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PRELIMINARY ECONOMIC ASSESSMENT OF THE KENBRIDGE NICKEL PROJECT, KENORA, ONTARIO

LONGITUDE 93º 38´W AND LATITUDE 49º 29´N
UTM NAD83 ZONE 15N 454,126 m E AND 5,481,381 m N

FOR
TARTISAN NICKEL CORP.

NI 43-101 & 43-101F1
TECHNICAL REPORT

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IMPORTANT NOTICE

This report was prepared as a National Instrument 43-101 Technical Report, in accordance with Form 43-101F1, for Tartisan Nickel Corp. ("Tartisan") by P&E Mining Consultants Inc. ("P&E"). The quality of information, conclusions and estimates contained herein is consistent with the level of effort involved in P&E's services and based on:

i) information available at the time of preparation;
ii) data supplied by outside sources; and
iii) the assumptions, conditions, and qualifications set forth in this report. This Technical Report is intended to be used by Tartisan, subject to the terms and conditions of its contract with P&E. This contract permits Tartisan to file this report as a Technical Report with Canadian Securities Regulatory Authorities pursuant to National Instrument 43-101, Standards of Disclosure for Mineral Projects. Any other use of this report by any third party is at that party's sole risk.

1.0 SUMMARY

1.1 INTRODUCTION

This Technical Report by P&E Mining Consultants Inc. ("P&E") has been prepared to provide an NI 43-101 Preliminary Economic Assessment ("PEA") of the Kenbridge Nickel Project (the "Deposit" or "Property" or "Project") that is wholly-owned by Tartisan Nickel Corp. ("Tartisan" or the "Company"). The Kenbridge Property is located 70 km east-southeast of the Town of Kenora in northwestern Ontario, Canada.

This Technical Report has an effective date of July 6, 2022.

Tartisan is a corporation trading on the Canada Stock Exchange ("CSE") under the symbol TN.

P&E completed a Mineral Resource Estimate and Technical Report on the Kenbridge Property for Tartisan with an effective date of May 18, 2021, which forms the basis for this PEA. There were 10 additional holes drilled on the Property later in 2021. This PEA incorporates the new drill holes into an estimate for a potential underground mining operation study.

This PEA studies underground mining of the Kenbridge Mineral Resource, with production of nickel and copper concentrates from an on-site process plant.

1.2 PROPERTY LOCATION AND DESCRIPTION

The Kenbridge Property is located in the north-central part of the Atikwa Lake area and the south-central part of the Fisher Lake area, Kenora Mining Division, 70 km east-southeast of the Town of Kenora in northwestern Ontario, Canada. The Property is accessible via gravel roads from paved Highway 71. The last 13 km of the access road is in the process of being upgraded to an all-season road.

The Property is covered by patented and unpatented mining claims totalling 4,108.42 ha. Most of the Property is covered by 93 contiguous Patented Mining Claims with mining and surface rights or only mining rights, and four Mining Licenses of Occupation with only mining rights. The Patented Mining Claims are surrounded by 142 single cell mining claims. The Kenbridge Deposit itself is covered by Patented Mining Claims PAT-5599 and PAT-5593. The mining claims are registered to Canadian Arrow Mines Limited and Kenbridge Nickel Mines Limited, currently wholly-owned subsidiaries of Tartisan Nickel Corp. The renewals of 71 of the unpatented mining claims are due in December 2022. Significant assessment credits are available on certain claims and patents which can be distributed to the unpatented claims coming due.

There are three royalties on the Kenbridge Property. One is with Glencore and is linked to the price of nickel, currently at 2.5% NSR since the nickel price is over US$5/lb. The second is a 1% NSR royalty currently held by VOX Royalty Corp. that has a buyback clause to purchase the royalty for $1,500,000. The third royalty is a 1.5% NSR resulting from the 2022 acquisition of 27 unpatented mining claims contiguous with the Property and does not apply to the mineralization considered in the mine plan in this PEA.

1.3 GEOLOGY AND MINERALIZATION

The Archean Kenbridge nickel sulphide deposit ("Kenbridge Deposit") occurs within a vertically dipping, lenticular gabbro and gabbro breccia with surface dimensions of approximately 250 m by 60 m. The host volcanic rocks of the Deposit are composed of medium-green, strongly foliated and sheared, tuffaceous units with fragments defined by a lensoid banding of matrix carbonate. Very fine-grained, massive green-rock, possibly volcanic flow or well-indurated tuff, occurs throughout the volcanic sequence. Volcanic rocks to the east of the Deposit are characterized by larger fragments and less intense foliation. Contacts between the mineralized gabbro and the surrounding volcanic rocks are marked by a talc schist 1 to 30 m thick. The talc schist may or may not be mineralized.

The mineralized zone has a strike length of approximately 250 m, as indicated by drill data. The mineralization has been investigated in detail on two underground levels and with drilling to a depth of 1,080 m below surface. Mineralization (pyrrhotite, pentlandite, chalcopyrite ± pyrite) occurs as massive to net-textured and disseminated sulphide zones, primarily in gabbro breccia with smaller amounts in gabbro and talc schist. Nickel grades within the Deposit are proportional to the total amount of sulphide, with massive sulphide zones locally grading in excess of 6% Ni. Mineralization undergoes rapid changes in thickness and grades. At least three sub-parallel mineralized zones were intersected in the current drilling and range in thickness from 2.6 to 17.1 m. Kenbridge is classified as a gabbro-related nickel sulphide deposit.

1.4 HISTORY

Historical exploration and Project development of the Kenbridge Deposit spans the period from 1936 to 2008. Mineral prospecting, geological mapping, geophysical surveys, trenching and drilling programs were completed by five main companies: Coniagas Mines Limited, INCO, Falconbridge Limited, Blackstone Ventures and Canadian Arrow Mines Limited. The primary focus of exploration was on drilling the Kenbridge Deposit itself. From 1937 to 2008, a total of 79,414 m in 575 surface and underground drill holes were completed.

Falconbridge Limited optioned the Property in 1952 and staked an additional 90 claims. An extensive work program included geological and magnetic surveys, and diamond drilling. Kenbridge Nickel Mines Limited was formed in 1956 and initiated underground development, including a shaft to a depth of 622 m (2,042 ft), with level stations at 46 m (150 ft) intervals below the shaft collar and two levels developed at 107 m (350 ft) and 152 m (500 ft) below the shaft collar. Development work included 244 m of drifts and 168 m of crosscuts on the 107 m and 152 m levels.

In addition to the development work, Falconbridge completed 246 drill holes underground. The minimum drill spacing was at 15.2 m on all levels. The deepest drill hole (end of hole K2010 = 880 m) intersected mineralization grading 4.25% nickel and 1.38% copper over 3.3 m (10.7 ft), indicating that the Deposit remains open at depth. Underground development ended in 1957 and the emphasis shifted to regional exploration work. Falconbridge terminated work on Kenbridge in 1958.

The 2005 Blackstone Ventures Inc. exploration program consisted of a 26 line-km UTEM3 geophysical survey, a two-phase 21-hole 4,120 m diamond drilling program, and mineralogical and metallurgical testing. The main objectives of the 2005 Blackstone exploration program were to determine if any other large, near-surface, geophysical conductors were located in the northern portion of the Property, to obtain information on the geometry of the known mineralization, and confirm the historical grades reported from previous drilling. Additionally, the drilling program was designed to test for the potential for high-grade nickel mineralization in the central part of the Kenbridge Deposit above 200 m vertical depth from surface, which might be accessible for open pit mining or shallow ramp access underground mining.

The 2007-2008 Canadian Arrow exploration program consisted of a two-phase 206-hole 40,749 m diamond drill program. Holes up to and including KB-07-146 were reported in a PEA Technical Report on the Kenbridge Property (Buck et al., 2008). Prior to the start of drilling, Canadian Arrow re-established the original mine grid utilized during the historical drilling and underground development, which involved transforming the original imperial coordinate system to the metric coordinate system. The objectives of the 2007-2008 drill program at Kenbridge were to improve the geological controls on the nickel sulphide mineralization and build a robust database to support an NI 43-101 Mineral Resource Estimate for a PEA and, ultimately, a Feasibility Study. One Mineral Resource Estimate and three Updated Mineral Resource Estimates of Kenbridge were released from 2007 to 2008. One positive PEA Technical Report and two updates were released in 2008.

Mineral processing and metallurgical testwork on Kenbridge Deposit materials were completed by Falconbridge in the 1970s, SGS Lakefield in 2005-06, and Xstrata Process Support (“XPS”) in 2008-10. The testwork included mineralogical, grindability, pre-concentration and flotation studies. In 2008, Canadian Arrow announced estimated average locked cycle flotation test (“LCT”) recoveries from a blended representative sample of open pit and underground material grading 0.85% Ni and 0.38% Cu were 90% and 93% for nickel and copper, respectively. A sample of lower-grade material from the proposed open pit portion of the Deposit grading 0.41% Ni and 0.20% Cu returned average LCT recoveries of 84% and 90% for nickel and copper, respectively. A final flow sheet developed by XPS was utilized for the locked cycle tests. The flotation circuit included primary and secondary rougher cells with a rougher bypass and two stages of cleaning. A grinding circuit design report was also completed by XPS. This design comprised a conventional SABC circuit, consisting of a semi-autogenous grinding (“SAG”) mill, pebble crusher and ball mill combination to achieve the selected flotation feed grind size. The design incorporated a 7.0 m x 2.7 m (23 ft x 9 ft) SAG mill owned by Canadian Arrow.

In an internal report dated February 24, 2010, XPS reported that a copper nickel separation test was performed on a sample of Kenbridge bulk concentrate produced in the lab using the flotation schedule developed in the previous testwork program. The sample tested was the 50:50 blend of open pit and underground material tested previously. Results of the copper nickel separation test were encouraging and suggested that separate clean copper and nickel concentrates could be produced from the Kenbridge Deposit.

Environmental and geotechnical studies of Kenbridge were completed by DST Consulting Engineers Inc. and Associated Geosciences Ltd. for Canadian Arrow. The environmental studies by DST involved extensive baseline aquatic and terrestrial surveys and locating sources of sand and gravel materials for future road construction on the Kenbridge Property. An engaging community relations program was also developed for permitting purposes. The geotechnical studies by Associated Geosciences and DST involved tailings pond design for storage of effluent from the shaft dewatering program and further use of the pond during future operations, preliminary evaluation of the proposed open pit host rocks, including rock mass properties and hydrogeological parameters, and review of government regulatory legislation pertaining to open pit mining operations.

A historical PEA study of Kenbridge was completed by Buck et al. (2008) for Canadian Arrow. The PEA was updated by WMT Associates Ltd. in a news release dated January 21, 2008, and was updated again in a subsequent news release dated September 4, 2008. The historical Updated PEA noted in the September 4, 2008 news release was based on an updated NI 43-101 Mineral Resource Estimate by P&E Mining Consultants Inc. (Canadian Arrow news release dated August 19, 2008) and improved metallurgical recoveries (Canadian Arrow news release dated June 26, 2008). Note that these PEAs are historical in nature and have not been verified by a Qualified Person as required by NI 43-101, and should not be relied upon.

1.5 EXPLORATION AND DRILLING

Since acquiring the Kenbridge Property from Canadian Arrow in 2018, Tartisan refurbished the access road into the site and re-established the cut-line grid. An ASTER LWIR imagery study of the area of the Kenbridge Property was completed in the spring of 2020. A surface time domain electromagnetics survey and borehole electromagnetic survey were completed on the Kenbridge Property in the spring of 2021.

Drilling recommenced on the Kenbridge Property in 2021. Previously, there had been no drilling on the Property since 2008. Ten drill holes totalling 8,988 m were completed on the Deposit. Four drill holes totalling of 2,419 m were completed on the Kenbridge North target. Since 1937, 665 surface and underground drill holes totalling 99,741 m have been completed on the Property.

1.6 SAMPLING AND ASSAYING, DATA VERIFICATION

It is the opinion of the author of this Technical Report section (the "Author") that sample preparation, security and analytical procedures for the Kenbridge Project 2021 drilling are adequate and that the data is of good quality and satisfactory for use in the current Mineral Resource Estimate. The Author is of the opinion that the sample assay data have been adequately verified for the purposes of a Mineral Resource Estimate. All data included in the current Mineral Resource Estimate are of adequate quality.

Based on the evaluation of the QA/QC program undertaken by Canadian Arrow (as evaluated by SRK) and the due diligence sampling and assay program performed by P&E, it is the Author's opinion that the assay data are suitable for use in the current Mineral Resource Estimate.

1.7 MINERAL PROCESSING AND METALLURGICAL TESTING

Two sets of test results are available to assess the grades and recoveries in the production of separate copper and nickel concentrates. A 2006 locked-cycle test was conducted by SGS, and in

2010 XPS completed one copper-nickel separation test on a bulk concentrate. The XPS results suggest that at feed grades inline with the current PEA mine plan, a 24% Cu concentrate at 89% Cu recovery and a 15% Ni concentrate at 80% Ni recovery could be anticipated.

1.8 MINERAL RESOURCE ESTIMATE

The Updated Mineral Resource Estimate presented herein confirms that the Kenbridge Project contains a significant nickel-copper-cobalt Mineral Resource that is potentially amenable to underground mining.

The Updated Mineral Resource Estimate (effective date July 6, 2022) is based on drilling and assay data provided by Tartisan and compiled, verified and validated by P&E. The drilling database contains 495 surface and underground diamond drill holes and 46 surface channels totalling 71,475 m, of which 422 drill holes were used to create the domain mineralized wireframes for constraining the Mineral Resource Estimate. The Authors of section 14 of this Technical Report consider the current drill hole database, methodologies, and analytical procedures to be appropriate for the estimation of a Mineral Resource. The Mineral Resource Estimate is summarized in Table 1.1.

TABLE 1.1
MINERAL RESOURCE ESTIMATE (1-7)

Class	Cut-off NSR (C$/t)	Tonnes (k)	Ni (%)	Ni (Mlb)	Cu (%)	Cu (Mlb)	Co (%)	Co (Mlb)	NSR (C$/t)
Measured	100	1,867	0.99	41.0	0.50	20.6	0.017	0.7	184.40
Indicated	100	1,578	0.95	33.0	0.53	18.5	0.009	0.3	180.26
Meas+Ind	**100**	**3,445**	**0.97**	**74.0**	**0.52**	**39.1**	**0.013**	**1.0**	**182.51**
Inferred	100	1,014	1.47	32.7	0.67	14.9	0.011	0.2	263.38

Note: *Ni =Nickel, Cu = Copper, Co = Cobalt, NSR = Net Smelter Return.*

1. *Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.*
2. *The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
3. *The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*
4. *The Mineral Resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines (2014) and Best Practices Guidelines (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.*
5. *The Mineral Resource Estimate is based on US$ metal prices of $8.25/lb Ni, $4.00/lb Cu, $26/lb Co. The US$:CDN$ exchange rate used was 0.76.*
6. *The NSR estimate uses flotation recoveries of 75% for Ni, 77% for Cu, 40% for Co and smelter payables of 92% for Ni, 96% for Cu, 50% for Co.*
7. *Mineral Resources were determined to be potentially extractable with the longhole mining method based on an underground mining cost of $77/t mined, processing of $19/t and G&A costs of $4/t.*

1.9 MINING METHODS

The Kenbridge Deposit is comprised of three steeply-dipping sub-parallel structures (HW, FW and Central) of varying extents from surface (300 m, 600 m, and 1,000 m, respectively). Mineralization is planned to be extracted from all three structures over the Life of Mine ("LOM").

Open pit mining was studied and was found to be less economic than underground mining. However, the potential exists to mine a shallow open pit at any time during the LOM in case emergency feed for the process plant is required.

An historical exploration shaft exists on the Property and extends to a depth of approximately 625 m from surface with 13 shaft stations cut approximately every 46 m. This shaft will be rehabilitated, expanded, and refitted with a new hoist and headframe to support mining in the upper areas above the shaft bottom, and hoisting of material excavated from areas below the extent of the shaft. Mining areas from below the extent of the shaft will be accessed via a ramp from the lowest shaft station, with material being trucked to the Loading Pocket ("LP") at the bottom of the shaft for crushing and final hoisting to surface. This method of access was chosen to minimize lead time to mining and maximize scheduling flexibility, in addition to minimizing transportation costs of broken rock.

Level spacing in the upper (shaft-access) part of the mine will be 46 m to utilize existing shaft stations and levels (Levels 2 and 3 have significant historical lateral development) where possible to minimize capital expenditures. These areas will be mined using a 16 m uphole blast followed by a 30 m downhole blast into the void created by the upholes. This methodology decreases overall dilution and allows for smaller longhole ("LH") drilling equipment. Levels in the lower (ramp-access) part of the mine will be spaced on 30 m intervals, as there is no historical development to incorporate, and 30 m level spacings will allow fleet continuity (same drilling and loading units as in the upper mine) while reducing the complexity of the stoping process by eliminating the 16 m uppers blast. Stopes are expected to be approximately 20 m long and an average of 11 m wide. To maximize productivity and limit lead time to production, the mine will be divided into five mining blocks: three in the shaft-access areas and two in the ramp-access areas below the shaft.

Extraction of material in all areas will use LH retreat stoping with Cemented Hydraulic Fill ("CHF") at nominal 3% binder by mass to eliminate in-situ pillars and maximize the extraction of the Mineral Resource. Artificial sill pillars comprised of higher-strength CHF (nominally 6% by mass) will be used to segregate the blocks where required, and allow for undermining of the pillars in a safe and controlled manner to maximize the extraction of mineralized material. It is expected that four artificial sill pillars will be required over the LOM, with a pillar being located in the bottom level of each mining block, except the lowest block. In addition to artificial sill pillars, a crown pillar extending 46 m from Level 1 to the overburden/host rock contact will be left until extracted at the end of the LOM.

Since material transport to surface will include hoisting via the shaft, a materials handling system will be installed, including: mineralized material and waste passes; truck dumps; grizzlies; bins; crusher; and loading pockets ("LPs"). Two LPs are utilized: the Upper LP located at Level 7 and the Lower LP at Level 13. Both LPs are equipped with crushers to reduce the particle size of mineralized material to a nominal 102 mm maximum. The Lower LP additionally services the ramp-access area of the mine below the shaft and is equipped with truck dumps and storage bins.

Services will be supplied via the shaft, and subsequently by boreholes down the ramp below the shaft extents. Electrical power will be supplied at a nominal 15 kV prior to on-level distribution at 1 kV. Compressed air will be provided in a similar fashion, with a peak draw of 2.0 m^3/s (4,300 scfm) early in mine life. Initial dewatering of the historical workings will be by submersible electric pump and staged pump boxes and is expected to take approximately six months. Ongoing dewatering of the mine will utilize compressed-air face pumps to move water to level sumps, which will cascade to sequential pump stations located at intervals in the mine. A main pump station at the bottom of the shaft will be equipped with electric centrifugal pumps to pump water to surface. Pump stations are designed for an operating flow rate of 40 L/s and a 33% duty cycle to accommodate the expected average inflow of 13 L/s.

Ventilation will be provided by a raisebored Fresh Air Raise ("FAR") and parallel Return Air Raise ("RAR") in the shaft areas, with the ramp area being provided with fresh air through a series of drop-raised FARs and exhausting air back up the ramp to the bottom of the main RAR. Total required airflow at maximum depth and full production is estimated at 150 m^3/s. This air will be provided by fans on surface and an underground booster fan installation located near the shaft bottom. Since the climate at the Kenbridge site includes significant periods of freezing temperatures, Compressed Natural Gas ("CNG") heaters will be installed to heat the air and keep the underground intake air at a nominal 2°C over the winter months to prevent freezing of water and compressed air lines and improve the working environment.

Mining and development will be carried out by Company personnel, with a fleet acquired through a lease-to-own strategy. To limit diesel consumption, Battery Electric Vehicles ("BEVs") have been utilized as much as possible in the fleet, and compressed-air powered machinery has been used in the shaft access areas for drilling and initial loading out of areas near the historical workings.

Process plant tailings will be incorporated into the CHF as much as possible to reduce tailings pond requirements while maintaining the required properties of the backfill to support continued adjacent mining.

The Kenbridge Project is expected to produce a total of 4.52 Mt of process plant feed over a nine-year mine life, with an average metal content of 0.81% Ni, 0.40% Cu and 0.01% Co. It is expected to operate for 352 days per year at a daily rate of 1,500 tpd, for a nominal yearly production rate of 528 ktpa.

1.10 RECOVERY METHODS

A new process plant on site has been planned to be a conventional facility with crushing, grinding, flotation, concentrate thickening and filtration, and tailings thickening for backfill preparation and disposal. The process plant will be sized for a nominal capacity of 1,500 tpd with a surge capability of 2,000 tpd.

Mineralized material will come from underground mining. A primary crusher will be located underground. There appears to be beneficial potential for mineralized material feed sorting at Kenbridge. This could reduce the amount of mineralized material to be processed, increase the process plant feed grade, and reduce capital and operating costs. The use of XRT sorting technology is probably the most appropriate and its application could avoid the costly step of washing sorter feed. However, with the absence of sorting test results, conventional crushing-grinding-flotation was selected for this PEA.

Conventional SAG and ball mill grinding is proposed with a target grind size P_{80} of 90 µm. The SAG mill could be equipped with a pebble circuit where +20 mm pebbles screened from SAG feed are recycled to the SAG mill feed. A medium grade copper-nickel bulk concentrate is obtained in a rougher-scavenger circuit which will have a retention time of 20 minutes. The finely ground rougher-scavenger bulk concentrate will be cleaned at least twice and the final bulk cleaner concentrate directed to a copper-nickel separation flotation step, with tailings reporting to a nickel concentration/cleaner circuit. The copper concentrate may also be subject to copper cleaner stages.

The two flotation concentrates will be separately thickened in conventional-type thickeners and filtered using plate and frame pressure filters. The concentrates will be stored between partitions in a heated warehouse. The concentrates are expected to be trucked to smelters in Sudbury, ON (nickel) and Rouyn-Noranda, QC (copper). Subject to confirmation of no liquefaction potential in transport, the shipments will be as separate bulk nickel and copper concentrates in warm weather and in one tonne tote bags in colder weather. No on-site concentrate drying is proposed.

Tailings will be transferred to a backfill plant, thickened to approximately 55% solids using a conventional hi-rate thickener where the fine fraction will be separated out by cyclones and the coarse fraction sent underground as hydraulic cemented backfill. The residual fines will be thickened to approximately 45% solids and sent to a conventional tailings facility with lined embankments.

Subject to confirmation that fine tailings thickener overflow water quality is not detrimental to flotation performance, process water will be a combination of tailings thickener reclaim water and tailings facility reclaim water. Mine water is an additional potential process water source.

1.11 PROJECT INFRASTRUCTURE

Existing infrastructure at the Kenbridge Property consists of an access road, exploration camp, drill core logging facility, old building foundations, shaft and underground development. The access road is currently being upgraded for vehicle use and is anticipated to be completed in September 2022.

Sufficient space exists on the Property to build mining infrastructure. A 1,500 tpd process plant and laboratory will be located approximately 100 m from the shaft. A hydraulic backfill plant will be located at the process plant. Nickel and copper concentrates will be produced and temporarily stored in a covered building before transport by truck to smelters. A truck weigh scale will be installed at the concentrate storage and load-out facility.

Other infrastructure located near the shaft will include a change house, administration offices, first aid station and mine rescue training facility, diesel storage and fuelling facilities, a maintenance shop, warehouse, cold storage building, and water retention and treatment facilities. A septic system will be installed for sanitary waste water. Potable water will be sourced from a nearby lake and will be treated to make it potable if necessary.

A tailings storage facility ("TSF") for approximately 3.0 Mt of tailings will be situated 1.5 km south of the process plant. The TSF will be constructed as a single cell valley impoundment east of Empire Lake. The impoundment will be formed through the construction of three dams (North, West and South Embankments) with natural topography providing containment along the east side and ultimately over approximately 70% of the basin perimeter. The TSF development will include an initial starter embankment (Stage 1) followed by subsequent raises using the downstream construction method as required over the approximate nine-year mine life.

An explosives storage facility will be located just north of the TSF.

Trade-off studies were performed to compare the cost of connecting to the Ontario Hydro power grid versus generating power on site, and it was determined that on-site power generation using Compressed Natural Gas ("CNG") delivered overland by tanker truck was the most cost-effective method. Power generation for the Kenbridge site will utilize five 1,000 kW generators powered by CNG.

There will be no camp at the mine site for production personnel or contractors, and employees will be expected to travel from nearby communities.

1.12 MARKET STUDIES AND CONTRACTS

Approximate long-term metal price forecasts as of May 31, 2022 of US$10/lb Ni, US$4/lb Cu and US$26/lb Co from Consensus Economics Inc. have been used for this PEA, with an exchange rate of 0.78 US$ per CAD$.

There are currently no material contracts in place pertaining to the Kenbridge Project. The Project is open to the spot metal price market and there are no streaming, forward sales contracts or concentrate off-take agreements in place.

1.13 ENVIRONMENTAL STUDIES, PERMITS, AND SOCIAL OR COMMUNITY IMPACTS

1.13.1 Regulatory Framework

The construction, operation, and closure of the Project will require both federal and provincial regulatory approvals/authorizations. The Project does not fall under the applicable Physical Activities Regulations (SOR/2019-285) of the Impact Assessment Act; however, depending on how the Projects proceeds, there are federal permits and authorizations which would be necessary. There are no specific provincial environmental assessment requirements for mining projects in Ontario; however, some of the activities related to the development of the Project, including some ancillary infrastructure components may require approval under one or more provincial Class Environmental Assessments related to provincial permitting or approval activities.

1.13.2 Consultation

Tartisan has and will continue to engage and consult with public, provincial, and federal agency stakeholders, regarding the Project. A task force has been formed by Treaty #3 with the directors of the Anishinaabeg of Kabapikotawangag Resource Council and representatives of six First Nation Communities. Tartisan continues to develop positive relationships with its surrounding First Nations through its First Nation consulting partner Talon Resources and Community Development Inc. Development of MOUs with each First Nation community will most likely be required prior to the Project entering the production phase.

1.13.3 Social Environment

The Property is located within the Kenora Mining Division, approximately 70 km east-southeast of the Town of Kenora, Ontario. The area forms part of the Township of Sioux Narrows-Nestor Falls. The Ojibways of Onigaming First Nation and their Sabaskong Bay No. 35-D reserve is located approximately 38 km from the Property. The property boundary of the Eagle-Dogtooth Provincial Park (W-LL-2363) is also located approximately 2 km north of the Property. The Rushing Wind Retreat Centre (i.e., a fly-in camp) is located nearby on the south end of Populus Lake; however, Canadian Arrow holds an agreement, made originally between the owners of the camp and Falconbridge Limited (now Glencore), to acquire the facility if a mining operation at the Property were to be constructed. Stage 1 and Stage 2 archaeological assessments will be required prior to future Project development.

1.13.4 Environmental Baseline Studies

Tartisan has retained Knight Piésold Consulting and Blue Heron Environmental to reinitiate environmental baseline studies in 2022 to support the various permitting and approvals processes for the Project.

Desktop and baseline terrestrial field studies were initiated in 2022 to establish if any Species at Risk are located within the Property. The terrestrial baseline studies are also being completed to characterize the terrestrial vegetation and wildlife communities within the Property. Additional baseline terrestrial studies may be required based on the results of the 2022 desktop and field studies.

The groundwater monitoring program established in the spring of 2022 should continue for a period of at least one year to characterize both the shallow overburden and deep bedrock aquifers within the vicinity of the proposed Project infrastructure, including the tailings storage facility and to capture temporal variations. Hydrogeological studies should also be completed to support the completion of a numerical groundwater model and to characterize the local hydrogeological conditions.

Surface water quality sampling, as well as ongoing characterization of the local hydrological regime should be continued for a period of one year to support permitting activities, and until production commences, at which time the permits and approvals will dictate the operational and post-closure monitoring requirements.

The Property is located within Fisheries Management Zone 5, which is an area of 44,360 square kilometres consisting of 5,000 lakes. Baseline aquatic studies have been initiated in 2022 to characterize the existing fish communities, fish habitat, sediment quality, and benthic macroinvertebrate communities within potentially impacted waterbodies.

Geochemical characterization of mineralized material, concentrate, tailings, or waste rock has also been initiated. Geochemical characterization of these materials will be required to determine their acid rock drainage and metal leaching potential. This geochemical data will be used to inform the development of the waste and water management plans and approvals for the facility closure measures.

1.13.5 Mine Closure Plan

A Closure Plan will be prepared and filed with the Ministry of Mines in accordance with Ontario Regulation 240/00: Mine Development and Closure Under Part VII of the Act. Closure of the Project will be completed in accordance with Ontario Regulation 240/00 with the fundamental considerations being to ensure physical and chemical stability of the Property to ensure safety, human health, and to protect the environment. Progressive rehabilitation will be completed throughout the life of the Project whenever feasible.

1.14 CAPITAL AND OPERATING COSTS

Costs in this PEA are reported as Q1 2022 Canadian dollars with no provision to offset future escalation. Capital costs (“CAPEX”) include a 15% contingency and operating costs (“OPEX”) do not include a contingency.

1.14.1 Capital Costs

Initial CAPEX is estimated at $134M (Table 1.2). Most initial capital costs will be for building the process plant and for underground mine development and infrastructure. Sustaining CAPEX is estimated at $93M over nine production years and is primarily for underground mine development and equipment. Total CAPEX over the life-of-mine (“LOM”) is estimated at $227M, which is equivalent to $50.16/t processed.

TABLE 1.2 PROJECT CAPEX SUMMARY				
Area	**Pre-Production Capital Costs ($M)**	**Sustaining Capital Costs ($M)**	**Total Capital Costs ($M)[1]**	**LOM Cost per Tonne ($/t)**
Site Preparation, Utilities, Services and General	7.9	4.1	**12.0**	2.65
Process Plant Equipment[2], Tailings, and Water Treatment	21.8	8.3	**30.2**	6.68
Process Plant Indirects, Laboratory and EPCM	15.0	0.1	**15.1**	3.33
Underground Fleet[2]	8.8	46.6	**55.4**	12.25
Underground Fixed Plant and Infrastructure	35.2	11.4	**46.6**	10.3
Underground Capital Development[3]	13.7	12.1	**25.7**	5.69
Capitalized Operating Costs	15.6	-	**15.6**	3.45
Subtotal	**118.0**	**82.5**	**200.5**	**44.36**
Contingency[3] @ 15%	15.7	10.6	**26.2**	5.80
Total[1]	**133.7**	**93.1**	**226.8**	**50.16**

Note: *1 Totals may not sum due to rounding.*
2 Underground fleet is leased, as is a portion of the machinery in the process plant.
3 No contingency is applied to underground capital development as contingency has already been applied at the design stage.
EPCM = engineering, procurement, construction and management.

1.14.2 Operating Costs

OPEX is estimated to total $292M over the LOM, at a unit cost of $64.64/t processed (Table 1.3). Mining and development will be performed entirely by Company personnel, with an owned equipment fleet that will be leased over five-year terms. Processing will be at 1,500 tpd.

TABLE 1.3 PROJECT OPEX SUMMARY		
Area	**Total Operating Costs ($M)[1]**	**LOM Cost per Tonne ($/t)**
Operating Development	10.5	2.31
Production	105.0	23.23
Processing	80.2	17.74
Underground power consumption and mine air heating	16.7	3.69
Interest on leases	6.4	1.41
Indirect and G&A costs	67.6	14.95
Other items	5.9	1.31
Total	**292.2**	**64.64**

Note: *Totals may not sum due to rounding.*

1.14.3 Other Costs

The Project is subject to a 3.5% NSR royalty with the option to buy out 1.0% of the NSR for $1.5M. This buyout is planned to occur at the start of production and the total royalty cost over the LOM is estimated at $22M including the buyout.

