

# GeoSpark Logger ~ Drill Log

**Project:** KZK **Hole Number:** K16-413

Prospect:	Sebesi	Hole Type:	DD	Survey Type:	PLND-LiDAR	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Roger Hulstein	Date Logging Start:	8/14/2016
UTM Easting:	415800	Core Size:	HQ3	Azimuth:	239.9	Date Logging Complete:	8/16/2016
UTM Northing:	6815170	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	New Age
UTM Elev. (m):	1595	Casing Depth (m):	6	Length (m):	147	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title:		Drill Started:	8/12/2016
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	8/15/2016
Local Elev. (m):				Hole Completed?:	Abandoned	Purpose:	Exploration
Comments:						Parent Hole:	

Drill hole intersected units of the Wind Lake Formation from 4.6m to 147.0m (EOH). Hole was abandoned at 147.0m due to excessive deviation from planned azimuth of 240 degrees and redrilled as K16-414.

**Downhole Surveys:**

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	238.5	1.4	239.9	TN14	Roger Hulstein	8/12/2016		<input checked="" type="checkbox"/>	Muddy drill pad, drill likely settled during drilling. At 8pm Aug 15 azimuth of drill rod in chuck was 237.8 (+1.4=239.2 degrees) and dip was -64.6 deg (as measured by TN14) prior to being aligned for K16-414.
15	-64.9	214.4	22.1	236.5	ReflexEZS	New Age	8/13/2016	5855	<input type="checkbox"/>	mag field is a little high
42	-65.8	217.7	22.1	239.8	ReflexEZS	New Age	8/13/2016	5769	<input checked="" type="checkbox"/>	
69	-65.7	216.4	22.1	238.5	ReflexEZS	New Age	8/13/2016	5782	<input checked="" type="checkbox"/>	
93	-66.1	214.6	22.1	236.7	ReflexEZS	New Age	8/14/2016	5771	<input checked="" type="checkbox"/>	
117	-66.4	212.9	22.1	235	ReflexEZS	New Age	8/14/2016	5802	<input checked="" type="checkbox"/>	
135	-66.9	211.3	22.1	233.4	ReflexEZS	New Age	8/15/2016	5710	<input checked="" type="checkbox"/>	essentially non-magnetic (no pyrrhotite) section.
147	-67.2	211.2	22.1	233.3	ReflexEZS	New Age	8/15/2016	5786	<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>4.60</b>	<b>OVBN Overburden</b>									
<b>4.60</b>	<b>8.76</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
4.6 - 8.76: includes minor MAFta											
<<Min: 4.6 - 19.5 0.5% Min: Pyrite>>											
<<Min: 4.6 - 19.5 0.5% Min: Pyrrhotite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<p>&lt;&lt;Alt: 4.6 - 8.76 Moderate Calcite&gt;&gt;            &lt;&lt;Vein: 6.1 - 8.76 20% Quartz-Carbonate&gt;&gt;            &lt;&lt;Struc: 5 - 7.3 Moderate dominant foliation&gt;&gt;            &lt;&lt;Struc: 6 - 15.5 Weak Fault&gt;&gt; broken core, minor gouge zones &lt;5cm wide            &lt;&lt;Struc: 7.3 - 12.5 Moderate dominant foliation&gt;&gt;</p> <p><b>8.76 13.68 MAFta Coarse grained to ash tuff</b>            8.76 - 13.68: 12.27-12.48m: intercalated unit of calcite rich MDS.</p> <p>&lt;&lt;Alt: 8.76 - 13.68 Moderate Calcite&gt;&gt;            &lt;&lt;Struc: 12.5 - 38 Moderate dominant foliation&gt;&gt; local zones of wavy banding approx perpendicular to DFOL</p> <p><b>13.68 16.08 MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>            &lt;&lt;Alt: 13.68 - 16.08 Moderate-Strong Calcite&gt;&gt;            &lt;&lt;Vein: 14.7 - 21 15% Quartz-Carbonate&gt;&gt;</p> <p><b>16.08 19.50 MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>            16.08 - 19.5: minor bands of MAFta</p> <p>&lt;&lt;Alt: 16.08 - 19.5 Moderate Calcite&gt;&gt;</p> <p><b>19.50 21.45 MAFt Mafic Volcaniclastics</b>            19.5 - 21.45: cm size siliceous (rhyolite?) blebs (large lapilli?) separated by green clay rich folia. 