NIOBAY METALS INC.

TECHNICAL REPORT ON THE JAMES BAY NIOBIUM PROJECT, COCHRANE DISTRICT, NORTHEASTERN ONTARIO, CANADA

NI 43-101 Technical Report

Qualified Persons:
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August 23, 2020

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Report Control Form

Document Title	Technical Report on the James Bay Niobium Project, Cochrane District, Northeastern Ontario, Canada		
Client Name & Address	NioBay Metals Inc. 1100 Ave des Canadiens-de-Montréal Suite 300 Montreal, QC H3B 2S2		
Document Reference	Project #3263	***Status & Issue No.***	FINAL Version
Issue Date	August 23, 2020		
Lead Author	Dorota El-Rassi	(Signed)	
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Report Distribution

Name	No. of Copies
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RPA Filing	1 (project box)

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1 SUMMARY

EXECUTIVE SUMMARY

Roscoe Postle Associates Inc. (RPA), now part of SLR Consulting Ltd (SLR), was retained by NioBay Metals Inc. (NioBay) to prepare an independent Technical Report on the James Bay Niobium Project (the Project or the Property), located in Cochrane District, northeastern Ontario, Canada. The purpose of this Technical Report is to support the disclosure of an updated Mineral Resource estimate. This Technical Report conforms to National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101). RPA visited the Property on August 21, 2020.

As of the effective date of this Technical Report, the Project consists of a single mining lease covering an area of approximately 2,585 ha located in 1:50,000 scale NTS map sheet 42I/15 (Meengan Creek). The Project is located approximately 40 km south of the town of Moosonee, Ontario, and is accessible by helicopter during the summer and by winter road in the winter.

NioBay is a Montreal-based company formed in January 1954 as Exploration Minière du Nord Inc., known more recently as MDN Inc. (MDN), and is a reporting issuer in British Columbia, Alberta, Ontario, and Quebec. The common shares of NioBay trade on the TSX Venture Exchange and the company is under the jurisdiction of the *Autorité des marchés financiers du Québec.*

On June 7, 2016, MDN announced that it had entered into an agreement with Barrick Gold Corporation, James Bay Columbium Ltd., and Goldcorp Inc. (collectively the Vendors) whereby it could earn a 100% interest in the Property by making a cash payment and issuing common shares, subject to a 2% net smelter return (NSR) royalty, with MDN having the right to buy out half the royalty. The Vendors retained the right to buy back a 51% interest should one or more deposits containing at least two million ounces of gold or gold equivalent, in aggregate, be established. The buy-back right does not apply to the niobium content of the Property. On June 28, 2016, MDN announced that it had closed the previously announced transaction. On September 2, 2016, MDN announced a name change to NioBay Metals Inc.

Currently, the major asset associated with the Project is a strategic land position covering prospective lithologies and structures. The Project hosts the James Bay niobium deposit (historically referred to as the Argor deposit), which is at the resource definition stage, as well as a large land position which merits additional exploration.

Since acquiring the Property, NioBay has completed a re-logging program of historical core, check sampling, preliminary metallurgical test work on a composite sample taken from historical drill core, and an initial diamond drilling program consisting of seven holes totalling 3,090 m to test the depth extension of a high-grade portion of the deposit.

The updated Mineral Resource estimate prepared by RPA is summarized in Table 1-1. The Mineral Resources conform to Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves dated May 10, 2014 (CIM (2014) definitions).

TABLE 1-1 MINERAL RESOURCE ESTIMATE AS OF JULY 9, 2020
NioBay Metals Inc. – James Bay Niobium Project

Category	Tonnage (Mt)	Grade (%Nb_2O_5)	Contained Nb_2O_5 (Mkg)
Indicated	29.7	0.53	158
Inferred	33.8	0.52	177

Notes:
1. CIM (2014) definitions were followed for Mineral Resources.
2. Mineral Resources are reported using a cut-off grade of 0.3% Nb_2O_5 based on an underground mining scenario, an operating cost of C$70/t, and a metallurgical recovery of 70%.
3. Mineral Resources are estimated using a long-term niobium price of US$40 per kg and a US$/C$ exchange rate of 1:1.2.
4. A minimum mining width of approximately 7.5 m was used.
5. Bulk density is 2.93 t/m^3.
6. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
7. Resources situated in a 46 m thick crown pillar have been excluded.
8. Numbers may not add due to rounding.

RPA is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

All currency in this Technical Report is Canadian dollars (C$) unless otherwise noted

CONCLUSIONS

The Project is hosted by the Argor Carbonatite Complex (the Carbonatite Complex) which occurs within the northern portion of the Kapuskasing Structural Zone (KSZ). The KSZ crosscuts an east-trending fabric within the Archean rocks of the Superior Province and is sub-parallel to the Trans-Superior Tectonic Zone (TSTZ). Numerous alkalic and carbonatite intrusions occur along and within the KSZ.

Pyrochlore and, to a lesser extent, columbite, are the economic minerals of interest and are hosted predominantly by the sovite phase of the carbonatite.

Extensive work during the mid to late 1960s resulted in a historical Mineral Resource estimate and feasibility study. The Property has been dormant since 1972. Re-sampling of the historical diamond drill core by NioBay has confirmed that, despite some variation at the individual sample level, the overall grade over wide intervals is similar to historical values. RPA reviewed the analytical quality control results and did not find any material issues. In RPA's opinion, the resource database is of sufficient quality to estimate Mineral Resources

Preliminary test work on a composite sample consisting of core from 12 historical drill holes included gravity, flotation, QEMSCAN mineralogy, and heavy liquid separation tests. Although preliminary and subject to verification, the results proved encouraging. Additional test work on fresh material is recommended.

Historical diamond drilling has outlined mineralization with three-dimensional continuity, and size and grades that can potentially be extracted economically. The 2020 drilling campaign successfully confirmed grades and continuity of the mineralization at depth.

Mineral Resources were estimated and classified by RPA following CIM (2014) definitions. At a cut-off grade of 0.3% Nb_2O_5, Indicated Mineral Resources are estimated to total 29.7 million tonnes grading 0.53% Nb_2O_5 containing approximately 158 million kilograms of niobium oxide. In addition, Inferred Mineral Resources are estimated to total 33.8 million tonnes grading 0.52 Nb_2O_5 containing 177 million kilograms of niobium oxide.

RPA is of the opinion that there is excellent exploration potential to increase the Mineral Resource at depth with more diamond drilling.

No Mineral Reserves have been estimated on the Property.

RECOMMENDATIONS

RPA is of the opinion that the Project hosts a significant niobium mineralized system, there is good potential to increase the resource base, and additional exploration and technical studies are warranted.

RPA has reviewed and concurs with NioBay's proposed exploration programs and budgets. Phase I of the recommended work will include 4,000 m of drilling focussed on upgrading portions of the Inferred Resources to Indicated Resources and extending the Mineral Resources at depth. It will also include environmental, engineering, and metallurgical study required to support a preliminary economic assessment (PEA) study.

Details of the recommended Phase I program can be found in Table 1-2.

TABLE 1-2 PROPOSED BUDGET – PHASE I
NioBay Metals Inc. – James Bay Niobium Project

Item	C$
PHASE I	
Head Office Expenses & Property Holding Costs	60,000
Project Management & Staff Cost	150,000
Travel Expenses	25,000
Diamond Drilling (4,000 m)	450,000
Analyses	100,000
Helicopter Support	347,000
Permitting & Environmental Studies	50,000
Resource Estimate Update	30,000
Camp/Accommodations	90,000
Metallurgical Test Work	100,000
Preliminary Economic Assessment Report	150,000
Social/Consultation	50,000
Total	**1,602,000**

A Phase II exploration program, contingent on the results of Phase I, will include diamond drilling and technical studies required to support a prefeasibility study (PFS) in 2022. The expected budget for the Phase II program is $5,000,000.

TECHNICAL SUMMARY

PROPERTY DESCRIPTION AND LOCATION

The Project is located in northeastern Ontario, approximately 40 km south of the town of Moosonee. Access to the Property is by helicopter year-round and bush roads from Moosonee during the winter months. It is centred at approximately Latitude 50°50’69” N and Longitude 80°40’48” W within 1:50,000 scale NTS map sheet 42I/15 (Meengan Creek).

The Property consists of a single mining lease (Lease 19586 or Claim CLM11) covering an area of 2,585.15 ha and 306 contiguous single claims covering an additional 6,247.56 ha.

The lease includes both mining and surface rights. An application with the Ontario Ministry of Energy, Northern Development and Mines (MENDM) to renew the mining lease for another 10 year term has been signed by the Lieutenant Governor and will be registered in the next few weeks. NioBay has maintained the lease in good standing by making annual mining rental costs that total $7,755.54.

The single cell claims are in good standing until their renewal date of January 30, 2022. Work required to renew all of the single cell claims on their renewal date totals approximately $122,400.

EXISTING INFRASTRUCTURE

There is no permanent infrastructure on the Property except for the historical underground excavations which consist of a 133 ft (40.54 m) shaft and a 100 ft (30.5 m) crosscut.

HISTORY

From April to June 1965, Canadian Aero Mineral Surveys Limited (Canadian Aero) was contracted to fly a combined magnetic-electromagnetic (EM)-radiometric survey over an area including the licences of occupation held by Consolidated Morrison Explorations Limited (Consolidated Morrison), Argor Explorations Limited (Argor Explorations), and Goldray Mines Limited (Goldray). A total of approximately 3,059 line-km were flown at an azimuth of N045°W and a nominal flight line spacing of approximately 400 m. A total of 46 anomalous zones consisting of clusters of individual anomalies of various intensities and magnetic correlation were detected, including three high priority areas.

From June to August 1965, as a follow-up to the airborne survey, a helicopter-supported geological mapping program was carried out by Argor Explorations on behalf of the concession holders to establish the regional geological controls and investigate the cause of specific magnetic anomalies.

From June to October 1965, Huntec Limited (Huntec) was contracted to complete ground geophysical surveys over several airborne geophysical anomalies. Geophysical surveys consisted of vertical loop electromagnetic (VLEM), horizontal loop electromagnetic (HLEM), magnetic, and refraction seismic surveys. A total of 27 anomalies or anomaly complexes identified by these surveys were selected for diamond drill testing from 1965 to May 1969. A total of 49 holes for a total of 32,041 ft (9,765.6 m) were drilled. A number of conductors were defined, two of which, the Alpha-A and Gamma targets on the Consolidated Morrison concession, were recommended for drilling. Additional geophysical surveying was recommended for several other targets prior to defining drill targets.

One of the magnetic anomalies, the Alpha-B, was found to be caused by a niobium-bearing carbonatite complex. In 1966, 18 holes were drilled and niobium mineralization was traced over a strike length of 7,800 ft (2,377 m). An additional 67 holes were drilled in 1967, bringing the number of holes drilled to 85 for a total of 47,625 ft (14,514 m) in outlining the deposit to a maximum depth of 900 ft (274.3 m). Niobium mineralization was encountered between sections 8+00S and 40+00N but the mineralized carbonatite remained open to the north.

Fifteen soil test holes were drilled during this period to investigate the stability of the glacial overburden and Paleozoic sedimentary cover, which together average approximately 100 ft (30.5 m), over the Precambrian basement.

In 1968, a test shaft was sunk in the central part of the mineralized body and a 250 ton bulk sample of niobium-bearing carbonatite was mined for metallurgical testing. The shaft was sunk to 133 ft (40.54 m) and a 100 ft (30.5 m) crosscut was driven.

In 1967, Canadian Bechtel Limited (Bechtel) completed a preliminary mining appraisal on the Project (historically referred to as the Argor deposit). The study considered three scenarios 1) mining the entire deposit by open pit, 2) mining the entire deposit by underground methods, and 3) mining the south end of the deposit by open pit followed by underground mining of the northwest limb. The assessment of the three scenarios was based on annual tonnage sufficient to produce 7.5 million pounds of Nb_2O_5 for 20 years with an overall mill recovery of 75%. Bechtel estimated "geological ore reserves" of 61,560,000 tons grading 0.52% Nb_2O_5. This estimate was prepared prior to the implementation of NI 43-101 and is considered to be historical in nature and should not be relied upon.

In 1979, Bechtel updated the preliminary mining appraisal. No further work had been completed between 1979 and 2016 when NioBay acquired the Project.

GEOLOGY AND MINERALIZATION

The James Bay niobium deposit is hosted by the Carbonatite Complex and occurs in the northern portion of the KSZ of the Superior Province. Numerous alkalic and carbonatite intrusions occur along this structure, which extends from the east shore of Lake Superior northeast to James Bay. Rocks in the general area of the Property are characterized by granulite facies rank gneisses and a pervasive north- to northeast-trending fault pattern.

The Carbonatite Complex is overlain by approximately 10 m of overburden and 20 m of Lower Devonian rocks of the Sextant Formation consisting of poorly bedded sandstone, mudstone, siltstone, and loosely cemented conglomerate.

The Carbonatite Complex appears to be a dyke-like body with a long axis striking north. The enclosing gneisses are described as mylonitic or augen gneisses.

The principal niobium-bearing mineral is pyrochlore, but niobium also occurs, to a much lesser extent, in the mineral columbite.

According to Stockford (1972), the main pyrochlore-bearing phases of the Carbonatite Complex include lineated dolomitic carbonatite (Unit No. 5), calcite-dolomite carbonatite breccia (Unit No. 6), massive calcite-dolomite carbonatite (Unit No. 7), and "crushed" dolomitic carbonatite (Unit No. 8).

Significant pyrochlore mineralization occurs only in sodium and magnesium-rich phases of the carbonatite. The highest-grade mineralization occurs in a mixed dolomite-calcite host (Unit No. 6). The pure dolomitic host (Unit No. 5) produces intermediate grades and pure calcite (Units No. 2, No. 7, and No. 9) is normally low in grade or barren.

The columbite occurs along the eastern side of the complex over a strike length of 120 m in the crushed dolomitic carbonatite (Unit No. 8). The columbite is totally or partially pseudomorphic after pyrochlore. The columbite may occur in the core or the rim of the crystal, or it may completely replace the pyrochlore. The columbite does not appear to be restricted to any one rock unit, however, it does appear to be related to fracturing and hematitic alteration.

Pale green fluor-variety of apatite is universally present in all rock units within the carbonatite-pyroxenite complex. Usually, the highest-grade bands of pyrochlore-bearing carbonatite also contain abnormally high quantities of apatite, while the converse is not true.

EXPLORATION STATUS

The James Bay niobium deposit is at the Mineral Resource development stage. The remainder of the Property is at an early exploration stage.

MINERAL RESOURCES

The Mineral Resources conform to CIM (2014) definitions and are summarized in Table 1-1. RPA considers the Mineral Resources of the James Bay Project to likely be amenable to underground extraction. The Mineral Resource estimate has an effective date of July 9, 2020 and excludes a portion of the deposit designated as part of the crown pillar.

RPA carried out database compilation and verification, geological modelling and wireframe construction, capping and compositing data for geostatistical analysis and variography, selection of estimation strategy and estimation parameters, block modelling and grade interpolation, block model validation, classification of Mineral Resources, assessment of reasonable prospects for eventual economic extraction, and selection of reporting assumptions.

RPA used Leapfrog software to create a three-dimensional geological model from core log information. Mineralization was modelled at an approximate modelling threshold of 0.3% Nb_2O_5. RPA determined that capping was not required due to the disseminated nature of the niobium and the overall grade distribution. Prior to grade interpolation, the assay data within each of the individual mineralized grade shells were combined into three metre long downhole composites, based on the analysis of the predominant sampling length, the style of mineralization, and continuity of grade.

Grade estimation was carried out in two passes; the first pass used full variogram ranges for the search, whereas the second pass ranges were enlarged to populate grades in the entire mineralized envelope.

The block model was validated using volumetric comparison of the blocks versus wireframes, a quantile-quantile (QQ) plot of 2017 re-sampling versus historical data, comparison of block grades by the primary ordinary kriging estimator to results from inverse distance cubed and nearest neighbour estimates, swath plot comparisons, visual inspection of block grades versus composite grades, and statistical comparison of block grades to assay and composite grades. A cut-off grade of 0.3% Nb_2O_5 was calculated using an average operating cost of C$70/t, a metallurgical recovery of 70%, and a niobium price of US$40 per kg with a US$/C$ exchange rate of 1:1.2.

MINERAL RESERVES

There are no current Mineral Reserves estimated on the Property.

2 INTRODUCTION

Roscoe Postle Associates Inc. (RPA), now part of SLR Consulting Ltd (SLR), was retained by NioBay Metals Inc. (NioBay) to prepare an independent Technical Report on the James Bay Niobium Project (the Project or the Property), located in Cochrane District, northeastern Ontario, Canada. The purpose of this Technical Report is to support the disclosure of an updated Mineral Resource estimate. This Technical Report conforms to National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101).

NioBay is a Montreal-based company formed in January 1954 as Exploration Minière du Nord Inc. and was subsequently known as MDN Inc. (MDN). NioBay is a reporting issuer in British Columbia, Alberta, Ontario, and Quebec. The common shares of NioBay trade on the TSX Venture Exchange and the company is under the jurisdiction of the *Autorité des marchés financiers du Québec*.

Apart from the Project, NioBay has staked three other properties hosting carbonatites elsewhere in Ontario and controls a property in Crevier Township, Lac St. Jean area, Quebec with the potential to host niobium-tantalum mineralization.

Currently, the major asset associated with the Project is a strategic land position covering prospective lithologies and structures. The Project hosts the James Bay niobium deposit (historically referred to as the Argor deposit), which is at the resource definition stage, as well as a large land position which merits additional exploration.

RPA estimated Mineral Resources for the Project in 2018 and disclosed the results in a NI 43-101 compliant technical report.

Since acquiring the Property, NioBay has completed a re-logging program of historical core, check sampling, preliminary metallurgical test work on a composite sample taken from historical drill core, and an initial diamond drilling program consisting of seven holes totalling 3,090 m to test the depth extension of a high-grade portion of the deposit.

SOURCES OF INFORMATION

A site visit to the Project was carried out by Dorota El-Rassi, M.Sc., P.Geo., RPA Senior Geological Engineer, on August 21, 2020. Ms. El-Rassi inspected the historical shaft site and examined the recent drill hole locations,. Paul Chamois, M.Sc.(A), P.Geo., Principal Geologist with RPA, visited the site previously on September 27, 2017. During the visit, Mr. Chamois inspected the historical shaft site, examined core from historical drilling programs stored in Moosonee, confirmed the local geological setting, investigated factors that might affect the Project, and collected core samples from historical drill holes for bulk density determination.

During the preparation of this Technical Report and the site visit, discussions were held with personnel from NioBay:

- Claude Dufresne, P.Eng., President and CEO
- Jacquelin Gauthier, P.Geo., Vice-President, Geology

This Technical Report was prepared by Dorota El-Rassi, M.Sc., P.Geo., RPA Senior Geological Engineer, a Qualified Persons as defined by NI 43-101. Ms. El-Rassi is responsible prepared for all sections in this Technical Report.

The documentation reviewed, and other sources of information, are listed at the end of this Technical Report in Section 27 References.

LIST OF ABBREVIATIONS

Units of measurement used in this Technical Report conform to the metric system. Imperial units are used in descriptions of historical work, provided with metric equivalents. All currency in this Technical Report is Canadian dollars (C$) unless otherwise noted.

μ	micron	kVA	kilovolt-amperes
μg	microgram	kW	kilowatt
a	annum	kWh	kilowatt-hour
A	ampere	L	litre
bbl	barrels	lb	pound
Btu	British thermal units	L/s	litres per second
°C	degree Celsius	m	metre
C$	Canadian dollars	M	mega (million); molar
cal	calorie	m^2	square metre
cfm	cubic feet per minute	m^3	cubic metre
cm	centimetre	MASL	metres above sea level
cm^2	square centimetre	m^3/h	cubic metres per hour
d	day	mi	mile
dia	diameter	min	minute
dmt	dry metric tonne	μm	micrometre
dwt	dead-weight ton	mm	millimetre
°F	degree Fahrenheit	mph	miles per hour
ft	foot	MVA	megavolt-amperes
ft^2	square foot	MW	megawatt
ft^3	cubic foot	MWh	megawatt-hour
ft/s	foot per second	oz	Troy ounce (31.1035g)
g	gram	oz/st, opt	ounce per short ton
G	giga (billion)	ppb	part per billion
Gal	Imperial gallon	ppm	part per million
g/L	gram per litre	psia	pound per square inch absolute
Gpm	Imperial gallons per minute	psig	pound per square inch gauge
g/t	gram per tonne	RL	relative elevation
gr/ft^3	grain per cubic foot	s	second
gr/m^3	grain per cubic metre	st	short ton
ha	hectare	stpa	short ton per year
hp	horsepower	stpd	short ton per day
hr	hour	t	metric tonne
Hz	hertz	tpa	metric tonne per year
in.	inch	tpd	metric tonne per day
in^2	square inch	US$	United States dollar
J	joule	USg	United States gallon
k	kilo (thousand)	USgpm	US gallon per minute
kcal	kilocalorie	V	volt
kg	kilogram	W	watt
km	kilometre	wmt	wet metric tonne
km^2	square kilometre	wt%	weight percent
km/h	kilometre per hour	yd^3	cubic yard
kPa	kilopascal	yr	year

3 RELIANCE ON OTHER EXPERTS

This Technical Report has been prepared by RPA for NioBay. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to RPA at the time of preparation of this Technical Report.
- Assumptions, conditions, and qualifications as set forth in this Technical Report.

For the purpose of this Technical Report, RPA has relied on ownership information provided by NioBay. RPA has not researched property title or mineral rights for the Project and expresses no opinion as to the ownership status of the Property.

Except for the purposes legislated under provincial securities laws, any use of this Technical Report by any third party is at that party's sole risk.

4 PROPERTY DESCRIPTION AND LOCATION

The Project is located in northeastern Ontario, approximately 40 km south of the town of Moosonee and approximately 640 km north of Toronto (Figure 4-1). It is located in the West of Marberg Creek Area and West of Flinch Lake Area, District of Cochrane, within 1:50,000 scale National Topographic System (NTS) sheet 42I/15 (Meengan Creek). The Project consists of a single, heptagonally shaped mining lease which extends over a distance of 9.36 km in a north-northeasterly direction and covers an area of approximately 2,585.1 ha. The centre of the mining lease is located at approximately Latitude 50°50’69” N and Longitude 80°40’48” W. The centre of the currently defined mineralization is located at approximately Latitude 50°43’31” N and Longitude 80°34’46” W (Berger, Singer and Orris, 2009).

LAND TENURE

The Property consists of a single mining lease (Lease 19586 or Claim CLM11) covering an area of 2,585.15 ha and 306 single cell claims contiguous with Lease 19586 covering an additional 6,247.56 ha (Figure 4-2). The Property covers a total area of 8,832.71 ha.

The lease includes both mining and surface rights. An application with the Ontario Ministry of Energy, Northern Development and Mines (MENDM) to renew the mining lease for another 10 year term has been signed by the Lieutenant Governor and will be registered in the next few weeks. NioBay has maintained the lease in good standing by making annual mining rental costs that total $7,755.54.

A list of the single cell claims together with relevant tenure details including their tenure number, claim type, status, surface area and issue and expiry dates is contained in Appendix 1 of this Technical Report. The work required to renew all the single cell claims on their renewal date (January 30, 2022) totals approximately $122,400.

On June 7, 2016, MDN, a predecessor company to NioBay, announced that it had signed a definitive property purchase agreement to acquire a 100% interest in the Project from Barrick Gold Corporation, James Bay Columbium Ltd., and Goldcorp Inc. (collectively the Vendors). In consideration for acquiring the Project, MDN agreed to make a one-time cash payment of $25,000 and issue 5,000,000 common shares to the Vendors. MDN’s interest in the Project is subject to a 2% net smelter return (NSR) royalty with MDN having the right to buy-back half the royalty (1%) at any time for $2,000,000 (in constant 2016 dollars, subject to a cap of $3,000,000). The Vendors retained the right to re-acquire a 51% interest in the Project for 2.5 times MDN's expenditures should one or more deposits containing at least two million ounces of gold and/or gold equivalent ounces of resources, in aggregate, be established. The back-in right does not apply to the niobium content. On June 28, 2016, MDN announced that the transaction had closed. On September 2, 2016, MDN announced a name change to NioBay Metals Inc.

MINERAL RIGHTS

In Canada, natural resources fall under provincial jurisdiction. In the Province of Ontario, the management of mineral resources and the granting of mining rights for mineral substances and their use are regulated by the Ontario Mining Act and administered by the MENDM. Mineral rights are owned by the Crown and are distinct from surface rights.

ROYALTIES AND OTHER ENCUMBRANCES

Except for the NSR royalty mentioned above, RPA is not aware of any other royalties due, back-in rights, or other obligations or encumbrances by virtue of any underlying agreements.

PERMITTING

The MENDM is the principal agency responsible for implementing the provincial *Mining Act* and regulating the mining industry in Ontario. It is involved in the permitting and approvals process throughout the lifecycle of a mine. Operations would include other provincial ministries including, the Ministry of Environment, Conservation, and Parks, and Ministry of Natural Resources and Forestry.

Given the Property's early stage of development, permits, approval applications, and reporting requirements for MENDM may include:

- Aboriginal Consultation Reports
- Exploration Permits
- Exploration Plans

FIRST NATIONS CONSULTATION

On December 24, 2019, NioBay announced that it had entered into a Protection Agreement (PA) with the Moose Cree First Nation (MCFN) with respect to the drilling program documented in this Technical Report.

RPA is not aware of any environmental liabilities on the Property. NioBay has all required permits to conduct the proposed work on the Property. RPA is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the proposed work program on the Property other than the consultation process with the MCFN. Status of the consultation process is provided in Section 20 Environmental Studies, Permitting, and Social or Community Impact.

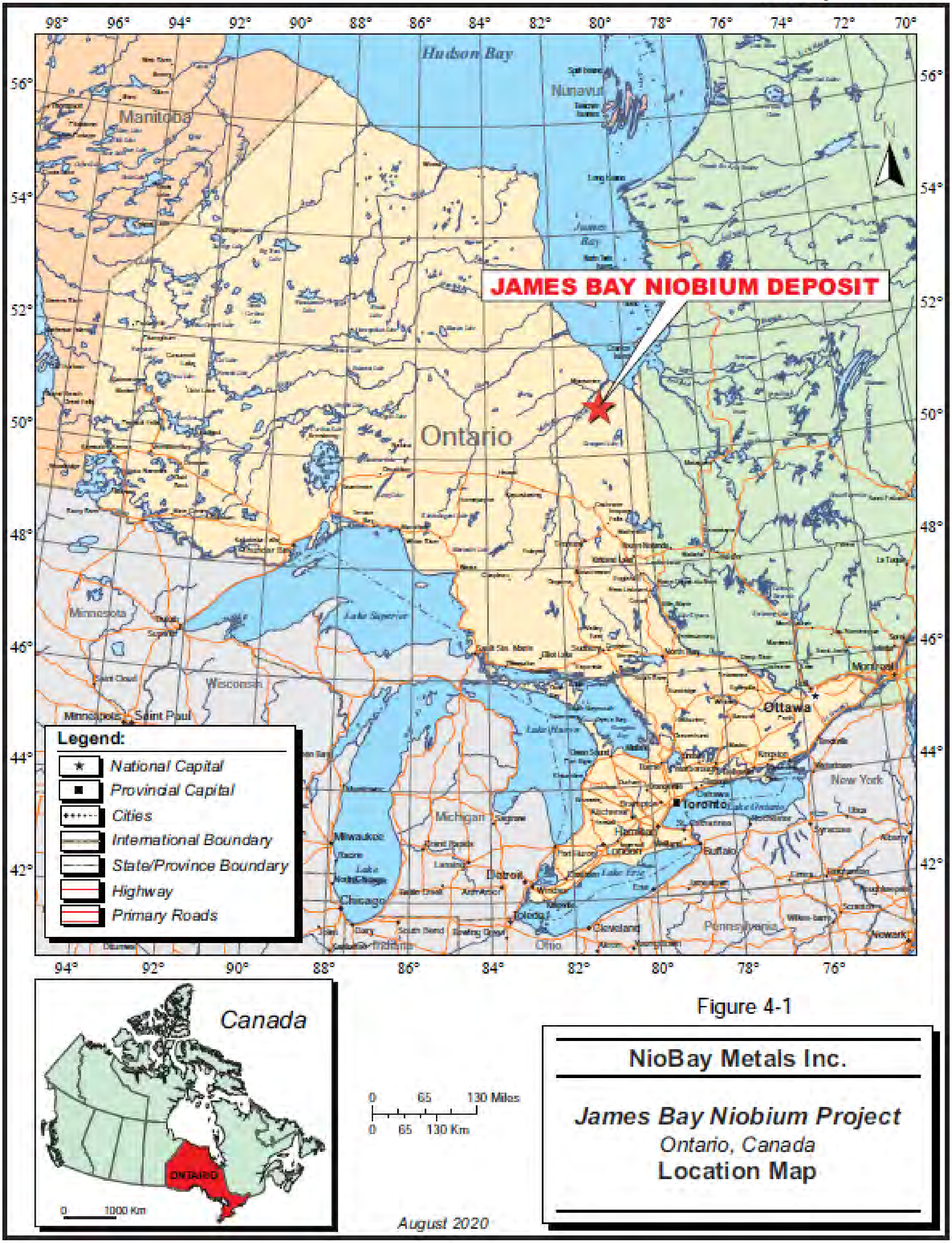

Figure 4-1

NioBay Metals Inc.