Closure and severance costs at the end of mine life are estimated at $10M to seal the shaft collar, cap the ventilation and egress raises, rehabilitate the Project site, and pay severance costs for employees.

Cash costs over the LOM, including royalties, are estimated to average US$3.76/lb NiEq (nickel equivalent) (CAD$4.82/lb NiEq). All-In Sustaining Costs ("AISC") over the LOM are estimated to average US$4.99/lb NiEq (CAD$6.40/lb NiEq) and include closure and severance costs.

1.15 ECONOMIC ANALYSIS

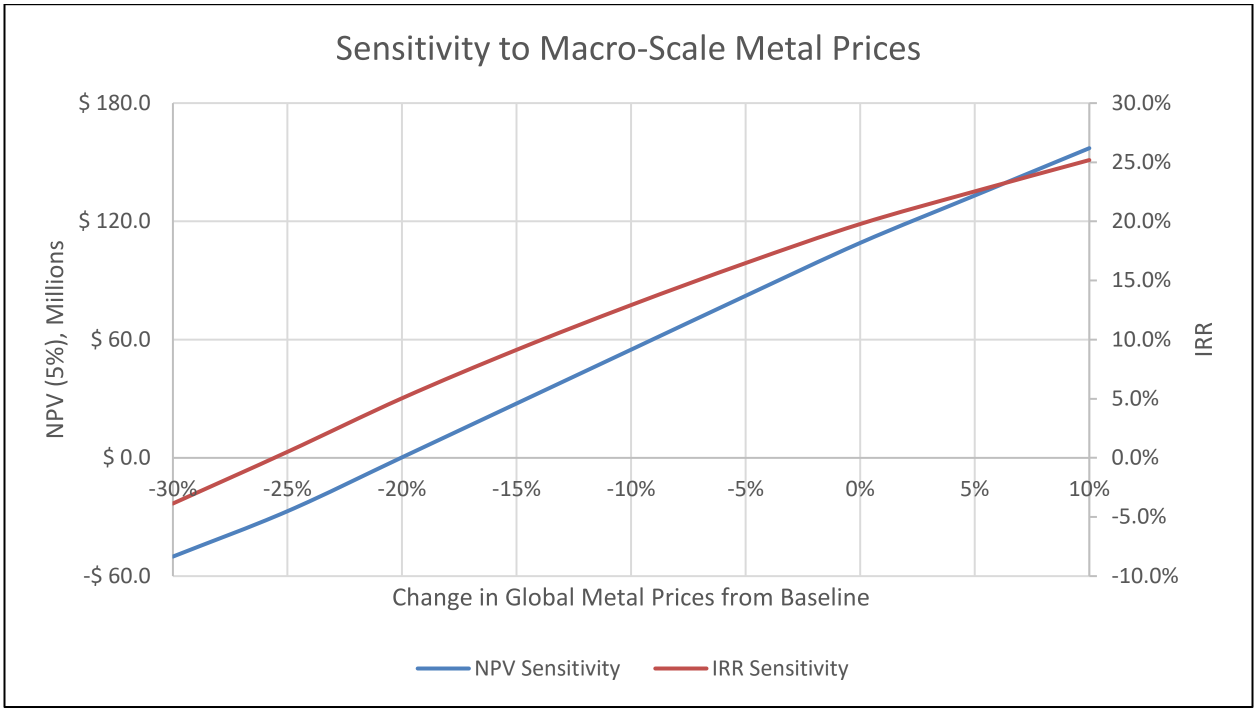
Table 1.4 presents a summary of the PEA financial results, including the NPV, IRR and payback period of the Project under baseline inputs (5% discount rate, US$10/lb Ni, US$4/lb Cu, US$26/lb Co, 0.78 US$/CAD$, OPEX and CAPEX as in Tables 1.2 and 1.3 above). Taxes are estimated at 15% for Federal income tax, 11.5% for Provincial income tax, and an additional 10% for the Ontario Mining Tax.

TABLE 1.4
PEA FINANCIAL RESULTS

Item	Units	Result	
General			
Nickel Price	US$/lb	10	
Copper Price	US$/lb	4	
Cobalt Price	US$/lb	26	
Exchange Rate	US$:CAD$	0.78	
Life-of-Mine	years	9	
Production			
Ni Production	Mlb	52.6	
Cu Production	Mlb	30.7	
NiEq Production	Mlb	65.3	
Average NiEq Annual Production	Mlb	7.3	
NSR Revenue	$M	837.0	
Operating Costs			
Mining Cost	$/t mined	38.93	
Processing Cost	$/t processed	17.74	
G&A Cost	$/t processed	7.96	
Total Operating Costs	$/t processed	64.64	
Operating Costs	$M	(292.2)	
NSR Royalty After 1% Buyback	%	2.50	
Royalty Costs	$M	(22.4)	
Cash Costs	US$/lb NiEq	3.76	
AISC	US$/lb NiEq	4.99	
Capital Costs			
Initial Capital	$M	(133.7)	
Sustaining Capital	$M	(93.1)	
Closure & Severance Costs	$M	(10.0)	
Cash Flow			
Income Taxes	$M	(104.7)	
After-Tax Cash Flow	$M	180.9	
Financials		**Pre-Tax**	**After-Tax**
NPV @ 5%	$M	182.5	109.1
IRR	%	26	20
Payback	years	3.4	3.5

The Project NPV is sensitive to several factors, with the largest impact coming from factors affecting revenue from the nickel concentrate stream, such as: nickel price, process recovery to the nickel concentrate, and payable factor (value of nickel in concentrate less smelter charges). Macro-scale factors (changes to global metal prices, and Project CAPEX and OPEX) also have significant effects. Changes to factors affecting revenue from the copper concentrate stream have moderate to minor impacts, as do changes to the discount rate. Figure 1.1 presents the metal price sensitivity on NPV and IRR.

FIGURE 1.1 PROJECT SENSITIVITY TO METAL PRICES



1.16 RISKS AND OPPORTUNITIES

Risks and opportunities have been identified for the Project. Anticipated risks with the highest potential impact on the Project are the 46 m level spacing in shaft areas and its implications on dilution, lack of geotechnical and hydrology studies, low CAPEX contingency at 15%, rising inflation and interest rate environment, and Project sensitivity to nickel and copper prices.

Opportunities consist of significant potential to expand the Mineral Resource laterally and at depth, alternative power generation and storage systems to reduce OPEX, use of additional electrified underground equipment as more units become available on the market, and possible negotiation of an off-take agreement to assist with Project financing.

1.17 CONCLUSIONS

This PEA indicates that the Kenbridge Project has potential economic viability for an underground mining and processing operation. At a 5% discount rate and metal prices of US$10/lb Ni, US$4/lb Cu, US$26/lb Co, the after-tax NPV of the Project is estimated at $109M ($183M pre-tax), with an IRR of 20% (26% pre-tax). This results in a payback period of approximately 3.5 years. The Project NPV is most sensitive to factors affecting revenue from the nickel concentrate stream, such as: nickel price, process recovery to the nickel concentrate, and payable factor (value of nickel in concentrate less smelter charges).

Cash costs over the LOM, including royalties, are estimated to average US$3.76/lb NiEq (CAD$4.82/lb NiEq). All-In Sustaining Costs ("AISC") over the LOM are estimated to average US$4.99/lb NiEq (CAD$6.40/lb NiEq) and include closure and severance costs.

1.18 RECOMMENDATIONS

The Authors of this Technical Report consider that the Kenbridge Project contains a significant nickel, copper and cobalt Mineral Resource that merits further evaluation. To advance the Project to the next level of study, a diamond drill program is required to convert Inferred Mineral Resources to Indicated Mineral Resources. Step-out drilling to expand the size of the Mineral Resource would also be beneficial.

The Authors of this Technical Report recommend advancing the Project in a two-phase approach, with infill and step-out drilling first. Once the drill program has been completed and analyzed, the second phase could be undertaken assuming successful results from phase one. Implementation of phase two is contingent on positive results from phase one.

The phase two work program would include geological, geochemical and geotechnical studies, further environmental baseline studies, and metallurgical testing, leading up to a Pre-Feasibility Study.

The recommended work program is estimated to cost $7.8M including a contingency of $1.0M. Phase one is estimated at $3.5M for drilling, and phase two study work is estimated at $3.3M, before contingency.

2.0 INTRODUCTION AND TERMS OF REFERENCE

2.1 TERMS OF REFERENCE

This NI 43-101 Preliminary Economic Assessment (“PEA”) Technical Report of the Kenbridge Nickel Project (the “Deposit” or “Property” or “Project”) located 70 km east-southeast of the Town of Kenora in northwestern Ontario, Canada, has been prepared by P&E Mining Consultants Inc. (“P&E”) at the request of Tartisan Nickel Corp. (“Tartisan” or the “Company”). The Kenbridge Property is wholly-owned by Tartisan. Input to the PEA was also provided by Knight Piésold Ltd. and Story Environmental Inc.

Tartisan is an Ontario registered company trading on the Canada Stock Exchange (“CSE”) under the symbol TN with its corporate office at: 44 Victoria Street, Suite 1102, Toronto, Ontario, M5C 1Y2, Canada.

The Authors of this Technical Report completed an Updated Mineral Resource Estimate on the Kenbridge Property for Tartisan with an effective date of May 18, 2021, which forms the basis for this PEA. There were 10 additional drill holes completed on the Property later in 2021. This Technical Report incorporates the new drill holes into an updated Mineral Resource Estimate for a potential underground mining operation study. The Updated Mineral Resource Estimate is conformable to the “CIM Standards on Mineral Resources and Reserves – Definitions (2014) and Best Practices Guidelines (2019)” as referred to in National Instrument (“NI”) 43-101 and Form 43-101F, Standards of Disclosure for Mineral Projects.

This PEA studies underground mining of the Kenbridge Mineral Resource, with production of nickel and copper concentrates from an on-site process plant. This Technical Report has an effective date of July 6, 2022.

The Authors of this Technical Report understand that this Technical Report will support the public disclosure requirements of the Company and will be filed on SEDAR as required under NI 43-101 disclosure regulations.

2.2 SITE VISIT

P&E has conducted three site visits to the Kenbridge Property. Mr. Eugene Puritch, P.Eng., FEC, CET of P&E and a Qualified Person under the terms of NI 43-101, completed a site visit in May 2008. A data verification sampling program was completed on-site. Mr. D. Gregory Robinson, P.Eng. of P&E and a Qualified Person under the terms of NI 43-101, conducted a site visit to the Kenbridge Property on May 18, 2021. The site visit was undertaken to verify current access and infrastructure. Mr. David Burga, P.Geo, of P&E and a Qualified Person under the terms of NI 43-101, conducted a site visit on June 1, 2022 and completed a data verification sampling program. Refer to Section 12 of this Technical Report for the sampling program results.

2.3 SOURCES OF INFORMATION

The Authors of this Technical Report carried out a review of all relevant parts of the available literature and documented results concerning the Kenbridge Project and held discussions with technical personnel from the Company regarding all pertinent aspects of the Project. This Technical Report is also based, in part, on internal Company technical reports, news releases and maps, published government reports, Company letters and memoranda, and public information as listed in the References section (Section 27) of this Technical Report. Additional details on the topic can be found in the public filings of Tartisan and the previous owner of Kenbridge, Canadian Arrow Mines Limited, available on SEDAR at www.sedar.com.

The most recent NI 43-101 Technical Report and Mineral Resource Estimate on the Project was completed by P&E titled "Technical Report and Updated Mineral Resource Estimate of the Kenbridge Nickel Project, Kenora Ontario" with an effective date of May 18, 2021.

The last PEA on the Project was completed by WMT Associates, SRK Consulting, Micon International Limited, and P&E titled "Technical Report on a Preliminary Assessment Study for the Kenbridge Deposit, Kenora, Ontario, Canada", dated February 2008 (Buck et al., 2008). This study, referred to hereafter in this report as Buck et al. (2008), has been largely relied upon for the History (Section 6), Geological Setting and Mineralization (Section 7), Sample Preparation (Section 11), and Data Verification (Section 12) sections of this Technical Report.

Considerable previous work was carried out on the Kenbridge Property by Coniagas Mines Limited ("Coniagas") in the 1930s, International Nickel Company of Canada ("INCO") in the late-1940s, Falconbridge Limited ("Falconbridge") in the 1950s, Blackstone Ventures Inc. ("Blackstone") in 2005-2006, and Canadian Arrow Mines Limited ("Canadian Arrow") in 2007-2008. Tartisan acquired the Property from Canadian Arrow in early 2018, refurbished road and cut-line grid access to the Property in 2019, and contracted an ASTER satellite LWIR Imagery study in 2020. A key technical document reviewed by the Authors of this Technical Report is the April 2020 internal report titled "ASTER Satellite LWQIR Imagery, Assessment Report for the Kenbridge Claims, Kenora Mining Division, Ontario, Canada", by Steel & Associates Geoscientific Consulting (2020) for the Kenbridge Property area.

Table 2.1 presents the authors and co-authors of each section of this Technical Report, who acting as a Qualified Person as defined by NI 43-101, take responsibility for those sections of the Technical Report as outlined in Section 28 "Certificate of Author".

TABLE 2.1
REPORT AUTHORS AND CO-AUTHORS

Qualified Person	Employer	Sections of Technical Report
Ms. Jarita Barry, P.Geo.	P&E Mining Consultants Inc.	11 and Co-author 1, 12, 25, 26
Mr. Andrew Bradfield, P.Eng.	P&E Mining Consultants Inc.	2, 3, 15, 19, 22, 24 and Co-author 1, 18, 25, 26
Mr. David Burga, P.Geo.	P&E Mining Consultants Inc.	Co-author 1, 12, 25, 26

TABLE 2.1 REPORT AUTHORS AND CO-AUTHORS		
Qualified Person	**Employer**	**Sections of Technical Report**
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Mr. Eugene Puritch, P.Eng.	P&E Mining Consultants Inc.	Co-author 1, 12, 14, 25, 26
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Ms. Maria Story, P.Eng.	Story Environmental Inc.	20 and Co-author 1, 25,26

2.4 UNITS AND CURRENCY

In this Technical Report, all currency amounts are stated in Canadian dollars ("$") unless otherwise stated. At the time of this Technical Report, the 24-month trailing average exchange rate between the US$ and the CAD$ is 1 US$ = 1.28 CAD$ or 1 CAD$ = 0.78 US$.

Commodity prices are typically expressed in US dollars ("US$") and will be noted where appropriate. Quantities are generally stated in Système International d'Unités ("SI") metric units including metric tons ("tonnes", "t") and kilograms ("kg") for weight, kilometres ("km") or metres ("m") for distance, hectares ("ha") for area, grams ("g") and grams per tonne ("g/t"). Metal values are reported in percentage ("%"). Metal grades may also be reported in parts per million ("ppm") or parts per billion ("ppb"), with quantities of base metals in pounds ("lb"). Quantities of precious metals may also be reported in troy ounces ("oz"). Abbreviations and terminology are summarized in Tables 2.2 and 2.3.

Grid coordinates for maps are given in the UTM NAD 83 Zone 15N or as latitude and longitude.

TABLE 2.2 TERMINOLOGY AND ABBREVIATIONS	
Abbreviation	**Meaning**
$	dollar(s)
°	degree(s)
°C	degrees Celsius
<	less than
>	greater than
%	percent
μm	micron, micrometre
3-D	three-dimensional
Actlabs	Activation Laboratories Ltd.
AG	Associated Geosciences Ltd.

TABLE 2.2
TERMINOLOGY AND ABBREVIATIONS

Abbreviation	Meaning
Ag	silver
AISC	all-in sustaining costs
AKRC	Anishinaabeg of Kabapikotawangag Resource Council
AQHI	Ontario's Air Quality Health Index
Au	gold
Blackstone	Blackstone Ventures Inc.
BEV	battery electric vehicle
BHEM	borehole electromagnetic (survey)
C$ or CAD$	Canadian Dollar
Canadian Arrow	Canadian Arrow Mines Limited
CaO	calcium oxide
CAPEX	capital expenditure
CEAA	Canadian Environmental Assessment Act
CHF	cemented hydraulic fill
CIM	Canadian Institute of Mining, Metallurgy, and Petroleum
CMS	cubic metre per second
CNG	compressed natural gas
Co	cobalt
Company, the	Tartisan Nickel Corp.
Coniagas	Coniagas Mines Limited
CoV	coefficient of variation
COV	cut-off value
CRM or standard	certified reference material
Crone	Crone Geophysics & Exploration Ltd.
CSE	Canada Stock Exchange
Cu	copper
CV_{AV}	average coefficients of variation
Deposit, the	the Kenbridge Property that is the subject of this Technical Report
DSO	Deswik Stope Optimizer
DST	DST Consulting Engineers Inc.
$M	dollars, millions
EA	Environmental Assessment
EDS	environmental design storm
ELOS	estimated linear overbreak and slough
EM	electromagnetic
EMS	electromagnetics
EPCM	engineering, procurement, construction and management
EV	electric vehicle
Falconbridge	Falconbridge Limited
FAR	fresh air raise
Fe	iron

TABLE 2.2
TERMINOLOGY AND ABBREVIATIONS

Abbreviation	Meaning
FEL	front end loader
FMZ 5	Fisheries Management Zone 5
ft	foot
FW	footwall
Ga	Giga annum or billions of years
H: V	horizontal: vertical ratio
HGG	high-grade gabbro
HW	hanging wakk
HR	hydraulic radii
IAA	Impact Assessment Act, 2019
ICP	Inductively Coupled Plasma
ICP-OES	Inductively Coupled Plasma Optical Emission spectroscopy
ID	identification
ID^2	Inverse Distance Squared
IDF	inflow design flood
IF	Inferred Mineral Resources
lb	pound(s)
INCO	International Nickel Company of Canada
IRR	internal rate of return
ISO	International Organization for Standardization
ISO/IEC	International Organization for Standardization / International Electrotechnical Commission
k	thousand(s)
Kenbridge Deposit	Kenbridge nickel sulphide deposit
Kenbridge Property or Kenbridge Project	Kenbridge nickel sulphide property
kg	kilogram
km	kilometre
KNB	Kenbridge Nickel Mines Limited
KBN1	Kenbridge North conductor 1
KBN2	Kenbridge North conductor 2
KNMV	non-mineralized (barren) mafic volcanic material
KP	Knight Piésold Ltd. / Knight Piésold Consulting
LCT	locked cycle test
level	mine working level referring to the nominal elevation (m RL), e.g., 4285 level (mine workings at 4285 m RL)
LGG	low-grade gabbro
LGOP	low-grade open pit
LHD	load-haul-dump
LIDAR	Light Detection and Ranging
LH	longhole

TABLE 2.2
TERMINOLOGY AND ABBREVIATIONS

Abbreviation	Meaning
LOM	life of mine
LP	loading pocket
M	million(s)
m	metre
m^3	cubic metre
masl	metres above sea level
MECP	Ministry of Environment, Conservation and Parks
MgO	magnesium oxide
Mlb	million(s) of pounds (weight)
MMI	mobile metal ion (sample survey)
MNRF	Ministry of Natural Resources and Forestry
MOU	memorandum of understanding
N	north
NAD	North American Datum
Na_2O_2	sodium peroxide
Ni	nickel
NI	National Instrument
NiEq	nickel equivalent
NN	Nearest Neighbour
NSR	net smelter return
NPV	net present value
O. Reg. 240/00	Ontario Regulation 240/00
O_3	ozone
OK	Ordinary Kriging
OPEX	operating expenses
OSC	Ontario Securities Commission
oz	ounce (troy)
P_{80}	80% percent passing
P&E	P&E Mining Consultants Inc.
PAG	potentially acid generating
Pd	palladium
PEA	Preliminary Economic Assessment
P.Eng.	Professional Engineer
P.Geo.	Professional Geoscientist
PGM or PGE	platinum group metals or platinum group elements
Property, the or Project, the	the Kenbridge Property that is the subject of this Technical Report
Pt	platinum
Q1, Q2, Q3, Q4	first quarter, second quarter, third quarter, fourth quarter of the year
QAQC or QA/QC	quality assurance/quality control
QC	quality control

TABLE 2.2
TERMINOLOGY AND ABBREVIATIONS

Abbreviation	Meaning
QEMSCAN	quantitative evaluation of materials by scanning electron microscopy
R^2	coefficient of determination
RAR	return air raise
Rh	rhodium
ROM	run of mine
RQD	rock quality determination
Ru	ruthenium
S	sulphur
SAG	semi-autogenous grinding (mill)
SCAP	sustaining capital
SD	standard deviation
SEDAR	System for Electronic Document Analysis and Retrieval
S.G.	specific gravity
SGS	SGS Mineral Services, SGS Laboratories, SGS Lakefield Research Limited, part of SGS Canada Inc.
SRC	SRC Geoanalytical Laboratories
SRK	SRK Consulting Inc.
standards or CRM	certified reference material
t	tonnes, metric
Tartisan	Tartisan Nickel Corp.
TDEM	time domain electromagnetic
Technical Report	NI 43-101 Technical Report
TEK	traditional ecological knowledge
TMF	tailings management facility
TSF	tailings storage facility
UG	underground
US$	United States dollar(s)
UTEM	time domain electromagnetic
UTM	Universal Transverse Mercator grid system
UTV	utility terrain vehicles
VOD	ventilation-on-demand
VFD	variable frequency drive
VTEM	versatile time domain electromagnetic
W	west
W x H	width x height
W x L	width x length
XPS	Xstrata Process Support
XRD	X-ray diffraction
XRF	X-ray fluorescence
XRT	X-ray transmission
Zn	zinc

TABLE 2.3
UNIT MEASUREMENT ABBREVIATIONS

Abbreviation	Meaning	Abbreviation	Meaning
μm	microns, micrometre	m^3/s	cubic metre per second
$	dollar	m^3/y	cubic metre per year
$/t	dollar per metric tonne	mØ	metre diameter
%	percent	m/h	metre per hour
% w/w	percent solid by weight	m/s	metre per second
¢/kWh	cent per kilowatt hour	min	minute
°	degree	min/h	minute per hour
°C	degree Celsius	mL	millilitre
cm	centimetre	Mlb	millions of pounds
CMS	cubic metre per second	mm	millimetre
d	day	Mt	million tonnes
ft	feet	Mtpa or Mtpy	million tonnes per annum or year
GWh	Gigawatt hours	MV	medium voltage
g	gram	MVA	mega volt-ampere
g/t	grams per tonne	MW	megawatts
h	hour	oz	ounce (troy)
ha	hectare	Pa	Pascal
hp	horsepower	pH	Measure of acidity
k	kilo, thousands	ppb	part per billion
kg	kilogram	ppm	part per million
kg/t	kilogram per metric tonne	psi	pound per square inch
km	kilometre	s	second
km^2	square kilometres	scfm	standard cubic feet per minute
kPa	kilopascal	sq km	square kilometres
kt	kilotonnes, thousands of tonnes	t or tonne	metric tonne
ktpd	kilotonnes per day	tpa	metric tonne per annum
ktpa	kilotonnes per annum	tpd	metric tonne per day
kV	kilovolt	t/h	metric tonne per hour
kVA	kilovolt amps, 1,000 volt amps	t/h/m	metric tonne per hour per metre
kW	kilowatt	$t/h/m^2$	metric tonne per hour per square metre
kWh	kilowatt-hour	t/m	metric tonne per month
kWh/t	kilowatt-hour per metric tonne	t/m^2	metric tonne per square metre
L	litre	t/m^3	metric tonne per cubic metre
L/s	litres per second	T	short ton
lb	pound(s)	tpy	metric tonnes per year
M	million	V	volt

TABLE 2.3
UNIT MEASUREMENT ABBREVIATIONS

Abbreviation	Meaning	Abbreviation	Meaning
m	metre	W	Watt
m^2	square metre	wt%	weight percent
m^3	cubic metre	yd	yard
m^3/d	cubic metre per day	yd^2	square yard
m^3/h	cubic metre per hour	yr	year
m^3/s	cubic metre per second		

3.0 RELIANCE ON OTHER EXPERTS

The authors of this Technical Report (the "Authors") have assumed that all the information and technical documents listed in the References section of this Technical Report are accurate and complete in all material aspects. Whereas the Authors carefully reviewed all the available information presented, the Authors cannot guarantee its accuracy and completeness. The Authors reserve the right but will not be obligated to revise the Technical Report and conclusions if additional information becomes known to the Authors subsequent to the effective date of this Technical Report.

Copies of the land tenure documents, operating licenses, permits, and work contracts were not reviewed. Information on land tenure was obtained from Tartisan. The Authors have relied on tenure information from Tartisan and has not undertaken an independent detailed legal verification of title and ownership of the Kenbridge Project. Tartisan provided the Authors with the information relating to the patented claims and the status of these claims has not been independently verified by the Authors. Ownership of the unpatented claims has been independently verified by the Authors on July 6, 2022, utilizing Ontario's Ministry of Northern Development and Mines website at:

> https://www.lioapplications.lrc.gov.on.ca/MLAS/Index.html?viewer=MLAS.MLAS&locale=en-CA.

The Authors of this Technical Report relied upon Tartisan's auditors and Chartered Professional Accountants at Clearhouse LLP in Mississauga, Ontario, for assistance with the taxation calculations in the financial model.

The Authors have not verified the legality of any underlying agreement(s) that may exist concerning the land tenure, or other agreement(s) between third parties, but has relied on and considers it has a reasonable basis to rely upon Tartisan to have conducted the proper legal due diligence.

The Authors have relied largely on the documents listed in the References section for the information in this Technical Report. However, the conclusions and recommendations are exclusively those of the Authors. The results and opinions outlined in this Technical Report are dependent on the aforementioned information being current, accurate and complete as of the effective date of this Technical Report. It has been assumed that no information has been withheld which would impact the conclusions or recommendations made herein.

A draft copy of this Technical Report has been reviewed for factual errors by Tartisan management. Any changes made as a result of these reviews did not involve any alteration to the conclusions made. Hence, the statement and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the effective date of this Technical Report.

The Authors wish to emphasize that they are Qualified Persons only in respect of the areas in this Technical Report identified in their "Certificates of Qualified Persons" submitted with this Technical Report to the Canadian Securities Administrators.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 LOCATION

The Kenbridge Property is located in the north-central part of the Atikwa Lake area and the south-central part of the Fisher Lake area, Kenora Mining Division, 70 km east-southeast of the Town of Kenora, Ontario and 50 km east of the Town of Sioux Narrows-Nestor Falls (Figure 4.1). The Property is bounded to the north by the southwest bay of Populous Lake, to the west by Betula Lake, and to the south by Empire Lake. It is also bound to the northeast by the Eagle Dogtooth Provincial Park (Figure 4.2). The centre of the Kenbridge Property is situated at approximately 93° 38’ W Longitude and 49° 29’ N Latitude, or UTM NAD83 Zone 15N 454,126 m E and 5,481,381 m N. The claims are on NTS Map sheet 052F05.

4.2 PROPERTY TENURE AND OWNERSHIP

4.2.1 Land Tenure

As of May 18, 2021, the Kenbridge Property is covered by patented and unpatented mining claims totalling 4,108.42 ha. The centre of the Property is covered by 93 contiguous Patented Mining Claims with mining and surface rights or only mining rights, and four Mining Licences of Occupation with only mining rights. In addition, the Patented Mining Claims are surrounded by 142 single cell mining claims (Figure 4.2). The Kenbridge Deposit itself is covered by Patented Mining Claims PAT-5599 and PAT-5593. The mining claims are registered to Canadian Arrow Mines Limited and Kenbridge Nickel Mines Limited, wholly-owned subsidiaries of Tartisan Nickel Corp.

The renewals of 71 of the unpatented mining claims are due in December 2022. Significant assessment credits are available on certain claims and patents which can be distributed to the unpatented claims coming due. The status of all the patented and unpatented claims as of July 6, 2022 is shown in Appendix H. This tabulation is derived from information available on the Ontario Ministry of Energy, Northern Development and Mines (https://www.mndm.gov.on.ca/en/mines-and-minerals/applications/mining-lands-administration-system-mlas-map-viewer).

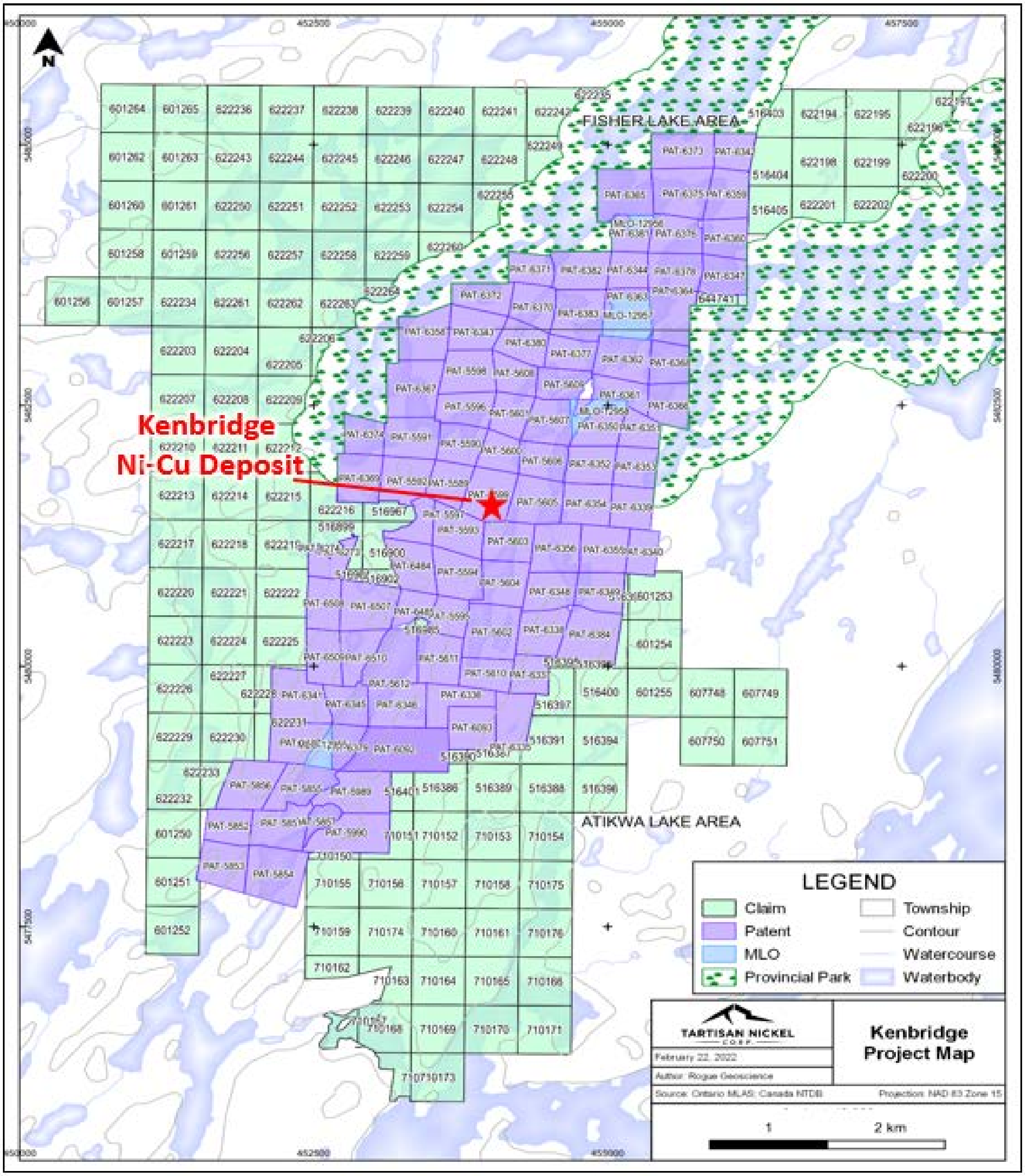
4.3 OWNERSHIP AGREEMENTS

Kenbridge Nickel Mines Limited was a private company set up and owned 97.3% by Falconbridge Limited. Blackstone Ventures since purchased a 99.1% ownership interest in Kenbridge Nickel Mines Limited. The remaining 0.9% was held by persons deceased or unknown. Canadian Arrow acquired Blackstone’s interest in 2006.

