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Ontario

ASSESSMENT REPORT

of

UREM Geophysics and Prospecting

on the

North Nipigon Property

Thunder Bay District,
Ontario
NTS: 52I
Latitude 50° 30’ 38.2” N, Longitude 88° 49’ 5.6” W
(NAD 83, Zone 16N)

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September 8th, 2017

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1 Introduction

Vale Canada Limited (VCL) acquired the North Nipigon claims via staking during the fall of 2015. The claims were acquired as a result of target identification from detailed airborne magnetic data and reconnaissance level prospecting completed by VCL in late 2014 and early 2015. The property is situated to the north of Lake Nipigon along the northern extent of the Nipigon embayment, a Mid-Continental Rift (MCR) related feature that extends north from Lake Superior. The target in this region is a primitive, picritic intrusive of early MCR-age that may or may not be directly associated with the Nipigon Sills. The presence of large volumes of MCR-aged rocks in this area highlights it as a region of significant interest, which is further emphasized by the limited geological work within the target area.

This report details work completed by VCL on the North Nipigon property, which consisted of a universal receiver electro-magnetic (UREM) geophysical survey during late fall 2015 and a follow-up mapping and prospecting program during the summer of 2016. The UREM program consisted of 24.3 line-km of time-domain EM designed to test several magnetic and geological anomalies that were identified from previous work conducted by VCL in the region. To follow-up on EM conductors identified from the UREM survey a five day exploration program was carried out by a team of Vale geologists. This program was designed to map over areas of EM conductors in an attempt to identify their source and to further prospect the property. In total 54 geological stations were collected and 25 rocks were submitted for geochemical analysis. The total expenditures for both programs combined, pre-tax was $215,382.07. A breakdown of these expenditures can be found in Appendix 2.

2 Property Description, Location and Access

The North Nipigon property is 100% owned by Vale Canada Limited and is located in the Thunder Bay District, north of Lake Nipigon in west-central Ontario (Figure 1). The property is approximately 30 km northeast of the town of Armstrong, centered at 50° 30’ 38.2’’ N latitude and 88° 49’ 5.6’’ W longitude on map sheet NTS 52I (Figure 2). The property is comprised of eight contiguous mining claims, totaling 82 individual units covering an area of 1,312 hectares (Figure 3). Additional information regarding the individual claims can be found in Table 1. The property can only be accessed by helicopter via the town of Armstrong. Access within the property is difficult due to heavy vegetation and is achieved either by foot or helicopter.

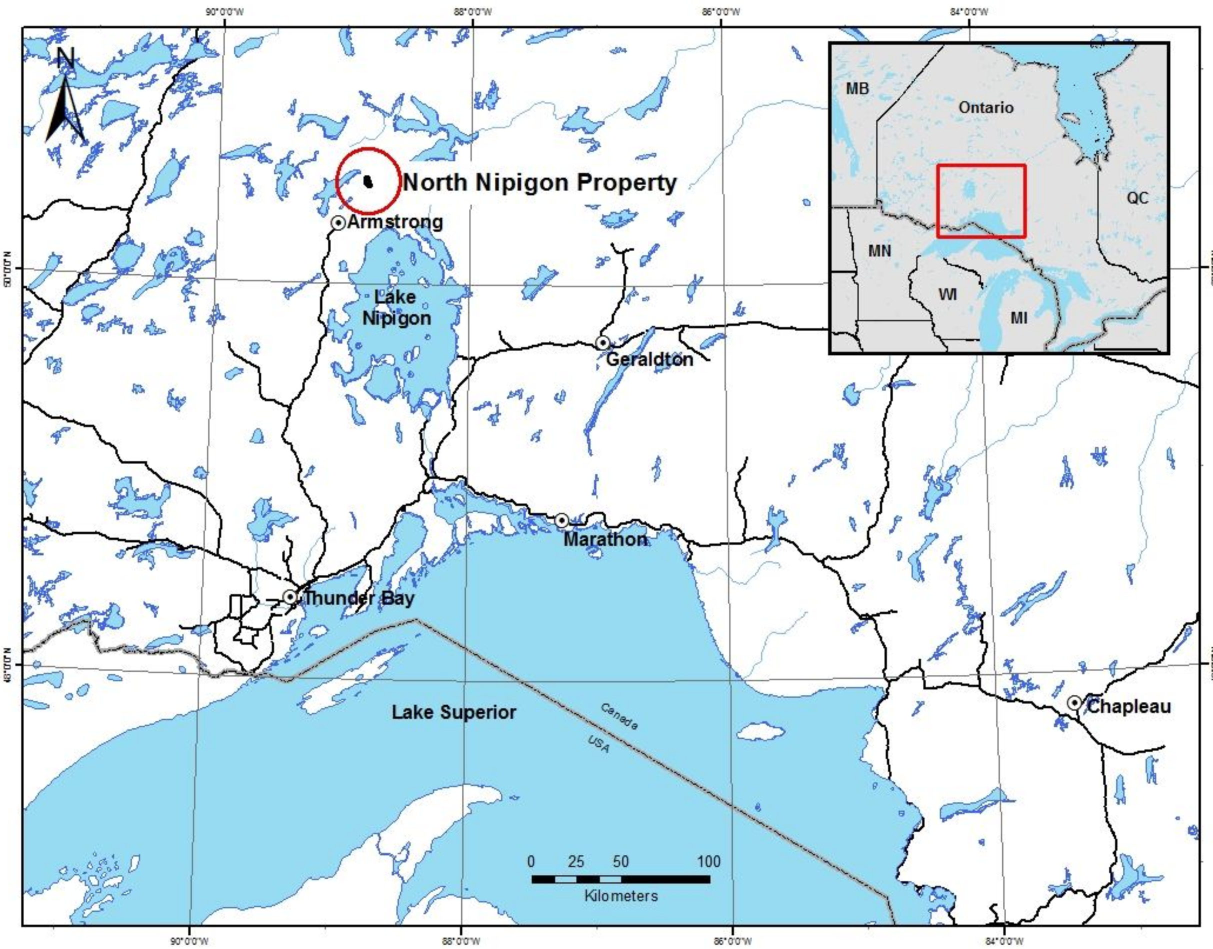

Figure 1: Regional location map for the North Nipigon Property relative to Lake Superior.

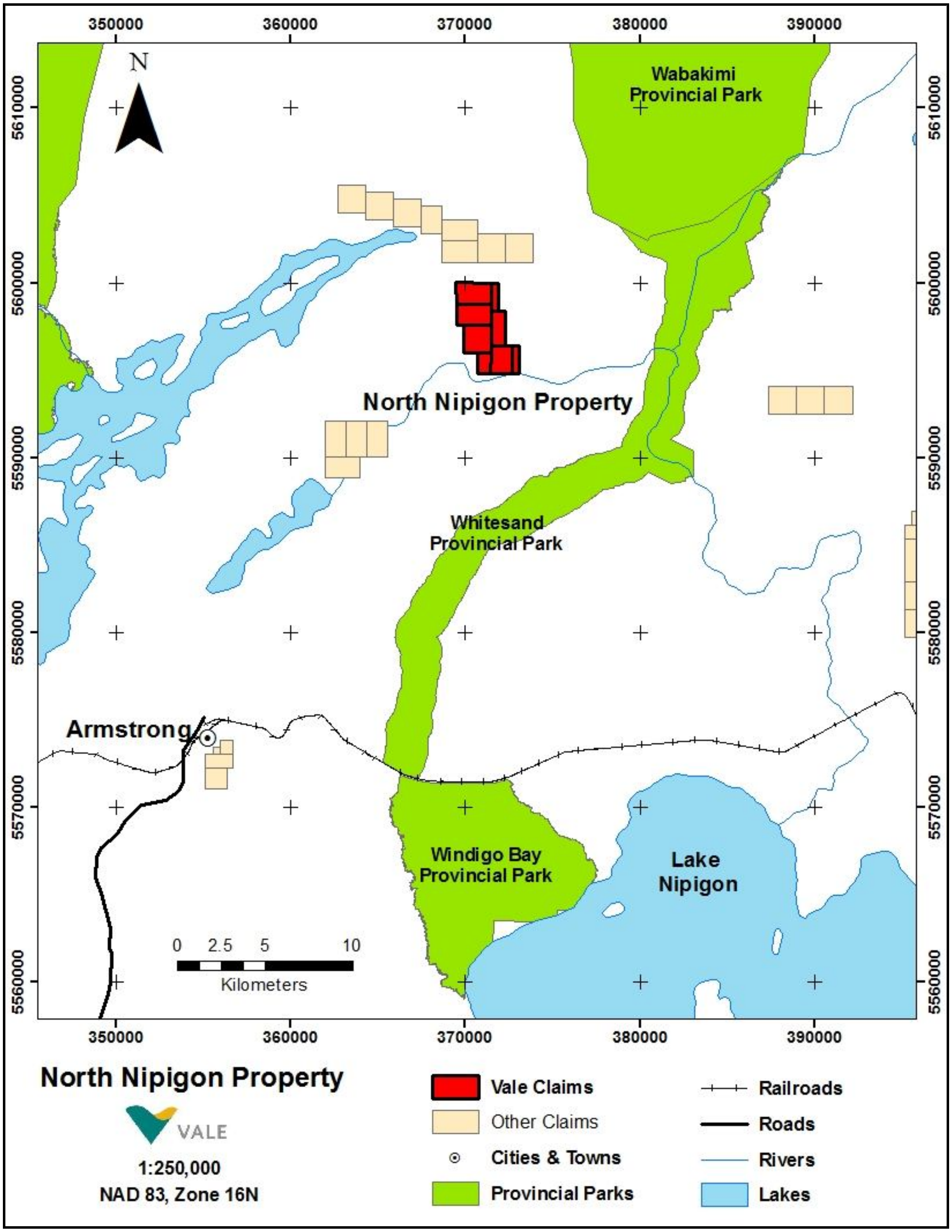

Figure 2: Map showing the location, size and shape of the North Nipigon claim block, and the competitor activity in the Armstrong area.

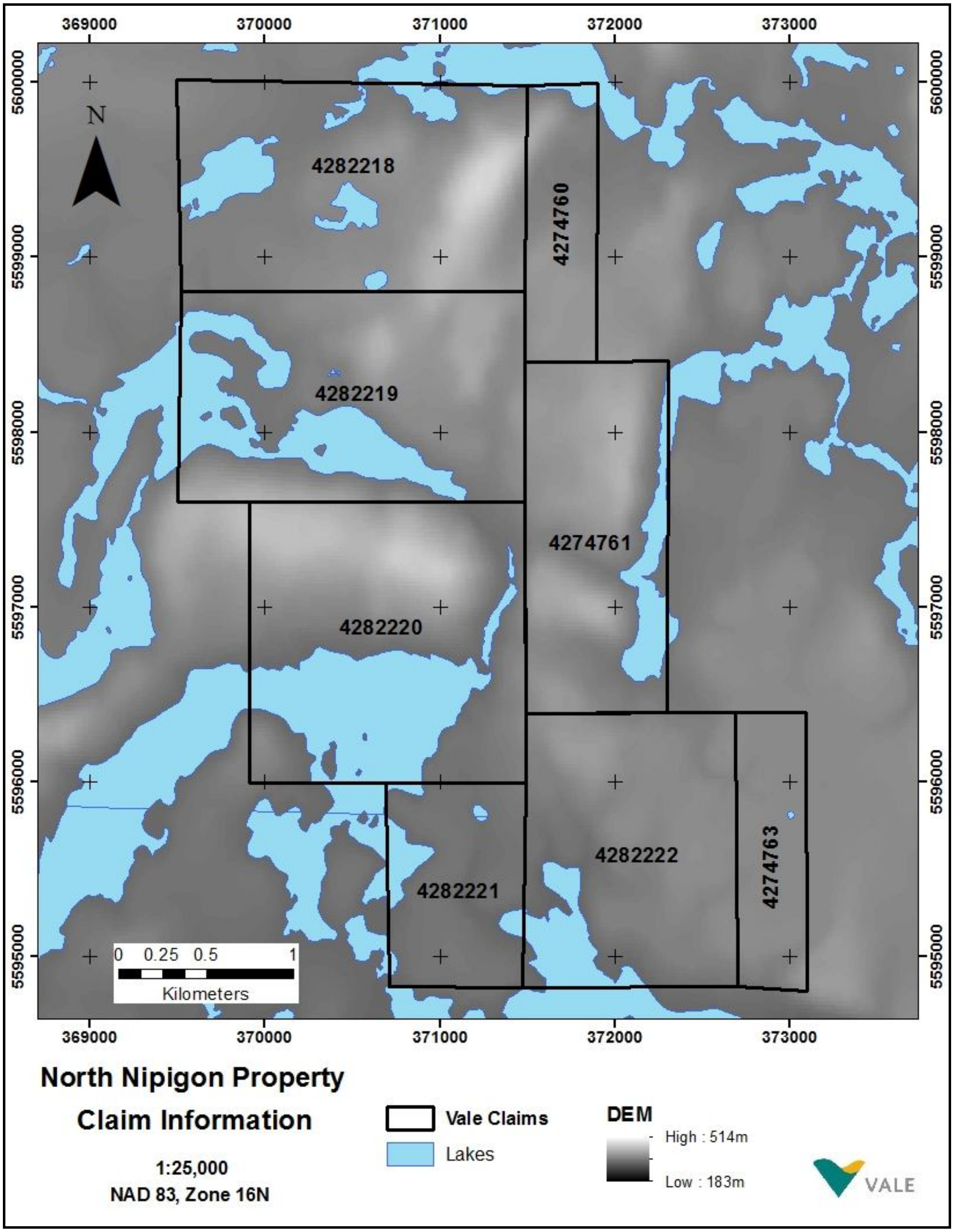

Figure 3: Map showing the claim status of the North Nipigon claim block, background is a digital elevation model (DEM), elevation ranges from 300m in swampy low lands to as high as 430m on top of the Nipigon Sills.

Table 1: North Nipigon property claim information.

Claim No.	Parties	Grant Date	Expiry Date	Claim Units	Hectares
TB4274760	Vale Canada Limited (100.00%)	20/11/15	20/11/17	4	64
TB4274761	Vale Canada Limited (100.00%)	20/11/15	20/11/17	10	160
TB4274763	Vale Canada Limited (100.00%)	20/11/15	20/11/17	4	64
TB4282218	Vale Canada Limited (100.00%)	11/09/15	11/09/17	15	240
TB4282219	Vale Canada Limited (100.00%)	11/09/15	11/09/17	15	240
TB4282220	Vale Canada Limited (100.00%)	11/09/15	11/09/17	16	256
TB4282221	Vale Canada Limited (100.00%)	11/09/15	11/09/17	6	96
TB4282222	Vale Canada Limited (100.00%)	11/09/15	11/09/17	12	192

3 Geological Setting

3.1 Regional Geological Setting

The Mid Continent Rift (MCR) system is a significant feature in the lithospheric evolution of continental North America, distinctly visible as a broad gravity and aeromagnetic anomaly that passes through six American states and extending north into the Province of Ontario. The arcuate shape of the rift extends more than 2,000 km and represents enormous volumes of igneous rock that reach thicknesses of greater than 15 km at the center of Lake Superior (Hutchinson et al., 1990). Much of the rift is now buried by Paleozoic rocks along a large portion of its strike length, with most of its outcropping occurring around Lake Superior (Figure 4).

Hutchinson et al. (1990) suggest that the MCR can be explained by volcanism associated with rifting above a large thermal anomaly in the sub-lithospheric mantle. They suggest that this broad thermal feature was created by a mantle plume termed the Keweenaw hot spot. This plume caused doming of the pre-existing continental lithosphere, which was stretched by a factor of 3-4 times above the asthenospheric mantle. U-Pb geochronology indicates that the subsequent magmatism evolved in several distinct stages and the vast majority of magmatism occurred between 1,109 and 1,086 Ma (Miller, 1996; Vervoort et al. 2007).

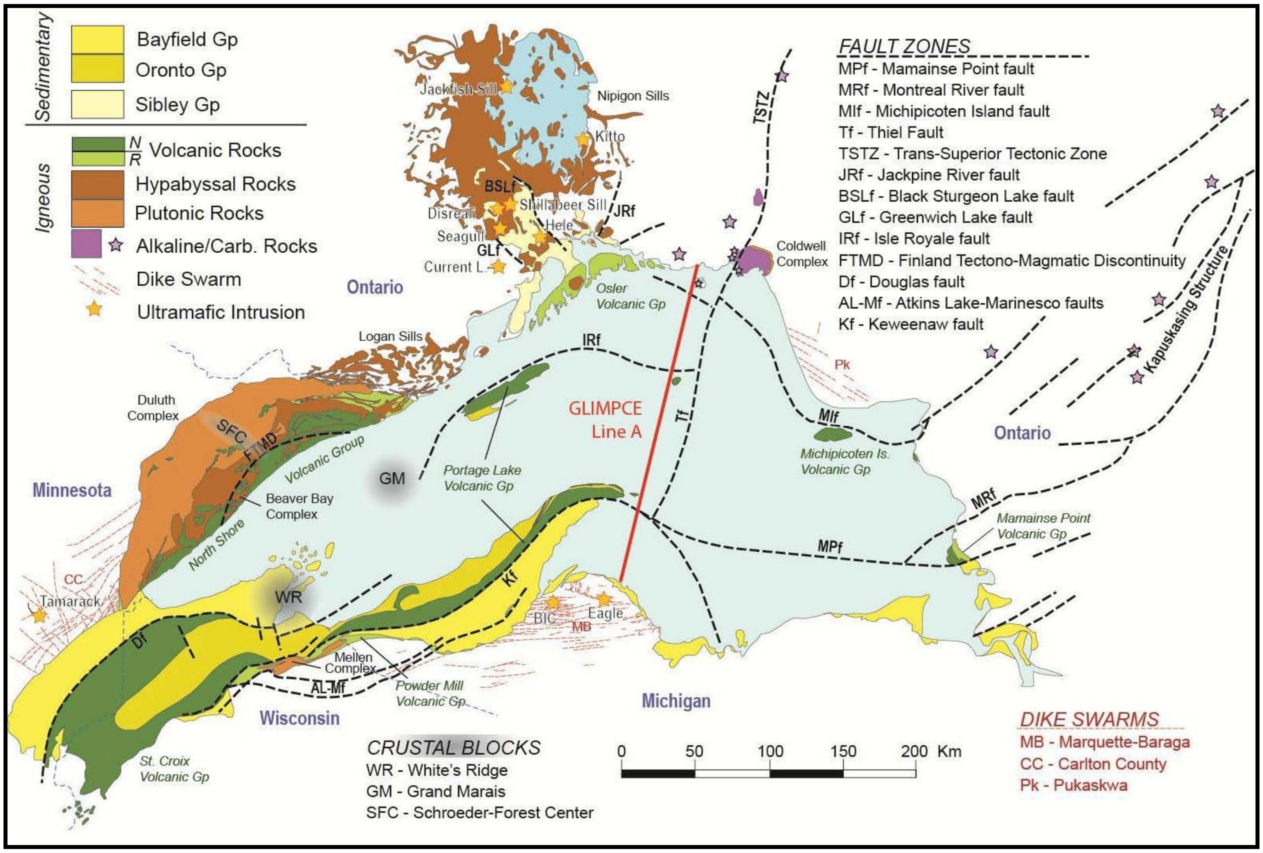

Figure 4: Geology and structural features of the Mid Continent Rift in the Lake Superior region (Miller and Nicholson, 2013).

The greatest rates of flood basalt eruption appear to have occurred at the beginning of the recorded activity (~1,108 Ma) and decreased over 1-3 Ma during a period of reversed magnetic polarity (Davis and Green, 1997). Further, magnetic field modelling by Mariano and Hinze (1994) in the eastern Lake Superior region shows that the majority of the basaltic section (75%) is reversely magnetized and therefore likely part of this early phase of volcanism. Davis and Green (1997) constrained the age of the reversed- to normal-magnetic polarity transition to between 1,105 +/- 2 and 1,102 +/- 2 Ma. Much of the volcanic activity after this time was during a period of normal magnetic polarity. Of importance, both the Eagle and Tamarack intrusions (Ni-Cu-PGE deposits) are described as having a remnant reversed magnetic polarity, with the ages of each being 1,107.3 +/- 3.7 Ma (Ding et al., 2010) and 1,105.6 +/- 1.2 Ma (Goldner, 2011), respectively.

Having the bulk of the volcanic rocks erupted over a very short time is consistent with melts generated by decompression of passively upwelling mantle in an extensional environment (Hutchinson et al., 1990). A resurgence of volcanic activity from 1,100 Ma to 1,094 Ma, within the western Lake Superior region, may have been caused by further extension within the rift basin. The North Shore Volcanic Group, the Portage Lake Volcanics and most of the Duluth Complex were emplaced during this time, currently forming the largest areal exposure of MCR related rocks (Davis and Green, 1997).

The Nipigon embayment, which extends north of Lake Superior for approximately 150 km hosts a series of sills formed during Keweenawan magmatism. These Nipigon Sills were emplaced within sedimentary rocks of the Sibley Group, a 1,339 +/- 33 Ma sedimentary sequence that formed in an elongate basin (Sibley Basin) within the Nipigon embayment (Franklin et al., 1980). The sills, dated at 1,112 Ma, are thought to have been emplaced along a series of pre-existing north, northwest and northeast trending faults that were formed prior to Keweenawan magmatic events. It is suggested that the presence of these large sills, rather than dikes, indicates that the Embayment was not formed as a result of extensional tectonics (i.e. failed arm) related to the Rift. At least four MCR-aged mafic to ultramafic intrusions (Current Lake, Disraeli, Seagull, and Hele) associated with the Embayment are located south of Lake Nipigon and the Kitto intrusion is located just east of the lake (Figure 4). Other poorly exposed mafic to ultramafic bodies include Jackfish, Shillabeer, Kama Hill and Nipigon Bay (Hart and MacDonald, 2007).

