Ontario

We are committed to providing accessible customer service.
If you need accessible formats or communications supports, please contact us.

Nous tenons à améliorer l’accessibilité des services à la clientèle.
Si vous avez besoin de formats accessibles ou d’aide à la communication, veuillez nous contacter.

Report on Diamond Drilling at the Gowganda Project, Capitol Mine Kilpatrick Prospect, Haultain Township, Ontario, Canada

2019/11/26

Prepared by:

Frank Ploeger, P.GEO
Canadian Exploration Services Limited

With contributions from:
Peter Doyle, FAusIMM
Jon Edwards, B.Sc.
Sean Hicks, B.Sc.

Prepared For:

Battery Mineral Resources Limited
P.O. Box 219
14579 Government Road
Larder Lake, Ontario
P0K 1L0 Canada

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF FIGURES AND TABLES

1. OVERVIEW

1.1 PROJECT NAME

This project is known as the **Gowganda Project.**

1.2 SUMMARY

Battery Mineral Resources Ltd. (BMR) undertook a diamond drilling campaign at the Gowganda Project, Capitol Mine Kilpatrick Prospect from March 29th, 2019 to April 4th, 2019 comprising 7 days of drilling (Table 1) and 48-man days spent by CXS Geologists. Fifteen holes totaling 960 meters were drilled to define a set of small N-S trending and steeply dipping cobalt veins (Kilpatrick Veins) exposed on surface during fall 2018 trench work. The drilling was completed by G4 Forage (G4) of Val-d'Or, Quebec, and support services were provided by Canadian Exploration Services (CXS) of Larder Lake, Ontario. Project supervision was provided by Peter Doyle, FAusIMM.

Each drill pad was cleared and leveled by CXS, and a sump was made to capture tailings from each hole and backfilled after drilling was complete. Core was packaged by G4 then transported to the Gowganda Lake Lodge by CXS for quick-logging, and then transported by CXS to its processing facility in Larder Lake. After processing, core samples were shipped by CXS to ALS labs in Sudbury, ON for assay.

The drilling program better defined the vertical and lateral extents of this previously known north-south striking and steeply dipping cobalt mineralized vein. This was completed though a series of east facing drill holes with step backs to the west along the N-S trend of the Kilpatrick vein.

Further drilling in the immediate area of this program is recommended to: test possible Cobalt bearing plunge structures speculated by Structural Geologist Consultant Dr. Erwann Lebrun from SRK Consulting Inc; test significant Geophysical anomalies located between the Kilpatrick veins and the Historic Capitol Mine Shaft; test the Unconformity between the volcanics and overlying sediments for possible ponding and deposition of Cobalt minerals; check the Volcanic package for possible fluid conduits; and, Cobalt deposition between the Diabase Sill and the overlying Sediments.

Further detailed mapping should be conducted along the Kilpatrick trench with a focus on identifying any secondary shear indicators which may assist in targeting possible Cobalt mineralized plunge structures.

Additional trenching along strike of the Kilpatrick veins to the south to expose the unconformity between the Huronian sediments and underlying Keewatin metavolcanics is recommended to discover mineralized fluid transport mechanisms and possible subcropping mineralized structures.

Continue modelling the adjacent historic mine workings to discover possible indicators of mineralization hosted within the Keewatin metavolcanics or associated with extensions of known structures which may have acted as fluid conduits for mineralization.

All coordinates presented in this report are in UTM NAD83 Z17N.

1.3 ACTIVITIES UNDERTAKEN

Work Performed	Dates	Total Holes Drilled / Samples Taken
Diamond Drilling	March 29 to April 4, 2019	15 holes
Assaying	April 10 to May 2, 2019	494 samples

Table 1: Drilling and Assay Activity Details

2. LOCATION DETAILS

2.1 PROPERTY & LOCATION

The Battery Mineral Resources' (BMR) Gowganda project is comprised of 1455 mining cell claims and 4 mining leases, totaling 31641.59 hectares, in Morel, Shillington, Rankin, Raymond, Knight, Van Hise, Haultain, Chown, Lawson, Nicol, Leith, Milner and Corkill townships (Figures 3 & 4) near the village of Gowganda in the District of Timiskaming. The general location of the Capitol mine property is shown in Figure 1.

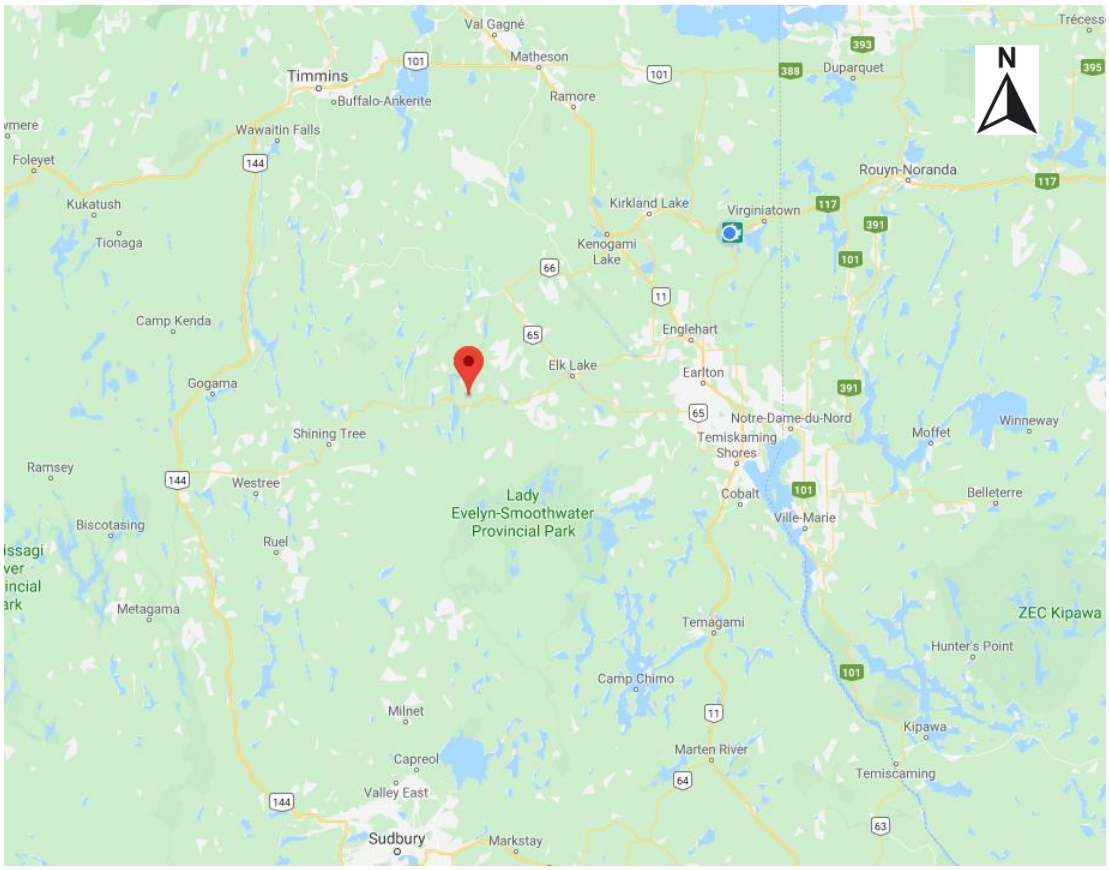


Figure 1: Location of the Gowganda Project, Capitol Mine Kilpatrick Prospect (Map data ©2019 Google)

2.2 ACCESS

Access to the property can be made by taking HWY 560 west from Elk Lake, Ontario for 37.7 km to Everett Lake road. Everett Lake road can be taken for 4.2 km north-north-east to the historic Capitol Mine Shaft. A trail can then be driven or walked due south for ~100m to the Capitol Mine Kilpatrick Prospect.

2.3 MINING CLAIMS

The Battery Mineral Resources' (BMR) Gowganda project is comprised of 1455 mining cell claims and 4 mining leases, totaling 31641.59 hectares, in Morel, Shillington, Rankin, Raymond, Knight, Van Hise, Haultain, Chown, Lawson, Nicol, Leith, Milner and Corkill townships (Figures 3 & 4). The BMR property consist of wholly owned staked units, leased claims, and under option from a number of individuals and companies.

The area of exploration drilling includes legacy claim numbered L4208019 which transitioned into boundary cells 272344, 152343, 101306, and 123830 (Table 2) located in the south boundary region of Haultain Township, within the Larder Lake Mining Division. Drilling was conducted on claims 152343 and 123830.

Legacy Claim Number	Claim Number	Provincial Grid Cell ID	Ownership of Land	Township
L4208019	152343	41P10J364	Battery Mineral Resources Limited	Haultain
L4208019	123830	41P10J384	Battery Mineral Resources Limited	Haultain

Table 2: Mining Lands and Cells Information

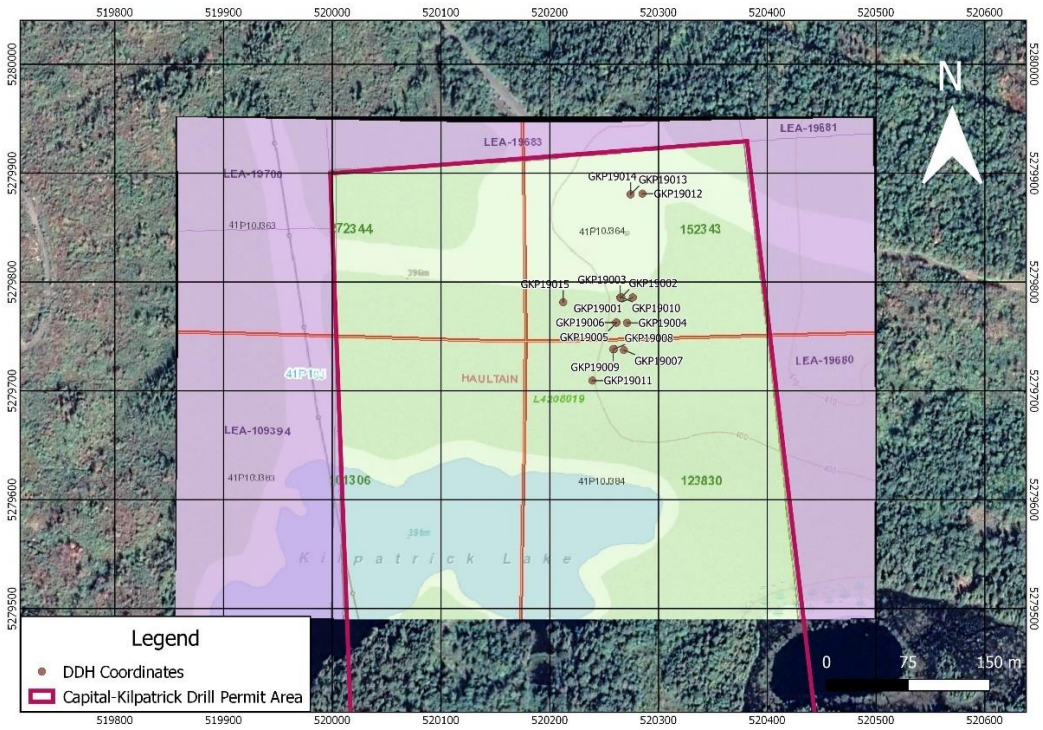


Figure 2: Drill Hole Location Plan

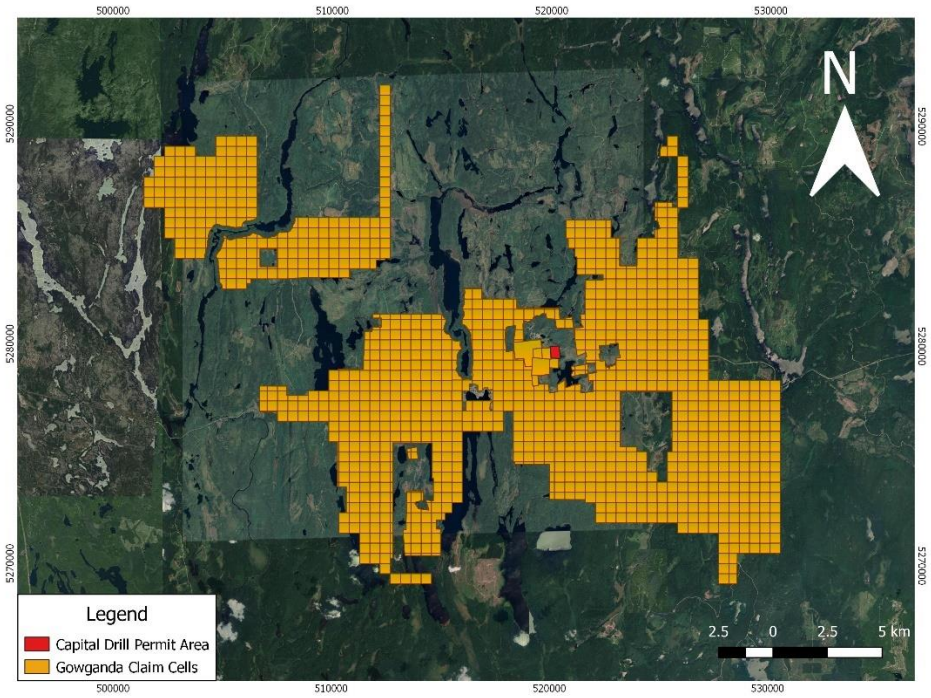


Figure 3: BMR's broader Gowganda project (yellow squares) and Capitol Mine Kilpatrick prospect (red squares) overlain on a satellite image.

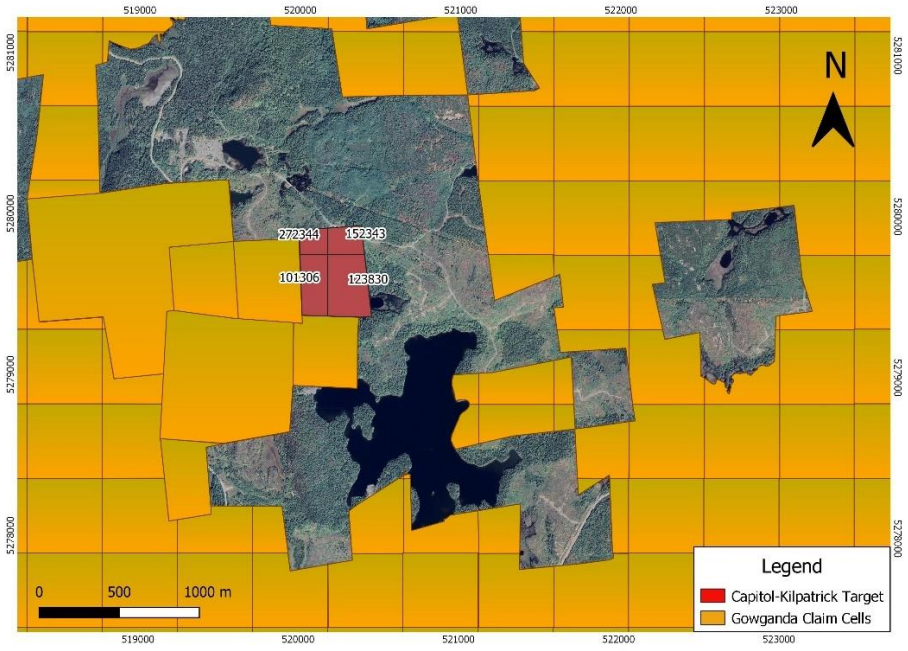


Figure 4: Gowganda project area (yellow squares) Capitol mine Kilpatrick prospect (red squares), overlain on a satellite image

2.4 PROPERTY & EXPLORATION HISTORY

There have been many historical mining and exploration projects carried out over the years within the survey area. The following list describes details of the previous geo-science work which was collected by the Mines and Minerals division and provided by OGSEarth (MNDM & OGSEarth 2018).

PROPERTY HISTORY

Initial work on the property commenced in 1908 upon the discovery and evaluation of a silver-cobalt vein. In 1929 Castle-Trethewey Mines Ltd was formed through the amalgamation of Capitol Silver Mines and Trethewey Silver Cobalt Mines both of whom began major production in the area in 1920. The bulk of the production came from the Castle No. 3 Mine. Production ceased in 1931. Castle-Trethewey Mines re-commenced operations in 1948 in the old Capitol Shaft area where production began again in 1949.

The Capitol Shaft property along with all other Gowganda Area properties held by Castle-Trethewey Mines were acquired by McIntyre Porcupine Mines in 1959. McIn-tyre Porcupine Mines continued production until 1964.

In 1967 all the Gowganda properties held by McIntyre Porcupine Mines were leased to United Siscoe Mines (Siscoe Metals). The Capitol Shaft was re-examined and op-erational until 1972 when Siscoe Metals relinquished the back to McIntyre Porcupine Mines.

In 1976, Milner Consolidated Silver Mines Ltd. acquired all the Gowganda properties from McIntyre.

EXPLORATION HISTORY

1908: Capitol Silver Mines/Trethewey Silver Cobalt Mines

Acquired the Capitol property among other neighbouring properties in the Gowganda camp. Initial surface work was completed (stripping/trenching) and a 44-foot shaft was sunk into a north-south trending vein carrying iron-cobalt-nickel arsenides with minor silver. (File 41P10NE0016).

1920-1931: Capitol Silver Mines/Trethewey Silver Cobalt Mines (Castle-Trethewey)

Major production was conducted across all Gowganda properties with 6,461,021 ounces silver and 299,847 ounces cobalt produced. The majority coming from the Castle No. 3 Shaft. (File 41P10NE0016).

1925: Capitol Silver Mines/Trethewey Silver Cobalt Mines (Castle-Trethewey)

Sunk a second shaft, 60 ft east of the initial shaft which reached a final depth of 819

ft. This second shaft would be referred to as the 'Capitol Shaft'. (File 41P10NE0016).

1951-66 and 1969-1971: Castle-Trethewey Mines Ltd./McIntyre Porcupine Mines/Siscoe Metals

During these times and under several companies the Capitol Mine was actively mining and produced 11,437,181 ounces silver and 209,474 ounces cobalt. (File 41P10NE0016).

1976: Milner Consolidated Silver Mines Ltd. (File 41P10NE0016)
Compilation and Interpretation – Haultain and Nicol Township

Kenneth H. Darke Consultants Limited compiled, interpreted, and concluded that vein systems and areas of potential economic interest within the properties were not sufficiently evaluated. Drilling and detailed geological evaluation was recommended to assess the potential of this area.

1987: Canadian Lencourt Mines Ltd. (File 41P10NE0023)
Geochemical Sampling – Haultain and Nicol Township

Canadian Lencourt Mines Ltd and Sandy K. Mines conducted geochemical sampling on mine tailings on the Siscoe Metals property. It was concluded that the silver tailings at Sandy K are amenable to treatment. Recoveries were estimated to yield significant profit over a 7-year span.

2007: Amador Gold Corp. (File 20000002177)
Magnetometer Survey – Haultain Township

Larder Geophysics Ltd. performed magnetometer survey over 3.3875 line-km of the Capitol Mine Grid. Three significantly high magnetic intensities were observed. A northwest trending magnetic high was interpreted as a geological boundary, whereas the sources of a southwest linear trend and a high anomaly observed in the lake region could not be configured.

2008: Amador Gold Corp. (File 20000002746)
Very Low Frequency EM Survey – Haultain Township

Larder Geophysics Ltd. conducted a VLF EM survey over 3.4875 line-km of the Capitol Mine Grid. High magnetic intensities were mainly observed in the vicinity of an old mine. An intense north-northwest trending anomaly and a strong axis was observed, but their sources were undetermined.

2009: Amador Gold Corp. (File 20000003861)
HLEM Survey – Haultain Township

Larder Geophysics Ltd. conducted a HLEM survey over 3.4875 line-km of the

Capitol Mine Grid. Conductive HLEM axes were observed in the survey area. Northern portion of these contributions were likely due to cultural features.

2013-2015: Castle Silver Mines Inc (File 20000014046)
Geological Mapping, Geochemical Sampling, Stripping, Channel Sampling, Rehabilitation – Haultain and Nicol Township

Douglas Robinson of Doug Robinson Consulting conducted geological data compilation, geochemical analyses, stripping, channel sampling and grid rehabilitation on the Castle Silver Property. Additional line cutting, geophysical surveys and geological surveys were recommended for the survey area.

2016: Battery Mineral Resources Limited (File 20000015781)
Airborne Magnetometer and Airborne Radiometric Surveys – Donovan, Barber, Browning, Charters, Corkill, Donovan, Dufferin, Ermatinger, Hart, Haultain, James, Leckie, Leonard, Moncrieff, Nicol, North Williams, Ray, Speight, Unwin, Van Nostrand, Willet Townships

Precision GeoSurveys conducted airborne magnetometer and radiometric surveys over 12,024 line-km of land for the Cobalt Project. Geophysical maps were generated with data obtained, but no solid interpretation was made. Additional geophysical surveying was recommended for accurate interpretation.

2.5 Regional & Local Geology

The Gowganda project area lies along the eastern margin of the Proterozoic Southern province within the Cobalt Embayment bounded by Archean basement rocks of the Superior province to the north and east, and by the Grenville province to the south (Joyce, 2011).

The project area is underlain by Early Proterozoic rocks of the Huronian Supergroup deposited between 2500 to 2200 million years ago. They rest unconformably over Archean granitic, meta-volcanic and metasedimentary rocks of the Superior province's Abitibi greenstone belt (Joyce, 2011; Hanych, 1999). The rocks comprising the Huronian Supergroup in the project area consist primarily of rocks from the Gowganda and Lorrain formations of the Cobalt Group, the youngest stratigraphic section of the Huronian Supergroup (Joyce, 2011).

The Gowganda Formation is the basal unit of the Cobalt Group and is composed of laminated siltstones and argillites, sandstones and a conglomeratic unit characterized by numerous felsic granitic drop stones (Lindsey, 1969; Siemiatwoska, 1977). The Lorrain Formation consists of pebbly sandstones, conglomerates and is capped by quartzite (Siemiatwoska, 1977). Both formations display strong evidence for a fluvial origin through flame structures, graded bedding and rippled tops (Lindsey, 1969).

Both the underlying Archean rocks and Huronian sediments were intruded by a large mafic sill known as the Nipissing Diabase between 2220 to 2217 million years ago (Palmer et al., 2007). A number of phases define the Nipissing Diabase but compositionally it is considered an olivine tholeiite and occurs as undulating gabbroic sills with a relatively uniform thickness of 980-100 m (Jambor 1971; Joyce 2011; Siddom and James, 1999). The undulatory nature of the sill creates a series of peaks and troughs and in the project area the Nipissing acts as a bowl which underlies the volcanics at approximately 400 m.

2.6 Mineral Deposit Types

Exploration drilling at Gowganda was focused on defining the extent of the Kilpatrick cobalt mineralized veins mapped on surface. Models of primary cobalt deposits, apart from those in the Central African Copperbelt, are not well defined in the existing literature (e.g., Hitzman et al., 2016).

Kerrich et al. (1986), Andrews et al. (1986a), and Andrews et al. (1986b) undertook detailed geological and geochemical studies of the Ag-Co veins of the historic Cobalt and Gowganda camps and concluded that saline to hypersaline basin brines transported metals to deposition sites, and that these metals were sourced from Huronian Basin aquifers. Proterozoic Ag-Co veins and Archean mineralized zones at Gowganda are hosted in the Huronian Basin and are closely linked to the basement massive sulfide deposits, it is possible that cobalt minerals at the Kilpatrick target also formed from saline basin brine circulation into structural traps.

2.7 Target of Interest

The objective of the drilling on the Gowganda project, Capitol Mine Kilpatrick prospect was to define vertical and lateral extents of the cobalt mineralized veins uncovered by recent stripping on surface. Cobalt mineralization at the Kilpatrick target may represent surface reflections of known Ag-Co mineralization and E-W and N-S structural trends that were mined at the Capitol and other local mines. Thus, the cobalt mineralizing fluid is interpreted to have exploited the same structural traps that controlled deposition of the Ag-Co mineralization mined in the proximal Capitol Mine workings, although the timing of the cobalt event remains unclear.

3. DRILLING

3.1 PERMITS

Permit for exploration drilling at the Gowganda project, Capitol Mine Kilpatrick prospect is PR-18-000108.

3.2 DRILLING

Hole planning of the drill campaign was based on the interpretation of the detailed mapping of the stripped area, thus drilling commenced on March 29th, 2019 and ended on April 4th, 2019. Fifteen holes were completed for a total of 960 meters (Table 3). The drill program was adjusted "on the fly" by P. Doyle after it was discovered that the targeted vein bottomed at the unconformity between the thin crust of sediments and the volcanic basement.

DDH	Easting (UTM NAD83 Z17N)	Northing (UTM NAD83 Z17N)	Elevation (m)	Azimuth	Dip	Depth (m)	Samples Collected	Samples Assayed
GKP19001	520276.30	5279785.81	403.43	94	-45	63	28	28
GKP19002	520265.35	5279785.42	403.00	91	-42	57	24	24
GKP19003	520264.69	5279785.56	402.65	91	-65	72	27	27
GKP19004	520271.00	5279762.46	402.78	89	-45	48	27	27
GKP19005	520261.34	5279762.69	402.41	90	-45	51	11	11
GKP19006	520260.73	5279762.67	402.22	91	-64	72	16	16
GKP19007	520268.11	5279737.50	402.86	94	-43	42	12	12
GKP19008	520259.04	5279738.42	402.50	89	-43	51	15	15
GKP19009	520258.32	5279738.30	402.57	93	-63	72	22	22
GKP19010	520265.74	5279786.03	403.04	65	-44	51	42	42
GKP19011	520239.15	5279709.40	399.50	108	-42	75	13	13
GKP19012	520285.21	5279881.13	403.44	94	-44	75	72	72
GKP19013	520274.32	5279880.53	399.39	na	90	42	40	40
GKP19014	520274.32	5279880.53	399.39	139	-44	72	69	69
GKP19015	520212.33	5279781.35	399.39	88	-54	117	23	23

Table 3: Data on diamond holes drilled by BMR in 2019

3.3 INTERPRETATION

Following the completion of the drill program at the Gowganda project, Capitol Mine, Kilpatrick prospect a number of observations were made:

There is a thinning of the Huronian Sediments from north to south and east to west. Within the sediments, there is a dominant cobalt mineralized vein feature/ structure

with a parallel weak vein/ fracture approximately 5m to the west similar to that observed in the stripping.

In the drilling, it was found that mineralization may occur as veins/ stringers in both structures (GKP19002), as fracture zones in the projected position of both (GKP19004) or concentrated only along the westerly structure (GKP19010).

To the north in the vicinity of the original Capitol Cobalt Shaft, holes GKP19012 & 014 did not intersect an actual vein/ stringer zone, but rather traversed sections of 30m-40m (core length) in which numerous occurrences of Cobalt mineralization (XRF values 527ppm Co - 2597ppm Co) were noted along fractures. Vertical hole GKP19013 intersected similar Cobalt bearing fractures between 4m and 22m, indicating a fairly extensive Co-mineralized system.

In the drilling, it was found that mineralization may occur as veins/ stringers in both structures (GKP19002), as fracture zones in the projected position of both (GKP19004) or concentrated only along the westerly structure (GKP19010).

Hole GKP19004 intersected a Graphitic Fault in the underlying Volcanics which does not appear to penetrate the overlying Huronian Sediments. It may reflect the low resistivity IP anomaly and may have acted as a channel/ pathway for mineralizing fluids in the stripped area.

A better understanding of the style of mineralization, a combination of fracture filling and veins/ stringers, implies that there was fluid channeling initiated by the heat provided by intrusion of the underlying Nipissing Diabase Sill, through the intervening mafic volcanic package. The fluids may have scavenged sulphur and cobalt from the host volcanics and were subsequently trapped under the sedimentary cap, finding their way into fractured zones and any minor slips/ joints/ faults/ dilatant features within the sediments where the cobalt mineralization was deposited.