James Bay Niobium Project
Ontario, Canada
Location Map

August 2020

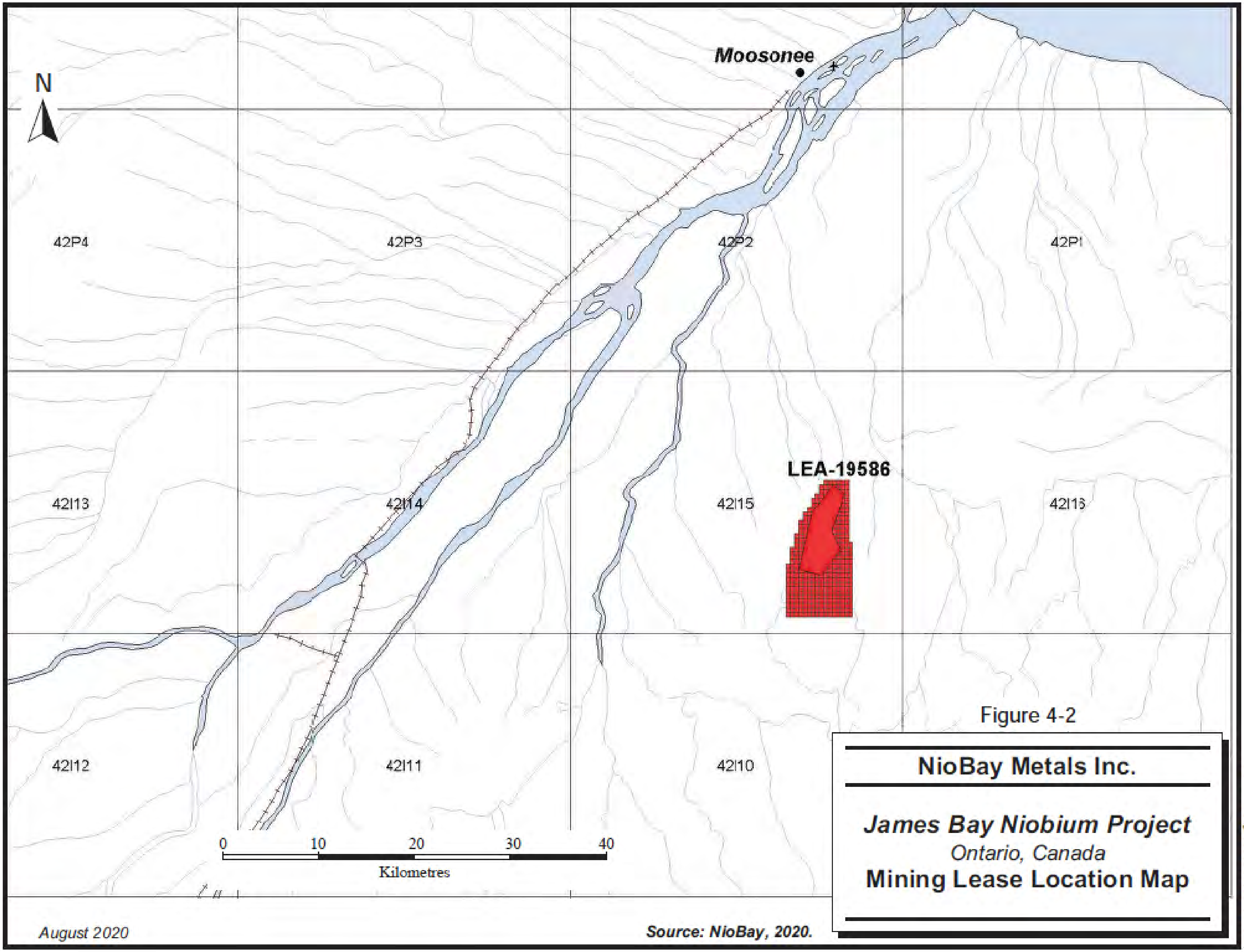

Figure 4-2

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Mining Lease Location Map

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

ACCESSIBILITY

The Project is located approximately 40 km south of the town of Moosonee which has a population of 1,725 according to the 2011 census. Moosonee is connected to Cochrane, Ontario by the Ontario Northland Railway which provides six day a week passenger service and twice weekly freight service. Moosonee also benefits from daily commercial flights from Timmins. The Wetum winter road links Moose Factory to the provincial road system at Otter Rapids seasonally, approximately 149 km to the south. Access to the Property is by helicopter year-round and bush roads from Moosonee during the winter months. Helicopters are available for charter in Timmins, Cochrane, and seasonally in Moosonee.

CLIMATE

The Property lies within the James Bay Lowland ecoregion of the Hudson Bay Plain ecozone and is marked by brief and warm summers and cold and snowy winters. The average mean daily temperature in July ranges from 12°C to 16°C and in January is approximately -23°C to -25°C (Marshall and Schutt, 1999).

Table 5-1 illustrates the major climatic data for the closest weather station located at Moosonee, approximately 40 km to the north.

TABLE 5-1 SUMMARY OF MOOSONEE CLIMATIC DATA
NioBay Metals Inc. – James Bay Niobium Project

Description	Value
Mean January Temperature	-20.0°C
Mean July Temperature	15.8°C
Extreme Maximum Temperature	37.8°
Extreme Minimum Temperature	-48.9°C
Average Annual Precipitation	703.6 mm
Average Annual Rainfall	502.6 mm
Average Annual Snowfall	226.8 cm

Source: Environment Canada

Despite the harsh climatic conditions, geophysical surveying and diamond drilling can be performed on a year-round basis. Geological mapping and geochemical sampling are typically restricted to the months of May through to October.

LOCAL RESOURCES

Various services including temporary accommodations, medical services, a post office, fuel (gas diesel and propane) stations, and some heavy equipment and machinery shops are available in Moosonee. A greater range of general services are available in Cochrane and specialized services including trained manpower and contractors are available in Timmins. Moosonee is connected to the provincial power grid system by a 115 kV high tension line from the 182 MW Otter Rapids generating station located on the Abitibi River, approximately mid-way between Cochrane and Moosonee.

INFRASTRUCTURE

There is no permanent infrastructure on the Property except for the historical underground excavations which consist of a 133 ft (40.54 m) shaft and a 100 ft (30.5 m) crosscut. The Property is located approximately 46 km east of the Ontario Northland Railway which links Cochrane to Moosonee. Figure 5-1 illustrates the infrastructure in the vicinity of the Project.

PHYSIOGRAPHY

The area is poorly drained, flat and dominated by extensive wetlands. The elevation on the Property varies from approximately 35 MASL to 45 MASL.

Treed-open fen (28.6%) and treed-open bog (38.9%) comprise the primary vegetation found in the James Bay Lowland ecoregion. Coniferous forest is the predominant forest class (12.6%), with black spruce usually being the most dominant tree species, followed by sparse forest (7.6%). Well-developed forests are usually limited to alongside rivers and creeks. Open water covers 5.6% of the area (EEM Inc., 2017).

The region provides habitat for large mammals such as woodland caribou, moose, black bear, lynx, timber wolves, and small mammals including muskrat, ermine, weasel, marten, snowshoe hare, and wolverine. Migratory bird species returning to these lowlands annually to nest include Canada goose, black duck, oldsquaw, king eider, pintail, and whistling swan. Upland bird species such as willow ptarmigan, spruce grouse, snow owl, and ravens are year-round residents.

RPA is of the opinion that, to the extent relevant to the mineral project, there is a sufficiency of surface rights and water.

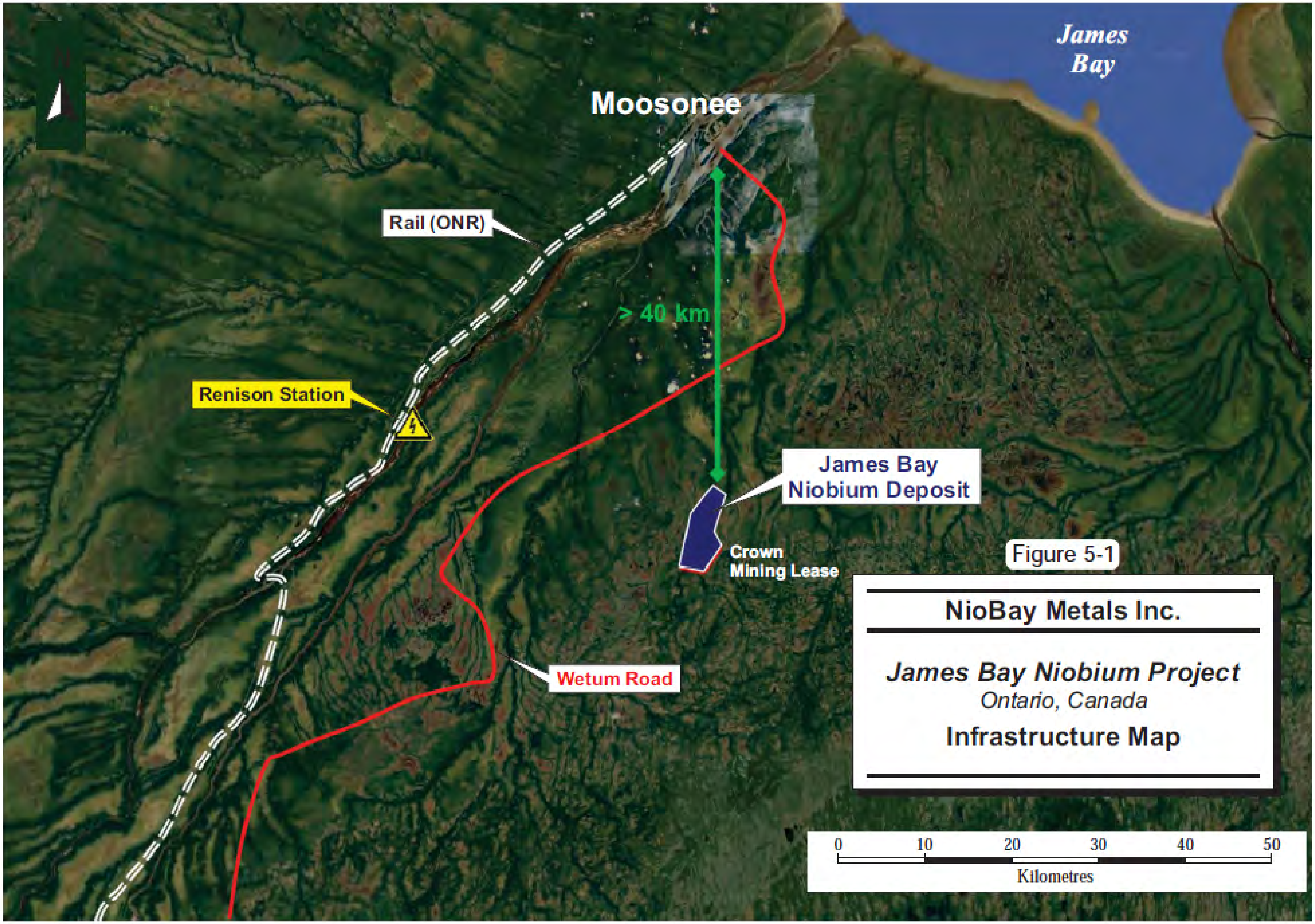

Figure 5-1

NioBay Metals Inc.

James Bay Niobium Project
Ontario, Canada

Infrastructure Map

August 2020

Source: NioBay, 2017.

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6 HISTORY

PRIOR OWNERSHIP

Contiguous mining concessions #13758, #13759, and #13760 were held by Consolidated Morrison Explorations Ltd. (Consolidated Morrison), Argor Explorations Ltd. (Argor Explorations), and Goldray Mines Ltd. (Goldray) as of 1965, respectively. Ownership of these concessions was eventually consolidated and held by Barrick Gold Corporation (60%), Goldcorp Inc. (9%), and James Bay Columbium/Consolidated Morrison (31%). In June 2016, NioBay entered into an agreement whereby it acquired a 100% interest in the Project, subject to a 2% NSR royalty.

The single cell claims contiguous with Lease 19586 were issued as of January 30, 2020 and are 100% owned by NioBay.

EXPLORATION AND DEVELOPMENT HISTORY

The location of the early ground geophysical surveys and diamond drilling performed in the area of the current mining lease is not well documented. Some of the surveys and drill holes mentioned below may in fact not be located on the current mining lease.

Historically, little interest had been shown in the James Bay region of northeastern Ontario by mining companies. Some prospecting was done in the Partridge River area in 1929 and 1930. During the 1950s, a thorium prospect was discovered in Pitt Township, southwest of the Project. Later Selco Exploration Inc. (Selco) made a reconnaissance survey along the French River for diamonds. A subsidiary of De Beers, Hard Metals, continued the work initiated by Selco, with negative results (Boyko, 1966).

The following is taken primarily from Stockford (1970) unless otherwise indicated.

In 1965, a consortium of companies including Argor Explorations, Consolidated Morrison, and Goldray were awarded three licences of occupation, each covering 64,000 acres (25,900 ha) and covering approximately 60 miles (96 km) in length by three to seven miles (5 km by 11 km) wide. The initial financial support for the Project was provided by Imperial Oil Enterprises Ltd. which earned a 60% interest in the licence areas and claim holdings in the vicinity.

From April to June 1965, Canadian Aero Mineral Surveys Limited (Canadian Aero) was contracted to fly a combined magnetic-electromagnetic (EM)-radiometric survey over an area including the licences of occupation held by Consolidated Morrison, Argor Explorations, and Goldray. A total of approximately 3,059 line-km were flown at an azimuth of N045°W and at a nominal flight line spacing of approximately 400 m. A total of 46 anomalous zones consisting of clusters of individual anomalies of various intensities and magnetic correlation were detected, including three high priority areas (Wagg, 1966).

From June to August 1965, as a follow-up to the airborne survey, a helicopter-supported geological mapping program was carried out by Argor Explorations on behalf of the concession holders to establish the regional geological controls and investigate the cause of specific magnetic anomalies.

From June to October 1965, Huntec Limited (Huntec) was contracted to complete ground geophysical surveys over several airborne geophysical anomalies. Geophysical surveys consisted of vertical loop electromagnetic (VLEM), horizontal loop electromagnetic (HLEM), magnetic, and refraction seismic surveys. A total of 27 anomalies or anomaly complexes identified by these surveys were selected for diamond drill testing from 1965 to May 1969. A total of 49 holes totalling 32,041 ft (9,765.6 m) were drilled. A number of conductors were defined, two of which (the Alpha-A and Gamma targets on the Consolidated Morrison concession) were recommended for drilling. Additional geophysical surveying was recommended for several other targets prior to defining drill targets (Patterson and Lane, 1966).

One of the magnetic anomalies, the Alpha-B, was found to be caused by a niobium-bearing carbonatite complex. In 1966, 18 holes were drilled and niobium mineralization was traced over a strike length of 7,800 ft (2,377 m). An additional 67 holes were drilled in 1967, bringing the number of holes drilled to 85 for a total of 47,625 ft (14,514 m) in outlining the deposit to a maximum depth of 900 ft (274.3 m). Niobium mineralization was encountered between sections 8+00S and 40+00N but the mineralized carbonatite remained open to the north (Stockford, 1972).

Fifteen soil test holes were drilled during this period to investigate the stability of the glacial overburden and Paleozoic sedimentary cover, which together average approximately 100 ft (30.5 m), over the Precambrian basement.

In 1968, a test shaft was sunk in the central part of the mineralized body and a 250-ton bulk sample of niobium-bearing carbonatite was mined for metallurgical testing. The shaft was sunk to 133 ft (40.54 m) and a 100 ft (30.5 m) crosscut was driven.

In 1967, Canadian Bechtel Limited (Bechtel) completed a preliminary mining appraisal on the Argor deposit. The study considered three scenarios 1) mining the entire deposit by open pit, 2) mining the entire deposit by underground methods, and 3) mining the south end of the deposit by open pit followed by underground mining of the northwest limb. The assessment of the three scenarios was based on annual tonnage sufficient to produce 7.5 million pounds of Nb_2O_5 for 20 years with an overall mill recovery of 75%.

From June to October 1968, Huntec completed approximately 87.5 line-km of reconnaissance HLEM and ground magnetic surveys in the area of the Goldray #2 anomaly. Two distinct conductors were defined and recommended for diamond drilling (Patterson, 1969).

In 1969, McPhar Geophysics Ltd. (McPhar) completed ground magnetic and EM surveys over five airborne anomalies on behalf of Argor Explorations. Two strong conductors corresponding to Anomalies “P” and “G” were defined and recommended for drilling.

In early 1970, Bergmann (1970) reported on ground magnetic and EM surveys completed by Prospecting Geophysics Ltd. (Prospecting Geophysics) to recover airborne geophysical anomalies on behalf of Argor Explorations. Several conductors were identified and two (Anomalies “A” and “B”) were recommended for drilling.

In late 1970, Questor Surveys Limited (Questor) flew a combined magnetic and EM (Mark IV INPUT) survey totalling approximately 264 line-km on behalf of Argor Explorations over an area northwest of Kesagami Lake. A total of 13 conductors were detected, most of which were recommended for either VLEM or HLEM follow-up (De Carle, 1970).

In 1979, Bechtel updated the preliminary mining appraisal. No further work had been completed between 1979 and 2016 when NioBay acquired the Project.

HISTORICAL RESOURCE ESTIMATES

In July 1967, Bechtel estimated "geological ore reserves" on behalf of Argor Explorations. Between sections 6+00S and 18+00N, Bechtel estimated 61,560,000 short tons grading 0.52% Nb_2O_5 for the pyrochlore and columbite mineralized zones (Canadian Bechtel Limited, 1967).

This estimate was prepared prior to the implementation of NI 43-101 and is considered to be historical in nature and should not be relied upon. A qualified person has not completed sufficient work to classify the historical estimate as a current Mineral Resource or Mineral Reserve and NioBay is not treating the historical estimate as current Mineral Resources or Mineral Reserves. This historical estimate is a good indication of significant mineralization on the Property.

In 2018, RPA was retained to prepare an initial Mineral Resource estimate and a NI 43-101 Technical Report for the Project. The 2018 estimate is superseded by the current Mineral Resource estimate summarized in Section 14 of this Technical Report.

PAST PRODUCTION

With the exception of the bulk sample taken in 1968, there has been no past production from the Project.

7 GEOLOGICAL SETTING AND MINERALIZATION

REGIONAL GEOLOGY

According to Sage (1991), the Project lies at the northern portion of the Kapuskasing Structural Zone (KSZ). The following description of the regional geology is taken from Sage (1991).

The KSZ extends from the east shore of Lake Superior northeast to James Bay. The KSZ is poorly defined along the east shore of Lake Superior but becomes better defined towards James Bay. The KSZ crosscuts an east-trending fabric within Archean rocks of the Superior Province and is sub-parallel to the Trans-Superior Tectonic Zone (TSTZ).

The KSZ is characterized by a north-northeast-striking linear aeromagnetic pattern (400 to 600 gammas above regional background) and positive gravity highs (up to 20 mgal) (Innis, 1960; ODM-GSC, 1970; GSC, 1984). Numerous alkalic and carbonatite intrusions occur along this structure.

The KSZ has been interpreted as an upwarp of the Conrad Discontinuity (Wilson and Brisbin, 1965; Bennett et al., 1967; Thurston et al., 1977), a product of collision of the Churchill and Superior cratons in Paleoproterozoic time (Gibb, 1978), and as a deep transcurrent shear (Watson, 1980). More recently, Percival and Card (1983) have proposed that the KSZ is an east-verging thrust fault which has exposed an oblique section through 20 km of uplifted Archean crust. Granulite-facies rocks of the KSZ are juxtaposed against greenschist-facies rocks of the Abitibi Sub-province along the Ivanhoe Lake cataclastic zone. The KSZ is characterized by a high-grade gneiss terrain and grades westward into a central gneiss terrain and then into low-grade terrain of east-west-striking linear belts composed of supracrustal rocks.

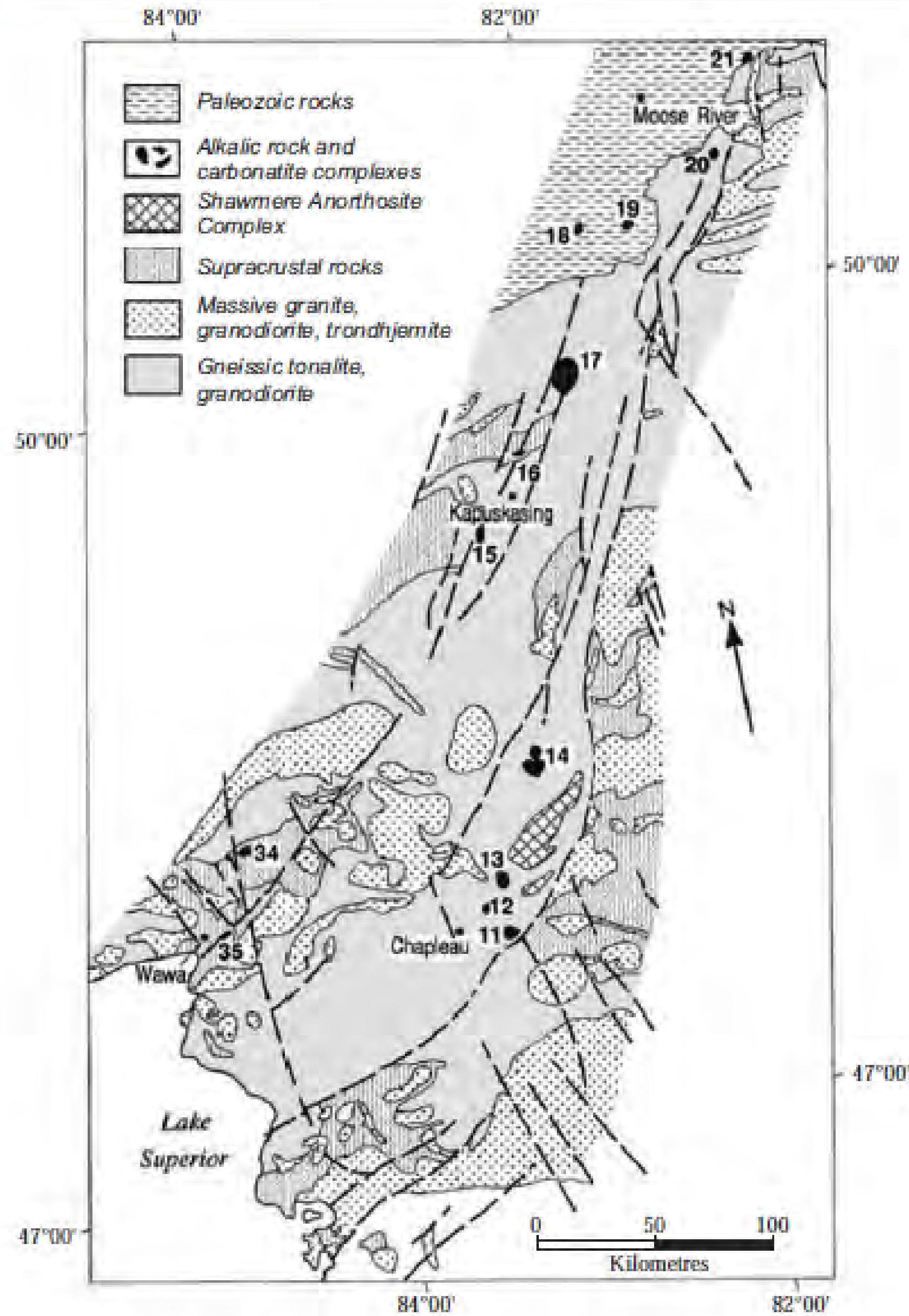
In addition to the major fault which forms the east boundary of the KSZ, three major northeast-striking faults dip 60° to 70° northwest and are present within the uplift (Percival and McGrath 1986). These internal faults are west-side-down with displacement of 7 km to 10 km and result from a late tensional event that followed the compressional uplift (Percival and McGrath, 1986; Percival, 1987).

Northey and West (1986) have interpreted seismic refraction data to indicate a crustal thickness of 48 km below the KSZ, which thins slightly to the west and the east. The interpretation of seismic data is consistent with the upthrust of mid-crustal rocks along a west-dipping listric fault (Northey and West, 1986; Boland et al., 1988).

The precise age of the KSZ is uncertain (Watson, 1980; Percival and Card, 1983). The 1,800 to 1,900 Ma carbonatite intrusions are exposed at a high structural level and are enclosed within high-grade deep level gneisses. The KSZ has therefore formed prior to the 1,800 to 1,900 Ma carbonatite intrusion event, however, the KSZ remains seismically active (Forsyth and Morel, 1982).

Alkaline magmatism along the KSZ took place during the Penokean and Grenville-Keweenawan orogenic events and in the Neoproterozoic to Early Cambrian and Jurassic periods. Wooley (1989) has documented the worldwide spatial and temporal distribution of carbonatite with doming, linear structures, and orogenesis.

Figure 7-1 illustrates the regional geology of the KSZ and indicates the location of the Project (indicated as the Argor Carbonatite Complex #21).



NOTE: *Kapuskasing Structural Zone (KSZ) and location of alkalic rock and carbonatite intrusions (geology modified from Card, 1982).* ***11****-Lackner Lake Alkalic Complex;* ***12****-Borden Township Carbonatite Complex;* ***13****-Nemegosenda Lake Alkalic Complex;* ***14****-Shenango Township alkalic rock;* ***15****-Cargill Township Carbonatite Complex;* ***16*** *Teetzel Township Carbonatite;* ***17****-Clay-Howells Alkalic Complex;* ***18****-Hecla-Kilmer Alkalic Complex;* ***19****-Valentine Township Carbonatite Complex;* ***20****-Goldray Carbonatite Complex;* ***21****-Argor Carbonatite Complex;* ***34****-Herman Lake Alkalic Complex;* ***35****- Firesand River Carbonatite Complex.*

Figure 7-1

NioBay Metals Inc.

James Bay Niobium Project
Ontario, Canada
Regional Geology

August 2020

Source: Ontario Geology Survey, Special Volume 4 Part 1, 1991.

LOCAL GEOLOGY

The following description of the local geology is abridged from Sage (1988).

The James Bay niobium deposit is hosted by the Argor Carbonatite Complex (the Carbonatite Complex) and occurs in the northern portion of the KSZ of the Superior Province. Rocks in the general area are characterized by granulite facies rank gneisses and a pervasive north- to northeast-trending fault pattern (Bennett et al., 1967).

The Carbonatite Complex is overlain by approximately 9 m of overburden and 21 m of Lower Devonian rocks of the Sextant Formation consisting of poorly bedded sandstone, mudstone, siltstone, and loosely cemented conglomerate (Stockford, 1972).

EARLY PRECAMBRIAN (ARCHEAN)

GNEISS

In proximity to the Carbonatite Complex, Stockford (1972) reported the presence of garnet-hornblende-feldspar gneiss and augen gneiss. The gneisses contain up to 20% quartz, up to 50% plagioclase, 10% to 15% biotite, 10% to 20% hornblende, 5% sericite, and 5% carbonate (Stockford, 1970). Stockford observed that nepheline-bearing rocks and evidence of fenitization are absent. The reported presence of carbonate and possibly sericite in the gneisses suggests some weakly developed metasomatic activity.