FIGURE 4.1 LOCATION OF THE KENBRIDGE PROPERTY, NORTHWESTERN ONTARIO

Source: *Tartisan (2021)*

FIGURE 4.2 KENBRIDGE PROPERTY LAND TENURE



Source: *Tartisan (2022)*

Under the terms of the original agreement dated September 13, 2006 to acquire Blackstone's interest in Kenbridge Nickel Mines Limited ("KNB") and the 50 wholly-owned, patented mining claims in the area, Canadian Arrow issued 2,500,000 units of its capital stock to Blackstone. Each unit consisted of a common share and a one-year common share purchase warrant, in which each warrant entitled Blackstone to purchase one further common share with each warrant having an exercise price equal to 125% of the trading price of the common shares of Canadian Arrow on the day prior to the issuance. In addition, Canadian Arrow agreed to spend $9M in exploration and development of the Property by December 31, 2010 and make a one-time payment to Blackstone of $1M by 2012.

In a press release dated February 16, 2011, it was announced that Canadian Arrow and Blackstone agreed that the $1M payment was to be replaced with a cash payment of $250,000 plus issuance of $250,000 of units of Canadian Arrow to be made by Canadian Arrow on receipt of the necessary regulatory approvals. Each unit was to be issued at a deemed price of $0.0776 and was to be comprised of one common share in the capital of Canadian Arrow and one common share purchase warrant exercisable at any time until the second anniversary of its issuance into one common share in the capital of Canadian Arrow at the exercise price of $0.10.

By acquiring Kenbridge, Canadian Arrow also assumed the terms of the underlying Sale and Purchase Agreement between Blackstone and Falconbridge (now Glencore), signed in June 2004. In that agreement, should Blackstone expend less than $5M, or less than $3M, on the Property by December 31, 2010, then Falconbridge was to be granted a right to a 51% or 75% interest in the Property, respectively. Falconbridge was to retain a one-time back-in right to acquire 51% interest in any new deposits found on the Property, outside of the known historical Mineral Resource area, where tonnage exceeds 10 Mt and metal grades indicative of economic viability at the time of the assessment. In order to exercise the back-in, Falconbridge was required to expend two times the amount that Blackstone expended on the new discovery within a two-year period. Falconbridge could elect to increase their interest to 70% by completing a Feasibility Study. Falconbridge was entitled to receive concentrates from the Property at commercial purchase rates and entitled to a net smelter return royalty in any deposit in which it is not an active participant. The net smelter return royalty payable was to be: 1% if nickel is below US$4.00 per pound; 1.5% for nickel between US$4.00 and US$4.50 per pound; 2% from US$4.50 to US$5.00 per pound; and 2.5% if nickel is over US$5.00 per pound.

In a press release dated October 20, 2017 Tartisan Resources Corp. announced that a Definitive Agreement had been signed with Canadian Arrow Mines Limited, whereby the former will acquire all of the issued and outstanding common shares of Canadian Arrow by way of a court-approved Plan of Arrangement in accordance with the Business Corporations Act (Ontario), in exchange for common shares in the capital of Tartisan Resources Corp.

Pursuant to the terms of the Plan of Arrangement, Tartisan Resources Corp. issued to Canadian Arrow shareholders one (1) common share of Tartisan for every 17.5 common shares of Canadian Arrow, resulting in the issuance of approximately 8 million common shares of Tartisan. Additionally, Tartisan Resources Corp. issued up to 4.5 million shares to settle Canadian Arrow debt pursuant to debt conversion agreements with various Canadian Arrow creditors. On closing, Canadian Arrow became a wholly-owned subsidiary of Tartisan Resources Corp. In a press release dated February 2, 2018, Tartisan Resources Corp. announced that final closing of the acquisition of Canadian Arrow had been completed. Tartisan Resources Corp. subsequently changed its name to Tartisan Nickel Corp. (see press release dated March 21, 2018) to better reflect corporate focus.

In a press release dated February 24, 2022, Tartisan announced the acquisition of an additional 27 unpatented mining claims contiguous with the Kenbridge Property. These mining claims (single cell mining claims 710150 to 710176 – see Figure 4.2) were acquired as part of the Company's strategy to assess promising environments along strike of its Kenbridge Nickel Deposit. Tartisan acquired 100% interest in the claims subject to a 1.5% NSR, with the right to buy 0.5% back for $200,000.

4.4 ONTARIO MINERAL TENURE

The claims information presented in this section is valid as of the effective date of this Technical Report. The Ministry of Energy, Northern Development and Mines (“MENDM”) converted from a system of ground staking to online registration of mining claims, effective April 10, 2018.

Ontario Crown lands are available to licensed prospectors for the purposes of mineral exploration. A licensed prospector must first stake a mining claim to gain the exclusive right to explore on Crown land. Claim staking is governed by the Ontario Mining Act and is administered through the Provincial Mining Recorder and Mining Lands offices of the MNDM.

Mining claims can be staked either in a single unit or in a block consisting of several single units. In un-surveyed territory, a single unit claim is laid out to form a 16 ha (40 acre) square with boundary lines running 400 m (1,320 ft) astronomic north, south, east and west. Multiples of single units, up to a maximum of 16 units (256 ha), may be staked with only a perimeter boundary as one block claim.

On completion of staking, a recording application form is filed with payment to the Provincial Recording Office. All claims are liable for inspection at any time by the Ministry. A claim remains valid as long as the claim holder properly completes and files the assessment work as required by the Mining Act and the Minister approves the assessment work. A claim holder is not required to complete any assessment work within the first year of recording a mining claim. In order to keep an unpatented mining claim current, the mining claim holder must perform $400 worth of approved assessment work per mining claim unit, per year; immediately following the initial staking date, the claim holder has two years to file one year’s worth of assessment work. Claims are forfeited if the assessment work is not done.

A claimholder may prospect or carry out mineral exploration on the land under the claim. However, the land covered by these claims must be converted from Mining Claims to Mining Leases prior to any development work or mining. Mining leases are issued for 21-year terms and may be renewed for additional 21-year terms. Leases can be issued for surface and mining rights, mining rights only or surface rights only. When issued, the lessee pays an annual rent to the Province of Ontario. Furthermore, prior to bringing a mine into production, the lessee must comply with all applicable federal and provincial legislation.

4.5 ROYALTIES

There are three royalties on the Kenbridge Property. One is with Glencore, currently at 2.5% NSR since the price of nickel is over US$5 per pound, as described in Section 4.3 above. The second is a 1% NSR royalty granted to South Shore Partnership Inc. in 2018, in exchange for assuming Canadian Arrow debt held by Breakwater Resources Ltd. (now Nyrstar Mining Ltd.). The 1% NSR royalty was subsequently transferred to Nyrstar in 2018. In 2020, the royalty was acquired from Nyrstar by VOX Royalty Corp. The NSR has a buyback clause to purchase the 1% NSR royalty for $1,500,000. The third royalty is the 1.5% NSR resulting from the 2022 mining claims acquisition described in Section 4.3 above, which applies to claims that are located outside of the Kenbridge Deposit and therefore does not apply to the mineralization considered in the mine plan in this PEA.

4.6 ENVIRONMENTAL AND PERMITTING

The author of this Technical Report section has not investigated any environment liabilities that may have arisen from previous work and is not aware of any present environment-related issues affecting the Kenbridge Property. Permits were not required for any drilling or trenching programs completed prior to 2013. In June 2021, Tartisan obtained a permit (PR-21-000147) for line cutting, geophysical surveying, and drilling on the Property for a period of three years (to June 2024).

In a press release dated May 31, 2022, Tartisan announced the commencement of environmental baseline studies on the Kenbridge Property. Tartisan retained Knight-Piésold and Blue Heron Environmental to perform the baseline studies. Such environmental baseline studies are critical to the permitting and approvals process for the Kenbridge Nickel Project.

Regarding relationships with First Nations, Tartisan is a signatory to Treaty #3 and has a signed exploration agreement in place. Treaty # 3 covers 28 First Nations and 142,000 sq. km of traditional territory. The Company has been engaged with Treaty # 3 since May 2007. Tartisan is recognized and participating in the Great Earth Law authorization process. Tartisan received the first ever Great Law authorization for a mineral resource company from the Treaty #3 Grand Council for the Kenbridge Property access road construction (described in Section 5). The Treaty # 3 communities near Kenbridge are Naotkamegwanning First Nation, Northwest Angle # 33 First Nation, Northwest Angle # 37 First Nation, and Onigaming First Nation.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESS

The Kenbridge Property road is accessible from Sioux Narrows via the Trans-Canada Highway for 10.2 km to the Maybrun Mine Road turn-off (see Figure 4.1). The Maybrun Mine Road is the primary access to the past-producing Maybrun (Au-Cu-Zn) Mine and residences along Denmark Lake and other nearby lakes (Figure 5.1). The bush road turn-off to the Kenbridge Property is located approximately 2.0 km along the Maybrun Mine Road. The Property is located 13.1 km along the bush road. The bush road was cleared of overgrowth and logs in late-2018 and early-2019 for access by 4-wheel ATV and snowmobile.

Tartisan announced in a press release dated May 25, 2022, that it had commenced construction of an all-season access road into the Kenbridge Nickel Project. Tartisan received the necessary work permit from the Ministry of Northern Development, Mines, Natural Resources and Forestry to complete bush road maintenance and all necessary upgrades, including brushing, ditching, gravelling and installing culverts. Construction is anticipated to be completed by September 2022.

Property access is also possible by float- or ski-equipped aircraft from either Kenora or Sioux Narrows-Nestor Falls, Ontario.

5.2 CLIMATE

Climate conditions are typical for the Canadian Shield, with short mild summers and long cold winters. Temperatures range from -40°C in the winter to 30°C in the summer. Mean annual precipitation exceeds 100 mm.

5.3 LOCAL RESOURCES AND INFRASTRUCTURE

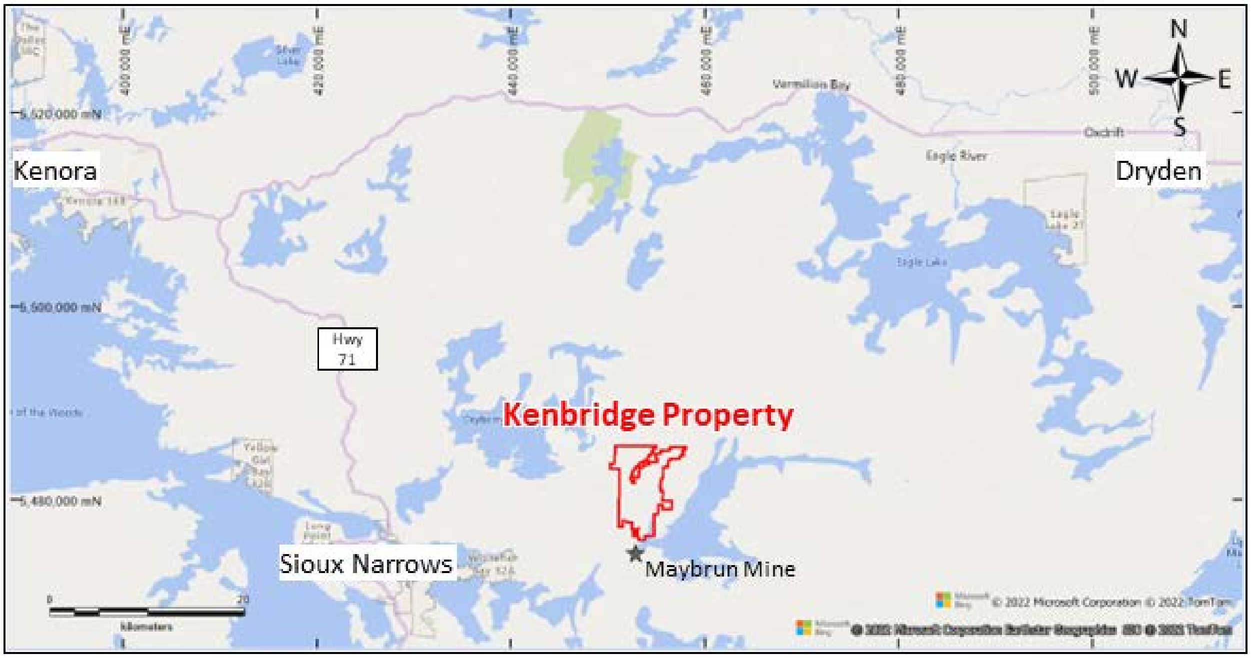
The nearby Town of Kenora is well known for its mining heritage and iron ore processing operations (see Figure 5.1). An experienced workforce and mining and exploration services and equipment are readily available in this area of northwestern Ontario. Although smaller, the Township of Sioux Narrows-Nestor Falls could provide support and services to a potential local mining operation at Kenbridge.

The main Canadian Pacific Railway line passes through Kenora connecting the area to the east and west coast ports of Canada. The Railway could provide transport of concentrate from Kenbridge to overseas smelters and refineries.

5.4 PHYSIOGRAPHY

Topography in the area is generally quite gentle with elevations ranging from 360 to 430 m above sea level. The area is covered by a mixed forest of mainly spruce, poplar and birch, with cedar swamps and related vegetation in low-lying wet areas. There are many lakes, ponds, swamps and rivers on the Property.

FIGURE 5.1 KENBRIDGE PROPERTY ACCESS AND INFRASTRUCTURE SETTING



Source: *Microsoft Bing (2022), modified by P&E (July 2022)*

6.0 HISTORY

The Kenbridge Property has been explored intermittently from the 1930s to present-day. The following summary is largely derived mainly from Keast and O'Faherty (2006), Buck et al. (2008), and Steel and Associates Geoscientific Consulting (2020).

6.1 EXPLORATION HISTORY

Historical exploration on the Kenbridge Property was completed mainly by Coniagas, INCO and Falconbridge (1936-2005), and more recently by Blackstone and Canadian Arrow (2005-2008).

6.1.1 1936 to 2004 Exploration History

The discovery and early exploration history of Kenbridge from 1936 to 1958 includes various activities ranging from geological mapping to geophysics and drilling to underground development. In 1936, F. McCallum staked the Gossan Zone west of Kathleen Lake. A flurry of exploration followed resulting in the discovery of numerous other mafic-ultramafic intrusions some of which contain nickel sulphide mineralization. The majority of the diamond drilling (43,440 m), and all underground development and underground exploration was completed between 1937 and 1958 by three companies: Coniagas, Inco and Falconbridge (Table 6.1).

TABLE 6.1
SUMMARY OF PRE-2005 DRILLING AT KENBRIDGE

Company	Years	Location	No. of Drill Holes	Total Length (ft)	Total Length (m)
Coniagas	1937	surface	35	10,000	3,048
INCO	1948-1949	surface	15	12,000	3,658
Falconbridge	1952-1955	surface	53	41,270	12,579
Falconbridge	1955-1957	underground	247	50,000	15,262
Falconbridge	1955-1958	regional	74	29,250	8,915
Total			**424**	**142,520**	**43,440**

Coniagas Mines Limited optioned the Property in 1937 and completed trenching and drilling of 35 surface holes that year. 23 drill holes were completed over the original showing along a 274 m strike length, seven drill holes were completed over the northern drift covered extension, and four drill holes were completed elsewhere on the Property (the location of the 35th drill hole is unknown). Mineralization was intersected in 13 drill holes. Coniagas incorporated a company, Kenora Nickel Mines Limited that controlled the Property until 1948, when International Nickel Company of Canada ("INCO") secured an option on the Property.

INCO staked an additional 34 surrounding claims, completed surface magnetic surveys and 3,658 m of diamond drilling designed to intersect the mineralized zones at depths of between 152 and 305 m. INCO subsequently terminated the option.

In 1952, Falconbridge Limited optioned the Property and staked an additional 90 claims to cover the area of the mining claims that are the subject of this Technical Report. An extensive work program was carried out, including geological and magnetic surveys and drilling. Kenbridge Nickel Mines Limited was formed in 1956 and initiated underground development, including a 622 m (2,042 ft) shaft with level stations at 45 m (150 ft) intervals and two levels developed at depths of 107 m (350 ft) and 152 m (500 ft) (Figure 6.1). The minimum drill spacing is at 15.2 m (50 ft) on all levels. The deepest drill hole extends to 838 m (2,750 ft) deep and intersected mineralization over 3.26 m (10.7 ft) grading 4.25% nickel and 1.38% copper, indicating that the Deposit remains open at depth. Historical surface drilling was completed at 30.5 m (100 ft) spacing.

The underground drilling and much of the early surface drilling (INCO) was completed with "AQ' size core. The vertical holes (over 100) by Falconbridge (circa 1953) were BQ size core. Unfortunately, the down-hole surveys of the historical holes were only by acid-etch techniques, which limits the accuracy of the position of the longer holes. Underground development stopped in 1957 and emphasis shifted to regional exploration work. Falconbridge terminated work on Kenbridge in 1958.

A brief gold exploration program was implemented in 1984 utilizing grid mapping and soil geochemistry, however, did not produce encouraging results. Following a 1987 GEOTEM® airborne survey by the Ontario Geological Survey, reconnaissance mapping and prospecting was completed in 1988, however, again without encouraging results.

6.1.2 2005 to 2008 Exploration History

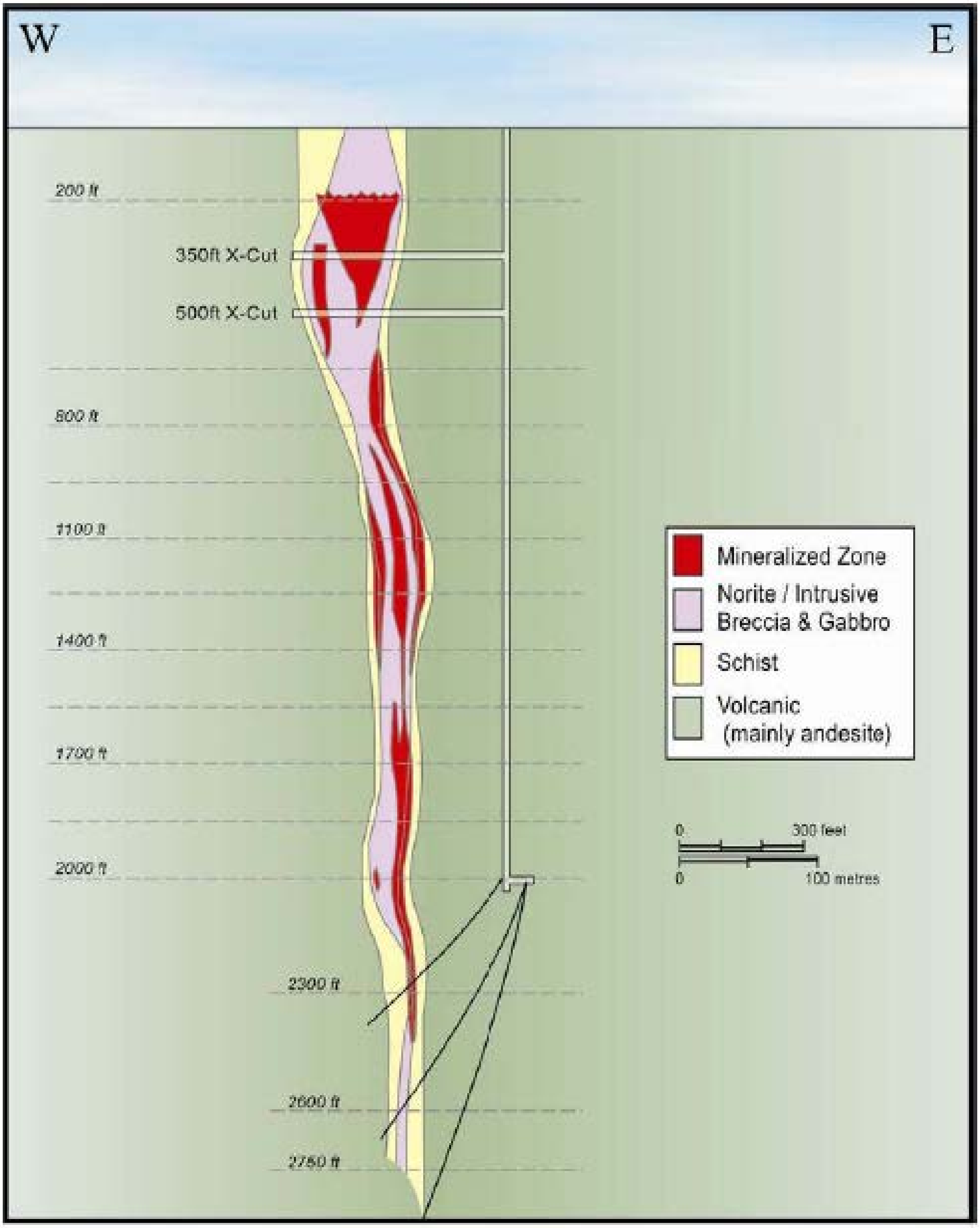
Between 2005 and 2008, significant exploration programs were completed at Kenbridge by Blackstone Ventures and Canadian Arrow.

6.1.2.1 Blackstone Ventures

In 2005, Blackstone completed a surface geophysics program on a portion of the Property and completed 21 drill holes on the Kenbridge Deposit, totalling 4,119 m. The main objectives of the 2005 Blackstone exploration program were to determine if any other large near-surface geophysical conductors were located on the northern portion of the Property, to obtain information on the geometry of the known mineralization, and confirm the historical grades reported from previous drilling. Additionally, the drilling program was designed to test for potential high-grade nickel mineralization in the central part of the Deposit above 200 m vertical depth from surface, which might be accessible for mining via an open pit or shallow ramp.

The 2005 exploration program consisted of a 26 line-km Lamontange UTEM3 geophysical survey, a 2-phase 4,120 m diamond drilling program, and mineralogical and metallurgical testwork. The geophysical program started in spring when ice conditions supported surveying on lakes. The loops were oriented parallel to the Deposit trend (32º) and the line direction was 122º. The first loop was placed to survey over the Kenbridge Deposit with two subsequent loops to the northeast (Figure 6.2). The last loop was moved to the southeast by 100 m, as some responses while surveying loop 2 were close to the forward loop edge.

FIGURE 6.1 KENBRIDGE SHAFT CROSS-SECTION



Source: *Keast and O'Flaherty (2006)*

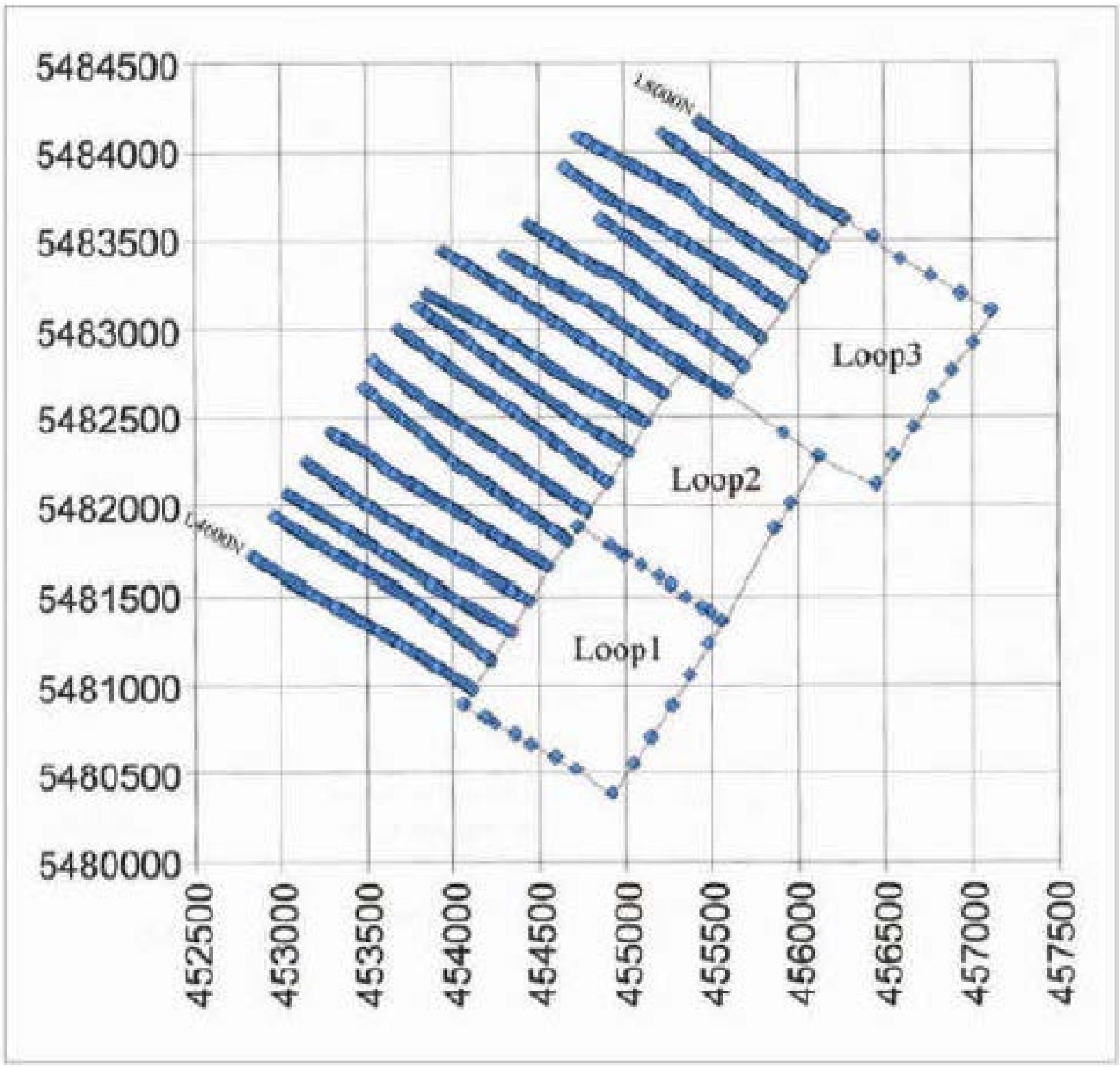
The response of the Kenbridge Deposit (line 5000N/ 4450-4650) to the survey was distinct, however, not remarkable (Figure 6.3). The massive sulphide (most conductive) part of the Deposit consists of irregular lenses which are quite discontinuous along strike. Net-textured and disseminated sulphide mineralization are more continuous, however, these styles of sulphide mineralization are less conductive and may not elicit a strong geophysical response. Responses over the remainder of the survey area are subdued and many clearly related to landforms, particularly the western edges of lakes. There are a few responses (L6200-6600; L7600-8000) where flat lying conductance similar to, however much weaker than, the Kenbridge Deposit may indicate continuation of the host structure and possible weak sulphide mineralization. Induced polarization geophysical surveys are recommended to aid exploration for additional mineralization.

Following completion of the geophysical survey, the first phase of diamond drilling was initiated. Some of the drill holes were collared in a swamp west of the Deposit area and required frozen conditions. Phase 1 of the 2005 drill program was carried out in March and April and Phase 2 in November and December. A total of 21 drill holes were completed for 4,119 m (Table 6.2; Figures 6.4 and 6.5).

The nine drill holes of Phase 1 were completed on three, 50 m spaced fences that began on the northernmost extent of the Deposit and extend to the south, slightly beyond the central part of the Kenbridge Deposit (Figure 6.5). Results of this drill phase were difficult to compare with the previous drilling because they were between sections. Drill holes K0501 through K0503 were completed on the northern edge of the Deposit and produced narrower, lower grade intersections at the edge of the Deposit (Table 6.3). Drill holes K0504 through K0506 were located on the southernmost section near the centre of the Deposit. The deepest drill hole in this area, K0506, intersected nearly continuous low-grade disseminated mineralization across the entire gabbro body with a true width of 48 m.

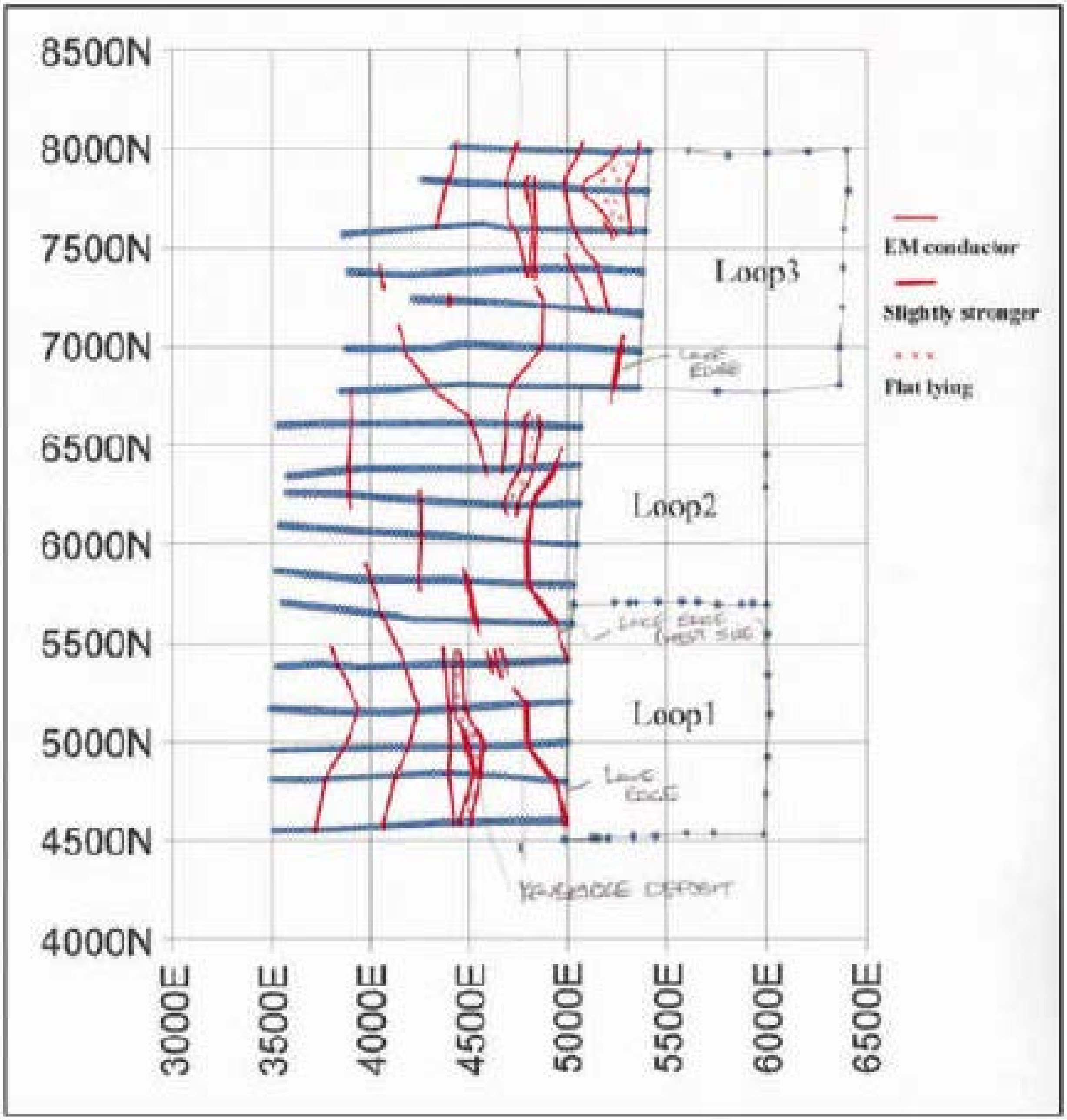
The results from the Phase 2 diamond drilling were easier to compare to previous drilling since those drill holes were placed along, or close to, the historical grid. In general, the results from Phase 2 compare well in grades and thicknesses with the historical drill results from underground. The mineralization appears to be steeply dipping and varies from broad zones of stringer and disseminated mineralization (drill hole K05-15) to zones of massive sulphide with significant nickel values (drill holes K05-11 and K05-21; Table 6.3). The area tested with the second phase of drilling covered approximately 125 m of strike length of the Deposit. Drill holes K05-20 and K05-21 were completed in the central part of the Deposit. Drill holes K05-14, K05-15, K05-16 and K05-17 were completed on the next section, 30 m to the north of K05-20 and K05-21. Drill holes K05-10 and K05-11 were completed 30 m to the south of K05-20 and K05-21. There appears to be at least three separate mineralized zones consisting of a core of massive to semi-massive sulphide surrounded by a halo of disseminated sulphide mineralization. Even on a section with five drill holes it is difficult to interpret mineralized contacts.