The Q7a property is located within the central portion of the Quesnellia Terrane which is host to numerous porphyry copper deposits, most notably New Afton, Ajax, Highland Valley, Mt. Milligan, Copper Mountain, and Kwanika (Figure 4). The Quesnellia Terrane, often termed the Quesnel Trough is comprised of a belt of Upper Paleozoic to Lower Jurassic volcanic rocks and intrusions of an island arc terrane which were structurally emplaced along the margin of Ancestral North America during the Cretaceous. The main volcano-sedimentary package in the central portion of the Quesnel Trough, which is where the Q7a property is located, is the Takla Group. The Takla Group consists of calc-alkaline to alkaline volcanic rocks which range in composition from andesite to rhyolite, and clastic sedimentary rocks. At least three phases of intermediate to felsic calc-alkalic to alkalic plutons and plugs intrude these rocks and porphyry-related mineralization can be associated with each event.

3.2 Local Geology

The North Nipigon area is mostly situated within the Wabigoon Subprovince, but also crosses into the English River Subprovince to the north. The Wabigoon Subprovince is a 900 km long, east-trending granite-greenstone terrain that is bounded to the north by Winnipeg River and English River Subprovinces and to the south by the Quetico Subprovince. The Wabigoon is characterized by metavolcanic and subordinate metasedimentary rocks surrounded and cross-cut by various granitoid batholiths. The Caribou Lake greenstone belt, located in eastern Wabigoon, contains extensive mafic flows and is host to several mineral occurrences including the low grade Ni-Cu-PGE Junior Lake deposit (Blackburn et al., (1991). The English River Subprovince is a linear belt extending 800 km from east to west, and is composed predominantly of highly metamorphosed and migmatized clastic sedimentary rocks, with minor metavolcanic rocks in the Melchett Lake and Separation Lake greenstone belts (Breaks, 1991). Nipigon sills, and potentially dikes, are found throughout the North Nipigon area and overlie both the Wabigoon and English River Subprovinces.

Although outcrop exposure throughout the North Nipigon property is of minimal extent the sporadic outcropping that does exist provides enough information to infer the geology of the property. The topography of the property is generally low-lying covered by thick vegetation and swamps. However, throughout the property there are small areas of higher elevation and outcrops can be found leading up to these elevated areas. Mapping has revealed that the geology consists of Archean aged metavolcanic and metasedimentary rocks which have possibly been overlain by sedimentary rocks of the Sibley Group and intruded by MCR related gabbroic Nipigon Sills and a Proterozoic gabbroic dike of unknown age. A more detailed property geology is explained in section 5.5.

4 Previous Work Completed by Vale Canada Limited

VCL has been actively exploring in the MCR for the past several years in an attempt to discover new MCR-aged magmatic sulfide deposits comparable to Eagle and Tamarack. Although exploration has been ongoing throughout the entire MCR district for several years, work focused towards the potential of the Nipigon embayment has only been seriously attempted since 2014.

In 2014 VCL completed a very regional-scale reconnaissance exploration program throughout the Nipigon embayment following up on interesting magnetic anomalies, AEM conductors and geology. It was the recommendation of this program to complete more detailed airborne magnetics in areas of high interest to significantly improve the magnetic resolution of coarser, regional magnetic data in order to discern more lithological and structural detail. This information was critical for the identification of targets as MCR-related chonolith-type mafic-ultramafic intrusions often have a very small, reversely polarized magnetic footprint in plan view.

In December 2014 VCL flew a detailed magnetic survey north of Lake Nipigon. The survey consisted of 5,500 line-km and was flown at 100 m line-spacing at an altitude of approximately 80 m. The survey was divided into two areas; the first covered an area within the Caribou Lake Greenstone Belt that contained mapped Nipigon Sills and several AEM anomalies, while the second area was south of the greenstone belt in an area just to the north of lake Nipigon which contained several mapped Nipigon Sills and possible dikes.

The aeromagnetic survey was successful in mapping out the extent of several Nipigon Sills in the region and identifying several linear trends within the Archean basement rocks. Most of the Nipigon Sills are strongly magnetic, or contain strongly magnetic layers and their outline showed very clearly in the detailed mag. Several features, in particular within the greenstone belt show clear repletion of almost parallel lines within Archean basement rock. These often match up with what are interpreted to be formational EM conductors and most likely represent banded iron formation or sulfide-rich strata within the Archean basement. Most importantly the survey identified several anomalies that are generally isolated, circular to ellipsoidal features far removed from the Nipigon Sills and out of sync with Archean trends. It was determined that these anomalies provide the best potential to be associated with a MCR-aged nickel sulfide system.

During the summer of 2015 VCL completed a small exploration program to investigate magnetic anomalies identified from the 2014 survey as well as several other areas that contained strong EM conductors. The area containing the North Nipigon property was included in this and was investigated over several days by a team of two Vale geologists conducting prospecting and sampling work. Geological data was collected from multiple field stations and a total of 11 rock samples were collected from the area and submitted to ALS Minerals for geochemical analysis.

Prospecting showed that the strong, reversely polarized magnetic anomalies in the area were caused by Nipigon Sills, and that several of the EM conductors could be explained by concentrations of disseminated pyrite mineralization within Archean metasedimentary rocks. However, several outcrops were identified that consisted of gabbroic rock which was mineralogically and geochemically different than the Nipigon gabbro and interpreted to be Proterozoic in age. Closer inspection of the magnetic data suggested that these rocks are located within a faint linear trend bearing towards the southeast which also has several EM conductors associated with it.

This was important as it represented a possible dike-like target of Proterozoic gabbro with EM conductors associated with it. Additional work would be required to assess the potential of these gabbroic rocks and conductors for MCR-associated mineralization. In September of that year VCL staked a total of five mineral claims (64 units) over the target area. Following the staking, a work plan was submitted to the MDNM and consultation was conducted with the First Nation groups in the area. The work plan was granted from the MNDM on November 5th after no issues or concerns were raised by the First Nations or the MNDM. The work completed in 2014 and 2015 exploration programs have not been filed for assessment.

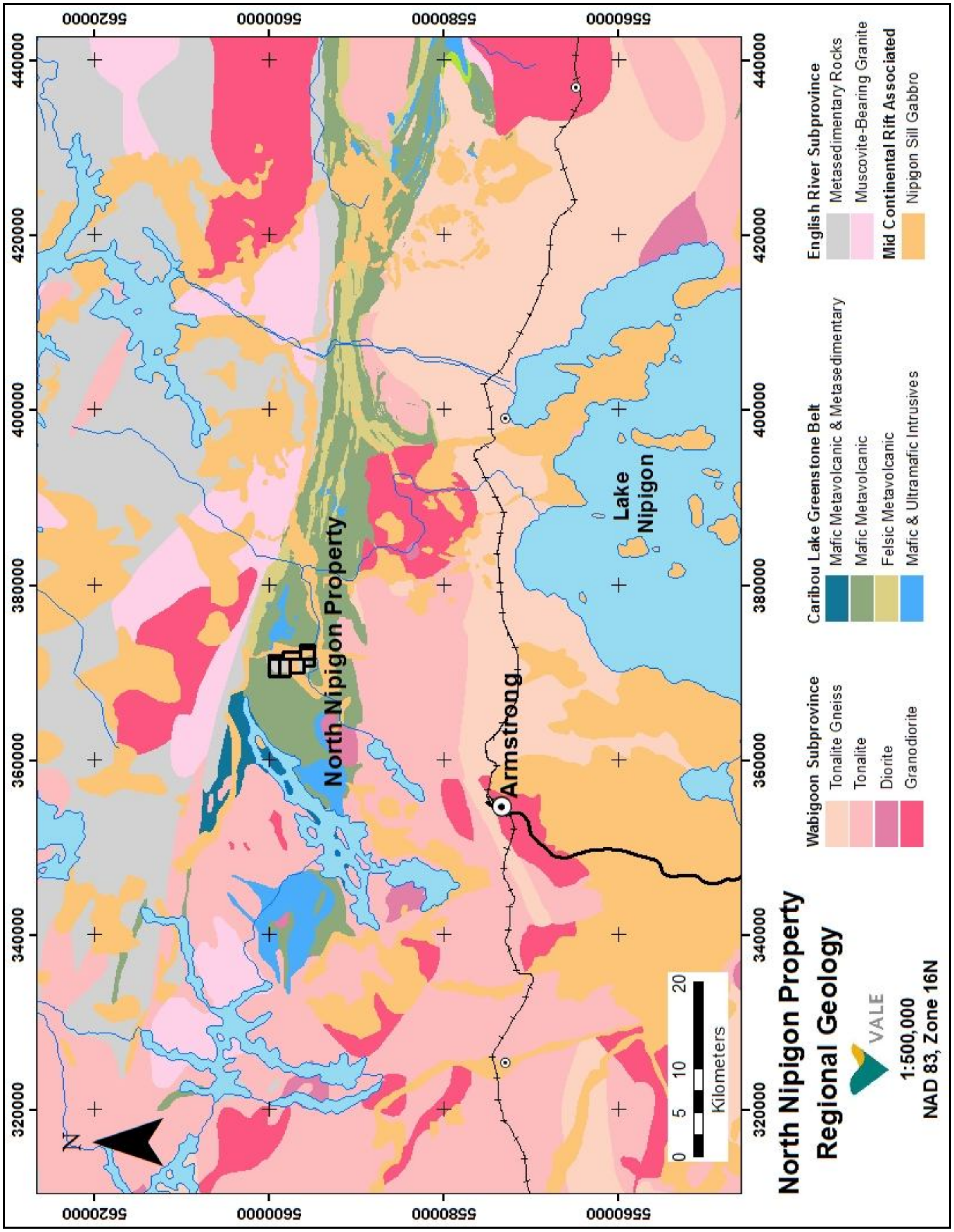

Figure 5: Regional geology map for the North Nipigon Property. Geology is from the Ontario Geological Survey's 1:250,000 geological map of Ontario.

5 Exploration Program

This report details work completed by VCL on its North Nipigon property during two separate exploration programs. The first program took place from November 6th to December 1st, 2015 and consisted of a geophysical survey designed to test magnetic and geological targets that were identified from previous field work conducted in the area. The second program took place from June 1st to 7th, 2016 and consisted of a five day mapping and prospecting program designed to evaluate EM conductors identified from the 2015 survey and to further explore and evaluate the property.

An Exploration Plan (PL-15-10512) outlining the proposed geophysical survey and line-cutting was submitted to the Ministry of Northern Development and Mines on October 2nd, 2015. The plan was reviewed and Aboriginal consultation with the Whitesand First Nation followed. The plan was approved by all parties with a start date for exploration activities commencing on November 5th, 2015, a copy of the approval letter can be found in Appendix 3. The work plan only included the original five claims that were recorded on September 11th, 2015 (4282218 to 4282222). All of the work completed during the geophysics program occurred on the original five claim blocks with no line-cutting or geophysical surveys taking place on the remaining three claims (4274760, 4274761 and 4274763) which were recorded on November 20th, 2015 during the line-cutting program to expand the property to the east.

5.1 UREM Geophysical Survey

The geophysical survey that was completed over a large portion of the North Nipigon property was designed to target portions of a linear magnetic feature, trending through the property to the southeast to see if it had EM conductors associated with it. The linear feature has several historic airborne EM (AEM) anomalies perceived to be associated with it, and rock samples collected from the vicinity of this magnetic trend show that the rock is comprised of gabbro that is mineralogically and geochemically different than the gabbros of the Nipigon Sills which dominate the area.

Prior to the start of the survey, a grid totaling 28.4 line-km was cut by Haveman Brothers Exploration Services from Kakabeka Falls, Ontario. The grid was a necessity, as vegetation cover in the area was extremely dense and took 10 days, from November 6th to the 15th to complete. The property was divided into two separate grids, Northern and Southern respectively, connected by north-south tie lines (Figure 6). The two grids were located on very different magnetic environments within the claim block. A portion of the Northern grid appears to lie within the magnetic signature of a Nipigon Sill, while the southern grid appears to lie outside of that magnetic environment. The AEM anomalies also differ between the two grids. AEM anomalies in the Northern grid correspond to large regional-scale conductors. These conductors are over a km in strike length, and at least a half km in dip extent. While the conductors identified in the Southern grid appear smaller in scale, with very little background conductivity (Figure 6).

The grids were covered with a Universal Receiver Electro-Magnetic (UREM) Survey that was completed in 18 days from November 14th to December 1st. Geophysics was completed in-house by VCL utilizing Vale's Universal Receiver to collect all of the EM data. Data collection was completed by Forget Geophysics from Sudbury, Ontario. A total of 24.3 line-km of time-domain electro-magnetic (TDEM) data was collected from several different loop configurations. Each grid was surveyed with a large in-loop configuration, and every target identified in the survey was later confirmed with a separate survey using a smaller off-loop configuration (Figure 7).

5.2 Survey Results

Three targets were identified in the UREM data from this survey (Figure 7). One target lies within the Northern grid and the other two lie within the Southern grid. The northern target appears to be a large regional conductor, while the southern two targets appear to be isolated conductors. The large anomaly in the Northern grid was surveyed with the large off-loop to the west of the grid, while each anomaly in the southern grid was confirmed using individual 200 m x 150 m off-loops.

The identified targets have been labelled A, B, and C (Figure 7). Target A is the large regional conductor in the Northern grid. The target conductor spans the entire loop and is therefore at least 1,800 m in strike length. The conductor appears to reach the surface, and extends for at least 500 m down dip. There appears to be a bend in this target one third of the way down the conductor from the north. The northernmost portion of the conductor dips 50 degrees east-southeast, while the southern portion of the conductor dips at approximately 35 degrees east-northeast (Figure 8).

Target B is a smaller, isolated conductor that is at least 200 x 200 m in size (Figure 9). This conductor is very close to surface and dips steeply to the east. Target C is another small isolated conductor that is approximately 200 x 60 m in size (Figure10). This conductor also dips steeply to the east, but is situated approximately 180 m below the surface.

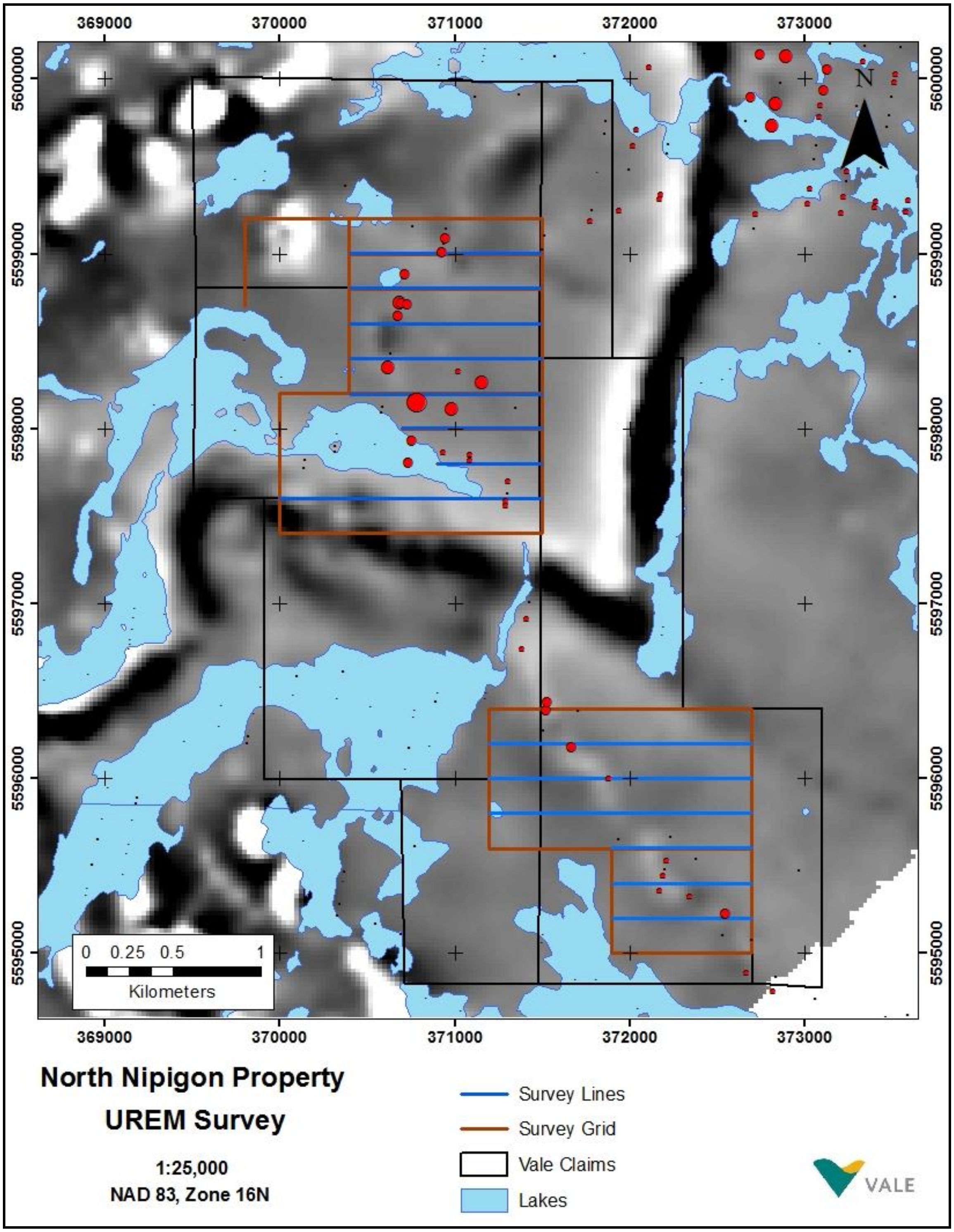

Figure 6: UREM survey grid with survey lines in blue and the remainder of the survey grid in red. Grid is overlain on a map of the vertical gradient of the total magnetic intensity from the 2014 airborne magnetic survey combined with AEM anomalies as red circles. Note the difference in magnetics and EM anomalies between the two grids.

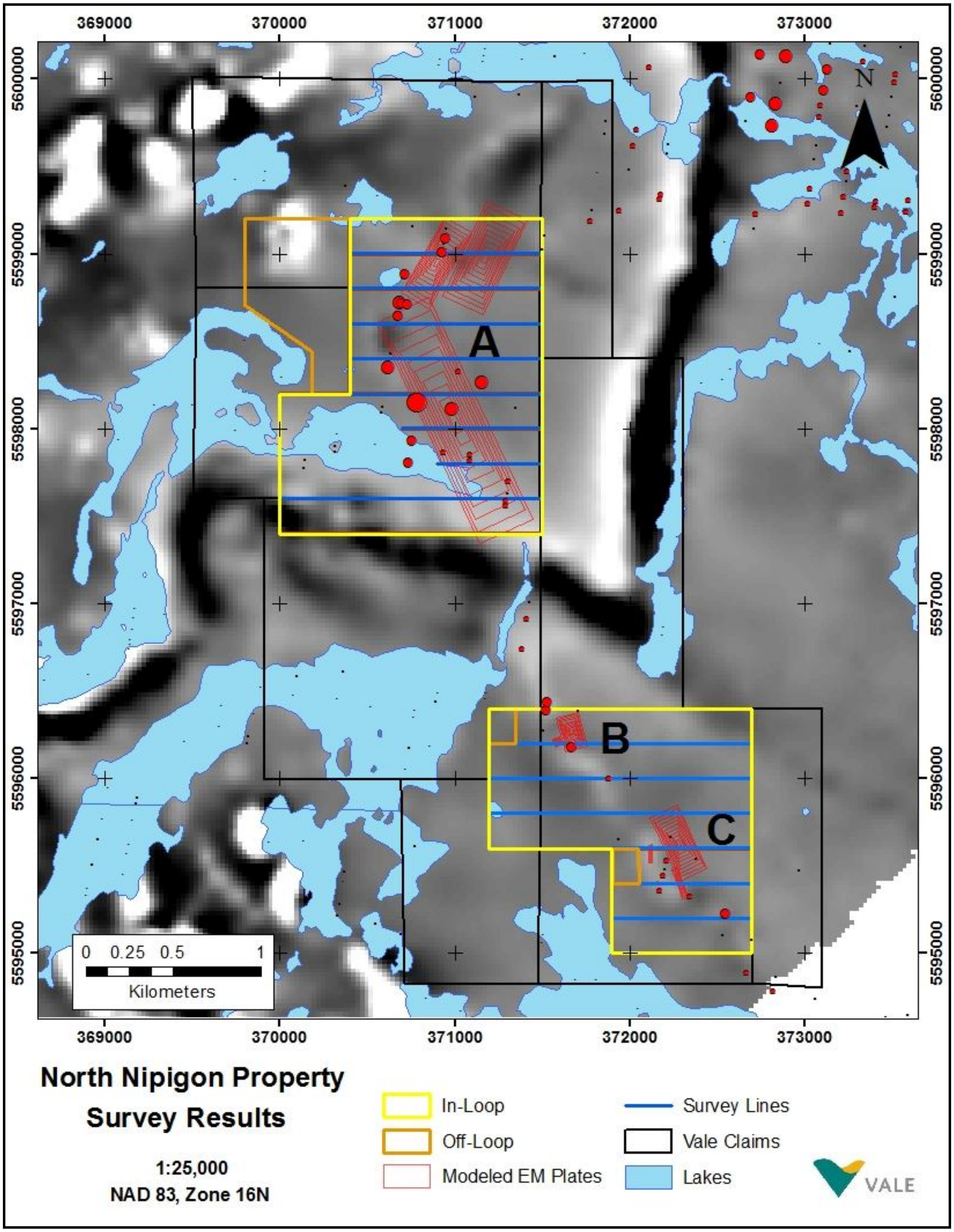

Figure 7: Survey results for the UREM survey. Modeled EM conductor plates are in red and there are three main targets. One in the Northern Grid labeled A, and two in the Southern Grid labeled B and C respectively. Large In-Loop configurations are in yellow and smaller Off-Loop configurations are in Orange.

