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| **Logged by:** | | | C. Couëslan | | | | | **Date logged:** 2019/08/28 |
| **Location:** | Huzyk Creek | | | | | | | **Continuous core** |
| **UTM zone** | | 14 | | **Easting:** | 479896 | **Northing:** | 6015081 | **Core size:** NQ |
| **DDH#** | | HZ-19-2 | | **Azimuth:** | 322° | **Plunge:** | 50° | **Unit:** meters |
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| **From:** | **To:** | | **Description:** | | | | | |
| **72** | **75.3** | | **Phanerozoic Sandstone** | | | | | |
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| **75.3** | **79.5** | | **Granitic Regolith** | | | | | |
|  |  | | Variably weathered granite from unconsolidated quartz and clay intervals <30 cm thick to texturally preserved granite with heavily weathered feldspar.  Photo: 78.1 m; Granitic Regolith / Granite; [6524](HZ-19-2_core_photos/IMG_6524.jpg), [6525](HZ-19-2_core_photos/IMG_6525.jpg). | | | | | |
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| **79.5** | **80.2** | | **Granite** | | | | |  |
|  |  | | Reddish-pink, medium- to coarse-grained, and weakly foliated rock.  Composition: biotite, 3–5%; quartz, 20–30%; plagioclase, 20–30%; and K-feldspar.  Biotite is largely altered to chlorite. | | | | | |
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| **80.2** | **93.5** | | **Hornblende gneiss / Pegmatite, mylonitic** | | | | | |
|  |  | | The interval consists of hornblende gneiss with 10–15% pink pegmatite as dikes <1.5 m. The pegmatite contains local bands of mylonite <15 cm.  The hornblende gneiss is green-grey, medium to coarse grained, foliated, to strongly foliated, and weakly magnetic in places.  Composition: ilmenite, tr–1%; pyrrhotite, 2–3%; garnet, 2–3%; diopside, 7–10%; biotite, 10–15%; hornblende, 10–20%; quartz and feldspar.  The rock is locally more calcareous with 10–20% hornblende and 20–30% diopside.  Interpretation: Likely mafic igneous rock (metabasalt?) with local calcsilicate alteration; alternatively, could be calcareous metasediment.  Photo: 87.1 m; Hornblende Gneiss / Hornblende-Diopside Gneiss / Pegmatite; [6526](HZ-19-2_core_photos/IMG_6526.jpg), [6527](HZ-19-2_core_photos/IMG_6527.jpg). | | | | | |
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| **93.5** | **99.5** | | **Pegmatite, pink** | | | | |  |
|  |  | | Pinkish-orange, pegmatitic, foliated, and non-magnetic rock.  Composition: hornblende, tr–1%; biotite, tr–1%; ilmenite, 1–2%; chlorite, 3–5%; quartz, 20–30%; K-feldspar, 20–30%; and plagioclase.  Contains xenoliths of hornblende gneiss <15 cm. | | | | | |
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| **99.5** | **101.8** | | **Hornblende Gneiss** | | | | |  |
|  |  | | Similar to previous, contains an approximately 40 cm wide zone of regolith.  Sample: 108-19-HZ12; 99.95–100.25 m; Hornblende Gneiss | | | | | |
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| **101.8** | **103.45** | | **Pegmatite, grey** | | | | | |
|  |  | | Grey, coarse-grained, foliated, and non-magnetic rock.  Composition: orthopyroxene?, tr.; ilmenite, 1–2%; biotite, 2–3%; hornblende, 2–3%; quartz, 20–30%; and feldspar. | | | | | |

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| **103.45** | **137.45** | **Orthopyroxene Wacke–Mudstone / Pegmatite, pink** |
|  |  | The interval consists of orthopyroxene wacke that locally grades into biotite-rich mudstone layers <2 m thick. The mudstone beds are thickest towards the bottom of the interval. The interval is intruded by pink pegmatite dikes <2.3 m wide.  The orthopyroxene wacke is grey, medium to coarse grained, foliated, and non-magnetic.  Composition: graphite, tr.; biotite, 10–20%; orthopyroxene, 10–20%; quartz and feldspar.  The biotite is reddish brown, the orthopyroxene is greenish. The orthopyroxene is locally poikiloblastic forming coarse grains <1 cm. The rock contains sparse garnet and locally 2–3% sulphide.  The mudstone is dark grey, medium grained, foliated, and non-magnetic.  Composition: orthopyroxene 10–20%; biotite, 20–30%; quartz and feldspar.  The mudstone locally contains 1–2% garnet towards the bottom of the interval.  Photos: 111.75 m; Orthopyroxene Wacke; [6528](HZ-19-2_core_photos/IMG_6528.jpg), [6529](HZ-19-2_core_photos/IMG_6529.jpg).  133.7 m; Orthopyroxene Mudstone / Orthopyroxene Wacke; [6531](HZ-19-2_core_photos/IMG_6531.jpg), [6532](HZ-19-2_core_photos/IMG_6532.jpg).  Samples: 108-19-HZ13; 134.45–134.65 m; Orthopyroxene Mudstone  108-19-HZ14; 136.5–136.83 m; Orthopyroxene Wacke |