FIGURE 6.2 UTEM SURVEY GRID
NAD83 Z15N GRID PROJECTION; FROM KRAWINKEL, 2005



Source: *Keast and O'Flaherty (2006)*

FIGURE 6.3 UTEM SURVEY INTERPRETED CONDUCTOR TRENDS LOCAL GRID PROJECTION; FROM KRAWINKEL, 2005



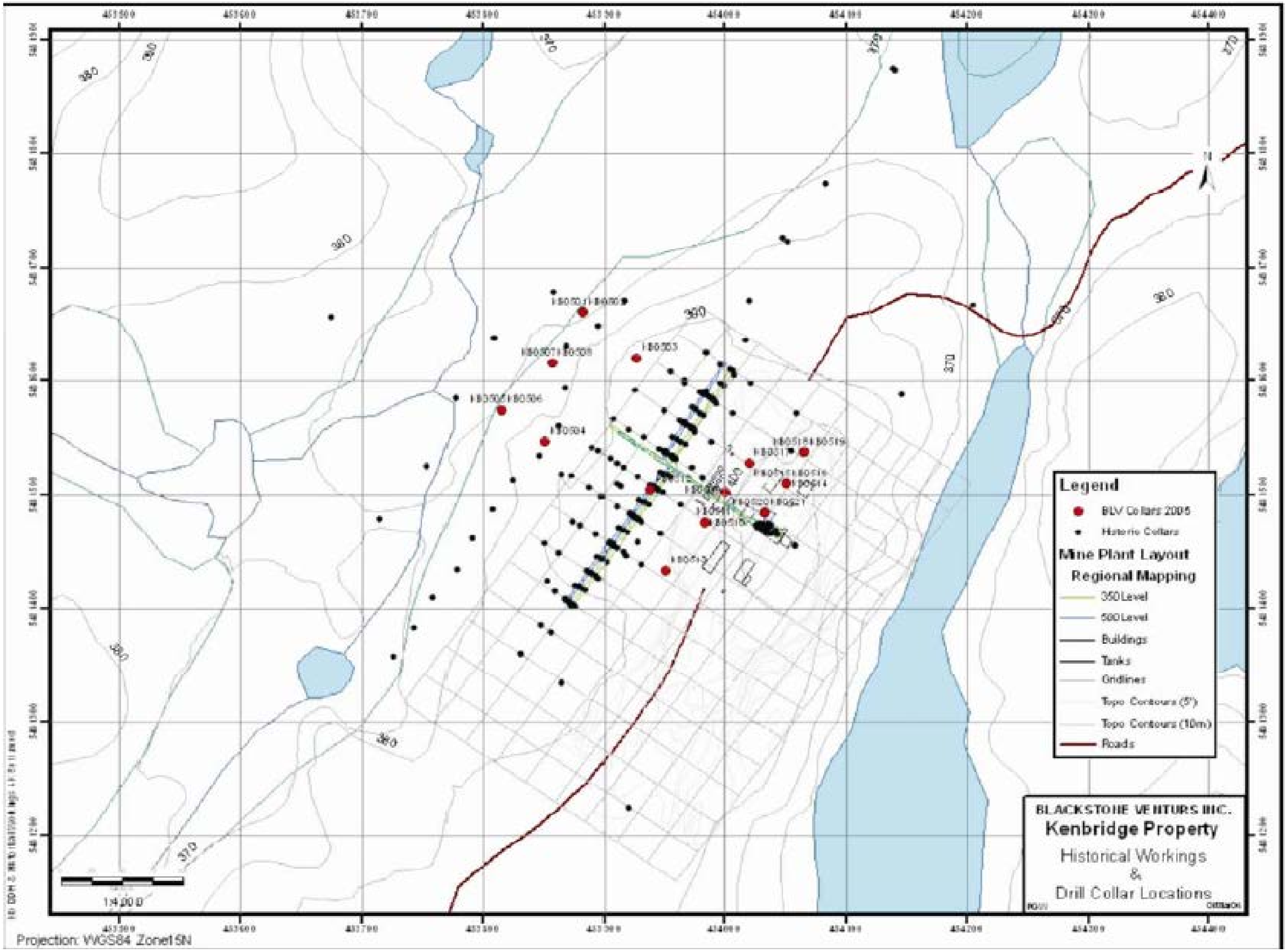
Source: *Keast and O'Flaherty (2006)*

TABLE 6.2
DRILL HOLE COLLAR INFORMATION FOR 2005 BLACKSTONE DRILL PROGRAM

Drill Hole ID	Phase	UTM Coordinates *		Elevation (m)	Azimuth (°)	Dip (°)	Total Depth (m)
		East	North				
KB0501	1	453,883	5,481,660	372	129	-45	200.3
KB0502	1	453,883	5,481,660	372	129	-60	331.3
KB0503	1	453,926	5,481,619	391	129	-45	145.0
KB0504	1	453,851	5,481,546	384	129	-45	170.4
KB0505	1	453,815	5,481,574	370	129	-45	212.4
KB0506	1	453,815	5,481,574	370	129	-60	311.5
KB0507	1	453,857	5,481,615	375	129	-45	214.0
KB0508	1	453,857	5,481,615	375	129	-55	282.5
KB0509	1	454,000	5,481,501	398	305	-45	145.7
KB0510	2	453,983	5,481,475	399	308	-45	171.0
KB0511	2	453,983	5,481,475	399	308	-60	201.0
KB0512	2	453,938	5,481,504	395	308	-45	132.0
KB0513	2	453,951	5,481,433	395	308	-45	147.0
KB0514	2	454,050	5,481,509	407	308	-45	201.0
KB0515	2	454,050	5,481,509	407	308	-55	201.0
KB0516	2	454,050	5,481,509	407	308	-65	234.0
KB0517	2	454,023	5,481,528	393	308	-45	129.0
KB0518	2	454,065	5,481,537	406	308	-45	156.0
KB0519	2	454,065	5,481,537	406	308	-55	132.0
KB0520	2	454,032	5,481,484	408	308	-45	210.0
KB0521	2	454,032	5,481,484	408	308	-55	192.0
Total							**4,119.1**

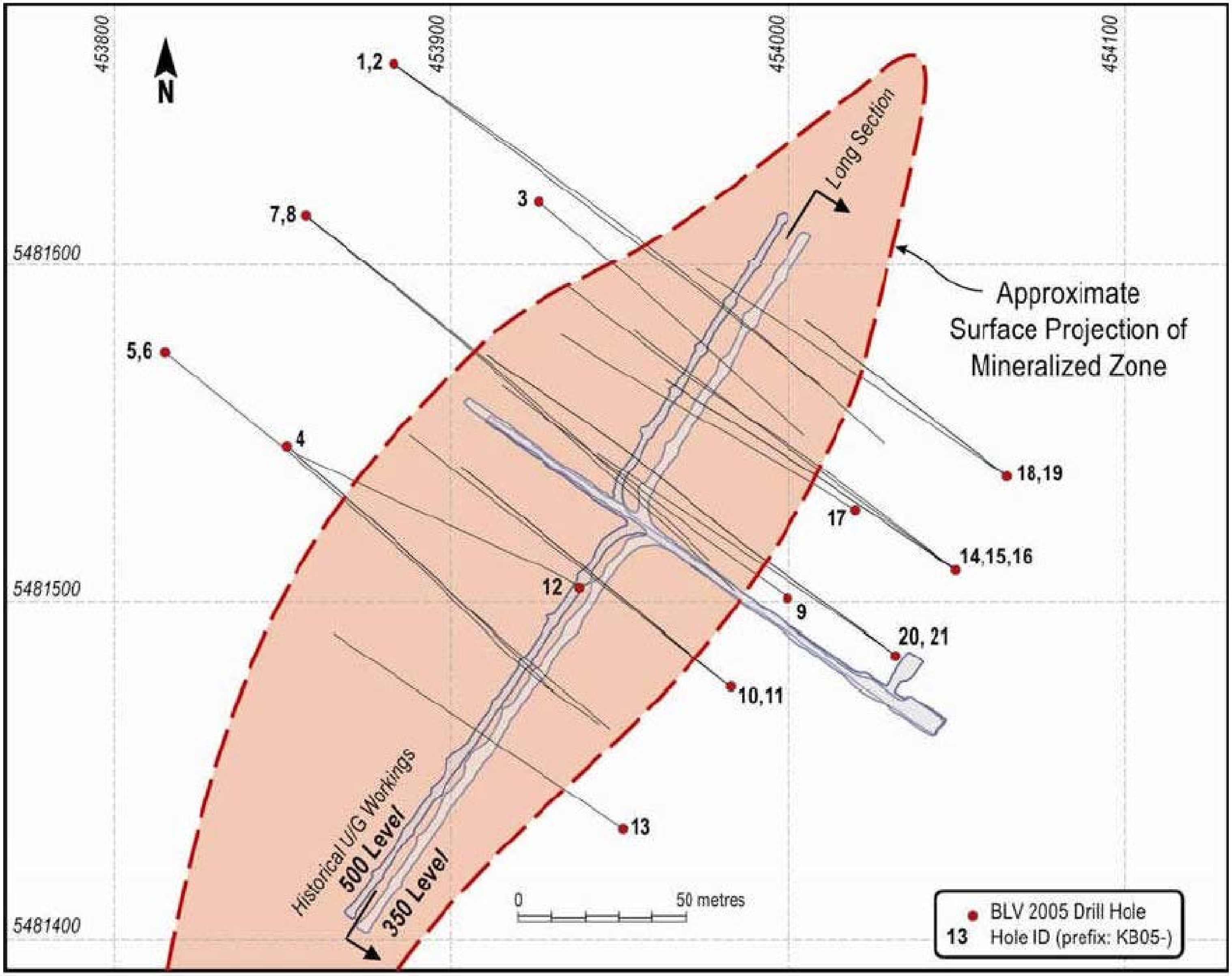
***** *Coordinates are in the projection UTM NAD 83 Zone 15N.*

FIGURE 6.4 PLAN OF SURFACE DRILL HOLE COLLAR LOCATIONS ON THE BLACKSTONE AND PRE-2005 DRILL HOLES ON THE KENBRIDGE PROPERTY



Source: *Keast and O'Flaherty (2006)*

FIGURE 6.5 PLAN MAP SHOWING 2005 DRILL HOLE COLLAR LOCATIONS ON THE KENBRIDGE PROPERTY



Source: *Keast and O'Flaherty (2006)*

TABLE 6.3
SIGNIFICANT 2005 BLACKSTONE DRILL HOLE INTERSECTIONS

Drill Hole ID	From (m)	To (m)	Length (m)	Ni (%)	Cu (%)	Co (%)
K0501	150.5	156.4	5.9	0.57	0.30	0.019
incl.	152.6	154.5	1.9	1.16	0.63	0.036
K0501	166.1	176.5	10.4	0.48	0.27	0.017
incl.	175.3	176.5	1.2	1.83	1.58	0.046
K0502	274.6	280.8	6.2	0.43	0.22	0.016
incl.	278.1	280.8	2.7	0.66	0.23	0.024
K0502	289.0	300.3	11.3	0.48	0.22	0.016
K0503	112.4	115.1	2.7	2.32	0.71	0.060
K0503	122.1	131.8	9.7	0.51	0.32	0.019
K0504	33.9	46.6	12.7	1.00	0.43	0.024
incl.	33.9	39.8	5.9	1.81	0.59	0.041
or	36.7	39.8	3.1	2.55	0.95	0.058
K0504	54.1	70.1	16.0	0.41	0.18	0.014
K0505	112.0	119.6	7.6	0.77	0.57	0.020
K0505	169.8	199.6	19.5	0.29	0.21	0.011
K0506	201.1	294.4	93.3	0.36	0.22	0.013
incl.	204.2	240.7	36.5	0.45	0.33	0.015
and	252.4	266.6	14.2	0.33	0.14	0.012
and	279.1	292.4	13.3	0.61	0.32	0.020
K0507	137.4	151.0	13.6	0.32	0.35	0.010
K0507	155.9	163.2	7.2	1.11	0.32	0.023
K0507	180.6	188.8	8.4	0.36	0.16	0.012
K0507	206.0	207.2	1.2	1.65	1.14	0.028
K0508	187.8	190.7	2.9	0.77	0.36	0.015
K0508	194.6	205.9	9.3	0.76	0.27	0.018
K0508	209.3	214.8	4.5	0.46	0.25	0.012
K0508	228.9	231.9	3.0	0.73	0.18	0.018
K0508	247.8	269.9	22.1	1.53	0.79	0.030
incl.	252.3	268.5	16.2	1.91	1.01	0.036
or	265.8	268.5	2.7	3.88	1.86	0.068
K0509	38.6	44.6	6.0	0.60	0.22	0.016
incl.	43.1	44.6	1.5	1.48	0.55	0.032
K0509	50.4	55.5	5.1	0.31	0.14	0.012
K0509	86.0	94.1	8.1	0.31	0.14	0.011
K0509	101.3	112.5	11.2	1.54	0.79	0.036
incl.	104.3	112.1	7.8	2.07	1.08	0.046
K0509	117.7	129.8	12.1	0.46	0.26	0.013
K05-10	41.7	52.2	10.5	1.79	0.55	0.04
incl.	41.7	44.2	2.5	2.90	0.80	0.07
incl.	47.5	52.2	4.7	2.45	0.81	0.06
K05-10	61.3	69.5	8.2	1.68	0.49	0.04

TABLE 6.3 **SIGNIFICANT 2005 BLACKSTONE DRILL HOLE INTERSECTIONS**						
Drill Hole ID	**From (m)**	**To (m)**	**Length (m)**	**Ni (%)**	**Cu (%)**	**Co (%)**
incl.	66.5	69.5	3.0	3.6	0.54	0.08
K05-10	124.0	135.4	11.4	1.16	0.67	0.02
incl.	124.9	129.0	4.1	2.15	0.59	0.04
incl.	132.0	135.4	3.4	1.39	1.03	0.02
K05-11	88.3	96.4	8.1	3.62	0.88	0.07
K05-12	23.4	25.6	2.2	0.71	0.21	0.02
K05-12	81.4	83.5	2.1	1.59	0.57	0.04
K05-13	95.9	99.3	3.4	1.14	0.72	0.03
K05-13	120.6	122.0	1.4	1.88	0.51	0.04
K05-13	132.2	136.8	4.6	1.00	0.58	0.02
K05-14	97.4	111.3	13.9	1.34	0.73	0.31
incl.	97.4	100.8	3.4	2.68	1.18	0.06
K05-14	145.4	147.7	2.3	1.84	1.93	0.04
K05-15	109.0	119.1	10.0	0.84	0.42	0.02
K05-15	128.8	142.9	14.1	0.88	0.48	0.03
incl.	134.6	139.4	4.8	1.45	0.70	0.04
K05-16	207.1	219.1	12.0	2.26	0.58	0.06
K05-17	54.8	59.4	4.6	0.99	0.50	0.03
K05-17	112.5	115.4	2.9	2.58	1.37	0.07
K05-18	134.7	139.2	4.5	1.17	0.48	0.04
K05-19	no significant mineralization					
K05-20	107.5	126.3	18.8	1.53	0.68	0.04
K05-20	129.3	145.4	16.1	0.65	0.28	0.02
K05-21	146.2	161.7	15.5	3.39	1.07	0.09
K05-21	185.4	189.0	3.6	1.48	0.56	0.04

Precious metal (Ag, Au, PGM) assay results from the Phase 1 drilling indicate silver and gold values correlate with copper values, whereas Co, Pt and Pd correlate with Ni values (Keast and O'Flaherty, 2006). Contents of silver range from below detection limit to 7.4 g/t Ag and are loosely proportional to copper values, with a level of 4-5 grams per 1% Cu (1:200 to 1:250). Gold also demonstrates proportionality to copper, with values of about 0.2 g/t Au per 1% Cu (1:5,000). Platinum and palladium correlate with Ni grades with contents of Pd at one-half of Pt, which averages about 0.2 g/t to 0.3 g/t per 1% Ni (but displays significant variability). Cobalt is closely correlated to Ni at a ratio of 1/50 of the nickel grade.

6.1.2.2 Canadian Arrow

In 2007, Canadian Arrow trench sampled (773 m) the Kenbridge Deposit surface outcrop (Figure 6.6) and completed diamond drilling at approximate 25 m x 25 m spacings (with some 12.5 m infill drilling in strategic areas), targeting particularly shallow Mineral Resources with open pit mining potential. In 2008, Canadian Arrow flew an airborne geophysical survey over the Kenbridge Property.

In a press release dated April 17, 2008, Canadian Arrow announced that a Versatile Time Domain Electromagnetic (“VTEM”) helicopter-borne survey was completed by Geotech Ltd. in February 2008. The VTEM survey delineated a strong magnetic feature with a 2 km strike length with a prominent 200 m long conductive anomaly located along the flank of the magnetic anomaly. This prospective target is located 2.5 km northeast of the Kenbridge Deposit, along the same structural trend as the host gabbro intrusion.

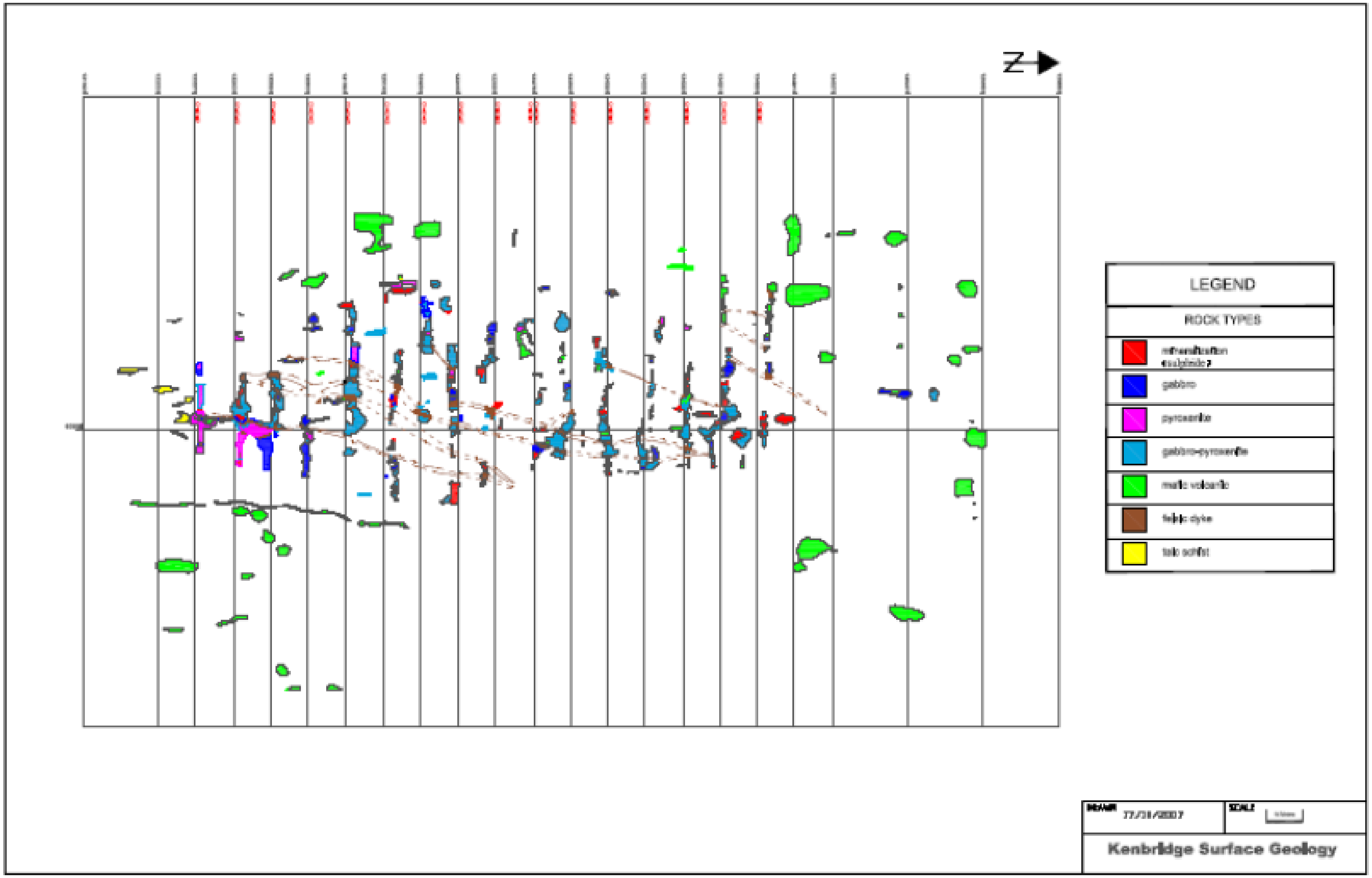
In 2007 and 2008, Canadian Arrow completed 206 drill holes for an aggregate length of 40,753 m. A total of 166 drill holes for approximately 30,316 m are listed in Table 6.4. Intersections for drill holes up to and including KB-07-146 are reported in Buck et al. (2008). Significant intersections for holes drilled in the 2007 and 2008 program are listed in Table 6.5.

Prior to the start of drilling in 2007, Canadian Arrow re-established the original mine grid used during the historical surface drilling, underground drilling and underground development. Drill casings for many of the surface drill holes were left in-place and, utilizing the historical collar plans, were relocated. Individual drill holes were identified by chaining from existing infrastructure (old building foundations) and from adjacent drill casings, and comparing their locations to historical drill plans, which provided accurate representation of the surface drilling.

The original mine grid baseline was re-established with cross lines established every 30.5 m (100 ft), as per the historical work. In order to work in a metric coordinate system, all the coordinates were transferred from feet to metres (1 ft = 0.3048 m). During the 2007 Canadian Arrow drill program, intermediate lines were established at 15.2 m (50 ft) intervals, and in 2008, a minimum drill hole spacing of 25 m x 25 m was used close to surface (drill spacing was 12.5 m x 12.5 m locally). A wider drill hole spacing was used at depth.

On completion of a drill setup, a marker was established and labelled with that particular drill hole information. In some cases, drill hole casings were left in place and provided a permanent marker for the drill hole location. Canadian Arrow contracted J.D. Barnes to accurately survey the positions of the diamond drill hole collars. This work was completed with a real time differential GPS unit and established permanent markers.

FIGURE 6.6 SURFACE OUTCROP AND TRENCH MAP OF THE KENBRIDGE PROPERTY



Source: *Keast and O'Flaherty (2006)*

TABLE 6.4
DRILL HOLE COLLAR INFORMATION FOR 2007-2008 CANADIAN ARROW DRILL PROGRAM

Drill Hole ID	Local Grid Coordinates		Elevation (m)	Azimuth (°)	Dip (°)	Total Depth (m)
	East	North				
KB-07-022	6,056.5	12,436.0	398.12	266.1	-45	50.0
KB-07-023	6,085.5	12,436.0	398.95	270.7	-45	77.0
KB-07-024	6,118.0	12,436.0	394.22	270.2	-45	122.0
KB-07-025	6,118.5	12,465.0	395.46	279.9	-45	125.0
KB-07-026	6,084.0	12,466.5	395.68	273.1	-45	77.0
KB-07-027	6,056.0	12,468.0	392.71	274.0	-45	50.0
KB-07-028	6,134.0	12,464.0	398.92	273.4	-45	128.0
KB-07-029	6,094.0	12,496.0	398.04	274.3	-45	50.0
KB-07-030	6,096.0	12,496.0	392.94	278.6	-87	167.0
KB-07-031	6,120.5	12,495.0	396.85	271.4	-45	50.0
KB-07-032	6,049.0	12,405.5	394.33	269.9	-45	50.0
KB-07-033	6,074.0	12,404.0	396.45	268.2	-45	100.0
KB-07-034	6,118.5	12,406.0	393.02	275.2	-45	151.0
KB-07-035	6,045.0	12,374.0	391.95	268.7	-45	65.0
KB-07-036	6,063.0	12,374.5	394.87	269.1	-45	74.0
KB-07-037	6,084.0	12,374.5	395.45	270.8	-45	124.0
KB-07-038	6,117.0	12,376.0	391.49	274.1	-45	152.0
KB-07-039	6,044.5	12,346.5	389.81	277.4	-45	50.0
KB-07-040	6,072.0	12,345.0	393.61	278.4	-45	77.0
KB-07-041	6,096.0	12,344.0	392.84	277.4	-45	122.0
KB-07-042	6,097.5	12,344.0	392.84	267.7	-87	151.5
KB-07-043	6,114.0	12,340.0	390.06	275.6	-45	133.3
KB-07-044	6,044.5	12,314.0	386.70	269.4	-45	50.0
KB-07-045	6,073.7	12,314.0	390.20	264.0	-50	77.0
KB-07-046	6,098.5	12,313.0	390.87	272.5	-45	104.0
KB-07-047	6,129.5	12,314.0	384.09	281.0	-45	112.8
KB-07-048	6,080.5	12,283.0	388.00	270.9	-45	80.0
KB-07-049	6,082.0	12,283.0	387.93	285.0	-87	152.0
KB-07-050	6,100.7	12,283.0	387.74	265.7	-45	111.4
KB-07-051	6,125.0	12,283.0	383.38	268.9	-45	134.0
KB-07-052	6,070.0	12,253.0	382.97	275.8	-45	61.5
KB-07-053	6,096.0	12,253.0	386.91	279.4	-45	98.0
KB-07-054	6,117.5	12,253.0	382.68	278.1	-45	115.5
KB-07-055	6075.3	12,222.0	381.34	266.7	-46	71.0
KB-07-056	6,100.0	12,222.0	382.33	270.4	-47	101.0
KB-07-057	6,120.0	12,222.0	382.26	272.1	-45	131.0
KB-07-058	6,245.0	12,283.0	399.44	266.0	-55	308.0
KB-07-059	6,191.0	12,222.0	395.53	270.6	-45	194.1
KB-07-060	6,090.0	12,527.0	390.79	269.7	-45	50.0

TABLE 6.4
DRILL HOLE COLLAR INFORMATION FOR 2007-2008 CANADIAN ARROW DRILL PROGRAM

Drill Hole ID	Local Grid Coordinates		Elevation (m)	Azimuth (°)	Dip (°)	Total Depth (m)
	East	North				
KB-07-061	6,125.0	12,527.0	396.16	270.8	-45	100.0
KB-07-062	6,086.0	12,558.0	387.07	267.9	-45	50.0
KB-07-063	6,138.0	12,558.0	389.92	265.7	-45	118.25
KB-07-064	6,101.0	12,590.5	385.27	265.7	-45	56.9
KB-07-065	6,125.5	12,588.0	387.16	267.5	-45	103.0
KB-07-066	6,150.0	12,527.0	395.69	265.4	-45	119.0
KB-07-067	6,144.5	12,497.0	398.19	266.6	-45	119.0
KB-07-068	6,147.0	12,375.0	399.21	268.7	-45	161.0
KB-07-069	6,167.0	12,375.0	399.64	266.7	-45	188.0
KB-07-070	6,182.4	12,344.0	401.90	274.8	-45	204.0
KB-07-071	6,150.5	12,398.0	399.40	275.8	-57	188.0
KB-07-072	6,095.0	12,405.0	398.08	262.9	-45	92.0
KB-07-073	6,102.0	12,436.0	396.19	274.9	-45	101.0
KB-07-074	6,102.0	12,466.0	396.54	276.0	-45	71.0
KB-07-075	6,060.0	12,314.0	389.05	269.1	-48	50.55
KB-07-076	6,110.0	12,314.0	390.45	281.4	-50	124.9
KB-07-077	6,126.0	12,283.0	383.38	271.2	-55	153.2
KB-07-078	6,126.0	12,283.0	383.38	270.5	-58	164.0
KB-07-079	6,126.0	12,283.0	383.38	272.5	-63	191.0
KB-07-080	6,049.6	12,298.0	385.19	254.1	-51	50.0
KB-07-081	6,077.9	12,297.6	389.29	272.6	-47	80.0
KB-07-082	6,101.3	12,298.0	389.54	274.1	-47	107.0
KB-07-083	6,128.0	12,298.0	383.85	283.0	-47	139.0
KB-07-084	6,077.8	12,268.0	386.55	271.9	-49	80.3
KB-07-085	6,100.0	12,268.0	387.20	271.7	-46	101.0
KB-07-086	6,121.0	12,268.0	382.94	275.4	-47	119.0
KB-07-087	6,054.5	12,420.0	396.08	272.1	-45	47.0
KB-07-088	6,079.0	12,420.0	396.80	269.0	-48	77.0
KB-07-089	6,094.8	12,420.0	397.29	266.2	-46	107.0
KB-07-090	6,118.0	12,420.0	393.34	273.9	-47	125.0
KB-07-091	6,234.0	12,453.5	398.58	273.4	-61	352.0
KB-07-092	6,122.0	12,390.0	392.51	295.6	-46	120.0
KB-07-093	6,080.0	12,390.0	396.36	268.5	-44	85.0
KB-07-094	6,053.0	12,390.0	393.68	273.1	-47	50.0
KB-07-095	6,049.7	12,359.0	391.34	267.2	-48	50.0
KB-07-096	6,071.0	12,359.0	393.74	271.7	-44	71.0
KB-07-097	6,098.3	12,359.0	394.03	265.9	-45	110.0
KB-07-098	6,123.0	12,359.0	389.41	270.6	-45	137.0
KB-07-099	6,129.0	12,329.0	385.40	275.6	-45	146.0