19.85-19.93m: weak limonite, gougy, crushed qtz zone. 19.93-20.05m: carbonaceous mudstone.</p> <p>&lt;&lt;Min: 19.5 - 21.45 0.5% Min: Pyrite&gt;&gt;            &lt;&lt;Alt: 19.5 - 21.45 Weak Calcite&gt;&gt;            &lt;&lt;Vein: 21 - 40 5% Calcite&gt;&gt;            &lt;&lt;Struc: 19.85 - 19.93 Weak-Moderate Fault&gt;&gt; fault gouge</p> <p><b>21.45 44.15 MAFt Mafic Volcaniclastics</b>            21.45 - 44.15: upper section is coarser.</p> <p>&lt;&lt;Min: 21.45 - 39 1% Min: Pyrite&gt;&gt; and as diss            &lt;&lt;Min: 21.45 - 39 1% Min: Pyrrhotite&gt;&gt;            &lt;&lt;Min: 39 - 40.8 1% Min: Pyrite&gt;&gt;            &lt;&lt;Min: 39 - 40.8 3% Min: Pyrrhotite&gt;&gt;            &lt;&lt;Min: 40.8 - 44.15 1% Min: Pyrrhotite&gt;&gt;</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %	
		<p>&lt;&lt;Alt: 21.45 - 44.15 Moderate-Strong Calcite&gt;&gt; and in bands and diss</p> <p>&lt;&lt;Vein: 42.95 - 46.45 15% Quartz-Carbonate&gt;&gt;</p> <p>&lt;&lt;Struc: 28.74 - 30 Moderate Fault&gt;&gt; broke core, minor gouge</p> <p>&lt;&lt;Struc: 38 - 38.44 Moderate dominant foliation&gt;&gt;</p> <p>&lt;&lt;Struc: 38.44 - 39 Moderate dominant foliation&gt;&gt;</p> <p><b>44.15 46.66 MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b></p> <p>44.15 - 46.66: intercalated carbonaceous MDS (60%) with MAFta (40%).</p> <p>&lt;&lt;Min: 44.15 - 46.66 1% Min: Pyrite&gt;&gt;</p> <p>&lt;&lt;Min: 44.15 - 46.66 1% Min: Pyrrhotite&gt;&gt;</p> <p>&lt;&lt;Alt: 44.15 - 46.66 Moderate-Strong Calcite&gt;&gt;</p> <p>&lt;&lt;Alt: 45.5 - 46.66 Weak Silicification&gt;&gt;</p> <p>&lt;&lt;Struc: 44.5 - 45.5 Weak-Moderate Fault&gt;&gt; broke core, minor gouge</p> <p><b>46.66 56.10 MAFt Mafic Volcaniclastics</b></p> <p>46.66 - 56.1: 48.93-49.10m: siliceous 'lappilli' - similar to 19.50-21.45m.</p> <p>&lt;&lt;Min: 46.66 - 56.1 0.5% Min: Pyrite&gt;&gt;</p> <p>&lt;&lt;Min: 46.66 - 56.1 3% Min: Pyrrhotite&gt;&gt;</p> <p>&lt;&lt;Alt: 46.66 - 56.1 Moderate Calcite&gt;&gt; and in bands and blebs</p> <p>&lt;&lt;Alt: 52.88 - 55.53 Weak Biotite&gt;&gt;</p> <p>&lt;&lt;Vein: 51.3 - 51.8 15% Quartz-Carbonate 10 deg. &gt;&gt;</p> <p>&lt;&lt;Struc: 47.5 - 48 Moderate dominant foliation&gt;&gt;</p> <p>&lt;&lt;Struc: 48 - 48.4 Moderate dominant foliation&gt;&gt;</p> <p>&lt;&lt;Struc: 50.55 - 50.65 Moderate-Strong Contact&gt;&gt;</p> <p>&lt;&lt;Struc: 55.5 - 57 Moderate dominant foliation&gt;&gt;</p> <p><b>56.10 62.60 MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b></p> <p>56.1 - 62.6: Includes section of MAFta or non carbonaceous MDS at: 56.72-57.13m, 60.00-60.31m,</p> <p>&lt;&lt;Min: 56.1 - 62.6 5% Min: Pyrite&gt;&gt;</p> <p>&lt;&lt;Alt: 56.1 - 62.6 Moderate Silicification&gt;&gt; original siliceous argillite</p> <p>&lt;&lt;Alt: 56.1 - 62.6 Weak-Moderate Calcite&gt;&gt;</p> <p>&lt;&lt;Vein: 56.1 - 57.5 10% Quartz-Carbonate&gt;&gt;</p> <p>&lt;&lt;Struc: 57.7 - 62 Moderate dominant foliation&gt;&gt;</p>										