During a site visit from SRK Consulting in August 2019, the Kilpatrick veins were interpreted as either extensional, hybrid, or shear veins with possible Cobalt bearing plunge structures identified with an approximate orientation of 350/65 and found at the intersection of steeply dipping N-S and NW veins (Lebrun, 2019).

DDH	From_m	To_m	Length_m	ALS Sample	SAMPLE	Ag ppm	As ppm	Co ppm	Cu ppm	Ni ppm	As %	Co %	Cu %	Ni %
GKP19001	12.30	12.80	0.50	16606	16606	0.65	>10000	>10000	3	>10000	10.25	2.55		2.9
GKP19001	12.80	13.65	0.85	16609	16609	0.17	1160	678	8.5	393				
GKP19002	20.20	20.70	0.50	16645	16645	0.15	9870	4400	2.3	2200				
GKP19002	20.70	21.50	0.80	16648	16648	0.16	1355	859	4.8	228				
GKP19002	25.00	26.00	1.00	16653	16653	0.22	1090	787	2.9	74				
GKP19002	26.00	27.00	1.00	16654	16654	0.44	824	523	55.6	186.5				
GKP19007	15.72	16.72	1.00	16742	16742	0.61	1690	1015	15.9	944				
GKP19010	21.22	21.33	0.11	16979	16979	0.41	>10000	>10000	3.3	>10000	6.16	1.755		2.23
GKP19010	21.33	21.85	0.52	16982	16982	0.12	2830	1760	3.9	660				
GKP19010	20.56	21.22	0.66	16978	16978	0.15	2080	1225	3.1	750				
GKP19012	5.80	6.50	0.70	16752	16752	0.37	1740	1155	5.6	1050				
GKP19013	37.00	38.00	1.00	15836	15836	6.74	2910	1780	17.5	395				
GKP19014	16.77	17.72	0.95	16880	16880	0.72	2340	1530	4.7	276				
GKP19014	17.72	18.56	0.84	16881	16881	0.92	2200	1465	12.7	258				

Table 4: Summary of significant assays in BMR 2019 drilling.

Details of the significant assays from the BMR 2019 diamond drilling program (Table 4) are described in the holes below:

GKP19001- Best from 12.3m-12.8m: 0.5m at 2.55% Co & 2.9 % Ni

GKP19002- Peak Co Value 4400ppm Co; Anomalous Range 304ppm Co-4400ppm Co. Cobalt Anomalous Interval: 19.20m-27.00m: 7.8m at 653ppm Co including 2.8m grading 1244ppm Co. Peak Ni Value 2200ppm Ni; coincides with Peak Co Value; Anomalous Range 122ppm-2200ppm Ni. Peak Cu Value 498ppm Cu; Anomalous Range: 200ppm Cu-498ppm Cu.

GKP19003- A few weakly anomalous zones of Cu and Ni >200ppm.

GKP19004- A few weakly anomalous Copper values >200pppm Cu.

GKP19005- Some elevated slightly anomalous Ni values from 309ppm Ni to a peak of 711ppm Ni.

GKP19006- Peak Cobalt Value: 20.42m-21.42m: 1.00m at 128ppm Co within an interval 19.42m-22,42m: 3.00m at 116ppm Co. Needs Infill Sampling as >100ppm Co & Ni >1000ppm Ni values in every selective sample from 19.42m to 67.50m. Peak Silver Value: 1.00m at 0.25ppm Ag. Peak Nickel Result: 1.00m at 1540ppm Ni; Best interval: 38.50m-40.85m: 2.00m at 1,473ppm Ni. Peak Copper Value: 1.00m at 450ppm Cu within an interval of 17.42m-19.42m: 2.00m at 370ppm Cu

GKP19007- 1m at 1015ppm Co, 1m @ 312ppm Co (or 2m at 664ppm Co); 1m at 101ppm Co and 1m at 90ppm Co (2m at 93ppm Co). Best: 14.72m-18.72m: 3m at 476ppm Co including 1m at 1015ppm Co.

GKP19008- Peak Cobalt Value 1.00m at 120ppm Co within an interval of 23.00m-

26.00m: 3m at 114ppm Co. Peak Silver Value: 1.00m at 0.40ppm Ag. Peak Nickel Result: 1.00m at 1395ppm Ni within an interval of 23.00m-26.00m: 3m at 1346ppm Ni. Peak Copper Value: 1.00m at 961ppm Cu.

GKP19009- Weakly anomalous Co and Ni values; 15.82m-17.82m: 2.00m at 133ppm Co, 19.00m- 21.00m: 2.00m at 155ppm Co, 26.00m-27.00m: 1.00m at 125ppm Co, 33.50m-34.50m: 1.00m at 125ppm Co, 44.00m-45.00m: 1.00m at 106ppm Co, 53.10m-54.10m: 1.00m at 126ppm Co, 67.50m-68.50m: 1.00m at 110ppm Co.

GKP19010- Peak Cobalt Value: 21.22m-21.33m: 0.11m at 17,550ppm Co (1.75% Co) within an interval 19.85m-22.31m: 2.46m at 2,250ppm Co and a best interval 20.56m-21.85m: 1.29m at 2,833ppm Co. Peak Silver Value: 25.98m-26.98m: 1.00m at 1.18ppm Ag. Peak Nickel Result: 21.22m-21.33m: 0.11m at 22,300ppm Ni (2.33% Ni); within an interval 19.85m-22.31m: 2.46m at 1,497ppm Ni and a best interval: 20.56m-21.85m: 1.29m at 2,637ppm Ni. Peak Copper Value: 0.74m at 1,765ppm Cu within an interval of 23.98m-33.20m: 9.22m at 552ppm Cu and 13.00m-15.95m: 2.95m at 771ppm Cu.

GKP19011- No Significant Results; Peak Cobalt Value: 1.00m at 142ppm Co. Peak Silver Value: 1.00m at 0.11ppm Ag. Peak Nickel Result: 1.00m at 1180ppm Ni. Peak Copper Value: 1.00m at 184ppm Cu.

GKP19012- Weakly Anomalous Co and Cu Values; Peak Cobalt Value 1.00m at 1155ppm Co within an interval of 4.80m-7.50m: 2.7m at 402ppm Co. Peak Silver Value: 0.86m at 0.61ppm Ag. Peak Nickel Result: 0.70m at 1050ppm Ni. Peak Copper Value: 1.00m at 1425ppm Cu.

GKP19013- Weakly Anomalous Co and Cu Values; Peak Cobalt Value: 38.00m-38.75m: 0.75m at 1780ppm Co within an interval 37.00m-40.00m: 3.00m at 704ppm Co. Peak Silver Value: 1.00m at 3.19ppm Ag. Peak Nickel Result: 0.75m at 395ppm Ni. Peak Copper Value: 1.00m at 5000ppm Cu within an interval of 10.00m – 19.00m: 9.00m at 1,511ppm Cu.

GKP19014- No elevated Ni associated with weakly anomalous Co Zones; Upper Cobalt Interval: 14.87m-19.25m: 4.38m at 804ppm Co with Higher Grade Zone of 1.79m at 1500ppm Co. Lower Cobalt Interval: 46.40m – 49.70m: 3.3m at 106ppm Co. Peak Nickel Value: 322ppm Ni. Peak Copper Value: 718ppm Cu.

GKP19015- No significant results; Peak Cobalt Value: 125ppm Co. Peak Nickel Value: 438ppm Ni. Peak Copper Value: 599ppm Cu

3.4 RECOMMENDATIONS

1) Infill drilling in the immediate area of this program is recommended to test possible Cobalt bearing plunge structures identified by Structural Geologist Consultant Dr. Erwann Lebrun (2019) of SRK Consulting;

2) Drill test significant IP anomalies located between the Kilpatrick veins and the historic Capitol Mine Shaft;

3) test the unconformity between the volcanics and overlying Cobalt Group sediments for possible ponding and deposition of Cobalt minerals;

4) check the Volcanic package for possible fluid conduits and Cobalt deposition between the Diabase Sill and the overlying Sediments;

5) Further detailed mapping should be conducted along the Kilpatrick trench with a focus on identifying any secondary shear indicators which may assist in targeting possible Cobalt mineralized plunge structures;

6) Additional trenching to extend the existing stripping the south is recommended to expose the unconformity between the Huronian sediments and underlying Keewatin metavolcanics looking for any clues to the fluid transport mechanisms that mineralized the Kilpatrick veins, and more possible outcropping mineralized structures;

7) Extending the existing trench/ stripping to the north is also recommended to try to expose the extension of the vein to the original Capitol cobalt shaft;

8) Continue modelling the adjacent historic mine workings from Capitol to Bonsall Mines looking for any indicators of possible mineralization hosted in the sediments, Keewatin metavolcanics, or underlying diabase sill. The modelling may also provide insight for any structures that may have acted as fluid conduits for mineralization on adjacent properties that may apply to the Capitol.

9) Survey the north and eastern extents of legacy claim L4208019.

4. REFERENCES CITED

Andrews, A.J., Owsiacki, L., Kerrich, R., and Strong, D.F., 1986a, The silver deposits at Cobalt and Gowganda, Ontario. I: Geology, petrography, and whole-rock geochemistry: Canadian Journal of Earth Sciences, v.23 (10), p. 1480-1506.

Andrews, A.J., Masliwec, A., Morris, W.A., Owsiacki, L., and York, D., 1986b, The silver deposits at Cobalt and Gowganda, Ontario. II: An experiment in age determinations employing radiometric and paleomagnetic measurements: Canadian Journal of Earth Sciences, v.23 (10), p. 1507-1518.

Google Earth Pro. 2019. *Location of the Gowganda Project.* 47°40'16.71"N, 80°43'46.78"W, eye alt 255.46km, Viewed November 19, 2019. <http://www.google.com/earth/index.html>.

Hanych, W. (1999). *Roy Lacarte Property, Geological Evaluation.* Tyrrell Township, Timiskaming District, Northeastern Ontario.

Hendrickson, M. (2019/07/15). *Evaluation of the Kilpatrick Prospect.* Battery Mineral Resources.* *Internal source may not be accessible to general public.*

Hitzman, M.W., Bookstrom, A. A., Slack, J. F., and Zientek, M. L., 2016, Cobalt—Styles of Deposits and the Search for Primary Deposits: USGS Open-File Report 2017–1155, 53 p.

Jambor, J.L. (1971). *The Nipissing Diabase.* The Canadian Mineralogist, 11(1):34-75.

Joyce, J.K. (n.d.). *The Cobalt-Gowganda Silver Mining Area*. Retrieved from https://www.davidkjoyceminerals.com/pagefiles/articles_cobaltgowganda.asp.

Kerrich, R., Strong, D.F., Andrews, A.J., and Owsiacki, L., 1986, The silver deposits at Cobalt and Gowganda, Ontario. III: Hydrothermal regimes and source reservoirs–evidence from H, O, C, and Sr isotopes and fluid inclusions: Canadian Journal of Earth Sciences, v.23 (10), p. 1519-1550.

Lebrun, E., 2019. Memo on a site visit to the Gowganda project. SRK Consulting, p. 1-5.

Lindsey, D.A. (1969). *Glacial Sedimentology of the Precambrian Gowganda Formation, Ontario, Canada.* GSA Bulletin, 80 (9): p. 1685-1702.

Palmer, H. C.; Ernst, R. E.; Buchan, K. L. (2007). "Magnetic Fabric Studies of the Nipissing sill province and Senneterre dykes, Canadian shield, and Implications

for Emplacement". Canadian Journal of Earth Sciences. NRC Research Press 44 (4): p. 507–528.

Ploeger, F. (2019/04/10). *Gowganda Capitol Shaft Drilling: Preliminary Observations.* Batter Mineral Resources.* *Internal source may not be accessible to general public.*

Siddom, James P. (1999). Differential Uplift of the Archean Basement North of the Sudbury Basin: Petrographic Evidence from the Matachewan Dyke Swarm (submitted in conformity with the requirements for the degree of M.Sc. Graduate Department of Geology University of Toronto thesis).

Siemiatkowska, K.M. (1977). *Geology of the Wakomata Lake Area, District of Algoma*. Ontario Division of Mines: Geoscience Report 151.

5. QUALIFICATIONS

CERTIFICATE OF QUALIFICATION AND CONSENT

I, Frank Rainer Ploeger of the town of Virginiatown, Province of Ontario, do hereby certify:

1) That I am a Consulting Geologist and reside at 21 Waite Avenue, Virginiatown, Ontario, P0K 1X0.

2) That I graduated from Queen's University at Kingston, Ontario with a Bachelor of Applied Science degree in 1973; and, that I completed 2 years of an MSc program at McMaster University in Hamilton, Ontario (1980- 1982).

3) That I am a **member in good standing of the Association of Geoscientists of Ontario (#479), the Association of Professional Engineers and Geoscientists of Saskatchewan (#10852, non- practicing), the Geological Association of Canada, the Prospectors and Developers Association, and the Northern Prospectors Association**. I have received a temporary permit (#2153) to practice in Quebec from the Ordre des geologues du Quebec pending acceptance by the Office quebequois de la langue francaise (OQLF).

4) That I have practiced my profession as a mineral exploration and mine geologist for a period of about 45 years.

5) This document is based on information various public documents and my personal observations during several visits to the property.

Although the information supplied to me is believed to be accurate and all reasonable care has been taken in the completion of this report, I hereby disclaim any and all liability arising out of its use and circulation. While I stand behind my interpretations, I cannot guarantee the accuracy of the source information and the use of this report or any part thereof shall be at the user's sole risk.

6) I have no interest, either directly or indirectly, in the subject property or client company.

7) *My written permission is required for the release of any summary or excerpt.*

Frank R. Ploeger

Virginiatown, Ontario, August 27, 2019

CERTIFICATE OF QUALIFICATION AND CONSENT

I, Peter James Doyle of the city of Richmond Hill, Province of Ontario, do hereby certify:

1) That I am an Exploration Geologist and reside at 79 Naughton Drive, Richmond Hill Ontario, L4C8B2.

2) That I graduated from Laurentian University at Sudbury, Ontario with an Honours Bachelor of Science degree in 1980.

3) That I am a **Fellow in good standing of the Australian Institute of Mining & Metallurgy (AUSIMM # 208850) as well as a member in good standing of Geological Association of Canada (GAC F0146); Canadian Institute of Mining & Metallurgy (CIMM # 91602); Prospectors & Developers Association of Canada (PDAC # 707); Society for Geology Applied to Mineral Deposits (SGA# 1333-08) and Society of Economic Geologists (SEG # 216720).**

4) That I have practiced my profession in various roles as a Mineral Exploration Geologist, Exploration Manager and Vice President of Exploration for a period of about 39 years principally within Canada & Australia as well as globally in United States of America, Mexico, Indonesia, China, Mongolia, Brazil, Argentina and Guyana.

5) This document is based on information various public documents and my personal observations during visits to the property during the exploration program.
Although the information supplied to me is believed to be accurate and all reasonable care has been taken in the completion of this report, I hereby disclaim any and all liability arising out of its use and circulation. While I stand behind my interpretations, I cannot guarantee the accuracy of the source information and the use of this report or any part thereof shall be at the user's sole risk.

6) I am currently employed full time as Exploration Manager – Canada for Battery Mineral Resources Limited and was directly involved in the planning and execution of the exploration program documented in this report.

7) *My written permission is required for the release of any summary or excerpt.*

Peter J. Doyle

Richmond Hill, Ontario, August 27, 2019

6. INSTRUMENT SPECIFICATIONS

Trimble GeoXT[1]

STANDARD FEATURES

System

- Windows Mobile 6.1(Classic edition)
- VGA display (480 x 640), sunlight-readable color touch screen
- Integrated Bluetooth 1.2 wireless technology
- Integrated 802.11b/g wireless LAN
- Ergonomic cable-free handheld
- Rugged and water-resistant design
- All-day internally rechargeable Li-ion battery
- Marvell 520 MHz XScale processor
- 128 MB RAM
- 1 GB non-volatile Flash data storage
- Sealed SD/SDHC card slot
- Integrated speaker and microphone

GPS

- Integrated high-performance GPS/SBAS1 receiver and L1 antenna
- Submeter real-time or 50 cm postprocessed accuracy

[1] Trimble instrument information available from: https://seafloorsystems.com/support/brochures/trimble-docs/43-trimble-geoxt-handheld-gps-receiver/file

- RTCM and CMR real-time correction support
- TSIP and NMEA protocol support
- EVEREST multipath rejection technology

Standard Software

- GPS Controller for control of integrated GPS and in-field mission planning
- GPS Connector for connecting integrated GPS to external ports
- Microsoft Office Mobile
- Transcriber (handwriting recognition)

Standard Accessories

- Support module
- AC Power supply with International adapter kit
- USB data cable
- Stylus(x2)
- Screen protectors (2-pack)
- Quick Start Guide
- Getting Started CD
- Hand strap
- Pouch

OPTIONAL FEATURES

Optional Software

- Terra Sync software
- Trimble GPS correct extension for ESRI ArcPad software
- GPS Pathfinder Tools Software Development Kit (SDK)
- GPS Pathfinder Office software
- Trimble GPSAnalyst™ extension for ESRI ArcGIS Desktop software
- TrimPix™ Pro system

Optional Accessories

- TDL 3G cellular modem accessory
- Power/serial clip (9-pin RS-232 serial connector and power input)
- Vehicle power adaptor
- Null modem cable
- Backpack kit
- Hard carry case
- Tempest™ antenna
- External patch antenna
- Pole-mountable ground plane
- Baseball cap with patch antenna pocket
- 2 meter range pole
- Range pole bracket

- Geo Beaconreceiver
- Anti-glare screen protectors (2-pack)

TECHNICAL SPECIFICATIONS

Physical

Size ..... 21.5 cm × 9.9 cm × 7.7 cm (8.5 in × 3.9 in × 3.0 in)
Weight ..... 0.80 kg (1.76 lbs) with battery
Processor .....520 MHz Marvell PXA-270 XScale processor
Memory ..... 128 MB RAM and 1 GB internal Flash storage
Battery ..... Internal 7500 mAh lithium-ion
27.8 Watt-hours, rechargeable in unit
Power usage
Low (no GPS or backlight) ..... 1.8 Watts
Normal (with GPS and backlight[3]) ..... 2.6 Watts
High (with GPS, backlight[3], Bluetooth, and wireless LAN)[4] ..... 3.7 Watts

Environmental

Operating temperature ..... –20 ºC to +60 ºC (–4 ºF to 140 ºF)
Storage temperature ..... –30 ºC to +70 ºC (–22 ºF to 158 ºF)
Casing ..... Dust-proof and resistant to heavy wind-driven rain per IP 65 standard
Slip-resistant grip, shock and vibration resistant
Drop ..... 1.2 m (4 ft) MIL-STD-810F, Method 516.5, Procedure IV

Input/Output

Expansion ..... SD card slot (SD or SDHC storage cards)
Display .....8.9 cm (3.5 in) VGA (480 x 640 pixel) TFT, 16-bit (65,536) colors

LED back light
Interface ..... Touch screen, 10 hardware control keys, power status LED
Audio system events, warnings, and notifications
Soft Input Panel (SIP) virtual keyboard and handwriting recognition software
Audio ..... Microphone and speaker, record and playback utilities
I/O ..... USB 1.1 client via support module
Serial via optional 9-pin RS-232 power/serial clip adaptor
Radios[5] .....Bluetooth 1.2, Wireless LAN 802.11b/g

GPS

Channels ..... 14 (12 L1 code and carrier, 2 SBAS)
Integrated real-time ..... SBAS[1] (dual-channel tracking)
Update rate ..... 1 Hz

Time to first fix ..... 30 seconds (typical)
Protocols
Data output ..... TSIP, NMEA-0183 v3.0 (GGA, VTG, GLL, GSA, ZDA, GSV, RMC)
Real-time corrections ..... RTCM 2.x, RTCM 3.0, CMR, CMR+

Accuracy (HRMS)[6] after differential correction

Code postprocessed ..... 50 cm
Carrier postprocessed[7]
With 10 minutes tracking satellites..... 20 cm
With 20 minutes tracking satellites..... 10 cm
With 45 minutes tracking satellites ..... 1 cm
Real-time (SBAS[1] or external correction source) ..... Submeter

1 SBAS (Satellite Based Augmentation System). Includes WAAS available in North America only, EGNOS available in Europe only, and MSAS available in Japan only.
2 Power/serial clip also required.
3 With backlight at default setting (50% brightness).
4 Power draw will vary depending on radio usage.
5 Bluetooth and wireless LAN type approvals are country specific. GeoExplorer 2008 series handhelds have Bluetooth and wireless LAN approval in the U.S. and in most European countries. For further information please consult your local reseller.
6 Horizontal Root Mean Squared accuracy, 1-sigma (68%). Except in conditions where most GPS signals are affected by trees, or buildings, or other objects. Except when using VRS corrections, accuracy varies with proximity to base station by +1 ppm for code postprocessing and real-time.
7 Postprocessed carrier accuracy varies with proximity to base station by +2 ppm. 45 minute carrier capability applies only to the GPS Pathfinder Office software and is limited to 10km from the base station.

7. APPENDIX

Data on accompanying disc includes:

1.) Drill Hole Metadata
2.) Drill Hole Text Logs
3.) Assay Data
4.) Certificates of Analyses
5.) Cross Section Graphic Logs with Assays
6.) Plan Maps

Appendix 1. Drill Hole Metadata

DDH	Easting (UTM NAD83 Z17N)	Northing (UTM NAD83 Z17N)	Elevation (m)	Azimuth	Dip	Depth (m)	Size	Legacy Claim Number	Cell Number	Drilling Start Date	Drilling End Date	Drilling Contractor	Storage	Overburden Thickness (m)	Casing	Cap	Abandoned	Artesion Conditions	Logging Completion Date	Log Author
GKP19001	520276.30	5279785.81	403.43	94	-45	63	NQ	L4208019	152343	29-Mar-19	29-Mar-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	3.80	Left in place	Metal cap and flag	No	No	March 31, 2019	Sarah Mills
GKP19002	520265.35	5279785.42	403.00	91	-42	57	NQ	L4208019	152343	29-Mar-19	30-Mar-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	2.83	Left in place	Metal cap and flag	No	No	April 1, 2019	Sean Hicks
GKP19003	520264.69	5279785.56	402.65	91	-65	72	NQ	L4208019	152343	30-Mar-19	30-Mar-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	3.54	Left in place	Metal cap and flag	No	No	April 1, 2019	Mercedes Rich
GKP19004	520271.00	5279762.46	402.78	89	-45	48	NQ	L4208019	152343	30-Mar-19	30-Mar-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	3.85	Left in place	Metal cap and flag	No	No	April 2, 2019	Sean Hicks
GKP19005	520261.34	5279762.69	402.41	90	-45	51	NQ	L4208019	152343	30-Mar-19	31-Mar-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	3.46	Left in place	Metal cap and flag	No	No	April 3, 2019	Seun Ajibode
GKP19006	520260.73	5279762.67	402.22	91	-64	72	NQ	L4208019	152343	31-Mar-19	31-Mar-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	3.36	Left in place	Metal cap and flag	No	No	April 7, 2019	Sean Hicks
GKP19007	520268.11	5279737.50	402.86	94	-43	42	NQ	L4208019	123830	31-Mar-19	31-Mar-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	4.55	Left in place	Metal cap and flag	No	No	April 6, 2019	Sean Hicks
GKP19008	520259.04	5279738.42	402.50	89	-43	51	NQ	L4208019	123830	31-Mar-19	01-Apr-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	3.00	Left in place	Metal cap and flag	No	No	April 5, 2019	Sean Hicks
GKP19009	520258.32	5279738.30	402.57	93	-63	72	NQ	L4208019	123830	01-Apr-19	01-Apr-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	1.63	Left in place	Metal cap and flag	No	No	April 8, 2019	Sean Hicks
GKP19010	520265.74	5279786.03	403.04	65	-44	51	NQ	L4208019	152343	01-Apr-19	01-Apr-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	3.85	Left in place	Metal cap and flag	No	No	April 7, 2019	Mercedes Rich
GKP19011	520239.15	5279709.40	399.50	108	-42	75	NQ	L4208019	123830	01-Apr-19	02-Apr-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	4.89	Left in place	Metal cap and flag	No	No	April 4, 2019	Sean Hicks
GKP19012	520285.21	5279881.13	403.44	94	-44	75	NQ	L4208019	152343	02-Apr-19	02-Apr-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	4.80	Left in place	Metal cap and flag	No	No	April 5, 2019	Geordie Hamilton and Mallory Metcalfe
GKP19013	520274.32	5279880.53	399.39	na	90	42	NQ	L4208019	152343	02-Apr-19	03-Apr-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	3.00	Pulled	None	No	No	April 9, 2019	Sean Hicks
GKP19014	520274.32	5279880.53	399.39	139	-44	72	NQ	L4208019	152343	03-Apr-19	03-Apr-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	3.71	Pulled	None	No	No	April 5, 2019	Mercedes Rich
GKP19015	520212.33	5279781.35	399.39	88	-54	117	NQ	L4208019	152343	03-Apr-19	04-Apr-19	G4 Forage	Canadian Exploration Services Ltd, 14579 Government Rd, Larder Lake, ON P0K 1L0, Canada	5.35	Left in place	Metal cap and flag	No	No	April 9, 2019	Mercedes Rich

Appendix 2. Drill Hole Text Logs

d=dark
m=medium
l=light

vfg=very fine grained
fg=fine grained
fmg=fine to medium grained
mg=medium grained
mcg=medium to course grained
cg= course grained

CA=core axis
DTCA=degrees to core axis
EOH=end of hole

v wk=very weak
wk=weak
wk mod=weak to moderate
mod=moderate
mod str=moderate to strong
str=strong
v str= very strong