Twyman (1983) reported the presence of fine to medium grained, light grey syenitic dykes with a phaneritic to porphyritic-phaneritic texture. The feldspars are microcline perthite or orthoclase and albite. Calcite occurs interstitially to the feldspars. The mafic minerals reported by Twyman include biotite, pyroxene (salite to sodic salite), and local arfvedsonite. The relationship of the syenite to the carbonatite is unknown, but Twyman (1983) considered it to be older than the complex.

GABBRO DYKES

Stockford (1972) reported that gabbroic dykes cutting the gneisses east of the Carbonatite Complex appear to have been crushed and metamorphosed along with the gneisses. He reported that the dykes consist of plagioclase, feldspar, hornblende, augite and garnet, with accessory apatite, sphene, quartz, chlorite, calcite, pyrite, and magnetite. Stockford (1970) reported that the mode of the gabbro dykes is 30% to 35% plagioclase, 30% to 40%

hornblende, 10% to 15% augite, and up to 25% garnet. A lamprophyre dyke was reported in drill core by Stockford (1972), although he stated that lamprophyres are uncommon in the area.

MIDDLE PRECAMBRIAN (PROTEROZOIC) - ARGOR CARBONATITE COMPLEX

PYROXENITE-HORNBLENDITE

This phase of the Carbonatite Complex is not well represented in the drill core examined. Hornblende is dominant over clinopyroxene and the pyroxenite and hornblendite appear to grade into each other. While some hornblende is undoubtedly primary, other hornblende clearly formed as a replacement of the clinopyroxene. The pyroxenite and hornblendite are likely part of the same lithologic unit and part of the same magmatic phase. Because of the intimate relationship between the two rock types, they are discussed as one unit. Stockford (1972) described the unit as pyroxenite and he also interpreted the hornblendite to have formed by alteration of the pyroxene. Pyroxenite-hornblendite drill core is black to dark green in colour.

In thin section the rock is fine to coarse grained, massive, inequigranular seriate, allotriomorphic, with straight to curved grain boundaries. Several specimens have a weakly developed granoblastic texture and several appear to have been weakly deformed.

SILICOCARBONATITE

The limited number of silicocarbonatite specimens examined appear to be possible cumulate phases of the carbonatite magma, however, some may be reaction products between sovite and other rocks. Drill core representative of this lithology is grey in colour or mottled grey and black.

Samples from the western side of the complex were described by Twyman (1983) as hybrid rocks with mylonitic fabric and are likely silicocarbonatite. Twyman investigated the possibility of a genetic link between carbonate and silicate magmas. On the basis of observed mineral disequilibrium, Twyman concluded the silicocarbonatite rocks examined by him were the result of assimilation or reaction of carbonatite magma with the enclosing rocks. Microprobe analyses of biotite indicated Al content intermediate between silicate and carbonatite rocks; microprobe analyses of amphibole indicated high Fe content which would have resulted from reaction with a carbonatite magma.

SOVITE AND MINOR RAUHAUGITE

Sovite contains in excess of 50% carbonate. The vast majority of the diamond drilling completed on this complex intersected this lithology since it is host to the niobium mineralization. Rocks of this grouping are grey to white in colour. No attempt was made to estimate the dolomite-calcite ratios in these rocks.

Twyman (1983) reported dolomite (rauhaugite) interstitial to calcite (sovite), implying that both carbonates crystallized simultaneously or that dolomite formed somewhat later. Two types of dolomite were reported by Twyman (1983): (1) a lineated variety composed of clear, anhedral to subhedral, elongated, interlocking tabular crystals; and (2) a fine-grained recrystallized variety with irregular grain boundaries. The lineated variety is interlayered with the sovite and the fine-grained variety occurs along intrusive contacts.

Microprobe analyses of carbonate, presented by Twyman (1983), indicate that dolomite at the Carbonatite Complex has a Mn enrichment trend while dolomite at the Cargill Complex displays a constant Mn content. At both complexes, the carbonate contains minor Mg, Fe, Mn and Sr, while the Argor rocks are richer in Fe. Twyman reported that the Fe enrichment trends in dolomite are compatible with chemical variations in associated amphiboles and biotites.

The minor element trends in dolomite within sovites and rauhaugites are similar, indicating that the sovites and rauhaugites formed at the same time (Twyman, 1983).

Stockford (1972) sub-divided rocks in this group into five sub-units based on texture, colour, and calcite-dolomite ratios. Stockford's (1972) efforts were directed to close identification of the pyrochlore-bearing carbonatite. While the pyrochlore is the essential economic mineral, it is nonetheless a minor accessory phase within the rock. Stockford (1972) places the pyrochlore content at 1.0% for the potentially economic portion of the carbonatite. Texturally or mineralogically, there is no difference between sovite with and without pyrochlore.

Twyman (1983) reported the presence of olivine sovite and provided a chemical analysis of this rock type. The olivine sovite occurs only on the western side of the complex, does not occur with dolomite, and has been interpreted to be an early phase of the carbonatite magma.

Pyrochlore occurs as anhedral to sharply euhedral grains that commonly contain rounded, irregular grains of carbonate. The mineral is red-brown to grey in colour. Its high relief and isotropic nature make it relatively easy to distinguish from other minor mineral phases. The mineral often appears crudely zoned from red-brown cores to grey rims, however, the reverse zoning pattern has also been observed. The zonation implies compositional variation.

GEOCHRONOLOGY

The Carbonatite Complex has been dated at 1655 Ma by K-Ar isotopic techniques on biotite (Gittins et al., 1967). Most Middle Precambrian (Proterozoic) complexes have isotopic ages of 1,800 Ma.

METAMORPHISM

The Carbonatite Complex displays all variations, from a well-developed granoblastic texture with curved grain boundaries typical of carbonatite rocks, to one that is very fine to fine-grained recrystallized with serrate to lobate grain boundaries. The Carbonatite Complex is relatively undeformed.

Stockford (1972) reported the absence of fenitization presumably on the basis of the absence of green to blue-green soda-iron amphiboles and pyroxenes within the enclosing gneissic wall rocks. The presence of carbonate, the alteration of pyroxene to amphibole and amphibole to biotite-phlogopite in the pyroxenite rocks, is interpreted to represent metasomatism of the pyroxenite by alkali-rich, aqueous, carbonate-rich fluids similar, if not identical, to a fenitizing liquid. The pyroxenite is, however, an early crystallizing phase of the Carbonatite Complex and not part of the much older wall rock assemblage.

Stockford (1972) reported the presence of sodic amphiboles in a mylonitic gneiss at the pyroxenite-gneiss contact on the east side of the complex. These sodic amphiboles may be indicative of more typical fenitization developed within restricted zones of greater permeability. Carbonate along fractures in the gneisses was reported by Stockford (1972) to occur for distances of up to a few hundred metres from the carbonatite contact. This is considered by Sage (1988) to be due to either the effect of a fenitizing liquid in a distal setting, or to a fenitizing fluid at relatively low temperatures, in essence, under hydrothermal conditions.

During the drilling and relogging campaigns, Joly (2020), suggests that the carbonatite is mostly undeformed body, with magmatic layering. Most brecciated zones mentioned in Stockford (1972) appear to be magmatic breccias showing magmatic foliation

STRUCTURAL GEOLOGY

REGIONAL SETTING

The Carbonatite Complex is located in the north portion of the KSZ of the Superior Province of the Canadian Shield. This KSZ is characterized geophysically by a north northeast-trending zone of gravity highs and pronounced linear aeromagnetic trends (Innes 1960; ODM-GSC 1970). This anomalous gravity zone has been interpreted to be due to an upwarp in the Conrad discontinuity caused by major regional faulting and the formation of a complex horst structure (Wilson and Brisbin, 1965; Bennett et al., 1967). This upthrown block is characterized by rocks that have locally reached the granulite facies rank of metamorphism (Bennett et al., 1967; Thurston et al., 1977).

The KSZ has been interpreted by Percival and Card (1983) to be an oblique section through 20 km of the Archean crust. The structural zone has been uplifted along a northeast-striking, northwest-dipping thrust fault. Along the east side of the structural zone, high-grade rocks are thrust against low-grade rocks. To the west, the high-grade rocks grade into low-grade rocks over a distance exceeding 100 km. Thrusting has exposed the Conrad Discontinuity within the KSZ (Percival, 1986).

LOCAL STRUCTURES

Stockford (1972) indicated that the Carbonatite Complex was emplaced into a series of northeast- and north-trending faults. The enclosing gneisses are described as mylonitic or augen gneisses and minor faulting along the east contact has been reported (Stockford, 1972). Stockford (1972) indicated the Carbonatite Complex to be a dyke-like body with a long axis striking north. More recently, NioBay geologists have noted that there are no significant faults at the contact or inside the Carbonatite Complex.

The intrusion has not been totally delineated in strike length. It is known to be approximately 1,440 m long and remains open to the north. The complex appears to have a minimum width of approximately 360 m in the area of pyrochlore mineralization. Pyrochlore mineralization has been identified to a maximum depth of 270 m. The zone of pyrochlore mineralization occurs in the southern portion of the complex and, in plan view, it covers a maximum area approximately 900 m long and 180 m wide.

The carbonatite displays a mineralogical variation which imparts a banding to the rock. In addition, the elongate minerals, amphibole and apatite, have their long axes subparallel to each other and define a lineation in the plane of the magmatic layering. The attitude of the banding is steep to vertical and contacts appear conformable (Stockford, 1972).

Stockford (1972) reported a zone of crushed dolomitic carbonatite (Zone 8), which is now interpreted to be a magmatic breccia located in the approximate centre of the carbonate phase of the complex. The zone consists of crushed and recrystallized carbonate in a turbid groundmass of carbonate, chlorite, and hematite. Stockford (1972) reported that accessory apatite, feldspar, pyrite, and pyrochlore-columbite are also present. Amphibole crystals within this rock unit are contorted and minor molybdenite has been recognized (Stockford, 1972).

Stockford (1972) has interpreted the deformation textures to be the result of the pulsating emplacement of the carbonatite magma as a crystal mush, now interpreted as a magmatic breccia.

Based on its re-logging of the historical core, NioBay is of the opinion that the carbonatite is undeformed and that the deformation textures reported in the literature are related to magmatic processes and events (Gauthier, 2017, pers. comm.). According to NioBay, the carbonite complex is shaped as a sigmoid body most likely intruding the gneiss during a late state extensional period of the KSZ formation (Gauthier, 2020, pers. comm)

PROPERTY GEOLOGY

A more detailed description of the lithologies found in the immediate vicinity of the deposit are taken from Stockford (1972). A property geology map, showing the lithologies, is provided in Figure 7-2.

PYROXENITE (UNIT NO. 1)

Pyroxenite forms metres wide dykes intruded into Carbonatite Complex and locally in its paragneiss/gneiss host rocks (Joly, 2020). The field terms, “pyroxenite” or “hornblendite”, have generally been used, although the original composition was probably pyroxenitic.

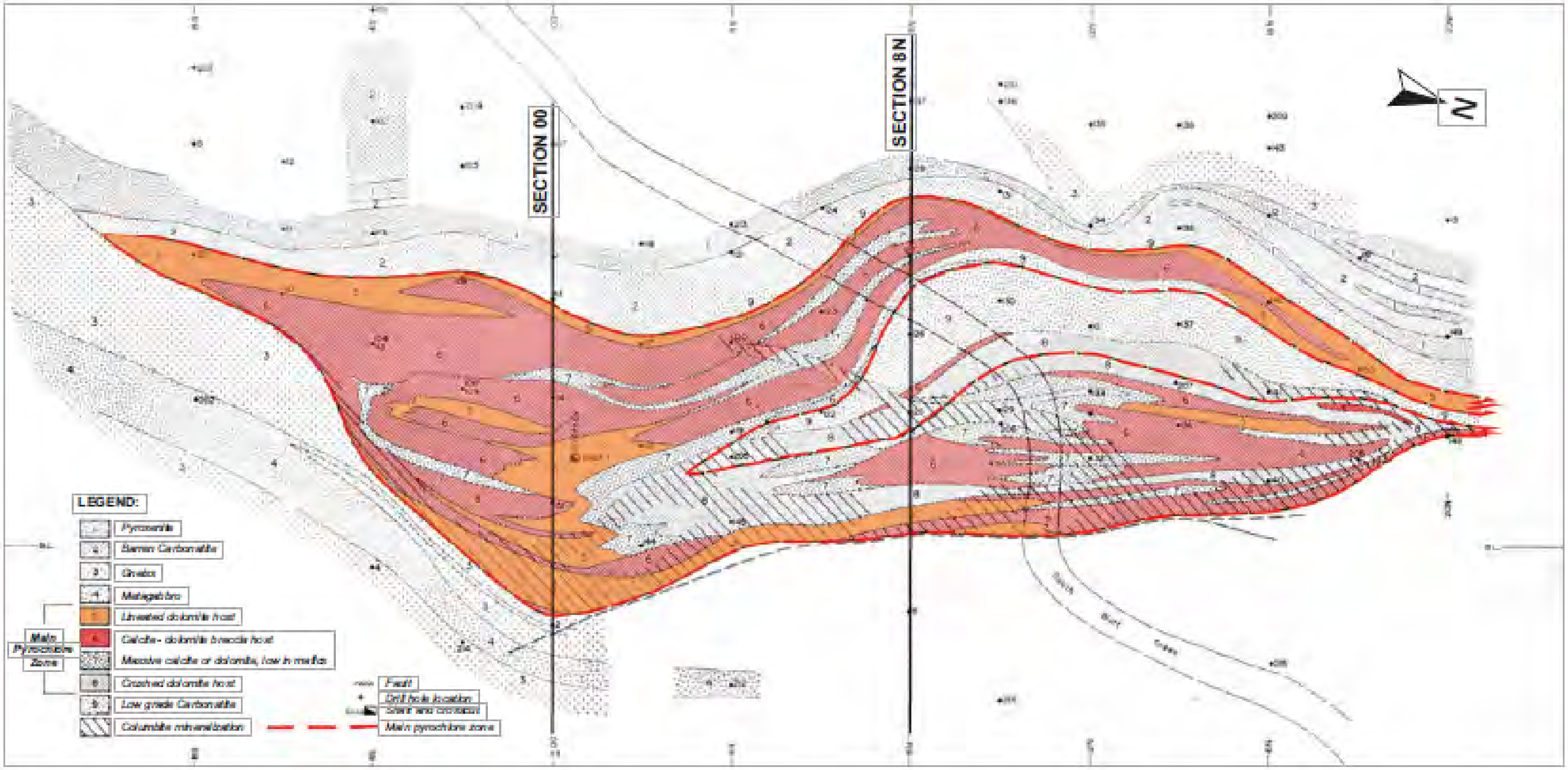
Mineralogically, it consists of hornblende, diopside and augite, coarse biotite after hornblende, and variable calcite. Accessory minerals include sphene, apatite, coarse titaniferous magnetite, and minor sulphides (1% to 2% pyrite and pyrrhotite with occasional chalcopyrite).

Zircon is fairly common, particularly where the carbonate content increases. Thin section studies indicate that hornblende is often secondary after pyroxene, occurring as uralitic rims and cleavage replacements, although much of the amphibole is clearly primary as well.

Pyroxenite is interbanded with barren carbonatite along the west side of the complex. A narrow band also extends between mineralized carbonatite and mylonitic gneiss along the southeast boundary from 8+00S to 00+00. Boundaries of the pyroxenite have not yet been delimited to the north, south, and west of the niobium-bearing carbonatite.

At least one age of barren, calcitic carbonatite (Unit No. 2) has invaded the pyroxenite and consequently all combinations between massive pyroxenite and massive carbonatite and their mixed counterparts are seen in the complex.

Frequent inclusions and bands of hybrid material are apparent within the pyroxenite and barren carbonatite phases. These hybrid zones, which consist of pink or grey feldspar, biotite mica and carbonate, are presumed to be xenoliths of gneissic country rock, partially digested by the intrusive magma. Additional petrographic work is required to determine the detailed mineralogy of this type of material.



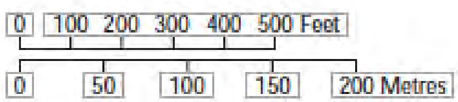


Figure 7-2

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Property Geology

August 2020

Source: NioBay Metals Powerpoint Presentation, 2017.

www.rpacan.com

AMPHIBOLE-BIOTITE CARBONATITE (UNITS NO. 2 AND NO. 9)

Intrusion of the first carbonatite phase followed the pyroxenite. Brecciation and veining of the pyroxenite by carbonate support this theory. The primary constituent of the rock is calcite (generally 60% to 80%) with variable quantities of the following minerals: 5% to 10% hornblende, 5% to 15% pale green apatite, 2% to 10% titaniferous magnetite, 2% to 15% biotite, 1% to 2% pyrrhotite, up to 1% zircon, and occasional olivine.

The amphibole-biotite carbonatite is white to grey, coarsely crystalline and massive to well banded. Rolled crystal aggregates of carbonatite enclosed in a carbonate groundmass are thought to be indicative of pulsating movement during periods of intrusion and cooling.

Rock Unit No. 9 is interpreted as being a contact phase between Units No. 2 and No. 5 along the western boundary of the pyrochlore zone and in the centre of the intrusive north of section 4+00N. This phase appears to have been subjected to soda metasomatism and contains soda amphibole instead of hornblende and phlogopite in place of biotite. The unit is distinctly pinkish or mauve-grey in colour, coarser grained and contains scattered grains of dark red-brown pyrochlore. This unit, which rarely grades more than 0.20% Nb_2O_5, could alternatively be a separate intrusive carbonatite phase.

Partial sideritization of the carbonate and chloritization of ferromagnesian minerals has occurred near the Precambrian surface.

GNEISS (UNIT NO. 3)

Only the eastern gneiss-carbonatite contact has been outlined to the south of section l0+00N; both east and west contacts have been intersected to the north. The gneiss is generally dark grey to black, consisting of quartz, plagioclase feldspar, hornblende and biotite-chlorite, with accessory amounts of sericite, carbonate, magnetite, zircon, sphene, apatite, epidote, and garnet. Minor pyrite and pyrrhotite have also been noted.

A narrow zone of chloritized gneiss extends along the eastern contact of the carbonatite from 00+00 to 16+00N. Minor faulting along this contact appears to have caused some fracturing of the eastern limb of the carbonatite in this area. There is local evidence of intense crushing and mylonitization of the gneiss, with local well-developed augen textures. It is unlikely that the augen textures would have been produced by intrusion of the carbonatite; it seems more probable that these structures were already in existence before intrusion.

Most of the carbonate in the gneisses occupies minute fractures extending for several hundred feet away from the carbonatite contact.

METAGABBRO (UNIT NO. 4)

Dykes of gabbroic composition are found to the east of the carbonatite intrusion within the gneisses. Knowledge of these dykes is limited due to lack of detailed drilling, however, they generally appear to have been metamorphosed and crushed along with the gneisses.

The main constituents are plagioclase feldspar, hornblende, augite, and 5% to 2·5% garnet. Accessory minerals include apatite, sphene, quartz, chlorite, calcite, pyrite, and magnetite. Notably absent in the country rocks are lamprophyre dykes which are commonly associated with carbonatites, although one isolated occurrence was noted in a drill hole 2.4 km north of the main anomaly.

PYROCHLORE CARBONATITE (UNITS NO. 5 TO NO. 8)

Rock Units No. 5 through No. 8, described in the following paragraphs, constitute the main pyrochlore-bearing carbonatite. The various rock units reflect the different textures and compositions of the carbonate hosts encountered in drill core. As such, they indicate mappable units containing fairly predictable niobium grades and possibly represent several different ages of carbonatite intrusion.

Thin sections indicate that the carbonate in Unit No. 5 is clear and unstrained, although distinctly lineated parallel to the dip and strike of the contacts. It is most likely that this lineated, dolomitic unit is the contact zone between Units No. 2 and No. 6, along the east and west margins of the pyrochlore zone and between Units No. 6 and No. 8 in the centre of the mass. The mineral constituents of the rock are 60% to 80% pale grey, medium- to coarse-grained dolomite, 5% to 10% sodic amphibole (riebeckite), 5% to 15% apatite, 5% to 10% phlogopite, 2% to 15% magnetite, 1% to 2% pyrrhotite, and 0.5% to 1% pyrochlore, with occasional epidote and zircon.

The host dolomite occurs as elongated crystals which, together with parallel orientation of riebeckite, apatite, and mica, impart the distinct wavy lineation to the rock.

Sideritization has taken place along the surface of the carbonatite. It is visualized as a layer of varying depth - up to three metres in the test shaft - which has been affected by groundwater and oxidation. The source of secondary iron appears to have been the ferruginous sediments above and/or magnetite in the dolomitic host rock. The dolomite has presumably been stained and partially replaced by siderite, particularly along fracture planes. There is no evidence in underground exposures to suggest a separate primary mass of siderite.

The pyrochlore content in this rock is usually uniform, with grades averaging between 0.3% Nb_2O_5 and 0.5% Nb_2O_5, and is generally the pale honey-coloured variety occurring as octahedra 0.1 mm to 4.0 mm in size. The heart of the intrusion appears to be a solidified mush of medium- to coarse-grained brecciated carbonatite (Unit No. 6), so called because of the frequent occurrence of rolled crystalline aggregates of carbonate rock within a carbonate groundmass. The unit consists of 50% to 70% grey to pinkish, mixed calcite and dolomite, 5% to 15% riebeckite, 5% to 15% phlogopite, 2% to 10% magnetite (hematite along east side of deposit), 5% to 20% apatite, 1% to 2% pyrrhotite, 0.5% to 3% pyrochlore, and up to 3% zircon. This rock type is the host for the best grade of columbium mineralization, with assays ranging up to a maximum of nearly 3% Nb_2O_5 over three metres. Segregation of accessory minerals into wavy bands is a feature of the rock, although the lineation is less distinct than in the dolomitic type (Unit No. 5). Pyrochlore is generally light to dark brown in colour and individual crystals frequently exhibit internal zoning. Pyrochlore is generally accompanied by riebeckite, although many exceptions to this rule have been found. Crystals range in size from 0.2 cm to 2.0 cm and are easily identified by their resinous lustre and octahedral crystal form, sometimes modified by cube faces.

Almost massive concentrations of mica appear locally as rolled blocks or inclusions up to a few metres across. Where feldspar is present, these have been termed "hybrid zones" and are possibly remnant xenoliths of country rock, as seen in rock Unit No. 2.

Bands of medium to coarse-grained sovite (Unit No. 7), which are almost lacking in riebeckite and magnetite, have been identified as distinct units within rock Unit No. 6. The pyrochlore content is erratic and normally low in tenor. The massive sovite contains between 5% and 10% apatite and 0 to 15% coarse phlogopite.

A disturbed and crushed dolomitic zone (Unit No. 8), interpreted as being the final phase of intrusion, is the most difficult rock unit to correlate between drill holes. However, it could represent the central core of the original intrusive which has been squeezed, recrystallized, and hydrothermally altered. The mineral assemblage in the unit is quite different from other phases within the complex. It consists mainly of crushed, coarsely recrystallized dolomite enclosed in a dirty groundmass of fine carbonate, chlorite and, locally, hematite and is generally low in sodic amphibole content. Accessory minerals include apatite, feldspar, and pyrite, with erratic pyrochlore and/or columbite and scattered molybdenite.

Figures 7-3 and 7-4 illustrate geological sections with composite intersection grades for Sections 0+00 and 8+00N, respectively.

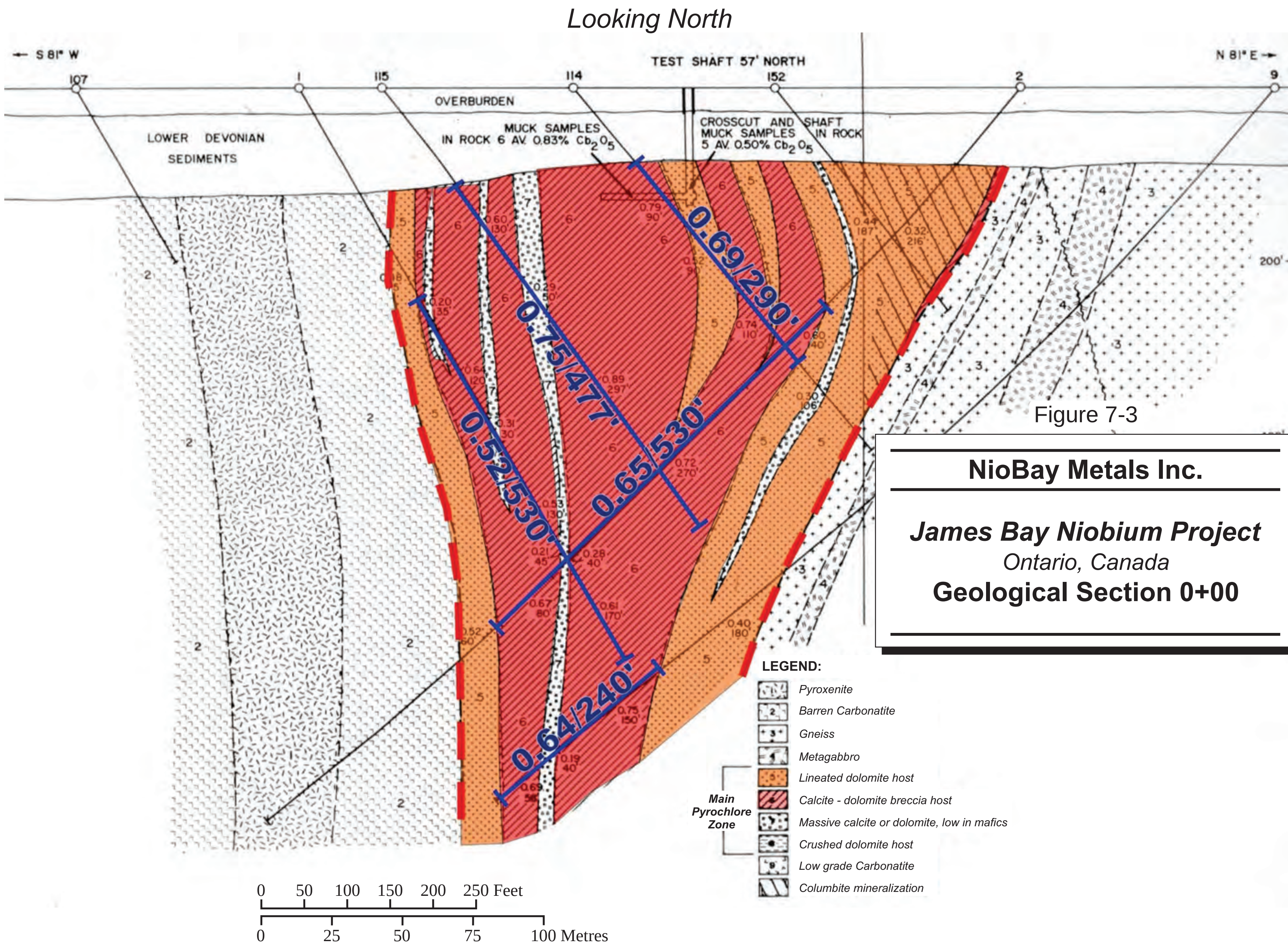


Figure 7-3

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Geological Section 0+00

August 2020

Source: NioBay Metals Powerpoint Presentation, 2017.