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
		<<Struc: 59.7 - 66.95 Weak Fault>> broken core (brittle fracture of siliceous agillite), minor gouge zones.									
<b>62.60</b>	<b>63.59</b>	<b>MAFta Coarse grained to ash tuff</b>									
		<<Min: 62.6 - 63.59 1% Min: Pyrite>>									
		<<Alt: 62.6 - 63.59 Moderate Calcite>>									
		<<Vein: 62.6 - 63.58 8% Quartz-Carbonate>>									
<b>63.59</b>	<b>67.14</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
		63.59 - 67.14: locally siliceous (argillite?). Minor zones of non carbonaceous MDS or MAFta at: 65.25-65.40m and 64.47-64.71m.									
		<<Min: 63.59 - 67.14 3% Min: Pyrite>> and as diss									
		<<Alt: 63.59 - 67.14 Moderate Silicification>> original siliceous argillite									
		<<Alt: 63.59 - 67.14 Weak Calcite>>									
		<<Vein: 64.47 - 66.6 8% Quartz-Carbonate>>									
		<<Struc: 66.85 - 67.14 Moderate dominant foliation>>									
<b>67.14</b>	<b>72.82</b>	<b>MAFt Mafic Volcaniclastics</b>									
		<<Min: 67.14 - 74 3% Min: Pyrite>>									
		<<Min: 67.14 - 74 0.5% Min: Pyrrhotite>>									
		<<Alt: 67.14 - 72.82 Moderate Calcite>> and in veins									
		<<Vein: 67.5 - 79 10% Quartz-Carbonate>> and foliaform bands									
		<<Struc: 69 - 70 Moderate dominant foliation>>									
<b>72.82</b>	<b>73.50</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
		<<Alt: 72.82 - 81.13 Weak-Moderate Calcite>> blebs, bands, veins									
		<<Struc: 73.05 - 73.3 Weak Fault>> broken core									
<b>73.50</b>	<b>74.00</b>	<b>MAFta Coarse grained to ash tuff</b>									
<b>74.00</b>	<b>77.20</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
		<<Min: 74 - 84.33 3% Min: Pyrite>> rare blebs and hairline stringers									
		<<Alt: 74 - 80.4 Weak-Moderate Silicification>>									
		<<Struc: 76 - 76.3 Weak-Moderate Fault>> broken core									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>77.20</b>	<b>80.40</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b> 77.2 - 80.4: 79.00-80.40m: siliceous sections <<Struc: 79.5 - 80.2 Moderate Fault>> broken and missing core, gouge									
<b>80.40</b>	<b>81.13</b>	<b>MAFta Coarse grained to ash tuff</b>									
<b>81.13</b>	<b>84.33</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b> <<Min: 83 - 83.5 0.5% Min: Pyrrhotite>> <<Alt: 81.13 - 88.31 Moderate Calcite>> and in bands <<Vein: 84.31 - 84.33 100% Quartz-Carbonate>> and foliaform bands <<Struc: 83.8 - 84 Moderate dominant foliation>>									
<b>84.33</b>	<b>88.31</b>	<b>MAFt Mafic Volcaniclastics</b> <<Min: 84.33 - 84.53 5% Min: Pyrite>> <<Min: 84.33 - 84.53 0.1% Min: Chalcopyrite>> <<Min: 84.53 - 88.1 1% Min: Pyrite>> <<Min: 88.1 - 90.39 1% Min: Pyrite>> <<Min: 88.1 - 90.39 3% Min: Pyrrhotite>> <<Vein: 87.47 - 88.31 10% Quartz-Carbonate>> <<Struc: 84.33 - 86.2 Weak-Moderate Fault>> broken core, clay on foliation									