DDH	From_m	To_m	Interval_m	Lithology	Hue	Colour	Grain Size	Texture	Lithology, Colour, Grain size, Texture, Structure, Alteration, Mineralization, Veining, Lower contact.	Structure	Alteration1	Alteration1_Intensity	Alteration2	Alteration2_Intensity	Alteration3	Alteration3_Intensity	Mineral1	Mineral1_%	Mineral2	Mineral2_%	Mineral3	Mineral3_%	Vein1	Vein1_%	Vein2	Vein2_%
GKP19001	0	3.8	3.8	Oou overburden general					Overburden																	
GKP19001	3.8	12.3	8.5	Ssl siltstone	d	Black grey	vfg	massive	Sandy siltstone. Dark grey to black. Very fine grained. Mostly massive with some localities of folded laminations or foliations, associated with alternating light brown - dark grey beds (occasionally have been displaced through faulting). Unit is fairly hard and competent. Minor to moderate carbonate alteration in localities with close proximity to carbonate fractures. Trace chlorite alteration associated with carbonate fractures as well. Patchy weak sericite alteration. Small 1mm fractures infilled with white carbonate. Most carbonate veinlets are barren, in areas of heightened fracturing and carbonate infill there is trace to minor chalcopyrite (can also be seen in groundmass of Siltstone with close proximity to these areas. Trace disseminated cobalt? and pyrite.	massive	carbonate alteration	wk	chlorite alteration	tr	sericite alteration	v wk	chalcopyrite	0.1	cobaltite	0.1	pyrite	0.01	veinlet	0.1		
GKP19001	12.3	12.72	0.42	Breccia (undifferentiated)	d	Black grey	vfg	massive	Cobalt mineralized breccia veins. Two veins spaced 42cm apart with smaller cobalt bearing veinlets local. Small cobalt sub-cm scale veinlets at 12.3m followed by a larger 3cm slightly brecciated cobalt vein. Cobalt mineral is tin-white with a weak purple-hue and a black streak, ~5 hardness, possibly Skutterodite? There is also a brassy brown coloured mineral (copper?) often confined within the middle of the mineralized vein and within the fracture infill veinlets. Brecciated clasts are of angular siltstone, appear to have an increased disseminated cobalt content and are moderately chlorite altered. Dissemination of cobalt minerals extend into pores of the siltstone for approximately 2-3cm before becoming trace. Second mineralized vein is from 12.68-12.72m. This vein is parallel and more clast dominant with a lesser amount of massive cobalt vein minerals. The cobalt minerals in these veinlets comprising the breccia vein are distinctly two different colours with a darker grey on the rock wall and a tin-white within the center of the vein. Dissemination in the rock wall is also present but weak, concentration of disseminated mineralization in pore spaces of these clasts is very strong. Between the two veins is the same siltstone found before and after with minor cobalt veinlets.	massive	carbonate alteration	wk	chlorite alteration	v wk			cobaltite	5	chalcopyrite	0.5			mineralized vein	3	veinlet	2
GKP19001	12.72	20.61	7.89	Ssl siltstone	d	Black grey	vfg	massive	Sandy siltstone. Same as previous before cobalt zone from 3.8m-12.3m.	massive	carbonate alteration	wk	chlorite alteration	tr	sericite alteration	v wk	chalcopyrite	0.1	cobaltite	0.1			veinlet	0.1		
GKP19001	20.61	25.58	4.97	Sar arenite	l	grey	fg	laminated	Arenite. Light grey. Fine grained. Weak to moderately lamination, showing ductile/soft sediments deformation. No veining or significant structures. Weak pervasive chlorite alteration giving a weak green hue to unit. Very minor carbonate pore infilling. Approximately 1% Chalcopyrite disseminated through groundmass, and infilling small fractures. Lower contact is gradational.	lineated or forming lineation	chlorite alteration	wk	carbonate alteration	v wk			chalcopyrite	1								
GKP19001	25.58	33.67	8.09	Ssl siltstone	m	grey	vfg	bedded - graded	Pebbly sandy siltstone. Medium to dark grey siltstone with light, white/red laminae of arenite. Very fine grained with beds which are comprised dominantly of fine grained sand. Moderately well laminated with more massive sections. Lamination is most apparent when there is the contrast with the lighter arenite laminae. Minor pebble inclusions of granite which are mostly gravel or course sand sized with one cobble at upper contact. Ductile deformation throughout from possible soft sediment deformation. Minor carbonate veinlets found cutting unit. Weak chlorite and very weak carbonate alteration. Chalcopyrite is disseminated throughout in trace amounts. Beyond 30m chalcopyrite increases in occurrence in both amounts of dissemination as well as occurrence in very small mm scale stringers associated with small carb veinlets. Lower contact is sharp and unconsolidated with approximately 20cm of oxidized rubble.	foliated/foliation	chlorite alteration	wk	carbonate alteration	v wk			chalcopyrite	1					veinlet	0.1	stringer	0.1
GKP19001	33.67	63	29.33	Vvm mafic volcanic	m	green grey	vfg	weakly foliated	Mafic volcanics. Light medium green. Very fine grained with fine grains of light alteration minerals (chlorite and sericite). Weakly foliated. Brecciated throughout the unit with minor faulting. Upper contact is unconsolidated for 20cm, comprised of oxidized rubble. There is a 30cm rubble zone at 41.2m, with significant fracturing on either side. Moderate, pervasive chlorite alteration. Moderate sericite alteration and weak carb alteration. Significant quartz carbonate veining, ranging from mm scale to 2cm, hosting weak to moderate chalcopyrite and moderate chlorite.	fracture/in fractures	chlorite alteration	wk mod	sericite alteration	wk			chalcopyrite	1					quartz-carbonate vein	3		
GKP19002	0	2.83	2.83	Casinz					Overburden																	
GKP19002	2.83	17.28	14.45	Ssl siltstone	d	fawn grey	vfg	bedded/bedding general	Sandy siltstone: medium to dark grey with lighter more fawny grey beds/laminae, very fine grained siltstone to more fine grained sandy siltstone beds/laminae, unit is predominantly bedded/laminated on the cm- to sub-cm scale with some thicker or more massive beds. Some beds are folded and appear to have undergone soft sediment deformation. Unit is hard and competent with few natural fractures and has numerous well rounded, granitic, pebble sized dropstones indicative of the Gowganda Formation. Very weak pervasive chloritization, very minor localized hematite stained fracture fills and weak localized sericite alteration. Very trace localized pyrite rimming or disseminated within granitic drogstones, one localized rusty red veinlet/fracture fill has an associated matte black Co-mineral at 13.35 m. Very minor sporadic sub-mm scale quartz veinlets. Lower contact is sharp at 35 DTCA.	massive	chlorite alteration	wk	sericite alteration	wk	hematite alteration	tr	pyrite	0.01	cobaltite	0.01			veinlet	0.01		
GKP19002	17.28	26.04	8.76	Sar arenite	l	white grey	fg	laminated	Arenite: light cream to whitish grey, fine to medium grained sand weakly laminated to massive. Unit is hard and competent with a couple broken/rubbly zones (i.e. 24.50 m). Pervasive moderate sericitization, with some heavily pitted sections. Very trace amounts of blebby pyrite +/- chalcopyrite, localized fine grained sub- to euhedral arsenopyrite associated with cm-scale Co-Ag-Bi-vein at 20.48 m (Co 4.9%, Ag 340 ppm, Bi .35%, As 40.5%), sporadic disseminated to blebby matte black Co-bearing mineral appears to be associated with more pitted areas and proximal fracture fills (30-2100 ppm). Very minor randomly oriented mm-scale carbonate stringers/veinlets, one cm-scale, vuggy Co-vein at 20.48 m. Lower contact is sharp at 35 DTCA.	massive	sericite alteration	mod					cobaltite	0.01	sv	0.01	bi	0.01	veinlet	0.01		
GKP19002	26.04	34.68	8.64	Ssl siltstone	d	grey	vfg	bedded/bedding general	Sandy Siltstone: dark grey with medium grey beds, very fine grained siltstone to more sandy siltstone beds, unit is bedded/laminated ranging from more massive sub-m scale beds to sub-cm scale laminae. Unit is hard and competent and has numerous well rounded, granitic dropstones up to 10 cm in diameter. Small scale micro faults displace beds/laminae as well as stringers/veinlets. Very weak pervasive chloritization and moderate pervasive sericitization with localized hematite staining associated with vuggy vein and fracture fills. Trace very fine grained disseminated pyrite +/- chalcopyrite, fracture fill pyrite and pyrite associated with dropstones. Numerous sporadic and randomly oriented cross-cutting mm-scale quartz veinlets/stringers, minor mm-scale quartz-carbonate veinlets which have a pinkish red hue and one cm-scale vuggy Ag-bearing (34 ppm) quartz-carbonate vein with deep red alteration, likely due to hematite staining at 26.71 m. Lower contact is undulatory and sharp 65 DTCA.	massive	sericite alteration	mod	chlorite alteration	wk	hematite alteration	tr	pyrite	0.1					veinlet	0.1	quartz-carbonate vein	0.01
GKP19002	34.68	38	3.32	Fault	d	grey	fg	massive	Faulted Mafic Volcanics: dark grey, fine grained and massive with heavily pitted to vuggy sections. Unit is hard and competent but severely blocky and broken to rubbly with very low RQD. Moderate pervasive chlorite and minor sericite alteration, minor hematite staining associated with vugs and rubbly fragments. Minor pyrite predominantly found along fracture planes. Several barren cm-scale quartz-carbonate veins sometimes stained pinkish red. Lower contact is defined by the end of rubbly zone.	faulted/fault	chlorite alteration	mod	sericite alteration	wk	hematite alteration	tr	pyrite	0.01					quartz-carbonate vein	0.01		
GKP19002	38	57	19	Vvm mafic volcanic	m	grey	fg	massive	Mafic Volcanics: medium grey, fine grained and massive. Unit is hard and competent, more blocky towards upper contact with a rubbly zone at 48.24 m. Moderate pervasive sericite alteration and very minor chlorite alteration. Significant pyrite found in fracture fills or associated with quartz-carbonate veinlets as well as mm-scale pyrite stringers. Unit is cut by numerous mm- to cm-scale, cross-cutting carbonate and quartz-carbonate veinlets/stringers and two larger 3 cm quartz-carbonate veins with brecciated margins and minor pyrite. EOH	massive	sericite alteration	mod	chlorite alteration	wk			pyrite	0.1					veinlet	1	quartz-carbonate vein	0.1
GKP19003	0	3	3	Casinz					casinz to 3 m																	
GKP19003	3	3.54	0.54	Oou overburden general					some rubble in box, start of competent core at 3.54 m.																	
GKP19003	3.54	11.2	7.66	Ssl siltstone	D	grey black	vfg	bedded/bedding general	Pebbly siltstone with minor silt to fine-sandy interbeds. Predominantly dark grey-black siltstone with minor rusty pink-red, discontinuous and irregular silt to fine-sand 'beds'; rare dropstones (3%), gradual to pebble, rounded to sub-angular, generally felsic granitic and lesser intermediate. Interval is generally competent but blocky. The rusty pink-red are undulatory, discontinuous, locally wavy (soft sediment deformation/folding). Weak sericite alteration of siltstone. Very trace, very fine- to fine-grained pyrite associated with rims of dropstone clasts. Rare, fracture-fill carbonate veining. Interval becomes increasingly well bedded towards the bottom of interval with a sharp contact at 45 DTCA.	massive	sericite alteration	wk					pyrite	0.01					stringer	0.01		
GKP19003	11.2	17.39	6.19	Sar arenite	L	grey fawn	fmg	bedded/bedding general	Arenite (quartz to potentially lithic (sub-lithic)). Light to medium grey-fawn (buff). Generally, massive beds (sub-meter to meter scale), with generally sharp contacts between beds composed of very-fine grained (silt) to medium sand. Interval is competent with few block less then 10 cm. Breccia 'vein'/healed breccia at 16.27 m (1 to 3 cm). Locally weak sericite alteration. Generally, in more medium sandy beds the interval becomes pitted and there is disseminated to semi-massive blebs of very fine- to fine-grained mat-black mineral. Rare, thin quartz veinlets and rare fracture-fill carbonate stringers. Lower contact is sharp at 55 DTCA.	massive	sericite alteration	v wk					cobaltite	0.1					quartz vein	0.05	stringer	0.01

GKP19003	17.39	23.55	6.16	Ssl siltstone	D	grey black	fg	bedded/bedding general	Dark grey-black siltstone with sandy (quartz and lesser feldspar) laminations to beds (fine to coarse-sand, locally granuals); with 3 to 7% dropstones, felsic-granitic to intermediate, sub-angular to rounded, granuales to pebbles (locally cobbles), more clast supported bands near bottom of interval. Minor offsets locally occur in sandy laminations. Interval is generally competent. Weak sericite alteration. Fine-grained disseminated chalcopyrite and pyrite occur associated with dropstone clasts (typically with in the clasts), as well as fine-grained blebs to discontinuous stringers in hair-thin carbonate stringers. Trace blebby pyrite in more sandy intervals. Rare thin carbonate stringers (seemingly becoming slightly more common down interval). Rare carbonate-quartz, mm-scale veins. Lower contact arbitrary and defined by the last appearance of clasts and the start of an rubbly interval.	massive		sericite alteration	v wk						chalcopyrite	0.3	pyrite	0.2		carbonate vein	0.1	stringer	0.1
GKP19003	23.55	26.99	3.44	Fault Breccia	D	grey black	fg	massive	Mafic meta-volcanic. Dark green grey-black, very fine- to fine-grained, massive, equigranular. Interval is broken, blocky to rubbly with low RQD. Weak and localized sericite alteration, weak and pervasive chlorite alteration. Fracture surfaces are oxidized. Rare carbonate-chlorite, 1 to 2 mm, veinlets and carbonate-quartz, 1 to 3 mm veinlets; trace stringers to subhedral pyrite associated with veinlets. Lower contact is difficult to defined as it is in rubble.	faulted/fault		sericite alteration	wk	chlorite alteration	wk			pyrite	0.01				carbonate vein	0.1	quartz-carbonate vein	0.1
GKP19003	26.99	27.15	0.16	Fault	M	erev black	fmz		Gouge	faulted/fault																					
GKP19003	27.15	42.34	15.19	Vvm mafic volcanic	D	green black	vfg	massive	Mafic meta-volcanic. Dark green grey-black, very fine- to fine-grained, massive, equigranular. Interval is competent with few blocks that are less then 10 cm. Tension fractures with carbonate fill at 35.70 m. Weak to moderate and pervasive chlorite alteration and sericite alteration. Trace disseminate fine-grained to blebby pyrite. Abundant thin, generally 1 to 3 mm, carbonate veinlets, occurring at moderate to high angles to core axis, locally associated with trace fine-grained disseminated pyrite, locally minor offsets of carbonate veins. Rare, cm-scale quartz-carbonate-chlorite veins. Lower contact arbitrary and defined by a change in texture of mafic meta-volcanics and appearance of graphic argillite.	massive		chlorite alteration	wk mod	sericite alteration	wk			pyrite	0.5				carbonate vein	1	quartz vein	0.1
GKP19003	42.34	47.57	5.23	Vvm mafic volcanic	D	grey black	vfg	bedded/bedding general	Intercalated mafic meta-volcanics and argillite (graphitic). Mafics are medium buff-green to medium grey black, very-fine grained (aphanitic) and massive with bands of black aphanitic graphitic argillite. Interval is generally competent. Multiple argillite bands occur: 43.55- 43.40 m, upper and lower contact at approximate 30 dtca, lower contact a fracture; 43.75 - 43.85 m slightly undulatory with contacts at 50 to 55 degrees; 46.40 to 46.56 m, upper contact at approximately 40 dtca and lower contact is wavy to flamey; 46.92 and 47.57 m has a well developed fabric, is carbonate rich and with blocky to augen quartz blebs with abundant disseminated to disseminated stringers of pyrite (shear(?)), upper contact is a fracture at 25 to 30 degrees and lower contact at 35 to 40 dtca, fabric is generally 25 to 40 degrees; as well as, undulatory and/or discontinuous argillite bands ranging from 30 to 40 dtca (locally up to 50 degrees) down interval. Abundant fine- to medium-grained disseminated to disseminated stringers of euhedral to subhedral pyrite is common in the mafic meta-volcanic. Locally semi-massive, irregular shaped pyrite is common in the argillite. Relatively common, 1 to 3 mm, carbonate vein. Lower contact slightly arbitrary and defined by end of argillitic unit.	massive		chlorite alteration	wk mod	sericite alteration	wk mod			pyrite	2				carbonate vein	1		
GKP19003	47.57	61.95	14.38	Vvm mafic volcanic	M	grey	fg	massive	Altered intermediate/mafic meta-volcanics. Medium grey, fine- to medium-grained, massive to locally weakly foliated. Weak to moderate and pervasive chlorite alteration (?) and moderate to strong sericite alteration (potential silica alteration(?)). Fine-grained disseminated, blebby to euhedral, pyrite (increasingly abundant near top of interval. Thin, 1 to 4 mm carbonate veins, locally wavy and locally with small off-sets. Rare quartz vein (very minor carbonate), cm-scale (4 to 10 cm). Lower contact is arbitrary and defined by first appearance of argillite. Altered mafic meta-volcanics or seds(?) IDK	massive		sericite alteration	mod str	chlorite alteration	wk mod			pyrite	0.3				carbonate vein	1	quartz vein	2
GKP19003	61.95	63.15	1.2	Vvm mafic volcanic	D	green black	vfg	massive	Intercalated mafic meta-volcanics and argillite (graphitic). Mafics are medium buff-green to medium grey black, fine-grained and weakly foliated to massive. An approximate 1 cm seam of graphic argillite, occurs at low-angel to core axis (sub-parallel) between 61.95 and 62.15; and a band of carbonate-rich intercalated argillite and lesser mafics occurs between 62.41 and 62.83 m, a weak-fabric occurs at low-angle to core axis (sub-parallel) and is irregular/undulatory(deformed/shear plain(?)). Interval is blocky with graphite common on fracture surfaces. Weak to moderate and pervasive chlorite alteration of mafics and weak to moderate sericite alteration of plagioclase grains defining weak to moderate fabric. Disseminated aggregated to stringers of pyrite occur replacing mafics in the argillite band and along the edges of the band. Minor carbonate vein at the bottom-end of the argillite band in the mafics roughly parallel to the contact. Lower contact is arbitrary and define by the change in alteration.	massive		chlorite alteration		sericite alteration	wk mod			pyrite	0.2				carbonate vein	0.1		
GKP19003	63.15	72	8.85	Vvm mafic volcanic	D	green	fg	massive	Mafic meta-volcanic. Medium grey-green, very fine- to fine-grained, massive, equigranular. Interval is competent, with few blocks less then 10 cm. Moderate and pervasive chlorite alteration and weak to moderate and pervasive sericite alteration. Trace disseminated pyrite. Abundant, thin, 1 to 4 mm (one up to, 10 mm) carbonate veins, locally associated with disseminate pyrite. EOH 72 m.	massive		chlorite alteration	mod	sericite alteration	wk mod			pyrite	0.05				carbonate vein	1		
GKP19004	0	3.85	3.85	Oou overburden general					Overburden																						
GKP19004	3.85	8.15	4.3	Sar arenite	I	fawn cream	vfg	laminated	Quartz Arenite: fawny cream, very fine, appears massive with weak relict laminations as unit appears to have been cooked up (psammite or quartzite?). Unit is hard and competent with few natural fractures. Alteration of laminae have made them discontinuous, mottled and a creamy white colour, minor localized pinkish orange staining likely resulting from hematite, unit is locally pitted almost vuggy. Trace very finely disseminated pyrite +/- chalcopyrite often rimmed by dull black mineral (Co-mineral?), dull black Co-bearing mineral found on fracture planes and appears dendritic when associated with fracture fills/stringers. Minor sub-mm-scale quartz-carbonate stringers and fracture fills sometimes associated with pyrite and dull black mineral. Lower contact is sharp and undulatory at 15 DTCA.	massive		silica alteration	mod str	sericite alteration	wk	hematite alteration	tr	pyrite	0.1	cobaltite	0.01	chalcopyrite	0.01	quartz-carbonate vein	0.01		
GKP19004	8.15	14.56	6.41	Sar arenite	m	grey	fg	bedded/bedding general	Quartz Arenite: light to medium grey, very fine to fine grained sand and laminated/bedded. Units are both hard and competent with very few natural fractures. Pervasive moderate silica alteration, localized orangey red hematite staining and very minor sericitization of more feldspar rich laminations, from 14 m to lower contact weak pervasive carbonate alteration. Trace subhedral disseminated pyrite, locally up to 1 % or stringer/fracture fill associated pyrite, very trace anomalous blebby chalcopyrite and dull black Co-bearing mineral found on fracture planes. Very minor sub-mm-scale quartz-carbonate fracture fills/stringers often with pyrite. Lower contact is sharp and undulatory at 15 DTCA.	massive		silica alteration	mod str	carbonate alteration	wk	hematite alteration	tr	pyrite	0.1	cobaltite	0.01	chalcopyrite	0.01	quartz-carbonate vein	0.01		
GKP19004	14.56	28.39	13.83	Scg conglomerate	d	grey black	vfg	matrix supported	Conglomerate: dark grey black, very fine grained silt to sandy siltstone matrix in a poorly sorted polymictic conglomerate. Felsic to intermediate granitic clasts range from coarse sand to cobble sized and are subangular to subrounded. Unit is predominantly matrix supported with a couple sub-m-scale siltstone bands and becomes clast supported towards lower contact. Unit is hard and competent save one oxidized rubbly zone at 27.32 m. Minor pervasive chlorite alteration, localized pervasive carbonate alteration and localized red hematite staining. Trace fine grained disseminated pyrite +/- chalcopyrite, anomalous medium grained blebs or associated with mm-scale quartz-carbonate stringers/veinlets. Numerous mm- to cm-scale carbonate and quartz-carbonate stringers/veinlets, locally vuggy and stained red, zones of pervasive carbonate alteration predominantly associated with siltstone bands display stockwork style carbonated veinlets. Sharp unconformable lower contact at roughly 90 DTCA.	massive		chlorite alteration	mod	carbonate alteration	wk mod	hematite alteration	tr	pyrite	0.1	chalcopyrite	0.01	quartz-carbonate vein	0.1	carbonate vein	0.1
GKP19004	28.39	31.1	2.71	Vvm mafic volcanic	m	grey	vfg	foliated	Mafic Volcanics: medium grey, very fine grained, weak to moderately foliated. Unit is hard and competent with few natural fractures. Very weak pervasive chlorite alteration, moderate pervasive sericitization of feldspars which define foliation, pervasive carbonate alteration. Trace blebby pyrite often proximal to sections of higher density carbonate stringers/veinlets. Numerous sub-mm to mm-scale carbonate stringers/veinlets cross cutting foliation sometimes with blebby pyrite association. Lower contact is sharp at 65 DTCA.	foliated		carbonate alteration	str	sericite alteration	mod	chlorite alteration	wk	pyrite	0.1				carbonate vein	1		
GKP19004	31.1	31.78	0.68	Fault Breccia	m	grey	cg	blocky	Mafic Volcanic Fault Breccia: medium grey, pebble sized clast supported fault breccia, clasts consist of angular or blocky mafic volcanic clasts. Unit is hard and competent with no natural fractures. Pervasive carbonate alteration even within clasts, as well as sericite and minor chlorite alteration. Trace blebby pyrite along grain/clast boundaries. Lower contact is sharp at 25 DTCA.	brecciated		carbonate alteration	str	sericite alteration	mod	chlorite alteration	v wk	pyrite	0.01							
GKP19004	31.78	34.15	2.37	Vvm mafic volcanic	m	grey	vfg	foliated	Mafic Volcanics: same as previous 28.39 m to 31.1 m, a couple cm-scale veins, one carbonate and two quartz-carbonate vein one which is locally stained red, both of which cross cut and displace carbonate stringers. Lower contact is faulted and defined by rubbly zone.	foliated		carbonate alteration	str	sericite alteration	mod	chlorite alteration	v wk	pyrite	0.01							
GKP19004	34.15	34.9	0.75	Fault	m	red grey	vfg	fragmental or as fragments	Fault: medium to dark grey and oxidized fragments of previously described mafic volcanics. Lower contact is defined by nd of rubbly zone which is the beginning of a felsic porphyry dyke.	faulted/fault		hematite alteration	mod														
GKP19004	34.9	35.58	0.68	Gpp porphyry	I	cream grey	vfg	porphyroblastic or as porphyroblasts	Feldspar Porphyry Dyke: light to medium creamy grey, aphanitic with medium to coarse grained subrounded porphyroblasts, weak foliation defined by biotite. Unit is hard and competent although slightly fractured. Pervasive carbonate alteration, very weak chlorite alteration and localized pink staining associated with vuggy quartz-carbonate vein. Trace very fine grained pyrite confined to biotite foliations. Numerous quartz-carbonate and/or carbonate stringers/veinlets with several cm-scale cross cutting quartz veins. Lower contact is sharp at 50 DTCA.	weakly foliated		carbonate alteration	mod	chlorite alteration	v wk	hematite alteration	v wk	pyrite	0.01				carbonate vein	1	quartz vein	0.01
GKP19004	35.58	37.9	2.32	Vvm mafic volcanic	m	grey	vfg	foliated	Mafic Volcanics: same as previous f31.78 m to 34.15 m, higher percentage of cross cutting cm-scale carbonate and quartz-carbonate veins locally stained orangey pink and a concentrated zone from 37.10 m to 37.29 m, one large brecciated quartz- carbonate 37.68 m. Lower contact is sharp and defined by rubbly zone.	foliated		carbonate alteration	str	sericite alteration	mod	chlorite alteration	v wk	pyrite	0.1				carbonate vein	1	quartz vein	1