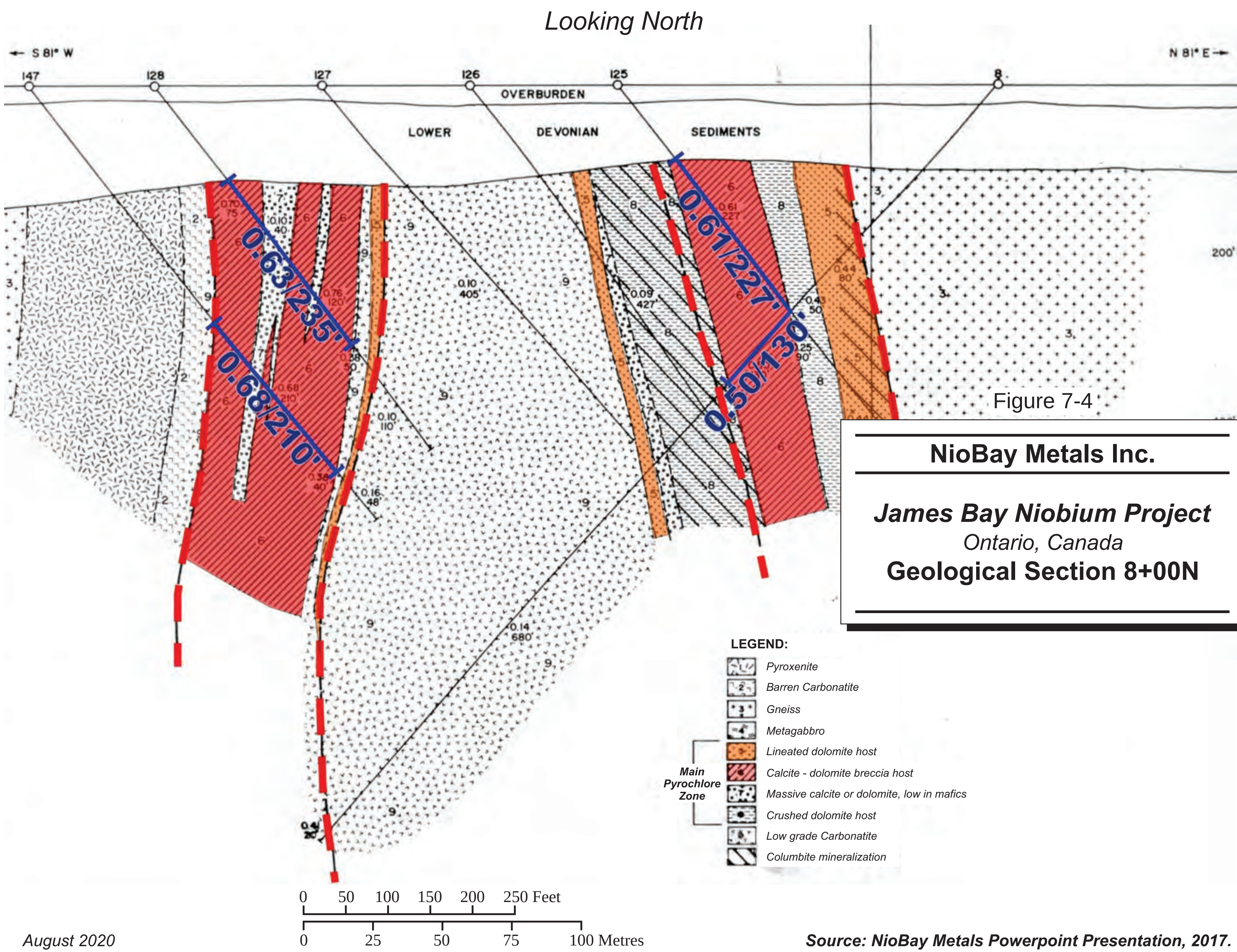


Figure 7-4

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Geological Section 8+00N

August 2020

Source: NioBay Metals Powerpoint Presentation, 2017.

MINERALIZATION

The following is taken from Stockford (1972).

PYROCHLORE

Pyrochlore, the main mineral of economic interest, occurs as discrete octahedral crystals in carbonatite. It is usually accompanied by, and sometimes enclosed in, apatite, riebeckite, magnetite, and phlogopite. Although these accompanying minerals seem to be essential to pyrochlore occurrences when considering the carbonatite as a whole, the columbium mineral does occur locally on its own, within a pure carbonate host.

Pyrochlore varies in colour from a pale honey to dark brown or reddish, and frequently displays spectacular zoning. Preliminary electron-microprobe studies by Dr. J. Gittins at the University of Toronto were carried out on seven pyrochlore crystals to determine the difference in composition of various zones, if any. He found that the most striking features were the compositional simplicity, homogeneity despite the colour variation and the absence of tantalum. Some of the darker areas were assumed to be iron-rich, however, further work is required to verify this fact.

The microprobe studies indicate that the pyrochlore ranges in composition from 57% to 65% Nb_2O_5 and contains minor quantities of the following compounds: 0.8% to 2.0% TiO_2; 0 to 0.4% FeO; 0.01% to 4.0% Al_2O_3; 13% to 16% CaO; 6% to 14% Na_2O. Most of the crystals were found to contain Ce (0.5% Ce_2O_3) and half contained La (0.04% La_2O_3). Other elements searched for but not detected were U, Th, Zr, Ta, Ba, Eu, and Sr. Historical ore dressing tests on the core and bulk sample indicated that a concentrate averaging 64% Nb_2O_5 could be produced from the deposit.

COLUMBITE

Columbite, $FeNb_2O_6$, occurs along the eastern side of the deposit and in the transgressive crushed dolomite zone between sections 4+00N and 8+00N. The mineral totally or partially pseudomorphs pyrochlore and is typically earthy and dark brown to black in colour. Individual crystals of pyrochlore have been replaced by columbite in various ways - central cores, inner zones, outer rims, or total crystals. Columbite is not restricted to any one rock unit within the complex but appears to be associated with fracturing and hematitic alteration.

APATITE

The pale green, fluor-variety of apatite is universally present in all rock units within the carbonatite-pyroxenite complex. Usually, the best-grade bands of pyrochlore carbonatite also contain abnormally high quantities of apatite, while the converse is not true. The mineral occurs as fine- to coarse-grained, hexagonal prisms aligned parallel to the wavy foliation. Assays for phosphate content from crosscut samples indicated an apatite range of 6% to 10%.

MAGNETITE

Titaniferous magnetite, like apatite, is present in all units within the intrusive, and also in the gneissic country rocks to a lesser degree. It is most abundant in the pyroxenitic phase (Unit No. 1) and in the barren carbonatite (Unit No. 2); the magnetite content of the pyrochlore zone rarely exceeds 5%. Hematite or martite are dominant over magnetite along the east side of the deposit and in brecciated sections of the crushed dolomite zone in association with minor, late-stage quartz.

Submicroscopic hydrothermal hematite could also account for the reddish colouring observed in some of the mylonitic gneisses.

SULPHIDES

Up to 2% primary pyrrhotite is evenly distributed throughout all intrusive units with the exception of the crushed dolomite zone, where pyrite is dominant. Molybdenite occurs only in the crushed dolomite (Unit No. 8), as discrete, scaley grains, in sub-economic quantities. Both molybdenite and pyrite may have been primary constituents of the last intrusive phase, or they could represent a later stage of hydrothermal mineralization.

Chalcopyrite, of minor importance, occurs in the pyroxenite in association with pyrite and pyrrhotite.

8 DEPOSIT TYPES

The following is taken from Richardson and Birkett (1996).

Carbonatite-associated deposits include a variety of mineral deposits that occur both within and in close spatial association with carbonatites and related alkalic silicate rocks. Carbonatite-associated deposits are mined for rare-earth elements (REEs), niobium, iron, copper, apatite, vermiculite, and fluorite. By-products include barite, zircon, or baddeleyite, tantalum, uranium, platinum group elements, silver, and gold. In some complexes, calcite-rich carbonatite is mined as a source of lime to produce Portland cement.

Carbonatites are igneous rocks which contain at least 50% modal carbonate minerals, mainly calcite, dolomite, ankerite, or sodium- and potassium-bearing carbonates. Other minerals commonly present include diopside, sodic pyroxenes or amphiboles, phlogopite, apatite, and olivine. A large number of rare or exotic minerals also occur in carbonatites.

Carbonatites occur mainly as intrusive bodies of generally modest dimensions (as much as a few tens of square kilometres) and to a lesser extent as volcanic rocks which are associated with a wide range of alkalic silicate rocks (syenites, nepheline syenites, nephelinites, ijolites, urtites, pyroxenites, etc.). Carbonatites are generally surrounded by an aureole of metasomatically altered rocks called fenites produced by the reaction of country rocks with peralkaline fluids released from the carbonatite complex.

Carbonatite-associated deposits can be sub-divided into magmatic and metasomatic types. Magmatic deposits are formed through processes associated with the crystallization of carbonatites, whereas metasomatic deposits form by the reaction of fluids released during crystallization with pre-existing carbonatite or country rocks.

Many carbonatite-associated deposits are relatively small, in the order of tens of thousands to hundreds of thousands of tonnes, however, significant production of phosphate, niobium, and rare earth oxides is derived from larger, higher grade deposits in Brazil, Canada and South Africa, which vary greatly in size and grade.

Most carbonatite complexes occur in relatively stable, intra-plate areas. The regional distribution of these complexes is controlled by major tectonic features. About half the known carbonatites are located in topographic highs or domes and are bounded by zones of crustal-scale faulting (Wooley, 1989). Other major controls on carbonatite emplacement are major faults, anorogenic rifts, and the intersection of major faults. A few carbonatites are found near plate margins and may be linked with orogenic activity or plate separation. Because carbonatites generally occur in clusters or in provinces that display episodic magmatic activity, physical and/or chemical properties of lithospheric plates may exert some control on their location and genesis (Wooley, 1989).

There appears to have been a gradual increase in carbonatite magmatism with time. Dates fall into groups that generally correspond to major orogenic and tectonic events (Wooley, 1989). Identified age groups include: 1) a mid-Proterozoic group (1,800-1,550 Ma) that corresponds to the Hudsonian and Svecokarelian orogenies in North America and Europe, respectively; 2) a mid- to late Proterozoic group corresponding to the Grenville orogeny (peak at ca. 1,100 Ma); 3) a group between 750 Ma and 500 Ma, and 4) a major period starting at 200 Ma. A few carbonatites of Archean age are known.

Carbonatites may consist of a number of intrusive phases with different textural and mineralogical characteristics. Early phases typically consist mainly of calcite, do not contain peralkaline pyroxenes or amphiboles, and contain associated apatite + magnetite ± pyrochlore mineralization. Later phases, which may contain dolomite, ankerite and siderite, in addition to calcite, are commonly enriched in pyrochlore. Many very late stage carbonatites contain only trace, or no, Nb mineralization and are enriched in primary REE-bearing minerals.

Economic mineralization in carbonatites is generally associated with plutonic carbonatite phases, not with lavas. Magmatic carbonatite deposits generally occur in small (3 km to 5 km) plug-like and cressentic bodies in composite plutons with coeval silica-undersaturated mafic and/or ultramafic rocks. Mineralization is commonly related to magmatic layering, and flow structures with the host rocks. The deposits are commonly groups of lenses or irregular ore shoots that, in plan, have crescent-shaped or annular forms. In section, these deposits generally have steep dips, parallel to the walls of the intrusive complex, and may extend to great depths.

Metasomatic carbonatite deposits typically have the form of 1) dykes and dilatant veins of ankerite or dolomite, with or without calcite; 2) thin hydrothermal veins; 3) stockworks, and 4) replacement bodies rich in calcite and dolomite or ankerite. Veins and dykes which locally form radial or annular patterns, commonly crosscut consanguineous fenitized alkaline lithologies and adjacent country rocks.

9 EXPLORATION

NioBay recovered all historical drill logs, collar survey data, historical assay certificates, and vertical drill sections with assays and geological interpretation from the archives of James Bay Columbium Ltd., one of the previous owners of the Property. All the existing historical drill core was stored in a secure building in Moosonee.

During the fall of 2016, NioBay undertook a program of core re-logging and check sampling to confirm the historical results on the Property.

NioBay selected two holes on each of six vertical sections located at 400 ft (~122 m) spacing for a total of twelve holes for the re-logging and check sampling study. The sections involved are Sections 400S, 00, 400N, 800N, 1200N, and 1600N. NioBay re-analyzed all of the remaining core, with the exception of a three-inch character sample for each sampled interval. Samples were typically 10 ft in length with some samples measuring not less than 5 ft. In some instances, previous sampling for metallurgical testing during the 1960s left only 25% of the split core available for re-assaying.

A total of 629 samples, exclusive of blanks and Certified Reference Material (CRM or standards), were taken for analysis

Table 9-1 illustrates the composite results of the original sampling and the results of the check sampling for the corresponding intervals.

TABLE 9-1 CORE RE-SAMPLING RESULTS
NioBay Metals Inc. - James Bay Niobium Project

Drill Hole		From (ft)	To (ft)	Length (ft)	1967 (% Nb_2O_5)	2017 (% Nb_2O_5)
66-2		117.0	915.0	798.0	0.55	0.56
	incl.	333.0	915.0	581.5	0.64	0.65
	incl.	395.0	695.0	300.0	0.74	0.79
66-10		140.0	800.0	660.0	0.44	0.41
	incl.	540.0	580.0	40.0	0.85	0.93
	incl.	690.0	740.0	50.0	0.66	0.65
66-12		255.0	393.2	138.2	0.56	0.50
		665.0	735.0	70.0	0.49	0.47

Drill Hole	From (ft)	To (ft)	Length (ft)	1967 (% Nb_2O_5)	2017 (% Nb_2O_5)
	945.0	115.0	205.0	0.41	0.36
67-101	820.0	1,120.0	300.0	0.57	0.51
67-103	160.0	600.0	440.0	0.54	0.53
incl.	260.0	400.0	140.0	0.77	0.74
67-115	150.0	617.0	467.0	0.76	0.74
incl.	320.0	617.0	297.0	0.89	0.85
67-119	150.0	586.0	436.0	0.39	0.38
incl.	300.0	380.0	80.0	0.55	0.54
67-121	250.0	570.0	320.0	0.50	0.39
incl.	358.0	560.0	202.0	0.64	0.61
67-125	113.0	548.8	435.8	0.49	0.48
incl.	113.0	350.0	237.0	0.60	0.59
67-135	450.0	560.0	110.0	0.49	0.46
67-142	400.0	564.0	164.0	0.38	0.38
67-147	350.0	610.0	260.0	0.62	0.60
incl.	370.0	480.0	110.0	0.80	0.74

The results of the check sampling program suggest that, while there is moderate variation over individual sample intervals, the overall average grades over larger intervals are comparable.

2020 EXPLORATION WORK

Except the drilling campaign no additional exploration work was carried on the Project.

10 DRILLING

HISTORICAL DRILLING

The historical drilling is described in Section 6.

CURRENT DRILLING

NioBay completed seven diamond drill holes for a total of 3,089.6 m between February 2 and March 12, 2020. Holes are oriented 081° with a dip of between -45° and -63° to the east. The drill holes ranged in length from 349 m to 504 m. Table 10-1 summarizes all the drilling completed on the Property to date.

TABLE 10-1 SUMMARY OF JAMES BAY DRILLING PROGRAMS
NioBay Metals Inc. - James Bay Niobium Project

Year	Number	Metreage
1966	12	4,029.5
1967	67	9,200.4
2020	7	3,089.6
Total	**86**	**16,319.5**

Diamond drilling was contracted to Rouillier Drilling from Amos, QC. A joint venture between the MCFN and Expedition Helicopters Inc. (Expedition) from Cochrane, Ontario was chartered for staff and drilling equipment transport between Expedition's base in Moosonee and the drilling area, and between drill sites. All drilling used NQ (47.6 mm) core size. A 9/15 hours schedule was planned due to limited daylight, however, extended shifts, up to 22 hours, were occasionally required due to bad weather hampering the helicopter operation. A safety shack was installed near the drilling site.

MCFN required the drilling site to be thoroughly cleaned, with the mud collected and removed. Mud was collected in decanting tanks and water recycled for drilling operations.

Holes were partly cemented over the main carbonatite interval with VanRhoute plugs at the beginning and the end of each zone. The cement was hand mixed and pumped into holes. Twenty to twenty-six bags were required for each hole. Casings were removed or cut at the ground level, and a 4' peg was inserted in the hole.

Deviation measurements were taken by the drillers with a Reflex EZ-track device at 50 m intervals (single shots) down hole, and in continuous, from bottom to top (multishots) at every 15 m for holes NBY-20-E1 to NBY-20-E5 and every three metres for holes NBY-20-E6 and NBY-20-E7. Significant deviation errors, from 5º to 20º, in azimuth were caused by locally massive magnetite, mainly in carbonatite and pyroxenite units. Downhole azimuth measurements are consequently not dependable, and a gyroscope device should have been used. The issue did not affect the dip of the holes, which varies less than 1° between readings.

IOS Services Geoscientifiques (IOS) was mandated to supervise drilling operations, spot and survey the hole location, log the core, and supervise the sampling process conducted by local workers (Joly, 2020).

A geological and mineralogical description was completed according to NioBay's nomenclature established in 2016 from 1966 to 1967 holes relogging. GeoticLog8 software was used for data entry of core logging and technical measurements in MS Access database. Collar coordinates are in UTM WGS 84 Zone 17.

Entire core marked as carbonatite, and approximately three metres of the host rock units were sampled. The sample length was kept typically to three metres with the shortest length set at 0.5 m with respect to geological contacts, mineralization, and significant alteration.

Core boxes are stored in core racks in a shed near NioBay's core shack, in Moosonee. Hole numbers and footages are indicated on core boxes with black felt pen and on sides with aluminum tags. A slip with sample number was stapled in the core boxes at the beginning of each sample.

Figure 10-1 shows the location of historical and current drilling used in Mineral Resource estimation.

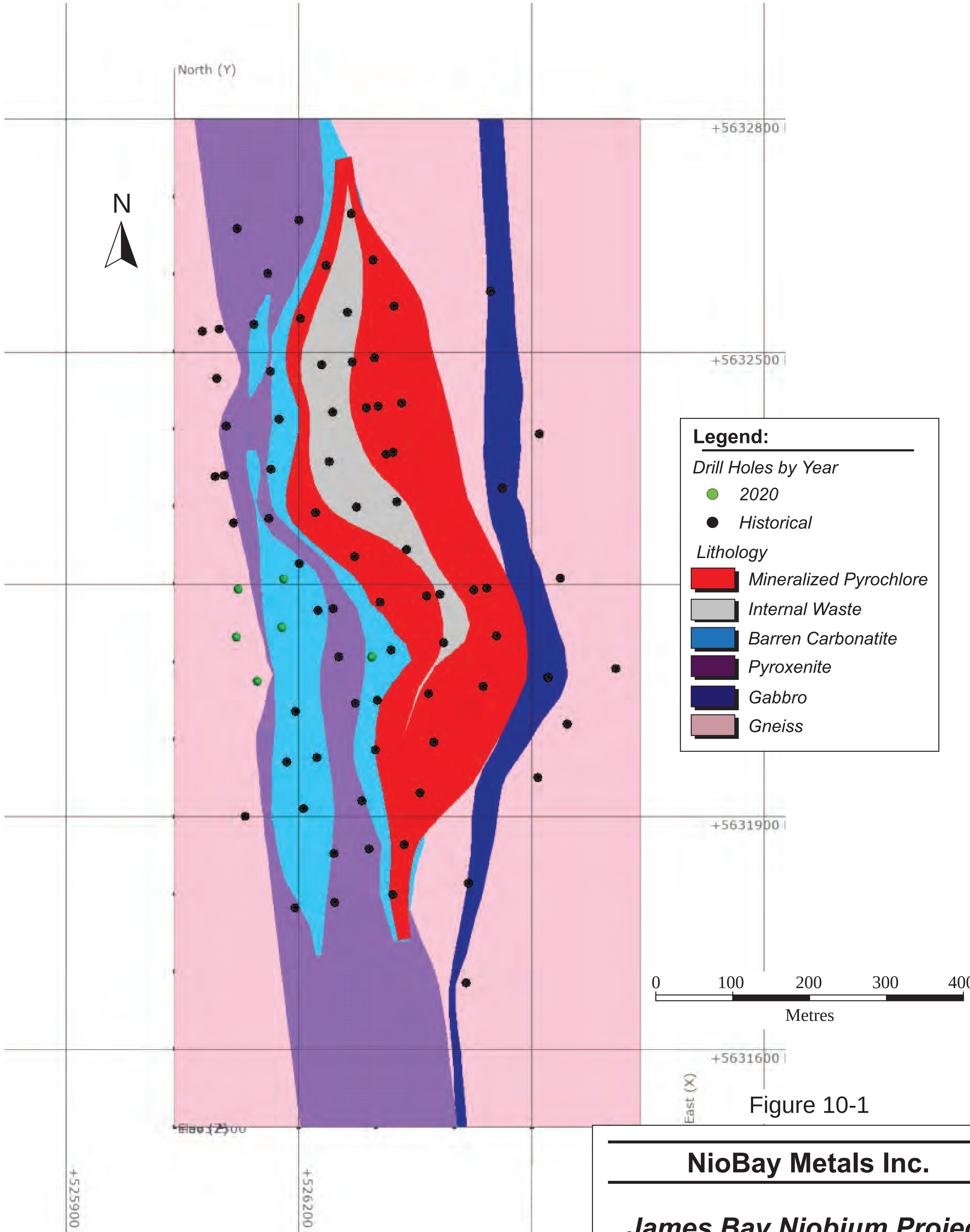


Figure 10-1

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Drill Hole Locations

August 2020

Source: RPA, 2020.

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

2016 CHECK SAMPLING PROGRAM

The core from the historical drilling on the Property was continuously stored in a secure building in Moosonee.

Samples taken during the 2016 check sampling program were bagged on site and were assigned a unique sample number. The samples were first transported on two stretch wrapped pallets by NioBay personnel to NioBay's warehouse in Montreal where standards were inserted into the sample sequence. The samples were then bagged, stretch wrapped on pallets, and sent directly to SGS Minerals in Lakefield, Ontario, (SGS Lakefield) by courier for processing and analysis. SGS Lakefield is Accredited Laboratory No. 184 and conforms with requirements of CAN-P-1579, CAN-P-4E (ISO/TEC 17025:2005).

At SGS Lakefield, core samples were dried and weighed, then crushed to 90% passing 2 mm, split into representative sub-samples using a riffle (or rotary) splitter, dry screened to -180 mesh and a 500 g sample pulverized to 85% passing 75 µm according to SGS Lakefield sample preparation code PRP91.

Samples were routinely analyzed for a suite of 12 major oxides including Al_2O_3, CaO, Cr_2O_3, K_2O, MgO, MnO, Na_2O, P_2O_5, Fe_2O_3, SiO_2, TiO_2, and V_2O_5 and loss on ignition (LOI) as well as Nb_2O_5. Analyses were done by the borate fusion/X-ray fluorescence (XRF) method (SGS Lakefield lab code GO XRF76V).

CURRENT DRILLING PROGRAM

During the 2020 winter drilling campaign, samples were selected and marked by the IOS geologist. Samples were split using a hydraulic splitter, bagged on site, and assigned a unique sample number. Standards, blanks, and core duplicates were inserted into the sample sequence.

Samples bags were sealed and placed in rice bags and sent directly to the SGS Lakefield warehouse in Cochrane, Ontario. Samples were then shipped by IOS personnel or NioBay staff to SGS Lakefield, the same laboratory as in 2016, for preparation and assaying. As previously noted, SGS Lakefield is Accredited Laboratory No. 184 and conforms with requirements of CAN-P-1579, CAN-P-4E (ISO/TEC 17025:2005).

Samples were assayed using XRF76V protocol for a suit of 13 major oxides including SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, K_2O, Na_2O, TiO_2, MnO, P_2O_5, Cr_2O_3, V_2O_5, Nb_2O_5 and LOI. Trace elements were analysed using package GE_ICM90A, for 56 traces elements analysis by inductively coupled plasma mass spectrometry (ICP-MS) or inductively coupled plasma atomic emission spectroscopy (ICP-AES) after sodium peroxide fusion.

NioBay, IOS, and RPA are independent of SGS Lakefield.

RPA is of the opinion that the sample preparation, analysis, and security procedures at the Project are adequate for use in the estimation of Mineral Resources.

QUALITY ASSURANCE AND QUALITY CONTROL

2016 CHECK SAMPLING PROGRAM

In 2016, NioBay initiated a Quality Assurance and Quality Control (QA/QC) program that includes the systematic use of CRMs and blanks. No field, coarse reject, or pulp duplicate samples were collected during the 2016 check sampling program. RPA is unaware of QA/QC results collected by previous operators.

BLANKS

The regular submission of blank material is used to assess contamination during sample preparation and to identify sample numbering errors. NioBay's QA/QC protocol calls for blanks to be inserted into the sample stream at a rate of approximately 1 in 20.

The blank material used by NioBay consisted of decorative calcite acquired from a local hardware store in Moosonee which was expected to have a very low Nb_2O_5 content.

RPA received results for 28 analyses of blanks. All the blanks from 11 of the 12 holes analyzed returned values of less than 0.01% Nb_2O_5. Four of the five blanks from hole 66-2 returned values ranging from 0.05% Nb_2O_5 to 0.94% Nb_2O_5 suggesting either contamination at the laboratory or, more likely, sample misnumbering. RPA recommends that NioBay investigate the associated sample batches from hole 66-2 and re-analyze if necessary.

CERTIFIED REFERENCE MATERIAL (STANDARDS)

Results for the regular submission of CRMs are used to identify issues with specific sample batches and long-term biases associated with the regular assay laboratory.

NioBay acquired two non-certified standards from GéoMéga Resources Inc. (GéoMéga). GéoMéga is in the process of developing the Montviel REE-Nb deposit located approximately 125 km north-northeast of Lebel-sur-Quévillon, Québec and developed in-house standard material for its internal purposes.

Table 11-1 documents the composition of the standards acquired from GéoMéga.

TABLE 11-1 STANDARDS
NioBay Metals Inc. – James Bay Niobium Project

	Low Standard (S4) Nb (ppm)	High Standard (S5) Nb (%)
Mean	75.36	0.845
Variance	2.43	0.000025
Std. Dev. (S)	1.56	0.005
Rel. Std. Dev. (%)	2.07	0.59

The results for 24 of the 27 standards were reasonable, however, three standards show significant differences from the expected value. RPA recommends that NioBay investigate the associated sample batches and reanalyze if necessary.

CURRENT DRILLING PROGRAM

Similar to the 2016 check sampling program, NioBay conducted a QA/QC program that includes the systematic use of CRMs and blanks and field duplicates. No coarse reject or pulp duplicate samples were collected during the 2020 check sampling program. In total, 128 samples of control material (approximately 15% of the total samples) were inserted into the sample sequence every 10 samples, alternating between CRMs, blanks, and duplicates.

BLANKS

Three types of blank material were used at the Project to assess contamination during sample preparation and to identify sample numbering errors. NioBay inserted blank material at the rate of approximately 1 in 20.

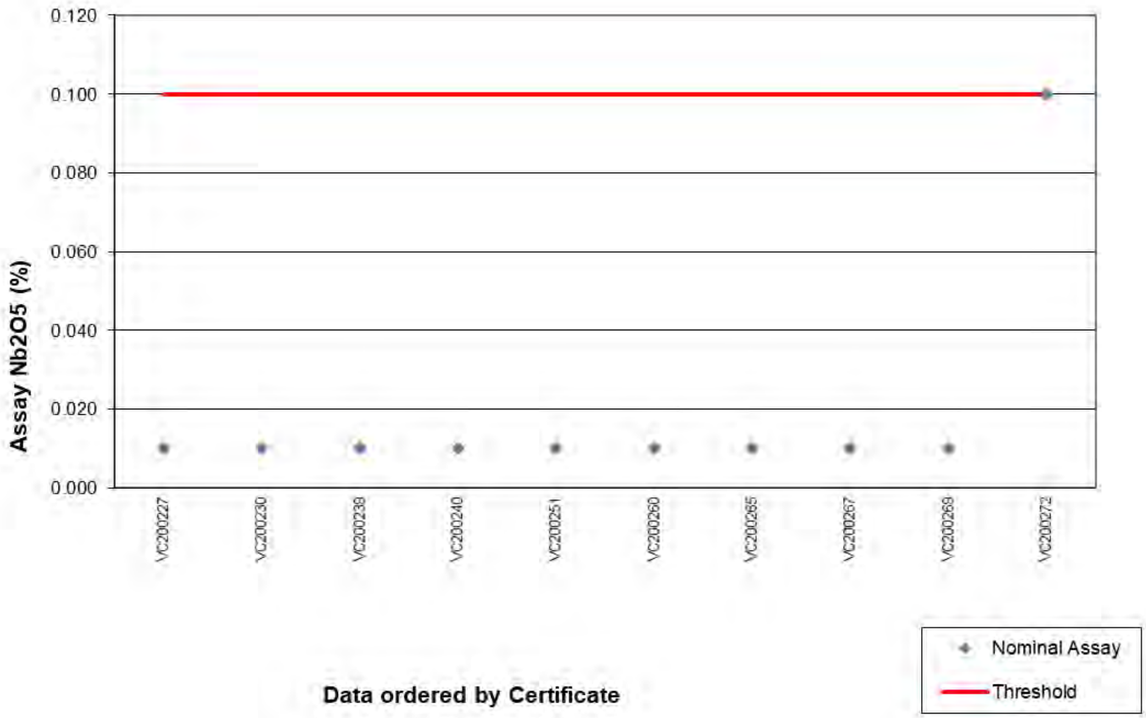
The blank materials included:

- Block blanks made of pure quartzite obtained from La Galette quartzite, Sitec Amérique du Nord Inc.
- Crushed blanks made of pure quartz from Lac Bouchette deposit crushed to >90 µm with jaw-crusher and ceramic disk pulveriser.
- Pulverized blanks made of pure quartz from Lac Bouchette deposit pulverised with carbon steel ringmill to <90 µm.