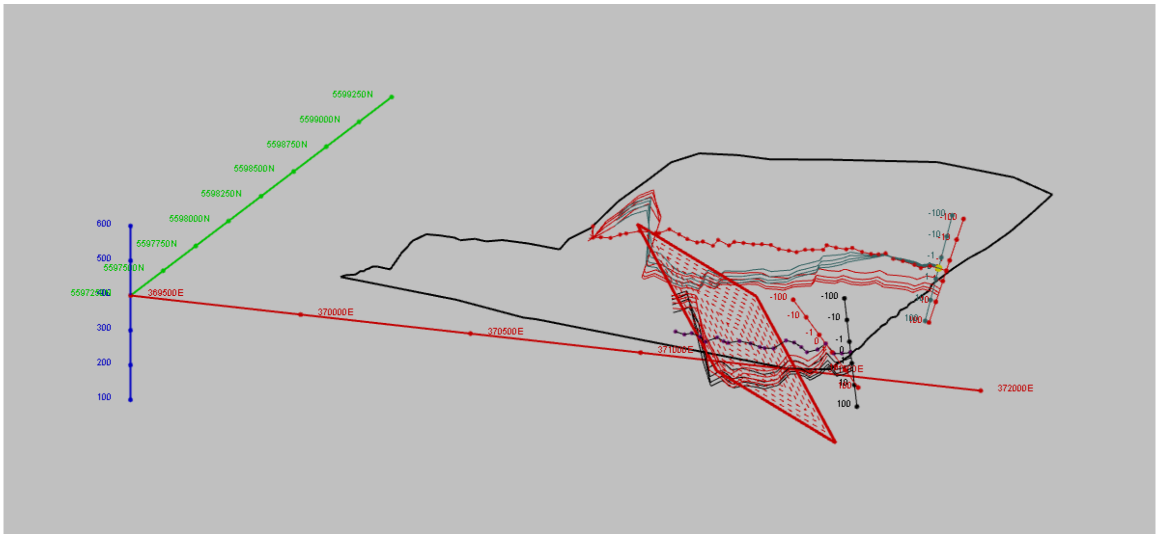

Figure 8: A 3D plate model of Target A. This target is shallowly dipping to the east-northeast, and very close to the surface.

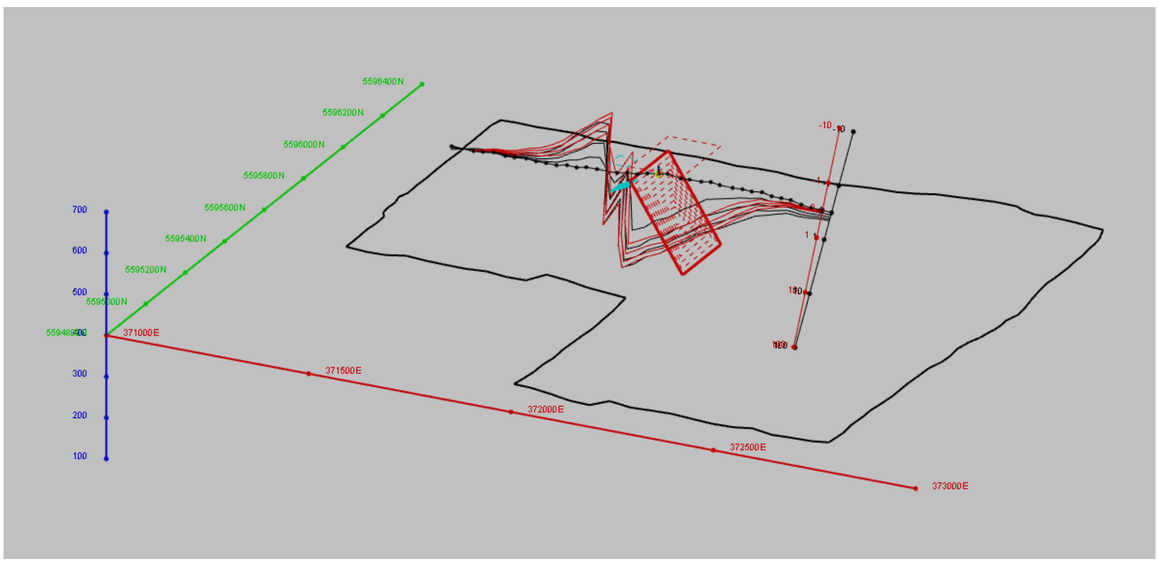

Figure 9: A 3D plate model of Target B. This target is steeply dipping to the east, and very close to the surface.

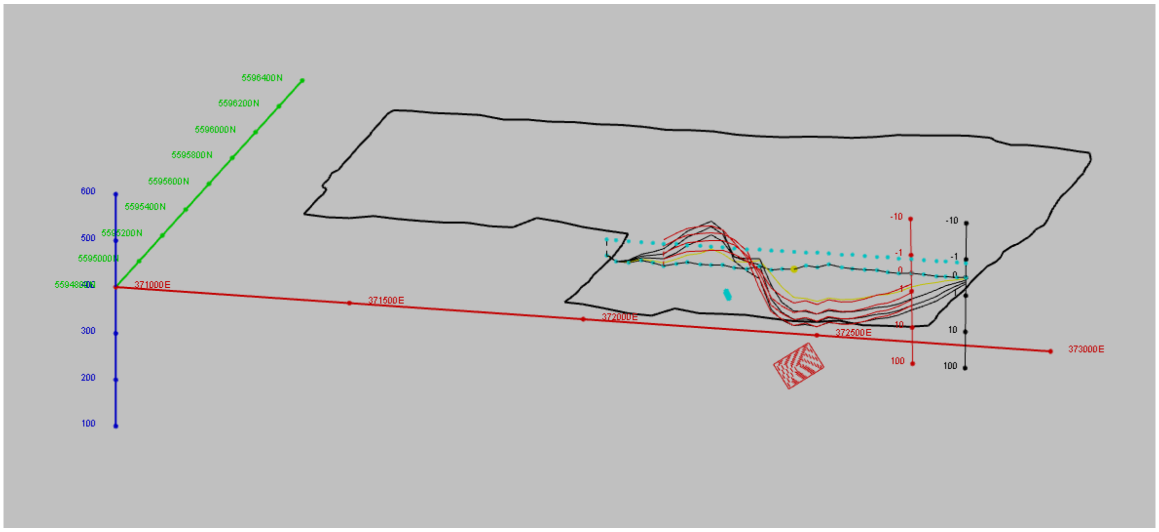

Figure 10: A 3D plate model of Target C. This target is steeply dipping to the east, and is located approximately 180 m below the surface.

5.3 Mapping and Prospecting Program

The mapping and prospecting campaign at North Nipigon consisted of a short program that focused on investigating EM conductors identified from the 2015 UREM survey (Figure 7). Field work began on June 2nd and consisted of five days of helicopter supported mapping and sampling. The field crew consisted of two Vale geologists accompanied by two field technicians supplied by Forget Geophysics. The main aim of the program was to carefully map the cut survey grid with a focus on areas where the EM conductors could potentially surface. This was necessary in order to identify a possible source for the EM conductors, to see if they were potentially related to a possible gabbro dike, or as sediment-hosted formational conductors consisting of disseminated sulfide. Secondary to this, the goal was to expand upon the linear magnetic feature, exploring throughout the property to further assess its potential.

A total of 54 mapping stations were identified during the program where geological data was collected. This data can be found in Appendix 5. From these 54 mapping stations a total of 25 rock samples (RX) were collected as grab samples and submitted for geochemical assay (Figure 11). The samples were delivered to ALS Minerals in Sudbury, Ontario where they were crushed, pulverized and then analyzed using package CCP-PKG01 which is a lithium-metaborate fusion with ICP-AES and ICP-MS for major oxides, trace elements and rare earth elements plus ME-MS81 for an additional 38 elements. The samples were also tested for PGE's using ALS's PGM-ICP23 package. Assay certificates can be found in Appendix 4. QA/QC samples, represented as standards, and blanks, totaling up to 10% of all samples were added to the group of rock samples. QA/QC inspection of these samples was completed in-house by Vale and the report can be found in Appendix 6.

5.4 Mapping and Prospecting Results

The Northern grid (Figure 12) contained several large but weak EM anomalies which were not as conductive as the EM anomalies in the Southern grid. The initial interpretation of these conductors was that they were formational in origin, most likely related to concentrations of disseminated sulfide in the underlying metasedimentary rocks. However, they had the potential to be related to a chonolith-type mafic-ultramafic body. Outcrop exposure in the Northern grid was scarce. Investigation of the southern portion of the grid identified several outcrops of foliated siltstone in the vicinity of the EM conductor and AEM anomalies. The siltstone contained minor quartz veining and disseminated sulfide mineralization. This was most likely the cause of the EM conductors in that area.

The better conductors in the northern portion of the grid were also difficult to investigate. A couple of outcrops were located near the EM conductors and consisted of metamorphosed mafic volcanic rocks mixed with metasedimentary rocks. If these metasedimentary rocks contained sulfide mineralization similar to the siltstone found in the southern portion of the grid then this could explain the EM conductors in this area. The other outcrops identified in this area consisted predominantly of Nipigon Sill, which was a strongly magnetic gabbro. These occurred to the west of the siltstone and mafic volcanic in areas of higher elevation.

The Southern grid (Figure 13), which consisted of 8 east-west cut lines contained two small, but strong EM conductors; one located in the northern portion of the grid and a second located in the southern portion of the grid. Both conductors plot on a linear magnetic trend that lines up with a series of gabbro outcrops located in the northern grid that are different than the Nipigon Sills. Field investigation of the Southern grid found that outcrop coverage was very poor in this area and that both EM conductors and the linear magnetic trend were completely covered by overburden and could not be explained.

Rare outcrops found in the eastern portion of the Southern grid, east of the linear magnetic feature, consisted of foliated, metamorphosed mafic volcanics. Assays from several of these samples confirmed that they were mafic volcanic having a SiO_2 content between 47 and 52%, MgO content between 6-8%, Ni and Cu content between 100-200 ppm, and a Cr content between 200-300 ppm. These rocks were unmineralized and due to the degree of foliation and metamorphism most likely represent Archean aged mafic metavolcanics, much older than the MCR event. In the northern portion of this grid to the west of the EM and linear magnetic anomaly several outcrops of gabbro were identified. These were non-magnetic and similar in texture and mineralogy to the gabbro samples found in 2015. Assay values for these samples averaged 50-53% SiO_2, 4-7% MgO, 50-100 ppm Ni and Cr, and 200-300 ppm Cu. It is unclear whether the magnetic anomaly is associated with these rocks, as there are outcrops of gabbro and mafic volcanics in the vicinity of the magnetic anomaly.

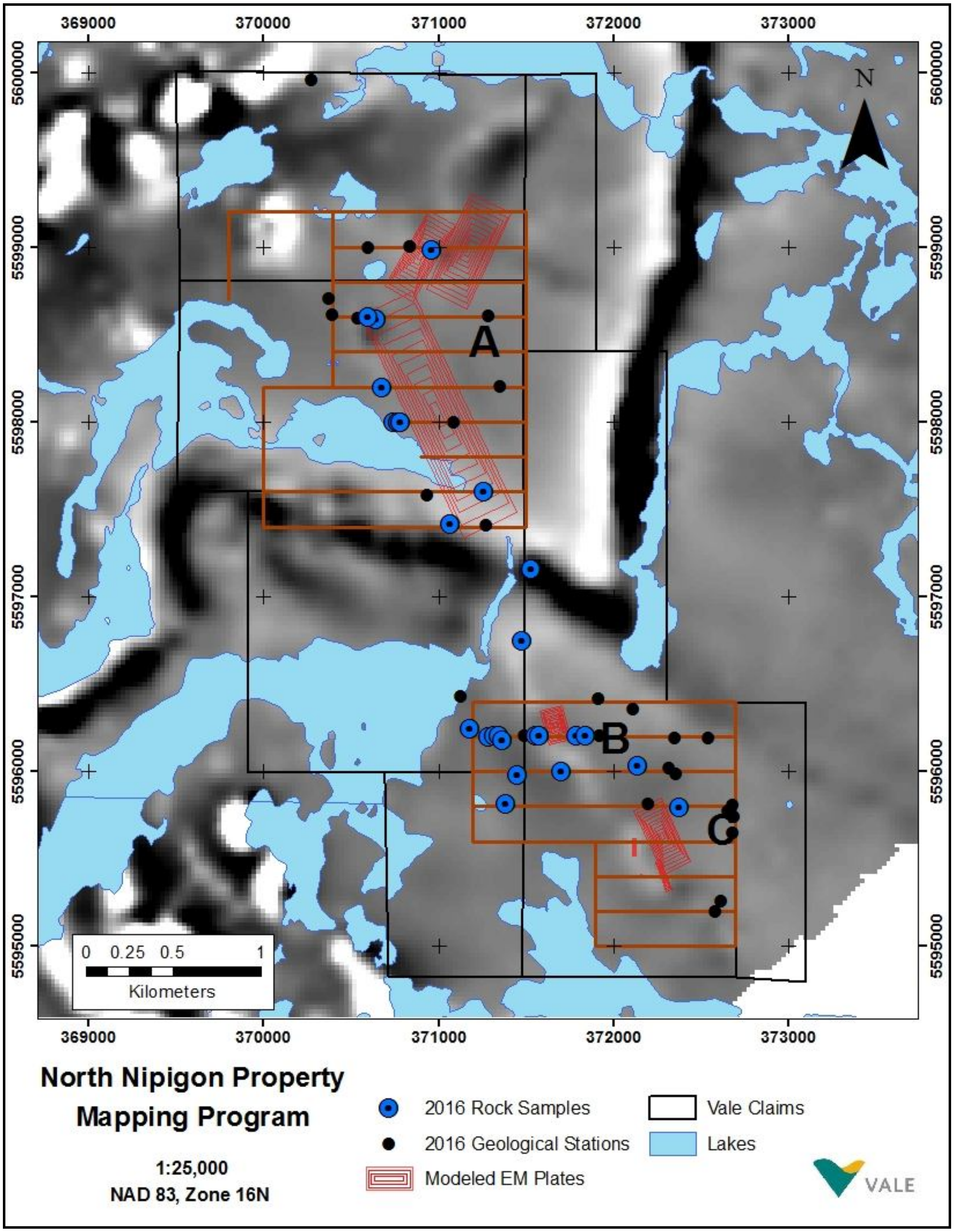

Figure 11: Map showing the geological station locations (54 total) and rock sample locations (25 total) for the 2016 mapping and prospecting program.

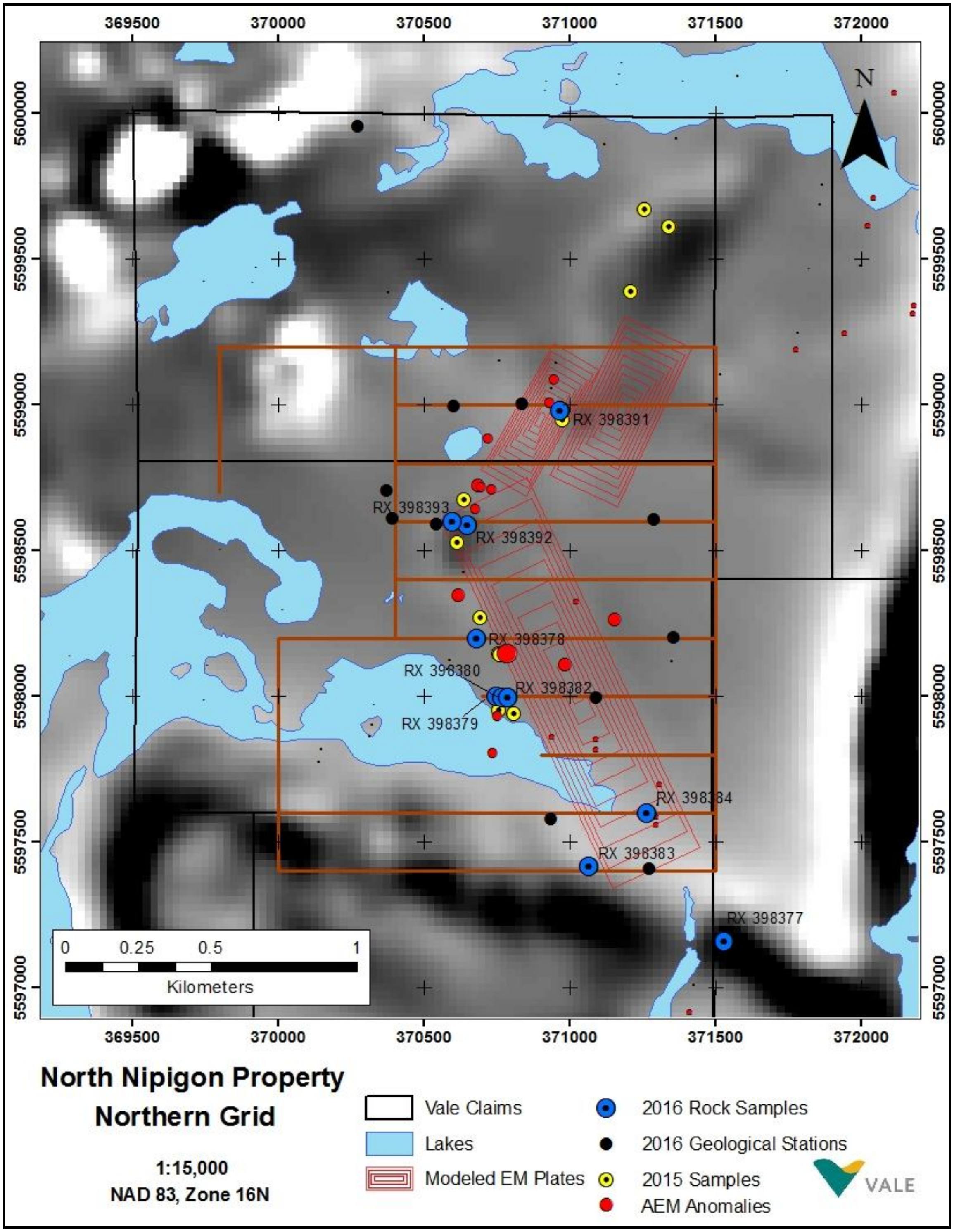

Figure 12: Map of the Northern Grid showing sample numbers and locations relative to the EM plates and AEM anomalies. 2015 samples are in yellow and focused more on the northern portion of the property over the elliptical magnetic anomalies which turned out to be Nipigon Sill.

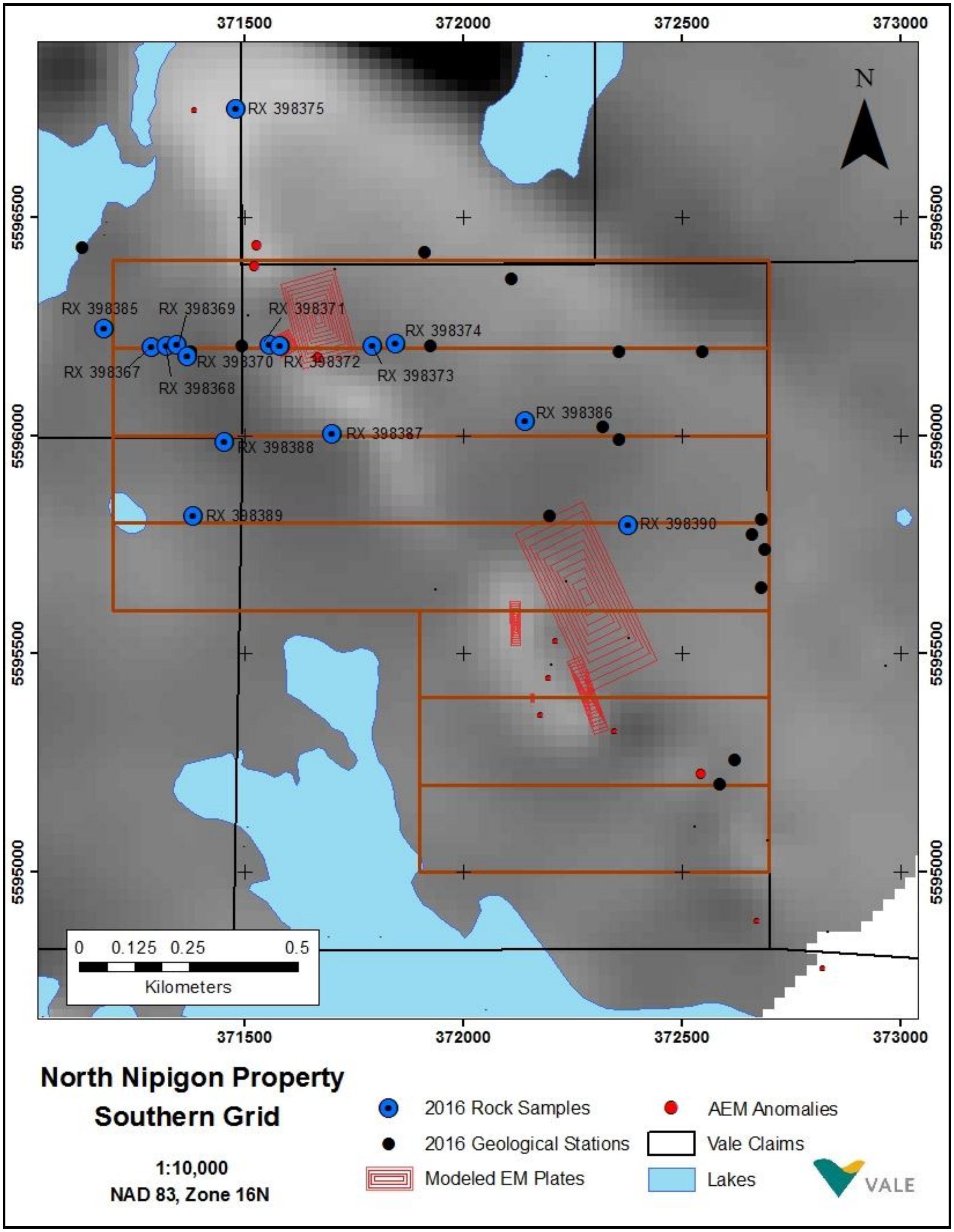

Figure 13: Map of the Southern Grid showing sample numbers and locations relative to the EM plates and AEM anomalies. There was little to no outcrop coverage in the southwest portion of the grid.