TABLE 6.4
DRILL HOLE COLLAR INFORMATION FOR 2007-2008 CANADIAN ARROW DRILL PROGRAM

Drill Hole ID	Local Grid Coordinates		Elevation (m)	Azimuth (°)	Dip (°)	Total Depth (m)
	East	North				
KB-07-100	6,103.5	12,329.0	391.02	268.9	-46	110.0
KB-07-101	6,068.3	12,329.0	392.09	267.9	-51	77.0
KB-07-102	6,043.8	12,329.0	389.06	271.6	-44	50.0
KB-07-103	6,234.0	12,453.5	398.67	271.5	-68	374.0
KB-07-104	6,234.0	12,453.5	398.58	271.7	-71	422.0
KB-07-105	6,092.5	12,512.0	391.90	266.1	-45	50.0
KB-07-106	6,119.0	12,511.0	396.68	274.4	-45	75.0
KB-07-107	6,143.0	12,511.0	396.88	264.0	-46	117.0
KB-07-108	6,145.0	12,481.0	399.36	268.3	-45	120.0
KB-07-109	6,116.0	12,481.0	396.24	283.6	-44	86.0
KB-07-110	6,091.0	12,481.0	393.74	273.1	-46	50.0
KB-07-111	6,079.5	12,450.0	397.99	274.2	-44	72.0
KB-07-112	6,104.0	12,451.0	396.50	259.3	-45	110.0
KB-07-113	6,131.5	12,451.0	398.89	276.4	-46	146.0
KB-07-114	6,179.0	12,497.0	403.94	263.2	-55	200.0
KB-07-115	6,244.0	12,405.0	402.93	267.6	-55	299.0
KB-07-116	6,244.0	12,405.0	402.93	265.5	-62	332.0
KB-07-117	6,245.0	12,405.0	402.93	267.0	-67	410.0
KB-07-118	6,181.0	12,481.0	404.23	265.8	-44	161.0
KB-07-119	6,206.0	12,451.0	405.33	267.0	-49	233.0
KB-07-120	6,206.0	12,451.0	405.33	266.9	-58	266.0
KB-07-121	6,206.0	12,451.0	405.33	266.2	-61	272.0
KB-07-122	6,161.0	12,314.0	393.60	274.1	-46	182.0
KB-07-123	6,163.0	12,298.0	393.41	271.0	-46	200.0
KB-07-124	6,165.0	12,286.0	393.12	267.9	-45	140.0
KB-07-125	6,165.5	12,286.0	393.10	272.0	-59	212.0
KB-07-126	6,162.0	12,268.0	392.61	272.5	-46	191.0
KB-07-127	6,162.5	12,253.0	391.63	274.8	-45	179.0
KB-07-128	6,164.0	12,451.0	400.61	268.6	-48	200.0
KB-07-129	6,168.0	12,420.0	400.76	268.7	-46	197.0
KB-07-130	6,168.5	12,420.0	401.44	265.2	-56	230.0
KB-07-131	6,245.0	12,405.0	402.93	265.9	-64	349.4
KB-07-132	6,180.0	12,512.0	402.23	267.1	-45	119.0
KB-07-133	6,180.0	12,512.0	402.27	268.3	-55	197.0
KB-07-134	6,180.0	12,512.0	402.27	269.0	-49	179.0
KB-07-135	6,181.0	12,481.0	404.23	268.0	-56	194.0
KB-07-136	6,193.5	12,329.0	402.45	272.7	-46	224.0
KB-07-137	6,205.0	12,314.0	402.28	272.2	-46	230.0
KB-07-138	6,206.0	12,298.0	401.44	273.6	-46	239.0

TABLE 6.4 DRILL HOLE COLLAR INFORMATION FOR 2007-2008 CANADIAN ARROW DRILL PROGRAM						
Drill Hole ID	Local Grid Coordinates		Elevation (m)	Azimuth (°)	Dip (°)	Total Depth (m)
	East	North				
KB-07-139	6,207.0	12,283.0	401.71	265.5	-58	260.0
KB-07-140	6,207.0	12,268.0	401.11	269.7	-46	221.0
KB-07-141	6,216.0	12,253.0	399.66	272.7	-46	231.0
KB-07-142	6,233.0	12,481.0	397.64	270.0	-55	272.0
KB-07-143	6,233.0	12,481.0	397.64	270.1	-60	278.0
KB-07-144	6,233.0	12,481.0	397.64	268.8	-66	311.0
KB-07-145	6,225.0	12,514.0	395.34	265.7	-49	248.0
KB-07-146	6,225.0	12,514.0	395.34	263.4	-55	248.0
KB-07-147	6,225.0	12,514.0	395.34	266.7	-57	248.0
KB-07-148	6,291.5	12,504.5	378.04	267.0	-60	320.0
KB-07-149	6,291.5	12,504.5	378.04	264.3	-67	380.0
KB-07-150	6,175.0	12,405.0	401.23	265.0	-61	248.0
KB-07-151	6,175.0	12,390.0	399.97	266.4	-61	236.0
KB-07-152	6,175.0	12,375.0	400.02	268.2	-54	225.0
KB-07-153	6,176.99	12,357.7	402.09	271.0	-45	212.0
KB-07-154	6,220.89	12,340.4	403.86	264.0	-45	251.0
KB-07-155	6,220.89	12,340.4	403.82	268.0	-55	272.0
KB-07-156	6,224.29	12,313.8	401.78	267.0	-57	272.0
KB-07-157	6,224.29	12,313.8	401.74	269.2	-45	254.0
KB-07-158	6,215.33	12,224.8	398.40	268.9	-45	251.0
KB-07-159	6,215.33	12,224.8	398.36	267.7	-51	244.0
KB-07-160	6,086.08	12,466.2	395.64	1.8	-48	152.0
KB-07-161	6,019.62	12,478.9	398.64	109.3	-45	146.0
KB-07-162	6,158.01	12,464.8	399.98	271.7	-43	149.0
KB-07-163	6,076.13	12,301.3	389.29	96.9	-45	110.0
KB-07-164	6,076.13	12,301.3	392.00	105.2	-48	122.0
KB-07-165	6,167.03	12,214.5	391.96	276.2	-45	149.0
KB-07-166	6,246.98	12,381.5	403.14	274.1	-49	263.0
KB-07-167	6,246.98	12,381.5	403.14	272.8	-54	290.0
KB-07-168	6,246.98	12,381.5	402.84	273.1	-63	327.0
KB-07-169	6,228.28	12,428.3	378.24	270.0	-52	299.0
KB-07-180	6,257.62	12,498.5	377.54	261.7	-71	491.0
KB-07-181	6,276.47	12,433.6	377.54	273.0	-57	325.5
KB-07-182	6,276.47	12,433.6	377.54	275.1	-61	377.0
KB-07-183	6,276.47	12,433.6	402.84	273.3	-65	409.0
KB-08-184	6,271.8	12,462.9	385.04	270.0	-55	377.8
KB-08-185	6,271.8	12,462.9	385.04	270.7	-65	407.0
KB-08-186	6,271.8	12,462.9	377.04	266.4	-72	413.0
KB-08-187	6,260.72	12,523.8	393.04	272.6	-52	401.0

TABLE 6.4
DRILL HOLE COLLAR INFORMATION FOR 2007-2008 CANADIAN ARROW DRILL PROGRAM

Drill Hole ID	Local Grid Coordinates		Elevation (m)	Azimuth (°)	Dip (°)	Total Depth (m)
	East	North				
KB-08-188	6,215.33	12,527.8	393.04	268.8	-57	281.0
KB-08-189	6,215.33	12,527.8	385.04	272.7	-45	264.0
KB-07-190	6,228.28	12,428.3	402.84	272.2	-63	311.4
KB-07-191	6,228.28	12,428.3	385.04	270.5	-70	78.0
KB-07-192	6,296.28	12,310.1	385.04	270.7	-53	374.0
KB-07-193	6,296.28	12,310.1	385.04	270.2	-61	410.0
KB-07-194	6,296.28	12,310.1	398.08	269.6	-68	482.0
KB-08-195	6,293.58	12,371.1	385.04	266.7	-55	380.0
KB-08-196	6,293.58	12,371.1	385.04	265.1	-65	449.0
KB-08-197	6,293.58	12,371.1	350.04	267.1	-69	497.0

TABLE 6.5
SIGNIFICANT 2007–2008 DRILL HOLE INTERSECTIONS

Drill Hole ID	From (m)	To (m)	Length (m)	Ni (%)	Cu (%)	Co (%)
KB-07-149	319.0	368.0	49.0	1.14	0.30	0.04
KB-07-157	175.5	183.0	7.5	0.35	0.23	0.02
KB-07-157	231.4	241.0	9.6	0.31	0.24	0.01
KB-07-158	196.8	209.0	12.2	0.31	0.27	0.01
KB-07-159	207.0	220.6	13.6	0.24	0.23	0.01
KB-07-160	8.0	12.5	4.5	0.45	0.17	0.02
KB-07-161	117.5	140.8	23.3	0.83	0.41	0.03
KB-07-163	9.0	21.5	12.5	0.35	0.31	0.01
KB-07-164	49.4	52.0	2.6	0.50	0.15	0.02
KB-07-169	200.5	206.5	6.0	0.41	0.27	0.01
KB-07-181	284.2	302.0	17.8	0.77	0.29	0.02
KB-07-182	320.5	349.9	29.4	0.37	0.22	0.01
KB-07-183	337.8	384.1	46.3	1.08	0.46	0.04
KB-08-184	282.5	283.5	1.0	1.26	0.58	0.05
KB-08-185	326.3	344.1	17.8	1.22	0.35	0.03
KB-08-185	359.8	365.0	5.2	0.69	0.15	0.03
KB-08-190	239.2	267.0	27.8	0.43	0.19	0.01
KB-08-192	327.1	339.0	11.9	0.31	0.31	0.01
KB-08-195	303.6	309.7	6.10	1.06	0.55	0.04
KB-08-195	320.2	332.3	12.1	0.33	0.15	0.01
KB-08-196	357.0	395.0	38.0	0.54	0.35	0.02
KB-08-197	426.0	445.0	19.0	0.46	0.28	0.01

In 2008, Canadian Arrow completed a Preliminary Economic Assessment on the Kenbridge Deposit, with an Updated Mineral Resource Estimate and preliminary metallurgy. The Kenbridge Property remained dormant until the current claims were staked in 2018 (see Section 4) and the ASTER survey was flown in 2020 (described in Section 9).

6.2 HISTORICAL MINERAL RESOURCE ESTIMATES

Historical mineral resource estimates have been completed by Falconbridge Limited and SRK Consulting. The information on the historical mineral resource estimates completed by Falconbridge was derived mainly from Keast and O'Flaherty (2006).

A Qualified Person has not done sufficient work to classify the historical estimates as current Mineral Resources and the Company is not treating the historical estimates as current Mineral Resources.

6.2.1 Falconbridge Limited

Two historical mineral resource estimates of the Kenbridge Deposit were completed by Falconbridge Limited (Kerby and Blowes, 1957; Archibald, 1970). In addition, Archibald completed a selective mining and a bulk mining "ore reserve" calculation using underground drill hole information (Table 6.6). Horizontal diamond drill holes were used to determine the mineralized zone areas between the 61 m (200 ft) and 610 m (2,000 ft) levels. The total areas and average grades for nickel and copper were projected halfway to the adjacent levels 14 m (75 ft) above and below. Mineralized zones from the 198 m (650 ft) level to the overlying 61 m (200 ft) level were based upon 15.2 m (50 ft) centred fan drilling from the 152 m (500 ft) and 107 m (350 ft) levels. Estimates for the 198 m (650 ft) level to the underlying 610 m (2,000 ft) level were based on fewer (3 to 7) drill holes completed from the shaft at each level. The 61 m (200 ft) level mineralized zones were joined on 15.2 m (50 ft) cross-sections and projected up to this level. Assays from upward inclined drill holes completed from the 107 m (350 ft) level were used for grade calculations. Below the 610 m (2,000 ft) level, diamond drill holes from two sections were used to calculate "reserves". A minimum 1.8 m (6 ft) mining width and 0.50% nickel cut-off grade was utilized, and all mineralized shoots were assumed to be continuous between levels. The 0.50% nickel cut-off was reduced over a few intersections in some places to preserve continuity for "reserves" and mining purposes. Mineralized zones occur within the mafic (norite) breccia. Dilution up to 20% was incorporated due to the presence of widespread shearing and fracturing.

Historical measured mineral resources (Developed Ore – Archibald, 1970) represent the volume most densely drilled from the 107 m (350 ft) and 152 m (500 ft) levels. Measured mineral resources here were projected 23 m (75 ft) above the 107 m (350 ft) level to 84 m (275 ft) level, and 23 m (75 ft) below the 152 m (500 ft) level to 175 m (575 ft) level. Indicated mineral resources were represented with less dense drilling; from surface to the 84 m (275 ft) level, by upward inclined drill holes from the 107 m (350 ft) level and from the 175 m (575 ft) level to the 152 m (2,000 ft) level by drill hole fans at stations every 46 m (150 ft) down the shaft. Historical mineral resources below the 610 m (2,000 ft) level are based on a few drill holes on two sections. The deepest mineralized intersection is found below the 823 m (2,700 ft) level in drill hole K2010, with grades of 4.25% nickel and 1.38% copper over 3.3 m (10.7 ft), which indicates that the Deposit is open at depth.

The mineral resource estimates prepared by Falconbridge are historical, and as such do not conform to the requirements of NI 43-101. **Although Canadian Arrow considered the historical mineral resource estimates to be relevant, they have not been verified by a Qualified Person, as required by NI 43-101, and should not be relied upon. Additional supporting data is required to complete an NI 43-101 Mineral Resource Estimate.**

TABLE 6.6
SUMMARY OF HISTORICAL MINERAL RESOURCES (ARCHIBALD, 1970)

Classification	Interval (ft)	Selective Mining			Bulk Mining		
		Ni (%)	Cu (%)	Tons	Ni (%)	Cu (%)	Tons
Measured Mineral Resource	275-575	1.04	0.52	794,266	0.46	0.25	2,267,619
Indicated Mineral Resource	surface to 275 and 575 to 2,000	1.05	0.55	2,187,507	0.55	0.34	5,345,692
Inferred Mineral Resource	below 2,000	1.55		654,741			

Notes: *Mineral Resources are undiluted.*
Using 20% dilution with 0.10% Ni and 0.10% Cu grade, total "reserves" become 3,578,079 tons grading 0.89% Ni and 0.47% Cu for above 2,000 ft level component.

6.2.2 SRK Consulting 2007

SRK Consulting ("SRK") completed an NI 43-101 Mineral Resource Estimate of the Kenbridge Deposit in 2007 (SRK, 2007) and an Updated Mineral Resource Estimate in 2008 (Buck et al., 2008).

In March 2007, an NI 43-101 Mineral Resource Estimate completed by SRK for the Kenbridge Deposit superseded the previous two Mineral Resource Estimates. The Technical Report supporting the March 2007 Mineral Resource Estimate highlighted concerns about the documentation of the historical borehole data. These issues related to aspects such as: drilling surveys, sampling approach, lack of documented quality assurance and quality control measures, and the inability to undertake a reasonable data verification process for a large part of the dataset. Canadian Arrow effectively remedied these deficiencies during their exploration programs (see Section 6.1.2 above).

The database for Mineral Resource Estimation purposes totalled 345 drill holes, a large proportion of which remained unvalidated. From the drill hole database, SRK constructed several cross-sectional string models to facilitate the definition of geologically valid nickel mineralization solids within which grade estimation was constrained. A single solid mineralized domain was constructed, within which grade interpolation was undertaken. Some intervals within the "mineralized envelope" were not sampled for reasons unknown. A composite file was created using uncapped values starting at the drill hole collar position and defined within the mineralized domain. All assays were composited to 2.5 m intervals. No significant outlier values were interpreted that could potentially bias the resultant grade interpolations and SRK did not apply any capping to the composited dataset.

Traditional variograms were modelled from the total composited datasets for nickel and copper, for all three principle directions. For nickel, the major axis was oriented at N000º degrees and the variogram reference plane dipped 90º. For copper, the major axis was oriented at N315º and the variogram reference plane dipped 75º to the northeast. The block model size was set as 5 m x 5 m x 5 m in the easting, northing and elevation directions. Block grades were estimated using ordinary kriging and inverse distance squared. Model validation studies suggest the global mineralization estimate was fairly insensitive to grade interpolation method.

Mineral Resources for the Kenbridge Deposit were estimated according to the "CIM Standards on Mineral Resources and Reserves: Definitions and Guidelines" (December 2005) by Glen Cole, P.Geo., an appropriate Qualified Person as defined by NI 43-101. A confident understanding of the geological controls on the distribution of mineralization at Kenbridge and the continuity of higher-grade mineralization was adversely affected by the fact that the majority of the drill holes in the database were completed prior to 1958. All Mineral Resources at the Kenbridge Project were classified as Inferred (Table 6.7). Two categories of Inferred Mineral Resources ("IF") are suggested by SRK and reported at different cut-off grades. The higher confidence IF1 Mineral Resources were shallower and reported at a cut-off grade of 0.3% nickel, which was considered suitable for possible open pit mining. The lower confidence IF2 Mineral Resources were deeper and reported at a cut-off grade of 0.7% nickel to reflect possible underground mining.

TABLE 6.7
SRK INFERRED MINERAL RESOURCE ESTIMATE FOR THE KENBRIDGE DEPOSIT (MARCH 21, 2007)

Classification	Tonnes (M)	Ni (%)	Cu (%)	Density (t/m^3)	Contained Ni (kt)
IF1	2.1	0.58	0.26	2.95	12.2
IF2	1.1	1.01	0.52	2.95	11.1
Total	**3.2**	**0.73**	**0.35**	**2.95**	**23.3**

Notes: *IF = Inferred Mineral Resources, S.G. = specific gravity.*
IF1 Mineral Resources were reported at a cut-off of 0.3% nickel that was considered suitable for an open pit mining scenario.
IF2 Mineral Resources were reported at a cut-off of 0.7% nickel to reflect a possible underground mining scenario. These cut-offs have not been verified by metallurgical testing or by any mining engineering studies. The numbers have been rounded to reflect the relative accuracy of the estimates.

6.2.3 SRK January 9, 2008

SRK Consulting completed an Updated Mineral Resource Estimate of the Kenbridge Deposit in January 2008 (Table 6.8; Canadian Arrow press release dated January 9, 2008). The Updated Mineral Resource Estimate formed a basis for a Preliminary Economic Assessment study by Buck et al. (2008).

After the March 2007 Mineral Resource Estimate, considerable improvement occurred in the understanding of the geological controls on the distribution of mineralization at Kenbridge. The continuity of higher-grade mineralization had been delineated with higher confidence, largely due to the application of well managed and designed additional drilling, the exclusion of low confidence drill data, and by the application of ‘best practice’ exploration procedures.

At the time of the 2007 Mineral Resource Estimate, 93% of the database used originated from poorly documented drilling prior to 1958. SRK noted specific concerns related to this largely historically derived dataset. The updated dataset used in the 2008 study was derived mainly from replacing low confidence historical data with new well documented data. The dataset applied for this study only incorporated the Falconbridge underground drilling dataset, which was combined with drill and trench data acquired during the period 2005 to 2007.

TABLE 6.8
UPDATED MINERAL RESOURCE ESTIMATE, KENBRIDGE DEPOSIT (JANUARY 2, 2008)

Classification	Tonnes (M)	Ni (%)	Cu (%)	Density (t/m^3)	Contained Ni (kt)
Open Pit Potential (above 1,360 m EL)*					
Indicated	3.4	0.60	0.33	2.95	20.3
Inferred	0.1	0.74	0.53	2.95	1.0
Underground Potential (below 1,360 m EL)*					
Indicated	0.3	1.09	0.47	2.95	3.1
Inferred	0.7	0.89	0.44	2.95	6.0
Total Pit and Underground					
Indicated	3.7	0.64	0.34	2.95	23.4
Inferred	0.8	0.86	0.46	2.95	7.0

* *Open pit Mineral Resources reported at a cut-off grade of 0.3% nickel that is believed to be suitable for open pit mining scenario, whereas the Underground Mineral Resources reported at a cut-off grade of 0.7% nickel to reflect a possible underground mining scenario. Mineral Resources that are not Mineral Reserves and do not have demonstrated economic viability. SRK was not aware of any known environmental, permitting, legal, title, taxation, socio-economic, marketing or other relevant issues that could potentially affect this estimate of Mineral Resources.*

***Note**: Mt = millions of tonnes, kt = thousands of tonnes, S.G. = specific gravity.*

The previously reported (SRK, 2007) specific concerns that were largely addressed by Canadian Arrow exploration staff included:

1. The lack of continuous sampling data within zones of mineralization;

2. Inadequate surveying of drilling, resulting in uncertainty in location of downhole drill information;

3. The quality assurance quality control (“QAQC”) procedures applied throughout the various exploration programs did not conform to accepted best practice guidelines;

4. A poor understanding of the geological controls of mineralization which resulted in poorly designed drilling orientations;

5. Much of the field procedures adopted by the various exploration programs were undocumented; and

6. The inability to verify much of the historical data.

Based on these improvements, SRK considered it appropriate to assign mainly Indicated Mineral Resources occurring above 1,300 masl elevation (proposed open pit portion of the Deposit). This domain is characterized by quality high density drill data. Mineral Resources below 1,300 masl elevation (proposed underground mining portion of the Deposit) were mainly assigned Inferred classifications, due to wider spaced drill coverage and uncertainty in the geological and grade continuities below that depth.

In addition to the geological and best practice improvements since 2007, the database SRK used for the 2008 Updated Mineral Resource Estimate of Kenbridge included 378 drill holes totalling 42,343 m of drilling plus 767.5 m of surface trench sampling completed in the period 1956 to 2007. The Mineral Resource Estimate was completed in Datamine Studio using a geostatistical block model approach constrained by NSR wireframes based on nickel and copper composite grades. Intrusive dykes and country rock xenoliths were modelled. Block size was set to 5 m in the X-, Y- and Z-directions. Assays were composited to equal 1.5 m lengths with zero values assigned to unsampled intervals. Nickel and copper grades were estimated by ordinary kriging using parameters determined from variography analyses.

6.2.4 WMT January 18, 2008

WMT Associates Limited produced an Updated Mineral Resource Estimate dated January 18, 2008 that was incorporated into the Updated PEA dated January 21, 2008 (described below). The Updated Mineral Resource Estimate differs from the previous one by SRK (dated January 2, 2008) by application of more realistic cut-off methodology. This Updated Mineral Resource Estimate, in contrast, incorporated operating costs, anticipated metal recoveries, and other economic parameters to distinguish waste and mineralized material and aid the open pit optimization process (Table 6.9). It does not appear to have been followed-up by the filing of an Updated Mineral Resource Estimate Technical Report on SEDAR.

TABLE 6.9 PEA UPDATED DILUTED MINERAL RESOURCE ESTIMATE BY WMT FOR KENBRIDGE (JANUARY 18, 2008)					
Classification	**Tonnes (M)**	**Ni (%)**	**Cu (%)**	**Density (t/m^3)**	**Contained Ni (kt)**
Open Pit (greater than 1,350 m EL)					
Indicated	6.6	0.38	0.23	2.95	25.3
Inferred	0.1 (±20%)	0.50	0.40	2.95	0.5 (±20%)
Underground (less than 1,350 m EL)					
Indicated	0.8	0.71	0.34	2.95	5.7
Inferred	2.2 (±20%)	0.60	0.31	2.95	13.2 (±20%)

Mt = millions of tonnes, kt = thousands of tonnes, S.G. = specific gravity.

6.3 PREVIOUS MINERAL RESOURCE ESTIMATES

In a news release dated August 19, 2008, Canadian Arrow announced an Updated Mineral Resource Estimate by P&E Mining Consultants Inc. for the Kenbridge Deposit (Table 6.10). This news release does not appear to have been followed by the filing of an Updated Mineral Resource Estimate Technical Report on SEDAR. This Mineral Resource Estimate was superseded by a Mineral Resource Estimate reported in 2021.

TABLE 6.10 P&E MINERAL RESOURCE ESTIMATE FOR KENBRIDGE DEPOSIT (AUGUST 19, 2008)						
Scenario	**Class-ification**	**Tonnes**	**Ni (%)**	**Cu (%)**	**Co (%)**	**Contained Ni (t)**
Open Pit	Measured	3,340,000	0.43	0.23	0.01	14,360
Open Pit	Indicated	1,124,000	0.38	0.23	0.01	4,270
Open Pit	**Meas & Ind**	**4,464,000**	**0.42**	**0.23**	**0.01**	**18,631**
Underground	Measured	206,000	0.85	0.43	0.02	1,748
Underground	Indicated	2,469,000	0.97	0.51	0.02	23,943
Underground	**Meas & Ind**	**2,675,000**	**0.96**	**0.50**	**0.02**	**25,691**
Underground	Inferred	118,000	1.38	0.88	0.00	1,634
Total	Measured	3,546,000	0.45	0.24	0.02	16,108
Total	Indicated	3,593,000	0.79	0.42	0.02	28,214
Total	**Meas & Ind**	**7,139,000**	**0.62**	**0.33**	**0.02**	**44,322**
Total	Inferred	118,000	1.38	0.88	0.00	1,634

1) *The Updated Mineral Resource for Kenbridge was estimated on the basis of US$ metal prices of $10/lb nickel, $2.50/lb copper, $25/lb cobalt with a US$ exchange rate of $0.90. NSR cut-offs were CAD$13/t for open pit mining and CAD$54/t for underground mining.*
2) *Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing or other relevant issues.*

3) The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as an Indicated or Measured Mineral Resource, and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource classification.

4) The Mineral Resources in this press release were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM"), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council December 11, 2005.

The P&E 2008 Updated Mineral Resource Estimate for Kenbridge was based on a database containing 532 drill holes totalling 62,487 m of underground and surface diamond drilling. The database included delineation drilling completed in the second-half of the 2007-2008 drill program, which focused primarily on mineralization below the limits of the proposed open pit. The tighter drill definition also upgraded the majority of the Mineral Resource from Inferred to Measured and Indicated classifications. The model extended from surface to a vertical depth of 725 m. Mineralization remained open below this depth and along strike.

Inverse distance squared grade interpolation was utilized to determine block model grades using parameters set by variographic analyses. The Kenbridge Mineral Resource model was constructed in Gemcom using a geostatistical block model approach constrained by net smelter return ("NSR") and domain wireframes constructed considering nickel and copper composite grades. Intrusive dykes and country rock xenoliths were modelled. Block size was set at 5 m x 5 m x 5 m. Assays were composited to 1.5 m lengths with assay detection limit values assigned to unsampled intervals. Compared to the previous NI 43-101 Mineral Resource Estimate (SRK 2008), total contained nickel in Measured and Indicated classifications increased from 52.2 Mlb to 97.7 Mlb, a gain of 87%.

A Tartisan press release dated September 17, 2020, announced an Updated Mineral Resource Estimate by P&E Mining Consultants Inc. for the Kenbridge Deposit as of an effective date of September 2, 2020. P&E considered the mineralization of the Kenbridge Project to be potentially amenable to both open pit and underground economic extraction. On June 1, 2021, a Tartisan press release announced it had filed an amended Technical Report prepared by P&E with an effective date of May 18, 2021. The pit constrained Mineral Resource Estimate at a cut-off value of C$15/t NSR and C$60/t NSR for an out-of-pit Mineral Resource Estimate are presented in Table 6.11. This previous Mineral Resource Estimate is superseded by the Mineral Resource Estimate reported herein.

TABLE 6.11 **MAY 18, 2021 MINERAL RESOURCE ESTIMATE (1-6)**									
Scenario	**Class-ification**	**Cut-off NSR C$/t**	**Tonnes (k)**	**Ni (%)**	**Ni (Mlb)**	**Cu (%)**	**Cu (Mlb)**	**Co (%)**	**Co (Mlb)**
Pit Constrained	Measured	15	2,966	0.47	30.8	0.26	17.3	0.007	0.5
	Indicated	15	2,270	0.43	21.5	0.26	13.2	0.01	0.5
	M+I	15	5,236	0.45	52.3	0.26	30.5	0.009	1
Out-of-pit	Indicated	60	2,232	0.86	42.5	0.45	22.4	0.006	0.3
	Inferred	60	985	1.00	21.8	0.62	13.5	0.003	0.1
Total	**Measured**	**15**	**2,966**	**0.47**	**30.8**	**0.26**	**17.3**	**0.007**	**0.5**
	Indicated	**15+60**	**4,502**	**0.65**	**64.1**	**0.36**	**35.6**	**0.008**	**0.8**
	M+I	**15+60**	**7,468**	**0.58**	**94.9**	**0.32**	**52.9**	**0.008**	**1.3**
	Inferred	**60**	**985**	**1.00**	**21.8**	**0.62**	**13.5**	**0.003**	**0.1**

Note: *Ni =Nickel, Cu = Copper, Co = Cobalt, NSR = Net Smelter Return, M+I = Measured + Indicated Mineral Resources.*

1. *Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability.*
2. *The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
3. *The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*
4. *The Mineral Resources were estimated in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM"), CIM Standards on Mineral Resources and Reserves, Definitions (2014) and Best Practices (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.*
5. *The Mineral Resource Estimate was based on US$ metal prices of $7.42/lb nickel, $3/lb copper and $25/lb cobalt.*
6. *The out-of-pit Mineral Resource grade blocks were quantified above the $60/t NSR cut-off, below the constraining pit shell and within the constraining mineralized wireframes. Additionally, only groups of blocks that exhibited continuity and reasonable potential stope geometry were included. All orphaned blocks and narrow strings of blocks were excluded. The longhole stoping with backfill mining method was assumed for the out of pit Mineral Resource Estimate calculation.*

6.4 HISTORICAL ENVIRONMENTAL, PERMITS, AND SOCIAL OR COMMUNITY IMPACTS STUDIES

In 2007, Canadian Arrow commenced a consultation process with local First Nations, nearby communities, and regulatory provincial and federal government agencies.

The Kenbridge Property and associated access corridor leading from Highway 71 is located near the community of Sioux Narrows and within the traditional territory of the Anishinaabe Nation of Treaty #3. Four First Nation communities are located near the Project; 1) the Naotkamegwanning First Nation; 2) the Northwest Angle No. 33 First Nation; 3) the Northwest Angle No. 37 First Nation; and 4) the Onigaming First Nation. These communities are located approximately 60 km southeast of Kenora, Ontario, with a total band membership of approximately 1,000 and an on-reserve population of approximately 700. Canadian Arrow had been in regular communication with Treaty #3 representatives since the spring of 2007, regarding plans for exploration programs and project development.

Formal consultations commenced in January 2008 between Canadian Arrow and the First Nation communities near the Property. A task force was formed by Treaty 3 with representatives from these communities and the direction of the Anishinaabeg of Kabapikotawangag Resource Council (“AKRC”) to negotiate an Exploration Agreement with Canadian Arrow. The following First Nations participated in the process:

1. Naotkamegwanning First Nation (also known as Whitefish Bay).
2. Northwest Angle No. 33 First Nation.
3. Northwest Angle No. 37 First Nation.
4. Onigaming First Nation (also known as Sabaskong).
5. Big Grassy First Nation.
6. Big Island First Nation.

The Exploration Agreement is similar to a Memorandum of Understanding (“MOU”) and provides a legal framework for the parties to respect each other’s interests in the area and formalizes processes for employment and business opportunities for participating First Nations members and companies. In addition, and as part of the Exploration Agreement, Canadian Arrow in cooperation with the First Nations agreed to finance a community fund based on the level of exploration work completed at Kenbridge or in the Kenbridge area, and to complete a Traditional Ecological Knowledge (“TEK”) study on the Property.

Baseline environment studies were initiated by Canadian Arrow in the second quarter of 2007 and continued throughout 2008. These studies were conducted by DST Consulting Engineers Inc. (“DST”) of Thunder Bay, Ontario, in order to provide a thorough assessment of the baseline environmental conditions that would support future permitting of the Kenbridge Project. In addition to the baseline program, Canadian Arrow held numerous public information sessions in the surrounding communities and inter-agency meetings with the various ministries of the Provincial and Federal governments to provide information and discussion about the Kenbridge Project (Table 6.12).