GKP19004	37.9	38.04	0.15	Fault	d	black	vfg	fragmental or as fragments	Fault: top of fault is defined by a 5 cm graphitic fault gouge which is dull black, aphanitic, pitted and weakly foliated. Gouge contains 2 % disseminated and foliation parallel pyrite stringers. Bottom of rubbly fault zone is same as previously described mafic volcanics but with no significant veining. Unit is rubbly and lower contact is defined by more competent mafic volcanics.	faulted/fault	Graphitic alteration	v str	carbonate alteration	wk	sericite alteration	wk	pyrite	2														
GKP19004	38.04	41.25	3.21	Vvm mafic volcanic	m	grey	vfg	foliated	Mafic Volcanics: same as previous 28.39 m to 31.1 m, but unit is much more blocky with a rubbly zone from 39.64 m to 40 m. A healed graphitic shear or fault gouge at 40.46 m contains numerous carbonate stringers and is associated to a 5 cm quartz-carbonate vein both of which are at a low angle to core axis. Trace galena and sphalerite are associated with the contact between the gouge and quartz-carbonate vein. The unit remains carbonaceous but also has numerous graphitic fracture fills/stringers. The entire unit almost appears to be brecciated. Lower contact is sharp and sub-parallel to core axis.	brecciated	carbonate alteration	str	Graphitic alteration	mod	sericite alteration	wk	pyrite	0.1					quartz vein	1	carbonate vein	0.1						
GKP19004	41.25	44.21	2.96	Fault	d	grey black	vfg	fissile	Fault: unit is a healed graphitic shear/ gouge, it is silvery black to dark grey, aphanitic to very fine grained and foliated or fissile where unit is still competent. Unit is mostly blocky to rubbly and has undergone intense pervasive graphitic alteration with minor pervasive carbonate and hematite alteration. Foliation parallel pyrite stringers, as well as disseminated sub- to euhedral pyrite, trace sphalerite +/- galena are more closely associated with a foliation parallel cm-scale carbonate vein. One 15 mm foliation parallel carbonate vein is also foliated and is has a minor sphalerite +/- galena association. The lower contact is sharp at sub-parallel to core axis ending at 44.21 m.	faulted/fault	Graphitic alteration	v str	carbonate alteration	mod	hematite alteration	mod	pyrite	1	sphalerite	0.01			carbonate vein	0.1							
GKP19004	44.21	48.05	3.84	Vvm mafic volcanic	m	green grey	vfg	foliated	Mafic Volcanics: same as previous 28.39 m to 31.1 m, unit is rubbly or broken from 44.12 m to 45.17 m. Unit displays a greener hue and the appearance of medium grained disseminated euhedral pyrite distinguish this unit from previous Vvm. EOH	foliated	carbonate alteration	str	sericite alteration	mod	chlorite alteration	wk	pyrite	2					quartz vein	1	carbonate vein	0.1						
GKP19005	0	3.46	3.46	Oou overburden general					Overburden																					
GKP19005	3.46	10.41	6.95	Sar arenite	m	cream grey	mg	interbedded	Cream grey quartz arenite interbedded grey siltstone. A secondary matrix supported conglomerate unit occurs from 7.93-8.72m. Fine to medium grained, massive to laminated beds of quartz arenite and siltstone. Unit is hard and competent with several fractures and sporadic vugs. Very weak iron staining of arenite laminae. Unmineralized unit is cut by minor randomly oriented carbonate veinlets. Gradational lower contact to dominantly conglomerate unit.	massive	hematite alteration	v wk											carbonate vein	0.01							
GKP19005	10.41	27.64	17.23	Scg conglomerate	d	grey	fg	matrix supported	Matrix supported conglomerate which transitions to clast supported intervals at the top and bottom contacts. Pebble to cobble sized, subangular to subrounded granitic and lithic clasts within a dark grey, very fine grained siltstone matrix. Unit is hard and moderately competent with several fractures and minor rubble sections i.e. at 23m and at the lower contact. Trace iron staining observed on fracture surfaces and rubble sections. Unmineralized unit is cut by minor randomly oriented carbonate veinlets. Lower contact is sharp at unconsolidated oxidized rubble and approximately perpendicular to core axis.	massive	hematite alteration	v wk											carbonate vein	0.01							
GKP19005	27.64	27.69	0.06	Fault	m	grey	mg	fragmental or as fragments	Unconsolidated oxidized rubble, unconformity between Huronian sediments and mafic volcanics.	faulted/fault	hematite alteration	wk mod																	
GKP19005	27.69	36.27	8.58	Vvm mafic volcanic	d	grey green	mg	massive	Mafic Volcanic. Grey green, medium grained, massive to weakly foliated. Unit is hard and moderately competent with some small rubbly oxidized sections and carbonate filled fractures. Weak to moderate pervasive chlorite alteration and local strong biotite alteration at bottom contact. Very trace disseminated Pyrite mostly confined to carbonate veins. Unit is moderately cut by carbonate and quartz-carbonate veins, which often have a chlorite component. Sharp lower contact at an angle approximately perpendicular to core axis.	fracture/in fractures	chlorite alteration	wk mod	biotite alteration	mod			pyrite	0.1					carbonate vein	3	quartz-carbonate vein	1						
GKP19005	36.27	36.35	0.08	Fault	d	black	fg	fragmental or as fragments	Fault lens from 36.27m to 36.35m. Abundant biotite in fault gouge, surrounded by strong biotite altered, black mafic volcanic. Fine to medium grained. Moderate disseminated Pyrite throughout. Sharp lower contact, perpendicular to core axis.	faulted/fault	biotite alteration	str																				
GKP19005	36.35	40.32	3.97	Vvm mafic volcanic	d	grey green	mg	massive	Same as unit from 27.69-36.27m, with an absence of biotite alteration and an increase in chlorite stringers.	fracture/in fractures	chlorite alteration	wk mod					pyrite	0.1					carbonate vein	3	stringer	1			
GKP19005	40.32	51	10.68	Vvm mafic volcanic	d	grey green	fg	weakly foliated	Same as unit at 36.35-40.32m with an abrupt increase in medium grained sub-hederal Pyrite and pink carbonate veining, up to several cm wide. Foliation is better developed with minor micro folding (, e at 45.11m. Small Graphite lens at 40.53m to 40.56m and trace iron staining on fracture surfaces. Gradational loss of Pyrite from 3% to 1% beyond 46.3m. Carbonate veining is boudinaged at 47.29m. End of hole.	fracture/in fractures	chlorite alteration	wk mod	hematite alteration	v wk			pyrite	3					carbonate vein	3							
GKP19006	0	3.36	3.36	Oou overburden general					Overburden																					
GKP19006	3.36	5.08	1.72	Ssl siltstone	d	grey black	fg	laminated	Pebbly Siltstone: dark grey, fine grained with medium grained sandy beds, laminated/bedded. Unit is hard and competent with few natural fractures, weak pervasive chlorite alteration, weak to moderate hematite staining which is intense in some red beds/laminae. Very trace disseminated blebby to subhedral pyrite. Minor healed sub-mm-scale chlorite fracture fill/veinlets. Lower contact is gradational with appearance of pebbles and coarsening of siltstone into fine grained sand.	foliated	hematite alteration	mod	chlorite alteration	wk mod			pyrite	0.01														
GKP19006	5.08	6.88	1.8	Sar arenite	m	fawn grey	mg	sorting moderate	Arenite/Sandstone: fawny white grey, fine to medium grained, poorly sorted sand. Upper contact is gradational from sandy siltstone to arenite/sandstone. Unit is hard and competent with one significant low angle Co-bearing fracture at 6.31 m. Very minor hematite staining of fracture planes and one Co-bearing fracture found in a dull black mineral. Lower contact is sharp at 75 DTCA.	unfoliated	hematite alteration	v wk																				
GKP19006	6.88	8.35	1.47	Ssl siltstone	d	green grey	fg	bedded/bedding general	Pebbly Siltstone: medium to dark green grey, very fine grained to medium grained sand towards lower contact with several cm-sized clasts. Unit is hard and competent with few natural fractures. Weak to moderate chlorite alteration. Very trace disseminated pyrite and trace chloritic healed fractures/stringers. Lower contact is a 20 cm arenitic/sandstone bed and is sharp at 75 DTCA.	foliated	chlorite alteration	mod	hematite alteration	wk mod			pyrite	0.01														
GKP19006	8.35	11.9	3.55	Scg conglomerate	d	grey black	fg	interbedded	Conglomerate (Gowganda): dark grey black, very fine grained silt to sandy siltstone matrix in a poorly sorted polymictic conglomerate. Felsic to intermediate granitic clasts range from coarse sand to cobble sized and are subangular to subrounded. Unit is predominantly matrix supported with a couple sub-m-scale siltstone bands. Unit is hard and competent with moderate pervasive chlorite alteration and minor hematite alteration, localized pitted zones. Trace chlorite fracture fill/veinlets. Lower contact is a fracture sub-parallel to core axis.	unfoliated	chlorite alteration	mod																				
GKP19006	11.9	12.1	0.2	Gfu felsic rock (undifferentiated)	m	brown cream	vfg	foliated	Felsic Dyke: possible alteration zone, medium creamy brown, very fine grained to aphanitic and foliated. Unit is hard and competent but fractured at both contacts. Minor chlorite alteration, possible sericitization. Lower contact is sharp at 70 DTCA.	foliated	chlorite alteration	mod																				
GKP19006	12.1	14.04	1.94	Scg conglomerate	d	grey black	fg	matrix supported	Conglomerate (Gowganda): same as previous 8.35 m to 11.9 m, lower contact into siltstone is gradational and defined loss of clasts around 14 m.	unfoliated	chlorite alteration	mod					pyrite	0.01												
GKP19006	14.04	17.87	3.83	Ssl siltstone	d	grey black	vfg	laminated	Siltstone: same as previous 6.88 m to 8.35 m, finer grained with no clasts, and laminated/bedded. Minor trace Co found in dull black mineral along a fracture plane at 15.11 m. Lower contact is sharp at 60 DTCA.	foliated	chlorite alteration	mod	hematite alteration	wk			pyrite	0.01												
GKP19006	17.87	19.14	1.27	Scg conglomerate	d	grey black	fg	sorting poor	Conglomerate (Gowganda): same as previous 8.35 m to 11.9 m, fine to medium grained sand sized matrix, unit is fractured and broken at upper and lower contact , moderate pervasive sericitization. Lower contact is fault gouge and sharp at 15 DTCA.	unfoliated	chlorite alteration	mod	sericite alteration	mod			pyrite	0.01														
GKP19006	19.14	19.42	0.29	Fault	d	brown grey	fg	fragmental or as fragments	Fault: reddish brown grey oxidized conglomeratic rubble, fine to medium grained with cm-scale healed fault gouge at lower contact at 15 DTCA.	faulted/fault	chlorite alteration	mod	hematite alteration	wk mod																
GKP19006	19.42	72	52.58	Vvm mafic volcanic	d	green grey	fg	massive	Mafic Volcanics: dark greenish grey to black, very fine grained with coarse grained alteration. Unit is moderately competent but locally broken and rubbly in areas of significant veining, minor faults displace veins. Upper contact is faulted and unit is significantly fractured, many chlorite/carbonate veins appear to be healed slip surfaces and fracture the mafics. Moderate to strong pervasive chlorite alteration, chlorite spotting and locally patchy chlorite alteration/leaching with greenish white spotting, local moderate pervasive carbonate alteration. Minor disseminated and blebby vein associated pyrite. Strong to locally intense chlorite and carbonate to quartz-carbonate veining, numerous cm-scale chlorite veins/healed slip surfaces with associated carbonate veining, numerous sub-mm-scale stringers/veinlets at low angle to core axis with almost stockwork texture, several carbonate veins appear foliated layered with chlorite. EOH	massive	chlorite alteration	mod str	carbonate alteration	wk			pyrite	0.01					carbonate vein	5	veinlet	1						
GKP19007	0	4.55	4.55	Oou overburden general					Overburden																					
GKP19007	4.55	15.18	10.63	Scg conglomerate	d	green grey	fg	matrix supported	Conglomerate (Gowganda): dark green grey, silt to fine grained sandy matrix in a non-foliated polymictic conglomerate. The clasts range from very coarse sand to cobbles, are subangular to rounded and are predominantly felsic to intermediate granitoids with minor mafic volcanic clasts. Unit is hard and competent with few natural fractures. Weak but pervasive chlorite alteration, trace hematite staining along fracture planes, localized background pinkish hue proximal to more alkali-feldspar granitoid clasts. Trace disseminated pyrite found in both the matrix and granitic clasts. Very minor sub-mm to mm-scale stringers/veinlets carbonate with several discontinuous and brecciated quartz-carbonate veins. Lower contact is gradational around 15 m into a weakly laminated pebbly siltstone.	unfoliated	chlorite alteration	wk mod	hematite alteration	v wk			pyrite	0.01					carbonate vein	0.01	quartz vein	0.01						
GKP19007	15.18	17.72	2.54	Ssl siltstone	d	green grey	vfg	laminated	Pebbly Siltstone: dark green grey to black, very fine grained with medium grained sand to small pebble sized clasts. Unit is hard and competent with one blocky section around 16 m, very weakly laminated at the mm- to cm-scale with some more pebbly lenses. Trace fine grained pyrite. Minor mm- to cm-scale carbonate to quartz-carbonate stringers/veinlets infill which sometimes brecciate the siltstone, one cm-scale vuggy vein with a pistachio green clay (epidote?). Lower contact is a faulted unconformity with the mafic volcanics.	foliated	chlorite alteration	wk mod					pyrite	0.01					carbonate vein	0.01	quartz-carbonate vein	0.01						
GKP19007	16.15	16.24	0.09	Vcb Carbonate vein	m	white green	vfg	vuggy	Carbonate Vein: vuggy carbonate vein with annabergite.	unfoliated							cobaltite	0.1	ni	0.1										
GKP19007	17.72	17.82	0.11	Fault	d	brown grey	vfg	fragmental or as fragments	Fault: small scale fault with browny grey oxidized fragments delineating the contact between the Huronian sediments and the mafic volcanics. Lower half appears to be healed fault gouge or severely pitted mafics. Lower contact is sharp and perpendicular to core axis.	faulted/fault	hematite alteration	wk mod	chlorite alteration	v wk																		

GKP19007	17.82	42	24.18	Vvm mafic volcanic	m	grey	fg	foliated	Mafic Volcanics: medium to light grey in more carbonaceous sections, fine to medium grey and weakly foliated defined by chlorite, biotite or sericite. Unit is hard and competent save a couple blocky/rubbly sections, one at 32.12 m has oxidized fragments. Moderate pervasive chlorite and biotite alteration, weak localized sericite alteration, pervasive localized carbonate alteration and minor hematite alteration along fracture planes. Trace disseminated pyrite which also occurs along fractures planes. Numerous mm- to cm-scale carbonate and quartz-carbonate veins which often brecciate the mafics. EOH	foliated/foliation	sericite alteration	str	biotite alteration	wk mod	carbonate alteration	wk mod	pyrite	0.01					quartz-carbonate vein	0.1		
GKP19008	0	3	3	Oou overburden general					Overburden																	
GKP19008	3	14.35	11.35	Scg conglomerate	d	green grey	fg	matrix supported	Conglomerate (Gowganda): dark grey to green grey, fine to medium grained matrix with coarse sand to cobble sized clasts. Clasts are predominantly felsic to intermediate granitic subangular to subrounded clasts. Unit is massive, hard and competent with few natural fractures. Very weak pervasive chlorite alteration, trace disseminated pyrite found in both the granitic clasts and the matrix. Sporadic sub-mm-scale quartz-carbonate stringers/veinlets. Lower contact is defined by the gradational loss of clasts.	massive	chlorite alteration	wk					pyrite	0.1					quartz-carbonate vein	0.01		
GKP19008	14.35	20.5	6.15	Ssl siltstone	d	green grey	vfg	massive	Pebbly Siltstone: dark green grey, very fine grained with several pebble sized clasts towards upper contact, predominantly massive locally weakly laminated. Unit is hard and competent but becomes broken and blocky towards lower faulted contact. Weak pervasive chlorite alteration, minor hematite staining of fracture planes often with a carbonate association. Very trace disseminated pyrite along fracture planes. Trace quartz-carbonate stringers/veinlets some of which are vuggy approaching the lower contact which is defined by an oxidized rubbly faulted zone.	massive	chlorite alteration	wk	hematite alteration	wk			pyrite	0.01					quartz-carbonate vein	0.01		
GKP19008	20.5	20.58	0.08	Fault	d	brown grey	fg	fragmental or as fragments	Fault: fine grained, browny green grey oxidized unconsolidated fault. Weak chloritization and pervasive hematite staining. Some fragments have vugs and a cm-scale quartz carbonate vein crosscuts' the fault becoming vuggy within the fault zone. Lower contact defined by end of unconsolidated/rubbly material.	faulted/fault	hematite alteration	mod	chlorite alteration	wk									quartz-carbonate vein	0.01		
GKP19008	20.58	40.81	20.23	Vvm mafic volcanic	m	green grey	fg	foliated	Mafic Volcanics: dark greenish grey to black, very fine grained with coarse grained alteration, weakly foliated. Unit is moderately competent but locally broken and rubbly in areas of significant veining. Upper contact is faulted and unit is significantly fractured, many chlorite/carbonate veins appear to be healed slip surfaces and fracture the mafics. Moderate to strong pervasive chlorite alteration, chlorite spotting and locally patchy chlorite alteration/leaching with greenish white spotting, local moderate pervasive carbonate alteration towards upper contact. Minor disseminated and blebby vein associated pyrite. Strong to locally intense chlorite and carbonate to quartz-carbonate veining, chlorite has a slight blueish tint, numerous cm-scale chlorite veins/healed slip surfaces with associated carbonate veining, numerous sub-mm-scale stringers/veinlets at low angle to core axis with almost stockwork texture. Lower contact is sharp defined by rubbly fault gouge.	foliated	chlorite alteration	v str	carbonate alteration	mod			pyrite	0.01					carbonate vein	2	veinlet	1
GKP19008	40.81	40.88	0.08	Fault	m	brown grey	fg		Fault: small rubbly healed fault gouge/slip, medium brown grey and oxidized, fine grained sand to clay. One mm-scale carbonate vein, pervasive chlorite alteration 10 cm on either side of fault.	faulted/fault	chlorite alteration	mod											carbonate vein	0.01		
GKP19008	40.88	48.32	7.44	Vvm mafic volcanic	m	green grey	fg	foliated	Mafic Volcanics: same as previous 20.58 m to 40.81 m, finer grained, much less coarse grained chlorite alteration/leaching and significantly less carbonate and quartz-carbonate veining and associated fracturing. Lower contact is sharp and delineated by a fracture at 55 DTCA.	foliated	chlorite alteration	mod	carbonate alteration	tr			pyrite	0.01					carbonate vein	0.01	quartz-carbonate vein	0.01
GKP19008	48.32	51	2.68	Vvm mafic volcanic	l	green grey	vfg	massive	Mafic Volcanics: light to medium green grey, aphanitic to very fine grained and massive. Unit is hard and competent with one broken/rubbly zone at 49.10 m. Moderate pervasive chlorite and sericite alteration. Trace fine grained disseminated pyrite and blebby to subhedral pyrite associated with chloritic slips/fractures. Several chlorite stringers/fractures fills often with significant pyrite association. EOH	massive	sericite alteration	mod	chlorite alteration	mod			pyrite	0.1					veinlet	0.01		
GKP19009	0	1.63	1.63	Oou overburden general					Overburden																	
GKP19009	1.63	8.3	6.67	Scg conglomerate	d	grey black	fg	matrix supported	Conglomerate (Gowganda): dark grey black, very fine to fine grained sandy matrix in a polymictic, matrix supported conglomerate. Clasts range from very coarse sand to cobbles (up to 15 cm in diameter), are rounded to subangular and are predominantly felsic to intermediate granitoids with minor mafic volcanic components. Unit is massive, hard and competent with few natural fractures. Minor pervasive chlorite alteration, trace localized hematite staining along fracture planes or within clasts. Trace disseminated pyrite within clasts and trace blebby chalcopyrite. Elevated Co (up to 2300 ppm) found in dull black mineral along fracture planes. Trace sub-mm-scale quartz-carbonate stringers/veinlets and minor vuggy fracture fills. Lower contact is sharp at 50 DTCA.	massive	chlorite alteration	wk	hematite alteration	v wk			cobaltite	0.01	pyrite	0.01	chalcopyrite	0.01	quartz-carbonate vein	0.01		
GKP19009	8.3	8.92	0.62	Ssl siltstone	m	grey black	fg	foliated	Sandy Siltstone: medium grey, fine to medium grained intensely foliated. Unit almost appears to be sheared, as relict pebbles are stretched and define foliation. Unit is hard and competent with few foliation parallel fractures. Minor chlorite and hematite alteration. Trace blebby pyrite, one mm-scale foliation parallel vuggy carbonate vein with minor hematite staining. Lower contact is sharp and delineated by foliation parallel fracture at 20 DTCA.	foliated	chlorite alteration	v wk	hematite alteration	v wk			pyrite	0.01					carbonate vein	0.01		
GKP19009	8.92	13.64	4.72	Ssl siltstone	d	grey black	vfg	bedded/bedding general	Pebbly Siltstone: dark greenish grey black, very fine grained but several medium grained sandy beds with small pebbles (i.e. 11.25 m to 11.45 m). Unit is laminated/bedded, hard and competent with a rubbly zone at upper the contact and another broken/rubbly zone from 11.81 m to 12.52 m. Minor pervasive chlorite alteration and localized hematite staining of clasts, along fracture planes or certain beds/laminae. Minor elevated Co (up to 2000 ppm) found in dull black mineral along fracture plans, trace very fine grained disseminated pyrite more common is coarser sandy beds or within quartz-carbonate veins. Minor sub-mm- to mm-scale quartz-carbonate veins/veinlets, minor vuggy healed fractures. Lower contact is gradational defined by increasing percentage of coarser sandy beds.	foliated	chlorite alteration	wk	hematite alteration	wk			cobaltite	0.01	pyrite	0.01			quartz-carbonate vein	0.01		
GKP19009	13.64	18.76	5.12	Scg conglomerate	d	grey brown	mg	bedded/bedding general	Conglomerate (Gowganda): same as previous 1.63 m to 8.3 m, top of unit is predominantly medium grained sand with very few larger clasts and large pebble to cobble sized clasts concentrated near lower contact. Clasts are subangular to subrounded, trace disseminated pyrite within sandy matrix and clasts. Minor sub-mm- to mm-scale quartz-carbonate stringers/veinlets. Lower contact is rubbly and appears to be delineated by orangey pink stained carbonate vein at 25 DTCA.	foliated	chlorite alteration	wk	hematite alteration	wk			pyrite	0.1					carbonate vein	0.01		
GKP19009	18.76	18.86	0.1	Fault	m	red grey	fg	fragmental or as fragments	Fault: rubbly reddish brown grey oxidized, fine grained sediments. Lower contact of fault is a 3 cm orangy pink stained carbonate vein with minor disseminated pyrite at 25 DTCA. Possible causation of faulting.	faulted/fault	chlorite alteration	wk mod	hematite alteration	wk			pyrite	0.01					carbonate vein	90		
GKP19009	18.86	72	53.14	Vvm mafic volcanic	m	green grey	vfg	massive	Mafic Volcanics: dark greenish grey to black, very fine grained with coarse grained alteration. Unit is moderately competent but locally broken and rubbly in areas of significant veining, minor faults displace veins. Upper contact is faulted and unit is significantly fractured, many chlorite/carbonate veins appear to be healed slip surfaces and fracture the mafics. Moderate to strong pervasive chlorite alteration, chlorite spotting and locally patchy chlorite alteration/leaching with greenish white spotting, local moderate pervasive carbonate alteration, zone of intense biotite alteration from 40.17 m to 40.60 m. Minor disseminated and blebby vein associated pyrite. Strong to locally intense chlorite and carbonate to quartz-carbonate veining, numerous cm-scale chlorite veins/healed slip surfaces with associated carbonate veining, numerous sub-mm-scale stringers/veinlets at low angle to core axis with almost stockwork texture, several carbonate veins appear foliated layered with dark green black chlorite, one cm-scale felsic vein stained and orangey pink at 20.46 m. EOH	unfoliated	chlorite alteration	mod str	biotite alteration	v str	carbonate alteration	wk mod	pyrite	0.01					carbonate vein	3	quartz-carbonate vein	2
GKP19010	0	3	3	Casing					casing to 3 m																	
GKP19010	3	3.85	0.85	Oou overburden general					no rock in box																	
GKP19010	3.85	6.25	2.4	Ssl siltstone	D	grey black	vfg	bedded/bedding general	Interval is composed of silt, black, very-fine grained (silt) with thin, mm-scale, laminations of buff-pink, silt to fine and medium sand; and rare granuals to pebbles, sub-angular to rounded, felsic and intermediate. Pink sandy laminations become more common down interval towards bottom contact forming cm-scale bands of intercalated laminated bands. Sandy bands are weakly undulatory. Interval is blocky. Weak sericite alteration. Very-fine grained disseminated arsenopyrite. Lower contact is shape, slightly undulatory and approximately 30 dtca.	massive	sericite alteration	wk					arsenopyrite	0.01								
GKP19010	6.25	7.59	1.34	Ssn sandstone	M	pink	fmg	massive	Interval is composed of fine- to medium sand, is generally massive with rare, thin undulatory and generally discontinuous seams of grey silt/very-fine sand. An interval between 7.14 and 7.53 m is significantly less sericite altered and pitted (very-fine/small) with disseminated seams, 2 to 4 mm, of mat-black mineral at lower and upper 'contact'. This mat-black mineral also occurs in localized small patched at 7.59 m. (mat-black mineral sphalerite or cobalt?) Moderate sericite alteration. Lower contact is sharp at 35 dtca	massive	sericite alteration	mod					cobaltite	0.1	sphalerite	0.1						
GKP19010	7.59	15	7.41	Ssl siltstone	D	grey black	vfg	massive	Interval is composed predominantly of silt with minor very fine- to medium-sand, mm-scale laminations; with rare granuals to pebbles. Siltstone is medium to dark grey-black and sandy (silty-sand intervals/laminations) are buff-pink. Rare granules to pebbles are sub-rounded and felsic-granitic to intermediate. Thin sandy laminations between approximate 11 and 13 m are sub-parallel to core axis at are generally less then 20 degrees to core axis; while a band of laminated silt and sand between 13.95 and 14.25 m is at high angle to core axis (60 to 80 degrees). Interval is generally competent with few broken intervals. Weak sericite alteration, seemingly associated with more sandy intervals. Rare, thin carbonate veins (1 to 3 mm) occur at 13.60 m and are associated with a dull-black mat-mineral, this dull-black, mat-mineral -'the mold'- is common on fracture surfaces. Trace disseminated chalcopyrite (locally 'shot-gun' chalcopyrite) and pyrite (disseminated stringers) in more sandy intervals. Very-very fine grained disseminated arsenopyrite. Rare, thin, locally discontinuous, fracture fill carbonate stringers. Lower contact is arbitrary and defined by the increasing deformation of the sandy-laminations.	massive	sericite alteration	wk mod					chalcopyrite	0.1	pyrite	0.15	cobaltite	0.01	carbonate vein	0.05		