5.5 Property Geology

Airborne magnetic data shows that the property is dominated by a very strong reversely polarized linear magnetic anomaly that trends north-south in the eastern portion of the property and then has an almost 90° turn in the central portion of the property where it heads west, creating a reverse L-shape. In the northern portion of the property to the west of this prominent mag feature are two small elliptical to circular reversely polarized magnetic features that are 400-700 m in diameter. Finally there is a faint southeast trending linear magnetic feature that starts near the north-central portion of the property and cuts through the southern half. AEM anomalies are located to the west of the prominent magnetic feature and concentrated along the southeast trending linear anomaly (Figure 14).

The topography of the area consists of flat, low-lying ground that is covered in small swampy areas consisting of small lakes, grass and shrubs that transition into very thick vegetation cover as elevation increases. Scattered throughout the property, coincident with the airborne magnetic anomalies are areas of higher elevation. These consist of large hills and ridges that contain gradual slopes to steep cliffs, as high as 40m in places. Higher elevation areas are also covered in very thick vegetation but scarce outcrops can be found in areas with changing elevation.

The majority of magnetic features found within the property are caused by gabbroic rocks related to the Nipigon Sills. This includes the prominent reverse L-shape anomaly which appears to be the outer edge of a large sill and the two small circular anomalies which appear to be small non-eroded outliers of Nipigon Sill. The Nipigon gabbro is differentiated, exhibiting compositional layering that contains slight to sometimes big changes in texture, mineralogy and chemistry. For the most part the gabbros are medium to coarse grained, equigranular gabbroic rocks that are non-foliated and moderately to strongly magnetic. They contain a weak sub-ophitic to ophitic texture with 1-3mm oikocrysts of orthopyroxene surrounding small lath-shaped plagioclase grains. In general they contains 50% plagioclase, 25-35% clinopyroxene, 10-15% orthopyroxene, 5-10% magnetite and minor to trace amounts of hornblende, biotite, olivine and quartz. They contain very minimal sulfide minerals, occurring as very weakly disseminated pyrrhotite grains.

The two circular anomalies consist of moderately to sometimes strongly magnetic Nipigon gabbro. Immediately above the lower contact with the undeformed siltstone the gabbro is weakly silicified, containing minor quartz. The lower portion of the sills tend to be coarser grained, and more mafic and magnetic in composition in comparison to the upper portion. However, the difference is very minor. These sills are very weakly mineralized throughout with no sulfide enrichment observed at the base of the sills.

The prominent reverse L-shaped linear magnetic feature appears to be caused by a

Nipigon Sill that is very strongly differentiated. Outcrops of medium to coarse grained, moderately magnetic, ophitic textured Nipigon Sill are found in the area to the west east and south of the linear feature but they are not causing it. Conformable within the sill are layers of coarse grained, equigranular gabbro that is strongly to very strongly magnetic. These layers contain 45-50% Plagioclase, 40-50% clinopyroxene, 10% orthopyroxene, 10-30% magnetite, and possible olivine. One layer, which was weakly foliated, was very strongly magnetic containing up to 30-40 % magnetite as well as enrichment in titanium and vanadium. These strongly magnetic layers, where they are exposed at surface seem to be the cause of the strong linear magnetic anomaly. None of the layers contain elevated amounts of sulfide.

Located in the southern portion of the Northern grid and also within the Southern grid a second gabbro intrusive exists that is different than that of the Nipigon Sill. This rock differs from the typical Nipigon sills in the area and consists of coarse grained, equigranular melagabbro. This rock typically contains 50-60% clinopyroxene, 40% plagioclase, and 5% phlogopite, and possible minor amounts of orthopyroxene and olivine. The rock is non to very weakly magnetic, non-foliated and contains trace disseminated sulfide. The rock differs from the Nipigon gabbro in both texture and mineral composition, and is fresh and undeformed suggesting that it is not Archean aged. The outcrops of melagabbro form a northwest trend, which could indicate that they are dike related.

Within the northern portion of the property, metasedimentary rocks were mapped in areas of lower elevation. These rocks consisted predominantly of strongly foliated, light to dark grey, fine grained siltstone. These rocks were often well bedded and moderately to steeply dipping. One outcrop contained siltstone interbedded with a possible conglomerate unit that contained stretched clasts of siltstone and carbonate. In another area a group of boulders, possibly representing subcrop consisted of banded iron formation (BIF) with 1-2 cm layers of chert layered with siltstone and sub-cm magnetite-rich discontinuous bands. The siltstone units often contained minor quartz veining and varying amounts of disseminated sulfide. In most areas mineralization consisted of only trace to weakly disseminated pyrite, but some areas contained up to several percent pyrite occurring as strongly disseminated material as well as hosted within foliation planes; siltstone layers within the BIF boulders contained up to 10% disseminated pyrite. Based on the rock types, strength of foliation, stretching of clasts, and moderate to steeply dipping nature of the units these rocks are all interpreted to be Archean-aged metasedimentary rocks, and not deformed units within the Sibley Group.

Mafic metavolcanic rocks dominated the southern portion of the property. These rocks consisted of foliated, metamorphosed mafic volcanics. These rocks were unmineralized and due to the degree of foliation and metamorphism most likely represent Archean aged mafic metavolcanics of the Caribou Lake Greenstone Belt.

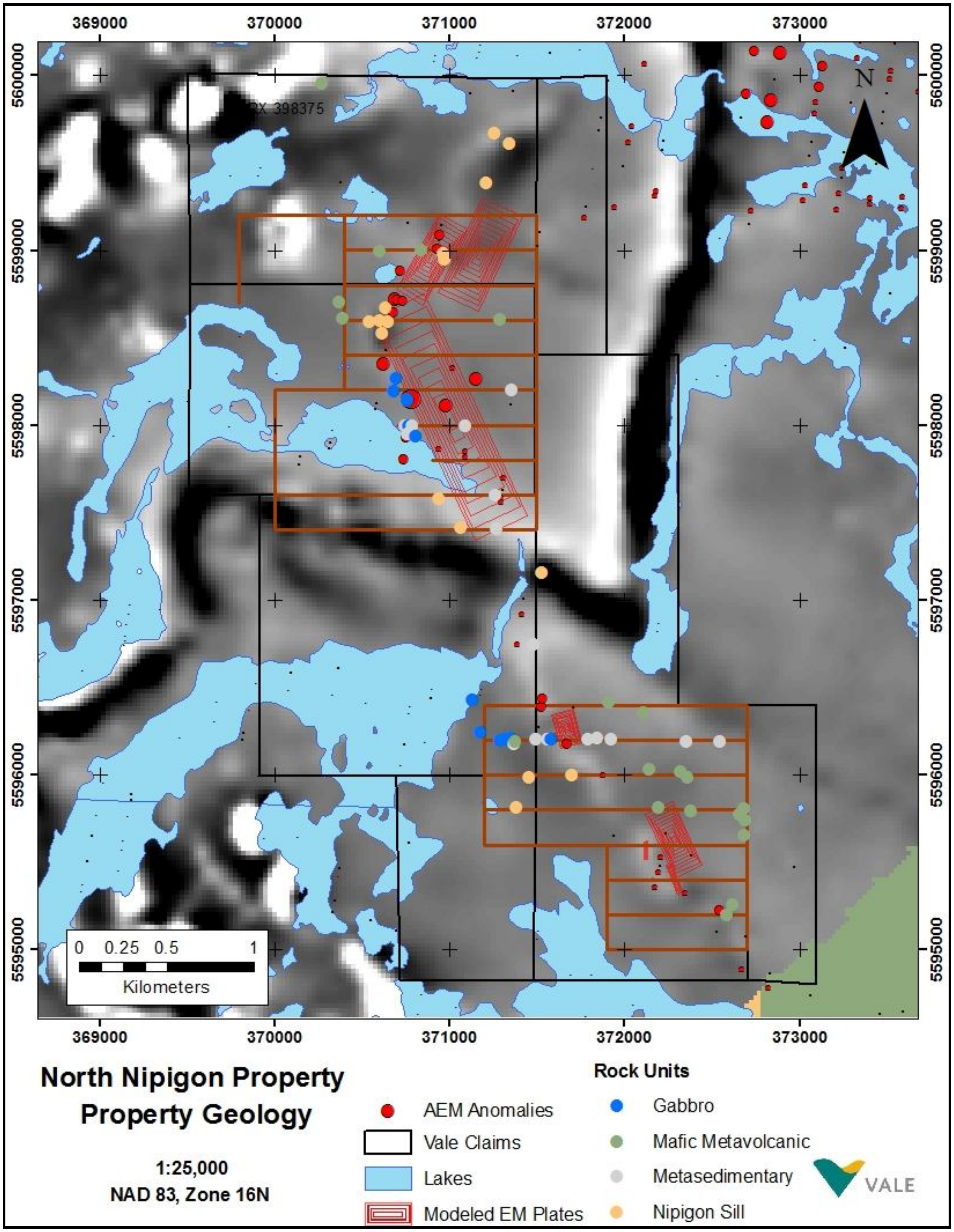

Figure 14: North Nipigon property showing the mapped geological stations. The Gabbro (blue dots) seem to form a linear trend coinciding with the linear mag anomaly and EM plates in the Southern Grid. The Magnetic anomalies are associated with Nipigon Gabbro. Metasedimentary rocks occur within both grids and could be the explanation for the EM conductors.

5.6 Interpretation

The North Nipigon property is very interesting as it contains a possible gabbroic dike-like body that does not appear to be mineralogically or geochemically associated with the Logan or Nipigon Sills and is not of Archean age. The dike also happens to correlate with a reversely polarized linear magnetic trend that has several AEM anomalies associated with it. This magnetic anomaly also appears to correspond with several small, but strong UREM conductors.

Unfortunately no evidence could be found to prove that the conductors are associated with massive sulfide. None of the gabbro samples of the dike found to date contain any Ni-Cu mineralization despite containing trace amounts of disseminated sulfide. Cu values generally range from 200-300 ppm which is typical for gabbroic sills, but the Ni values are low, averaging 75 ppm. The low Ni correlates with low Cr values and a slightly higher SiO_2 content suggesting that, despite the more mafic appearance these rocks are slightly more felsic than the Nipigon Sills. They also contain lower MgO values in comparison to the picritic rocks that host the Eagle and Tamarack deposits. Some of the conductors in the Northern grid appear to be explained by sulfide mineralization in Archean metasediments and possibly within the metamorphosed mafic volcanics which host the dike. It is unknown whether these rocks are the source for all of the EM anomalies but it is probable they are the source for the larger, formational-appearing conductors.

The two EM conductors in the Southern grid do not appear to be related to formational phenomenon and instead appear to be two small, but strong point source conductors. These could be considered viable exploration targets as they are stand-alone strong conductors that appear to be closely associated with a linear magnetic feature. Given the lack of exposure, the only way to further test these conductors is by a helicopter supported drill program.

6 Conclusion and Recommendations

The North Nipigon property represents a very interesting target. The 2016 exploration program was able to identify some of the weaker conductors as being formational, associated with Archean siltstone and mafic volcanics. However, the program could not explain the two small, but strong EM conductors in the southern portion of the property. Although small, these conductors are of interest as they appear to be associated with the reversely polarized linear magnetic feature. Mapping suggest that this feature is a Proterozoic mafic dike which cuts through the property and is different than the Nipigon Sill gabbros which dominate the area. Therefore there is a reversely polarized mafic dike which has local, but strong EM conductors associated with it. These conductors warrant further follow-up work and the interpreted EM plates should be drill tested to 1) determine the cause of the conductor, 2) to see if there is any Ni-Cu-PGE associated with the conductor and 3) to see if the geochemistry or mineralogy of the dike changes with depth.

7 References

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Appendix 1 – Statement of Qualifications

Statement of Qualifications

I, Christopher Larry Hicks, of 2425 Cavendish Court, Sudbury, in the province of Ontario, certify that:

- I am a graduate of Memorial University of Newfoundland, St. John's, Newfoundland, Canada and hold a B.Sc. (hons) degree in Earth Sciences (2007) and a M.Sc degree in Earth Sciences (2015).
- I am a registered Professional Geoscientist of the province of Newfoundland and Labrador (PEGNL) in good standing (Registration Number 06909).
- I have worked in my profession as a geologist since 2007.
- I am a full-time employee with Vale Canada Limited as a Project Geologist based in Sudbury, Ontario, Canada.
- This report was prepared by myself and is based on field work carried out by Vale Canada Limited, and to the best of my knowledge, information and belief, all scientific and technical information in this report is accurate.

Dated the 8th day of September, 2017 at Sudbury, Ontario, Canada.

Signed Christopher L. Hicks, M.Sc, P.Geo

Appendix 2 – Expenditure Statement

North Nipigon Expenditure Statement

Line Cutting and Geophysics - November 2015

Haveman Brothers	Line Cutting	$1,086.3 per line-km	28.4 line-km	$30,850.00
Forget Geophysics	UREM Survey	$ 1,413.6 per line-km	24.3 line-km	$34,350.00
Canadian Helicopters	Helicopter Support	Avg $2,046.25 per hour flown	33.5 hrs + 18.5 hrs min	$68,548.88
Accommodations	McKenzie Lake Inn	Avg $95.67 per night	202 Nights	$19,325.00
Geologist	Field Support	$518.08 per day	13 days	$6,735.04
Total				$159,808.92

Summer Prospecting Program - June 2016

Great Slave Helicopters	Helicopter Support	Avg $3,912.7 per hour flown	9.7 hrs + 8.3 hrs min	$37,953.20
Senior Geologist	Field Mapping	$781.12 per day	5 days	$3,905.60
Geologist	Field Mapping	$614.72 per day	5 days	$3,073.60
Field Technicians x2	Field Support	$400 per day	5 days	$4,000.00
Assay Results	ALS Minerals	$67.23 per sample	25 samples	$1,680.75
Accomodations	McKenzie Lake Inn	Avg $118.1 per night	42 Nights	$4,960.00
Total				$55,573.15

Total	**$215,382.07**

Appendix 3 – Work Plan Approval Letter

Ministry of Northern Development and Mines

Mineral Development and Lands Branch

B002-435 James Street South
Thunder Bay ON P7E 6S7
Tel.:   (807) 475-1123
Fax: (807) 475-1112

Ministère du Développement du Nord et des Mines

Direction de l'exploitation des minéraux et de la gestion des terrains miniers

Bureau B002-435 James Sud
Thunder Bay ON P7E 6S7
Tél.:   (807) 475-1123
Téléc.: (807) 475-1112

Ontario

October 6, 2015

Chris Hicks
Vale Exploration Canada Inc.
2060 Flavelle Blvd.
Mississauga, ON L5K 1Z9

Via email: chris.hicks@vale.com

Dear Mr. Hicks:

Re: Exploration Plan PL-15-10512, North Nipigon 1 Project Linklater Lake area, Thunder Bay District, NW Region

The Ministry of Northern Development and Mines (MNDM) received your exploration plan on October 2, 2015. I have identified the following Aboriginal community to be notified about your early exploration activities:

- Whitesand First Nation

A copy of the exploration plan (with the supplemental "Geophysical Plan" depicting the proposed grid lines) was sent to the above Aboriginal community on October 6, 2015, the Circulation Date, advising that comments with respect to potential adverse effects of the proposed activities on their Aboriginal and treaty rights be provided to MNDM.

Through this circulation the Crown will lead consultation with the identified communities. Comments received by MNDM from Aboriginal communities, which may require your consideration, will be communicated to you. If you receive any comments directly from a community, we ask that you forward them to MNDM. Should further discussions regarding your plan be required, the Crown may require your participation to explain your activities or consider adjustments to mitigate potential impacts identified through the consultation process.

Unless otherwise directed by the Director of Exploration, the activities included in your exploration plan can commence on November 5, 2015. The exploration plan is effective for a period of two years from that date.

In conducting Aboriginal consultation, circumstances may arise that lead the Director of Exploration to decide that an exploration permit is required for some or all of the early exploration activities proposed in your exploration plan. If that should happen, you will be advised in writing and MNDM will explain the process to be followed to obtain an exploration permit.

If you have any questions regarding this letter or the exploration plan, its review or the comment period, please do not hesitate to contact Mark O'Brien, Mineral Exploration and Development Consultant in the Thunder Bay office, at 807-475-1106 or by e-mail to mark.o'brien@ontario.ca.

Sincerely,

Neal Bennett
for
Mike Grant
Director of Exploration

Appendix 4 – Rock Sample Assay Certificates

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
www.alsglobal.com

To: VALE CANADA LIMITED (GREENFIELDS EXPLORATION)
NORTH AMERICAN FIELD EXPLORATION
HIGHWAY 17 WEST
COPPER CLIFF ON P0M 1N0

Finalized Date: 26- JUN- 2016
Account: ITSNAE

CERTIFICATE SD16091920

Project: R000439.03.13.01.01

This report is for 52 Rock samples submitted to our lab in Sudbury, ON, Canada on 10- JUN- 2016.