TABLE 6.12 REGULATORY AGENCY CONSULTATIONS				
Date	**Location**	**Agencies Invited**	**Agencies Attended**	**Meeting Description**
20-Jun-07	Ministry of Northern Mines and Development Office, Kenora	MNDM, MNR, MOE, MOL, DFO, CEAA	MNDM, MNR, MOE, DFO	Canadian Arrow: Background on Canadian Arrow and Kenbridge Project Consultation Program
				DST: Review of Environmental Baseline Assessment Programs
				Group Discussion: Agency Responsibilities
27-Jul-07	Teleconference MNR - Kenora, Canadian Arrow - London, DST-Thunder Bay	MNR	MNR	MNR: Requirements for MNR Class EA process for project components located outside of mineral claims areas
2-Oct-07	Canadian Environmental Assessment Office, Toronto	MNDM, MNR, MOE, DFO, CEAA, EC, NRCAN, TC, HC	MNDM, MNR, MOE, DFO, CEAA, EC, NRCAN, TC	Canadian Arrow: Update on Kenbridge Project, Consultation Program
				DST: Review of Environmental Baseline Assessment Programs, Review EIA Terms of Reference and Permitting Schedule
				Group Discussion: Agency Responsibilities

Source: *Buck et al. (2008)*

Canadian Arrow retained DST to carry out environmental work on the Kenbridge Property (DST, 2007; 2008a). The work included extensive environmental baseline studies and locating potential sand and gravel sources for construction of access roads to the proposed mine site development. Extensive aquatic and terrestrial baseline studies were completed on the Property over 22 months.

6.5 HISTORICAL GEOTECHNICAL STUDIES

Geotechnical studies of the Kenbridge Deposit were carried out by Associated Geosciences Ltd. (“AG”) and DST (AG, 2007; DST, 2008b, 2008c). The geotechnical studies involved: designing a tailings pond for storage of effluent from the shaft dewatering program and evaluating further use of the pond during future operations; preliminary evaluation of the proposed open pit host rocks for rock mass properties and hydrogeological parameters; and review of Ontario government regulatory legislation pertaining to open pit mining operations.

6.6 HISTORICAL PRELIMINARY ECONOMIC ASSESSMENTS

A PEA study of Kenbridge was completed by Buck et al., (2008). The PEA was updated by WMT Associated Ltd. in a news release dated January 21, 2008, and then again in a subsequent news release dated September 4, 2008. **These PEAs are historical in nature and have not been verified by a Qualified Person as required by NI 43-101, and should not be relied upon.**

6.6.1 PEA January 14, 2008

In a news release dated January 14, 2008 Canadian Arrow announced receipt of a positive PEA for the Kenbridge Project (Buck et al., 2008). The PEA was based in part on the Updated Mineral Resource Estimate by SRK dated January 9, 2008.

6.6.2 Updated PEA January 21, 2008

On January 21, 2008 Canadian Arrow announced receipt of an Updated PEA for Kenbridge. The Updated PEA was prepared by WMT Associates, P&E Mining Consultants Inc. and Micon International Limited, all independent consulting firms. It was based on the Updated Mineral Resource Estimate completed by SRK and released on January 9th, 2008 and differs only by applying a more realistic cut-off methodology. The PEA estimate included mine operating costs, anticipated metal recoveries, mining dilution, metal values and other economic parameters to derive a Net Smelter Return (“NSR”) model to distinguish process plant feed and waste material. The Updated Mineral Resource Estimate, using computer-aided open pit optimization tools, also resulted in an increase in depth of the open pit by 10 m to the 1,350 m elevation, (160 m from surface). However, the press release does not appear to have been followed-up by the filing of an Updated Technical Report on SEDAR.

6.6.3 Updated PEA September 4, 2008

On September 4, 2008, Canadian Arrow announced an Updated PEA for the Kenbridge Deposit. The Updated PEA was completed by WMT Associates Limited based on an updated NI 43-101 Mineral Resource Estimate by P&E Mining Consultants Inc. (Canadian Arrow news release dated August 19, 2008) and improved metallurgical recoveries (Canadian Arrow news release dated June 26, 2008), however, does not appear to have been followed-up by the filing of an Updated Technical Report on SEDAR.

It should be noted that the preceding PEA summaries are historical in nature and, as such, are based on Mineral Resource estimates that are historical in nature. The work necessary to verify the classification of the historical Mineral Resource estimates has not been completed and the historical Mineral Resource estimates therefore cannot be treated as NI 43-101 defined Mineral Resources verified by a Qualified Person. The historical estimates should not be relied upon and there can be no assurance that any of the historical Mineral Resources, in whole or in part, will ever become economically viable.

6.7 PAST PRODUCTION

The Kenbridge Deposit has never been mined.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

The regional geological setting, property-scale geology and nickel sulphide mineralization at the Kenbridge Nickel Deposit are summarized below.

7.1 REGIONAL GEOLOGY

The regional geological setting of the Kenbridge Project is characterized by a Precambrian metavolcanic sequence with coeval ultramafic-mafic intrusions and post-deformation intermediate-felsic intrusions (Figure 7.1). The Kenbridge Deposit and its host rocks occur between two main granitoid bodies: 1) the smaller Flora Lake Pluton to the west; and 2) the larger Atikwa Batholith to the east. The rock sequence that hosts the Kenbridge Deposit consists of intermediate to mafic volcanic rocks intruded by gabbro and numerous dykes that coincide with a prominent northeast-trending deformation zone. The exposure of the Flora Lake Pluton is roughly elliptical with a length of 5.6 km and a width of 3.2 km. The pluton is zoned with an outer rim of monzodiorite to monzonite and a core of granite (Davies, 1973). The rim has a strong positive magnetic signature. The Atikwa batholith, to the east of the Kenbridge mining claims (Figure 7.1), covers an area of 2,000 square km and is zoned. The inner zone consists of weakly foliated quartz diorite and trondhjemite and the outer zone is heterogeneous diorite with abundant inclusions and xenoliths of basalt and gabbro.

Intrusion of the two granitoid plutons resulted in varying degrees of hydrothermal and contact metamorphic alteration and deformation of the rocks at Kenbridge.

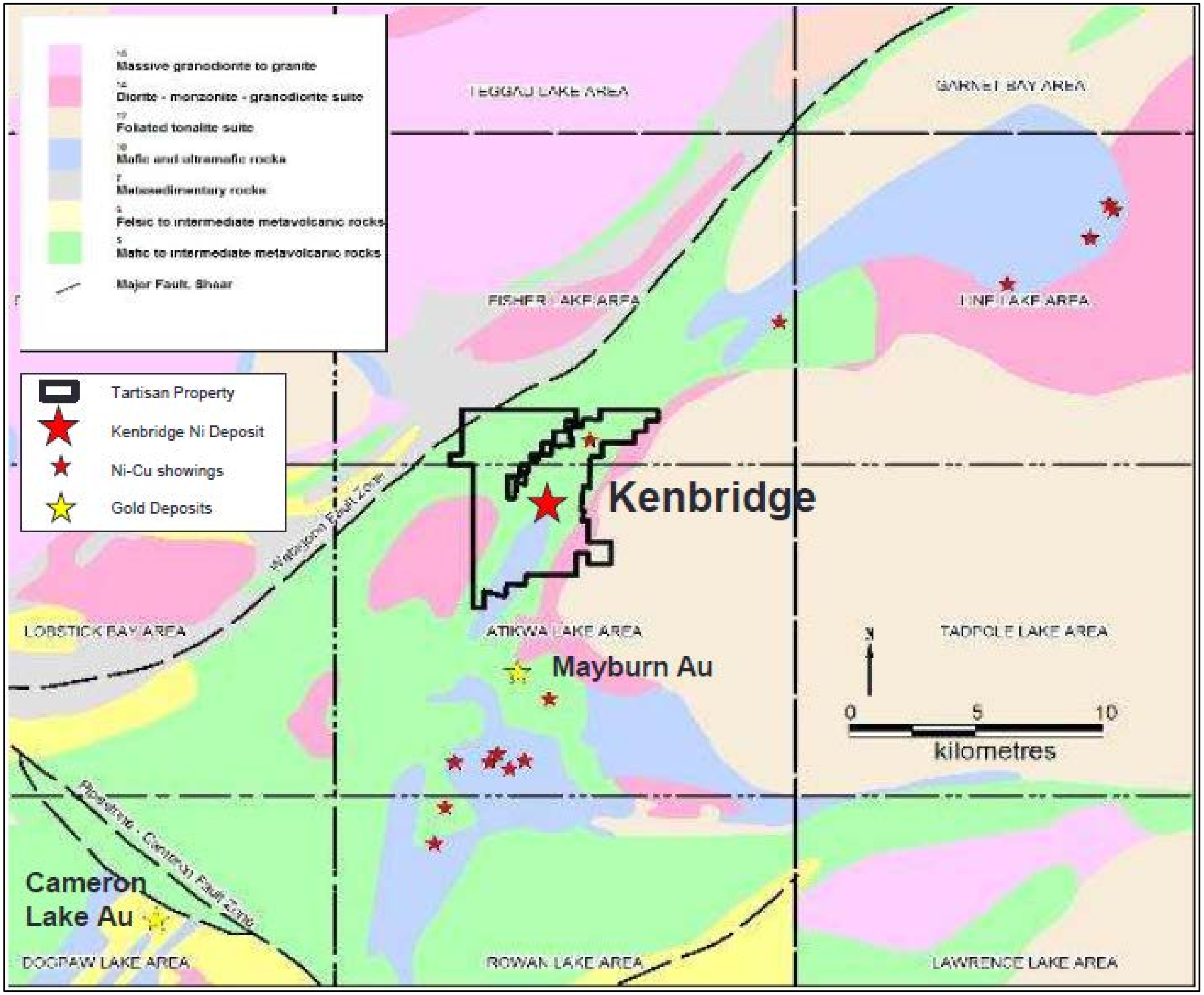
7.2 PROPERTY GEOLOGY

The Kenbridge Property overlies volcanic rocks and an ovoid-shaped gabbro body, which hosts the Kenbridge Deposit (Figure 7.2). Interpretation of property-scale geology is complicated by limited rock exposure and the overprinting effects of deformation and upper greenschist facies regional metamorphism and contact metamorphism. Intrusive and extrusive rock types occur on the Property with associated nickel sulphide mineralization.

Mafic volcanics are the oldest rocks in the Property area. The volcanic units are andesite to basalt in composition and consist of flow and pyroclastic rocks. A variety of depositional textures and compositions are reported in 1950s Falconbridge mapping, but metamorphism and alteration combined with the lack of exposed unit contacts mean that the volcanic unit is poorly defined. Difficulty distinguishing basalt from gabbro is noted in the field reports.

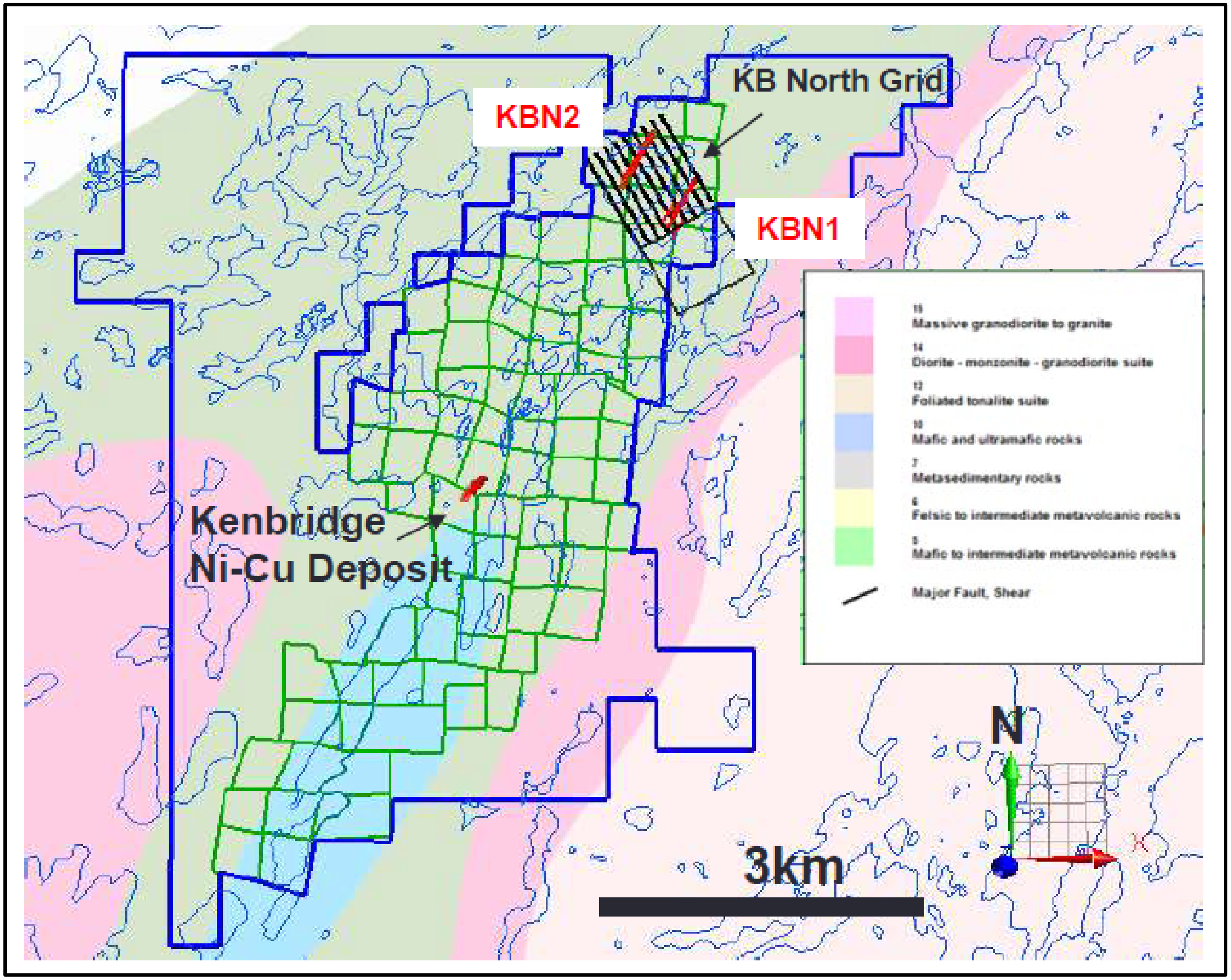
Seven gabbro intrusions, including the gabbro unit that hosts the Kenbridge Deposit, have been mapped in the area of the Property as a gabbroic suite. Pyroxenite phases and peridotite to pyroxenite bands occur locally. Massive magnetite bands have been reported in the more mafic parts. Diorite bodies occurring within the Project area have been interpreted as a marginal phase of the gabbroic suite. The occurrence of gabbro rocks within younger granitoid plutons probably represents rafts incorporated during felsic magmatism. Fine-grained mafic dykes (lamprophyre?) have been observed in drill core (Keast and O'Faherty, 2006).

FIGURE 7.1 REGIONAL GEOLOGIC SETTING OF THE KENBRIDGE NICKEL SULPHIDE DEPOSIT



Source: *Tartisan (2021)*
Note: The Kenbridge Property outline (black) is shown here as it was in 2021.

FIGURE 7.2 PROPERTY SCALE GEOLOGY OF THE KENBRIDGE NICKEL PROPERTY AREA



Source: *Tartisan (2021)*
Note: *KBN1 and KBN2 are geophysical targets. See Section 9 for description.*
The Kenbridge Property outline (blue) is shown here as it was in 2021

Felsic dykes intrude the granites, volcanic rocks and the gabbroic suites, and are therefore interpreted to be the youngest rocks in the Project area. There are a variety of dyke compositions and textures and there may be two intrusive events. The majority of the dykes are feldspar-phyric and range from feldspar megacrystic porphyry (with feldspar phenocrysts up to 2 cm) to very fine-grained, almost aphanitic rock.

7.3 DEPOSIT GEOLOGY

The Kenbridge Deposit occurs within a vertically dipping, lenticular gabbro and gabbro breccia with surface dimensions of 250 by 60 m. The Deposit and host rocks occur within a regional northeast-trending deformation zone. The gabbro body is surrounded by vertically-dipping volcanic units consisting of andesite flows, fragmental rocks, and volcaniclastic sedimentary rocks.

The host volcanic rocks west of the Kenbridge Deposit are composed mainly of medium-grained green, strongly foliated and sheared, fragmental tuffaceous units. Volcanic rocks to the east of the Deposit are characterized by larger fragments and weak foliation. Most of the fragments are fine-grained volcanics with subtle changes in contents of chlorite and interstitial carbonate, which allows them to be recognized. This "eastern" volcanic unit is logged as a volcanic breccia. The volcanic sequence is intruded by gabbro, granite and quartz diorite plutons and by the mafic-ultramafic breccias that host the Kenbridge Deposit.

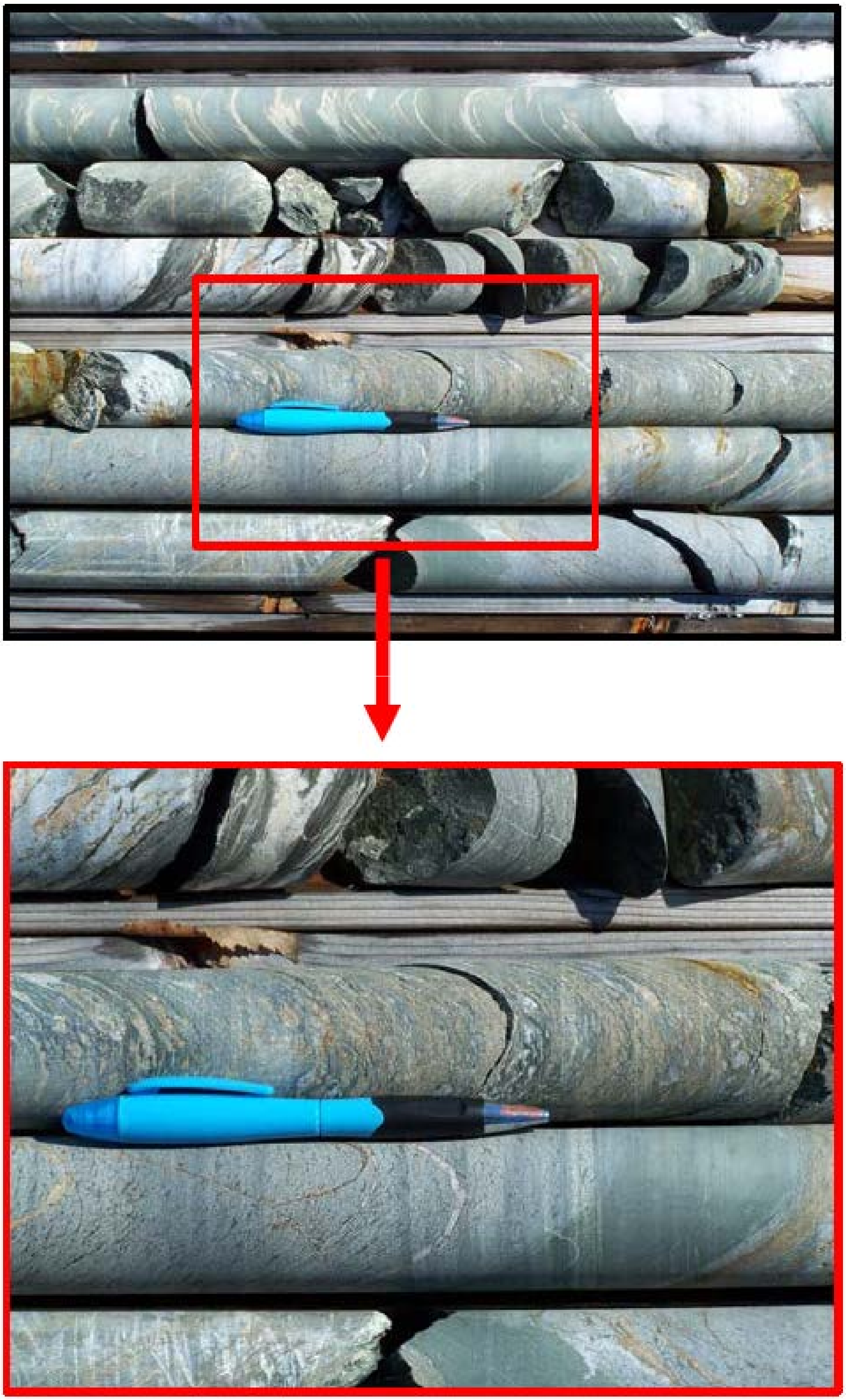
The gabbro body that hosts the Kenbridge Deposit consists of several rock types, including fine- to coarse-grained gabbro, quartz-phyric gabbro with 2 to 3% rounded blue quartz grains, and diorite. In the historical literature, terms such as anorthositic gabbro and norite were used, but these names were not recorded during drill core logging. Some of the diorite may be later dykes. Texturally, the rocks range from fine-grained (probable chilled) to medium-grained massive to highly sheared and schistose rock (Figure 7.3), particularly near the granitoid pluton contacts and fault zones. Contacts between the mineralized gabbro and the surrounding volcanic rocks are marked by a talc schist unit up to 30 m wide, which is tightly folded in places (Figure 7.4). The talc schist may or may not be mineralized.

Whether the gabbro is an intrusive mega-breccia with numerous xenoliths of feldspar porphyry, diorite and volcanic rocks, or a complexly folded gabbro sheet with "screens" of country rock intruded by many dykes, is difficult to determine.

7.4 STRUCTURE AND METAMORPHISM

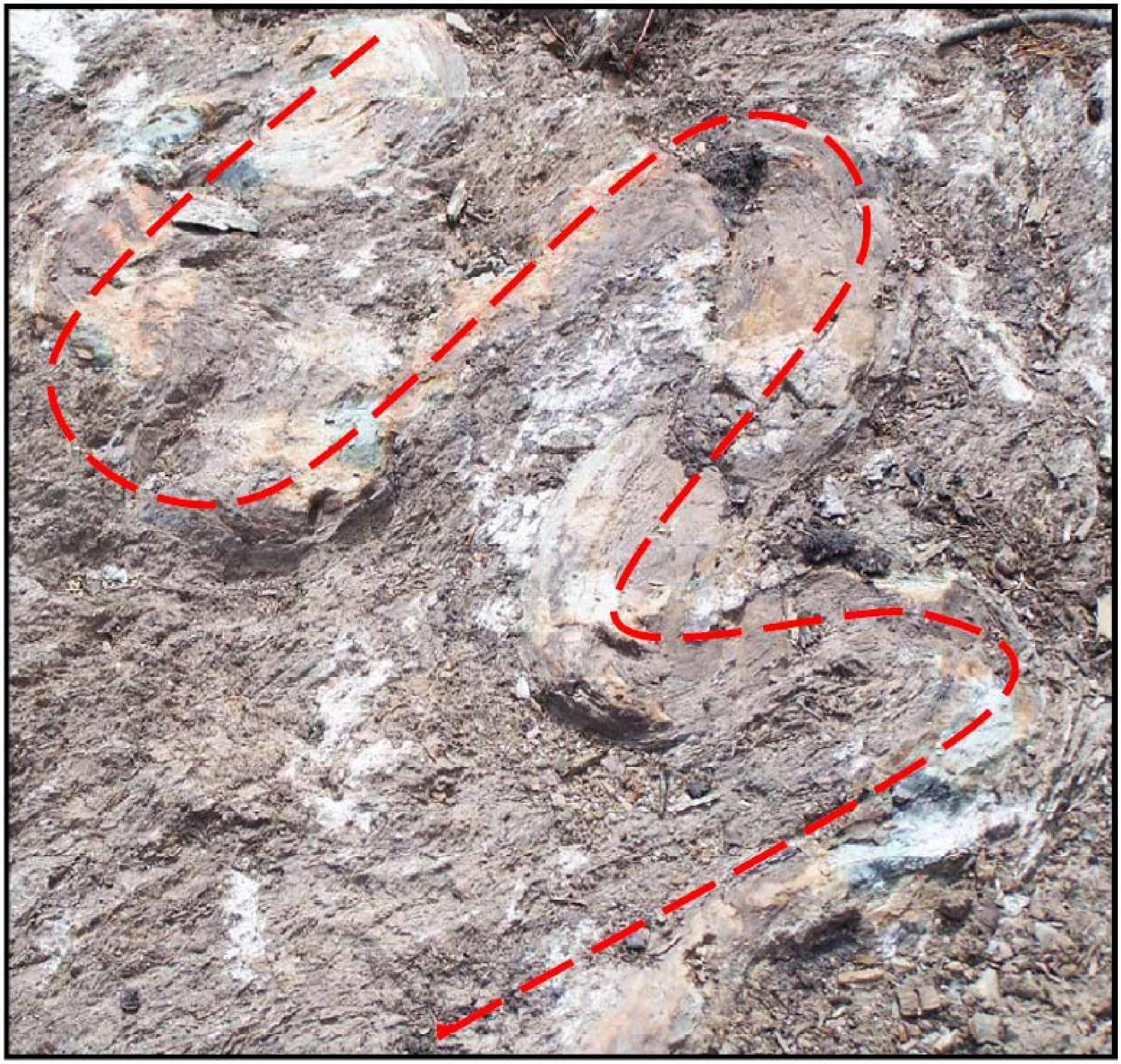
Four structural trends are recognized at Kenbridge and reflect syn- and post-gabbro intrusion events. Northeast-trending lineaments are the most prominent in the Property area and are reflected in the main shearing and faulting fabrics in the rocks. The Kenbridge Deposit coincides with the main northeast-trending deformation zone. North-, east- and northwest-trending lineaments are also common in the area. The east-trending lineaments appear to control the larger mafic-ultramafic bodies at Denmark and Overflow lakes, located south of the Kenbridge Property.

FIGURE 7.3 FOLIATED AND SHEARED GABBRO IN DRILL HOLE K05-16



Source: *Buck et al. (2008)*

FIGURE 7.4 FOLD PATTERN IN TALC SCHISTS NEAR CONTACT OF THE MINERALIZED GABBRO BODY AND COUNTRY VOLCANIC ROCKS



Source: *Buck et al. (2008)*

Volcanic rocks in Kenbridge Property area are regionally metamorphosed to the upper greenschist facies, and locally retrograded to the greenschist facies during intense shearing and faulting.

7.5 MINERALIZATION

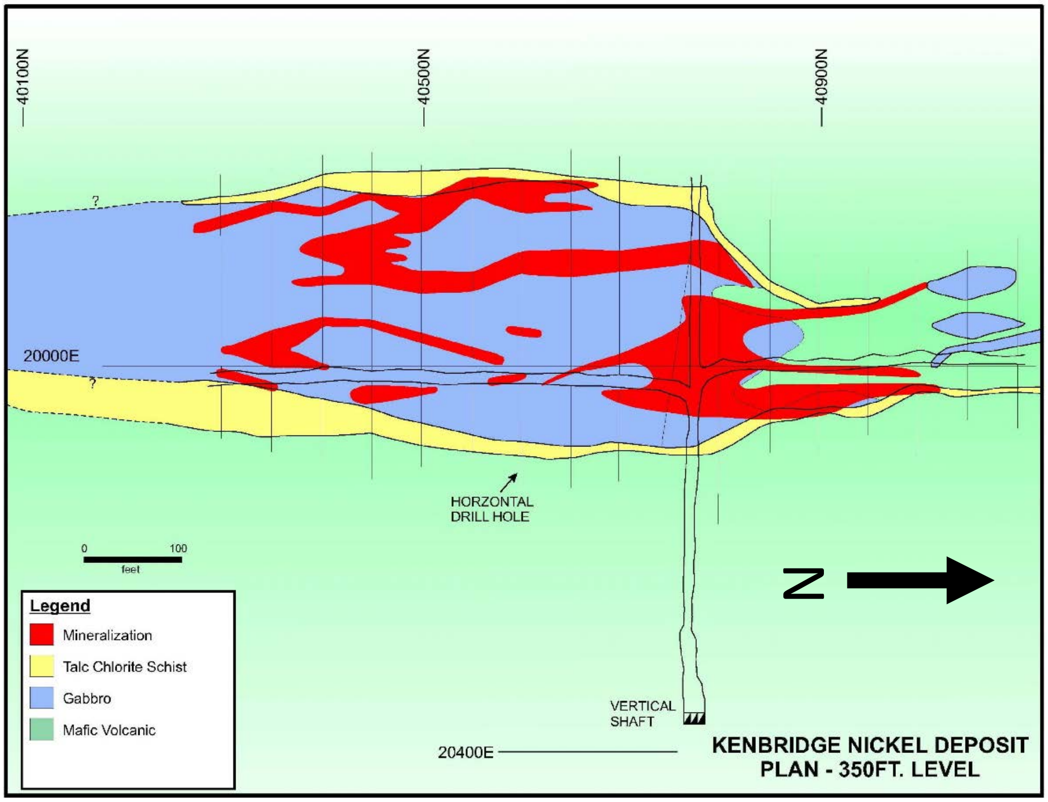
The nickel sulphide mineralization at Kenbridge is described by Keast and O'Flaherty (2006). Nickel sulphide mineralization in the Kenbridge Project area is exposed in trenches for a distance of 150 m (Figure 7.5), but the nickel-copper mineralized zone has a strike length of approximately 250 m in drilling. The mineralization is mapped in detail on two underground levels at Kenbridge (Figure 7.6), diagrammatically interpreted in 3-D (Figure 7.7), and has been intersected in drilling at 823 m below surface. The 3-D interpretation suggests isoclinal folding with vertically plunging fold axes, consistent with the regional geologic setting.

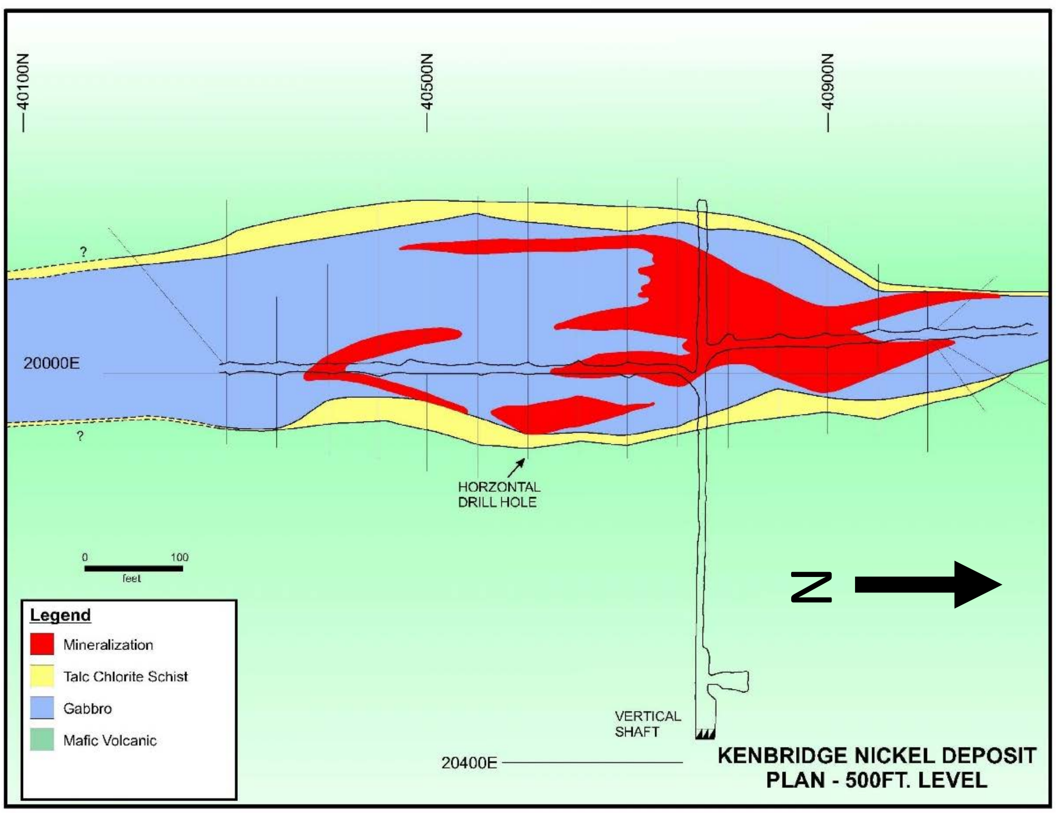
Mineralization (pyrrhotite, pentlandite, and chalcopyrite ± pyrite) occurs as massive to net-textured and disseminated sulphide zones (Figures 7.8 and 7.9), primarily in gabbro with smaller amounts in talc schist. Nickel grades within the Kenbridge Deposit are proportional to the total amount of sulphide present. Massive sulphide zones locally grade higher than 6% Ni. Mineralization undergoes rapid changes in thickness and grades.