GKP19010	15	16.89	1.89	Ssl siltstone	M	grey	vfg	bedded/bedding general	Interval consists of laminated dark grey-black silt and buff very fine- to fine-sand. Sandy laminations are weakly wavy to kinked, and irregularly oriented (soft sediment deformation/folding). Trace disseminated fine-grained pyrite. Weak to moderate sericite alteration of sandy laminations. Rare very-thin, fracture fill carbonate stringers. Lower contact is slightly arbitrary and defined by the end of deformed sandy laminations.	massive		sericite alteration	wk mod						pyrite	0.1				stringer	0.01									
GKP19010	16.89	21.22	4.33	Ssl siltstone	D	grey black	vfg	bedded/bedding general	Interval is composed predominately of dark grey-black silt with minor laminations of mm-scale, grey to buff, very fine- to fine-sand; and rare granuals to pebbles. Sandy laminations are locally discontinuous, and wavy. Rare granules to pebbles are sub-angular to rounded, felsic-granitic to intermediate. Very thin, sub-mm, pyrite stringers/seams. Very-very fine-grained disseminated arsenopyrite. Lower contact is arbitrary and defined by first appearance of mineralization.	massive							pyrite	0.1	arsenopyrite	0.01		stringer	0.05									
GKP19010	21.22	21.33	0.11	Mineralized vein	D	grey black	vfg	vuggy	Kilpatrick Vein, hosted in siltstone. Massive, sub-cm, cobalt mineralization (cobaltite) with disseminated cobalt mineralization into the wall-rock (visible disseminated mineralization less then 1 cm). Cobaltite vein is vuggy. Multiple fractures prior to mineralization associated with thin, sub-mm cobaltite stringers (also locally vuggy), one fracture infilled with cream-beige 'clay'. Annabergite and Erythrite oxidization precipitate in fracture surfaces and locally in vuggs. The mineralized vein seems to branch and locally have thin off-shoots stringers of mineralization. Fractures and massive mineralization tend to run between 50 and 60 degrees to core axis. Lower contact defined by end of mineralized vein.	massive							cobaltite	10	erythrite	0.01	an	0.01	mineralized vein	10								
GKP19010	21.33	29.98	8.65	Ssl siltstone	D	grey black	vfg	bedded/bedding general	Interval is composed predominantly of silt (grey-black, very-fine grained) with rare, thin, laminations to bands of pink, very-fine to medium sand, and rare dropstones. Bands of increase sandy laminations/bands occur between approximate 22.4 - 23 m and 28.50 - 29.40 m. Drop stones range from course-sand to boulders (typically granules to pebbles), sub-angular to rounded, and are felsic-granitic to intermediate. One large boulder occurs between 26.85 and 27.08 m. Small scale faulting/off-sets in laminations occurs between 29.14 and 29.20 m. Interval is generally competent with locally blocky to rubbly. Two elongated vugs occur between 21.56 and 21.59 m, may be associated with Kilpatrick (thin fracture fill carbonate/ very fine breccia and carbonate fracture fill can be followed around drill core); the 'black mold' occurs on near by fracture surfaces . Healed breccia, angular siltstone clasts cemented with quartz and course blebs of chalcopyrite occur between 26.24 and 26.30 m. Trace disseminated fine grained pyrite and lesser chalcopyrite, very-very fine-grained disseminated arsenopyrite. Thin, carbonate, fracture-fill carbonate veins and tension fracture carbonate infill (particularly between 28.5 and 29.5 m).	massive							chalcopyrite	0.3	pyrite	0.1	cobaltite	0.01	carbonate vein	0.2	quartz vein	0.1						
GKP19010	29.98	33.32	3.34	Scg conglomerate	M	grey	cg	bedded/bedding general	Interval consists of a large felsic (to intermediate?) boulder occurs between 29.98 and 30.70 m, siltstone occurs between approximate 30.70 and 31.50 m, and clast supported conglomerate occurs between approximate 31.50 and 33.20 m. Slightly sandy laminations/beds occur within the siltstone as well as rare granuals to pebbles (felsic to intermediate, angular to sub-rounded); trace, fine-grained disseminated pyrite and lesser chalcopyrite, and thin, very fine-grained, stringers of disseminated pyrite. Very, thin-fracture fill carbonate stringers (+/- pyrite/chalcopyrite), Locally tension-fill carbonate. Clast-supported conglomerate, consists of, coarse-sand to boulders (predominantly granuals to pebbles), sub-angular to rounded, felsic granitic to intermediate clasts, with a matrix of sandy-silt. Weak to moderate sericite alteration and chlorite alteration; as well as trace disseminated pyrite, generally associated with clasts. Potential breccia vein, 32.4 and 32.55 m, irregular shaped, 1 to 3 cm, angular clasts with carbonate infill; rare, very thin, fracture fill carbonate veins and rare tension fill carbonate pods. Lower contact difficult to determine due to being in faulted/rubbly zone.	massive		sericite alteration	wk mod	chlorite alteration	wk		pyrite	0.3				carbonate vein	0.75									
GKP19010	33.32	33.85	0.54	Fault Breccia	D	green grey	vfg	clastic or as clasts	Unconformity between Huronian sediments and Archean mafic meta-volcanics. Consists of clasts - low RQD. Clasts are predominantly mafic meta-volcanics.	faulted/fault																							
GKP19010	33.85	51	17.15	Vvm mafic volcanic	M	green	vfg	massive	Mafic meta-volcanics. Interval consists of predominantly forest green, very-fine-grained (aphanitic) massive mafic meta volcanics, cross-cut by numerous carbonate veinlets which locally have small-scale offsets. Moderate and pervasive chlorite alteration. Trace very-fine to fine-grained disseminate pyrite. Interval is cross-cut my numerous mm-scale carbonate veinlets/veins, generally thick veins (0.5 to 1 cm) are associated with trace fine-grained disseminated pyrite and lesser chalcopyrite. Two intervals between: 43.50 and 45.10 m and 45.40 m and 46.48 m are medium to dark forest-green, medium to coarse grained and massive; and seem to consist of increase alteration (potential dykes(?)). The interval between 45.50 and 45.10 m consists of bands of subhedral to euhedral biotite and pyroxene grains. Moderate and pervasive chlorite alteration and weak to moderate localized epidote alteration, weak to moderate and localized carbonate alteration. Localized white, carbonate pods, particularly in sections with the euhedral amphiboles/pyroxenes and/or biotite. The interval between 45.40 and 46.48 m is duller and consists of moderate to strong and pervasive chlorite alteration and weak to moderate and pervasive carbonate alteration; both of which have resulted in a spotted appearance. The lower contact consists of a 2 cm, moderately to strongly foliated band of alternating black chlorite and carbonate. Neither interval is significantly mineralized (trace disseminated pyrite) and are cross-cut my numerous thin-carbonate veinlets. Contacts for these intervals are generally low angle to core axis (approximately 20 to 35 degrees). E.O.H: 51 m	massive		chlorite alteration	mod	carbonate alteration	wk mod	epidote alteration	tr	pyrite	0.15	chalcopyrite	0.01			carbonate vein	3								
GKP19011	0	4.89	4.89	Oou overburden general					Overburden																							
GKP19011	4.89	75	70.11	Vvm mafic volcanic	m	green grey	fg	foliated	Mafic Volcanics: medium to light medium green grey (where unit is significantly sericitized and/or carbonaceous), fine to medium grained, moderately foliated. Unit is hard and competent with few natural fractures. Weak pervasive chlorite alteration, localized weak biotite alteration, moderate pervasive sericitization and locally intense, localized pervasive carbonate alteration, intense localized hematite staining of fracture planes. Trace disseminated, fracture fill or vein associated pyrite, anomalous disseminated chalcopyrite. Numerous mm-scale carbonate veins with minor chlorite, sub-mm-scale carbonate stringers/veinlets, several quartz veins with chlorite and pyrite along margins, one 4 cm quartz-carbonate vein at 48.57 m with red stained margins, one cm-scale carbonate vein which brecciates mafics at 17.9 m. EOH	foliated		sericite alteration	mod str	chlorite alteration	wk mod	biotite alteration	wk	pyrite	0.01			carbonate vein	1	quartz vein	0.1						
GKP19012	0	4.8	4.8	Oou overburden general					Oou overburden general																							
GKP19012	4.8	28.08	23.28	Ssl siltstone	M	grey	vfg	laminated	Siltstone with minor pebbles (<5%), medium-dark grey, dominantly silt-sized material with sub-m sandy beds, unit is well bedded with minor massive sections, minor sub-m rubbly sections occur @ 6-6.5m and between 10-12m, weak hematite occurs along fracture faces and weak, pervasive chlorite with trace carbonate, erythrite occurs along fracture faces ~5.25m with minor greenish-white mineral, likely annabergite and trace disseminated pyrite occurs throughout; XRF @6.25m - 4.36% Co, 12.3% Ni, 26.6% As, dark grey-black Co precipitate (moldy appearance) occurs sporadically along fractures observed ranging from 336-2595 ppm Co, faces trace quartz-carbonate veining, lower contact is gradational with underlying arenite ~55 DTCA.	massive		chlorite alteration	wk	hematite alteration	wk	carbonate alteration	tr	erythrite	0.01	nc	0.01	pyrite	0.1	carbonate vein	0.1								
GKP19012	28.08	32.16	4.08	Sar arenite	M	fawn	fg	bedded/bedding general	Arenite to quartzite, creamy beige to medium brown, fine-medium sand with minor sub-m silty interbeds, mostly massive with weak bedding, very hard unit with few fractures, weak sericite alteration and trace carbonate alteration, trace fracture-filling dark grey-black Co precipitate (moldy appearance) occurs along fractures observed @28.85m ~36 ppm Co; trace disseminated pyrite, trace mm-scale quartz-carbonate veinlets, lower contact is gradational with underlying siltstone ~50 DTCA.	massive		sericite alteration	wk	carbonate alteration	wk			cobaltite	0.01	pyrite	0.1			carbonate vein	0.1								
GKP19012	32.16	43.12	10.96	Ssl siltstone	M	grey	vfg	laminated	Same as described from 4.80-28.08m. Trace fracture-filling dark grey-black Co precipitate (moldy appearance) occurs along fractures observed @36.88m ~140 ppm Co Lower contact is sharp marked by the appearance of rubbly core.	massive		chlorite alteration	wk	hematite alteration	wk	carbonate alteration	tr	cobaltite	0.01	pyrite	0.1			carbonate vein	0.1								
GKP19012	43.12	43.3	0.18	Fault Breccia	M	grey	fg	fragmental or as fragments	Potential fault breccia, rubbly core with minor mud along slip plane (~12 DTCA), weak slickenline development, trace pyrite along fracture faces, lower contact is sharp marked by the transition back into competent core.	faulted/fault		chlorite alteration	wk	hematite alteration	wk	carbonate alteration	tr	pyrite	0.1					carbonate vein	0.1								
GKP19012	43.3	54.3	11	Ssl siltstone	M	grey	vfg	laminated	Same as described from 4.80-28.08m. Unit contains large granitic boulder ~49-49.5m with disseminated chalcopyrite. Lower contact is gradational with underlying arenite ~25 DTCA.	massive		chlorite alteration	wk	hematite alteration	wk	carbonate alteration	tr	chalcopyrite	0.05	pyrite	0.1			carbonate vein	0.1								
GKP19012	54.3	58.16	3.86	Sar arenite	M	fawn	fg	bedded/bedding general	Similar as described from 28.08-32.06m. Unit displays odd mm-scale carbonaceous blebs throughout 1-2%; likely weak-moderate carbonate alteration product. Lower contact is gradational with underlying siltstone ~55 DTCA.	massive		sericite alteration	wk	carbonate alteration	wk			pyrite	0.1					carbonate vein	0.1								
GKP19012	58.16	64.98	6.83	Ssl siltstone	M	grey	vfg	laminated	Same as described from 4.80-28.08m. Lower contact is gradational with underlying arenite ~35 DTCA.	massive		chlorite alteration	wk	hematite alteration	wk	carbonate alteration	tr	pyrite	0.1					carbonate vein	0.1								
GKP19012	64.98	73.4	8.42	Sar arenite	M	fawn	fg	bedded/bedding general	Same as described from 28.08-32.06m. Unit becomes more silty toward lower contact with underlying conglomerate ~40 DTCA.	massive		sericite alteration	wk	carbonate alteration	wk			pyrite	0.1					carbonate vein	0.1								
GKP19012	73.4	74.34	0.94	Scg conglomerate	D	grey	cg	matrix supported	Matrix supported conglomerate, dark grey, muddy-silty matrix with dominantly pebble-sized granitic clasts, massive, competent unit, weak pervasive chlorite and very weak, patchy carbonate alteration, trace disseminated pyrite, unit grades into coarse sandstone toward lower contact, lower contact (unconformity) is sharp ~35 DTCA with underlying mafic volcanic.	massive		chlorite alteration	wk	carbonate alteration	v wk			pyrite	0.1					carbonate vein	0.1								
GKP19012	74.34	75	0.66	Vvm mafic volcanic	D	green grey	fg	massive	Mafic volcanic, dark green-grey, fine grained, biotite-sericite alteration gives unit a medium-grained appearance, moderate-strong pervasive biotite and sericite alteration, trace vein-hosted and disseminated pyrite, trace mm-scale quartz-carbonate veinlets with chlorite selvages.	massive		biotite alteration	mod str	sericite alteration	mod			pyrite	0.1					carbonate vein	0.1								
GKP19013	0	3	3	Casing					Casing																							
GKP19013	3	5.16	2.16	Ssl siltstone	m	fawn grey	fg	bedded/bedding general	Siltstone: medium fawn grey to brown, very fine grained to fine grained sandy beds, unit is bedded or laminated at the mm- to cm-scale. Unit is hard and competent. Unit is hard and competent but slightly broken towards lower contact. Minor pervasive sericite alteration and possible silicification. Elevated Co (up to 530 ppm) found in dull black mineral along fracture planes, highest results found in fracture sub-parallel to core axis, dendritic dull mineral associated with fractures/healed fractures (possible manganese oxide?). No significant veining, minor haled fractures. Lower contact is sharp at 60 DTCA.	foliated		sericite alteration	wk mod	silica alteration	mod			cobaltite	0.01														

GKP19013	5.16	10.88	5.72	Sar arenite	l	fawn cream	mg	bedded/bedding general	Arenite: light to medium fawny cream, medium grained sand to very fine grained towards lower contact, bedded/laminated with some sub-m-scale beds. Unit is hard and competent with few natural fractures. Minor pervasive sericite alteration and pervasive silicification of unit with some localized pitted sections. Very fine grained disseminated pyrite beginning around 10 m where unit becomes much finer grained, minor elevated Co (up to 2500 ppm) found in dull black mineral, highest values found in fracture sub-parallel to core axis, dull grey black dendritic mineral associated with fractures (possible manganese oxide?). Minor sub-mm-scale healed fracture fills. Lower contact is gradational and defined by fining of grain size and darkening of colour.	foliated		sericite alteration	wk mod	silica alteration	wk mod			cobaltite	0.01	pyrite	0.1														
GKP19013	10.88	20.48	9.6	Ssl siltstone	m	grey	vfg	laminated	Siltstone: medium to dark grey, very fine grained to fine grained with a couple sub-m-scale coarser sandy cream coloured beds (i.e. 18.25 m). Unit is laminated to bedded, hard and competent with few natural fractures or broken sections. Very weak pervasive chlorite alteration, significant silicification and localized hematite staining along fracture planes or certain beds/laminae. Very fine grained disseminated chalcopyrite +/- pyrite and quartz vein/fracture fill associated chalcopyrite. One foliation parallel 10 mm chalcopyrite-bearing quartz vein at 13.13 m, localized mm-scale discontinuous carbonate veins around 19 m. Lower contact is gradational and defined by coarsening grain size and return to m-scale cream coloured arenitic unit.	foliated		sericite alteration	wk mod	chlorite alteration	v wk	hematite alteration	v wk	cobaltite	0.01	chalcopyrite	0.1	pyrite	0.01	quartz vein	0.01	carbonate vein	0.01								
GKP19013	20.48	36.9	16.42	Sar arenite	l	fawn cream	mg	bedded/bedding general	Arenite: same as previous 5.16 m to 10.88 m, minor sub-m-scale siltstone beds. Minor localized hematite staining of fracture planes, two meter zone of pervasive carbonate and sericite alteration associated with high concentration of quartz-carbonate veining around 32 m. Trace disseminated sulphides pyrite +/- chalcopyrite, minor mm-scale quartz-carbonate stringers/veinlets. Lower contact is sharp at 60 DTCA.	foliated		silica alteration	wk mod	chlorite alteration	v wk			cobaltite	0.01					quartz-carbonate vein	0.01										
GKP19013	36.9	38.96	2.06	Ssl siltstone	d	grey black	fg	laminated	Pebbly Siltstone: dark grey black, very fine grained with coarse grained sand to pebble sized clasts, unit is laminated at the mm-scale. Unit is hard and competent with few natural fractures save broken/rubbly lower contact. Minor pervasive chlorite alteration, localized hematite staining of clasts, minor carbonate alteration resulting from stratiform carbonate veins. Trace blebby pyrite, several cm-scale altered carbonate veins. Lower contact is rubbly and delineated by unconsolidated material. No distinct orientation.	foliated		chlorite alteration	wk mod	hematite alteration	v wk			pyrite	0.01					carbonate vein	1										
GKP19013	38.96	39	0.04	Fault	d	grey black	fg	fragmental or as fragments	Fault: dark browny grey black unconsolidated fault material. One mm-scale carbonate vein is observed on several fragments. Lower contact is defined by return to competent material.	faulted/fault		chlorite alteration	mod	hematite alteration	wk mod									carbonate vein	0.01										
GKP19013	39	42	3	Vvm mafic volcanic	m	green grey	fg	massive	Mafic Volcanics: medium green grey, very fine to fine grained massive unit which is hard and competent with few natural fractures. Moderate pervasive sericite alteration save one sub-m zone which appears to have more of a feldspar spotting/leaching alteration (resembles diabase), minor pervasive chlorite alteration, minor localized hematite staining along fractures or within carbonate veins, minor carbonate alteration a proximal to a fractured carbonate vein. Vein and fracture fill hosted pyrite and chalcopyrite, several mm- to cm-scale quartz-carbonate veins with associated pyrite and chalcopyrite some of which exhibit hematite staining.	unfoliated		sericite alteration	mod	chlorite alteration	wk mod	hematite alteration	wk	pyrite	0.1	chalcopyrite	0.01			carbonate vein	1	quartz-carbonate vein	1								
GKP19-014	0	3.71	3.71	Oou overburden general																												
GKP19-014	3.71	13.9	10.19	Ssl siltstone	D	grey black	vfg	bedded/bedding general	Siltstone with sandy laminations to thin beds. Medium to dark grey black very fine-grained to fine grained siltstone with thin, generally, mm-scale, rarely cm-scale, pink fine sand. An interval, between 9.40 and 10.5 m is silt to very-fine sand with coarse-sand to granules of angular intermediate/mafic clasts. Pink sandy laminations to bands are generally weakly undulatory (soft sediment deformation?) and locally/rarely discontinuous. Erythrite precipitate locally occurs on fracture surfaces (i.e., 4 m 10.5 to 10. 70 m). Very fine-grained disseminated pyrite (and chalcopyrite(?)), typically associated with sandy-er intervals and blebby pyrite and chalcopyrite in more silty bands. Weak to moderate, sericite alteration, generally associated with more sandy laminations. Rare, thin (hair-line), carbonate veining. Lower contact is gradational and arbitrary.	massive		sericite alteration	wk					erythrite	0.001	chalcopyrite	0.3	pyrite	0.3	stringer	0.01										
GKP19014	13.9	15.87	1.97	Ssn sandstone	D	fawn grey	fmg	massive	Sandstone. Medium to dark fawn-grey, fine to medium sand, massive, siliceous/quartz-rich(?). Moderate and pervasive sericite(?) alteration, resulting in a speckled appearance of the interval. Erythrite on fracture surfaces between 14.65 and 14.70 m. Locally blebby, shot-gun chalcopyrite (particularly visible between approximately 14 and 14.25 m) and oxidized (peacock) on fracture surfaces. Relatively common, thin, mm-scale (1 to 2 mm), carbonate veinlets. Lower contact is gradational and arbitrary.	massive		sericite alteration	mod					erythrite	0.001	chalcopyrite	0.1			carbonate vein	0.1										
GKP19014	15.87	27.7	11.83	Ssl siltstone	D	grey black	vfg	bedded/bedding general	Siltstone with rare sandy laminations and rare pebbles. Dark grey-black very fine-grained to fine grained siltstone with rare thin, generally mm-scale, pink fine sandy laminations. Pink sandy laminations are generally weakly undulatory (soft sediment deformation?) and locally/rarely discontinuous. Rare, sub-rounded to rounded pebbles to cobbles, granitic to intermediate. Between 17.45 and 17.70 m, multiple small-scale displacement/faulting occurs, noted in offsets of silty and sandy laminations. Locally weak, sericite alteration of silty intervals. Trace, blebby, chalcopyrite/pyrite occurs is silty intervals; Arsenopyrite is common on fracture surfaces, (especially between approximately 20 and 27 m), localized and minor galena on fracture surfaces (i.e., 20.70 m); locally very-fine grained, black-mat mineral occurs on fracture surfaces. Thin, hairline - fracture-fill carbonate stringers/veinlets. Lower contact sharp and defined by the first appearance of sandstone beds.	massive		sericite alteration	wk					chalcopyrite	0.2	arsenopyrite	0.1	gl	0.01	carbonate vein	0.05										
GKP19014	27.7	32.75	5.05	Ssl siltstone	M	grey black	vfg	bedded/bedding general	Interbedded siltstone and fine- to medium-sand. Silty intervals are medium to dark grey-black, very-fine grained and massive and locally pebbly; sandstone intervals are buff, composed of fine to medium sand and massive. Thin, sandy laminations do occur in siltstone intervals, these laminations are weakly to moderately undulatory. Major sandy intervals occur between approximately: 27.70 - 28.04 m, 28.29 - 28.40 m, 28.56 - 28.61 m, 28.70 - 29.53 m, 30.06 - 30.33 m, and 31.17 - 31.83 m. Granular to pebbles, sub-rounded to rounded, granitic to intermediate, occur in silty intervals between 29.53 and 32.75 m. Contacts between sandy and silty intervals are generally sharp and generally low angle to core axis (10 to 40 degrees). Locally sandy beds are weakly to moderately sericite altered. Trace disseminated pyrite. Rare, thin, fracture fill carbonate veins. Lower contact is relatively sharp but occurs in a blocky broken section.	massive		sericite alteration	wk					pyrite	0.01					stringer	0.01										
GKP19014	32.75	37.08	4.33	Ssn sandstone	M	grey black	fg	massive	Sandstone. Light- to medium-grey, fine to medium sand, modeled texture; irregular-shaped, undulatory, discontinues light-grey and medium grey sand (soft sediment deformation(?)). Weak to moderate and pervasive sericite alteration. Trace disseminated pyrite and arsenopyrite (noted on fracture surfaces). Very rare, fracture-fill carbonate veining. Lower contact is slightly arbitrary and defined by the disappearance of the modeled texture.	massive		sericite alteration	wk mod					arsenopyrite	0.01	pyrite	0.01			stringer	0.01										
GKP19014	37.08	38.93	1.85	Ssl siltstone	D	grey black	vfg	bedded/bedding general	Siltstone with minor interbedded laminations of sandstone. Dark grey-black, very fine-grained siltstone with buff fine to medium-grained sandy laminations. One sandy bed occurs between 38.05 and 38.11 m. Rare angular granuals. Sandy laminations are locally weakly undulatory to planer and generally about 40 DTCA. Trace blebby pyrite. Rare fracture-fill carbonate veins. Lower contact is sharp at 47 DTCA.	massive		sericite alteration	wk					pyrite	0.1					stringer	0.01										
GKP19014	38.93	39.68	0.75	Ssn sandstone	M	grey	fmg	interbedded	Interbedded sandy and silty bands. Sand dominated silty band occurs between 38.93 - 39.25 m and 39.41 - 39.68 m. Silt dominated band between 39.93 and 30.41 m. Sandy bands are fawn with grey black, composed of silt and fine to medium sand and poorly to moderately laminated. Silty beds are dark grey black composed of silt and very minor sand and appear massive. Very thin pyrite laminations occur at the upper and lower 'contact' of the silty interval between the sandy intervals. Weak to moderated sericite alteration of sandy intervals. Lower cantatas sharp, undulatory and at 30 to 50 degrees to core axis.	massive		sericite alteration	wk					pyrite	0.1																
GKP19014	39.68	46.38	6.7	Ssn sandstone	M	grey	fmg	massive	Sandstone. Grey to slightly fawn-grey, very fine- to medium-sand, massive to locally very-weakly laminated (near upper and lower contact). Weak to moderate sericite alteration, locally giving the interval a specked appearance. Locally disseminated to disseminated aggregated of a mat-black mineral; disseminated very fine- to fine- grained pyrite. Very rare fracture fill carbonate veining. Lower contact is sharp at 30 to 40 DTCA.	massive		sericite alteration	wk					pyrite	0.2					stringer	0.01										
GKP19014	46.38	49.7	3.32	Ssl siltstone	D	grey black	fg	massive	Siltstone with thin slightly more sandy laminations/bands. Dark grey-back silt with medium grey-black fine- to medium-sand, weakly laminated defined by a slight increase in sand-size. Slightly more sandy laminations are undulatory and occur at low to moderate angles to core axis (approximately 10 to 40 DTCA). Arsenopyrite occurs locally along fracture surfaces, and locally a very-fine grained black mineral occurs on fracture surfaces, trace disseminated fine-grained pyrite, rare fine-grained disseminated stringers of pyrite. Rare fracture fill veining. Lower contact is gradational and slightly arbitrary.	massive		sericite alteration	tr					arsenopyrite	0.1	pyrite	0.1			stringer	0.01										
GKP19014	49.7	55.56	5.86	Sar arenite	L	grey	fmg	massive	Arenite/Sandstone. Light- to medium-grey, fine to medium sand , massive. Weak and localized sericite alteration. Quartz dominated minor black lithic fragments. Light, pale-pink erythrite on natural fracture surfaces, trace disseminated, very-fine grained pyrite. Rare, fracture-fill, carbonate veining. Lower contact is slightly gradation.	massive		sericite alteration	wk					erythrite	0.01	pyrite	0.05			stringer	0.01										
GKP19014	55.56	58.29	2.73	Ssl siltstone	D	grey black	vfg	massive	Siltstone with rare pebbles. Composed predominantly of black, very fine-grained to fine grained, massive silt with rare, sub-angular to sub rounded pebbles, predominantly felsic (rarely intermediated) pebbles. Trace disseminate pyrite. Rare carbonate veinlets. Lower contact is slightly arbitrary and defined by first appearance of sandy beds.	massive		sericite alteration	v wk					pyrite	0.01					carbonate vein	0.01										
GKP19014	58.29	60.7	2.41	Ssl siltstone	D	grey black	fg	bedded/bedding general	Interval consists of intercalated silt and sandy-silt beds/laminations with abundant sub-angular to rounded granuals and pebbles, felsic granitic to intermediate, associated with more sandy intervals; interval becomes increasingly sandy and pebbly down intervals. Sandy beds are slightly undulatory and moderated angle to core axis (30 to 50 degrees). Interval is competent with few blocks less then 10 cm. Fine-grained disseminated pyrite occurs in more sandy intervals. Rare fracture-fill carbonate stringers. Lower contact is sharp, and undulatory and at high angle to core axis (between 60 and 80 degrees) and is the unconformity.	massive		sericite alteration	v wk					pyrite	0.1					carbonate vein	0.01										

GKP19014	60.7	69.89	9.19	Vvm mafic volcanic	D	green	vfg	massive	Mafic meta-volcanic. Medium to dark forest green, very fine-grained (aphanitic) to fine-grained, massive. Weak and pervasive sericite alteration and weak to moderate chlorite alteration and very weak carbonate alteration near the bottom of the interval. Cross-cut my numerous thin, fracture fill and 2 to 4 mm carbonate and carbonate-quartz veinlets; associated with minor pyrite. Abundant cm to sub dec-cm scale quartz carbonate veins, locally irregularly shape or with small-scale off-sets; these larger veins are associated with abundant blebby chalcopyrite and pyrite. Lower contact is relatively sharp and defined by the first appearance of argillite.	massive		chlorite alteration	wk mod	sericite alteration	wk	carbonate alteration	wk	chalcopyrite	0.25	pyrite	0.3		quartz-carbonate vein	3	carbonate vein	1.5
GKP19014	69.89	70.55	0.66	Sag argillite	D	Black	vfg	foliated	Argillitic shear. Black and very fine-grained (aphanitic). The start of the interval is highly foliated and carbonations (thinly foliated white and black, carbonate and argillite) to massive black argillite with few thin carbonate veinlets and pods. Interval is broken blocky to rubbly with one block >10 cm Graphitic, particularly noticeable on fracture surfaces. Abundant subhedral to euhedral disseminated pyrite to fine-grained stringers. Lower contact is relatively sharp, undulator and at a high degree to core axis (>70%).	sheared		carbonate alteration	wk mod					pyrite	5	gp	3		carbonate vein	0.5		
GKP19014	70.55	70.81	0.27	Vvm mafic volcanic	M	grey	vfg	massive	Altered mafic meta-volcanics. Medium-grey, very fine-gained (aphanitic), massive. Interval is broken to rubbly. Moderate and pervasive carbonate alteration. Abundant fine-grained disseminated anhedral to euhedral pyrite. Few thin stringers of argillite alteration and rare 2 mm, white carbonate veinlets. Lower contact is sharp and at 40 DTCA.	massive		carbonate alteration	mod					pyrite	5				carbonate vein	0.5		
GKP19014	70.81	71.14	0.33	Fault Breccia	M	black	mcg	brecciated	Healed Breccia. White to black, with minor pink, angular clasts (to sub-rounded), predominantly quartz clasts with lesser green clay-altered clasts and lesser intermediate clasts and pink felsic/iron-stained clasts, in a black matrix (locally carbonate matrix), mm to cm- clasts. Strong carbonate alteration. Disseminated pyrite, as well as=, pyrite replacing clasts. Thin carbonate vein at lower contact, lower contact sharp and at 40 DTCA.	faulted/fault		carbonate alteration	mod str					pyrite	2				carbonate vein	0.01		
GKP19014	71.14	72	0.86	Vvm mafic volcanic	M	grey green	vfg	massive	Altered mafic meta-volcanics. Medium green-grey, fine-grained, massive. Interval is generally competent. A breccia pod occurs at 71.25 (similar to above breccia vein). Weak to moderate and pervasive chlorite alteration, weak to moderate sericite alteration and localized weak carbonate alteration. Trace disseminated subhedral to euhedral pyrite, particularly near upper contact. Rare, thin, discontinuous carbonate stringers. E.O.H 72 m.	massive		chlorite alteration	wk mod	sericite alteration	wk mod	carbonate alteration	wk	pyrite	0.1				stringer	0.1		
GKP19015	0	4.5	4.5	Casinz					casinz. some rubble in box																				
GKP19015	4.5	5.35	0.85	Oou overburden general					no core																				
GKP19015	5.35	38.35	33	Vvm mafic volcanic	M	green	vfg	massive	Mafic meta-volcanics. Medium to dark forest-green, very fine-grained (aphanitic), massive (locally a weak fabric is defined by the sericite alteration. Interval is broken and blocky. Weak to moderate and pervasive chlorite alteration and sericite alteration, weak and localized carbonate alteration. Trace fine-grained pyrite in mafic meta-volcanics. Interval is cross cut my numerous thin, fracture fill stringers to mm-scale (rarely cm-scale) carbonate (+/- lesser quartz) veinlets; larger (thicker) veinlets are locally slightly more irregularly shaped and associated with chlorite and trace pyrite and/or chalcopyrite. Locally small off-sets of carbonate veinlets and locally tension fracture fill carbonate. Lower contact is sharp at 70 dtca	massive		chlorite alteration	wk mod	sericite alteration	wk mod	carbonate alteration	v wk	pyrite	0.2	chalcopyrite	0.1		carbonate vein	3		
GKP19015	38.35	39.69	1.34	Vvm mafic volcanic	M	green grey	fmg	massive	Mafic meta-volcanics, medium green-grey, fine to medium grained, massive. Interval is composed of fine grained mafic volcanics with fine to medium-grained biotite (chlorite altered)/amphibole(?). Interval is broken and blocky Moderate to strong and pervasive chlorite alteration, weak to moderate and pervasive sericite alteration and weak and pervasive carbonate alteration. Trace disseminated pyrite. Thin, fracture-fill to mm-scale carbonate veins. Upper and lower contact are 1 to 2 cm quartz-carbonate-chlorite veins. Lower contact is sharp, 50 dtca.	massive		chlorite alteration	mod str	sericite alteration	wk mod	carbonate alteration	wk	pyrite	0.01				carbonate vein	1		
GKP19015	39.69	41.2	1.52	Vvm mafic volcanic	M	green	vfg	massive	Pyrite-rich mafic meta-volcanics. Interval is composed of medium forest green, aphanitic to very fine-grained and massive mafic meta-volcanics with abundant subhedral to euhedral fine to medium-grained disseminated pyrite. Moderate to strong and pervasive chlorite alteration, weak to moderate sericite alteration. Carbonate veining, fracture-fill to mm-scale, stringers to veinlets, thin stringers are locally undulatory and discontinuous. Lower contact is sharp at 15 dtca.	massive		chlorite alteration	mod str	sericite alteration	wk mod			pyrite	3				carbonate vein	1		
GKP19015	41.2	42.65	1.45	Sag argillite	D	green black	vfg	foliated	Interval is composed of foliated/sheared, weakly undulatory, black argillite and forest-green mafic meta-volcanic. Abundant pyrite, euhedral to blebby, disseminated to disseminated stringers of pyrite generally foliation parallel. Interval is broken to rubbles (generally parallel to fabric). Weak to moderate chlorite alteration. Thin, sub-mm, discontinuous white carbonate veinlets/seams (tension-fracture fill(?)) cross-cutting the fabric; as well as, rare foliation parallel carbonate veins. Lower contact is sharp and undulatory at 20 dtca.	sheared		argillic alteration	mod str	chlorite alteration	mod			pyrite	5				carbonate vein	0.5		
GKP19015	42.65	44.72	2.07	Vvm mafic volcanic	M	grey green	fg	massive	Mafic meta-volcanics. Medium grey green, very fine to fine grained, massive; a weakly to moderately foliated interval between 42.57and 42.83 m (localized and increase argillitic, sericite, carbonate alteration(?)/weak shearing(?)). Weak to moderate and pervasive chlorite and sericite alteration. Trace disseminated pyrite. Thin, fracture fill to mm-scale carbonate stringers/veinlets, locally wavy, locally truncated or with small offsets. Lower contact is gradational.	massive		chlorite alteration	wk mod	sericite alteration	wk			pyrite	0.01				carbonate vein	0.1		
GKP19015	44.72	117	72.28	Vvm mafic volcanic	D	black	fmg	massive	Mafic meta-volcanic. Dark grey-green black to black with a brown-purple hue, very fine- to fine- grained, with medium grained alteration, massive. Interval is competent with few rubbly zone. Moderate to strong chlorite alteration, locally resulting in a spotted appearance (chlorite spotting). Abundant mm-scale to cm-scale commonly pale-green carbonate (talc?) commonly associated with black chlorite, and lesser white carbonate stringers/veins. Common, very-thin, sub-mm fracture fill carbonate stringers, locally undulatory. Locally carbonate strings and veins have small-scale off-sets. Trace disseminated pyrite in mafic meta-volcanic and locally trace disseminated pyrite with stringers and veins. EOH 117 m	massive		chlorite alteration	mod str					pyrite	0.05				carbonate vein	5		