The following have access to data associated with this certificate:

CAMERON BELL	HENRIQUE IZUMI	DANIELLE LEGER
NOELLE SHRIVER	BEN VANDENBERG	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI- 21	Received Sample Weight
LOG- 22	Sample login - Rcd w/o BarCode
CRU- 31	Fine crushing - 70% <2mm
SPL- 22Y	Split Sample - Boyd Rotary Splitter
LOG- 24	Pulp Login - Rcd w/o Barcode
CRU- QC	Crushing QC Test
PUL- QC	Pulverizing QC Test
PUL- 32	Pulverize 1000g to 85% < 75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME- MS42	Up to 34 elements by ICP- MS	ICP- MS
OA- GRA05	Loss on Ignition at 1000C	WST- SEQ
TOT- ICP06	Total Calculation for ICP06	ICP- AES
ME- 4ACD81	Base Metals by 4- acid dig.	ICP- AES
ME- OG62	Ore Grade Elements - Four Acid	ICP- AES
Ni- OG62	Ore Grade Ni - Four Acid	VARIABLE
PGM- ICP23	Pt, Pd, Au 30g FA ICP	ICP- AES
ME- ICP61a	High Grade Four Acid ICP- AES	ICP- AES
ME- ICP06	Whole Rock Package - ICP- AES	ICP- AES
C- IR07	Total Carbon (Leco)	LECO
S- IR08	Total Sulphur (Leco)	LECO
ME- MS81	Lithium Borate Fusion ICP- MS	ICP- MS

To: VALE CANADA LIMITED (GREENFIELDS EXPLORATION)
ATTN: DANIELLE LEGER
NORTH AMERICAN FIELD EXPLORATION
HIGHWAY 17 WEST
COPPER CLIFF ON P0M 1N0

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:
Colin Ramshaw, Vancouver Laboratory Manager

ALS Minerals
ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
www.alsglobal.com

To: VALE CANADA LIMITED (GREENFIELDS EXPLORATION)
NORTH AMERICAN FIELD EXPLORATION
HIGHWAY 17 WEST
COPPER CLIFF ON P0M 1N0

Finalized Date: 26- JUN- 2016
Account: ITSNAE

Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method	WEI- 21	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	OA- GRA05
	Analyte	Recvd Wt.	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI
	Units	kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	LOR	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
RX398363		0.52	97.8	1.90	0.71	0.02	0.01	0.29	0.24	0.01	0.03	0.01	0.02	<0.01	<0.01	0.13
RX398364		0.71	49.9	12.20	17.10	6.90	3.56	2.77	1.30	<0.01	3.86	0.20	0.47	0.05	0.05	1.59
RX398365		0.84	49.5	13.30	16.70	6.43	4.00	2.75	1.21	0.01	3.43	0.19	0.40	0.06	0.05	1.82
RX398366		1.22	49.7	13.35	17.25	6.96	4.31	2.92	1.13	0.01	3.48	0.19	0.40	0.05	0.04	1.31
RX398367		1.26	50.5	13.60	13.75	10.65	7.12	1.67	0.13	0.01	0.75	0.22	0.06	0.01	<0.01	1.71
RX398368		1.16	52.0	13.35	16.70	8.67	5.42	1.80	0.17	<0.01	1.03	0.25	0.08	0.01	<0.01	0.99
RX398369		0.40	50.7	12.05	17.85	5.60	4.73	1.38	0.36	<0.01	1.19	0.22	0.10	0.01	0.02	3.87
RX398370		0.55	50.7	13.20	14.25	8.02	6.34	3.09	0.15	<0.01	0.87	0.20	0.07	0.01	<0.01	1.90
RX398371		0.41	52.8	14.45	10.35	9.98	6.03	1.89	0.16	0.03	0.80	0.16	0.07	0.02	<0.01	1.38
RX398372		0.96	49.2	14.60	14.60	9.95	7.09	2.31	0.43	0.02	1.21	0.20	0.13	0.02	0.02	-0.12
RX398373		0.85	52.8	14.15	10.95	7.71	5.82	3.49	0.86	0.03	1.21	0.17	0.56	0.02	0.03	1.14
RX398374		0.95	51.1	13.95	11.15	9.12	6.65	1.60	0.18	0.04	0.63	0.21	0.05	0.01	0.01	4.83
RX398375		0.64	49.1	15.50	11.90	10.40	6.91	1.89	0.24	0.04	0.69	0.22	0.05	0.01	0.01	1.73
RX398376		0.06	45.6	9.48	12.70	9.44	9.20	2.69	0.42	0.01	0.33	0.09	3.39	0.02	0.01	3.33
RX398377		1.18	50.7	13.40	16.80	9.02	4.58	2.59	0.66	<0.01	1.76	0.22	0.18	0.02	0.02	-0.01
RX398378		1.20	47.2	14.15	11.60	9.84	11.05	1.64	0.06	0.03	0.54	0.20	0.04	0.01	<0.01	2.76
RX398379		1.17	51.3	14.15	11.70	10.45	7.29	1.71	0.09	0.04	0.69	0.23	0.05	0.01	<0.01	2.24
RX398380		1.10	48.1	15.05	10.75	12.15	7.58	1.59	0.05	0.04	0.61	0.17	0.05	0.01	<0.01	2.33
RX398381		0.51	96.7	1.94	0.87	0.06	0.04	0.28	0.26	0.01	0.03	0.01	0.01	<0.01	<0.01	0.06
RX398382		1.29	48.2	13.20	11.95	12.50	8.02	1.24	0.04	0.03	0.62	0.20	0.04	0.01	<0.01	2.49
RX398383		1.20	48.4	15.25	14.00	10.45	7.56	2.26	0.42	0.02	1.08	0.19	0.10	0.02	0.01	-0.03
RX398384		1.29	48.2	14.55	11.95	10.95	8.06	1.56	0.57	0.04	0.71	0.25	0.06	0.02	0.01	1.83
RX398385		1.57	50.6	13.95	13.00	8.97	7.73	2.48	0.18	0.02	0.85	0.20	0.06	0.02	<0.01	2.03
RX398386		1.09	47.9	14.35	12.05	11.75	6.82	2.77	0.12	0.04	0.62	0.23	0.04	0.01	<0.01	2.39
RX398387		1.11	50.1	14.60	13.45	8.88	6.16	3.37	0.16	0.01	0.78	0.19	0.04	0.01	0.01	0.90
RX398388		0.98	49.1	14.40	11.75	11.40	7.56	1.77	0.13	0.05	0.63	0.19	0.05	0.01	<0.01	1.32
RX398389		0.75	49.4	14.30	11.55	10.25	7.63	2.84	0.16	0.03	0.57	0.18	0.05	0.01	<0.01	1.16
RX398390		0.45	49.9	14.80	11.70	10.05	8.19	2.83	0.11	0.05	0.67	0.21	0.05	0.01	<0.01	1.69
RX398391		0.83	49.3	14.35	15.10	9.90	6.31	2.44	0.60	0.02	1.35	0.20	0.13	0.02	0.02	0.67
RX398392		1.73	49.9	14.55	13.40	10.25	6.08	2.63	0.67	0.01	1.24	0.19	0.14	0.02	0.03	0.34
RX398393		0.80	50.4	15.10	13.65	10.20	6.62	2.52	0.60	0.02	1.08	0.19	0.13	0.02	0.03	0.06
RX398394		1.35	47.7	14.90	12.75	10.95	8.77	1.99	0.33	0.04	0.77	0.22	0.05	0.02	0.01	1.08
RX398395		0.90	49.1	14.85	13.35	10.95	7.06	2.34	0.40	0.02	1.00	0.18	0.10	0.02	0.01	-0.20
RX398396		0.05	46.1	9.30	12.60	9.45	9.17	2.70	0.42	0.01	0.33	0.09	3.47	0.02	0.01	3.18
RX398397		0.92	49.9	14.00	15.15	9.95	4.86	2.62	0.45	0.01	1.14	0.23	0.13	0.02	0.02	-0.09
RX398398		0.80	50.5	13.15	15.20	10.20	6.24	2.43	0.49	<0.01	1.30	0.23	0.12	0.02	0.02	-0.20
RX398399		0.72	49.7	13.15	15.65	10.20	5.93	2.38	0.49	0.01	1.41	0.22	0.12	0.02	0.02	-0.08
RX398400		1.27	49.4	14.50	15.20	10.20	6.38	2.42	0.53	0.02	1.31	0.20	0.13	0.02	0.02	0.02
RX398401		0.53	96.7	2.11	0.62	0.04	0.02	0.32	0.27	0.01	0.03	0.01	0.01	<0.01	<0.01	0.11
RX398402		0.95	46.5	14.70	11.90	12.00	7.37	2.19	0.37	0.04	0.78	0.23	0.06	0.02	0.01	2.08

***** See Appendix Page for comments regarding this certificate *****

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To: VALE CANADA LIMITED (GREENFIELDS EXPLORATION)
NORTH AMERICAN FIELD EXPLORATION
HIGHWAY 17 WEST
COPPER CLIFF ON P0M 1N0

Finalized Date: 26- JUN- 2016
Account: ITSNAE

Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method Analyte Units LOR	TOT- ICP06 Total % 0.01	C- IR07 C % 0.01	S- IR08 S % 0.01	ME- MS81 Ba ppm 0.5	ME- MS81 Ce ppm 0.5	ME- MS81 Cr ppm 10	ME- MS81 Cs ppm 0.01	ME- MS81 Dy ppm 0.05	ME- MS81 Er ppm 0.03	ME- MS81 Eu ppm 0.03	ME- MS81 Ga ppm 0.1	ME- MS81 Gd ppm 0.05	ME- MS81 Ge ppm 5	ME- MS81 Hf ppm 0.2	ME- MS81 Ho ppm 0.01
RX398363		101.17	0.01	<0.01	9.3	19.5	50	0.06	0.53	0.22	0.24	1.8	0.90	<5	1.6	0.07
RX398364		99.95	0.24	0.03	427	78.5	20	6.37	8.02	4.23	3.27	25.0	9.76	<5	7.6	1.59
RX398365		99.85	0.13	0.02	427	64.3	40	5.33	7.10	3.20	2.64	22.4	7.96	<5	6.2	1.19
RX398366		101.10	0.19	0.04	389	67.3	50	5.62	6.85	3.62	2.85	23.7	8.47	<5	6.5	1.28
RX398367		100.18	0.17	0.03	31.1	7.4	80	0.10	2.96	1.86	0.73	14.9	2.41	<5	1.4	0.69
RX398368		100.47	0.12	0.03	31.2	9.2	20	0.11	3.98	2.48	0.76	16.9	3.04	<5	1.6	0.78
RX398369		98.08	0.56	<0.01	132.0	10.7	10	1.88	4.63	3.20	0.90	16.6	3.38	<5	2.1	0.99
RX398370		98.80	0.32	0.04	24.2	8.0	20	0.08	3.51	2.33	0.67	15.2	2.74	<5	1.7	0.67
RX398371		98.12	0.38	0.01	30.0	13.6	230	0.31	3.40	2.02	0.65	15.8	2.39	<5	2.1	0.64
RX398372		99.66	0.05	0.01	138.0	18.6	140	0.39	4.24	2.58	1.02	19.6	3.86	<5	2.4	0.80
RX398373		98.94	0.07	0.07	248	71.5	250	4.73	3.61	1.97	1.57	16.4	4.77	<5	3.5	0.67
RX398374		99.53	0.80	0.05	62.8	4.4	270	0.57	2.52	1.59	0.43	13.0	1.91	<5	1.2	0.46
RX398375		98.69	0.06	0.01	59.2	4.8	310	0.17	2.94	2.10	0.55	14.4	2.12	<5	1.3	0.60
RX398376		96.71	0.05	2.18	76.2	185.5	90	0.45	15.25	7.44	2.33	14.5	20.6	<5	2.2	2.77
RX398377		99.94	0.03	<0.01	201	26.8	20	0.75	5.75	3.66	1.36	21.8	5.84	<5	3.5	1.24
RX398378		99.12	0.02	<0.01	23.0	3.6	210	0.14	2.12	1.30	0.41	12.5	1.53	<5	0.8	0.45
RX398379		99.95	0.28	0.02	34.1	4.9	250	0.12	2.73	1.66	0.60	13.5	2.09	<5	1.3	0.56
RX398380		98.48	0.25	0.02	26.0	4.2	290	0.04	2.25	1.39	0.55	13.8	1.92	<5	1.0	0.49
RX398381		100.27	<0.01	<0.01	10.4	17.7	50	0.09	0.47	0.16	0.27	1.8	0.95	<5	1.6	0.09
RX398382		98.54	0.33	0.05	23.2	4.6	260	0.03	2.60	1.74	0.64	15.3	2.12	<5	1.0	0.57
RX398383		99.73	0.03	0.02	122.5	17.6	180	0.63	3.64	2.22	0.93	19.1	3.67	<5	3.0	0.80
RX398384		98.76	0.02	0.41	64.5	5.6	280	0.59	2.69	1.84	0.73	16.1	2.17	<5	1.3	0.67
RX398385		100.09	0.12	<0.01	29.9	7.6	150	0.17	2.99	2.42	0.73	17.0	2.43	<5	1.7	0.73
RX398386		99.09	0.46	0.07	42.6	5.1	300	0.04	2.76	1.81	0.53	16.8	2.04	<5	1.2	0.65
RX398387		98.66	0.05	<0.01	54.5	8.7	100	0.11	3.36	2.10	0.75	16.9	2.66	<5	1.8	0.70
RX398388		98.36	0.02	0.02	26.7	6.0	390	0.12	2.41	1.55	0.56	14.6	2.04	<5	1.2	0.60
RX398389		98.13	0.02	0.04	24.5	5.5	230	0.13	2.59	1.50	0.50	14.2	2.02	<5	0.9	0.53
RX398390		100.26	0.10	0.04	36.6	5.5	360	0.12	2.90	1.69	0.56	14.4	2.35	<5	1.2	0.53
RX398391		100.41	0.04	<0.01	142.0	22.3	120	1.16	4.55	2.92	1.31	20.4	4.59	<5	2.8	0.97
RX398392		99.45	0.02	0.01	241	26.7	90	0.59	4.34	2.71	1.25	19.6	4.25	<5	3.1	0.97
RX398393		100.62	0.01	<0.01	215	23.4	120	0.47	3.81	2.67	1.20	19.5	4.15	<5	2.7	0.88
RX398394		99.58	0.04	0.03	98.7	6.1	270	0.76	2.46	1.59	0.62	15.4	2.45	<5	1.4	0.55
RX398395		99.18	0.02	0.02	116.5	16.4	160	0.33	3.56	2.13	1.04	19.1	3.49	<5	2.1	0.74
RX398396		96.85	0.05	2.40	76.2	198.5	100	0.41	15.80	7.99	2.35	15.9	21.2	<5	2.5	2.95
RX398397		98.39	0.01	0.01	145.5	20.4	40	0.34	4.86	3.09	1.75	20.5	4.83	<5	2.4	1.19
RX398398		99.70	0.03	0.01	151.5	19.4	30	0.79	4.60	2.61	1.23	19.9	4.34	<5	2.8	0.97
RX398399		99.22	0.05	<0.01	148.5	20.4	40	0.94	4.96	2.83	1.14	20.2	4.48	<5	2.5	0.97
RX398400		100.35	0.02	0.01	153.5	21.9	120	0.63	4.79	2.86	1.34	20.2	4.67	<5	2.9	1.07
RX398401		100.25	<0.01	<0.01	11.1	20.2	40	0.03	0.54	0.09	0.30	2.1	0.69	<5	2.5	0.09
RX398402		98.25	0.39	0.02	123.5	7.2	270	0.46	2.72	1.84	0.63	15.2	2.52	<5	1.2	0.67

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NORTH AMERICAN FIELD EXPLORATION
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COPPER CLIFF ON P0M 1N0

Project: R000439.03.13.01.01

Finalized Date: 26- JUN- 2016
Account: ITSNAE

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81
	Analyte	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.5	0.01	0.2	0.1	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05	0.01	0.05	5
RX398363		10.2	0.03	0.8	9.1	2.47	5.6	1.76	<1	14.5	0.1	0.10	2.35	0.02	0.48	<5
RX398364		37.0	0.50	28.7	48.8	10.60	48.1	10.00	3	412	2.0	1.48	4.74	0.58	1.34	405
RX398365		30.4	0.35	22.7	38.0	8.86	42.7	8.87	2	415	1.6	1.33	3.89	0.46	1.22	389
RX398366		31.5	0.41	25.7	38.6	8.81	40.0	9.18	2	451	1.7	1.29	3.88	0.51	1.12	429
RX398367		3.0	0.32	2.4	5.7	1.10	0.8	1.56	1	101.5	0.2	0.49	0.39	0.33	0.08	311
RX398368		3.8	0.37	2.6	6.6	1.29	1.3	2.34	1	115.0	0.2	0.57	0.52	0.38	0.17	386
RX398369		4.6	0.42	3.2	7.5	1.62	14.3	2.78	2	64.0	0.2	0.62	0.61	0.44	0.12	395
RX398370		3.5	0.32	2.4	6.0	1.14	0.8	1.94	<1	82.4	0.2	0.52	0.50	0.34	0.11	332
RX398371		6.9	0.27	3.1	6.9	1.64	4.5	2.01	1	145.0	0.3	0.51	1.69	0.30	0.41	252
RX398372		8.8	0.30	4.5	12.0	2.57	13.3	3.58	1	151.5	0.3	0.68	1.55	0.39	0.43	321
RX398373		33.9	0.24	10.9	37.6	9.29	46.6	6.50	1	137.0	0.6	0.67	3.53	0.24	0.75	217
RX398374		1.7	0.26	1.2	3.8	0.69	6.7	1.46	<1	72.5	0.1	0.37	0.24	0.28	0.06	271
RX398375		1.9	0.28	1.3	4.6	0.83	4.8	1.53	<1	89.7	0.1	0.44	0.34	0.32	<0.05	309
RX398376		84.0	0.81	9.9	104.0	24.0	7.2	22.6	3	182.5	0.6	2.78	26.5	1.00	2.99	208
RX398377		12.8	0.40	6.7	16.6	3.78	21.6	4.78	1	149.0	0.5	0.92	2.36	0.50	0.65	474
RX398378		1.5	0.16	1.0	3.3	0.62	0.8	1.36	<1	69.1	<0.1	0.32	0.18	0.21	<0.05	210
RX398379		2.0	0.22	1.2	4.5	0.75	0.7	1.63	<1	87.7	0.1	0.42	0.28	0.28	0.06	279
RX398380		1.6	0.21	1.0	3.8	0.69	0.3	1.19	<1	111.5	0.1	0.37	0.26	0.20	0.07	244
RX398381		9.3	0.02	1.0	9.3	2.18	5.7	1.47	<1	14.2	0.2	0.12	2.11	0.03	0.34	5
RX398382		1.7	0.25	1.2	4.1	0.70	0.2	1.50	<1	101.5	0.6	0.37	0.25	0.27	0.13	276
RX398383		7.8	0.37	4.3	10.7	2.55	12.1	2.87	1	150.5	0.3	0.60	1.41	0.40	0.44	312
RX398384		2.1	0.26	1.4	4.6	0.92	16.5	1.60	1	123.5	0.1	0.44	0.29	0.26	0.13	305
RX398385		3.3	0.35	2.5	5.8	1.14	3.6	1.97	<1	151.5	0.1	0.53	0.48	0.31	0.16	354
RX398386		1.9	0.32	1.4	4.1	0.80	0.6	1.46	<1	63.4	0.1	0.40	0.27	0.27	0.08	306
RX398387		3.5	0.38	2.3	6.2	1.25	2.1	1.96	1	114.0	0.1	0.53	0.53	0.44	0.12	353
RX398388		2.4	0.27	2.3	4.5	0.85	1.1	1.39	<1	97.4	0.1	0.39	0.30	0.30	0.15	287
RX398389		2.2	0.26	1.5	4.1	0.84	2.1	1.34	<1	79.0	0.1	0.36	0.32	0.28	0.09	266
RX398390		2.1	0.25	1.2	4.2	0.84	0.8	1.68	<1	89.7	0.1	0.46	0.33	0.28	0.09	318
RX398391		10.3	0.37	5.5	13.6	3.14	19.6	3.80	1	149.0	0.3	0.84	1.68	0.43	0.60	370
RX398392		12.7	0.33	6.7	14.8	3.47	21.0	3.74	1	182.0	0.4	0.74	2.29	0.43	0.69	326
RX398393		11.2	0.38	5.9	12.4	3.12	18.9	3.28	1	181.5	0.3	0.72	2.10	0.39	0.68	309
RX398394		2.4	0.23	2.0	4.8	1.02	10.6	1.72	<1	128.5	0.1	0.41	0.28	0.28	0.09	294
RX398395		7.3	0.31	3.8	10.7	2.17	10.6	3.12	1	149.0	0.3	0.67	1.29	0.30	0.40	322
RX398396		84.2	0.81	10.6	107.5	26.1	8.1	22.8	3	184.0	0.5	3.05	25.8	1.06	2.97	223
RX398397		8.8	0.47	4.9	13.1	2.94	11.8	3.80	1	171.5	0.3	0.85	1.48	0.46	0.43	266
RX398398		8.7	0.40	4.8	12.6	2.85	16.7	3.29	1	145.0	0.3	0.72	1.56	0.41	0.45	417
RX398399		9.1	0.42	4.9	12.8	2.88	14.5	3.90	1	142.5	0.3	0.71	1.54	0.43	0.52	435
RX398400		9.6	0.38	5.4	13.5	3.01	16.1	3.50	1	159.5	0.3	0.75	1.80	0.46	0.58	384
RX398401		10.0	0.04	1.0	9.2	2.44	6.0	1.39	<1	16.3	0.1	0.12	2.33	0.03	0.52	6
RX398402		3.1	0.29	2.2	5.6	1.14	11.2	1.95	<1	135.5	0.1	0.50	0.38	0.27	0.08	298