All the blanks from six of the seven holes submitted for analysis returned values of less than 0.01% Nb_2O_5. One blank made from pure quartz crushed to >90 µm, inserted after a sequence of several higher grade field samples, returned a value of 0.1% Nb_2O_5 (Figure 11-1), indicating that contamination can occur and cleaning procedures should be more carefully followed. Due to the low grades RPA considers it to be non-material.

RPA noticed that the failure criteria were applied to either the content of metal (Nb ppm - GE_IC90A, sodium peroxide fusion/ICP-AES finish) or oxide (%Nb_2O_5 - GO_XRF76V, Ore grade Borate fusion, XRF), depending on the assaying method reported by the lab and used for comparison with the failing criteria. The oxide percent threshold (0.01%) is much higher than the ppm threshold value (1 ppm = 0.0001%), leading to a much larger number of potential failures when the Nb ppm value is considered. A consistent approach should be used in order to reduce the potential of identifying false failures. The Nb ppm value used as threshold should be equal to the Nb_2O_5 percent value, converted to ppm. The occurrence of the blank apparent failures in the Nb ppm data reflects trace level contamination from previous higher grade samples, however, due to the very low values detected, RPA considers it to be non-material.

FIGURE 11-1 PERFORMANCE OF BLANK REFERENCE MATERIAL NB_2O_5 – PURE QUARTZ (>90 µM)



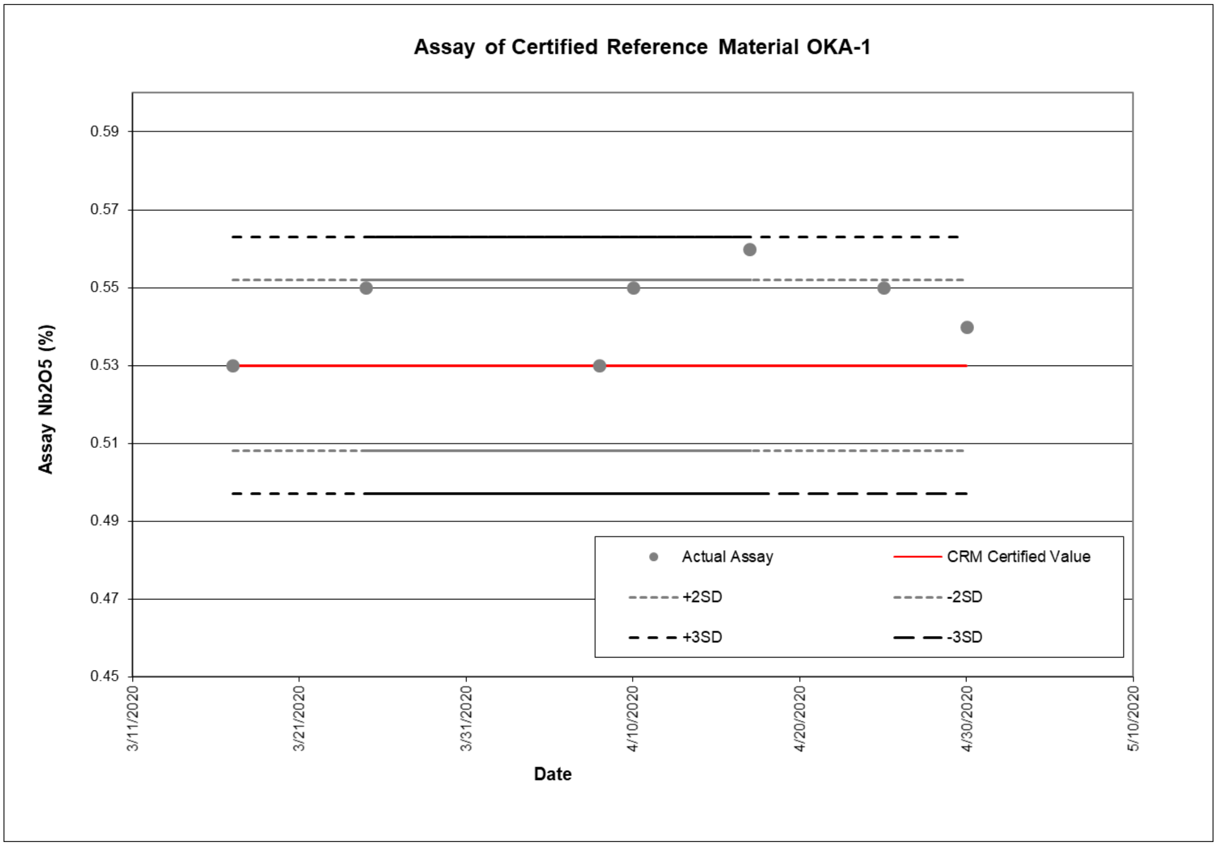
CERTIFIED REFERENCE MATERIAL (STANDARDS)

In order to identify a potential issue with a single sample batch or biases associated with the regular assay laboratory, NioBay used four types of commercial CRMs. One CRM, OKA-1, is certified for niobium and was acquired from CANMET (Canada Centre for Mineral and Energy Technology). The other three were certified for tantalum, suite of oxides (SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, K_2O, Na_2O, TiO_2, MnO, P_2O_5, Cr_2O_3, V_2O_5, and LOI), and rare earth elements.

Additionally, NioBay used an internal reference material made of niobium and tantalum bearing nepheline syenitic pegmatite, which was obtained from IOS facilities in 2009.

Performance of the OKA-1 CRM was acceptable with slight positive bias (Figure 11-2), with an average assayed value of 0.54% Nb_2O_5, which is 1.9% higher than the CRM's nominal certified value of 0.53% Nb_2O_5.

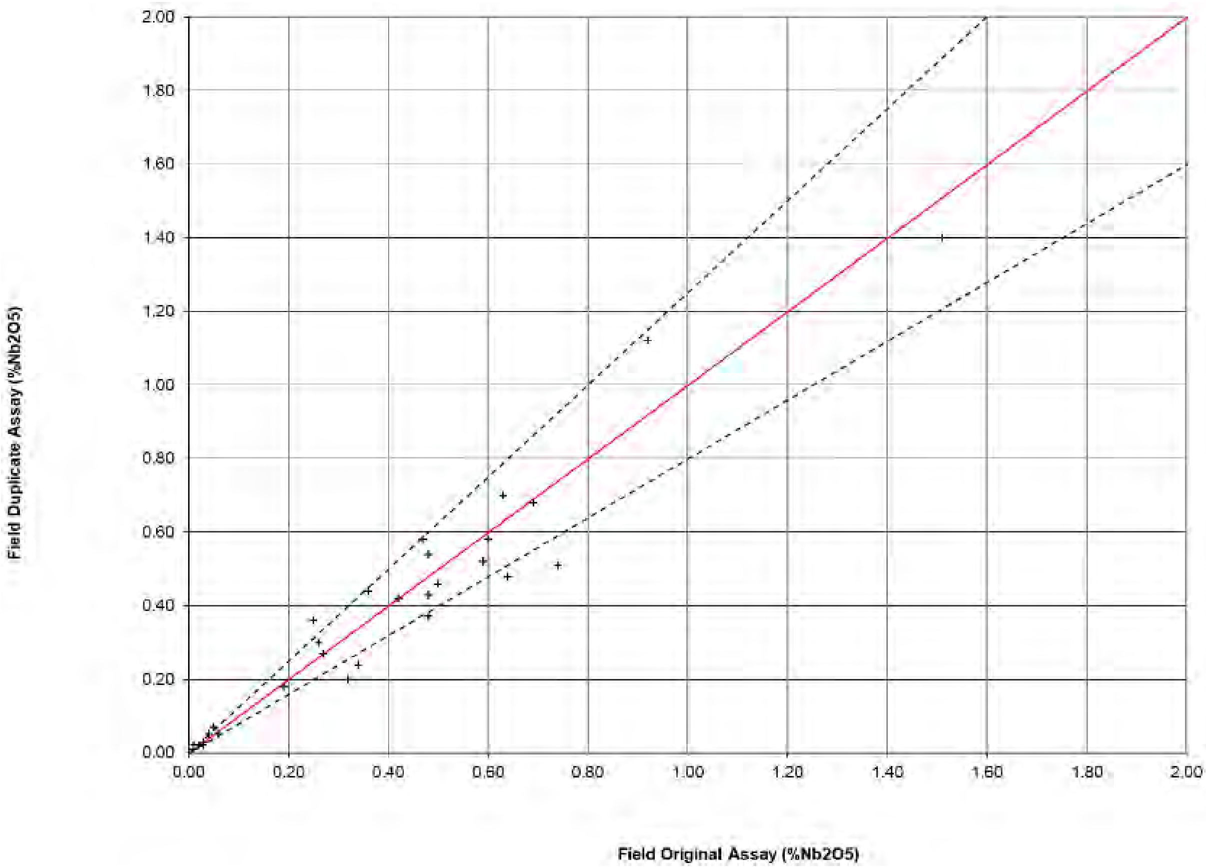
FIGURE 11-2 PERFORMANCE OF STANDARD REFERENCE MATERIAL OKA-1



FIELD DUPLICATES

The purpose of field sample duplicates is to test the quality of preparation and repeatability of samples along the analysis pathway. NioBay inserted field duplicates obtained from the quarter split core submitted in different sample shipment. Figure 11-3 is a scatter plot of the pairs of original sample and field duplicate. Most of the pairs plot within the ±20% difference lines, which indicates that the mineralization is reasonably well-distributed in the drill core. RPA considers the overall field sample duplicate results to be acceptable.

FIGURE 11-12 FIELD DUPLICATE ASSAY RESULTS (% NB_2O_5)



ENHANCEMENTS TO QA/QC PROGRAM

RPA recommends several enhancements to the QA/QC protocol for use during the drilling programs recommended in this Technical Report including the regular submission of pulp duplicates to an alternative laboratory and a temporary coarse reject duplicate analysis program. NioBay should also implement a QA data monitoring system used to detect failed batches, and in turn, identify sample batches for reanalysis.

Pulp duplicates are submitted to a second laboratory to make an additional assessment of laboratory bias. The primary laboratory should be instructed to prepare one pulp duplicate for every 50 samples. These should be forwarded to an alternative laboratory for analysis using similar digestion and analysis methods as used by primary laboratory.

Reject duplicates consist of a second split of the crushed sample and should be prepared and analyzed at the primary laboratory. The split should be taken using the same method and have the same weight as the original sample. RPA recommends an initial test program of 50 reject duplicates of samples over a range of grades. Results from the reject duplicate QC program will determine if the splitting procedures are applied consistently and are appropriate. NioBay should then continue to submit one coarse reject duplicate every 50 samples.

In RPA's opinion, the QA/QC program as designed and implemented by NioBay is adequate and the assay results within the database are suitable for use in a Mineral Resource estimate.

12 DATA VERIFICATION

SITE VISITS

A site visit to the Project was carried out by Dorota El-Rassi, M.Sc., P.Geo., RPA Senior Geological Engineer, on August 21, 2020. Ms. El-Rassi inspected the historical shaft site and examined the recent drill hole locations.

Paul Chamois, P. Geo., Principal Geologist with RPA and an independent QP, visited the Project on September 27, 2017. During the visit, Mr. Chamois examined the historical shaft site on the Property, examined core from historical drilling programs stored in Moosonee, identified pyrochlore mineralization in the historical core, confirmed the local geological setting, and investigated factors that might affect the Project.

DATA VERIFICATION

RPA visually inspected the drill hole traces, performed basic database validation procedures, and reviewed the drill hole traces in 3D, level plan, and in vertical sections, and found no unreasonable geometries. RPA also confirmed that there are no duplicate sample numbers and that samples numbers are available for every assayed interval.

RPA extracted 422 samples from the 2016 check sampling results, representing approximately 67% of the total samples, and compared them to the original assay certificates. For the 2020 drilling data, RPA compared 20 SGS Lakefield laboratory assay certificates, representing essentially all of the 2020 drill hole samples, to the assay values in the database. No significant discrepancies were identified.

In addition, a number of standard data integrity checks were performed by the software program on the drill hole database such as:

1. Intervals exceeding the total hole length (from–to issue).
2. Negative length intervals (from–to issue).
3. Inconsistent downhole survey records.
4. Out-of-sequence and overlapping intervals (from–to issue; additional sampling/QA/QC/check sampling included in table).

5. No interval defined within analyzed sequences (not sampled or missing samples/results).
6. Inconsistent drill hole labelling between tables.
7. Invalid data formats and out-of-range values.

RPA is of the opinion that the drill hole database is acceptable for the purposes of Mineral Resource estimation.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

The following summary of historical and recent metallurgical test work completed on material from the Property is taken from Pelletier (2017).

HISTORICAL WORK

Extensive laboratory process test work has been done in the past including:

- Heavy liquid separation
- Gravity separation (tabling, jigging and spiralling)
- Magnetic and electrostatic separation
- Flotation (direct and dual flotation)

The results of the historic work suggest that part of the material could be removed before the flotation process with a positive impact to the process plant size and cost. The dual flotation provides better results than direct flotation. Based on the laboratory results, a pilot plant test was carried out on a bulk sample from underground. The sample combined part of the muck coming from the shaft sinking and a crosscut over 100 ft long (30.5 m) at 122 ft (37 m) below the surface. The sample assayed 0.72% Nb_2O_5, which is higher than the average grade reported for the historic resource estimate (0.55% Nb_2O_5). The total amount of sample sent to SGS Lakefield for the pilot plant was 250 tons and another 18 tons were sent to the Ontario Research Centre (ORC).

MINERALOGY

The historical mineralogy indicated that only two niobium-bearing minerals were present: sodium pyrochlore (a fluocalciopyrochlore salt $(NaCa)_2$ $(NbTi)_2$ $(O,F)_7$) and columbite ($FeNb_2O_6$).

PILOT PLANT TEST WORK

Grinding test investigation included wet autogenous and dry autogenous grinding. Wet rod mill was suggested but not investigated. Results suggest that wet autogenous grinding produced a desirable size distribution and pebble size. Grinding tests were carried out at the ORC.

A detailed pilot plant program was conducted at Lakefield Research Ltd. (now SGS Lakefield) to assess the final plant flowsheet and pilot plant design criteria. The pilot plant consisted of the following:

- Grinding and gravity separation
- Magnetic separation
- Calcite flotation
- Pyrochlore flotation
- Reverse sulphide flotation
- Acid leach
- Tabling

Results from the pilot plant were:

- 45% of the initial mass was removed with niobium losses of 4% to 5%.
- A final niobium concentrate of 64% Nb_2O_5 was produced at a niobium recovery of 79%.
- Two types of concentrate were produced; a low and higher silica content (grade 1 with max 1% SiO_2 and grade 2 with max 4% SiO_2)

Despite the positive results achieved, the final process flowsheet was complicated and included a number of cleaning stages, a regrinding stage, and a tabling stage. It may be challenging to operate and control the niobium losses. Some of the reagents are hazardous (HF) or obsolete. With the current evolution in niobium ore processing during the last four decades, it appears that this process flowsheet needs to be revisited and possibly simplified.

Table 13-1 lists the quality of the niobium concentrates produced from the historical test work.

TABLE 13-1 HISTORIC NIOBIUM CONCENTRATES
NioBay Metals Inc. – James Bay Niobium Project

	High Grade	Low Grade
Distribution	41%	59%
Nb_2O_5	67.7%	62.3%
Ta_2O_5	0.49%	0.50%
Fe_2O_5	1.24%	3.45%
SrO	1.11%	1.01%
Pb	0.04%	0.03%
As	Nil	Nil
SnO_2	0.02%	0.01%
TiO_2	1.76%	2.73%
SiO_2	0.68%	2.90%
CaO	15.7%	13.6%
MgO	0.26%	0.69%
BaO	---	---
Na_2O	7.31%	7.28%
Al_2O_3	0.04%	0.13%
S	0.05%	0.06
P_2O_5	0.08	0.23
MnO	0.01	0.03

RECENT WORK

The 2017 test work was performed on a representative composite sample of coarse reject material from the 2016 core sampling program.

HEAVY LIQUID SEPARATION

Heavy liquid separation provided excellent results with 90% of Nb_2O_5 concentrate in 5% mass pull at an SG cutting point of 3.5. These results suggest a good liberation of the niobium mineral and open the possibility of gravity concentration inside the process flowsheet. Historical process flowsheets used gravity separation to remove up to 40% of the mass prior to flotation with limited niobium losses.

QEMSCAN

Advanced mineralogy available today reveals a good liberation of most of the mineral in the samples. QEMSCAN results combined with the heavy liquid separation results indicate that a better niobium recovery can be achieved at the Project compared to other niobium deposits. The main niobium mineral at the Project is pyrochlore (87%), with columbite accounting for only 9.6%. The niobium-bearing pyrochlore is easier to recover than columbite. The best result is achieved using niobium liberation, with approximately 95% of the niobium mineral free or liberated. This result can explain the historical niobium recovery achieved. The other critical minerals in the niobium processing are also well liberated. The theoretical grade recovery curve provides other details in the potential niobium recovery. It can also explain the potential for gangue rejection by gravimetry.

TABLE 13-2 MINERAL LIBERATION
NioBay Metals Inc. – James Bay Niobium Project

Species	Free	Liberated	Total Free and Liberated
Niobium	71.1%	23.8%	94.9%
Silica	89.5%	5.6%	95.1%
Apatite	97.2%	1.4%	98.6%
Sulphide	87.5%	4.1%	91.6%
Fe Oxide	68.7%	26.5%	95.2%

TEST WORK

The work performed in 2017 is referred to as preliminary process test work.

A master composite was prepared based on the results of re-assaying of 12 historical drill holes. The grade of the master composite approximates the historical grade used in the feasibility study and is estimated to be 0.56% Nb_2O_5. All of the test work was done on the master composite. Table 13-3 lists the grade of the master composite estimate and direct assay grade.

TABLE 13-3 MASTER COMPOSITE
NioBay Metals Inc. – James Bay Niobium Project

	Estimate	Direct Assay
Nb_2O_5	0.56	0.59
SiO_2	4.64	4.74
Al_2O_3	0.55	0.54
Fe_2O_3	8.96	8.79
MgO	6.54	6.37
CaO	38.20	38.40
Na_2O	0.53	0.53
K_2O	0.46	0.44
TiO_2	0.22	0.25
P_2O_5	3.29	3.33
MnO	0.75	0.75
S	0.49	0.47

The test work included:

- Completion of head grade assay for 12 holes including major elements to understand the variability of the principal elements/contaminants
- Heavy liquid separation
- QEMSCAN mineralogy
- Gravity separation (2)
- Flotation tests (10)

The flotation test work used the dual flotation system with mainly the new approach developed over time. A typical reagents scheme was used. The pH regulation was done using fluosilicic and oxalic acids that are less corrosive and hazardous than hydrofluoric acid (HF). Ten flotation tests were completed, and the results appear to be in line with the historical data. The tests were done in open circuit and the final results will need to be confirmed by locked cycle and possibly pilot plant tests. The test identified one major issue, that is, the silica concentration remains relatively high or close to the upper limit.

The results achieved are higher in terms of Nb_2O_5 recovery than any other niobium operation. The actual flowsheet is simplified compared to the historical one. The gravity tests failed to reproduce the historical results. For the current testing, it was decided to complete the flotation test on the entire sample without any mass removal by gravity. The gravity separation will be reviewed in a future test work phase, considering its impact on process plant and capital cost as well as the flotation.

The proposed process flowsheet includes:

- Grinding to 100% 200 µm or 300 µm
- Desliming
- Magnetic separation
- Sulphide flotation
- Mica flotation
- Carbonate flotation
- Niobium flotation

The concentrates produced ranged from 56% to 59% Nb_2O_5 with Nb_2O_5 recovery between 68% and 77% in open circuit. The main contamination grades meet specifications except for silica. TiO_2 ranges from 3.9% to 6.0%, P_2O_5 is low at 0.12% to 0.14% (the HCl leaching cost will be low), and the sulphide S ranges from 0.04% to 0.8%. At present, no secondary sulphide flotation appears necessary on the final concentrate. For the silica, the lower grade achieved was 3.21% SiO_2 up to 4.5% SiO_2 in the next best flotation test. Presently this is the main issue to address in the next phase of test work. The historical flowsheet included many stages of cleaner and gravity separation. Characterization on the concentrate will be carried out to find the best alternative to resolve this issue.

Table 13-4 lists the typical preliminary open circuit flotation results:

TABLE 13-4 PRELIMINARY FLOTATION TEST RESULTS
NioBay Metals Inc. – James Bay Niobium Project

	F1	F2	F6
Distribution			
Nb_2O_5	58.9%	55.7%	56.3%
Nb_2O_5 recovery (final conc)	67.7%	68.3%	73.9%
Nb_2O_5 recovery (rougher conc)	86.6%	87.8%	85.0%
Fe_2O_3	6.81%	8.33%	7.74%
P_2O_5	0.14%	0.13%	0.13%
TiO_2	3.91%	6.56%	6.01%
SiO_2	3.21%	4.00%	4.45%
S	---	0.06%	0.04%

CONCLUSIONS

Extensive historical test work has been completed for the Project and good recovery has been achieved. Multiple cleaning, however, reveals that the control of the silica, and to some extent sulphur, remains complicated and requires the use of a gravity table to achieve these results. It was proposed in 2016 to revisit all the processes to see if it was possible to reduce and simplify the number of cleaning stages and the overall processing.

Preliminary test work was carried out in 2017 on historical samples available. Despite limited test work, good results have been achieved. Silica remains the main area of concern and will require attention in the next phase of test work. The sulphur issue appears to be well controlled in the current test work program by using a different flotation approach than in the past. The sulphur grade in the concentrate is well below the target limit. Additional testing on fresh material is recommended to verify the 2017 test work results. Variability test work should be carried out to develop the final flowsheet. The test work program should be completed with a pilot plant run with all the processing stages to understand the impact of recirculation and water management.

Gravity concentration test work should be carried out to verify the historical result of approximately 40% mass pull being removed with limited Nb_2O_5 losses (4% to 5% Nb_2O_5 recovery). If the gravity test proves to be successful, the new process flowsheet will need to be validated on the reduced mass circuit feed.

14 MINERAL RESOURCE ESTIMATE

SUMMARY

The Mineral Resources conform to Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves dated May 10, 2014 (CIM (2014) definitions) and are reported in accordance with the Canadian Securities Administrators' National Instrument 43-101. Mineral Resources are not Mineral Reserves and have not demonstrated economic viability. RPA considers the Mineral Resources of the Project to be amenable to underground extraction. A summary of the Mineral Resources is presented in Table 14-1. RPA has excluded approximately 7.2 million tonnes averaging 0.5% Nb_2O_5 situated in a 46 m thick crown pillar.

TABLE 14-1 SUMMARY OF MINERAL RESOURCES – JULY 9, 2020
NioBay Metals Inc. – James Bay Niobium Project

Category	Tonnage (Mt)	Grade (%Nb_2O_5)	Contained Nb_2O_5 (Mkg)
Indicated	29.7	0.53	158
Inferred	33.8	0.52	177

Notes:
1. CIM (2014) definitions were followed for Mineral Resources.
2. Mineral Resources are reported using a cut-off grade of 0.3% Nb_2O_5 based on an underground mining scenario, an operating cost of C$70/t, and a metallurgical recovery of 70%.
3. Mineral Resources are estimated using a long-term niobium price of US$40 per kg and a US$/C$ exchange rate of 1:1.2.
4. A minimum mining width of approximately 7.5 m was used.
5. Bulk density is 2.93 t/m^3.
6. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
7. Resources situated in a 46 m thick crown pillar have been excluded.
8. Numbers may not add due to rounding.

Leapfrog Geo software (version 5.0.4) was used to construct the geological solids, prepare assay data for geostatistical analysis, construct the block model, estimate niobium oxide grades, and tabulate Mineral Resources.

RPA is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

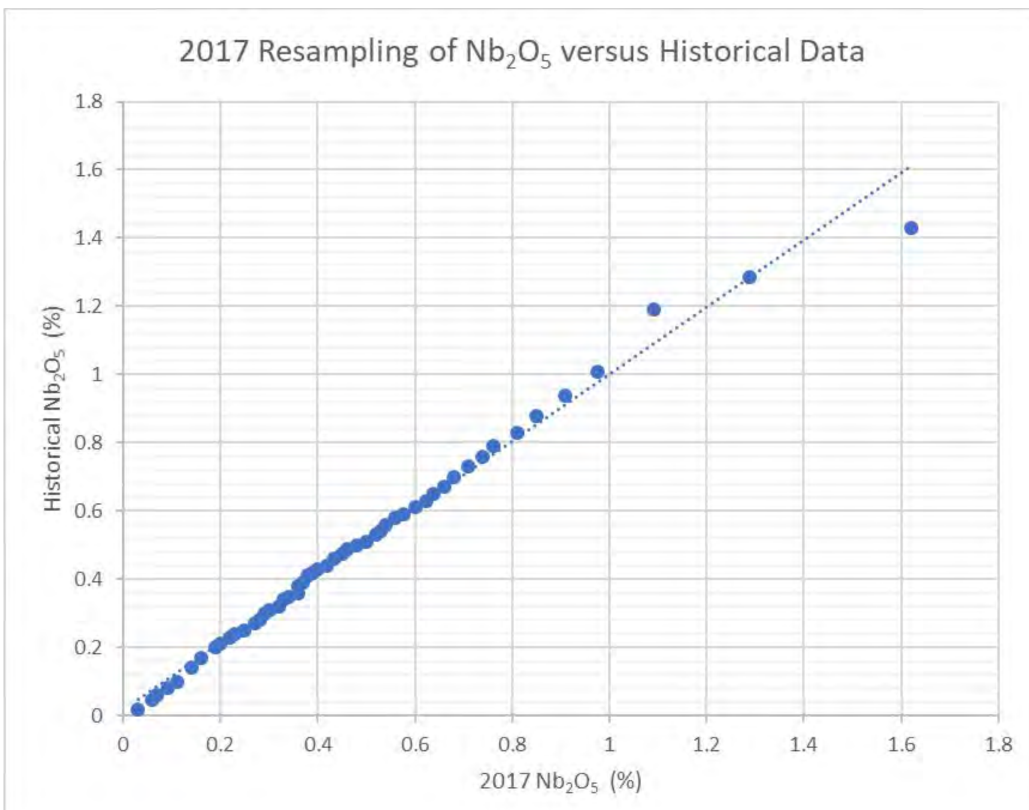
RESOURCE DATABASE

The previous Mineral Resource estimate was generated using a local mine grid in Imperial units. RPA converted the geological and mineralization model created in Leapfrog from feet to UTM coordinates (Imperial units to metric units).

NioBay provided the Project data as separate MS Excel files containing location, survey, lithology, mineralogy, and assays. The data used for grade interpolation contains records for 86 holes (16,320 m), including seven holes (3,090 m) drilled in the 2020 winter program. All drilling is located within the resource model area. The total number of samples within the database is 3,449, with 64 containing a value of zero for Nb_2O_5. There are 2,956 samples located within the mineralized pyrochlore.

NioBay re-logged and re-assayed 12 boreholes completed in the 1960s to confirm that the historical borehole data can be used to support a new Mineral Resource estimate without drilling any new holes. In RPA's opinion, there is a good correlation of the historical and re-sampled Nb_2O_5 values (Figure 14-1).

FIGURE 14-1 QQ PLOT OF THE HISTORICAL AND RESAMPLED DATA



RPA conducted a number of checks on the resource database, including a search for unique, missing, and overlapping intervals, a total depth comparison, and a visual search for extreme or deviant survey values. As part of the data review, RPA compared the MS Excel files with the scan copy of the original paper log. No errors were encountered.

The resource database is considered by RPA to be reliable for grade modelling and Mineral Resource estimation.