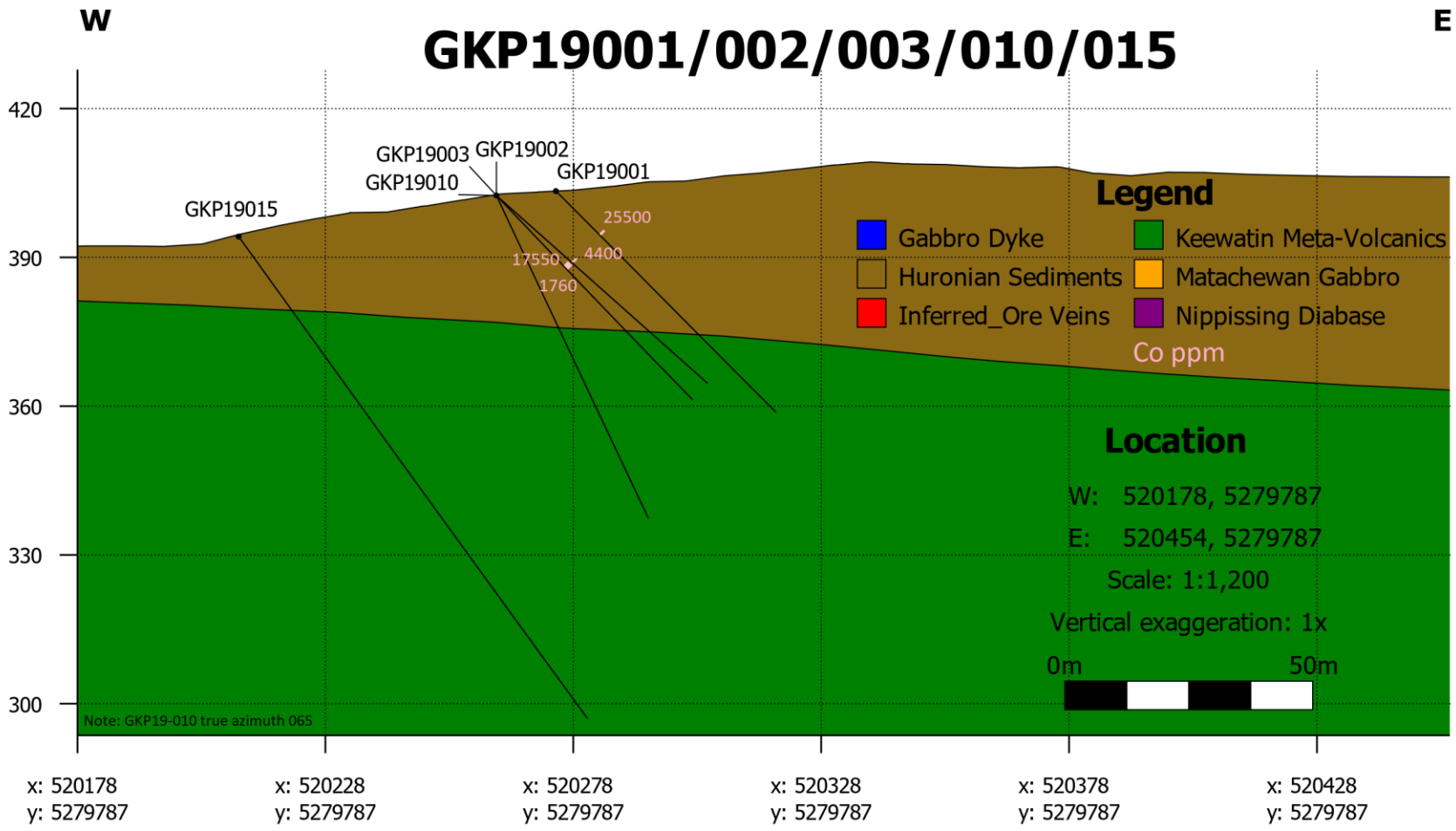
Appendix 3. Assay Data

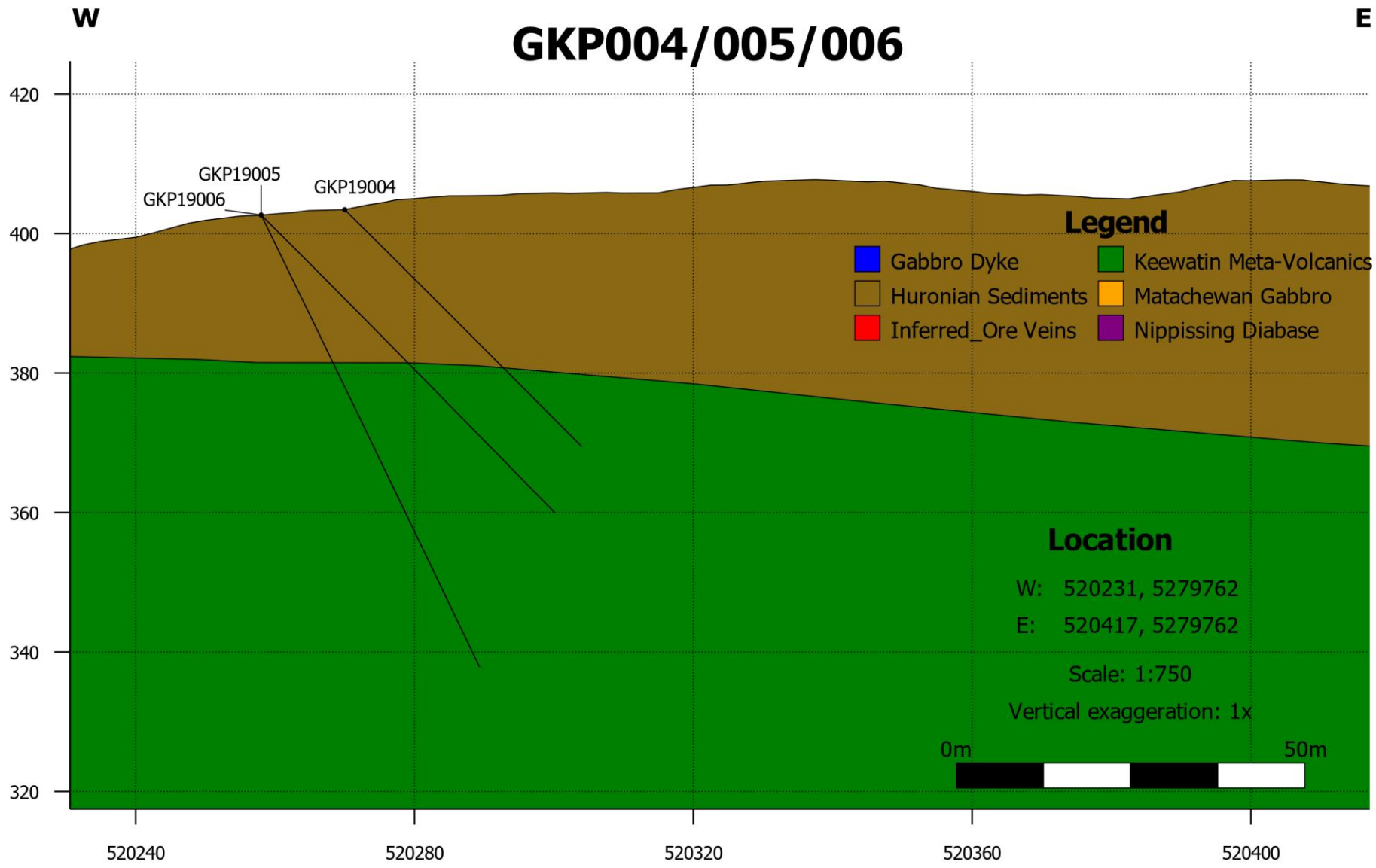
GKP19015	49.00	50.00	1.00	15792	15792	0.04	2.9	54.6	<10	0.17	0.02	4.22	0.09	6.66	107	2340	0.85	62	9.01	8.36	0.07	0.8	0.036	0.01	2.6	5.2	14.15	1380	1.66	0.03	1.5	1165	180	3.7	1.1	0.002	0.19	0.3	22.7	1	0.2	25	0.09	<0.05	0.23	0.274	0.04	0.1	131	0.2	8.1	109	32.4
GKP19015	57.50	58.50	1.00	15793	15793	0.03	2.39	47.5	10	0.18	0.01	5.4	0.07	5.31	95.4	2380	0.81	19.3	7.88	6.86	0.06	0.3	0.027	0.02	1.8	4	15.1	1380	0.05	0.03	1.2	1200	120	1.6	1.4	<0.002	0.04	0.37	18.7	1	0.3	36.4	0.08	<0.05	0.19	0.251	0.03	<0.1	111	0.5	9	82	8.9
GKP19015	63.65	64.65	1.00	15794	15794	0.04	2.68	55.1	10	0.16	0.01	5.87	0.06	5.06	94.8	2180	0.7	32.2	7.6	6.98	0.06	0.5	0.026	0.02	1.8	4.2	15.1	1420	<0.05	0.02	1.4	1170	180	1.7	1.7	<0.002	0.05	0.52	17.9	1	0.2	48.9	0.09	<0.05	0.21	0.277	0.03	<0.1	109	0.5	7.6	80	14
GKP19015	74.20	75.20	1.00	15795	15795	0.04	1.88	57.4	<10	0.13	0.01	5.36	0.08	4.16	111.5	2520	0.44	33.8	8.05	5.38	0.05	0.4	0.021	0.01	1.6	3.3	16.25	1540	<0.05	0.01	0.9	1350	110	2.3	1.2	<0.002	0.05	0.5	15.3	1	0.2	65.7	0.06	<0.05	0.13	0.176	0.03	<0.1	89	0.6	5.6	81	7.5
GKP19015	85.00	86.00	1.00	15796	15796	0.05	1.81	3.5	<10	0.13	0.02	2.39	0.08	3.23	123	3140	0.45	40.5	8.86	4.98	0.05	0.2	0.023	0.01	1.2	3.1	17.75	1240	<0.05	0.01	0.9	1570	130	9.9	1.3	<0.002	0.04	0.46	15	1	0.2	24.2	0.06	<0.05	0.16	0.188	<0.02	<0.1	91	0.5	4.7	96	7.5
GKP19015	93.00	94.00	1.00	15797	15797	0.04	1.55	4.1	<10	0.07	0.02	4.4	0.11	3.42	116.5	3170	0.3	21.7	7.9	4.47	0.05	0.4	0.022	<0.01	1.3	3.8	15.65	1460	0.07	0.01	0.7	1475	100	2.2	0.5	<0.002	0.03	0.21	14	<1	0.2	99.4	0.05	<0.05	0.12	0.153	<0.02	<0.1	81	0.2	4.6	88	9.7
GKP19015	99.00	100.00	1.00	15798	15798	0.03	1.74	1.6	10	0.16	0.01	2.75	0.03	3.74	123	3070	0.38	36.5	8.63	4.99	0.05	0.1	0.022	0.01	1.4	2.7	18.15	1320	0.05	0.01	0.9	1600	110	1	1.3	<0.002	0.03	0.4	14.5	<1	0.2	35.6	0.05	<0.05	0.13	0.163	<0.02	<0.1	85	0.3	5.2	83	2.7
GKP19015	101.90	102.90	1.00	15799	15799	0.06	1.61	6.3	10	0.12	0.02	4.05	0.05	3.64	111.5	2920	0.44	36.4	8.06	4.63	0.05	0.2	0.023	0.01	1.3	3.5	16.75	1280	<0.05	0.01	0.9	1500	130	1.1	0.8	<0.002	0.04	0.3	12.6	1	0.2	41.2	0.06	<0.05	0.15	0.176	<0.02	<0.1	79	0.3	4.9	83	4.4
GKP19015	113.00	114.00	1.00	15800	15800	0.1	1.53	118	<10	0.2	0.03	2.69	0.09	3.36	125	3050	0.33	37.2	8.47	4.43	0.06	0.1	0.02	<0.01	1.2	1.8	17.6	1300	<0.05	<0.01	0.8	1605	110	31	0.7	<0.002	0.08	0.37	13.8	<1	0.2	49.1	0.05	<0.05	0.12	0.147	0.02	<0.1	79	0.4	4.7	116	3.5

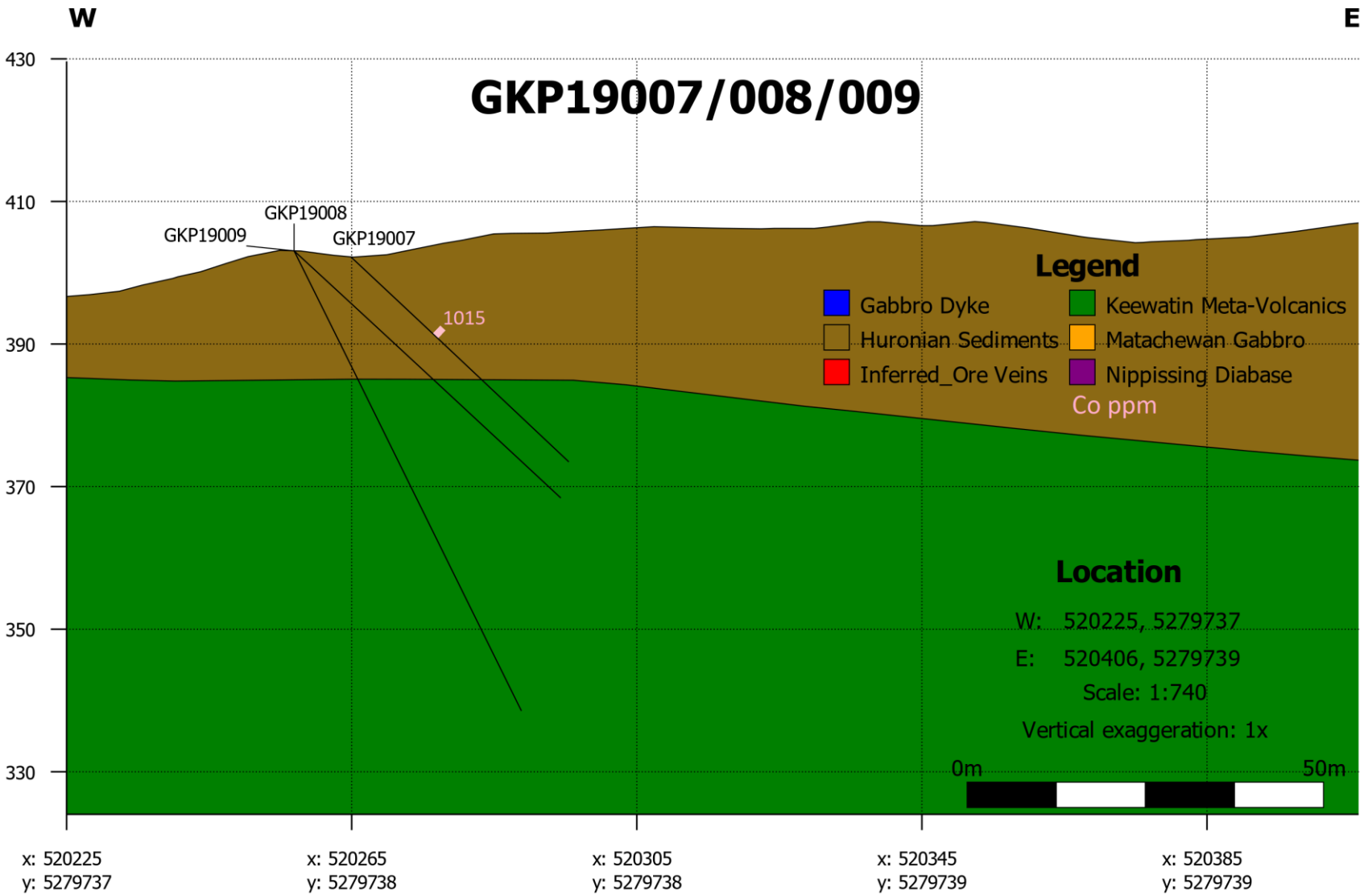
Appendix 4. Assays Certificates

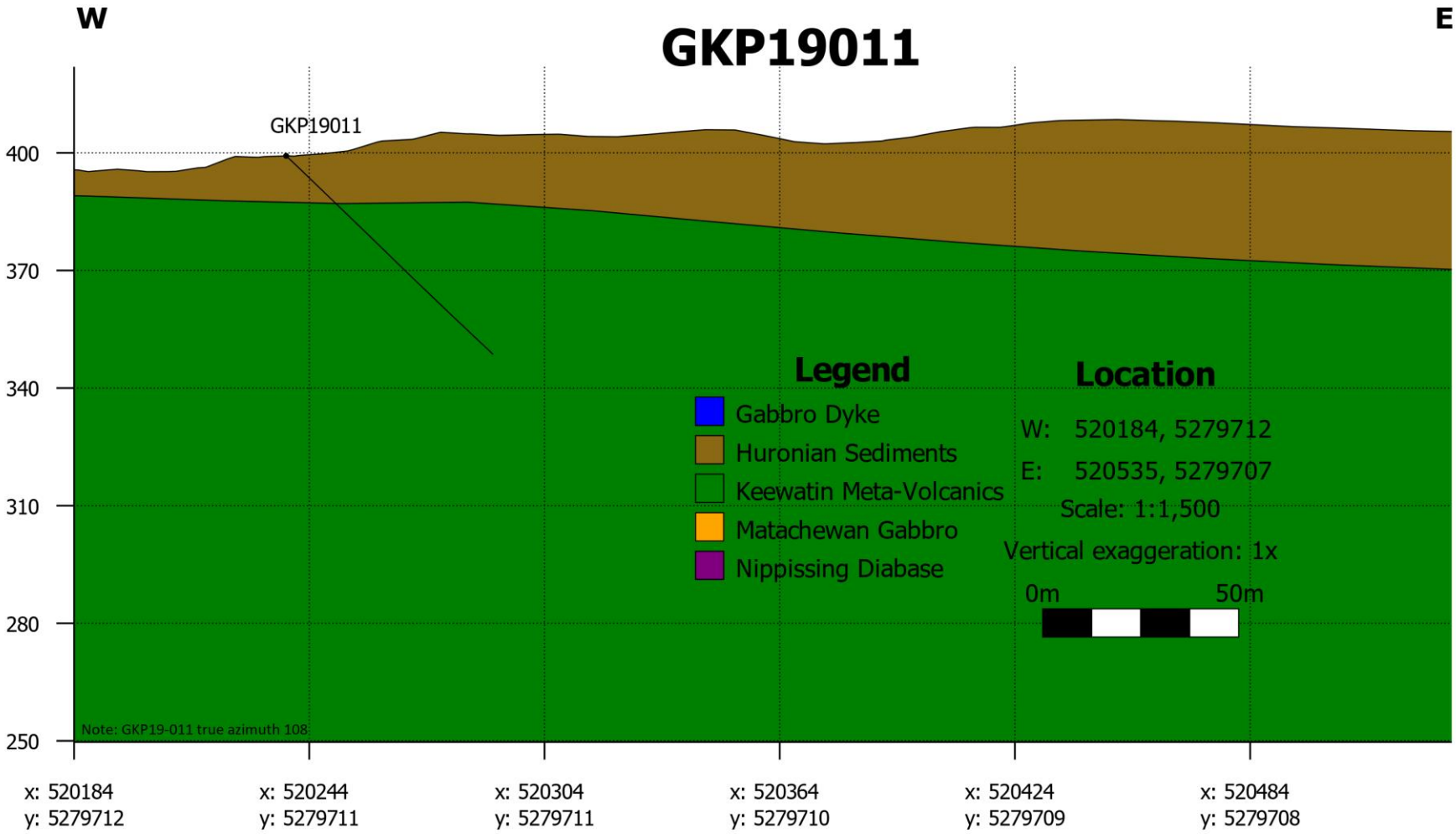
See Accompanying PDF Portfolio.

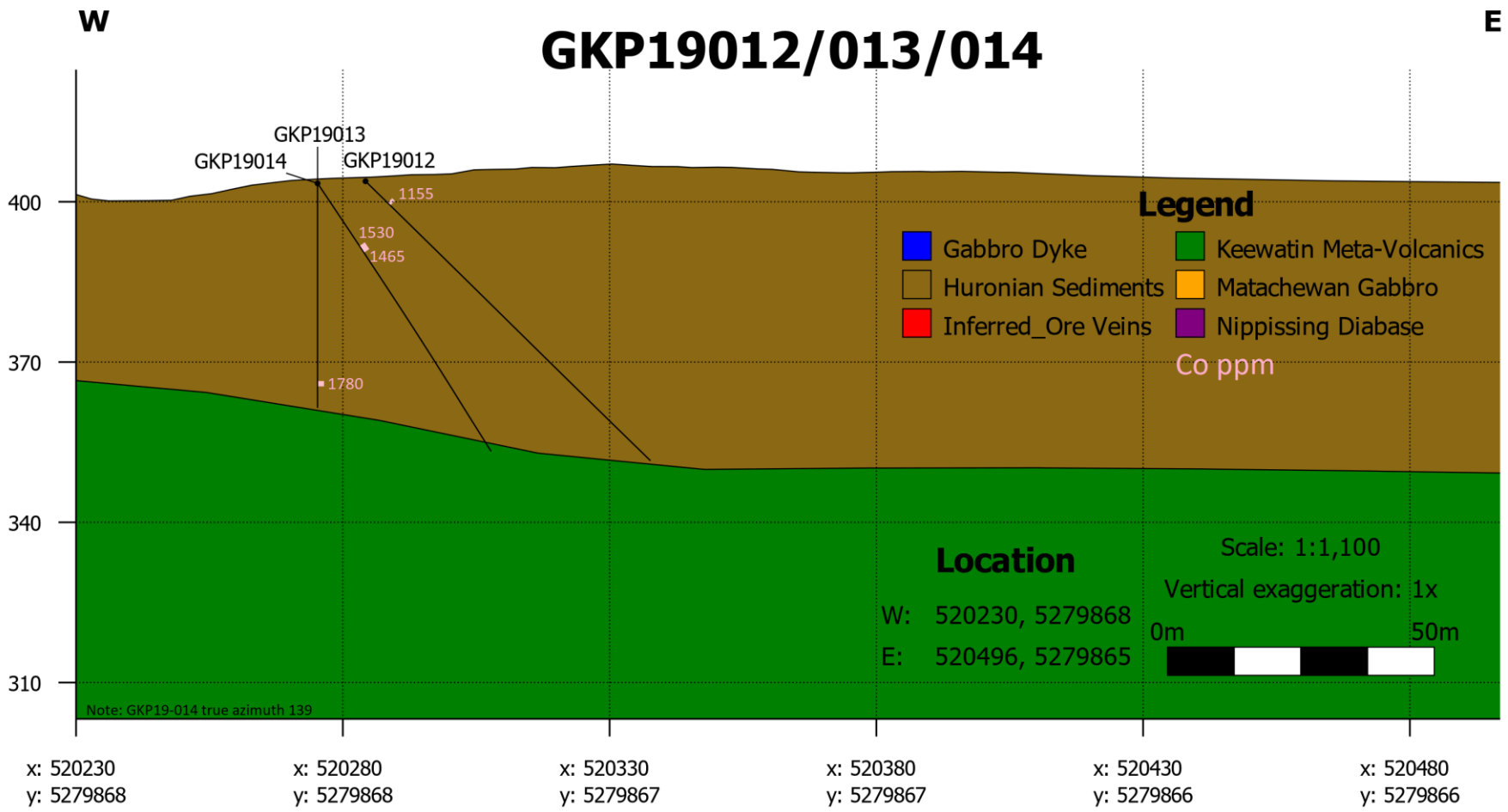
Appendix 5. Cross Section Graphic Logs and Assays