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Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- 4ACD81	ME- 4ACD81
	Analyte	W	Y	Yb	Zr	As	Bi	Hg	In	Re	Sb	Se	Te	Tl	Ag	Cd
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	1	0.5	0.03	2	0.1	0.01	0.005	0.005	0.001	0.05	0.2	0.01	0.02	0.5	0.5
RX398363		<1	1.9	0.17	57	1.1	0.03	<0.005	<0.005	<0.001	0.05	<0.2	0.01	<0.02	<0.5	<0.5
RX398364		1	41.6	3.48	299	2.3	0.05	0.022	0.051	0.001	0.15	<0.2	<0.01	0.31	<0.5	<0.5
RX398365		1	34.5	3.01	244	1.8	0.05	0.040	0.039	<0.001	0.10	<0.2	0.01	0.29	<0.5	<0.5
RX398366		<1	35.0	2.71	249	1.6	0.06	0.025	0.036	0.001	0.10	<0.2	<0.01	0.25	<0.5	<0.5
RX398367		<1	19.0	2.10	43	3.2	0.01	<0.005	0.010	0.001	0.44	<0.2	0.02	<0.02	<0.5	<0.5
RX398368		<1	23.5	2.32	60	5.2	0.01	<0.005	0.018	<0.001	0.21	<0.2	0.01	<0.02	<0.5	<0.5
RX398369		<1	26.3	2.78	70	1.3	0.01	<0.005	0.037	0.001	0.16	0.2	0.01	0.13	<0.5	0.5
RX398370		<1	20.6	2.20	58	0.7	<0.01	<0.005	0.014	<0.001	0.18	0.4	0.01	<0.02	<0.5	<0.5
RX398371		<1	18.1	1.75	75	0.3	0.02	<0.005	0.012	<0.001	0.13	<0.2	<0.01	0.02	<0.5	<0.5
RX398372		<1	23.8	2.35	90	0.8	0.02	<0.005	0.013	<0.001	<0.05	0.2	0.01	0.05	<0.5	<0.5
RX398373		<1	19.0	1.77	141	0.4	0.02	<0.005	0.016	<0.001	0.09	<0.2	0.02	0.34	<0.5	<0.5
RX398374		<1	15.4	1.75	35	2.8	<0.01	<0.005	0.006	0.001	0.07	<0.2	0.03	0.04	<0.5	<0.5
RX398375		<1	17.4	1.86	39	1.5	0.04	<0.005	0.010	0.001	0.06	0.2	0.03	<0.02	<0.5	<0.5
RX398376		1	80.5	6.03	82	0.7	0.03	<0.005	0.023	0.028	<0.05	9.0	2.13	0.10	<0.5	0.5
RX398377		<1	32.7	3.26	129	0.8	0.03	<0.005	0.025	0.001	<0.05	0.4	0.01	0.08	<0.5	<0.5
RX398378		<1	11.4	0.99	27	1.1	<0.01	<0.005	0.005	<0.001	<0.05	<0.2	0.02	<0.02	<0.5	0.5
RX398379		<1	15.6	1.85	38	0.1	0.01	<0.005	0.008	<0.001	0.07	0.3	0.02	<0.02	<0.5	<0.5
RX398380		<1	13.2	1.51	32	0.1	<0.01	<0.005	0.006	<0.001	<0.05	0.2	0.03	<0.02	<0.5	<0.5
RX398381		<1	1.8	0.13	58	0.2	<0.01	<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	<0.02	<0.5	<0.5
RX398382		<1	13.1	1.53	36	0.2	0.01	<0.005	0.005	<0.001	<0.05	0.3	0.05	<0.02	<0.5	0.6
RX398383		1	20.1	2.17	95	0.6	0.02	<0.005	0.014	<0.001	<0.05	0.2	<0.01	0.10	<0.5	<0.5
RX398384		<1	15.0	1.69	41	0.7	0.12	<0.005	0.018	0.001	0.12	1.1	0.05	0.07	<0.5	<0.5
RX398385		<1	18.3	2.17	52	1.0	0.01	<0.005	0.012	<0.001	0.36	<0.2	<0.01	<0.02	<0.5	0.9
RX398386		2	15.7	1.96	37	1.4	0.01	<0.005	0.010	<0.001	0.14	0.5	0.03	<0.02	<0.5	<0.5
RX398387		<1	19.6	2.29	59	0.6	0.01	<0.005	0.014	0.001	0.14	0.2	0.01	<0.02	<0.5	<0.5
RX398388		<1	14.1	1.66	38	1.7	<0.01	<0.005	0.007	<0.001	0.17	0.4	0.02	<0.02	<0.5	<0.5
RX398389		<1	13.3	1.67	34	0.7	0.01	<0.005	0.006	<0.001	0.15	0.5	0.03	<0.02	<0.5	<0.5
RX398390		<1	14.8	1.74	38	13.3	0.01	<0.005	0.011	<0.001	0.32	0.3	0.03	<0.02	<0.5	0.5
RX398391		<1	24.1	2.46	102	2.9	0.03	<0.005	0.018	0.001	0.08	0.4	<0.01	0.19	<0.5	0.7
RX398392		1	23.2	2.54	100	1.3	0.04	<0.005	0.017	<0.001	0.07	0.4	<0.01	0.08	<0.5	0.7
RX398393		<1	21.4	2.16	89	0.5	0.03	<0.005	0.016	<0.001	<0.05	0.4	<0.01	0.04	<0.5	0.6
RX398394		1	13.7	1.60	41	0.3	0.01	<0.005	0.008	<0.001	0.07	0.3	0.01	0.05	<0.5	0.5
RX398395		<1	19.4	1.93	73	0.6	0.02	<0.005	0.011	<0.001	0.06	0.3	0.01	0.06	<0.5	0.5
RX398396		1	77.1	5.75	86	0.8	0.03	<0.005	0.021	0.023	<0.05	10.2	2.26	0.10	<0.5	0.9
RX398397		<1	27.0	3.24	86	0.7	0.04	<0.005	0.017	0.001	<0.05	0.3	0.01	0.14	<0.5	0.8
RX398398		<1	23.9	2.53	88	0.5	0.02	<0.005	0.012	0.001	<0.05	<0.2	0.01	0.08	<0.5	1.0
RX398399		1	24.1	2.73	96	0.6	0.03	<0.005	0.015	0.001	<0.05	<0.2	<0.01	0.10	<0.5	0.6
RX398400		<1	23.7	2.50	99	0.8	0.03	<0.005	0.016	<0.001	0.06	0.2	0.01	0.08	<0.5	0.7
RX398401		<1	1.6	0.15	85	0.1	0.01	<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	0.02	<0.5	<0.5
RX398402		<1	15.6	2.10	45	0.4	0.01	<0.005	0.008	<0.001	0.06	0.3	0.01	0.02	<0.5	<0.5

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To: VALE CANADA LIMITED (GREENFIELDS EXPLORATION)
NORTH AMERICAN FIELD EXPLORATION
HIGHWAY 17 WEST
COPPER CLIFF ON P0M 1N0

Finalized Date: 26- JUN- 2016
Account: ITSNAE

Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method / Analyte / Units / LOR	ME- 4ACD81 Co ppm 1	ME- 4ACD81 Cu ppm 1	ME- 4ACD81 Li ppm 10	ME- 4ACD81 Mo ppm 1	ME- 4ACD81 Ni ppm 1	ME- 4ACD81 Pb ppm 2	ME- 4ACD81 Sc ppm 1	ME- 4ACD81 Zn ppm 2	Ni- OG62 Ni % 0.001	PGM- ICP23 Au ppm 0.001	PGM- ICP23 Pt ppm 0.005	PGM- ICP23 Pd ppm 0.001	ME- ICP61a Ag ppm 1	ME- ICP61a Al % 0.05	ME- ICP61a As ppm 50
RX398363		<1	3	<10	2	2	<2	<1	4		<0.001	<0.005	<0.001			
RX398364		45	275	10	2	38	8	29	182		0.002	<0.005	0.009			
RX398365		52	249	20	2	74	8	27	162		0.003	<0.005	0.008			
RX398366		57	261	10	1	89	6	27	168		0.002	<0.005	0.008			
RX398367		52	149	10	<1	78	4	36	104		<0.001	<0.005	0.001			
RX398368		56	150	10	<1	38	6	52	129		<0.001	<0.005	0.002			
RX398369		61	174	20	<1	33	6	54	215		0.001	<0.005	0.001			
RX398370		48	131	10	<1	52	5	50	101		<0.001	<0.005	0.001			
RX398371		45	147	10	1	111	6	35	103		<0.001	<0.005	0.004			
RX398372		58	186	10	<1	137	4	34	113		0.002	0.013	0.016			
RX398373		31	47	10	1	68	6	30	92		<0.001	0.005	0.006			
RX398374		50	102	10	<1	118	3	45	95		0.002	0.012	0.015			
RX398375		57	130	10	<1	128	2	47	77		0.001	0.013	0.012			
RX398376		208	2100	10	2	>10000	10	10	51	1.235	0.019	<0.005	0.007			
RX398377		50	257	10	<1	58	6	41	146		0.004	0.010	0.026			
RX398378		63	78	20	<1	274	3	21	91		0.001	0.011	0.017			
RX398379		52	76	20	1	126	2	46	94		0.002	0.012	0.013			
RX398380		52	94	10	<1	153	<2	38	78		0.002	0.015	0.035			
RX398381		<1	1	<10	2	3	<2	1	4		<0.001	<0.005	0.001			
RX398382		48	108	10	1	132	<2	31	78		0.002	0.013	0.017			
RX398383		54	146	10	<1	145	5	30	99		0.003	0.013	0.015			
RX398384		59	227	10	<1	125	11	42	159		0.003	0.016	0.020			
RX398385		39	26	10	<1	66	3	43	105		<0.001	<0.005	0.002			
RX398386		51	137	<10	<1	124	<2	48	90		0.004	0.012	0.017			
RX398387		42	90	10	<1	62	5	44	91		<0.001	<0.005	0.001			
RX398388		42	98	<10	<1	82	2	40	72		0.001	<0.005	0.002			
RX398389		40	81	<10	<1	79	6	32	66		0.001	<0.005	0.003			
RX398390		45	104	<10	<1	107	5	44	86		0.005	0.013	0.017			
RX398391		52	195	10	1	107	3	34	102		0.003	0.011	0.019			
RX398392		48	125	10	1	99	4	33	111		0.003	0.014	0.015			
RX398393		53	147	<10	1	121	3	33	100		0.002	0.014	0.013			
RX398394		48	116	20	<1	155	5	36	90		0.002	0.006	0.007			
RX398395		51	155	<10	<1	118	4	35	95		0.003	0.010	0.016			
RX398396		203	2090	<10	3	>10000	15	9	48	1.230	0.019	0.006	0.007			
RX398397		42	279	10	<1	46	5	38	125		0.006	0.009	0.018			
RX398398		48	183	10	<1	58	5	42	113		0.003	0.007	0.015			
RX398399		48	200	10	1	58	6	42	118		0.004	0.010	0.022			
RX398400		53	209	10	<1	101	10	34	112		0.005	0.011	0.022			
RX398401		<1	2	<10	2	2	<2	<1	<2		<0.001	<0.005	<0.001			
RX398402		49	144	20	<1	151	4	40	85		0.002	0.005	0.007			

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NORTH AMERICAN FIELD EXPLORATION
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COPPER CLIFF ON P0M 1N0

Finalized Date: 26- JUN- 2016
Account: ITSNAE

Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method Analyte Units LOR	ME- ICP61a Ba ppm 50	ME- ICP61a Be ppm 10	ME- ICP61a Bi ppm 20	ME- ICP61a Ca % 0.05	ME- ICP61a Cd ppm 10	ME- ICP61a Co ppm 10	ME- ICP61a Cr ppm 10	ME- ICP61a Cu ppm 10	ME- ICP61a Fe % 0.05	ME- ICP61a Ga ppm 50	ME- ICP61a K % 0.1	ME- ICP61a La ppm 50	ME- ICP61a Mg % 0.05	ME- ICP61a Mn ppm 10	ME- ICP61a Mo ppm 10
RX398363																
RX398364																
RX398365																
RX398366																
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RX398401																
RX398402																

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Minerals

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CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method / Analyte / Units / LOR	ME- ICP61a Na % 0.05	ME- ICP61a Ni ppm 10	ME- ICP61a P ppm 50	ME- ICP61a Pb ppm 20	ME- ICP61a S % 0.05	ME- ICP61a Sb ppm 50	ME- ICP61a Sc ppm 10	ME- ICP61a Sr ppm 10	ME- ICP61a Th ppm 50	ME- ICP61a Ti % 0.05	ME- ICP61a Tl ppm 50	ME- ICP61a U ppm 50	ME- ICP61a V ppm 10	ME- ICP61a W ppm 50	ME- ICP61a Zn ppm 20
RX398363																
RX398364																
RX398365																
RX398366																
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RX398399																
RX398400																
RX398401																
RX398402																

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CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method / Analyte / Units / LOR	WEI- 21 Recvd Wt. kg 0.02	ME- ICP06 SiO2 % 0.01	ME- ICP06 Al2O3 % 0.01	ME- ICP06 Fe2O3 % 0.01	ME- ICP06 CaO % 0.01	ME- ICP06 MgO % 0.01	ME- ICP06 Na2O % 0.01	ME- ICP06 K2O % 0.01	ME- ICP06 Cr2O3 % 0.01	ME- ICP06 TiO2 % 0.01	ME- ICP06 MnO % 0.01	ME- ICP06 P2O5 % 0.01	ME- ICP06 SrO % 0.01	ME- ICP06 BaO % 0.01	OA- GRA05 LOI % 0.01
RX398403		1.24	49.2	14.35	14.80	10.40	6.67	2.37	0.47	0.02	1.23	0.20	0.12	0.02	0.02	-0.33
RX398404		0.68	48.1	15.35	14.20	9.95	7.73	2.31	0.42	0.02	1.10	0.19	0.11	0.02	0.01	-0.22
RX398405		0.95	50.2	15.00	13.40	11.25	6.23	2.44	0.44	0.01	1.12	0.19	0.11	0.02	0.01	-0.06
RX398406		0.91	48.6	14.60	13.75	10.75	7.00	2.31	0.43	0.02	1.06	0.19	0.11	0.02	0.01	-0.15
RX398407		0.70	48.2	13.90	13.30	11.05	8.05	2.32	0.13	0.02	0.77	0.19	0.06	0.01	<0.01	1.42
RX398408		1.22	49.6	15.00	13.40	9.29	7.00	3.16	0.52	0.02	0.76	0.21	0.06	0.01	0.01	1.08
RX398409		1.64	49.1	12.90	17.75	10.10	6.39	1.75	0.49	<0.01	1.08	0.25	0.07	0.01	0.01	0.80
RX398410		0.93	49.7	12.85	16.85	10.20	5.60	2.43	0.47	0.01	1.59	0.23	0.17	0.02	0.02	-0.19
RX398411		0.93	45.4	10.85	23.5	8.98	4.77	2.22	0.51	<0.01	3.12	0.27	0.18	0.02	0.02	-0.52
RX398412		0.99	48.0	12.40	19.30	10.20	5.79	2.29	0.40	<0.01	2.10	0.24	0.12	0.02	0.01	-0.19
RX398413		1.06	48.0	12.95	17.20	10.40	6.14	2.27	0.30	0.01	1.74	0.23	0.10	0.02	0.01	-0.19
RX398414		1.51														

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Finalized Date: 26- JUN- 2016
Account: ITSNAE

Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	TOT- ICP06	C- IR07	S- IR08	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81
Analyte	Total	C	S	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf	Ho
Units	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
LOR	0.01	0.01	0.01	0.5	0.5	10	0.01	0.05	0.03	0.03	0.1	0.05	5	0.2	0.01
RX398403	99.54	0.02	0.03	138.5	20.6	150	0.47	4.22	2.53	1.15	20.6	4.35	<5	2.8	1.03
RX398404	99.29	0.04	0.02	132.5	18.5	140	0.63	4.09	2.26	1.17	19.7	3.65	<5	2.3	0.90
RX398405	100.36	0.04	<0.01	127.0	17.7	100	0.31	3.96	2.25	1.15	20.1	3.73	<5	2.3	0.91
RX398406	98.70	0.04	<0.01	126.5	19.0	160	0.49	3.89	2.31	1.19	19.9	3.78	<5	2.7	0.86
RX398407	99.42	0.03	<0.01	18.9	6.6	120	0.13	3.06	1.69	0.73	15.9	2.44	<5	1.6	0.70
RX398408	100.12	0.03	<0.01	81.9	8.0	120	0.62	2.87	1.70	0.71	14.9	2.61	<5	1.5	0.66
RX398409	100.70	0.04	0.01	77.2	11.0	20	0.31	3.54	2.05	0.83	16.5	3.08	<5	2.0	0.87
RX398410	99.95	0.01	0.02	141.5	21.9	90	0.40	5.75	4.06	1.43	20.3	5.54	<5	3.2	1.30
RX398411	99.32	0.02	0.01	162.0	23.7	10	1.11	6.16	3.71	1.52	23.8	5.65	<5	3.7	1.47
RX398412	100.68	0.03	0.01	125.0	18.0	20	0.96	4.82	2.84	1.19	22.0	4.51	<5	2.6	1.11
RX398413	99.18	<0.01	0.01	95.4	13.4	80	0.35	3.80	2.22	1.09	19.6	3.66	<5	1.9	0.86
RX398414															

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Sample Description / Method / Analyte / Units / LOR	ME-MS81 La ppm 0.5	ME-MS81 Lu ppm 0.01	ME-MS81 Nb ppm 0.2	ME-MS81 Nd ppm 0.1	ME-MS81 Pr ppm 0.03	ME-MS81 Rb ppm 0.2	ME-MS81 Sm ppm 0.03	ME-MS81 Sn ppm 1	ME-MS81 Sr ppm 0.1	ME-MS81 Ta ppm 0.1	ME-MS81 Tb ppm 0.01	ME-MS81 Th ppm 0.05	ME-MS81 Tm ppm 0.01	ME-MS81 U ppm 0.05	ME-MS81 V ppm 5
RX398403	9.0	0.38	5.0	11.9	2.82	13.4	3.54	1	155.5	0.3	0.75	1.57	0.40	0.54	372
RX398404	8.3	0.31	4.4	11.7	2.51	11.9	3.28	1	162.0	0.3	0.64	1.41	0.38	0.42	313
RX398405	8.0	0.34	4.4	11.6	2.57	12.7	3.26	1	161.0	0.3	0.68	1.29	0.38	0.45	367
RX398406	8.6	0.32	4.3	12.0	2.67	12.3	3.26	1	164.0	0.3	0.68	1.54	0.35	0.47	331
RX398407	2.5	0.33	1.5	5.3	1.04	1.1	1.91	1	88.3	0.1	0.49	0.31	0.36	0.09	325
RX398408	3.3	0.29	2.3	5.5	1.17	12.5	1.84	1	126.5	0.1	0.46	0.41	0.33	0.14	297
RX398409	4.8	0.36	3.1	7.4	1.71	9.0	2.34	1	97.2	0.2	0.58	0.60	0.34	0.18	380
RX398410	9.4	0.52	5.8	13.6	3.22	11.7	4.43	1	134.5	0.3	1.01	1.34	0.56	0.44	448
RX398411	10.3	0.54	6.7	15.5	3.41	15.4	4.36	1	123.0	0.4	1.09	1.43	0.66	0.48	1270
RX398412	7.7	0.40	4.7	11.6	2.49	13.6	3.23	1	130.5	0.3	0.84	1.06	0.48	0.32	942
RX398413	5.7	0.36	3.5	8.9	1.99	7.5	2.89	1	133.0	0.2	0.62	0.77	0.34	0.25	634
RX398414															

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Finalized Date: 26- JUN- 2016
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Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- 4ACD81	ME- 4ACD81
Method / Analyte	W	Y	Yb	Zr	As	Bi	Hg	In	Re	Sb	Se	Te	Tl	Ag	Cd
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
LOR	1	0.5	0.03	2	0.1	0.01	0.005	0.005	0.001	0.05	0.2	0.01	0.02	0.5	0.5
RX398403	<1	23.6	2.35	95	0.6	0.02	<0.005	0.015	0.001	<0.05	<0.2	0.01	0.05	<0.5	0.5
RX398404	<1	20.7	2.15	84	0.6	0.02	<0.005	0.013	0.001	<0.05	0.2	0.01	0.10	<0.5	0.6
RX398405	<1	21.3	1.98	79	0.5	0.02	<0.005	0.014	0.001	<0.05	0.2	<0.01	0.13	<0.5	0.5
RX398406	1	21.5	2.52	89	0.4	0.02	<0.005	0.012	<0.001	<0.05	<0.2	0.01	0.08	<0.5	0.5
RX398407	<1	16.9	2.08	47	0.4	<0.01	<0.005	0.008	0.001	0.19	0.2	0.02	<0.02	<0.5	0.5
RX398408	<1	15.2	1.89	44	0.4	0.02	<0.005	0.017	<0.001	0.26	<0.2	0.02	0.02	<0.5	0.6
RX398409	<1	20.4	2.55	62	0.3	0.03	<0.005	0.020	0.001	0.10	<0.2	<0.01	0.02	<0.5	0.7
RX398410	<1	30.5	3.10	109	0.5	0.03	<0.005	0.015	0.001	<0.05	0.4	<0.01	0.04	<0.5	0.6
RX398411	<1	33.4	3.35	124	0.4	0.03	<0.005	0.022	0.002	<0.05	<0.2	0.01	0.07	<0.5	0.7
RX398412	<1	25.8	2.92	91	0.3	0.02	<0.005	0.019	0.001	<0.05	<0.2	<0.01	0.05	<0.5	1.0
RX398413	<1	20.9	2.25	67	0.3	0.02	<0.005	0.015	0.001	<0.05	0.3	0.01	0.03	<0.5	0.8
RX398414															

***** See Appendix Page for comments regarding this certificate *****

ALS Minerals

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www.alsglobal.com

To: VALE CANADA LIMITED (GREENFIELDS EXPLORATION)
NORTH AMERICAN FIELD EXPLORATION
HIGHWAY 17 WEST
COPPER CLIFF ON P0M 1N0

Finalized Date: 26- JUN- 2016
Account: ITSNAE

Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method Analyte Units LOR	ME- 4ACD81 Co ppm 1	ME- 4ACD81 Cu ppm 1	ME- 4ACD81 Li ppm 10	ME- 4ACD81 Mo ppm 1	ME- 4ACD81 Ni ppm 1	ME- 4ACD81 Pb ppm 2	ME- 4ACD81 Sc ppm 1	ME- 4ACD81 Zn ppm 2	Ni- OG62 Ni % 0.001	PGM- ICP23 Au ppm 0.001	PGM- ICP23 Pt ppm 0.005	PGM- ICP23 Pd ppm 0.001	ME- ICP61a Ag ppm 1	ME- ICP61a Al % 0.05	ME- ICP61a As ppm 50
RX398403		52	197	10	<1	112	5	36	110		0.004	0.010	0.019			
RX398404		61	163	10	<1	174	6	28	108		0.003	0.013	0.016			
RX398405		45	156	<10	<1	78	5	38	95		0.002	0.008	0.014			
RX398406		54	167	10	<1	123	4	35	101		0.002	0.011	0.016			
RX398407		49	109	<10	<1	89	<2	43	80		0.002	0.014	0.009			
RX398408		45	105	10	<1	71	3	41	69		0.002	0.007	0.006			
RX398409		46	84	10	<1	45	<2	46	95		<0.001	<0.005	<0.001			
RX398410		49	252	10	1	54	2	43	129		0.005	<0.005	0.026			
RX398411		66	237	10	<1	46	9	47	177		0.004	<0.005	0.023			
RX398412		58	181	<10	<1	64	6	47	140		0.002	<0.005	0.013			
RX398413		56	182	10	<1	63	2	45	124		0.002	<0.005	0.015			
RX398414											0.007	<0.005	0.003	<1	0.18	<50

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Finalized Date: 26- JUN- 2016
Account: ITSNAE

Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method Analyte Units LOR	ME- ICP61a Ba ppm 50	ME- ICP61a Be ppm 10	ME- ICP61a Bi ppm 20	ME- ICP61a Ca % 0.05	ME- ICP61a Cd ppm 10	ME- ICP61a Co ppm 10	ME- ICP61a Cr ppm 10	ME- ICP61a Cu ppm 10	ME- ICP61a Fe % 0.05	ME- ICP61a Ga ppm 50	ME- ICP61a K % 0.1	ME- ICP61a La ppm 50	ME- ICP61a Mg % 0.05	ME- ICP61a Mn ppm 10	ME- ICP61a Mo ppm 10
RX398403																
RX398404																
RX398405																
RX398406																
RX398407																
RX398408																
RX398409																
RX398410																
RX398411																
RX398412																
RX398413																
RX398414		<50	<10	<20	0.12	<10	40	10	200	>50	<50	<0.1	<50	0.14	370	<10

***** See Appendix Page for comments regarding this certificate *****

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COPPER CLIFF ON P0M 1N0

Finalized Date: 26- JUN- 2016
Account: ITSNAE

Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

Sample Description	Method / Analyte / Units / LOR	ME- ICP61a Na % 0.05	ME- ICP61a Ni ppm 10	ME- ICP61a P ppm 50	ME- ICP61a Pb ppm 20	ME- ICP61a S % 0.05	ME- ICP61a Sb ppm 50	ME- ICP61a Sc ppm 10	ME- ICP61a Sr ppm 10	ME- ICP61a Th ppm 50	ME- ICP61a Ti % 0.05	ME- ICP61a Tl ppm 50	ME- ICP61a U ppm 50	ME- ICP61a V ppm 10	ME- ICP61a W ppm 50	ME- ICP61a Zn ppm 20
RX398403																
RX398404																
RX398405																
RX398406																
RX398407																
RX398408																
RX398409																
RX398410																
RX398411																
RX398412																
RX398413																
RX398414		<0.05	140	80	<20	>10.0	<50	<10	<10	<50	<0.05	<50	<50	<10	<50	20

***** See Appendix Page for comments regarding this certificate *****

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HIGHWAY 17 WEST
COPPER CLIFF ON P0M 1N0

Finalized Date: 26- JUN- 2016
Account: ITSNAE

Project: R000439.03.13.01.01

CERTIFICATE OF ANALYSIS SD16091920

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Sudbury located at 1351- B Kelly Lake Road, Unit #1, Sudbury, ON, Canada.