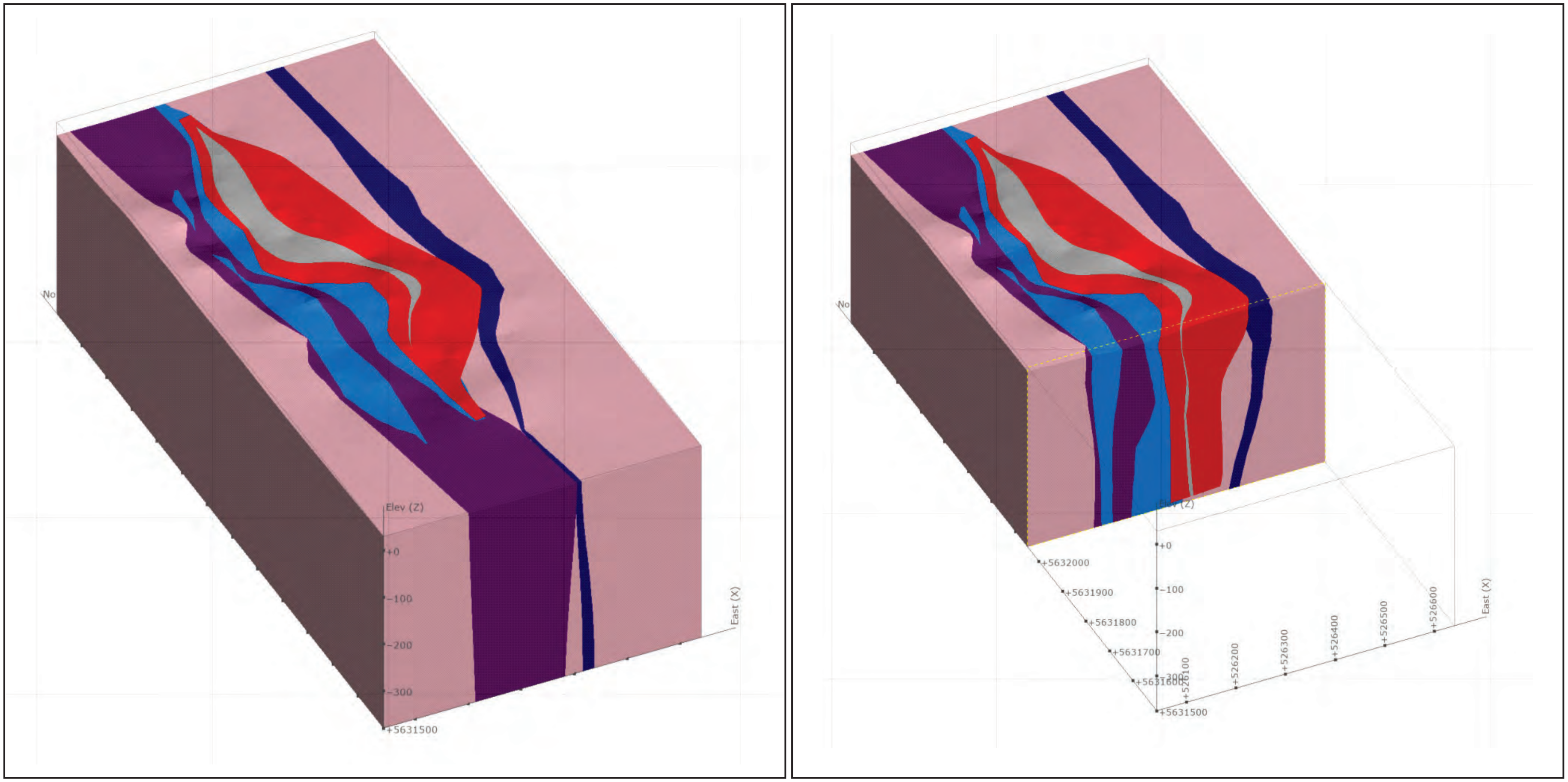
GEOLOGICAL INTERPRETATION

RPA used Leapfrog software to create a three-dimensional geological model from core log information. As part of the modelling routine, RPA simplified original logging codes into seven main geological groups:

1. Overburden
2. Sediments
3. Gneiss
4. Gabbro
5. Pyroxenite
6. Carbonatite
7. Pyrochlore

Niobium mineralization occurs only in the pyrochlore, in which RPA defined two zones of enriched mineralization separated by internal waste. The two domains join at the south end to form a single body. RPA retained the two-domain differentiation for modelling purposes. Mineralization was modelled at an approximate modelling threshold of 0.3% Nb_2O_5 (Figure 14-2).

Looking Northeast



Legend:

- *Mineralized Pyrochlore*
- *Internal Waste*
- *Barren Carbonatite*
- *Pyroxenite*
- *Gabbro*
- *Gneiss*

0 200 400 600 800

Metres

Figure 14-2

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Lithological Model

August 2020

Source: RPA, 2020.

RESOURCE ASSAYS

Niobium assays located inside the wireframe models were tagged with domain identifiers for statistical analysis. Results were used to help verify the modelling process. Descriptive statistics by domain are summarized in Table 14-2.

TABLE 14-2 STATISTICAL SUMMARY OF NB_2O_5 ASSAY DATA
NioBay Metals Inc – James Bay Niobium Project

Domain	Count	Min (%Nb_2O_5)	Max (%Nb_2O_5)	Mean (%Nb_2O_5)	Variance	Std. Dev (%Nb_2O_5)	CV
East Zone	1,714	0.001	2.66	0.54	0.08	0.28	0.53
West Zone	697	0.001	1.77	0.51	0.07	0.27	0.53
Internal Waste	545	0.001	1.00	0.14	0.01	0.12	0.86
Total	2,956	0.001	2.66	0.46	0.09	0.30	0.66

TREATMENT OF HIGH-GRADE ASSAYS

Capping analysis was performed using decile analysis, histograms, log probability plots, and cutting curves. Considering the disseminated nature of the niobium distribution, RPA is of the opinion that the capping is not necessary for this deposit.

COMPOSITING

The composite lengths used during interpolation were chosen considering the predominant sampling length, style of mineralization, and continuity of grade. The raw assay data contains samples with irregular sample lengths. Sample lengths range from 0.61 m to 6.1 m within the wireframe models, with 98% of the samples taken at three metre intervals (Figure 14-3). Given the width of the mineralization and considering the block size, RPA chose to composite to three metre lengths within domain boundaries. Assays within the wireframe domains were composited using Leapfrog, starting at the first mineralized wireframe boundary from the collar and resetting at each new wireframe boundary. Since assay intervals cross lithological contacts, the created composites contain a small number of residuals with lengths less than three metres. Composites less than 1.5 m were added to the previous interval. The descriptive statistics for composites used for resource estimation are presented in Table 14-3.

FIGURE 14-3 HISTOGRAM OF JAMES BAY NIOBIUM SAMPLING LENGTH

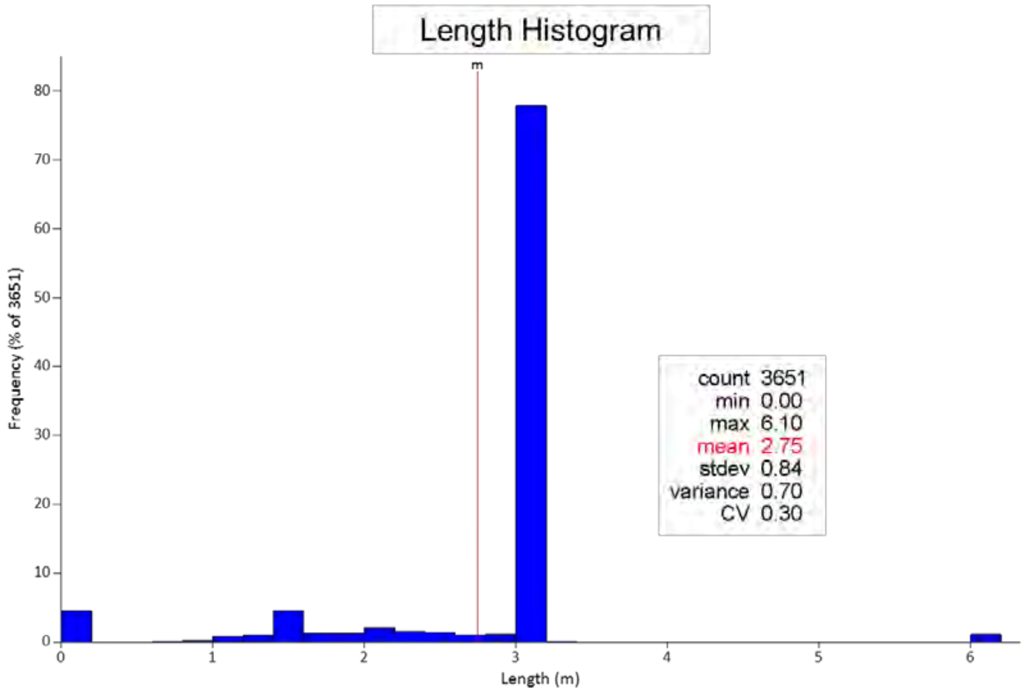


TABLE 14-3 DESCRIPTIVE STATISTICS OF JAMES BAY Nb_2O_5 COMPOSITES
NioBay Metals Inc – James Bay Niobium Project

Domain	Count	Min (%Nb_2O_5)	Max (%Nb_2O_5)	Mean (%Nb_2O_5)	Variance	Std. Dev (%Nb_2O_5)	CV
East Zone	1,665	0.00	2.16	0.54	0.07	0.26	0.48
West Zone	638	0.00	1.45	0.51	0.06	0.24	0.48
Internal Waste	557	0.00	0.96	0.14	0.01	0.11	0.80
Total	**2,860**	**0.00**	**2.16**	**0.45**	**0.08**	**0.28**	**0.62**

TREND ANALYSIS

VARIOGRAPHY

RPA generated downhole, omni-directional, and directional variograms and correlograms using the three metre composite %Nb_2O_5 values located within the mineralized wireframes. The variograms were used to support search ellipsoid anisotropy and plunges observed in the data, and Mineral Resource classification decisions. RPA modelled the variograms using two spherical structures with a nugget effect of between 0% and 0.1% of the sill (Figure 14-4). A summary of the variogram parameters is shown in Table 14-4.

FIGURE 14-4 JAMES NIOBIUM BAY DIRECTIONAL VARIOGRAM

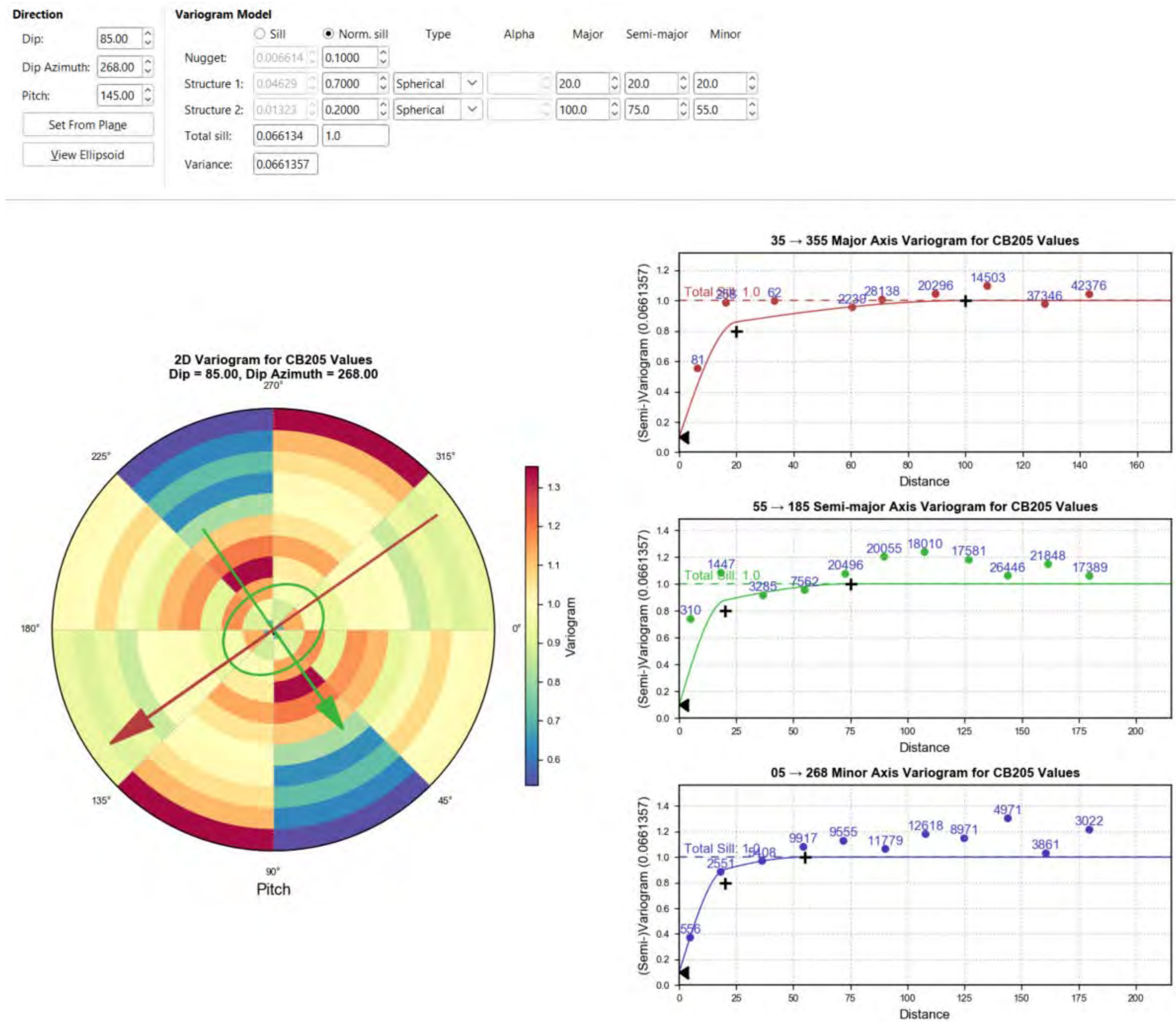


TABLE 14-4 VARIOGRAPHY OF THE NIOBIUM MINERALIZATION
NioBay Metals Inc – James Bay Niobium Project

Nugget					First Structure					Second Structure			
	Azimuth	Dip	Plunge	Sill	X	Y	Z	Type	Sill	X	Y	Z	Type
0.1	98	85	145	0.7	20	20	20	Sph	0.20	100	75	55	Sph

GRADE CONTOURING

The niobium grade continuity for the Project was investigated by generating a set of grade shells in Leapfrog for the mineralized envelopes. The identified major trend is plunging approximately 55° as shown in Figure 14-5.

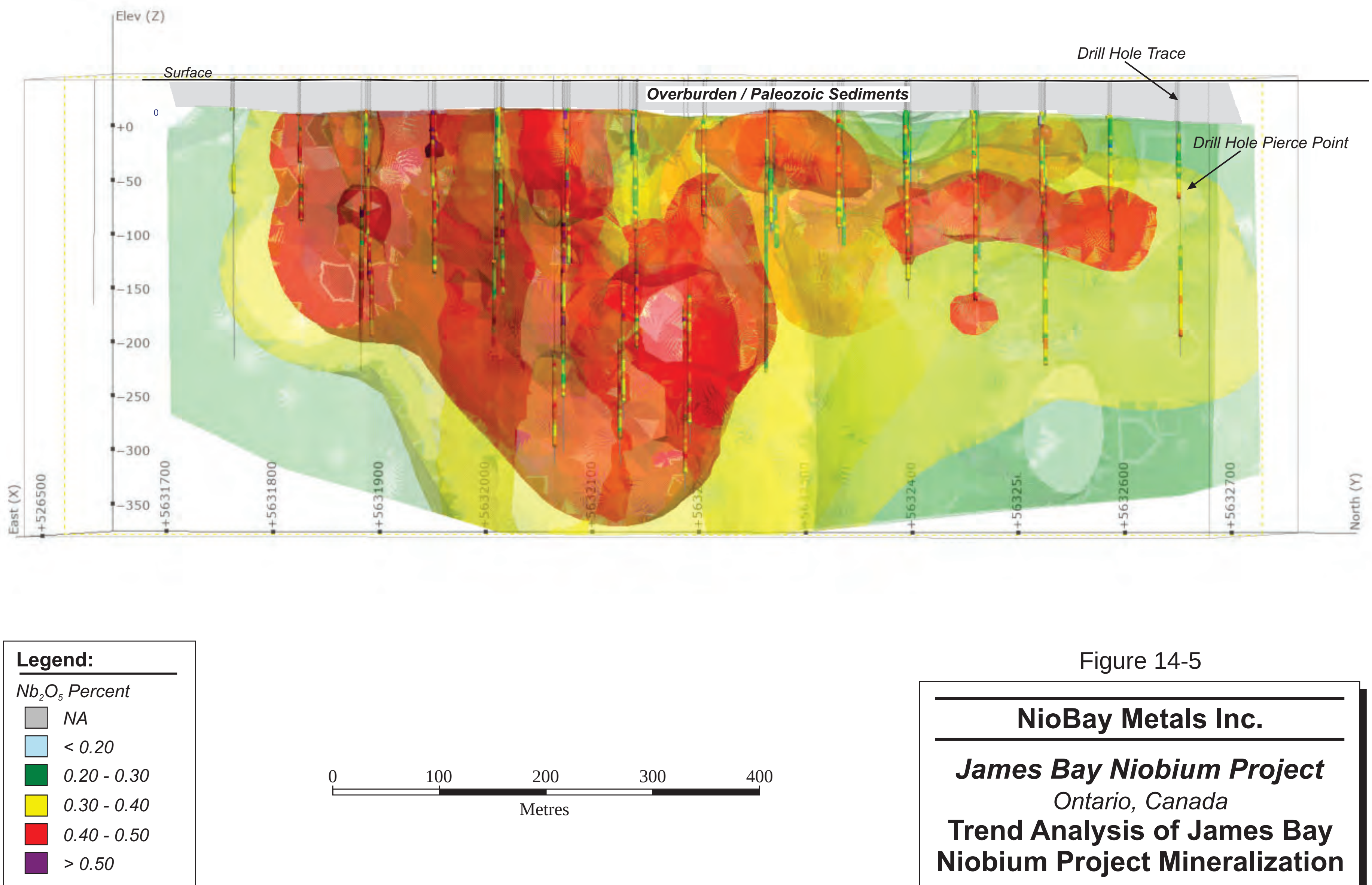


Figure 14-5

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Trend Analysis of James Bay Niobium Project Mineralization

August 2020

Source: RPA, 2020.

SEARCH STRATEGY AND GRADE INTERPOLATION PARAMETERS

Grades were interpolated by ordinary kriging (OK) with a minimum of five to a maximum of nine composites per block estimate for the first pass, and a minimum of two to a maximum of ten composites per block estimate in the second pass. A minimum of two drill holes and a maximum of four composites per drill hole were applied during the first pass (Table 14-5). Search ellipse dimensions were chosen following a review of variography and interpolation efficiency. The first pass used the full variogram ranges for the search, whereas the second pass ranges were enlarged to populate grades in the entire mineralized envelope.

Soft boundaries were applied between the two mineralized domains limited to ten metres away from their boundary. The two domains locally share hanging wall and footwall surfaces where they form a combined single domain and exhibit similar grade distribution.

Overall, the mineralization at the Project shows a strike of 98°, with varying orientation due to folding. In order to reproduce the direction of the trends, RPA employed a Variable Orientation tool in Leapfrog. The tool allows the search to be locally adjusted to the orientation of the mineralization, which results in improved local grade estimates. RPA used hanging wall, footwall, as well as the centreline of each domain to guide the variable direction search. In addition, the variogram directions were employed as global trends to improve the variable search.

TABLE 14-5 BLOCK MODEL INTERPOLATION PARAMETERS
NioBay Metals Inc – James Bay Niobium Project

Parameter	Pass 1	Pass 2
Min. No. Composites	3/5*	2
Max. No. Composites	9	10
Max. Composites per Drill Hole	2/4*	0
Major (m)	100	450
Semi-Major (m)	75	450
Minor (m)	15	20

* Search parameters for 10 m by 10 m by 10 m block model

RPA has also estimated grades in the Internal Waste domain between the two mineralized domains using the same interpolation parameters as those used in the East and West domains.

Grade interpolation was carried out using OK, with inverse distance cubed (ID^3) and nearest neighbour (NN) used as check estimates in the mineralized domains.

BULK DENSITY

During the 2017 site visit, RPA collected 21 independent samples to determine the density of the niobium mineralization. RPA assigned an average value of 2.93 g/cm³ to material in the pyrochlore domain. Table 14-6 shows summary statistics for density data provided by NioBay.

TABLE 14-6 SUMMARY STATISTICS - DENSITY
NioBay Metals Inc. – James Bay Niobium Project

Parameter	Value (g/cm³)
Count	21
Max	3.21
Min	2.67
Average	2.93
Variance	0.01
Std. Dev.	0.11

Table 14-7 lists average densities assigned to the waste rocks on the Project.

TABLE 14-7 WASTE ROCK DENSITY
NioBay Metals Inc. – James Bay Niobium Project

Rock Unit	Density (g/cm³)
Gneiss	2.7
Gabbro	2.9
Pyroxenite	3.1
Barren Carbonatite	2.87
Sediments	2.7
Overburden	2.2

BLOCK MODEL

One single block model covering the entire deposit was constructed in Leapfrog EDGE software to estimate Mineral Resources at the Project. Each block is 10.0 m long by 5.0 m wide by 10.0 m high, sub-blocked to 2.5 m long by 2.5 m wide by 2.5 m high. A summary of the definition data for the block model is provided in Table 14-8.

TABLE 14-8 BLOCK MODEL SETUP
NioBay Metals Inc – James Bay Niobium Project

Description	Easting	Northing	Elevation
Origin (m)	526,000	5,631,550	49
Block Size (m)	10	5	10
Sub Block Size (m)	2.5	2.5	2.5
Number of Parent Blocks	140	133	45
Boundary Size (m)	700	1,330	450
Rotation	0°		

CUT-OFF GRADE

The cut-off grade calculation was based on an average underground operating cost of C$70/t, metallurgical recovery of 70%, and niobium price of US$40 per kg with a US$/C$ exchange rate of 1:1.2.

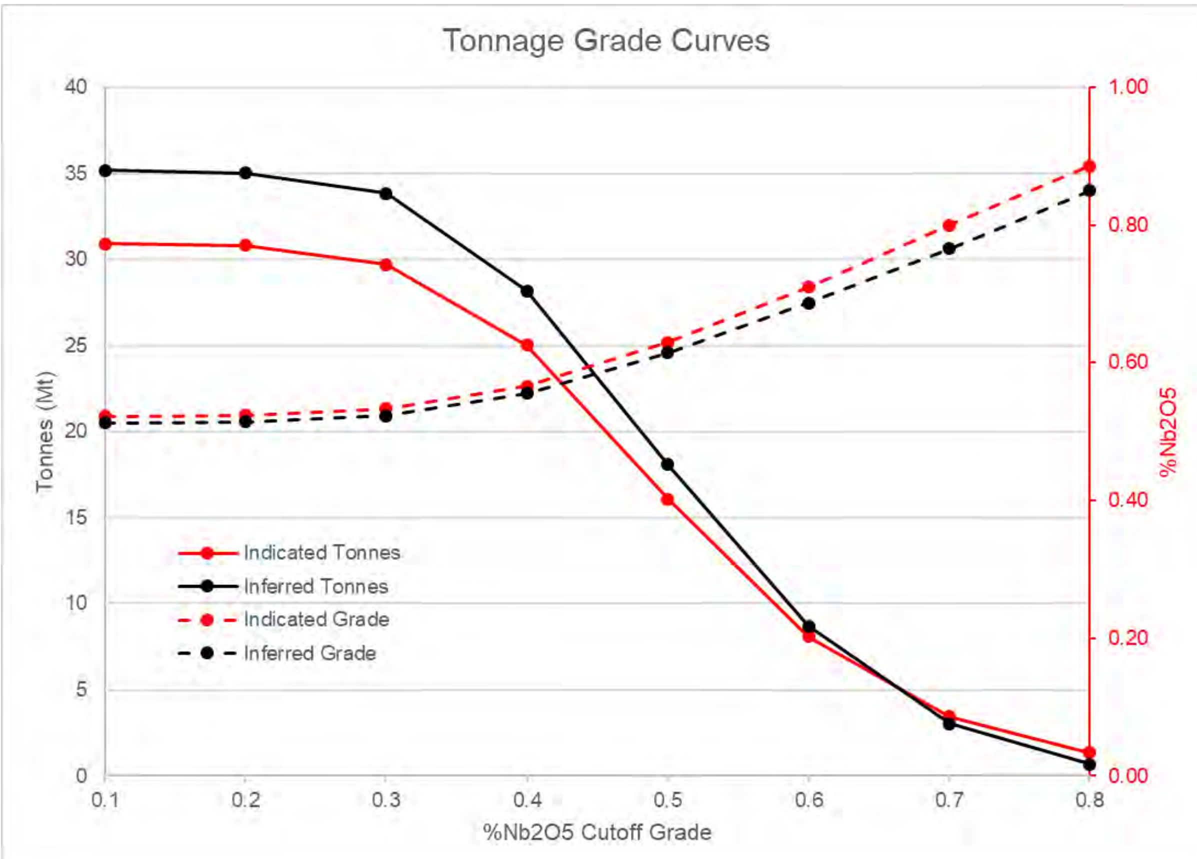
Table 14-9 and Figure 14-6 show the sensitivity of the block grade estimates to a range of cut-off grades both above and below the 0.3% Nb_2O_5 resource cut-off grade. The Indicated Mineral Resource grade increases from 0.53% Nb_2O_5 to 0.63% Nb_2O_5 when the cut-off grade is raised to 0.5% Nb_2O_5. At a 0.1% Nb_2O_5 cut-off grade, the Indicated mineralization grade is essentially the same and the tonnage increase is very minor compared to the grade and tonnage of the Indicated Mineral Resource estimated by RPA at a 0.3% Nb_2O_5 cut-off grade, because the mineralization wireframes were built based on an approximately 0.3% Nb_2O_5 cut-off grade. This means that there is only a small amount of low grade mineralization present in the mineralization wireframes and that reporting the resources at a zero cut-off grade or a 0.3% Nb_2O_5 cut-off grade does not make much difference. Approximately 1.4 million tonnes of low grade material within the wireframes are below the 0.3% Nb_2O_5 resource cut-off grade and were not reported as part of the Mineral Resource. RPA reviewed the location of this material and determined that it was relatively contiguous and could be avoided in underground mining.