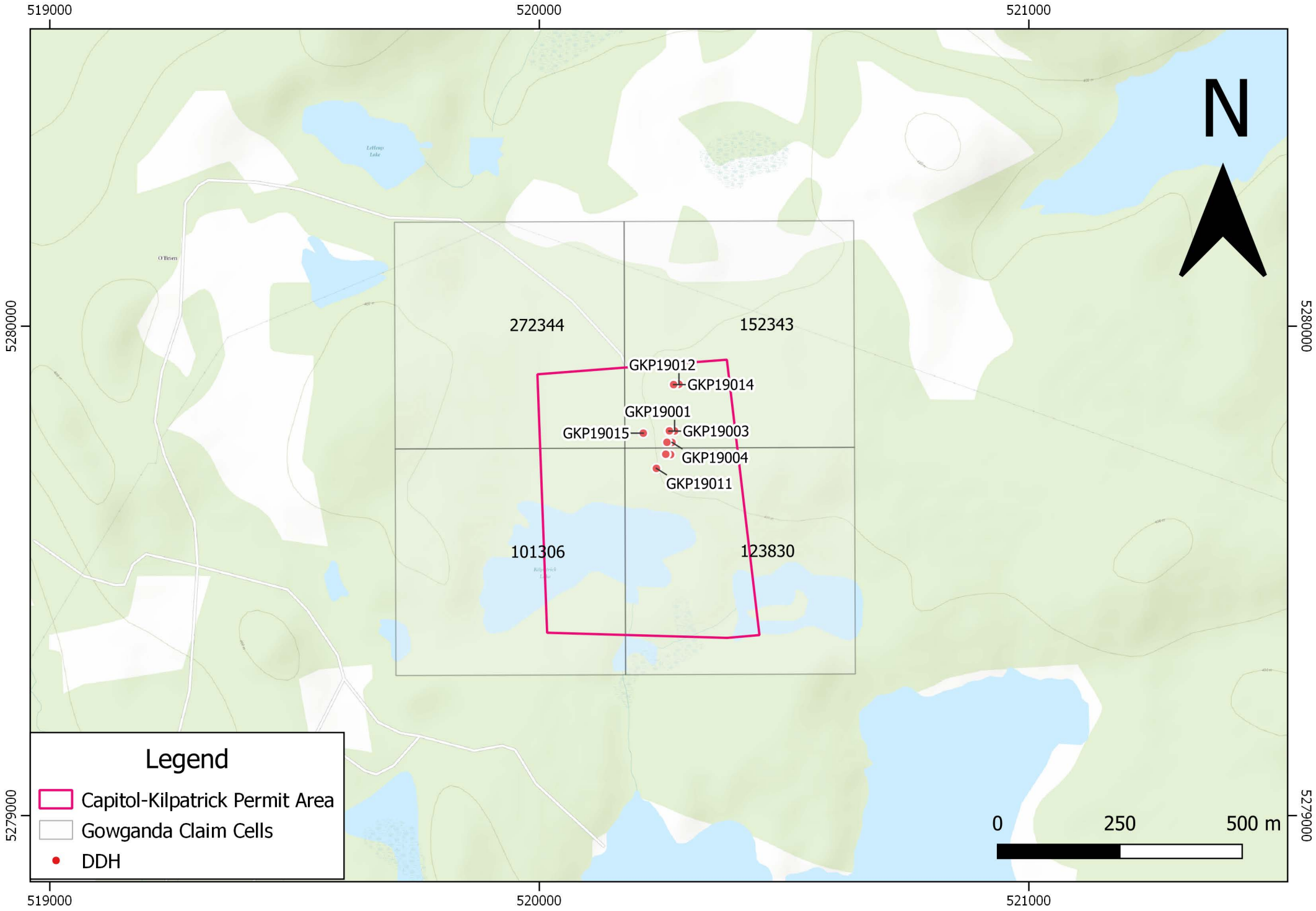

W
E
GKP19001/002/003/010/015
420
390
360
330
300
GKP19015
GKP19003
GKP19010
GKP19002
GKP19001
25500
17550
4400
1760
Legend
Gabbro Dyke
Huronian Sediments
Inferred_Ore Veins
Keewatin Meta-Volcanics
Matachewan Gabbro
Nippissing Diabase
Co ppm
Location
W: 520178, 5279787
E: 520454, 5279787
Scale: 1:1,200
Vertical exaggeration: 1x
0m
50m
Note: GKP19-010 true azimuth 065
x: 520178
y: 5279787
x: 520228
y: 5279787
x: 520278
y: 5279787
x: 520328
y: 5279787
x: 520378
y: 5279787
x: 520428
y: 5279787


W
E
GKP004/005/006
420
400
380
360
340
320
GKP19005
GKP19006
GKP19004
Legend
Gabbro Dyke
Keewatin Meta-Volcanics
Huronian Sediments
Matachewan Gabbro
Inferred_Ore Veins
Nippissing Diabase
Location
W: 520231, 5279762
E: 520417, 5279762
Scale: 1:750
Vertical exaggeration: 1x
0m
50m
520240
520280
520320
520360
520400


W
E
GKP19007/008/009
430
410
390
370
350
330
GKP19009
GKP19008
GKP19007
1015
Legend
Gabbro Dyke
Keewatin Meta-Volcanics
Huronian Sediments
Matachewan Gabbro
Inferred_Ore Veins
Nippissing Diabase
Co ppm
Location
W: 520225, 5279737
E: 520406, 5279739
Scale: 1:740
Vertical exaggeration: 1x
0m
50m
x: 520225
y: 5279737
x: 520265
y: 5279738
x: 520305
y: 5279738
x: 520345
y: 5279739
x: 520385
y: 5279739


W
E
GKP19011
GKP19011
400
370
340
310
280
250
Legend
Gabbro Dyke
Huronian Sediments
Keewatin Meta-Volcanics
Matachewan Gabbro
Nippissing Diabase
Location
W: 520184, 5279712
E: 520535, 5279707
Scale: 1:1,500
Vertical exaggeration: 1x
0m
50m
Note: GKP19-011 true azimuth 108
x: 520184
y: 5279712
x: 520244
y: 5279711
x: 520304
y: 5279711
x: 520364
y: 5279710
x: 520424
y: 5279709
x: 520484
y: 5279708


W
E
GKP19012/013/014
GKP19013
GKP19014
GKP19012
1155
1530
1465
1780
400
370
340
310
Legend
Gabbro Dyke
Keewatin Meta-Volcanics
Huronian Sediments
Matachewan Gabbro
Inferred_Ore Veins
Nippissing Diabase
Co ppm
Location
W: 520230, 5279868
E: 520496, 5279865
Scale: 1:1,100
Vertical exaggeration: 1x
0m
50m
Note: GKP19-014 true azimuth 139
x: 520230
y: 5279868
x: 520280
y: 5279868
x: 520330
y: 5279867
x: 520380
y: 5279867
x: 520430
y: 5279866
x: 520480
y: 5279866


519000
520000
521000
5280000
5279000
N
272344
152343
101306
123830
GKP19012
GKP19014
GKP19001
GKP19015
GKP19003
GKP19004
GKP19011
Legend
Capitol-Kilpatrick Permit Area
Gowganda Claim Cells
DDH
0
250
500 m

Appendix 7. M. Hendrickson Kirkpatrick Evaluation

Evaluation of the Kilpatrick Prospect

Mike Hendrickson

7/15/2019

Summary

The Kilpatrick prospect was drilled by Battery Mineral Resources Ltd. (BMR) in March and April of 2019 to determine the depth and lateral continuity of the vein system exposed at surface. Generally east-trending holes were drilled to shallow depths, with only two of the holes intercepting thin, significantly mineralized cobalt veins. The edge of the main IP anomaly coincides with high grade cobalt intercepts and was not systemically drill tested by the previous program. This anomaly should be tested with several holes, as should the surrounding coincident IP and electromagnetic anomalies in mafic volcanic rocks for VMS-associated cobalt deposits.

Geological and Geophysical Setting

The prospect comprises a cobalt bearing vein exposed at surface near the Captiol silver deposit that is in turn part of the historically producing Gowganda silver mining camp on the northern margin of the Paleoproterozoic Huronian basin (Figure 1). Cobalt occurs near the contact between Archean mafic volcanic rocks and unconformably overlying Huronian sediment host rock (Figure 2). The known Co-vein is ~700 meters from a Nipissing gabbro sill that may have overlain the host rocks during mineralization.

Cobalt and silver mineralized zones in the project area are hosted in a north trending, teardrop shaped Nipissing sub-basin. Most of the historic drilling was concentrated on the Nipissing-Huronian contact, or the Nipissing itself, as these are the historical hosts for silver-cobalt deposits. The cobalt vein at Kilpatrick is hosted near the western margin of the sub-basin and may be in an erosional window that exposes Archean bedrock underlying the Nipissing gabbro (Figure 3). The area surrounding prospect contains numerous, predominately silver-dominant mineral occurrences that also contain accessory cobalt.

High-resolution aeromagnetic data collected from the project area are heterogenous—depicting Archean mafic volcanic rocks and granite, as well as Nipissing gabbro and Huronian sediments (Figure 3). Huronian sediments and Archean granite rocks coincide with magnetic lows, whereas mafic volcanic rocks coincide with magnetic highs with internal lows. The Nipissing gabbro, which varies widely in magnetic susceptibility across the Huronian basin, has relatively consistent moderate amplitude magnetic signatures. These data are useful for identifying covered, magnetic mafic volcanic rocks that are known to coincide with cobalt-rich veins (e.g., Kilpatrick; Figure 3)

Data from airborne electromagnetic data highlight numerous low intensity cultural anomalies, but also contain three moderate amplitude conductors that may represent Archean bedrock conductors. Kilpatrick is near one of these anomalies, and the other two remain unevaluated by BMR (Figure 2).

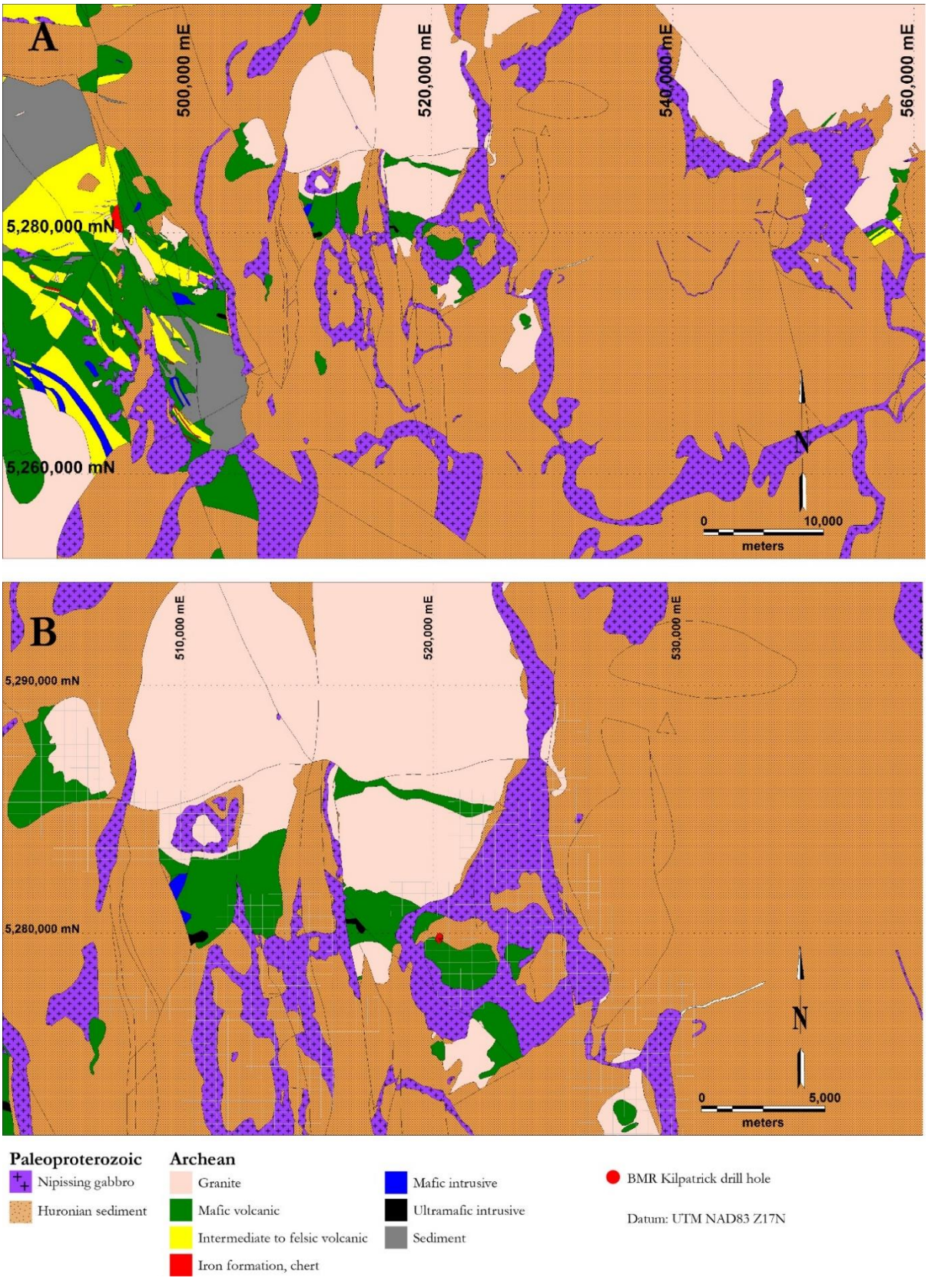


Figure 1: Regional (A) and sub-basin scale (B) geology of the Gowganda area.

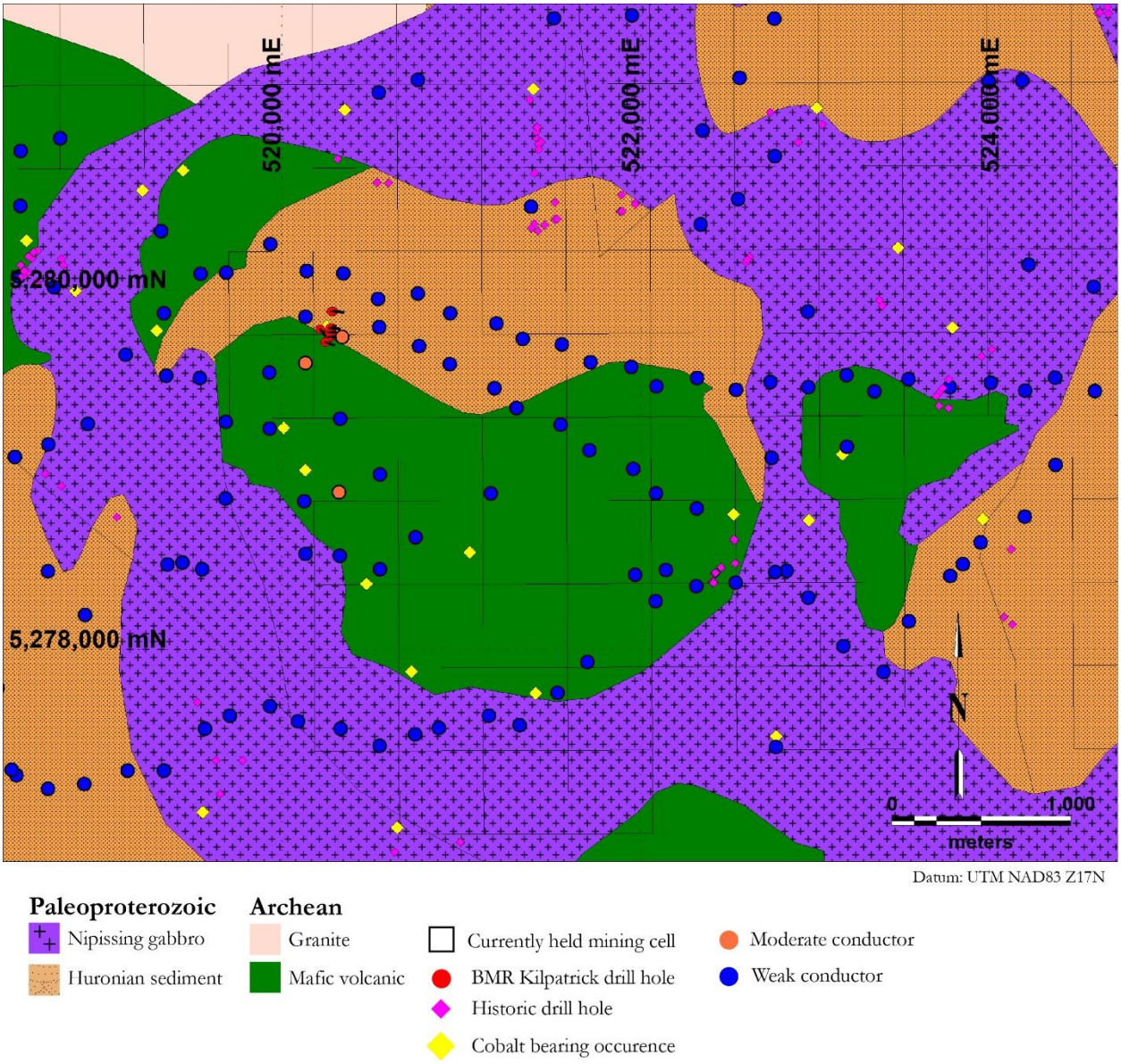


Figure 2: Local geology of the Kilpatrick prospect area with EM data, mineral occurences, and historic drill holes.

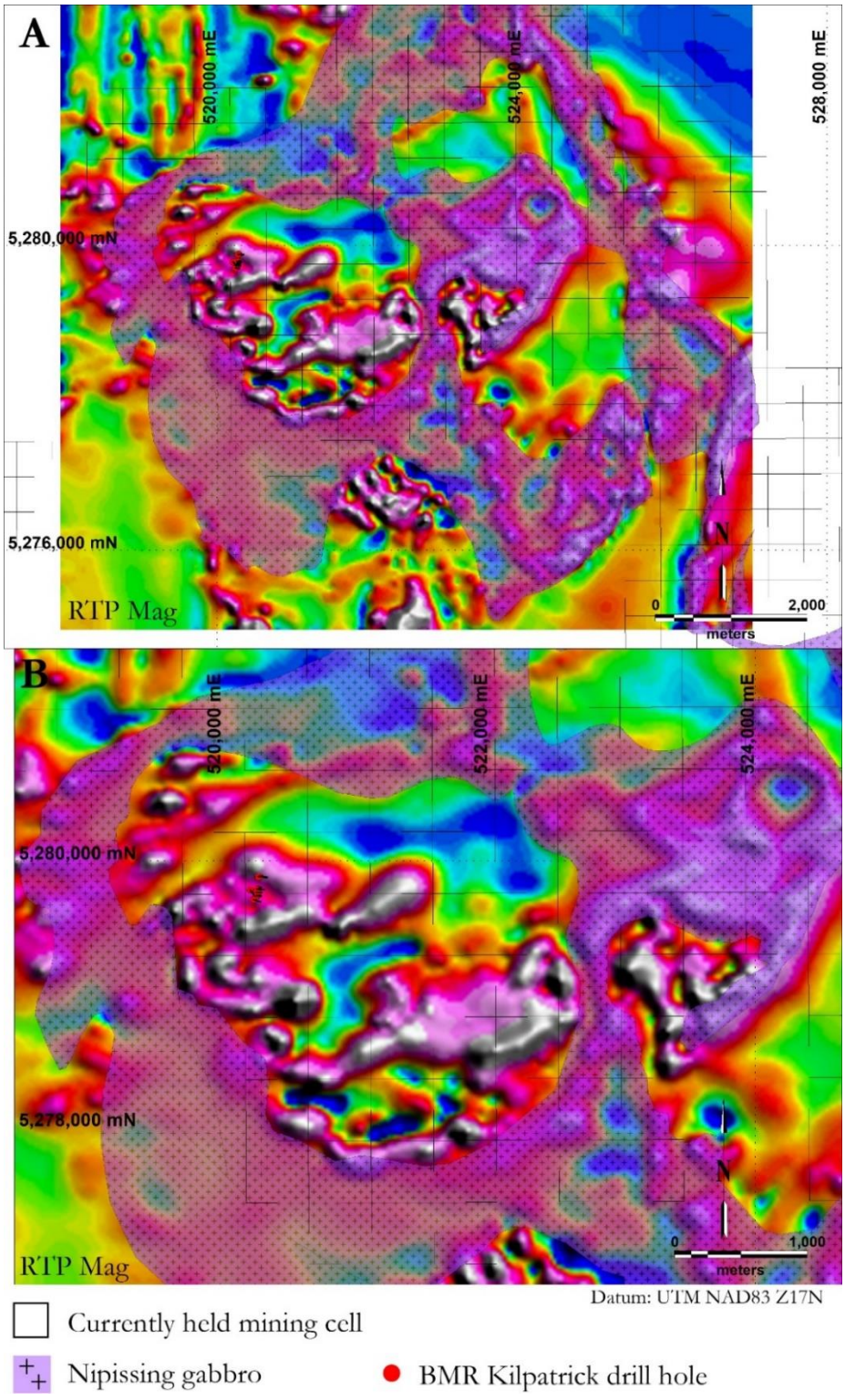


Figure 3: Nipissing gabbro at sub-basin scale (A) and prospect scale (B) plotted on the RTP magentic data showing that it has moderate amplitude magnetic siginatures, whereas the mafic volcanic basement that underlies the Kilpatrick prospect is typically higher amplitude and magnetically heterogenous.

Prospect Geophysics

Inversions of the 3D induced polarization (IP) data from the Kilpatrick prospect (Figures 4, 5) highlight three discrete anomalies near surface (0m, -50m, and -100m), and a single significant, north-trending anomaly at depth (-150m, -200m, and -250m). None of these anomalies have been tested by BMR. Based on the drill data, the Huronian sediments form a thin veneer on top of the Archean metavolcanics basement, so most of the IP responses may reflect sulfide minerals in the basement rocks that may be prospective for hosting cobalt veins, or McAra-style (VMS-associated) cobalt deposits.

BMR drill data overlain on the near surface IP data show that the cobalt vein intercepted in drilling coincides with margin of a significant anomaly (Figure 5). The highest amplitude part of this anomaly remains untested and should be drilled and (or) excavated at surface. It is possible that the surface mineralized zone at Kilpatrick is the distal part of a larger vein system represented by the IP anomaly.

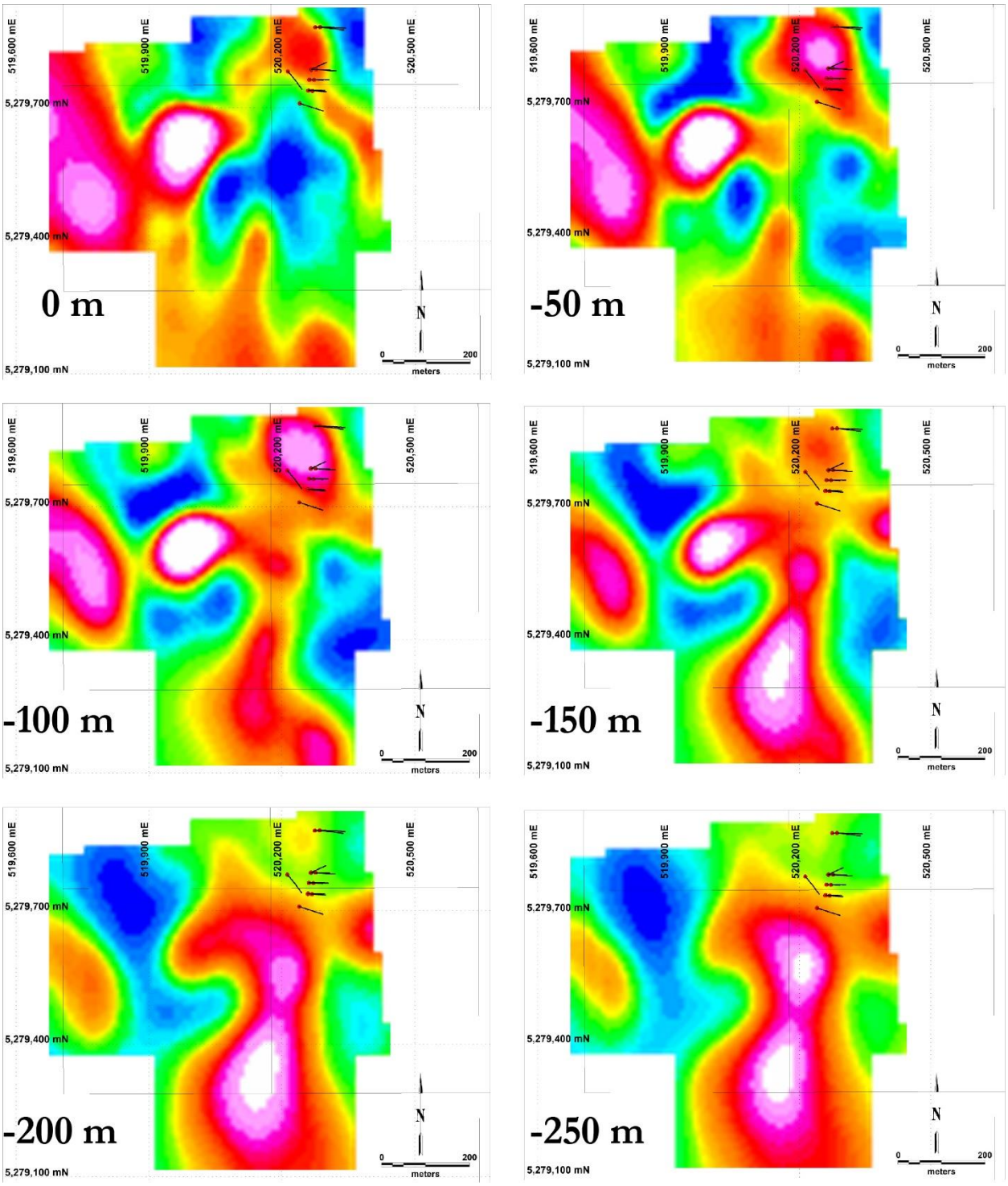


Figure 4: IP depth slices from the Kilpatrick prospect. BMR drill hole locations are denoted by red circles and projected to surface hole traces are shown as black lines. The IP anamoly next to the drilled vein has not been drill tested.

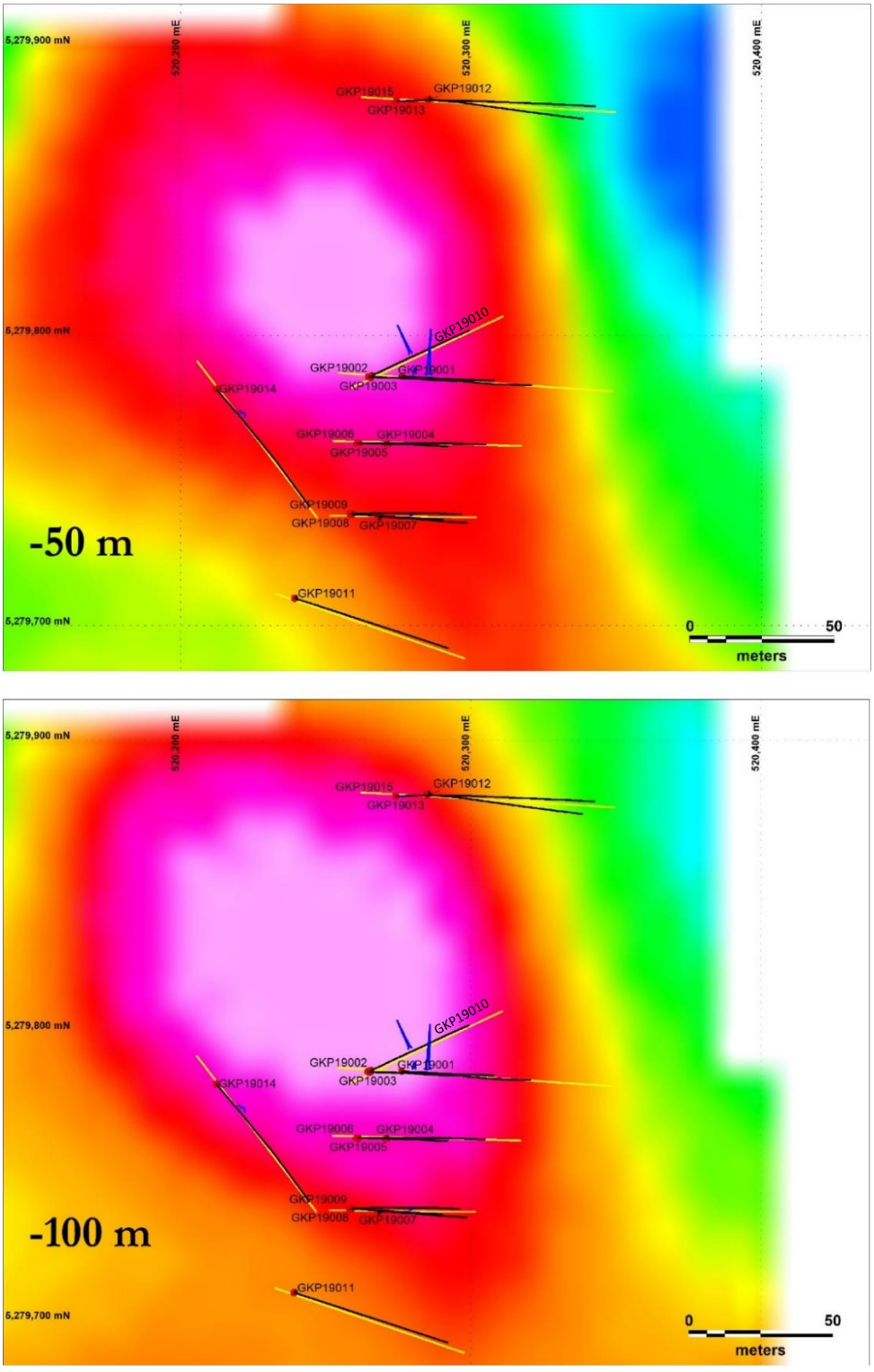


Figure 5: Near surface IP data from the drilled vein at the Kilpatrick prospect. BMR drill hole locations are denoted by red circles and projected to surface hole traces are shown as black lines. Signifcant cobalt intercepts are denoted by blue lines. Section lines for Figures 6 and 7 are shown as yellow lines. A high amplitude EM anamoly coincides with the high cobalt drill interecepts, and should be fully drill tested.