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| **137.45** | **140.4** | **Garnet Mudstone / Pegmatite, pink** |
|  |  | The interval consists of garnet mudstone with dikes of pink to grey pegmatite <45 cm thick.  The mudstone is brown-grey, medium grained, foliated, and non-magnetic.  Composition: graphite, 1–2%; garnet, 10–20%; biotite, 20–30%; quartz and feldspar.  The garnet mudstone is interbedded with orthopyroxene mudstone at a scale of <10 cm.  Photos: 137.8 m; Pegmatite / Garnet Mudstone / Orthopyroxene Wacke; [6534](HZ-19-2_core_photos/IMG_6534.jpg), [6535](HZ-19-2_core_photos/IMG_6535.jpg).  Samples: 108-19-HZ15; 139.1–139.6 m; Garnet Mudstone (1/4 core). |
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| **140.4** | **152.65** | **Orthopyroxene Wacke / Pegmatite, pink / Garnet Mudstone** |
|  |  | The interval consists of orthopyroxene wacke with beds of garnet mudstone <20 cm thick, and pegmatite dikes <40 cm thick.  The wacke is similar to previous with 7–10% biotite and 10–20% orthopyroxene. It locally contains 1–2% sulphide.  The garnet mudstone is similar to previous. |

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| **152.65** | **169.35** | **Graphite Mudstone / Pyrrhotite-Graphite Wacke / Calcsilicate / Garnet Mudstone** |
|  |  | The interval consists of graphite mudstone with local beds of pyrrhotite-graphite sandstone <1.8 m, and sparse beds of calcsilicate <25 cm. The graphite mudstone grades into garnet mudstone over the bottom 50 cm of the interval.  The graphite mudstone is dark grey, coarse grained, strongly foliated, and non-magnetic.  Composition: molybdenite, tr–1%; sphalerite, 1–2%; pyrrhotite, 7–10%; biotite, 10–15%; graphite, 20–30%; quartz and feldspar.  The pyrrhotite-graphite sandstone is light grey, fine to medium grained, foliated, and moderately magnetic.  Composition: graphite, 2–3%; pyrrhotite, 3–5%; biotite, 5–7%; quartz and feldspar.  The contact between the mudstone and sandstone is sharp indicating a sudden influx of clastic material.  The calcsilicate is green-grey, coarse to very coarse grained, foliated, and weakly magnetic in places.  Composition: oxide, tr.; titanite, tr–1%; graphite, 1–2%; sulphide, 2–3%; diopside, 60–70%; quartz and feldspar.  The calcsilicate is relatively homogeneous and in sharp contact with the graphitic sandstone.  Photos: 155.9 m; Graphitic Sandstone / Graphitic Mudstone; [6536](HZ-19-2_core_photos/IMG_6536.jpg), [6537](HZ-19-2_core_photos/IMG_6537.jpg).  158.95 m; Graphitic Mudstone; [6538](HZ-19-2_core_photos/IMG_6538.jpg), [6539](HZ-19-2_core_photos/IMG_6539.jpg).  163.0 m; Graphitic Sandstone / Calcsilicate / Graphitic Mudstone; [6540](HZ-19-2_core_photos/IMG_6540.jpg), [6542](HZ-19-2_core_photos/IMG_6542.jpg).  163.65 m; Graphitic Sandstone / Graphitic Mudstone; [6541](HZ-19-2_core_photos/IMG_6541.jpg), [6543](HZ-19-2_core_photos/IMG_6543.jpg).  Samples: 108-19-HZ16; 156.7–157.2 m; Graphitic Mudstone (1/4 core).  108-19-HZ17; 162.5–162.8 m; Graphitic Sandstone (1/4 core). |
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| **169.35** | **247.85** | **Orthopyroxene Wacke / Pegmatite, pink / Granite** |
|  |  | The interval consists of orthopyroxene wacke with local intrusions of pink pegmatite <3.25 m, and sparse intrusions of pink granite <35 cm.  The orthopyroxene wacke is similar to previous. It contains trace amounts of graphite. Orthopyroxene is locally replaced by hornblende, possibly in spatial association with pegmatite intrusions, suggesting a retrograde/metasomatic influence.  The pegmatite is locally transected by mylonitic bands <5 cm.  The granite is pink, medium grained, weakly foliated, and non-magnetic.  Composition: sulphide, tr–1%; biotite, 3–5%; quartz, 20–30%; plagioclase, 20–30%; and K-feldspar.  The biotite is locally chloritized.  Photos: 184.25 m; Orthopyroxene Wacke / Pegmatite, mylonitic; [6544](HZ-19-2_core_photos/IMG_6544.jpg), [6545](HZ-19-2_core_photos/IMG_6545.jpg).  201.05 m; Orthopyroxene Wacke; [6547](HZ-19-2_core_photos/IMG_6547.jpg), [6548](HZ-19-2_core_photos/IMG_6548.jpg).  239.7 m; Orthopyroxene Wacke; [6549](HZ-19-2_core_photos/IMG_6549.jpg), [6550](HZ-19-2_core_photos/IMG_6550.jpg).  Sample: 108-19-HZ18; 204.55–204.9 m, Orthopyroxene Wacke. |
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| **247.85** | **257.75** | **Pegmatite, pink** |