TABLE 14-9 MINERAL RESOURCE SENSITIVITY TO CUT-OFF GRADE
NioBay Metals Inc. – James Bay Niobium Project

Cut-off (%Nb_2O_5)	Indicated			Inferred		
	Tonnage (Mt)	Grade (%Nb_2O_5)	Contained Nb_2O_5 (000 t)	Tonnage (Mt)	Grade (%Nb_2O_5)	Contained Nb_2O_5 (Mkg)
0.1	30.9	0.52	162	35.2	0.51	180
0.2	30.8	0.52	161	35.0	0.51	180

Cut-off (%Nb2O5)	Indicated			Inferred		
	Tonnage (Mt)	Grade (%Nb2O5)	Contained Nb_2O_5 (000 t)	Tonnage (Mt)	Grade (%Nb2O5)	Contained Nb_2O_5 (Mkg)
0.3	29.7	0.53	158	33.8	0.52	177
0.4	25.0	0.57	142	28.2	0.56	157
0.5	16.1	0.63	101	18.1	0.61	111
0.6	8.1	0.71	58	8.7	0.69	60
0.7	3.5	0.80	28	3.0	0.77	23
0.8	1.4	0.89	12	0.7	0.85	6

FIGURE 14-6 MINERAL RESOURCE SENSITIVITY TO CUT-OFF GRADE

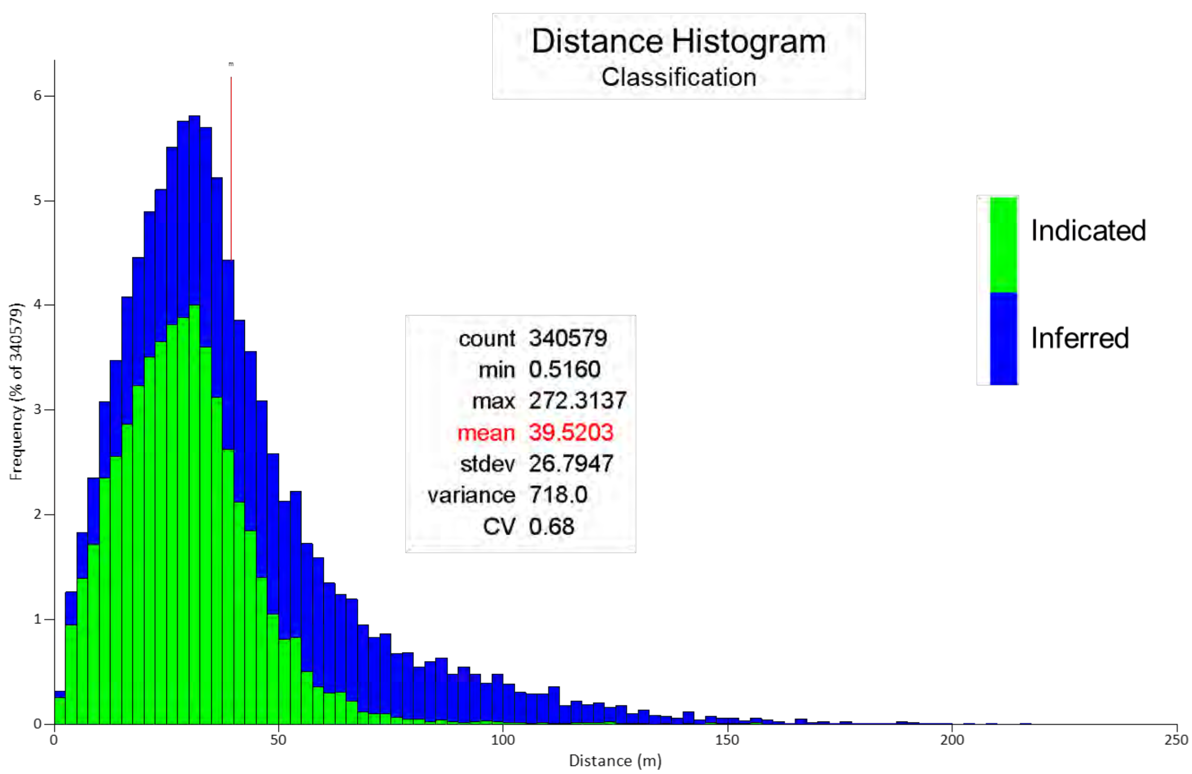


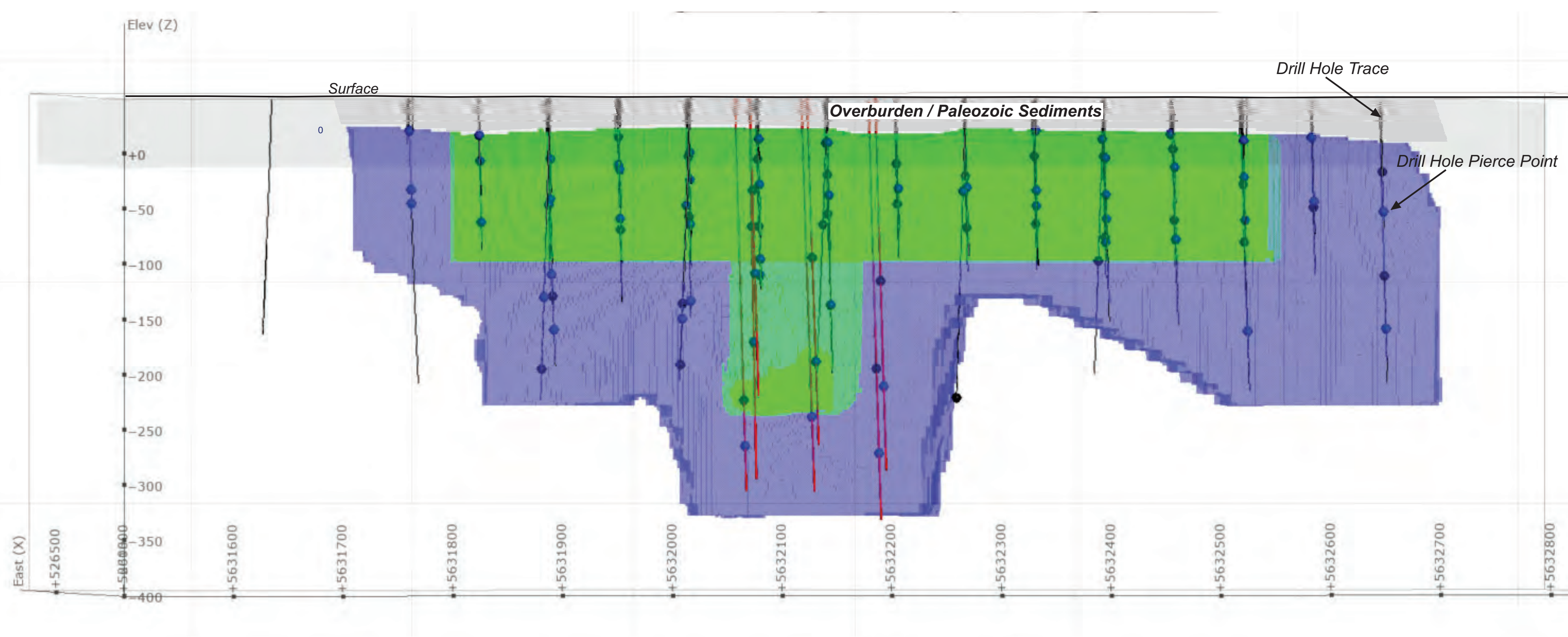
CLASSIFICATION

Definitions for resource categories used in this Technical Report are consistent with those defined by CIM (2014) and adopted by NI 43-101. In the CIM classification, a Mineral Resource is defined as "a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction". Mineral Resources are classified into Measured, Indicated, and Inferred categories. No Mineral Reserves have been estimated for the James Bay niobium deposit.

The basis for the classification is a distance-based scheme using the relative confidence expressed by the range of variograms, distance to nearest neighbour, and apparent continuity of mineralization. RPA manually defined the portions of the deposit supported by drill hole spacing up to approximately 70 m and 120 m and classified these areas as Indicated and Inferred Mineral Resources, respectively (Figures 14-7 and 14-8).

FIGURE 14-7 HISTOGRAM OF THE CLASSIFIED BLOCKS VERSUS DISTANCE TO THE COMPOSITES





August 2020

Source: RPA, 2020.

Figure 14-8

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Classified Mineral Resource Blocks

www.rpacan.com

BLOCK MODEL VALIDATION

RPA validated the block model by visual inspection, volumetric comparison, and scatterplots. Visual comparison on vertical sections and plan views, and a series of swath plots found good overall correlation between the block grade estimates and supporting composite grades.

The estimated total volume of the wireframe models is 50,793,000 m^3 while the volume of the block model at a zero grade cut-off is 50,696,578 m^3, showing a 0.19% difference. Results are listed by domain in Table 14-10.

TABLE 14-10 BLOCK VERSUS WIREFRAME VOLUMES
NioBay Metals Inc. – James Bay Niobium Project

Domain	Wireframe Volume (000 m^3)	Block Volume (000 m^3)	Volume Difference (%)
East	28,036	28,039	0.01%
West	10,288	10,273	0.15%
Internal Waste	12,469	12,385	0.67%
Total	**50,793**	**50,697**	**0.19%**

Comparing the swath plots of the block grades estimated using OK, ID^3, and NN (Figures 14-9 to 14-11) shows that there is slight smoothing in the OK estimate as expected. Since the OK results are very similar to the ID^3 results, RPA decided to use the blocks estimated by the OK method for the Mineral Resource reporting. The swath plots compare the mean block grades estimated by the three interpolation methods to the composite grades in the X, Y, and Z directions.

The visual inspection of the block grades versus the composite data on sections and level plans indicates that the OK interpolation performed well (Figures 14-12 to 14-16).

FIGURE 14-9 EAST SWATH PLOT

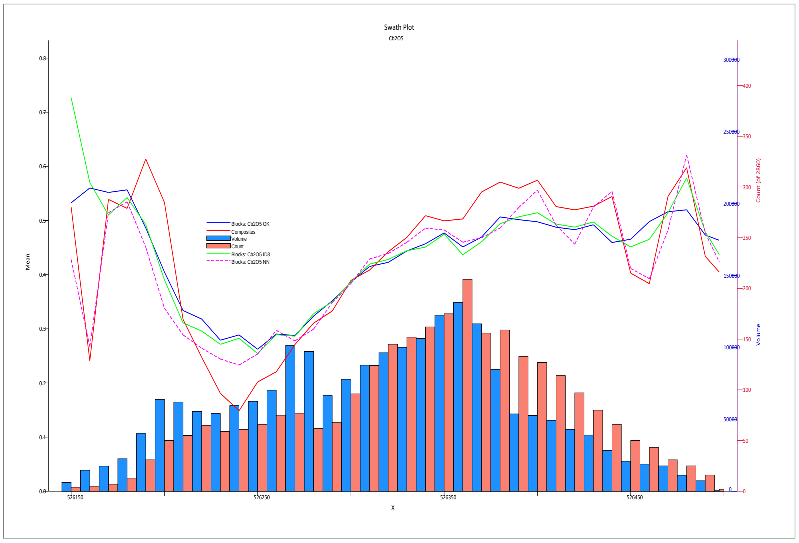


FIGURE 14-10 NORTH SWATH PLOT FIGURE

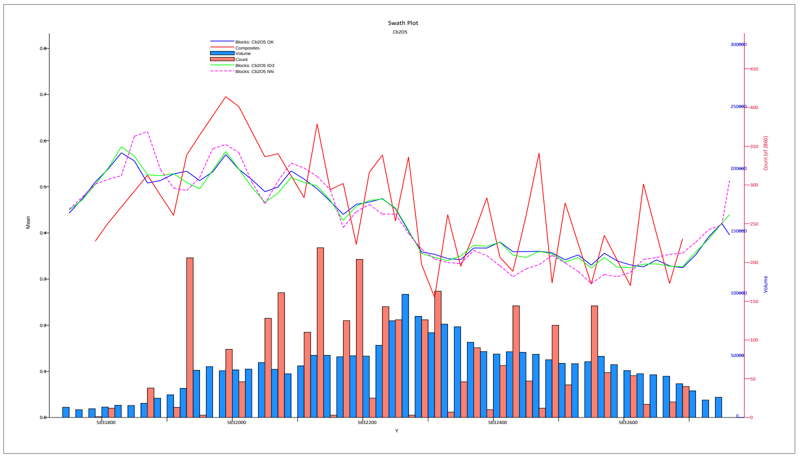
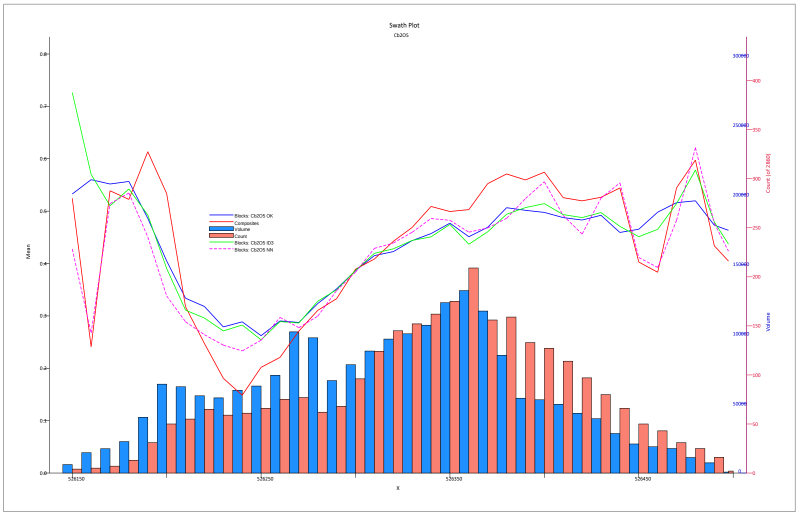


FIGURE 14-11 VERTICAL SWATH PLOT



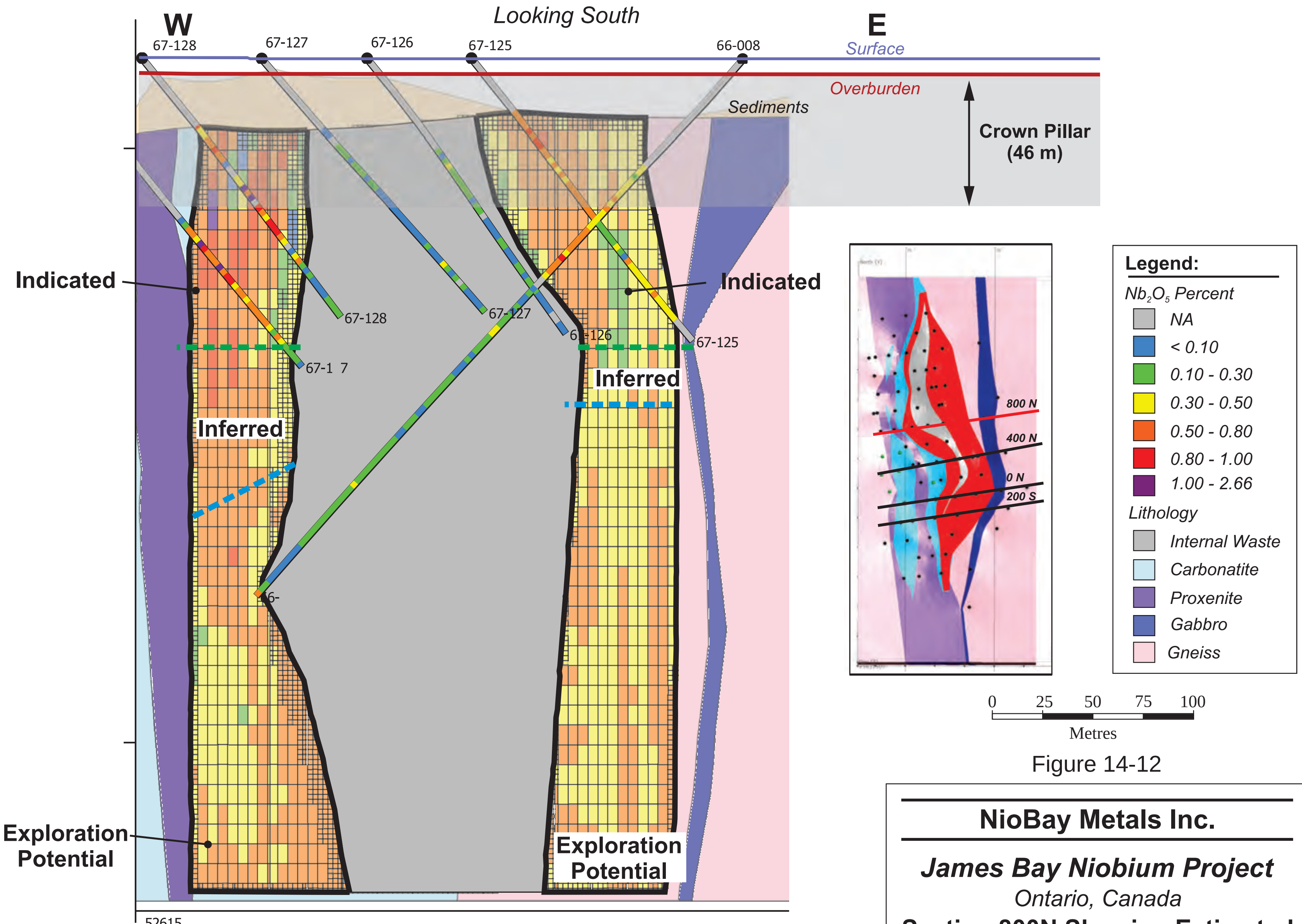


Figure 14-12

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Section 800N Showing Estimated Block Grades Versus Composites

August 2020

Source: RPA, 2020.

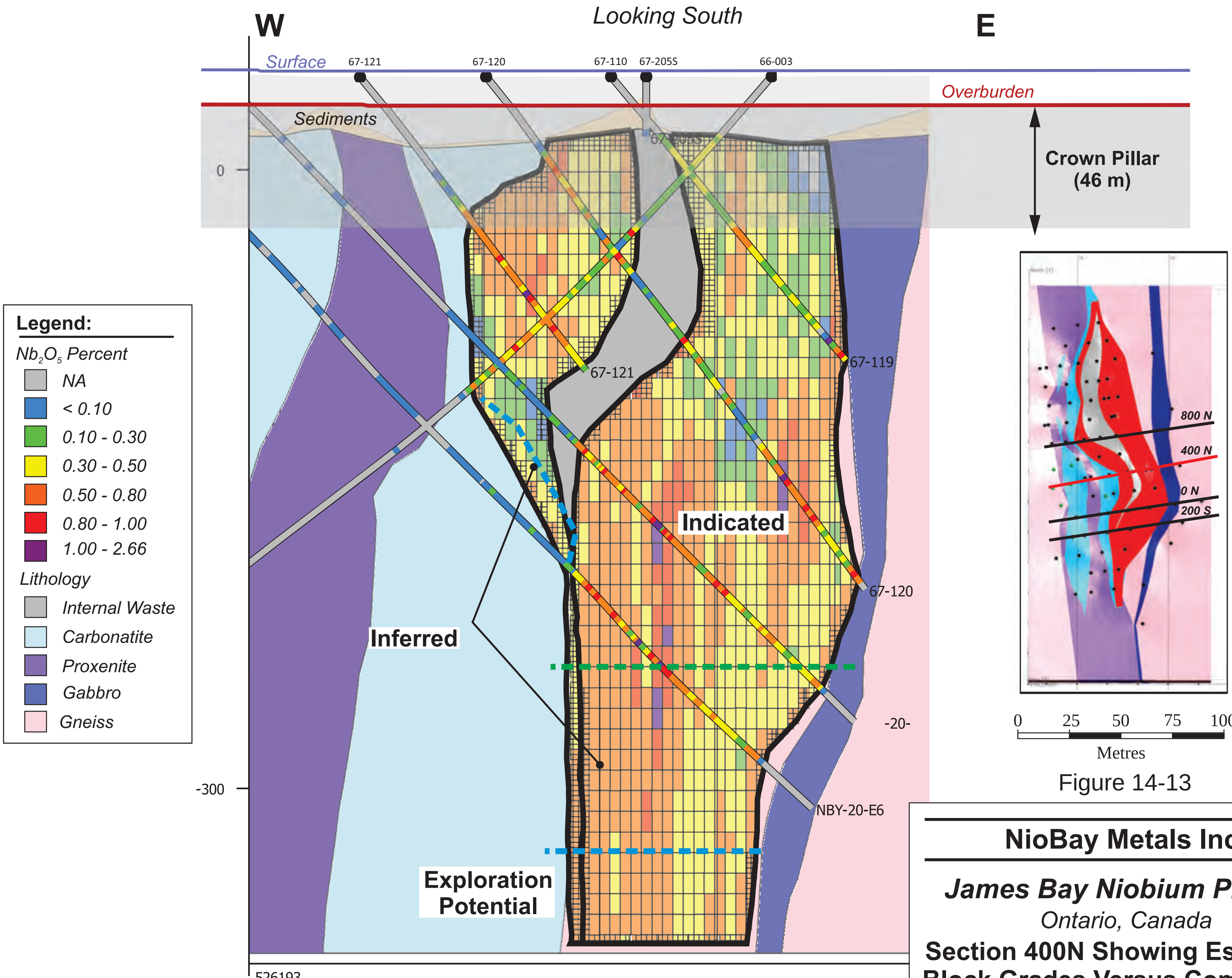


Figure 14-13

NioBay Metals Inc.

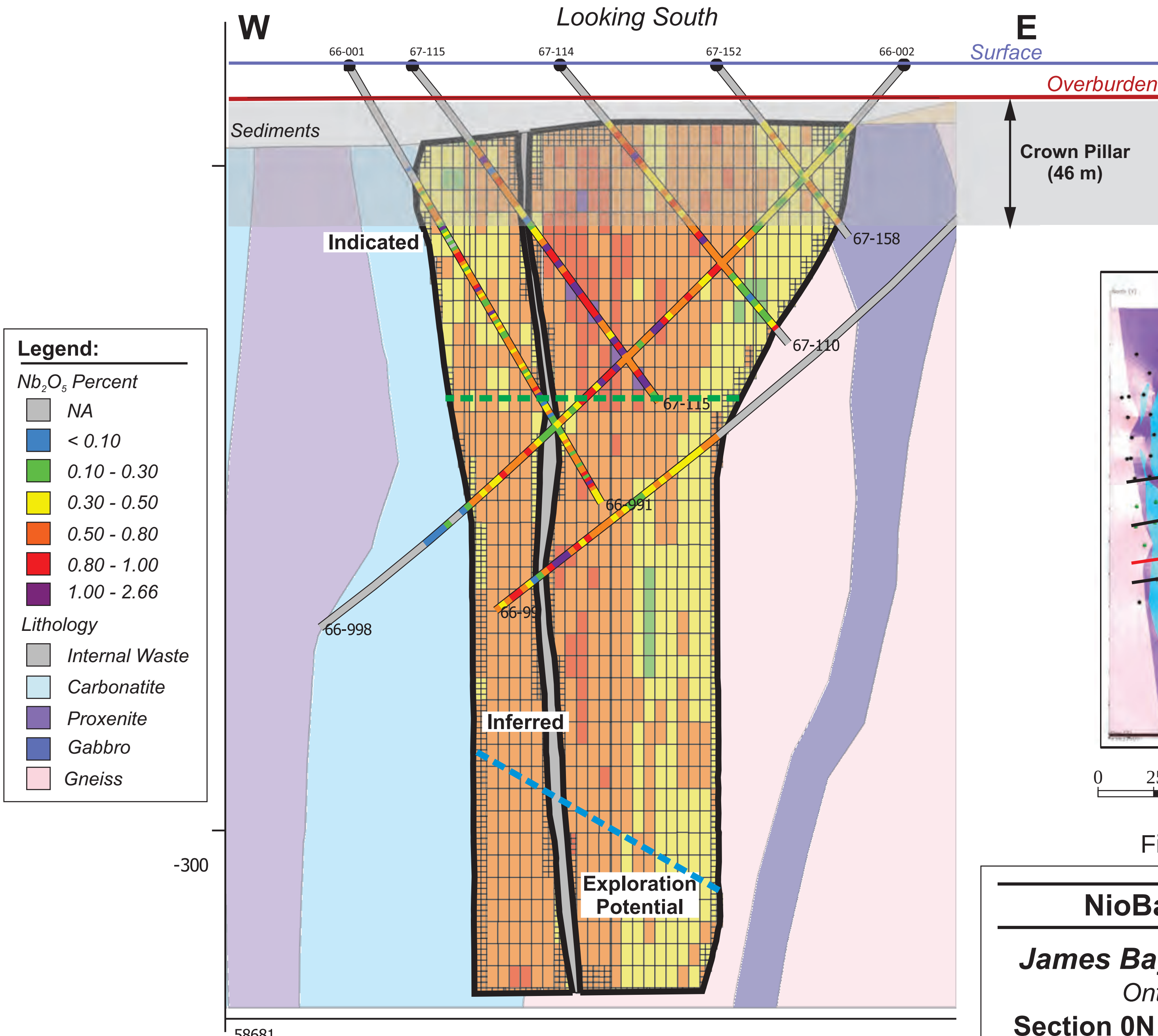
James Bay Niobium Project

Ontario, Canada

Section 400N Showing Estimated Block Grades Versus Composites

August 2020

Source: RPA, 2020.



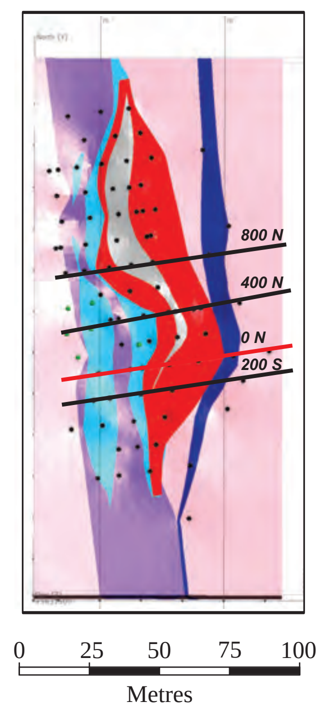


Figure 14-14

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Section 0N Showing Estimated Block Grades Versus Composites

August 2020

Source: RPA, 2020.

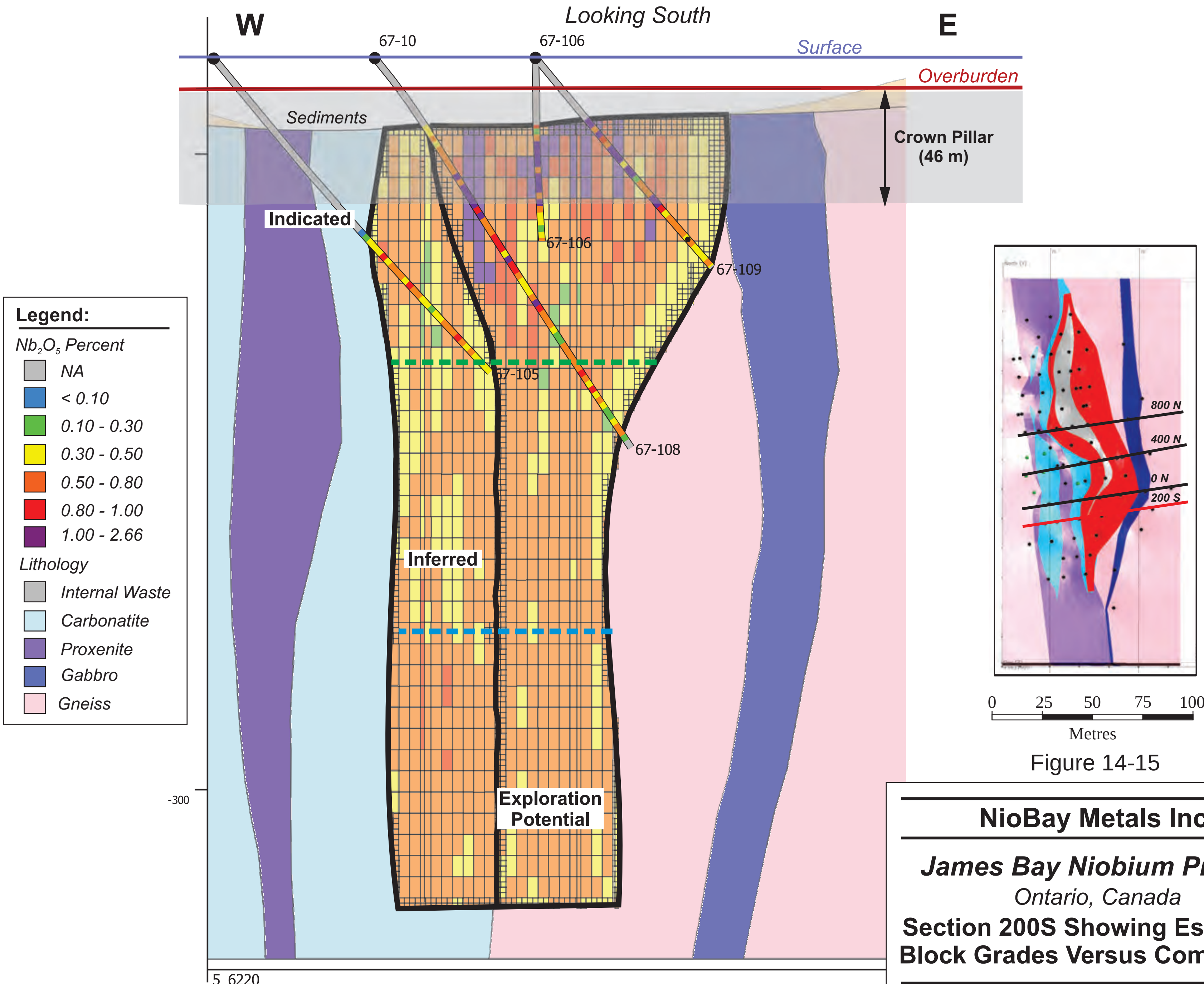


Figure 14-15

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Section 200S Showing Estimated Block Grades Versus Composites

August 2020

Source: RPA, 2020.