Drill Results

Fifteen holes for a total of 960 meters were drilled by BMR at the Kilpatrick prospect. Of those, only holes GKP001 and GKP010 intercepted ore grade cobalt zones (greater than 1%), and holes GKP002, GKP013, and GKP014 intercepted anomalous cobalt zones (greater than 200 ppm) (Figures 6, 7, 8, 9). All the anomalous cobalt values are hosted by fine grained clastic Huronian sediments, commonly tens of meters from the Archean contact. The Gowganda formation diamictite units (called "conglomerate" in the field logs) at Kilpatrick are prevalent south of the cobalt zones, and conspicuously coincide with an absence of anomalous cobalt values indicating it is a non-prospective (i.e., impermeable or rheologically unfavorable) host rock (Figures 6, 7)

The drilled area covers a strike length of ~200m, and over that distance the depth to basement Archean rocks varies widely (Figures 8, 9). This variation could be explained by undulating basement topography, but more likely reflects synsedimentry faults that mark rapid thickness variations in the Huronian sediments and controlled sub-basin development in the Paleoproterozoic. These growth faults likely focused mineralizing fluids to depositions sites and should be better defined to plan follow up work.

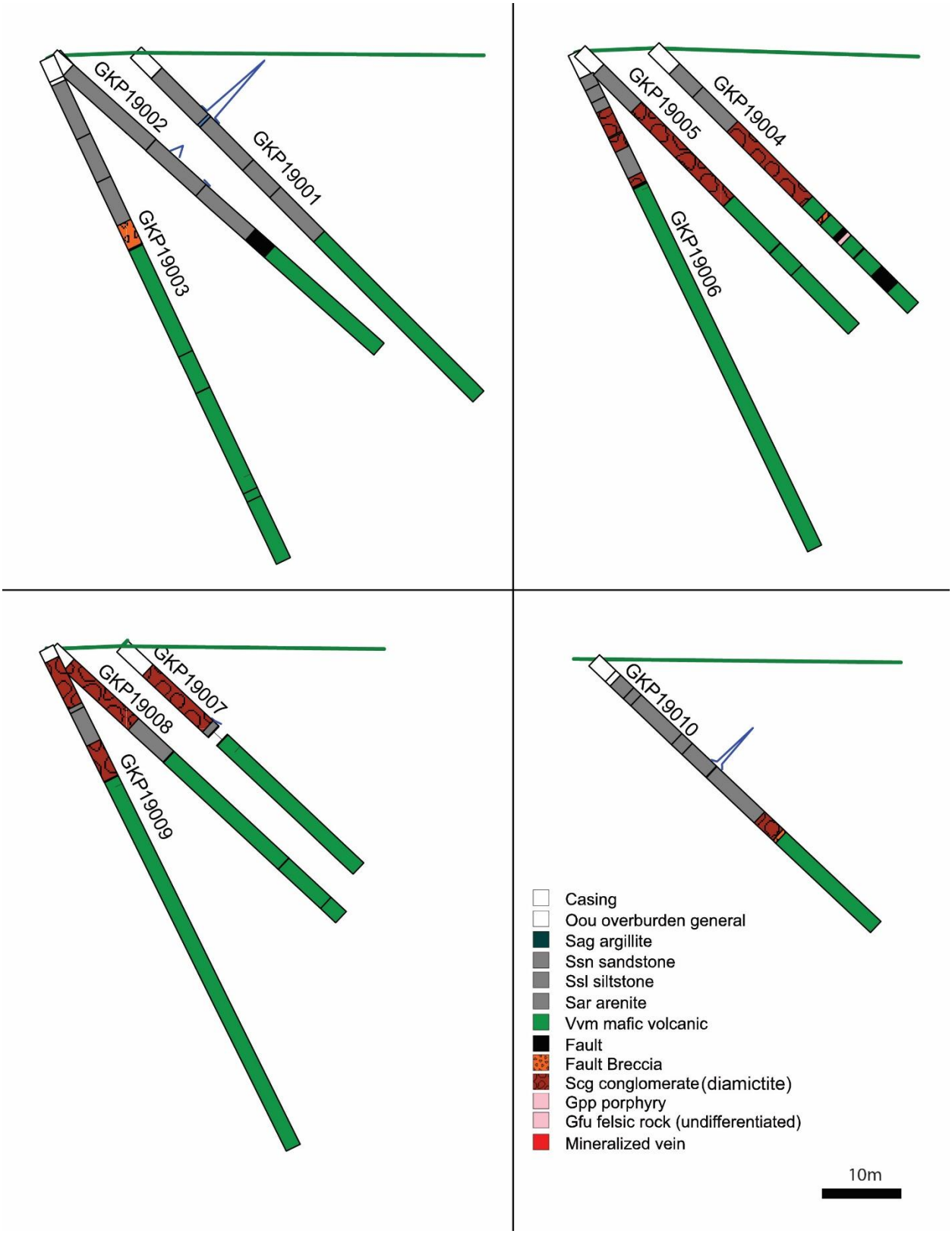


Figure 6: North-oriented cross sections of holes GKP001 through GKP010. Section lines are shown as yellow lines in Figure 5.

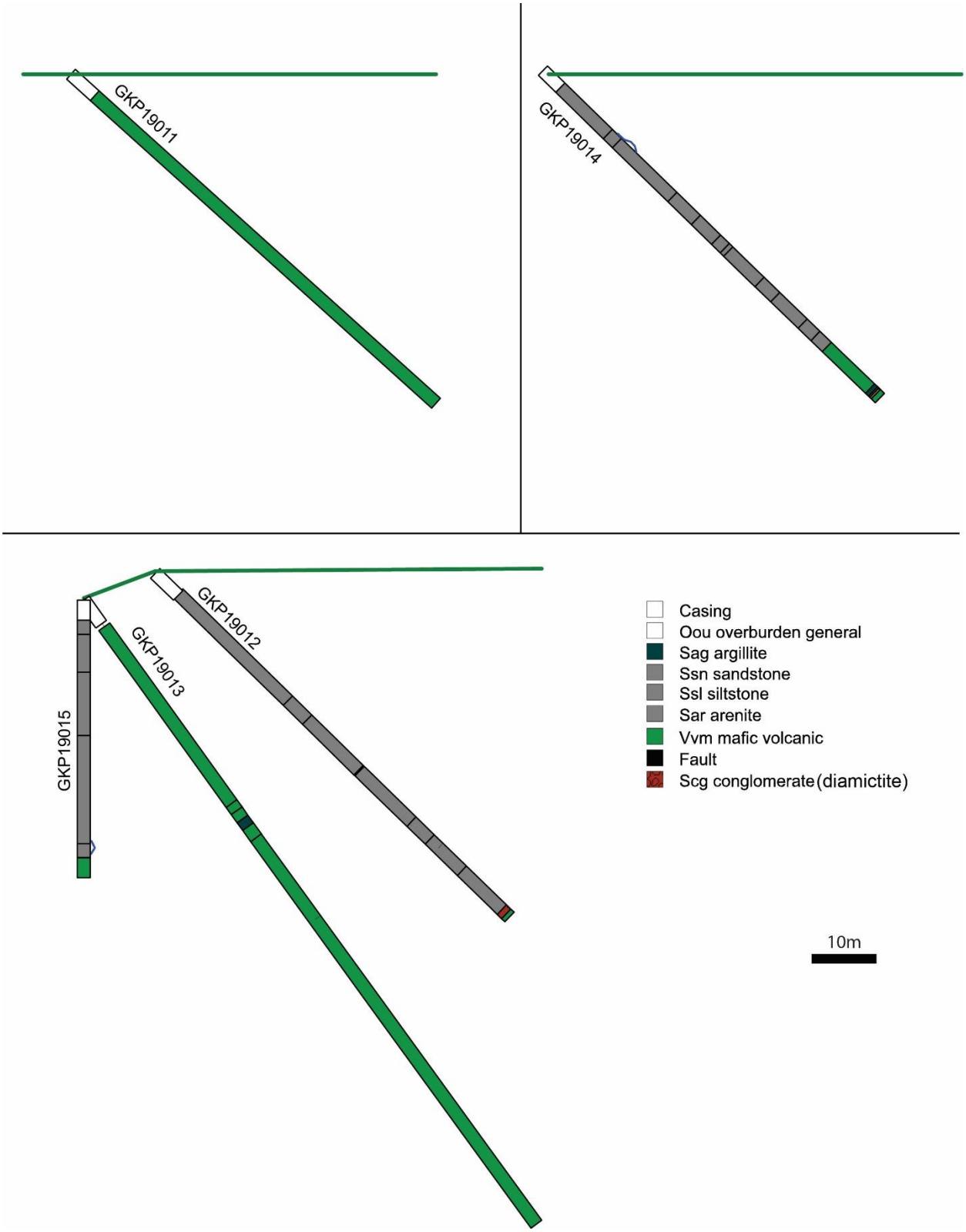


Figure 7: North-oriented cross sections of holes GKP011 through GKP015. Section lines are shown as yellow lines in Figure 5.

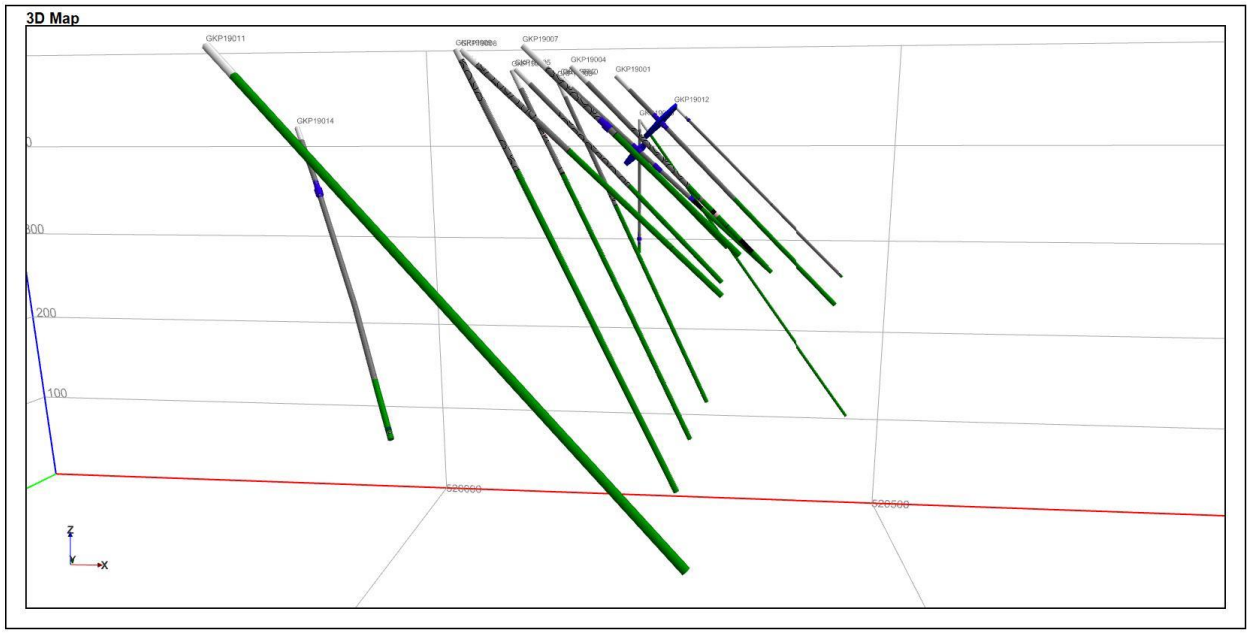


Figure 8: North-oriented view of the Kilpatrick drill holes and cobalt intercepts (blue discs). The lithology legend is in Figures 6 and 7.

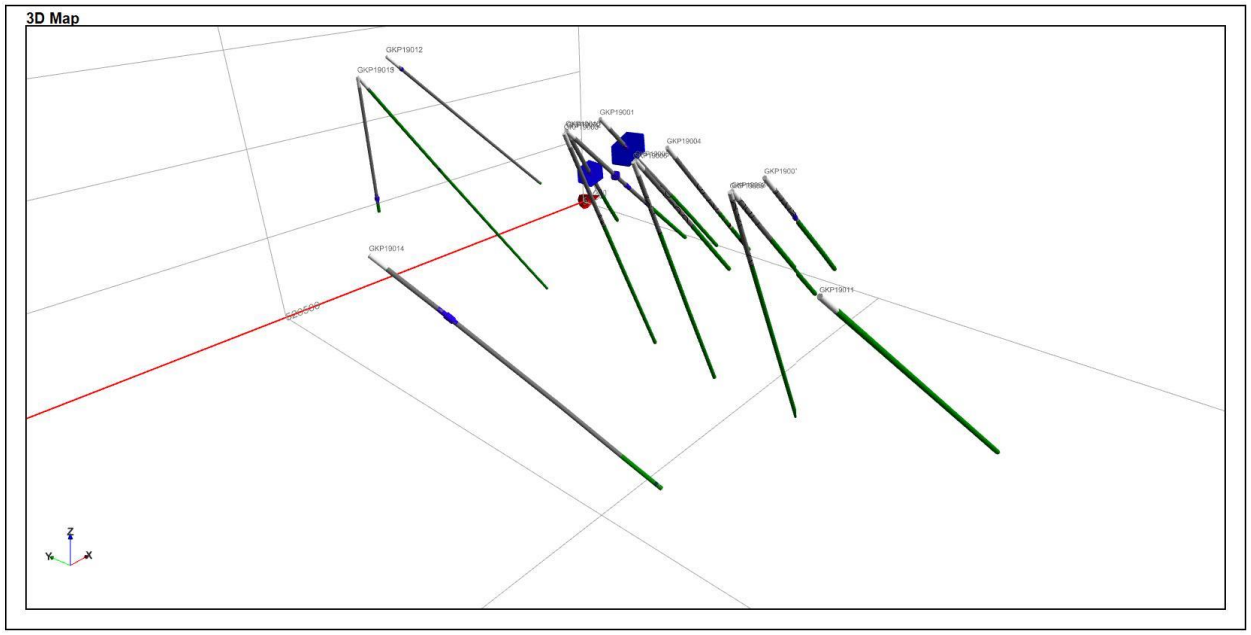


Figure 9: Northeast-oriented view of the Kilpatrick drill holes and cobalt intercepts (blue discs). The lithology legend is in Figures 6 and 7.

Geochemistry

The cobalt veins at Kilpatrick are marked by high arsenic content and geochemically anomalous nickel (Table 1). Many of the metallic elements reach maximum values at or above ore-grades, but always over small intervals. A correlation matrix of metals (Table 2) shows that cobalt strongly correlates with nickel, arsenic, and antimony, which reflects the elemental composition and type (arsenide) of the ore mineralogy. Silver correlates moderately to strongly with copper, zinc, lead, and molybdenum, but none of those elements correlates strongly with cobalt in vein zones (Table 2). A major element correlation matrix (Table 3) shows that cobalt does not strongly correlate with calcium, sodium, potassium, iron, magnesium, or titanium, but some of those elements may be enriched or depleted in the rocks adjacent to the cobalt bearing veins, which would reflect an alteration pattern associated with the mineralization. Cobalt has a weak correlation with sulfur which indicates the mineral phase of the ore mineralogy contains some sulfur.

Table 1: Summary statistics for select elements at the Kilpatrick occurrence.

Element	Minimum	Maximum	Mean	Median	Range	MedianDevMedian	StandardDeviation	Percentile25	Percentile50	Percentile75	Percentile90
Ag_ppm	0.02	7.34	0.27	0.12	7.32	0.07	0.61	0.07	0.12	0.24	0.53
As_ppm	0.2	102500	481.78	14.3	102499.8	10.1	5709.51	6.5	14.3	33.7	117
Ba_ppm	10	730	227.28	250	720	80	120.36	145	250	320	360
Bi_ppm	0.01	538	3.74	0.21	537.99	0.145	33.08	0.0925	0.21	0.4	1.578
Co_ppm	3.9	25500	191.63	39.3	25496.1	22.7	1493.52	20.3	39.3	69.2	123
Cr_ppm	2	4280	365.46	71	4278	25	735.27	56	71	229	1260
Cu_ppm	1	2830	194.99	73.2	2829	68.5	339.12	12	73.2	205	490
Fe_%	0.49	14.75	4.48	2.96	14.26	1.81	3.41	1.67	2.96	7.88	9.77
Mn_ppm	89	2860	654.18	320	2771	162	566.44	197	320	1260	1500
Mo_ppm	0.05	602	5.53	1.34	601.95	0.54	31.99	0.91	1.34	1.98	6.65
Pb_ppm	0.5	4970	76.48526	10.2	4969.5	4.3	384.722067	6.8	10.2	16.3	31.9
Ni_ppm	0.2	29000	339.17	65.8	28999.8	42.8	1771.95	30.2	65.8	160.5	893
S_%	0.01	4.77	0.23	0.08	4.76	0.04	0.57	0.05	0.08	0.14	0.36
Sb_ppm	0.06	355	1.64	0.29	354.94	0.13	17.59	0.19	0.29	0.47	0.87
Sn_ppm	0.2	8	0.82	0.7	7.8	0.2	0.74	0.5	0.7	1	1.2
Ti_%	0.07	1.17	0.28	0.193	1.1	0.064	0.21	0.153	0.193	0.334	0.645
U_ppm	0.1	11.9	2.019728	1.9	11.8	1.5	1.681624193	0.2	1.9	3.2	4
V_ppm	14	490	98.19	64	476	29	79.46	41	64	143	243
W_ppm	0.1	6.1	0.53	0.4	6	0.1	0.56	0.3	0.4	0.6	0.9
Zn_ppm	4	9160	153.35	27	9156	17	665.76	16	27	96	157

Table 2: Pearson product-moment correlations between metal elements at the Kilpatrick prospect. Important values are denoted in bold.

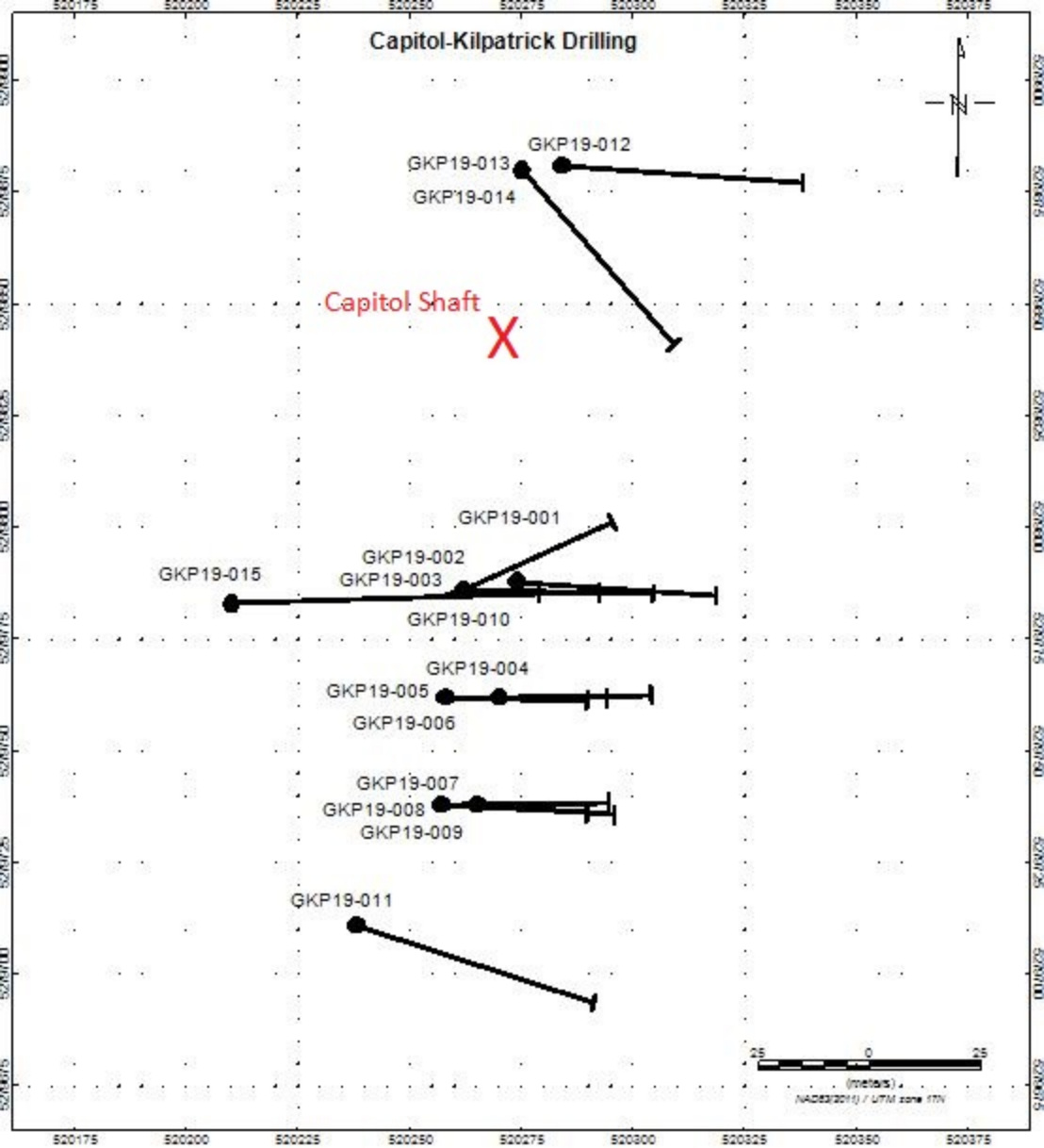
Field	As_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Mg_%	Mn_ppm	Mo_ppm	Ni_ppm	Pb_ppm	S_%	Sb_ppm	Sn_ppm	Ti_%	U_ppm	V_ppm	W_ppm	Zn_ppm
Ag_ppm	0.05	0.06	-0.10	**0.33**	0.05	-0.11	0.01	**0.64**	0.01	0.66	0.55	0.06	0.24	-0.03	0.15	0.04	0.31	0.21
As_ppm		**0.99**	-0.03	-0.04	-0.04	-0.03	-0.05	0.17	0.97	-0.01	0.15	0.96	0.01	-0.05	0.09	-0.03	-0.01	-0.01
Co_ppm			-0.02	**-0.05**	-0.03	-0.03	-0.04	0.20	**0.97**	-0.01	0.15	**0.94**	0.01	-0.05	0.10	-0.03	-0.01	-0.02
Cr_ppm				-0.09	0.47	0.92	0.54	-0.06	0.18	-0.03	-0.04	-0.03	-0.18	-0.03	-0.43	0.12	-0.05	0.02
Cu_ppm					0.06	-0.09	0.04	-0.04	-0.07	0.20	0.25	-0.03	0.15	0.11	-0.05	0.16	0.15	0.07
Fe_%						0.66	0.92	-0.06	0.07	0.20	0.27	-0.03	0.19	0.80	-0.63	0.87	0.11	0.21
Mg_%							0.67	-0.07	0.18	-0.04	-0.03	-0.03	-0.12	0.20	-0.52	0.35	-0.07	0.04
Mn_ppm								-0.05	0.07	0.13	0.20	-0.04	0.04	0.70	-0.70	0.80	0.08	0.23
Mo_ppm									0.13	0.05	0.05	0.17	0.04	-0.05	0.35	-0.04	0.02	-0.01
Ni_ppm										-0.02	0.14	0.90	-0.03	-0.05	-0.01	-0.01	-0.02	-0.01
Pb_ppm											0.72	0.02	0.26	0.06	-0.13	0.15	0.45	0.43
S_%												0.16	0.65	0.15	-0.18	0.23	0.33	0.52
Sb_ppm													0.02	-0.04	0.06	-0.03	0.01	0.00
Sn_ppm														0.23	0.08	0.23	0.22	0.31
Ti_%															-0.45	0.93	0.14	0.19
U_ppm																-0.53	-0.01	-0.20
V_ppm																	0.18	0.21
W_ppm																		0.12
Zn_ppm																		

Table 3: Pearson product-moment correlations between cobalt and major elements. Cobalt does not correlate strongly with any major element which verifies field observations that cobalt does not occur with substantially altered hosted rocks.

Element	Ca_%	Co_ppm	Fe_%	K_%	Mg_%	Na_%	S_%	Ti_%
Al_%	-0.55	0.01	-0.46	0.70	-0.82	0.82	-0.12	0.00
Ca_%		-0.05	0.80	-0.82	0.48	-0.73	0.32	0.64
Co_ppm			-0.03	0.04	-0.03	0.01	0.15	-0.05
Fe_%				-0.85	0.66	-0.80	0.27	0.80
K_%					-0.71	0.80	-0.20	-0.60
Mg_%						-0.86	-0.03	0.20
Na_%							-0.24	-0.37
S_%								0.15
Ti_%								

Recommendations

1.) Drill the IP anomaly adjacent to the high-grade cobalt intercepts. This anomaly is ~150m long, so a best-case scenario resource potential—assuming a 2m wide and 100m deep vein—is ~100,000 of 1% cobalt.
2.) Test the remaining IP anomalies with one or two holes each.
3.) Attempt to find areas with sheeted cobalt veins, as thin, single veins are not likely to contain economic amounts of cobalt.
4.) Focus future exploration at Kilpatrick on the fine-grained clastic sediments, and avoid areas dominated by Gowganda formation diamictites as they appear to be unfavorable host rocks.
5.) Attempt to identify growth faults (using basement offsets) around the vein systems—this may guide exploration into different directions.
6.) Consider exploring the Archean basement near Kilpatrick for massive sulfides that may contain McAra-style cobalt deposits. Several EM anomalies south of Kilpatrick should also be followed up for this type of cobalt mineralization.


Capitol-Kilpatrick Drilling
GKP19-012
GKP19-013
GKP19-014
Capitol Shaft
GKP19-001
GKP19-002
GKP19-003
GKP19-015
GKP19-010
GKP19-004
GKP19-005
GKP19-006
GKP19-007
GKP19-008
GKP19-009
GKP19-011
25
0
25
(meters)
NAD83(2011) / UTM zone 17N
520175
520200
520225
520250
520275
520300
520325
520350
520375