|  |  | Pink to grey, coarse-grained, foliated, and non-magnetic rock.  Composition: biotite, 3–5%; quartz, 20–30%; plagioclase, 20–30%; and K-feldspar.  The pegmatite contains local altered, brown-bronze, relatively equant grains, possibly pseudomorphs of orthopyroxene or amphibole. Biotite is commonly chloritized. |

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| **257.75** | **273.15** | **Orthopyroxene Wacke / Pegmatite, white** |
|  |  | The interval consists of orthopyroxene wacke with local pegmatite dikes <3 m.  The orthopyroxene wacke is similar to previous with tr-1% sulphide. Orthopyroxene is locally replaced by hornblende. The wacke contains sparse layers <2 cm thick with 5–7% garnet. |
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| **273.15** | **276.7** | **Tonalite / Pegmatite, pink / Granite** |
|  |  | The interval consists of tonalite intruded by pink pegmatite dikes <40 cm and pink granite dikes <35 cm.  The tonalite is light grey, coarse grained, foliated, and non-magnetic.  Composition: orthopyroxene, tr–1%; sulphide, 2–3%; biotite, 5–7%; quartz and feldspar.  Photos: 273.75 m; Tonalite / Wacke, retrogressed; [6551](HZ-19-2_core_photos/IMG_6551.jpg), [6552](HZ-19-2_core_photos/IMG_6552.jpg). |
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| **276.7** | **277.75** | **Wacke, sheared, retrogressed** |
|  |  | Light green-grey, fine- to medium-grained, strongly foliated, and non-magnetic rock.  Composition: graphite, tr.; sulphide, tr.; biotite, 10–20%; green amphibole, 10–20%; quartz and feldspar.  Likely derived from the orthopyroxene wacke. |
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| **277.75** | **289.3** | **Gneiss, hematized, chloritized / Granite, hemitized, chloritized** |
|  |  | The interval consists of strongly altered gneiss intruded by strongly altered granite dikes <1.5 m thick.  The gneiss is pink to dark green, medium to coarse grained, foliated, and non-magnetic.  Composition: hematite, 10–12%; chlorite, 20–30%; quartz, 10–20%; and K-feldspar.  Hematite occurs as both earthy and specular varieties.  Photo: 282.8 m; Gneiss, hematized, chloritized; [6553](HZ-19-2_core_photos/IMG_6553.jpg), [6554](HZ-19-2_core_photos/IMG_6554.jpg).  Sample: 108-19-HZ19; 284.3–284.57 m, Gneiss, hematized, chloritized. |
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| **289.3** | **300.75** | **Granite, hematized, chloritized / Pegmatite, hematized, chloritized** |
|  |  | The interval consists of medium- to coarse-grained granite intruded by dikes of pegmatite <1 m thick. Both rocks are hematized and chloritized. The interval is cut by a 2 m wide zone of quartz-vein breccia with local specular hematite occurring as void fill. |
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| **300.75** | **349.0** | **Gneiss, hematized, chloritized / Granite, hematized, chloritized / Pegmatite** |
|  |  | The interval is similar to previous with granite dikes <2m wide and pegmatite dikes <60 cm wide. All phases are hematized and chloritized. The gneiss has local mottled texture, possibly from the chloritization of coarse-grained poikiloblastic orthopyroxene.  Photos: 345.0 m; Gneiss, hematized, chloritized; [6555](HZ-19-2_core_photos/IMG_6555.jpg), [6556](HZ-19-2_core_photos/IMG_6556.jpg). |
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| **349.0** | **370.8** | **Granite, hematized, chloritized** |
|  |  | Similar to previous. Local least altered zones consist of pink, coarse-grained, weakly foliated, and rather homogeneous granite with 3–5% biotite, 10–20% plagioclase, 20–30% quartz, and K-feldspar.  Photos: 349.3 m; Granite, hematized, chloritized; [6557](HZ-19-2_core_photos/IMG_6557.jpg), [6558](HZ-19-2_core_photos/IMG_6558.jpg). |

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| **370.8** | **374** | **Gneiss, hematized, chloritized** |
|  | **EOH** | Similar to previous. |
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| **Interpretation of the drillcore:** | | Possible metabasalt with local calcsilicate alteration at top of hole, followed by thick sequence of wacke-mudstone, and terminating in altered gneiss below 277.75 m. The wacke-mudstone contains a graphite-rich horizon from 152.65–169.35 m. The altered gneiss consists of a package of hematized and chloritized rocks, possibly derived from multiple protolith. The sequence is intruded throughout by numerous granitoid phases. |