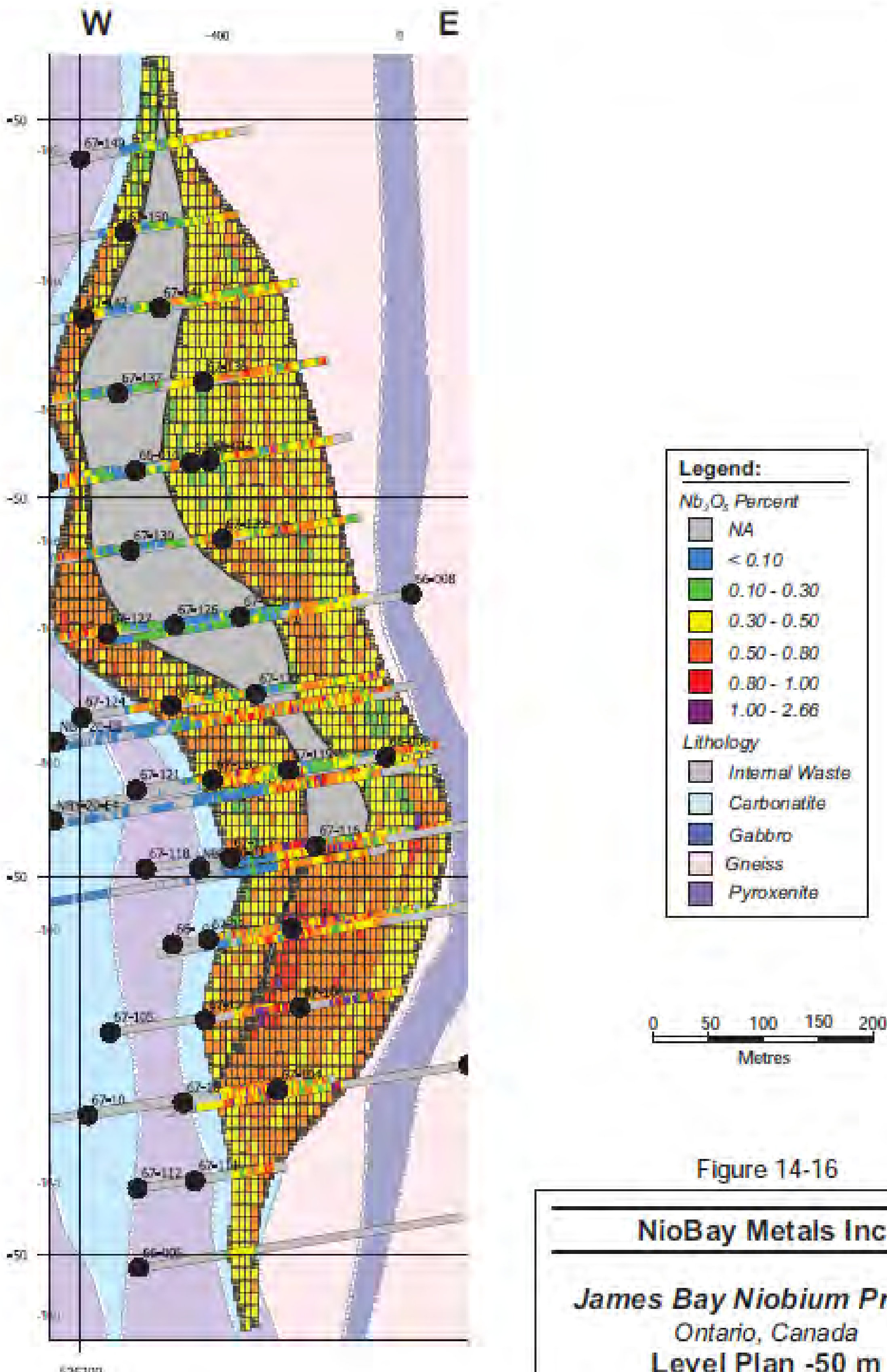


Figure 14-16

NioBay Metals Inc.

James Bay Niobium Project

Ontario, Canada

Level Plan -50 m

August 2020

Source: RPA, 2020.

Descriptive statistics of the block model are illustrated in Table 14-11, and a comparison of the minimum, maximum, and mean of the assay, composite, and block grades is presented in Table 14-12.

TABLE 14-11 BASIC STATISTICS OF NB_2O_5 BLOCK GRADES
NioBay Metals Inc. – James Bay Niobium Project

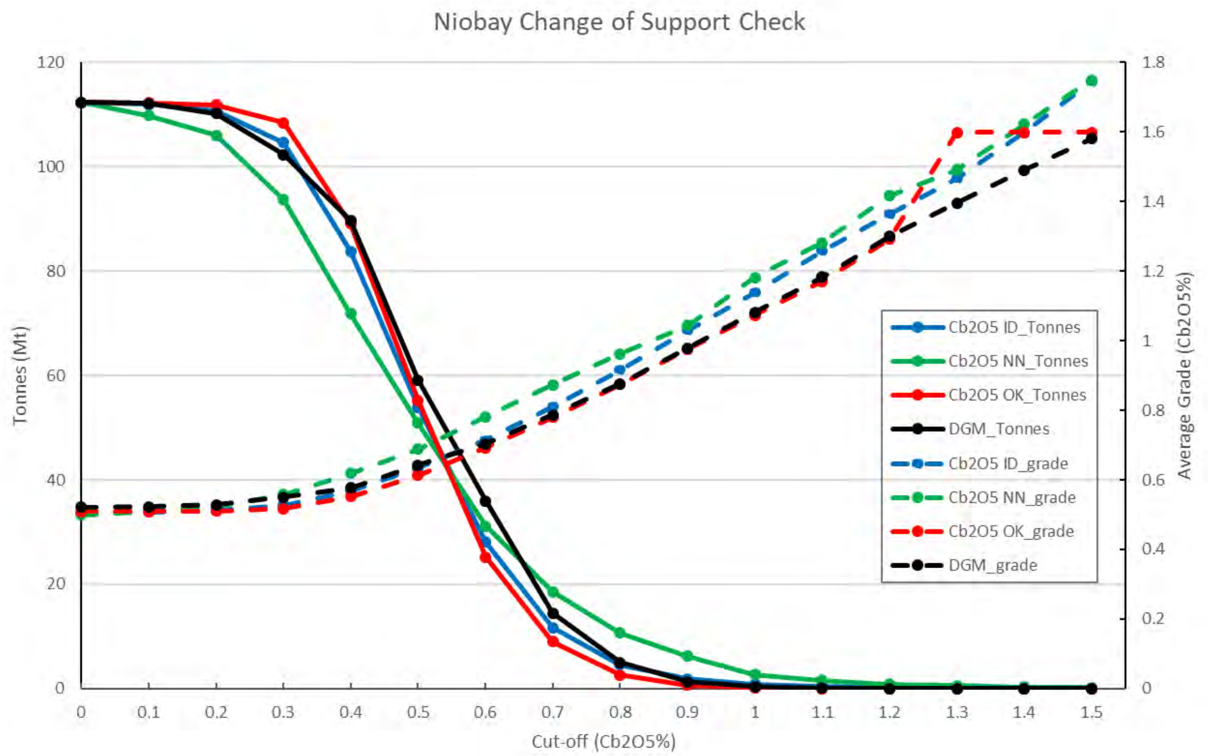
Domain	Count	Min (%Nb_2O_5)	Max (%Nb_2O_5)	Mean (%Nb_2O_5)	Variance	Std. Dev. (%Nb_2O_5)	CV
East	244,246	0.00	2.01	0.50	0.03	0.16	0.32
West	154,137	0.03	1.36	0.52	0.02	0.14	0.28

TABLE 14-12 COMPARISON OF ASSAY, COMPOSITE AND BLOCK GRADES
NioBay Metals Inc. – James Bay Niobium Project

Domain	Assay			Composites			Block Model		
	Min (%Nb_2O_5)	Max (%Nb_2O_5)	Mean (%Nb_2O_5)	Min (%Nb_2O_5)	Max (%Nb_2O_5)	Mean (%Nb_2O_5)	Min (%Nb_2O_5)	Max (%Nb_2O_5)	Mean (%Nb_2O_5)
East	0.00	2.66	0.54	0.00	2.16	0.54	0.00	2.01	0.50
West	0.00	1.77	0.51	0.00	1.45	0.51	0.03	1.36	0.52

RPA performed a Global Change of Support Check (GCOS) using the composite variogram and the NN model. The Discrete Gaussian Model (DGM) was used to correct the NN grades and then compared to the OK and ID estimates. Above the cut-off grade, the DGM reports slightly less tonnes at a similar grade to both the ID and OK estimates. RPA noted that the Inferred tonnes showed the largest variance while the Indicated ID and OK tonnes were very close to the DGM tonnes. The results suggest that the block model grade and tonnes are reasonable for the proposed scale of mining (Figure 14-17).

FIGURE 14-17 GLOBAL CHANGE OF SUPPORT CHECK



MINERAL RESOURCE REPORTING

The Mineral Resource estimate has an effective date of July 9, 2020 (Table 14-13).

TABLE 14-13 SUMMARY OF MINERAL RESOURCES – JULY 9, 2020
NioBay Metals Inc. – James Bay Niobium Project

Category	Tonnage (Mt)	Grade (%Nb_2O_5)	Contained Nb_2O_5 (Mkg)
Indicated	29.7	0.53	158
Inferred	33.8	0.52	177

Notes:
1. CIM (2014) definitions were followed for Mineral Resources.
2. Mineral Resources are reported using a cut-off grade of 0.3% Nb_2O_5 based on an underground mining scenario, an operating cost of C$70/t, and a metallurgical recovery of 70%.
3. Mineral Resources are estimated using a long-term niobium price of US$40 per kg and a US$/C$ exchange rate of 1:1.2.
4. A minimum mining width of approximately 7.5 m was used.
5. Bulk density is 2.93 t/m^3.
6. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
7. Resources situated in a 46 m thick crown pillar have been excluded
8. Numbers may not add due to rounding.

COMPARISON TO THE PREVIOUS MINERAL RESOURCE ESTIMATE

The current Mineral Resource estimate, dated July 9, 2020, supersedes the previous Mineral Resource estimate dated October 31, 2018. The current model incorporates additional drilling (3,090 m) completed in 2020. All the price and recovery assumptions remain unchanged. Table 14-14 compares the two estimates.

TABLE 14-14 COMPARISON TO PREVIOUS MINERAL RESOURCE ESTIMATE
NioBay Metals Inc. – James Bay Niobium Project

Category	Tonnage (Mt)	Grade (%Nb_2O_5)	Contained Nb_2O_5 (Mkg)
2018			
Indicated	26.1	0.53	139
Inferred	25.3	0.51	129
2020			
Indicated	29.7	0.53	158
Inferred	33.8	0.52	177
Differences			
Indicated	13.8%	0.0%	13.7%
Inferred	33.6%	2.0%	37.2%

The seven boreholes completed during the 2020 drilling campaign confirmed niobium mineralization at depth, which extended resource envelope by approximately 80 m downdip. All the new drilling intersected significant mineralization (above 0.5% Nb_2O_5) which added confidence in the continuity of the pyrochlore zone and thus improved classification of the Mineral Resources at depth.

15 MINERAL RESERVE ESTIMATE

There are no current Mineral Reserves estimated for the Project.

16 MINING METHODS

This section is not applicable.

17 RECOVERY METHODS

This section is not applicable.

18 PROJECT INFRASTRUCTURE

This section is not applicable.

19 MARKET STUDIES AND CONTRACTS

The following is taken from Camet (2017).

Niobium is a niche metal present in a variety of minerals, the most commercially important of which is pyrochlore which accounts for as much as 97% of global niobium supply. There are currently only three significant producers of pyrochlore: CBMM and China Molybdenum (CMOC) in Brazil; and Niobec in Canada. All three convert their mine output to ferro-niobium prior to sale, mostly into export markets and on a yearly contract basis. CBMM, a privately owned company, is by far the largest producer of ferro-niobium in the world and, unlike CMOC and Niobec, CBMM also supplies a range of other downstream products like niobium oxide and niobium metals. Its share of the global niobium products market has peaked at 85%.

Niobium is used in a variety of forms but the most important in terms of tonnage is standard-grade ferro-niobium, which has applications in steelmaking, most notably in high-strength low-alloy (HSLA) and stainless steels. This market accounts for approximately 90% of niobium usage. Niobium is added in very small amounts (usually in the order of 0.05%) as a grain refiner to produce high-quality steels for use in gas pipelines, automobiles, construction, stainless steels, and other applications.

Two factors are essentially impacting the ferro-niobium demands: 1) increase in overall steel production with an associated increase in production of high strength steels and 2) a rise in the intensity of use of niobium in the steel industry. Traditionally steel production growth has always been the greatest contributor to niobium consumption growth, while with moderate steel production forecasts, the greatest potential for niobium consumption growth lies in an increase of intensity of use, which is currently approximately 50 grams per tonne of steel. China, which represents nearly half of the world steel output, is a key region for future ferro-niobium consumption. Chinese GDP growth is forecasted to slow down in the upcoming years, which could negatively affect the rate of increase in ferro-niobium consumption. On the other hand, the importance of construction and pipeline steels produced in China combined with new regulations in construction material quality could push Chinese niobium requirements to new heights.

Camet forecasts that the world consumption for ferro-niobium will rise from an estimated 82,000 tonnes in 2016 to approximately 100,000 tonnes in 2020. With the upcoming expansions announced by the two Brazilian producers and one or two probable niobium projects around the world, the market will remain in oversupply for several years. Presently at 125,000 tonnes of ferro-niobium production, capacity is expected to reach 150,000 tonnes by 2020.

With only three main producers of ferro-niobium in the world, prices have been historically very stable at approximately $40/kg before falling to a low of $30/kg and currently at approximately $35/kg. Camet believes that there is still room for price increases without affecting the demand. Market trends and industry sources indicate that prices are heading towards $45/kg in the medium to long term.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

The following is taken from EEM Inc. (2017).

REQUIREMENTS

The Government of Canada has a constitutional duty to consult, and where appropriate, accommodate Aboriginal groups when it considers resource development projects that might adversely impact potential or established Aboriginal or treaty rights. While third parties such as project proponents do not have a legal obligation to consult Aboriginal groups in most Canadian jurisdictions, in practice, the Crown may delegate some responsibility for consultation to third parties to collect information about how the impacts of project development may affect potential or established Aboriginal or Treaty rights.

PROVINCIAL REQUIREMENTS

At the provincial level, the MENDM has established requirements to ensure that project proponents consider Aboriginal consultation throughout the project lifecycle. MENDM has identified Moose Cree First Nation (MCFN) as the only Aboriginal community that must be consulted for the exploration phase of the Project. As part of the consultation process, NioBay is required to:

- Provide further details to MCFN about NioBay's proposed exploration activities;
- Gather information from MCFN about whether or how the proposed activities have the potential to adversely affect the communities' Aboriginal or treaty rights;
- Discuss with MCFN, and MENDM if appropriate, ways to avoid, eliminate, or minimize any concerns raised;
- Seek further direction or advice from MENDM, if needed; and
- Document the process and decisions made and report to MENDM.

NioBay is required to submit regular Aboriginal Consultation Reports as part of the MENDM's exploration reporting requirements once the consultation process has begun. If the Project progresses to the advanced exploration and production stages of the project lifecycle, NioBay will be required to submit regular Aboriginal Consultation Plans and Aboriginal Consultation

Reports to MENDM, including plans and reports about future Environmental Assessment(s) and Closure Plan consultation.

NioBay has concluded a PA with MCFN to guide the relationship and allow the 2020 exploration program to proceed. The PA also details how further exploration, including advanced exploration would proceed. NioBay has hosted community open houses and regular meetings with the Chief and Council to familiarize them with the mining cycle, niobium as a commodity, and the proposed environmental approach.

FEDERAL REQUIREMENTS

At the federal level, the Impact Assessment Act will be triggered if the Project Description submitted to Impact Assessment Agency (IAA) includes one or more physical activities defined in the *Inclusion List Regulations or Regulations Designating Physical Activities*. The federal IAA process requires proponents to undertake consultation with Indigenous communities, the public, and other stakeholders to promote meaningful public participation before and during the environmental assessment process. IAA also requires project proponents to collect and/or facilitate the collection of traditional, archeological and community knowledge (mainly related to land use and ecological values) relative to the proposed project area. Indigenous communities that are included within the scope of the federal environmental assessment are determined by project-specific IAA guidelines.

PLANS, NEGOTIATIONS, AND AGREEMENTS

Above and beyond its legal obligations, NioBay is committed to building lasting relationships with Project partners and stakeholders based on the principles of transparency, trust, and mutual respect to ensure the maximum possible local benefit from the Project. NioBay recognizes that the Project is situated in the Traditional Home Lands of the MCFN and is committed to fully respecting MCFN's traditional land, culture, environment, and water.

NioBay has held information session(s) in Moosonee and Moose Factory. Two recent information sessions were scheduled, however, one was canceled due to the death of an Elder. An information session was held on March 5, 2020 after the completion of the drill program. NioBay wishes to emphasize that the Project would likely be a mine located outside the North French River watershed and that it will have a minimal impact on traditional harvesting activities and to the environment. The Project would create important economic benefits to MCFN members in the short, medium, and long term. Due to the proximity of the Project to Moose Factory and Moosonee, daily transport services would allow all local workers to return to their homes and families at the end of the workday.

NioBay is interested in entering into a partnership agreement with demonstrably impacted Indigenous communities with emphasis on MCFN. As part of such a partnership agreement, some of the aspects of the Project that NioBay would like to discuss with MCFN include:

- Project monitoring and mitigation
- Bird and wildlife conservation
- Support for the community, including traditional concerns
- Employment
- Contracting and procurement opportunities
- Apprenticeship, training, and career development opportunities
- Any other issues of importance to MCFN, as identified during consultation and negotiation

21 CAPITAL AND OPERATING COSTS

This section is not applicable.

22 ECONOMIC ANALYSIS

This section is not applicable.

23 ADJACENT PROPERTIES

There are no properties adjacent to the Project.

24 OTHER RELEVANT DATA AND INFORMATION

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

25 INTERPRETATION AND CONCLUSIONS

The Project is hosted by the Carbonatite Complex which occurs within the northern portion of the KSZ. The KSZ crosscuts an east-trending fabric within the Archean rocks of the Superior Province and is sub-parallel to the TSTZ. Numerous alkalic and carbonatite intrusions occur along and within the KSZ.

Pyrochlore and, to a lesser extent, columbite, are the economic minerals of interest and are hosted predominantly by the sovite phase of the carbonatite.

Extensive work during the mid to late 1960s resulted in a historical Mineral Resource estimate and feasibility study. The Property has been dormant since 1972. Re-sampling of the historical diamond drill core by NioBay has confirmed that, despite some variation at the individual sample level, the overall grade over wide intervals is similar to historical values. RPA reviewed the analytical quality control results and did not find any material issues. In RPA's opinion, the resource database is acceptable to estimate Mineral Resources

Preliminary test work on a composite sample consisting of core from 12 historical drill holes included gravity, flotation, QEMSCAN mineralogy, and heavy liquid separation tests. Although preliminary and subject to verification, the results proved encouraging. Additional test work on fresh material is recommended.

Historical diamond drilling has outlined mineralization with three-dimensional continuity, and size and grades that can potentially be extracted economically. The 2020 drilling campaign successfully confirmed grades and continuity of the mineralization at depth.

Mineral Resources were estimated and classified by RPA following CIM (2014) definitions. At a cut-off grade of 0.3% Nb_2O_5, Indicated Mineral Resources are estimated to total 29.7 million tonnes grading 0.53% Nb_2O_5 containing approximately 158 million kilograms of niobium oxide. Inferred Mineral Resources are estimated to total 33.8 million tonnes grading 0.52 Nb_2O_5 containing 177 million kilograms of niobium oxide.

RPA is of the opinion that there is excellent exploration potential to increase the Mineral Resource at depth with more diamond drilling.

No Mineral Reserves have yet been estimated on the Property.

26 RECOMMENDATIONS

RPA is of the opinion that the Project hosts a significant niobium mineralized system, there is good potential to increase the resource base, and additional exploration and technical studies are warranted.

RPA has reviewed and concurs with NioBay's proposed exploration programs and budgets. Phase I of the recommended work will include 4,000 m of drilling focussed on continuing to upgrade portions of the Inferred Resources to Indicated Resources and extending the Mineral Resources at depth. It will also include environmental, engineering, and metallurgical study required to support a preliminary economic assessment (PEA) study.

Details of the recommended Phase I program can be found in Table 26-1.

TABLE 26-1 PROPOSED BUDGET – PHASE I
NioBay Metals Inc. – James Bay Niobium Project

Item	C$
PHASE I	
Head Office Expenses & Property Holding Costs	60,000
Project Management & Staff Cost	150,000
Travel Expenses	25,000
Diamond Drilling (4,000 m)	450,000
Analyses	100,000
Helicopter Support	347,000
Permitting & Environmental Studies	50,000
Resource Estimate Update	30,000
Camp/Accommodations	90,000
Metallurgical Test Work	100,000
Preliminary Economic Assessment Report	150,000
Social/Consultation	50,000
TOTAL	**1,602,000**

A Phase II exploration program, contingent on the results of Phase I, will include diamond drilling and technical studies required to support a prefeasibility study (PFS) in 2022. The expected budget for the Phase II program is $5,000,000.

27 REFERENCES

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28 DATE AND SIGNATURE PAGE

This report titled "Technical Report on the James Bay Niobium Project, Cochrane District, Northeastern Ontario, Canada" and dated August 23, 2020 was prepared and signed by the following author:

(Signed and Sealed) ***Dorota El-Rassi***

Dated at Toronto, ON
August 23, 2020

Dorota El-Rassi, M.Sc., P.Eng.
Senior Geological Engineer

29 CERTIFICATE OF QUALIFIED PERSON

DOROTA EL-RASSI

I, Dorota El-Rassi, P.Eng., as an author of this report entitled “Technical Report on the James Bay Niobium Project, Cochrane District, Northeastern Ontario, Canada” prepared for NioBay Metals Inc. and dated August 23, 2020, do hereby certify that:

1. I am a Senior Geological Engineer with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON M5J 2H7.

2. I am a graduate of the University of Toronto in 1997 with a B.A.Sc.(Hons.) degree in Geological and Mining Engineering and in 2000 with a M.Sc. degree in Geology and Mechanical Engineering.

3. I am registered as a Professional Geological Engineer in the Province of Ontario (Reg.# 100012348). I have worked as a geologist for a total of 19 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Review and report on exploration and mining projects for due diligence and regulatory requirements
   - Mineral Resource estimates on a variety of commodities including gold, silver, copper, nickel, zinc, PGE, and industrial mineral deposits
   - Experienced user of Gemcom, Leapfrog, Phinar’s x10-Geo, and Gslib software

4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

5. I visited the James Bay Niobium Project on August 21, 2020.

6. I am responsible for all sections of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have prepared a previous Technical Report dated October 31, 2018 on the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 23rd day of August 2020,
(Signed and Sealed) ***Dorota El-Rassi***

Dorota El-Rassi, P.Eng.

30 APPENDIX 1

JAMES BAY NIOBIUM PROJECT CLAIMS

TABLE 30-1 CLAIMS LIST
NioBay Metals Inc. – James Bay Niobium Project

Project	Tenure No.	Type[1]	Status	Issue Date (MM/DD/YYYY)	Expiry Date (MM/DD/YYYY)	Surface Area (ha)
LEA-19586	572938	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572939	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572940	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572941	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572942	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572943	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572944	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572945	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572946	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572947	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572948	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572949	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572950	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572951	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572952	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572953	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572954	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572955	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572956	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572957	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572958	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572959	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572960	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572961	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572962	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572963	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572964	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572965	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572966	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572967	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572968	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572969	SCMC	Active	1/30/2020	1/30/2022	20.44
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LEA-19586	572971	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572972	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572973	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572974	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572975	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572976	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572977	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572978	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572979	SCMC	Active	1/30/2020	1/30/2022	20.44

Project	Tenure No.	Type[1]	Status	Issue Date (MM/DD/YYYY)	Expiry Date (MM/DD/YYYY)	Surface Area (ha)
LEA-19586	572980	SCMC	Active	1/30/2020	1/30/2022	20.44
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LEA-19586	572982	SCMC	Active	1/30/2020	1/30/2022	20.44
LEA-19586	572983	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572984	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572985	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572986	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572987	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572988	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572989	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	572990	SCMC	Active	1/30/2020	1/30/2022	20.43
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LEA-19586	572998	SCMC	Active	1/30/2020	1/30/2022	20.43
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LEA-19586	573000	SCMC	Active	1/30/2020	1/30/2022	20.43
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LEA-19586	573009	SCMC	Active	1/30/2020	1/30/2022	20.43
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LEA-19586	573012	SCMC	Active	1/30/2020	1/30/2022	20.43
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LEA-19586	573014	SCMC	Active	1/30/2020	1/30/2022	20.43
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LEA-19586	573016	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573017	SCMC	Active	1/30/2020	1/30/2022	20.43
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LEA-19586	573021	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573022	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573023	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573024	SCMC	Active	1/30/2020	1/30/2022	20.43

Project	Tenure No.	Type[1]	Status	Issue Date (MM/DD/YYYY)	Expiry Date (MM/DD/YYYY)	Surface Area (ha)
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LEA-19586	573029	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573030	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573031	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573032	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573033	SCMC	Active	1/30/2020	1/30/2022	20.43
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LEA-19586	573049	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573050	SCMC	Active	1/30/2020	1/30/2022	20.42
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LEA-19586	573060	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573061	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573062	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573063	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573064	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573065	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573066	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573067	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573068	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573069	SCMC	Active	1/30/2020	1/30/2022	20.42

Project	Tenure No.	Type[1]	Status	Issue Date (MM/DD/YYYY)	Expiry Date (MM/DD/YYYY)	Surface Area (ha)
LEA-19586	573070	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573071	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573072	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573073	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573074	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573075	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573076	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573077	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573078	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573079	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573080	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573081	SCMC	Active	1/30/2020	1/30/2022	20.43
LEA-19586	573082	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573083	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573084	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573085	SCMC	Active	1/30/2020	1/30/2022	20.42
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LEA-19586	573093	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573094	SCMC	Active	1/30/2020	1/30/2022	20.41
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LEA-19586	573104	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573105	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573106	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573107	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573108	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573109	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573110	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573111	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573112	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573113	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573114	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573115	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573116	SCMC	Active	1/30/2020	1/30/2022	20.41

Project	Tenure No.	Type[1]	Status	Issue Date (MM/DD/YYYY)	Expiry Date (MM/DD/YYYY)	Surface Area (ha)
LEA-19586	573117	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573118	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573119	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573120	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573121	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573122	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573123	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573124	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573125	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573126	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573127	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573128	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573129	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573130	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573131	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573132	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573133	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573134	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573135	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573136	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573137	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573138	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573139	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573140	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573141	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573142	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573143	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573144	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573145	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573146	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573147	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573148	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573149	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573150	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573151	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573152	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573153	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573154	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573155	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573156	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573157	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573158	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573159	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573160	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573161	SCMC	Active	1/30/2020	1/30/2022	20.42

Project	Tenure No.	Type[1]	Status	Issue Date (MM/DD/YYYY)	Expiry Date (MM/DD/YYYY)	Surface Area (ha)
LEA-19586	573162	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573163	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573164	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573165	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573166	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573167	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573168	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573169	SCMC	Active	1/30/2020	1/30/2022	20.42
LEA-19586	573170	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573171	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573172	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573173	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573174	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573175	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573176	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573177	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573178	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573179	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573180	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573181	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573182	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573183	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573184	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573185	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573186	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573187	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573188	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573189	SCMC	Active	1/30/2020	1/30/2022	20.41
LEA-19586	573190	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573191	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573192	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573193	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573194	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573195	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573196	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573197	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573198	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573199	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573200	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573201	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573202	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573203	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573204	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573205	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573206	SCMC	Active	1/30/2020	1/30/2022	20.40

Project	Tenure No.	Type[1]	Status	Issue Date (MM/DD/YYYY)	Expiry Date (MM/DD/YYYY)	Surface Area (ha)
LEA-19586	573207	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573208	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573209	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573210	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573211	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573212	SCMC	Active	1/30/2020	1/30/2022	20.40
LEA-19586	573213	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573214	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573215	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573216	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573217	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573218	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573219	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573220	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573221	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573222	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573223	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573224	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573225	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573226	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573227	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573228	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573229	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573230	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573231	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573232	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573233	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573234	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573235	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573236	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573237	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573238	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573239	SCMC	Active	1/30/2020	1/30/2022	20.38
LEA-19586	573240	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573241	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573242	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573243	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573244	SCMC	Active	1/30/2020	1/30/2022	20.39
LEA-19586	573245	SCMC	Active	1/30/2020	1/30/2022	20.39
Total	**306**					**6,247.56**

Note:
1. Single Cell Mining Claim (SCMC).
2. NioBay Metals Inc. holds 100% of all claims.