Applies to Method:	CRU- 31	CRU- QC	LOG- 22	LOG- 24
	PUL- 32	PUL- QC	SPL- 22Y	WEI- 21

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:	C- IR07	ME- 4ACD81	ME- ICP06	ME- ICP61a
	ME- MS42	ME- MS81	ME- OG62	Ni- OG62
	OA- GRA05	PGM- ICP23	S- IR08	TOT- ICP06

Appendix 5 – Geological Stations Information

Station	Easting	Northing	Elevation	Datum	Zone	Sample	Rep	Rock Type	Outcrop
CLH-16-001	371291	5596202	354	83	16	RX398367	Yes	Gabbro	Yes
CLH-16-002	371309	5596204	356	83	16			Gabbro	Yes
CLH-16-003	371325	5596206	356	83	16	RX398368	Yes	Gabbro	Yes
CLH-16-004	371348	5596209	357	83	16	RX398369	Yes	Gabbro	Yes
CLH-16-005	371371	5596182	357	83	16	RX398370	Yes	Siltstone	Yes
CLH-16-006	371379	5596192	357	83	16			Mafic Volcanic	Yes
CLH-16-007	371497	5596206	362	83	16		Yes	Siltstone	Yes
CLH-16-008	371560	5596208	361	83	16	RX398371	Yes	Siltstone	Yes
CLH-16-009	371583	5596205	365	83	16	RX398372	Yes	Gabbro	Yes
CLH-16-010	371795	5596206	378	83	16	RX398373	Yes	Siltstone	Yes
CLH-16-011	371848	5596210	373	83	16	RX398374	Yes	Siltstone	Yes
CLH-16-012	371928	5596204	380	83	16			Siltstone	Yes
CLH-16-013	372358	5596192	368	83	16			Siltstone	Yes
CLH-16-014	372549	5596191	370	83	16			Siltstone	Yes
CLH-16-015	371482	5596748	360	83	16	RX398375	Yes	Siltstone	Yes
CLH-16-016	371532	5597161	384	83	16	RX398377	Yes	Nip Sill	Yes
CLH-16-017	371359	5598202	368	83	16		Yes	Siltstone	Yes
CLH-16-018	370682	5598199	370	83	16	RX398378	Yes	Gabbro	Yes
CLH-16-019	370750	5597999	359	83	16	RX398379	Yes	Siltstone	Yes
CLH-16-020	370772	5597997	369	83	16	RX398380	Yes	Gabbro	Yes
CLH-16-021	370789	5597996	367	83	16	RX398382	Yes	Siltstone	Yes
CLH-16-022	371093	5597997	370	83	16		Yes	Siltstone	Yes
CLH-16-023	371274	5597411	356	83	16		Yes	Siltstone	Yes
CLH-16-024	371070	5597419	366	83	16	RX398383	Yes	Nip Sill	Yes
CLH-16-025	370939	5597580	366	83	16			Nip Sill	Yes
CLH-16-026	371267	5597600	357	83	16	RX398384	Yes	Siltstone	Yes
IFWP092	371181	5596244	347	83	16	RX398385		diabase	Yes
IFWP093	371132	5596431	344	83	16			diabase	Yes
IFWP094	371915	5596420	360	83	16			mafic meta-volcanic	Yes
IFWP095	372114	5596358	355	83	16			mafic meta-volcanic	Yes
IFWP096	372360	5595990	354	83	16			mafic meta-volcanic	Yes
IFWP097	372321	5596020	354	83	16			mafic meta-volcanic	Yes
IFWP098	372144	5596033	357	83	16	RX398386		mafic meta-volcanic	Yes
IFWP099	371704	5596004	352	83	16	RX398387		Gabbro - Nipigon	Yes
IFWP100	371457	5595984	345	83	16	RX398388		Gabbro - Nipigon	Yes
IFWP103	371387	5595816	347	83	16	RX398389		Gabbro - Nipigon	Yes
IFWP104	372201	5595815	362	83	16			mafic meta-volcanic	Yes
IFWP105	372381	5595796	365	83	16	RX398390		mafic meta-volcanic	Yes
IFWP106	372662	5595774	368	83	16			mafic meta-volcanic	Yes
IFWP107	372685	5595809	369	83	16			mafic meta-volcanic	Yes
IFWP108	372693	5595741	372	83	16			mafic meta-volcanic	Yes
IFWP109	372685	5595653	364	83	16			mafic meta-volcanic	Yes
IFWP110	372622	5595258	368	83	16			mafic meta-volcanic	Yes
IFWP111	372589	5595201	364	83	16			mafic meta-volcanic	Yes
IFWP112	370394	5598614	370	83	16			mafic meta-volcanic	Yes
IFWP113	370375	5598709	371	83	16			mafic meta-volcanic	Yes
IFWP114	370603	5598997	371	83	16			mafic meta-volcanic	Yes
IFWP115	370840	5599003	371	83	16			mafic meta-volcanic	Yes
IFWP116	370967	5598983	388	83	16	RX398391		Melo Gabbro - Nipigon	Yes
IFWP117	371292	5598608	379	83	16			mafic meta-volcanic	Yes
IFWP118	370649	5598590	389	83	16	RX398392		Melo Gabbro - Nipigon	Yes
IFWP119	370601	5598601	404	83	16	RX398393		Melo Gabbro - Nipigon	Yes
IFWP120	370543	5598593	386	83	16			Melo Gabbro - Nipigon	Yes
IFWP135	370276	5599958	351	83	16			mafic meta-volcanic	Yes

Station	Mineralization	Comments
CLH-16-001	No	
CLH-16-002		
CLH-16-003		
CLH-16-004		
CLH-16-005		
CLH-16-006		
CLH-16-007	Trace	
CLH-16-008		
CLH-16-009		
CLH-16-010		
CLH-16-011	Trace	
CLH-16-012		Possibly mafic volcanic
CLH-16-013		
CLH-16-014		
CLH-16-015	Trace	Possibly metabasalt
CLH-16-016		Nipigon Sill Gabbro
CLH-16-017		
CLH-16-018	Trace	Near Conductor in Northern Grid, plag and pyroxene rich gabbro w/ trace sulfide
CLH-16-019		
CLH-16-020	Trace	Plag rich variety of the melagabbro
CLH-16-021	Diss	Contains diss sulfide and amygules or qtz eyes w/ sulfide around them.
CLH-16-022		
CLH-16-023		
CLH-16-024		Nipigon Sill
CLH-16-025		
CLH-16-026	Diss	Contains qtz veins and diss sulfide, possible cause of AEM conductors in this area of grid
IFWP092		
IFWP093		
IFWP094		
IFWP095		
IFWP096	trace	many joints, qtz carb vein. Outcrop is 20x30m
IFWP097		
IFWP098		chl carb, hem staining on jnts. Outcrop is 20x40m
IFWP099	none	outcrop is small 1m high ridge 10m long
IFWP100	none	
IFWP103		outcrop 10x40m
IFWP104	trace	outcrop 30x50m
IFWP105	trace	outcrop 30x15m
IFWP106		outcrop 10x20m
IFWP107		outcrop forms ridge 2m high
IFWP108		
IFWP109		
IFWP110		
IFWP111		
IFWP112		very jntd
IFWP113		small ridge 20x10m
IFWP114		
IFWP115		very jntd and sheared.
IFWP116		
IFWP117		
IFWP118		
IFWP119		
IFWP120		
IFWP135		

Appendix 6 – QA/QC Report

QAQC Report – Canada Project Generation Multicommodity
North Nipigon and Aminikie Basin, Ontario
2016 Surface Rock Sampling Program

Prepared by
Henrique Izumi, P.Geo.
November 28, 2016

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Summary

This document presents the QC report of the surface geochem sampling and assaying program carried out at the, North Nipigon and Aminikie basin properties located in the Thunder Bay region, Ontario, in 2016.

47 routine core samples, 3 blanks and 2 certified reference materials were submitted for preparation and assay work with ALS Minerals. All samples were submitted for preparation at their facilities in Thunder Bay, Ontario, while assay work was carried out at ALS facilities in Vancouver, British Columbia.

Quality control materials were inserted in the analytical batches at the following average rates:

- CRM: 4.2% of the routine samples.
- Blanks: 6.4% of the routine samples.
- No field duplicates were inserted in the batches.

The following table summarizes the sampling information.

Campaign	SAMPLES			
	Rock	CRM	BLANK	TOTAL
CNG-NNPG-C	47	2	3	52
Total	**47**	**2**	**3**	**52**

Table 1: *Sampling Summary*

No major failures were noted on the reference materials or blanks inserted in the analytical batches. In general, the assay data is deemed to be acceptable for the purposes of the program.

Analytical Methods

All samples were assayed using the ALS Complete Characterization Package (CCP-PKG01). This package uses ME-ICP06 for the major elements and ME-MS81 for trace elements including the rare earth suite. Carbon and Sulphur are determined by Leco Methods while the volatile Au related trace elements are determined after an aqua regia digestion using method ME-MS42. Base metals are determined after a four-acid digestion using method ME-4ACD81.

- ME-ICP06: Lithium Metaborate/Lithium Tetraborate ($LiBO_2$/$Li_2B_4O_7$) Fusion , analysis of major oxides by ICPAES.
- OA-GRA05: Thermal decomposition of sample; gravimetric determination of loss on ignition (LOI).
- ME-MS-81: Lithium Metaborate Fusion package, with ICP-MS finish.

- C-CIR07: sample decomposition in LECO furnace and carbon determination nby infrared spectrometry.
- S-IR08: total sulphur determination
- ME-MS42: Aqua regia sample digestion, with ICP-MS finish.
- ME-4ACD81: 4 acid digestion with ICP-AES finish.

In addition, precious metals (Au, Pt, Pd) were determined using method PGM-ICP23.

- PGM-ICP23: fire assay decomposition with Au, Pd and Pt determination by by inductively coupled plasma – atomic emission spectrometry (ICP-AES).

One single sample (RX398414) that consisted of massive sulphide was assayed using method ME-MS61A.

- ME-MS61A: determination of high grade materials with four acid digestion and ICP-AES finish.

Analytes and Ranges

The following tables display the analytes and analytical ranges of the methods used in the program.

Method ME ICP06 Lithium Metaborate/Lithium Tetraborate Fusion				
Element	**Symbol**	**Units**	**Lower Limit**	**Upper Limit**
Aluminum	Al_2O_3	%	0.01	100
Barium	BaO	%	0.01	100
Calcium	CaO	%	0.01	100
Chromium	Cr_2O_3	%	0.01	100
Iron	Fe_2O_3	%	0.01	100
Magnesium	MgO	%	0.01	100
Manganese	MnO	%	0.01	100
Phosphorus	P_2O_5	%	0.01	100
Potassium	K_2O	%	0.01	100
Silicon	SiO_2	%	0.01	100
Sodium	Na_2O	%	0.01	100
Strontium	SrO	%	0.01	100
Titanium	TiO_2	%	0.01	100

***Table 2:** ALS method ME-ICP61. Analytes and Analytical Ranges.*

Method OA GRA05				
Element	**Symbol**	**Units**	**Lower Limit**	**Upper Limit**
Loss on Ignition	LOI	%	0.01	100

Table 3: *ALS method OA-GRA05. Analytes and Analytical Ranges.*

C IR07 LECO				
Element	**Symbol**	**Units**	**Lower Limit**	**Upper Limit**
Carbon	C	%	0.01	50

Table 4: *ALS method C-IR07. Analytes and Analytical Ranges.*

S IR08 LECO				
Element	**Symbol**	**Units**	**Lower Limit**	**Upper Limit**
Sulphur	S	%	0.01	50

Table 5: *ALS method S-IR08. Analytes and Analytical Ranges.*

ME MS42 Aqua Regia Digestion				
Element	**Symbol**	**Units**	**Lower Limit**	**Upper Limit**
Arsenic	As	ppm	0.1	250
Bismuth	Bi	ppm	0.01	250
Mercury	Hg	ppm	0.005	250
Antimony	Sb	ppm	0.05	250
Selenium	Se	ppm	0.2	250
Tellurium	Te	ppm	0.01	250

Table 6: *ALS method ME-MS42. Analytes and Analytical Ranges.*

ME 4ACD81				
Element	**Symbol**	**Units**	**Lower Limit**	**Upper Limit**
Silver	Ag	ppm	0.5	100
Arsenic	As	ppm	5	10000
Cadmium	Cd	ppm	0.5	500
Cobalt	Co	ppm	1	10000
Copper	Cu	ppm	1	10000
Molybdenum	Mo	ppm	1	10000
Nickel	Ni	ppm	1	10000
Lead	Pb	ppm	2	10000
Zinc	Zn	ppm	2	10000

Table 7: *ALS method ME-4ACD81. Analytes and Analytical Ranges.*

ME MS81 Lithium Metaborate Fusion				
Element	**Symbol**	**Units**	**Lower Limit**	**Upper Limit**
Silver	Ag	ppm	1	1000
Barium	Ba	ppm	0.5	10000
Cerium	Ce	ppm	0.5	10000
Cobalt	Co	ppm	0.5	10000
Chromium	Cr	ppm	10	10000
Cesium	Cs	ppm	0.01	10000
Copper	Cu	ppm	5	10000
Dysprosium	Dy	ppm	0.05	1000
Erbium	Er	ppm	0.03	1000
Europium	Eu	ppm	0.03	1000
Gallium	Ga	ppm	0.1	1000
Gadolinium	Gd	ppm	0.05	1000
Hafnium	Hf	ppm	0.2	10000
Holmium	Ho	ppm	0.01	1000
Lanthanum	La	ppm	0.5	10000
Lutetium	Lu	ppm	0.01	1000
Molybdenum	Mo	ppm	2	10000
Niobium	Nb	ppm	0.2	10000
Neodymium	Nd	ppm	0.1	10000
Nickel	Ni	ppm	5	10000
Lead	Pb	ppm	5	10000
Praseodymium	Pr	ppm	0.03	1000
Rubidium	Rb	ppm	0.2	10000
Samarium	Sm	ppm	0.03	1000
Tin	Sn	ppm	1	10000
Strontium	Sr	ppm	0.1	10000
Tantalum	Ta	ppm	0.1	10000
Terbium	Tb	ppm	0.01	1000
Thorium	Th	ppm	0.05	1000
Thallium	Tl	ppm	0.5	1000
Thulium	Tm	ppm	0.01	1000
Uranium	U	ppm	0.05	1000
Vanadium	V	ppm	5	10000
Tungsten	W	ppm	1	10000
Yttrium	Y	ppm	0.5	10000
Ytterbium	Yb	ppm	0.03	1000
Zinc	Zn	ppm	5	10000
Zirconium	Zr	ppm	2	10000

Table 8: *ALS method ME-MS81. Analytes and Analytical Ranges.*

PGM ICP23 Fire Assay,				
Element	**Symbol**	**Units**	**Lower Limit**	**Upper Limit**
Gold	Au	ppm	0.001	10
Platinum	Pt	ppm	0.005	10
Palladium	Pd	ppm	0.001	10

Table 9: *ALS method PGM-ICP23. Analytes and Analytical Ranges.*

ME ICP61A 4 Acid Digestion				
Element	**Symbol**	**Units**	**Lower Limit**	**Upper Limit**
Silver	Ag	ppm	1	200
Aluminum	Al	%	0.05	50
Arsenic	As	ppm	50	100 000
Barium	Ba	ppm	50	50 000
Beryllium	Be	ppm	10	10 000
Bismuth	Bi	ppm	20	50 000
Calcium	Ca	%	0.05	50
Cadmium	Cd	ppm	10	10 000
Cobalt	Co	ppm	10	50 000
Chromium	Cr	ppm	10	100 000
Copper	Cu	ppm	10	100 000
Iron	Fe	%	0.05	50
Gallium	Ga	ppm	50	50 000
Potassium	K	%	0.1	30
Lanthanum	La	ppm	50	50 000
Magnesium	Mg	%	0.05	50
Manganese	Mn	ppm	10	100 000
Molybdenum	Mo	ppm	10	50 000
Sodium	Na	%	0.05	30
Nickel	Ni	ppm	10	100 000
Phosphorus	P	ppm	50	100 000
Lead	Pb	ppm	20	100 000
Sulphur	S	%	0.05	10
Antimony	Sb	ppm	50	50 000
Scandium	Sc	ppm	50	50 000

ME ICP61A 4 Acid Digestion				
Element	**Symbol**	**Units**	**Lower Limit**	**Upper Limit**
Strontium	Sr	ppm	10	100 000
Thorium	Th	ppm	50	50 000
Titanium	Ti	%	0.05	30
Thallium	Tl	ppm	50	50 000
Uranium	U	ppm	50	50 000
Vanadium	V	ppm	10	100 000
Tungsten	W	ppm	50	50 000
Zinc	Zn	ppm	20	100 000

Table 10: *ALS method MEICP61A. Analytes and Analytical Ranges.*

QC Materials

Quartz blank material and certified in-house reference material NISU-001 were inserted in the analytical batches.

Blanks

In-house quartz material QZTEBLK was used in the program as blank material.

Historically collected from relatively clean quartzite, QZTEBLK was stockpiled at the Vale Sudbury smelter complex and used as a smelter flux. In 2010, as the reserves of the blank material QZTEBLK were approaching depletion, additional material was collected from the Vale owned Lawson quartzite quarry located near Espanola, Ontario, and crushed at the ALS preparation facility in Sudbury, Ontario. Depending on the crushing batch it may be labeled either as QZTEBLK-V1, QZTEBLK-V1, or QZTEBLK-4.

The error limits adopted by the Brownfields and Mines Exploration groups for the blank material QZTEBLK listed below can be used to monitor potential carry-over and sample contamination.

Reference Material	Method	Element	Unit	Error Limit
Quartz Blank	ME-ICP81	Cu	%	0.025
		Co	%	0.01
		Ni	%	0.025
		Fe	%	0.71
		S	%	0.14
	ME-ICP41	As	ppm	10
		Pb	ppm	10

Reference Material	Method	Element	Unit	Error Limit
	ME-ICP61	Cu	ppm	20
		Co	ppm	20
		Ni	ppm	20
		Fe	%	0.71
		S	%	0.14
		As	ppm	100
		Pb	ppm	40
	PGM-ICP23	Au	oz/ton	0.00015 (0.0051 ppm)
		Pd	oz/ton	0.00015 (0.0051 ppm)
		Pt	oz/ton	0.0005 (0.017 ppm)

Table 11: *Quartz Blank Adopted Error Limits*

Blanks that exceed the error limits listed in the table above are to be considered failed only if the estimated carry-over from the immediately preceding sample is greater than 1%.