<b>88.31</b>	<b>95.47</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b> 88.31 - 95.47: <50% siliceous sections <<Min: 90.39 - 95.17 3% Min: Pyrite>> and as blebs and hairline veinlet <<Min: 95.17 - 121.8 1% Min: Pyrite>> <<Min: 95.17 - 121.8 3% Min: Pyrrhotite>> diss and rare blebs <<Alt: 88.31 - 91.42 Moderate Calcite>> and in bands <<Alt: 91.42 - 95.47 Weak Calcite>> blebs, bands, veins <<Alt: 93.3 - 97.7 Weak Silicification>> <<Vein: 91.74 - 95.19 10% Quartz-Carbonate>> <<Struc: 91.3 - 95 Weak-Moderate Fault>> zones of broken core, clay on foliation									
<b>95.47</b>	<b>116.85</b>	<b>MAFt Mafic Volcaniclastics</b> <<Alt: 95.47 - 104.4 Moderate-Strong Calcite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
		<<Alt: 104.4 - 108.4 Weak Calcite>>									
		<<Alt: 108.4 - 126 Moderate Calcite>> blebs and bands									
		<<Vein: 111.9 - 111.98 70% Quartz-Carbonate>>									
		<<Vein: 114 - 124.4 5% Quartz-Carbonate>>									
		<<Struc: 96 - 97.3 Moderate dominant foliation>>									
		<<Struc: 98 - 99 Moderate dominant foliation>>									
		<<Struc: 103.9 - 104.2 Weak-Moderate Fault>> broken core, clay on foliation									
		<<Struc: 104.8 - 105.6 Moderate dominant foliation>>									
		<<Struc: 112 - 112.2 Weak-Moderate Fault>> broken and crushed core									
		<b>116.85 123.44 MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
		<<Min: 121.8 - 126 1% Min: Pyrite>>									
		<<Min: 121.8 - 126 0.5% Min: Pyrrhotite>>									
		<<Struc: 117 - 117.4 Moderate dominant foliation>>									
		<<Struc: 119.8 - 120 Moderate dominant foliation>>									
		<<Struc: 122.8 - 123.3 Moderate dominant foliation>>									
		<<Struc: 123.27 - 123.47 Weak-Moderate Fault>> gouge zone									
		<b>123.44 126.00 MAFt Mafic Volcaniclastics</b>									
		<<Struc: 125.1 - 125.35 Weak-Moderate Fault>> crushed core & missing core									
		<b>126.00 137.06 MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
		<<Min: 126 - 131 1% Min: Pyrite>> and rare blebs									
		<<Min: 131 - 147 2% Min: Pyrite>> and as wisps									
		<<Min: 131 - 147 2% Min: Pyrrhotite>> and as wisps and rare bands with pyrite and calcite									
		<<Alt: 126 - 131.65 Moderate-Strong Calcite>> dis and bands									
		<<Alt: 131.65 - 132.4 Weak Calcite>>									
		<<Alt: 132.4 - 137.06 Moderate-Strong Calcite>> dis and bands									
		<<Struc: 126.15 - 126.35 Weak-Moderate Fault>> crushed core									
		<<Struc: 126.8 - 128.6 Trace Fault>> broken and minor clay on foliation									
		<<Struc: 131.1 - 132 Weak-Moderate Fault>> broken and minor gouge									
		<<Struc: 133 - 134 Moderate dominant foliation>>									
		<<Struc: 134.3 - 134.7 Weak Fault>> broken and minor gouge									
		<<Struc: 136.2 - 137.1 Weak Fault>> broken and minor gouge									

# GeoSpark Logger ~ Drill Log

**Project:**

**KZK**

**Hole Number:**

**K16-413**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>137.06</b>	<b>138.56</b>	<b>MAFt Mafic Volcaniclastics</b> <<Alt: 137.06 - 138.56 Moderate Calcite>> dis and bands									
<b>138.56</b>	<b>146.08</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b> <<Alt: 138.56 - 147 Moderate Calcite>> dis and blebs <<Struc: 139.85 - 139.93 Moderate Fault>> gouge <<Struc: 140 - 141 Moderate dominant foliation>>									
<b>146.08</b>	<b>147.00</b>	<b>MAFt Mafic Volcaniclastics</b>									
<b>End of Hole @ 147</b>											