FIGURE 7.5 NICKEL SULPHIDE MINERALIZATION IN TRENCH ON THE KENBRIDGE PROPERTY

Source: *Tartisan website (2020)*

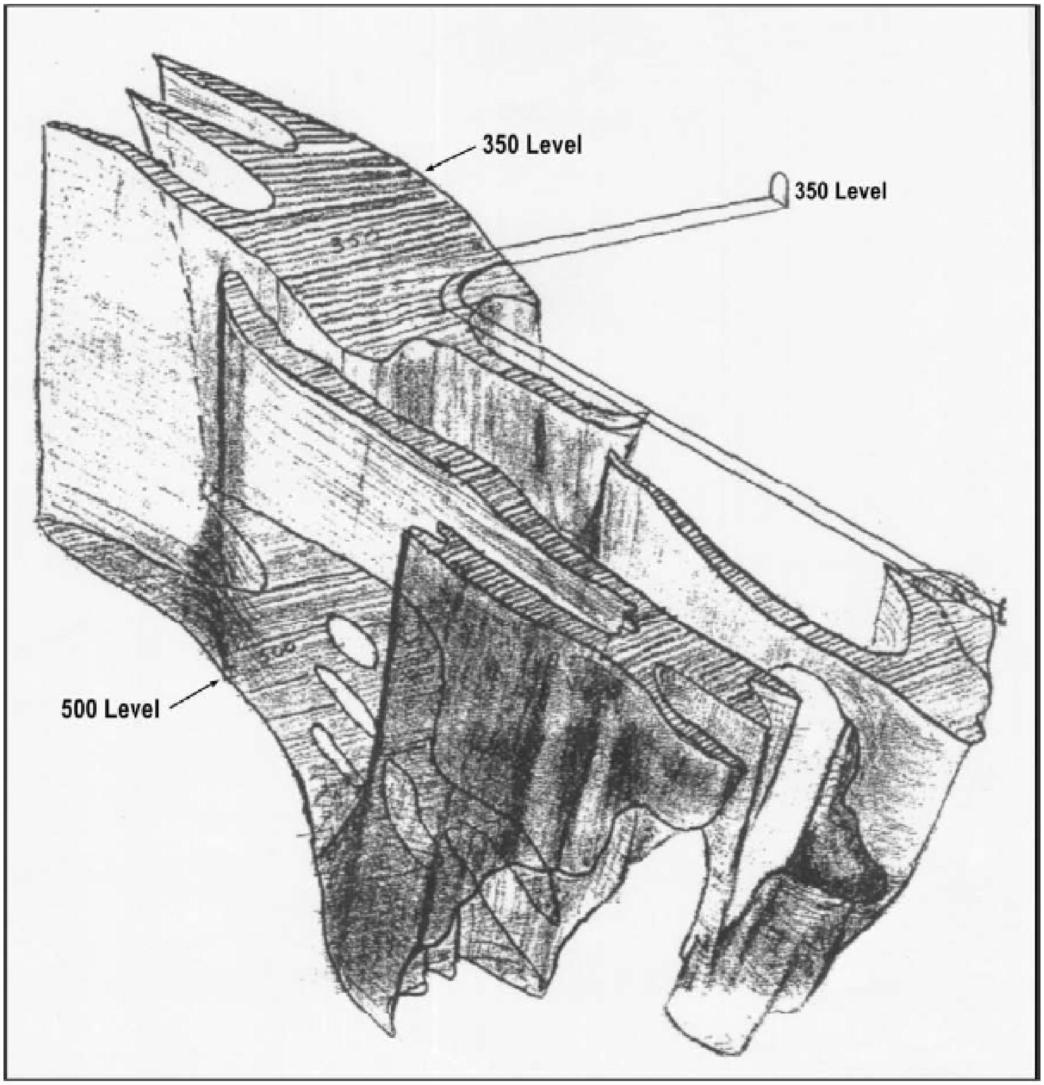
FIGURE 7.6 **FALCONBRIDGE UNDERGROUND MAPPING ON THE 500 FT AND 350 FT LEVELS (1952-1957)**





Source: *Buck et al. (2008)*

FIGURE 7.7 3-D MINERALIZED ZONE MODEL INTERPRETED FROM UNDERGROUND MAPPING AT KENBRIDGE



Source: *Keast and O'Flaherty (2006)*

FIGURE 7.8 MASSIVE AND DISSEMINATED NICKEL SULPHIDE MINERALIZATION IN DRILL CORE FROM HOLE K07-119

Source: *Buck et al. (2008)*

FIGURE 7.9 MASSIVE AND DISSEMINATED NICKEL SULPHIDE MINERALIZATION IN ALTERED GABBRO FROM DRILL HOLE K05-9

Source: *SRK (2007)*

8.0 DEPOSIT TYPES

Kenbridge is an Archean age gabbro-related magmatic sulphide deposit with geological similarities to the better known and larger deposits, such as the Montcalm Mine Deposit near Timmins, Ontario (Naldrett, 1981).

Magmatic nickel sulphide deposits span a broad age range from the Archaean to Phanerozoic (2.70 Ga to 0.25 Ga). Globally, the largest deposits discovered to date are located at Sudbury, Ontario (Lightfoot, 2017) and Noril'sk-Talnakh, Russia (Lightfoot and Naldrett, 1994; Diakov et al., 2002). Models for the magmatic nickel sulphide deposit formation invoke partial melting of the upper mantle and magma fractionation, mixing and assimilation of country rock to form an immiscible sulphide melt within a basic or ultrabasic silicate magma (Naldrett, 2010) (Figure 8.1). Tectonostratigraphic setting and transcrustal structures are considered to be fundamental controls on the localization of intrusion and nickel sulphide mineralization.

Magmatic nickel sulphide deposits form when sulphur-undersaturated picrite or high magnesium basalt magma becomes saturated in sulphides, generally as a result of interaction with and assimilation of sulphur-bearing sedimentary rocks. Assimilation of crustal sulphur results in the formation of an immiscible sulphide liquid that segregates toward the base of the flow or sill. Assimilation and concentration may be enhanced by multiple pulses of magma in a dynamic conduit system. The mineralization typically forms lenses or tabular concentrations in the middle or lower parts of the gabbro intrusions. Subsequently, the effects of post-emplacement deformation preferentially concentrate in the incompetent sulphides, resulting in the latter being displaced from their host parental body unit, possibly as breccias, into surrounding rocks.

The Kenbridge Deposit appears to be a breccia pipe that may represent the conduit of a larger magmatic feeder system associated with major regional structure. The sulphide mineral assemblage appears to be relatively high-nickel in composition, with nickel/copper of 2:1 overall. Keast and O'Flaherty (2006) favour a model in which the sulphides were remobilized in a breccia pipe conduit. This interpretation is consistent with the variable grade and less variable nickel/copper ratios of the Deposit. However, the effects of overprinting deformation and metamorphism on the rock textures and sulphide compositions remain to be comprehensively studied and understood.

FIGURE 8.1 PROCESSES LEADING TO MAGMATIC NICKEL SULPHIDE DEPOSIT FORMATION

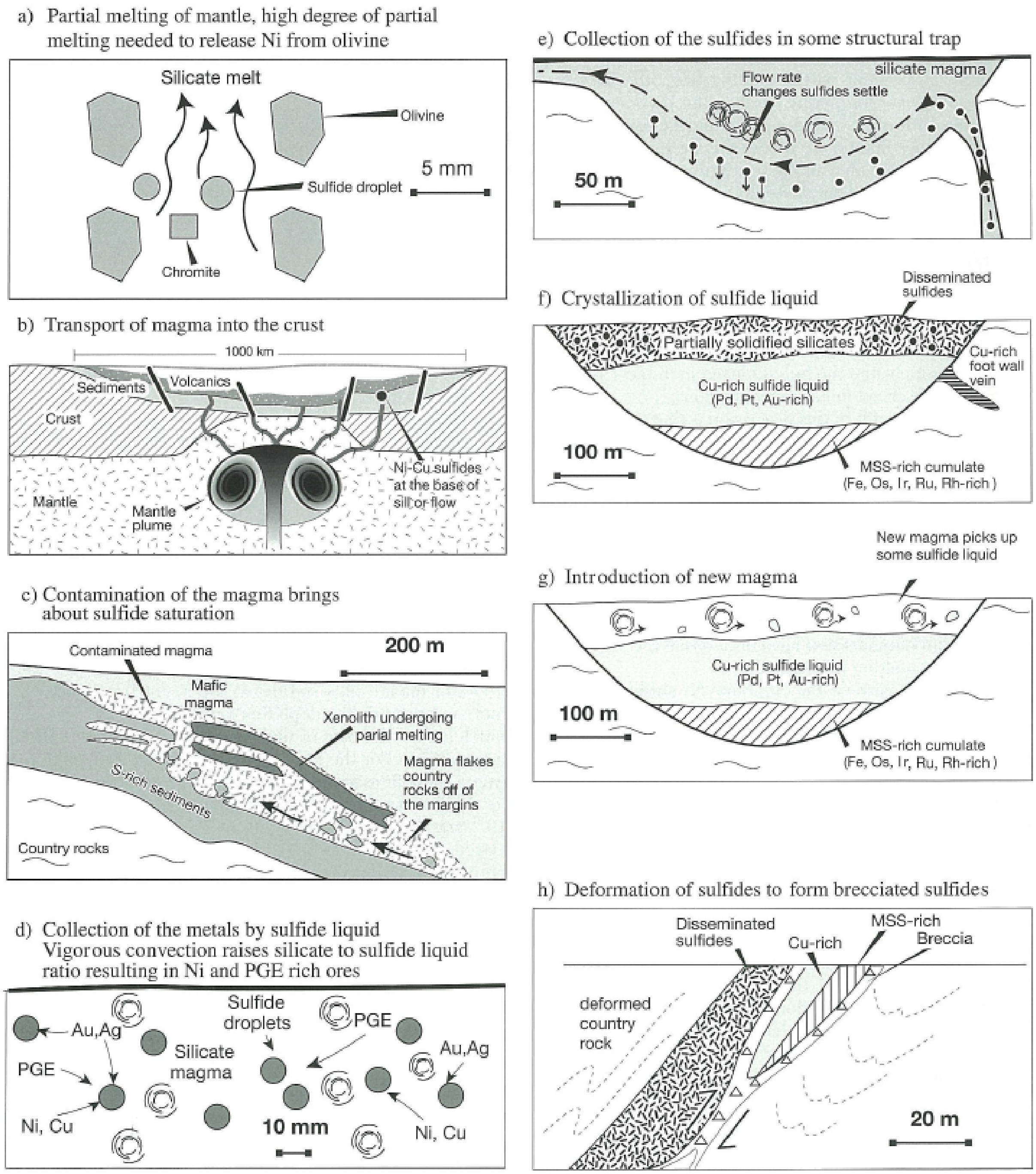


FIG. 16. Cartoon outlining the processes that lead to the formation of a Ni sulfide ore deposit. a. The mantle melts to release Ni from olivine and PGE from sulfides. b. Magma is transferred to the crust along crust penetrating faults. c. Sulfur is added to the magma from sediments to bring about saturation of a sulfide liquid. d. The sulfide droplets assimilate chalcophile metals. e. The droplets are transported by the magma until the magma flow slows such that they collect at the base of the intrusion or flow. f. The sulfide liquid undergoes crystal fractionation to produce an mss cumulate and a Cu-rich liquid that can be injected into the footwall. g. In some cases there may be a new injection of magma and the Cu sulfide liquid may be entrained and moved to a new site collection site. h. Deformation concentrates in the incompetent sulfides, resulting in sulfides being displaced from their parent body, possibly as breccias.

Source: *Barnes and Lightfoot (2005)*

9.0 EXPLORATION

Recent exploration programs on the Kenbridge Property include an Aster Satellite Survey in 2020 and surface and borehole geophysical surveys in 2021. Drilling recommenced on the Kenbridge Property in 2021 (since 2008) and included the Kenbridge North Target. The drilling results are discussed in Section 10.

9.1 ASTER SATELLITE SURVEY (2020)

The only recent exploration survey of the Kenbridge Property was a remote sensing Aster satellite survey (Steel and Associates Geoscientific Consulting, 2020). That survey was based on a spectral analysis and synthetic aperture radar survey performed by Aster Funds Ltd of Toronto, Ontario. The survey generated a visual near-infrared image of the Kenbridge Property and surrounding area, which gave a false colour image denoting water courses and gradational density of vegetation, sourced from the Japanese Terra satellite.

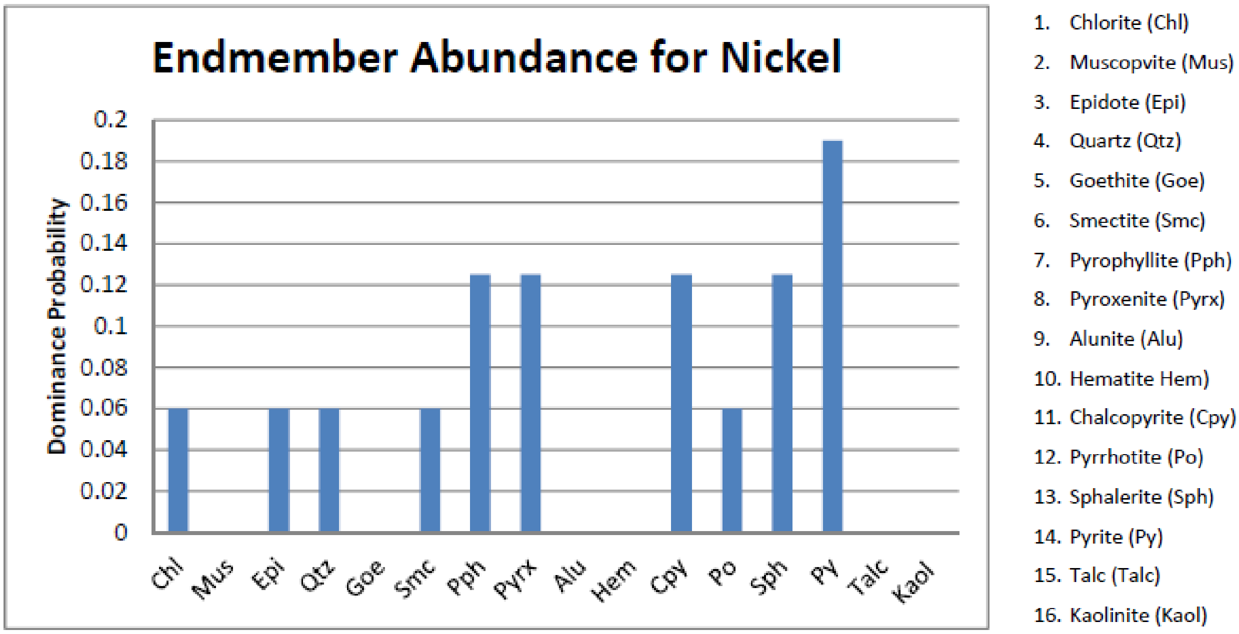
The synthetic aperture radar survey was based on polarized microwave signals from the Sentinel A and B satellites in para-synchronous orbit of the earth. The signals are unmixed using a proprietary mathematical algorithm based on the dielectric constant of discrete materials. A high dielectric constant defines water, which is removed using shapefiles provided by the Ontario government. Further analysis of the dielectric constant shows conductive features within the survey area and the potential mineral source of the conductor as mineral dielectric constants are known to a high degree of accuracy.

The third survey was a long wave infrared survey, again from the Terra satellite. Aster Funds Ltd. removes the digital effect of cloud, cloud shadow, vegetation, and surface waters, in order to provide a digital image of 100% outcrop, and subsequently unmixes the signal using a cubic convolution algorithm. Potential spectral values are cross-referenced with established spectral databases, and minerals are identified that correspond to the 95% confidence level, based on spectral frequency. Maps are provided that show each of the most abundant sixteen minerals in density and distribution with colours providing a visual estimate of scale of importance. Minerals are then tied to the typical mineral suite of deposits in the analytical area, and may indicate lithologies, alteration suites, or specific minerals.

The Aster Funds Ltd spectral analysis survey of Kenbridge revealed the presence of alunite, chlorite, chalcopyrite, pyrrhotite, goethite, hematite, epidote, pyrite, pyroxenites, pyrophyllite, muscovite, smectite, kaolinite, quartz, sphalerite, and talc in the area of the Kenbridge Property. These minerals were then grouped into exploration indicator suites for deposits of nickel, copper, gold and zinc (Figure 9.1).

Contouring these groups yielded new insights into the intensity and distribution of mineralization on the Kenbridge mining claims and surrounding area (Figure 9.2). The Kenbridge Deposit was readily identified in the spectral analysis survey and showed five of the six possible indicator minerals in the nickel group. The same response was recorded in three different locations on Mining Claims 516390 and 516401.

FIGURE 9.1 ABUNDANCE OF NICKEL TARGET VECTOR MINERALS

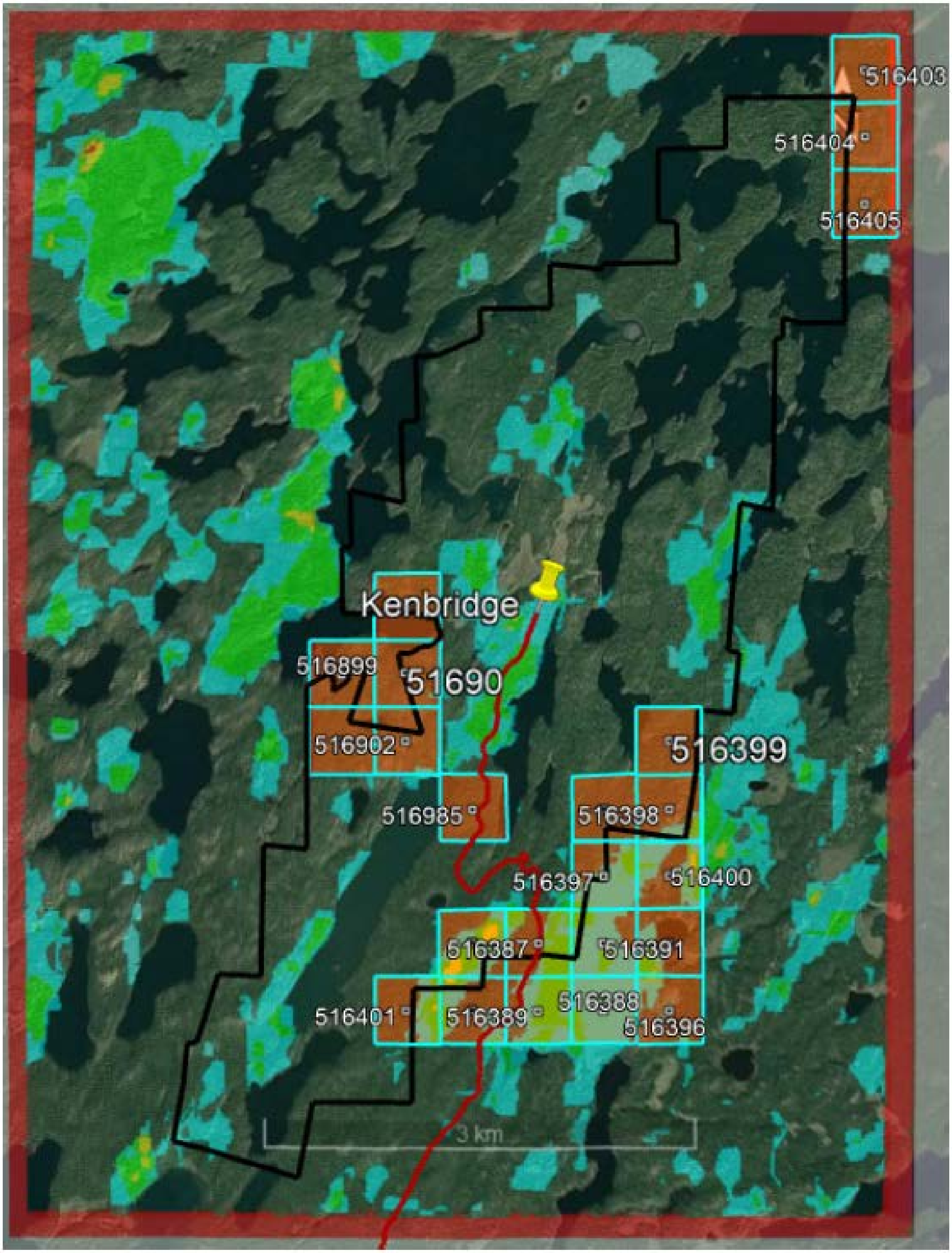


Source: *Steel and Associates Geoscientific Consulting (2020)*

Integration with geology and structure found that these three responses coincide with a tectonic fracture zone spatially associated with the ultramafic and metavolcanic host rocks in which the Kenbridge Project is found. The key mineral indicators are pyrrhotite and talc. The presence of pyrrhotite indicates that the mineralizing system contained sufficient sulphur and iron to precipitate sulphide minerals. The talc indicates low-grade metamorphic conditions during structural movement, and is present as a distinctive schist unit in the hanging wall and footwall of the Kenbridge Deposit structural zone.

Ground-based follow-up of the Aster Funds Ltd Target Vector Minerals™ was planned for the 2021 field season. Steel and Associates Geoscientific Consulting (2020) recommended a $154,000 program of mobile metal ion (“MMI”) sampling on the mining claims covering the ASTER Imagery Study anomalies in nickel, copper and gold.

FIGURE 9.2 DISTRIBUTION OF NICKEL TARGET VECTOR MINERALS CONTOURED FOR TARGET DEFINITION

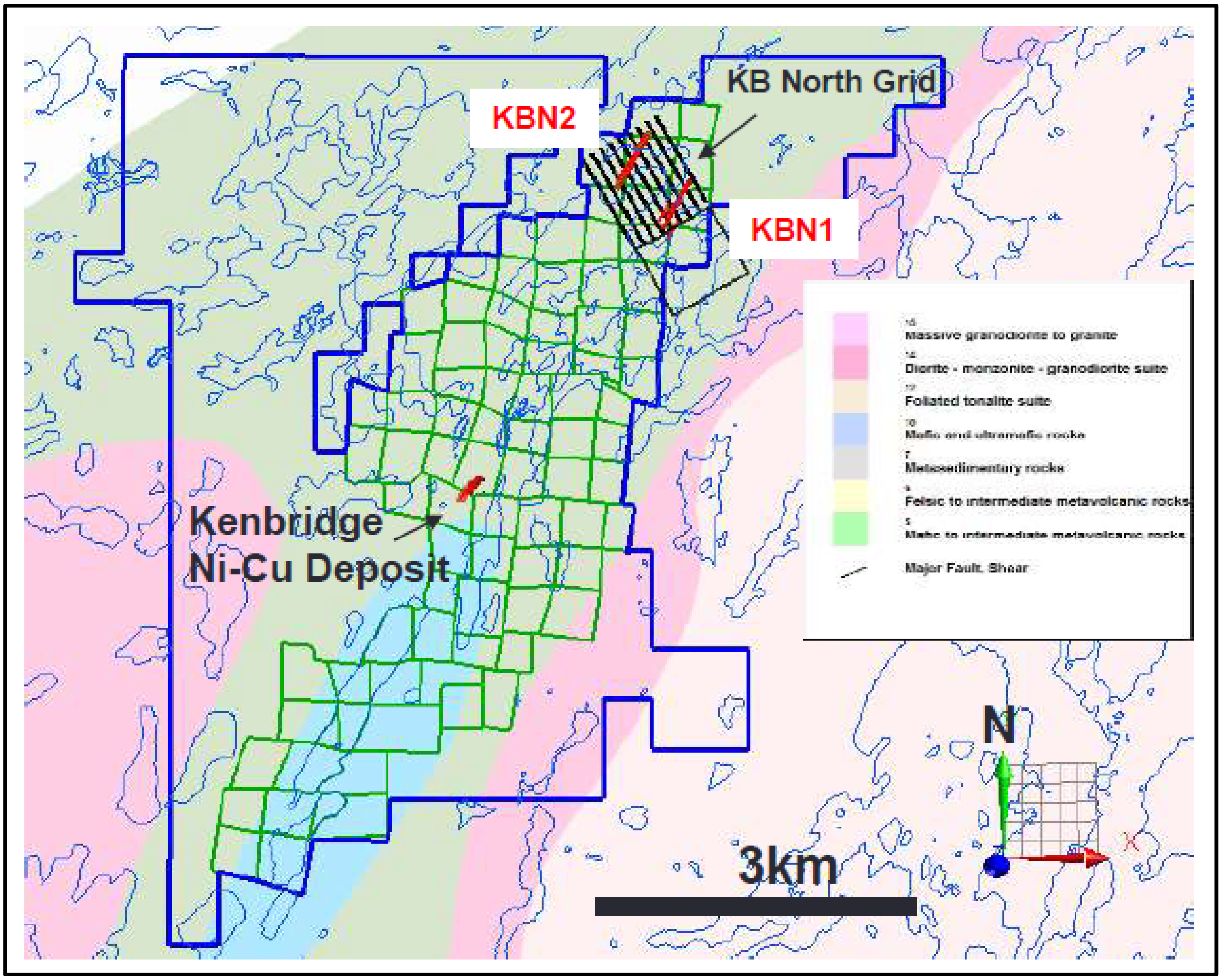


Source: *Steel and Associates Geoscientific Consulting (2020)*

9.2 GEOPHYSICAL SURVEYS (2021)

In a Company press release dated March 2, 2021, Tartisan announced that it had contracted Crone Geophysics & Exploration Ltd. ("Crone") to perform a surface Time Domain Electromagnetic ("TDEM") survey over targets identified to the north of the Kenbridge Deposit. The target areas are interpreted to represent similar rock types to those that host the Kenbridge Deposit (see Figure 9.3). In addition, Crone completed borehole electromagnetic ("BHEM") surveys of historical drill holes completed at the Kenbridge Deposit.

FIGURE 9.3 LOCATION OF THE TDEM SURVEY AT KENBRIDGE NORTH



Source: *Tartisan (2021)*
Note: *The Kenbridge Property boundary (blue) shown is as it was in 2021.*

In a follow-up Company press release dated May 5, 2021, Tartisan announced results of the TDEM and BHEM surveys. Results of the surface TDEM survey at Kenbridge North shows a strong conductor known as "KBN1", which appears to extend for at least 400 m with a similar strike direction as the Kenbridge Deposit. A second conductor, "KBN2" was also identified on Kenbridge North, specifically on the northern portion of the survey grid. "KBN2" requires further ground follow-up in the upcoming exploration program. Interpretation of the Kenbridge North area has highlighted gabbro hosted mineralization similar to the Kenbridge Deposit. Previous shallow historical drilling from the 1950s intersected gabbro host rocks with disseminated sulphide. The current TDEM survey indicates that the ‘KBN1” anomaly represents a stronger conductor than previously interpreted in the historical drilling. Additional modelling of the data is on-going and will help to determine the optimal depth to drill these conductors.

Borehole TDEM results were to be utilized in drill hole target generation through the identification of targets with the highest conductivity and potentially higher-grade sulphides. Borehole TDEM survey results for historical drill holes KB07-180 and KB07-194 at the Kenbridge Deposit, suggest that conductive material continues to depth and to the north of the Kenbridge Deposit. Historical drill hole KB07-180, located on the north side of the Kenbridge Deposit, intersected 2.95% Ni over 21.5 m. The BHEM modelling indicates a strong in-hole anomaly. Tartisan’s first-pass drilling in 2021 was planned to focus on testing below and along strike to the north of the known Kenbridge Deposit and at Kenbridge North (see Section 10 of this Technical Report).

10.0 DRILLING

Drilling recommenced on the Kenbridge Property in 2021. Previously, there had been no drilling on the Property since 2008 (see Section 6). Since 1937, 665 surface and underground drill holes totalling 99,741 m have been completed on the Property (Table 10.1).