The carry-over is calculated using this formula:

$$\text{Carry Over (\%)} = [\text{Assay}_{(blank)}/\text{Assay}_{(sample)} \times \text{Weight}_{(blank)}/\text{Weight}_{(sample)}] \times 100$$

Reference Material NISU-001

Certified by Ore Research & Exploration Pty, the in-house reference material NISU-001 is derived from nickel sulphide ore sourced from Vale's GT-34 target. Its certified values are listed in the following table.

NISU 001 Certified Values				
Element	Recommended Value	95% Confidence Interval		1SD
		Low	High	
Fusion				
Cr (ppm)	110	97	122	8
Fe_2O_3 (wt.%)	12.698	12.565	12.831	0.225
Ni (wt.%)	1.236	1.219	1.254	0.021
S (wt.%)	2.378	2.334	2.423	0.069
SiO_2 (wt.%)	45.738	45.375	46.100	0.688
4 Acid				
Co (ppm)	196	190	203	9
Cr (ppm)	73.8	70.5	77.0	6.0
Cu (ppm)	2024	1991	2056	64
MnO (wt.%)	0.089	0.086	0.092	0.005
Mo (ppm)	3.6	3.2	3.9	0.3
Zn (ppm)	50.1	48.5	51.6	2.7

Table 12: *NISU-001 Certified Values*

Sample Submittals and Analytical Batches QAQC

A total of 52 samples that included 477 routine rock samples, 3 blanks and 3 certified reference materials were submitted for preparation and assay work with ALS Minerals. All samples, were prepared at the ALS facilities in Thunder Bay, Ontario. All assay work was carried out at ALS facilities in Vancouver, British Columbia.

The next table lists the particulars of the sample submittal and related QAQC information.

LABJOBNO	SUBMITTAL	ASSAYED	SAMPLES				QAQC COMMENTS
			ROCK	CRM	BLANK	TOTAL	
SD16091920	CNG-NNPG-001/16	26-Jun-2016	47	2	3	52	No failures noted. Batch accepted.
TOTAL			47	2	3	52	

Table 13: *Sample Submittals and QC Summary*

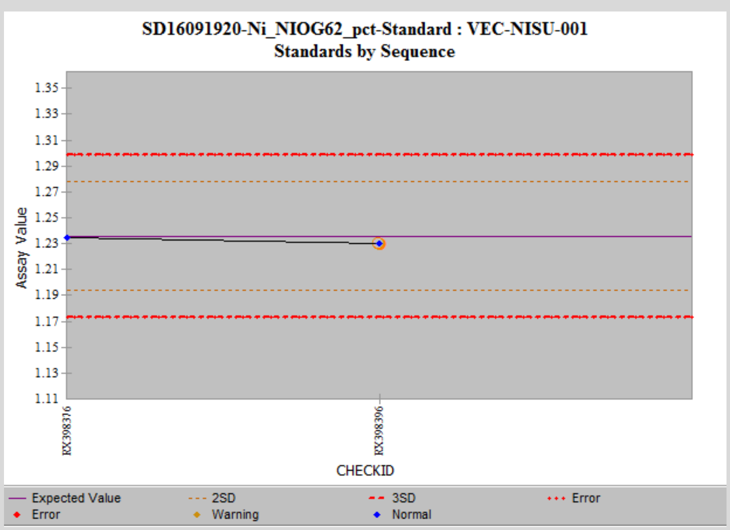
No failures were noted in the assays of the reference material inserted in the batches.

In general, the assay data is considered as acceptable for the purposes of the program.

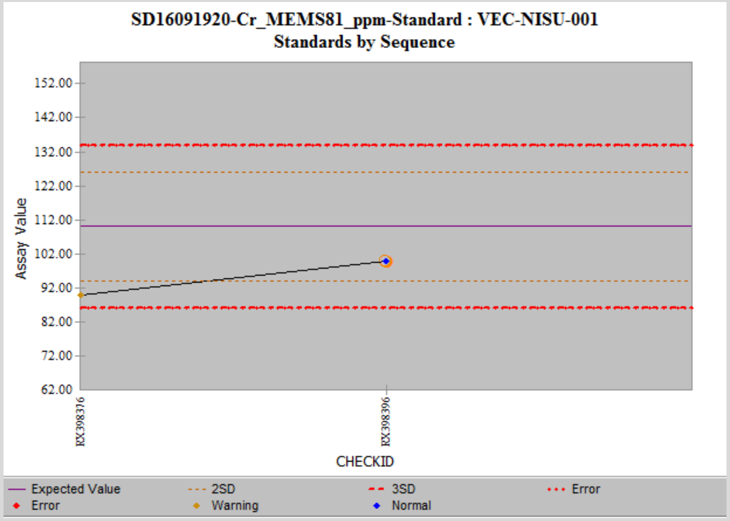
Appendix 1 lists the control reference and blank samples inserted in the batches along with the assay values of the monitored elements.

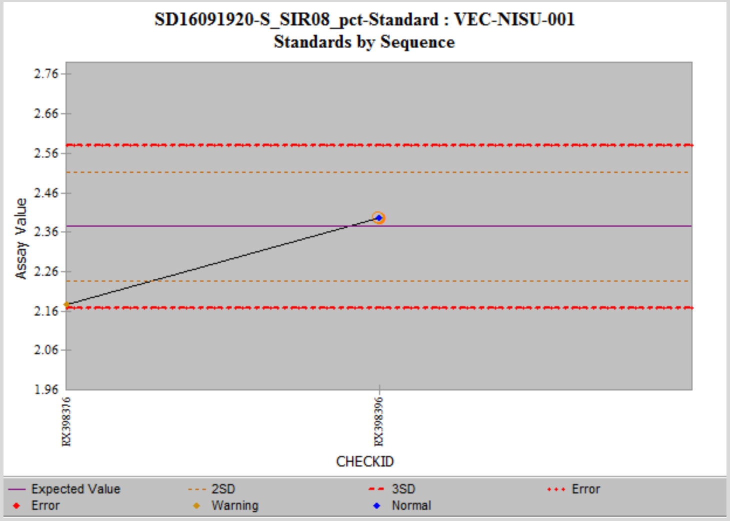
Control Charts – Reference Material NISU-001

NISU 001
Control Charts

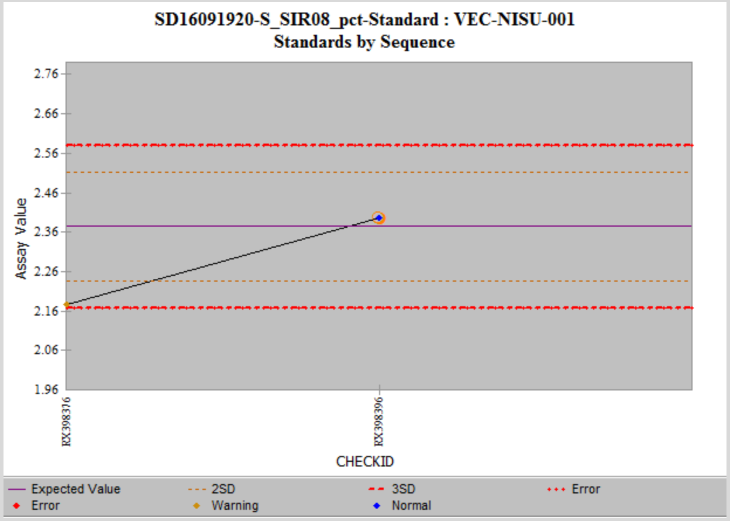


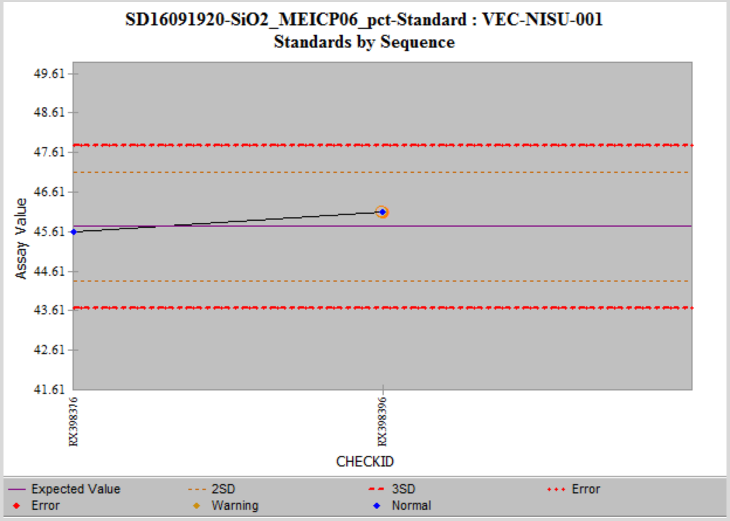
NISU 001
Control Charts





NISU 001
Control Charts





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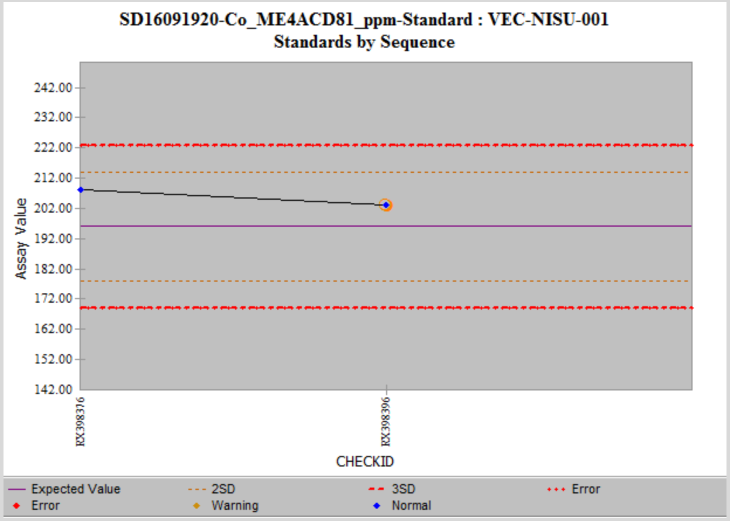
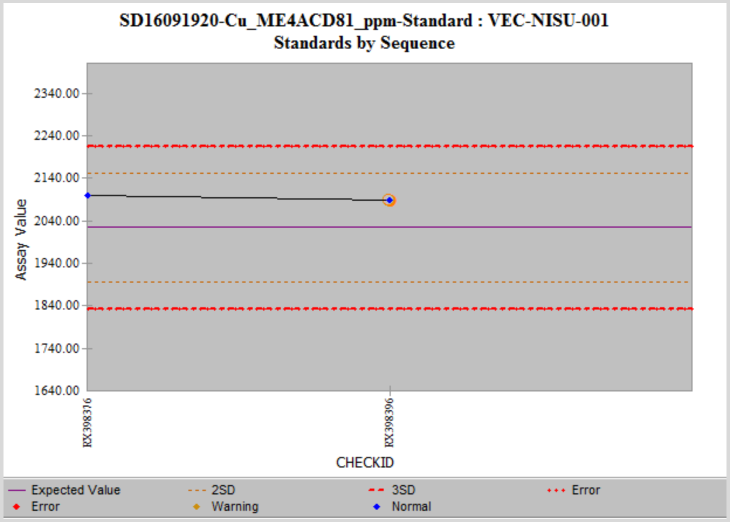
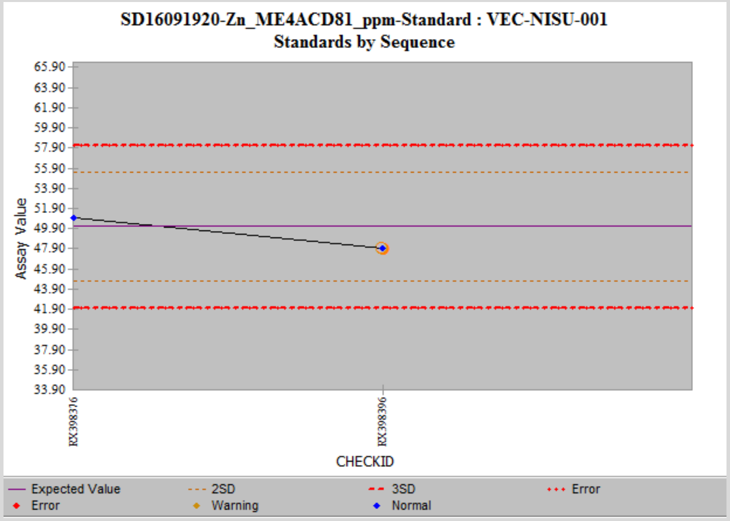
Control Charts



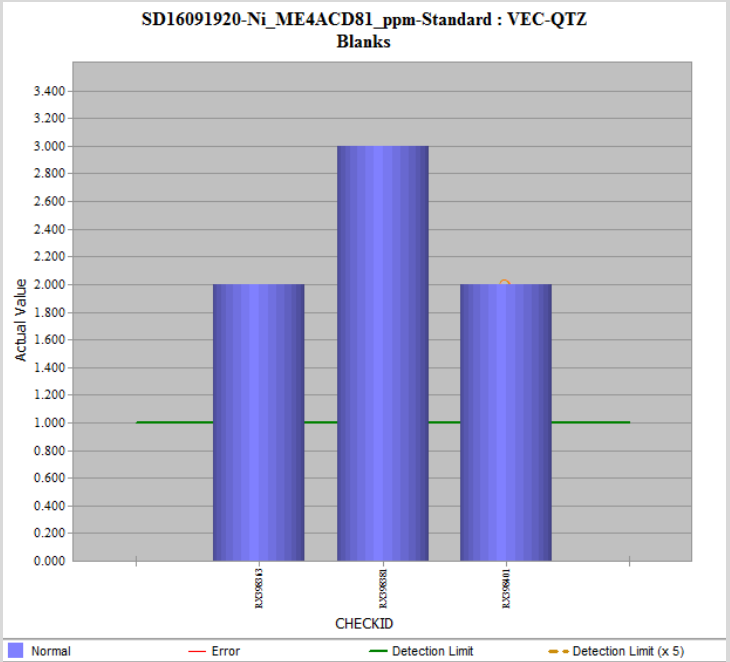


NISU 001
Control Charts

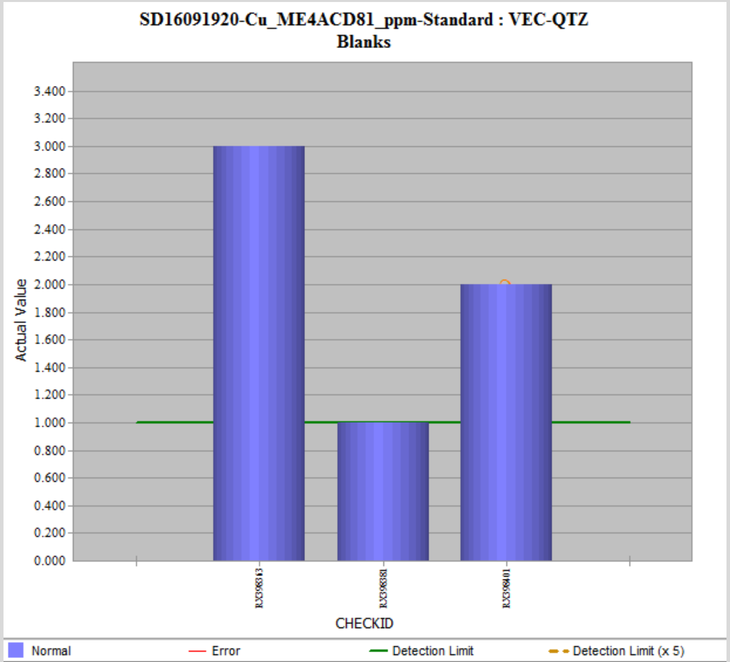


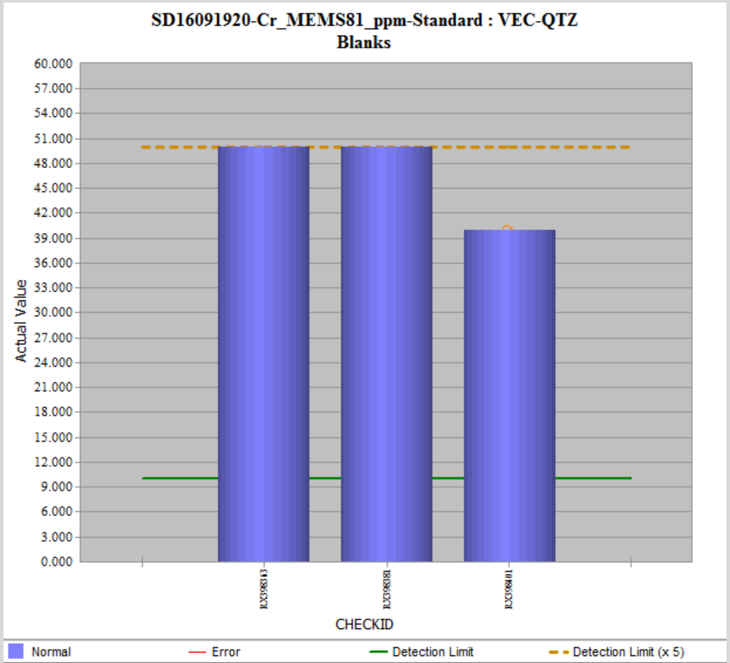
Control Charts – Blanks

Blank Quartz
Control Charts

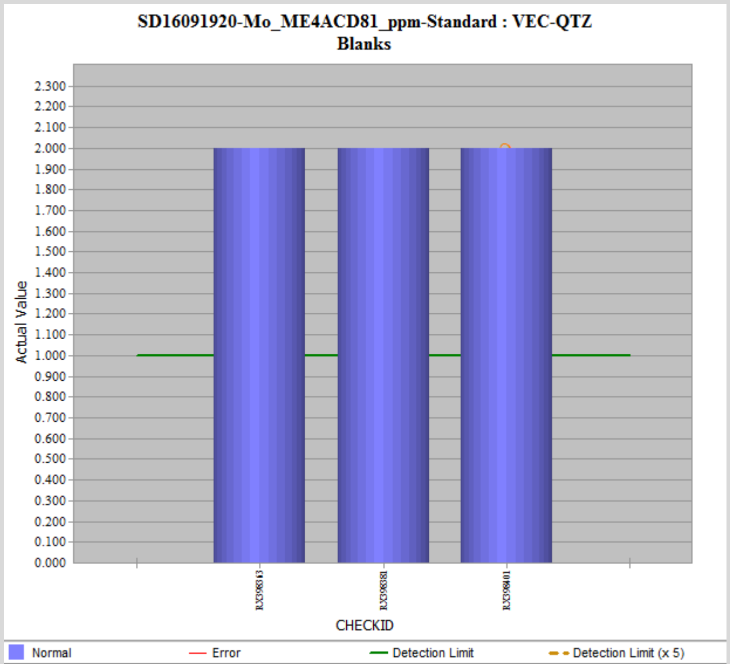


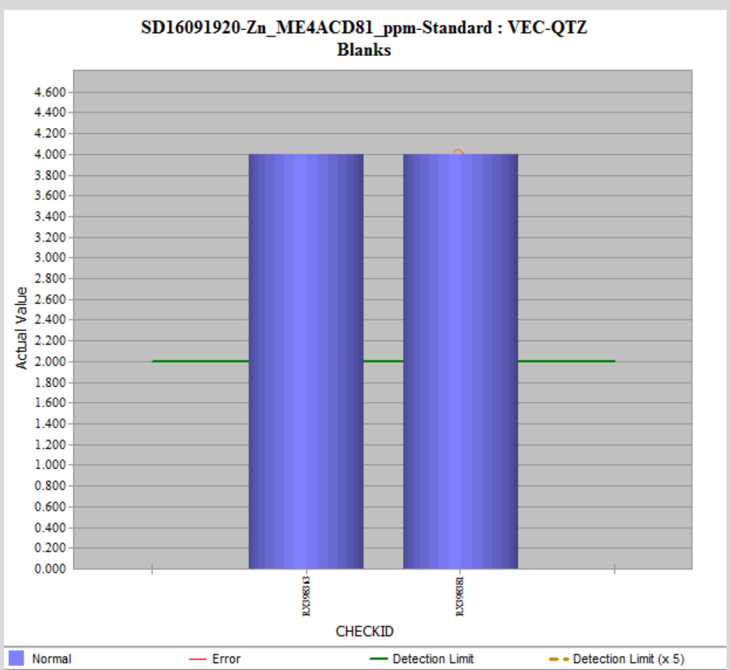
Blank Quartz
Control Charts





Blank Quartz
Control Charts





	METHOD	OG62	ME MS81	SIR08	ME ICP06	ME ICP06	ME ICP06	ME 4ACD81	ME 4ACD81	ME 4ACD81	ME 4ACD81	ME 4ACD81
	UNIT	%	PPM	%	%	%	%	ppm	ppm	ppm	ppm	ppm
CHECKID	STANDARDID	Ni	Cr	S	Fe2O3	SiO2	MnO	Co	Cu	Mo	Ni	Zn
RX398363	VEC-QTZ		50	<0.01	0.71	97.8	0.01	<1	3	2	2	4
RX398376	VEC-NISU-001	1.235	90	2.18	12.7	45.6	0.09	208	2100	2	>10000	51
RX398381	VEC-QTZ		50	<0.01	0.87	96.7	0.01	<1	1	2	3	4
RX398396	VEC-NISU-001	1.23	100	2.4	12.6	46.1	0.09	203	2090	3	>10000	48
RX398401	VEC-QTZ		40	<0.01	0.62	96.7	0.01	<1	2	2	2	<2

Blank and CRM Samples: Assay Data (Monitored Elements)

Appendix 7 – Geophysical Data

Data Files are on the Included CD