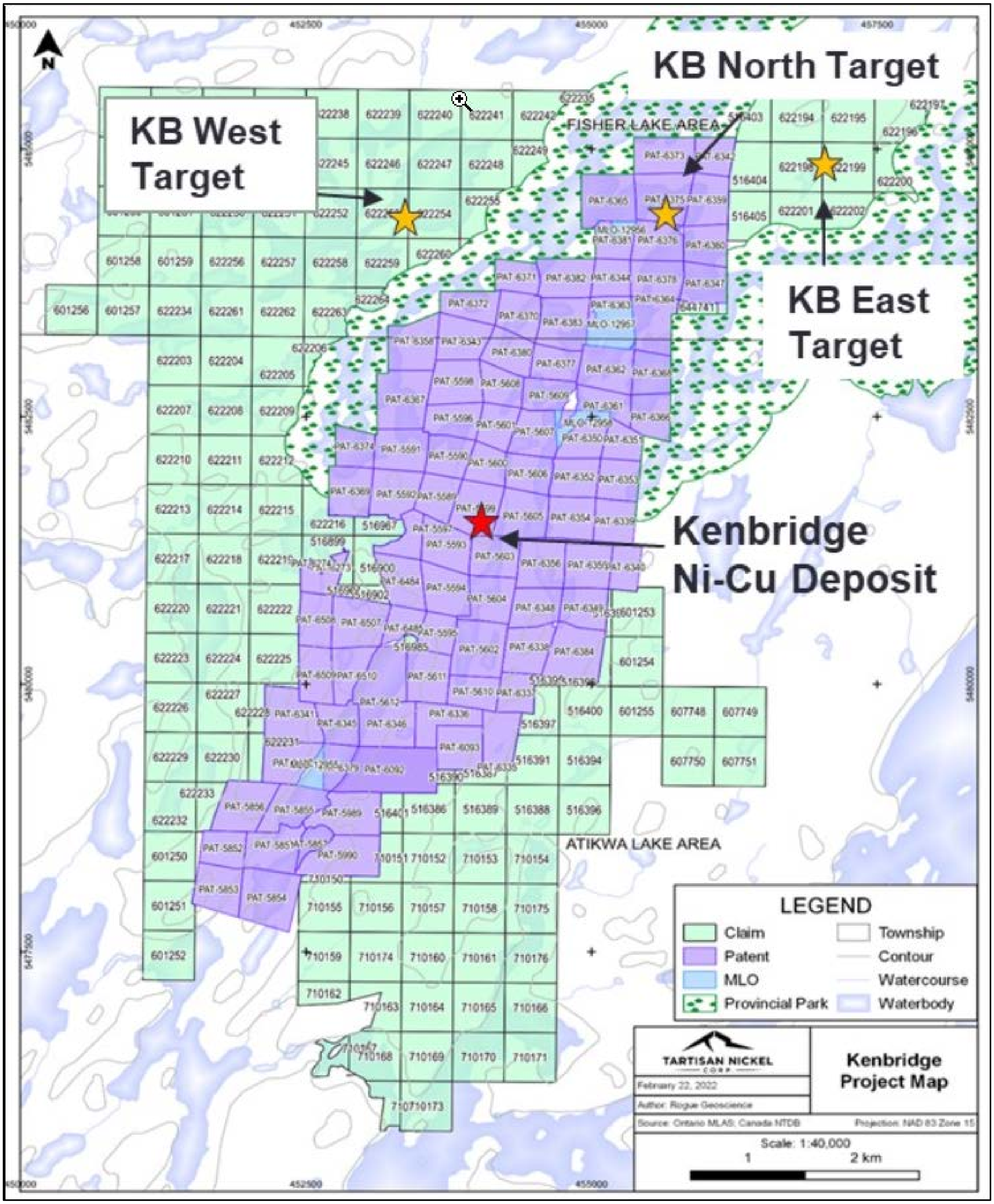
TABLE 10.1
KENBRIDGE PROPERTY DRILLING

Company	Years	Location	No. of Drill Holes	Drilling Length (m)
Coniagas	1937	surface	35	3,048
INCO	1948-1949	surface	15	3,658
Falconbridge	1952-1955	surface	53	12,579
Falconbridge	1955-1957	underground	247	15,262
Falconbridge	1955-1958	regional	74	8,915
Blackstone	2005	surface	21	4,119
Canadian Arrow	2007-2008	surface	206	40,753
Tartisan	2021	surface	14	11,407
Total			**665**	**99,741**

10.1 INTRODUCTION

Tartisan announced in a press release dated June 28, 2021, mobilization of two diamond drill rigs to its Kenbridge Property to complete a 10,000 m drilling program. The drilling program was designed to test the on-strike and down-dip potential for additional nickel sulphide mineralization to increase the size and grade of the Kenbridge Deposit. Additionally, Tartisan also planned to drill the Kenbridge North area, where two sizable targets were interpreted from the winter 2021 ground Time Domain Electromagnetic ("TDEM") survey (Figure 10.1). Although the Kenbridge Deposit is included in the current Mineral Resources, the Kenbridge North target is not.

FIGURE 10.1 KENBRIDGE NICKEL DEPOSIT AND KENBRIDGE NORTH 2021 DRILL TARGETS

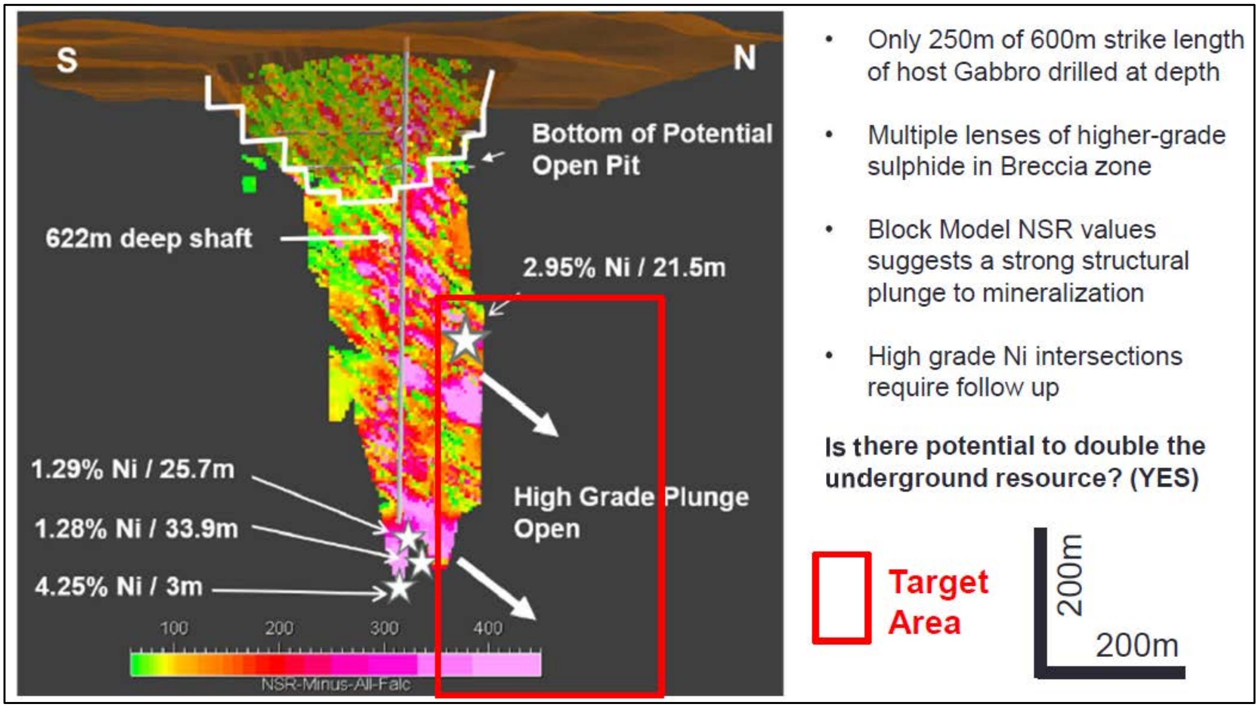


Source: *Tartisan (press release dated March 8, 2022)*

10.2 KENBRIDGE DEPOSIT 2021 DRILLING RESULTS

Geological evaluation of the Kenbridge Deposit indicates there is significant potential to expand the Mineral Resource laterally and at depth, by step-out drilling from high-grade intersections such as historical drill hole KB07-180 (2.95% Ni, 0.82% Cu over 21.5 m, including 7.2% Ni, 0.67% Cu over 5.5 m). One of the deepest drill holes (K2011 = 880 m below surface) intersected mineralization grading 4.25% Ni and 1.38% Cu over 3.3 m (Figure 10.2), which indicates that the Deposit also remained open at depth.

FIGURE 10.2 KENBRIDGE DEPOSIT PRIORITY DRILL TARGET – VIEW LOOKING WEST



Source: *Tartisan (Corporate Presentation, February 2022)*

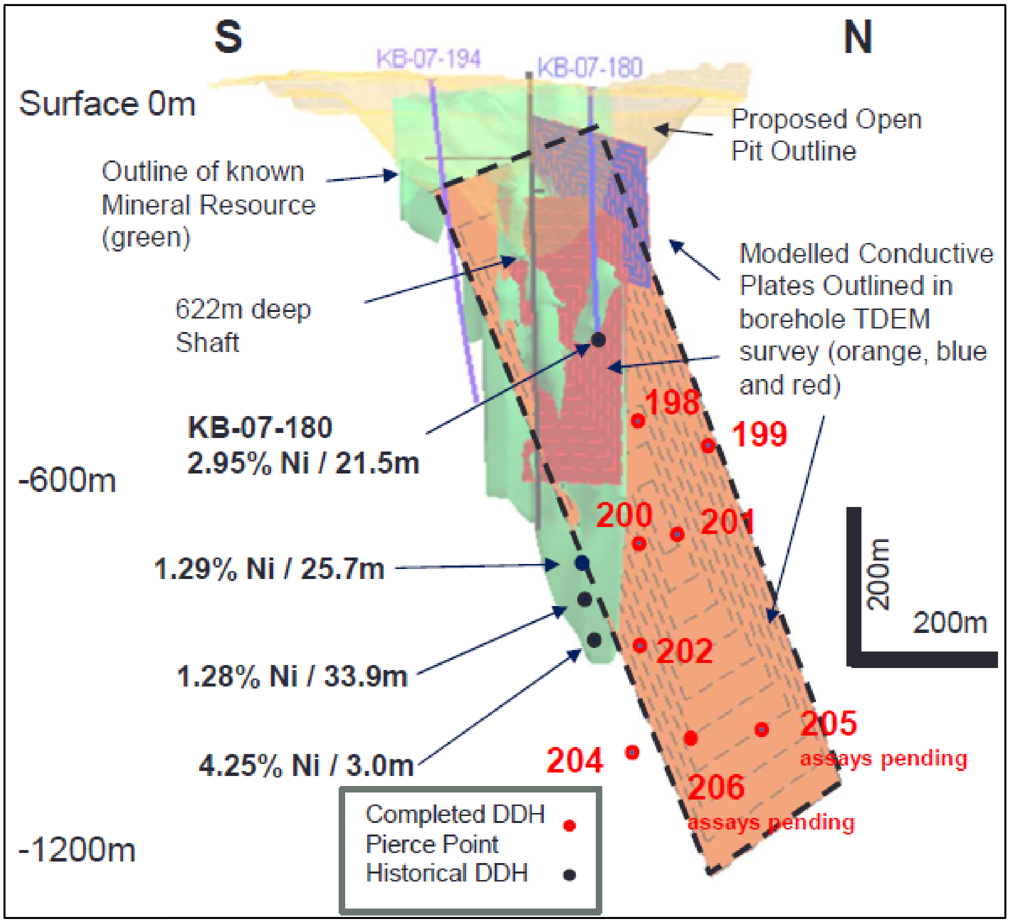
The collar location, orientations and drill hole lengths for the Kenbridge Deposit 2021 drill holes are presented in Table 10.2, pierce points on longitudinal projection are shown in Figure 10.3, and the drill hole assay intersections are listed in Table 10.3. A total of ten drill holes totalling 8,988 m were completed.

TABLE 10.2
KENBRIDGE 2021 DRILL HOLE COLLAR LOCATION INFORMATION, ORIENTATIONS AND HOLE LENGTHS

Drill Hole ID	Easting	Northing	Elevation (m)	Azimuth (deg °)	Dip (deg °)	Length (m)
KB21-198	454,291	5,481,431	392.40	300.00	-55.10	639
KB21-199	454,320	5,481,491	392.00	298.30	-60.00	810
KB21-200	454,291	5,481,431	392.40	300.00	-62.00	717
KB21-201	454,320	5,481,491	392.00	300.00	-70.00	1,002
KB21-202	454,291	5,481,431	392.40	300.00	-66.00	867
KB21-203	454,291	5,481,431	392.40	300.00	-74.00	840
KB21-203A	454,291	5,481,431	392.40	300.00	-71.00	675
KB21-204	454,328	5,481,488	394.70	300.00	-76.00	1,110
KB21-205	454,406	5,481,551	374.20	300.00	-76.00	1,179
KB21-206	454,406	5,481,551	374.20	285.00	-76.00	1,149
Total						**8,988**

Source: *Tartisan (press release dated March 8, 2022)*

FIGURE 10.3 KENBRIDGE LONGITUDINAL PROJECTION SHOWING MODELLED TDEM ANOMALIES AND 2021 DRILL HOLE PIERCE POINTS



Source: *Tartisan Corporate Presentation (February 2022)*

TABLE 10.3
KENBRIDGE DEPOSIT 2021 DRILL HOLE INTERSECTIONS

Drill Hole ID	From (m)	To (m)	Length (m)	Ni (%)	Cu (%)
KB21-198					
A-Zone	454.0	479.6	25.6	1.03	0.41
including	456.4	459.1	2.7	2.76	0.88
and	464.0	467.0	3.0	2.26	0.80
and	473.0	477.2	4.2	1.55	0.49
B-Zone	486.7	493.0	6.3	0.95	0.38
Low Grade Zone	499.0	502.0	3.0	0.56	0.37
KB21-199	no significant results				
KB21-200					
A-Zone	603.5	608.0	4.5	1.02	0.47
B-Zone	617.0	623.0	6.0	0.70	0.20

TABLE 10.3 **KENBRIDGE DEPOSIT 2021 DRILL HOLE INTERSECTIONS**					
Drill Hole ID	**From (m)**	**To (m)**	**Length (m)**	**Ni (%)**	**Cu (%)**
KB21-201	762.0	763.5	1.5	0.52	0.22
KB21-202					
A-Zone	663.0	688.5	25.5	1.13	0.61
including	672.0	676.5	4.5	2.96	1.61
including	673.5	675.0	1.5	4.17	2.14
B-Zone	697.5	711.0	13.5	0.25	0.13
KB21-203	hole lost before reaching the zone				
KB21-204					
A Zone	993.6	994.6	1.1	3.18	0.19
including	993.6	993.9	0.4	7.73	0.16
B Zone	1002.0	1009.8	7.8	0.85	0.54
including	1002.5	1006.5	4.0	1.15	0.71
including	1004.5	1006.5	2.0	1.33	0.28
KB21-206					
A Zone	975.0	977.8	2.8	0.86	0.18
including	975.0	976.5	1.5	1.30	0.28
B Zone	996.0	1002.0	6.0	0.47	0.18
including	996.0	998.5	2.5	0.74	0.19

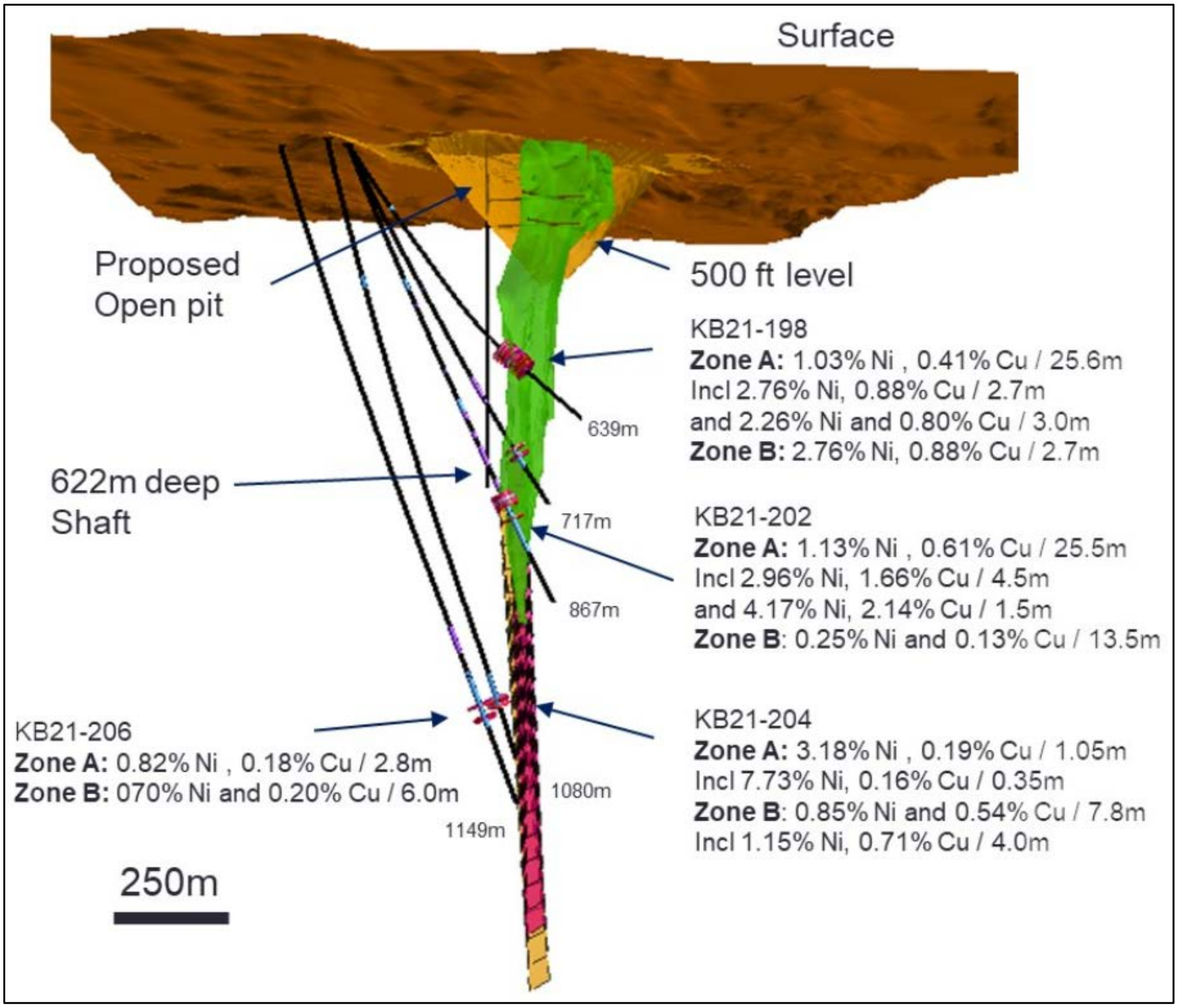
Source: *Tartisan (press release dated March 8, 2022)*

Drill hole KB21-198 intersected two nickel-copper zones at a drill depth of 454 m (Zone A) and 486.7 m (Zone B): Zone A returned 25.6 m of 1.03% Ni and 0.41% Cu, including higher-grade intersections of 2.7 m of 2.76% Ni and 0.88% Cu, and 3.0 m of 2.26% Ni and 0.80% Cu; and Zone B returned assays results of 0.95% Ni and 0.38% Cu over 6.3 m. This drill hole was targeted approximately 50 m north of the current Mineral Resource. An additional, lower-grade zone was intersected at a drill depth of 499 m. That horizon returned 3.0 m of 0.56% Ni and 0.37% Cu. Drill hole KB21-199 was completed north of drill hole KB21-198 and did not return any significant results.

Drill hole KB21-200 also intersected Zones A and B at drill depths of 603.5 m and 617.0 m, respectively. Zone A returned 4.5 m of 1.02% Ni and 0.47% Cu. Zone B returned 6.0 m of 0.70% Ni and 0.20% Cu. This drill hole was targeted towards the lower known extent of the Mineral Resource.

Time Domain Electromagnetic ("TDEM") surveying has been completed on the initial drill holes. Preliminary interpretation suggests that strongly conductive material extends below the intersections. This interpretation was tested in 2021 drill holes KB21-201, KB21-202 and KB21-204 (Figure 10.4). Drill hole KB21-204 is located approximately 150 m below the previously deepest drilling of the Kenbridge Deposit. Tartisan determined that similar sulphide mineralization was intersected in these drill holes as previously reported in drill holes KB21-198 and KB21-200.

FIGURE 10.4 KENBRIDGE DEPOSIT EAST-WEST CROSS-SECTIONAL PROJECTION SHOWING 2021 DRILL RESULTS – VIEW LOOKING SOUTH



Source: *Tartisan (Press Release dated March 8, 2022)*

Description: *Green outline is the current Mineral Resource. Blue and purple are associated gabbro and pyroxenite favorable host rocks. Red and orange outlines are newly modelled borehole TDEM anomalies interpreted to extend below the deepest drill intersections. Drill hole KB21-206 is located approximately 150 m below the deepest historical drill hole intersection (1950s drill hole K2011- 4.25% Ni over 3 m) and 125 m north of drill hole KB21-204.*

Drill hole KB21-202 intersected two nickel-copper zones at drill depths of 663.0 m and 693.7 m. These two zones are interpreted to represent the down-dip extension of the Zone A and Zone B intersected previously in drill holes KB21-198 and KB21-200. In drill hole KB21-202, Zone A returned 25.5 m of 1.13% Ni and 0.61% Cu, including higher-grade intersections of 4.5 m of 2.96% Ni and 1.66% Cu, and 1.5 m of 4.17% Ni and 2.14% Cu. Zone B returned 13.5 m of 0.25% Ni and 0.13% Cu. This drill hole was planned to intersect mineralization at approximately 200 m down-dip of previously completed drill hole KB21-198. Drill Hole KB21-201 intersected Zone A at a drill depth of 762.0 m. Zone A returned 1.5 m of 0.52% Ni and 0.22% Cu. This drill hole was completed north of drill holes KB21-202 and KB21-198.

TDEM surveys were completed on drill holes KB21-198 and KB21-200. Interpretation suggests that two parallel, steeply dipping, strongly conductive zones extend below the intersections from those holes. Drill hole KB21-202 appears to confirm this interpretation. Drill hole KB21-204 was planned to test these same interpreted conductors, approximately 200 m down-dip of drill hole KB21-202. Drill hole KB21-203 was suspended, due to drill hole conditions, and drill hole KB21-03A was completed at a slightly shallower dip angle.

Drill hole KB21-204 intersected two nickel-copper zones at a drill depth of 993.55 m and 1,002 m. The two zones are interpreted to represent the down-dip extension of Zone A and Zone B previously intersected in drill holes KB21-198, KB21-200, and KB21-202. In KB21-204, Zone A returned 1.05 m of 3.18% Ni and 0.19% Cu, including a higher-grade section of 0.35 m of 7.73% Ni and 0.16% Cu. Zone B returned 7.8 m of 0.85% Ni and 0.54% Cu, including 4.0 m of 1.15% Ni and 0.71% Cu. Drill hole KB21-204 is located approximately 150 m below the deepest drill hole intersection completed in the 1950s (historical drill hole K2011- 4.25% Ni over 3 m) and is the deepest drill intersection on the Project (see Figures 10.2 and 10.3), at approximately 1,080 m vertically below surface.

Drill hole KB21-206 intersected two nickel-copper zones at a drill depth of 975 m and 996 m. These two zones are interpreted to represent the down-dip extension of Zone A and Zone B intersected previously in drill holes KB21-198, KB21-200, KB21-202, and KB21-204. In drill hole KB21-206, Zone A returned 2.8 m of 0.86% Ni and 0.18% Cu, including a higher-grade section of 1.5 m of 1.30% Ni and 0.28% Cu. Zone B returned 6 m of 0.47% Ni and 0.18% Cu, including 2.5 m of 0.74% Ni and 0.19% Cu. Drill hole KB21-206 is located approximately 150 m below the deepest historical drill hole intersection (K2011- 4.25% Ni over 3 m) and is 125 m north of drill hole KB21-204. Drill hole KB21-205 was completed and assays remain pending from the laboratory.

10.3 KENBRIDGE NORTH 2021 DRILLING RESULTS

At Kenbridge North (KB North Target in Figure 10.1), 2.5 km north of the Kenbridge Deposit, Tartisan performed a surface TDEM survey. The Kenbridge North Target was interpreted to represent similar rock types that host the Kenbridge Deposit. Given the favourable TDEM signature, Kenbridge North was considered to be a high-priority drill target similar to the Kenbridge Deposit.

As part of the 2021 drilling program, four diamond drill holes totalling of 2,419 m were completed on the Kenbridge North target (conductor KBN1, see Figure 9.3). Drilling at Kenbridge North intersected similar rock types (gabbro and pyroxenite) that host the Kenbridge Nickel Deposit. Weakly disseminated sulphides were intersected. Assay results and interpretation were pending as of the effective date of this Technical Report. Borehole TDEM surveys could not be completed on the Kenbridge North target during or immediately following the drilling program, due to deteriorating weather and unsafe conditions around the surrounding lakes. Instead, those four drill holes were planned to be surveyed under winter freeze-up conditions and combined with a ground

TDEM survey over the two additional identified targets to the east (KB East Target) and west (KB West Target) of the Kenbridge North Grid (see Figure 10.1).

11.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

11.1 HISTORICAL SAMPLING

11.1.1 Sample Preparation, Analyses and Security

The historical sample preparation, analysis and security information herein are derived from the previous Kenbridge Technical Report (Buck et al., 2008), primarily work by SRK. The author of this section of the current Technical Report (the "Author") has not reviewed any historical data relating to the sampling undertaken at the Kenbridge Property, other than that described in the 2008 report.

Information regarding the historical Falconbridge sample preparation, analyses and procedures was not available to SRK, who completed the Updated Mineral Resource Estimate on which the PEA work of Buck et al. (2008) is based. The Blackstone (2005) program is documented in Keast and O'Flaherty (2006).

The Blackstone NQ core was used for metallurgical testing, bulk density determinations, and for assay analyses of a pre-selected suite of elements. Metallurgical samples were taken from various mineralized intervals with the objective of representing a range of mineralization types, grades and locations from Kenbridge. Where metallurgical samples were taken, half of the split drill core was taken and packed in nitrogen filled sealed bags, which were subsequently packed within airtight nitrogen filled plastic containers and shipped to SGS Laboratories in Lakefield, Ontario. The residual half-drill core was subsequently sawn in half (quartered) and samples used to measure bulk density, before being placed into sealed bags for shipment to SGS Mineral Services in Sudbury, Ontario for assay analyses. Quality control procedures employed include the inclusion of blanks and certified reference materials ("CRM") at pre-determined intervals. According to Keast and O'Flaherty (2006), insufficient blanks and CRMs were available on-site for insertion into the entire sampling program.

Analyses of the Blackstone core were conducted in two phases: all samples were analyzed for nickel, copper and cobalt by ICP-OES, following a sodium peroxide fusion. Mineralized intervals were subsequently identified and samples within those intervals were analyzed for platinum, palladium and gold by fire assay methods with atomic absorption finish and for silver by multi-acid digestion followed by atomic absorption. Sulphur was determined by Leco Furnace. Sample sizes used for the analyses were not reported. Selective repeat samples were not taken. In addition, whether an umpire laboratory was used for the Blackstone analyses is not known. The SGS Mineral Services Laboratory in Sudbury was accredited to ISO 17025 by the Standards Council of Canada for a number of specific test procedures. SRK did not comment on the security measures in place during the sample handling processes, during the various phases of data generation, as information relating to this aspect was not available.

For the Canadian Arrow drill program, split drill core samples were collected and processed by personnel under contract to Canadian Arrow and supervised by Todd Keast (VP Exploration). After splitting and bagging, the sealed individual samples were placed in shipping bags sealed with plastic tie straps. The bags remained sealed until opened by ALS Chemex or Accurassay personnel in Thunder Bay, Ontario. All samples were initially stored in the field camp to await a scheduled flight to Sioux Narrows. On arrival in Sioux Narrows, the samples were loaded directly on a trailer that was then locked. Samples were subsequently delivered by Canadian Arrow personnel to the laboratories in Thunder Bay.

Canadian Arrow submitted a total of 4,901 samples to the ALS Chemex Thunder Bay facility since July 2007. ALS Chemex laboratories in North America are registered to ISO 9001:2000 for the "provision of assay and geochemical analytical services" by QMI Quality Registrars.

The preparation and analyses methods and procedures applied at ALS Chemex include the following:

- For preparation, the method generally used was PREP-31 for rock samples;
- For the analysis of platinum, palladium and gold, the method used was PGM-ICP23; and
- For multi-element analysis, the method used was ME-ICP81. For individual elements, method used was Ag-AA62.

In addition, the sample preparation, precious and base metal analyses and quality control procedures implemented by Accurassay on the Canadian Arrow samples have been reviewed by SRK and found to conform to industry standards. Accurassay Laboratories uses a combination of CRMs, including reference materials purchased from CANMET, CRMs created in-house by Accurassay Laboratories and tested by round robin with laboratories across Canada, and ISO certified calibration CRMs purchased from suppliers. If any of the CRMs plot outside the warning limits (±2SD = standard deviation), re-assays will be performed on 10% of the samples analyzed in the same batch and the re-assay values are compared with the original values. If the values from the re-assays match original assays the data is certified; if they do not match the entire batch is re-assayed. Should any of the standard fall outside the control limit (±3SD) all assay values are rejected and all of the samples in that batch will be re-assayed.

11.1.2 Check Assay Quality Assurance/Quality Control

The field procedures implemented by Falconbridge during exploration programs cannot be commented upon by SRK, since documentation to verify exploration aspects such as surveying, drilling, core handling, sampling, assaying and database creation and management were not available. Reference to the quality assurance and quality control program implemented by Blackstone during their exploration program in 2005 is made by Keast and O'Flaherty (2006).

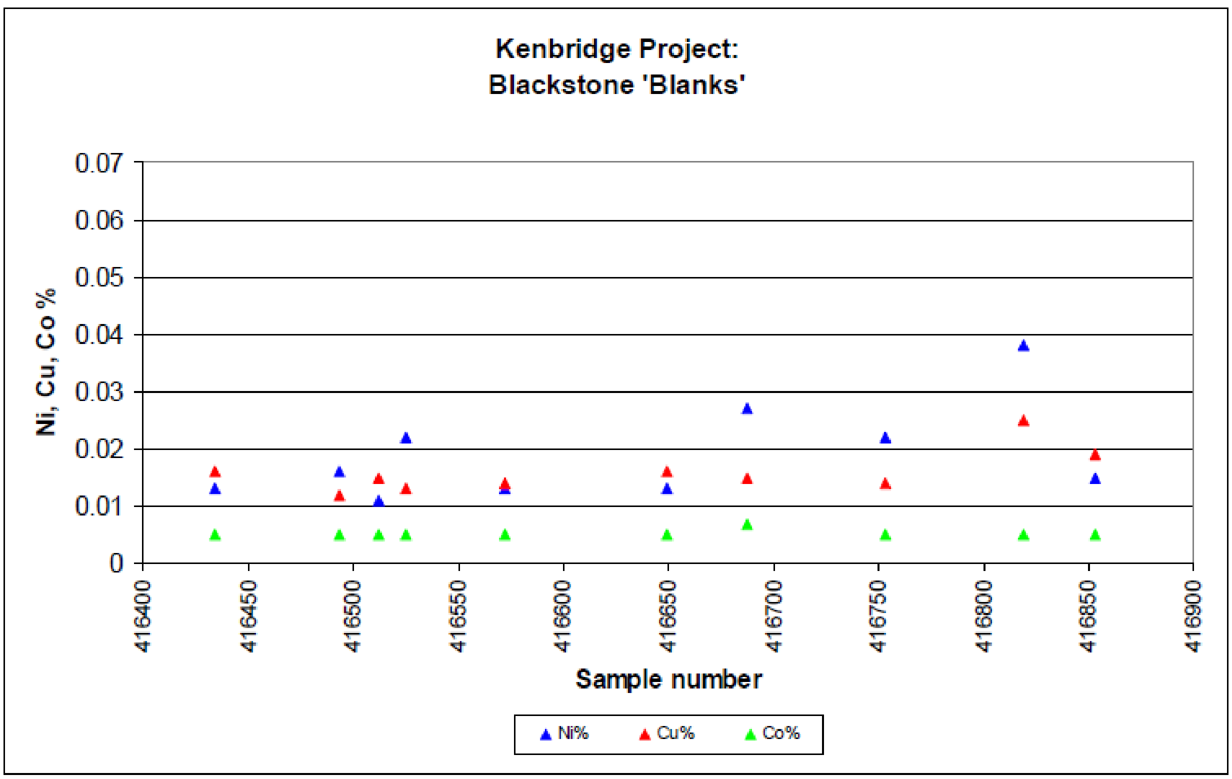
Analytical control measures typically involve internal and external laboratory measures implemented to monitor the precision and accuracy of the sampling, preparation and assaying process. They are also important to prevent and monitor the voluntary or inadvertent contamination of samples. Although assay certificates and Quality Assurance and Quality Control Reports from SGS Laboratories in Sudbury were not available to SRK, it was assumed that internal and external laboratory control measures were in place.

In addition to the inferred quality assurance measures taken by SGS Laboratories in Sudbury, a series of external analytical quality control measures to monitor the reliability of assaying results delivered by SGS Laboratories were implemented by Blackstone. A series of blanks and CRMs were inserted at approximately every 10 to 20 samples. However, it was reported that blanks and CRMs were inserted into only 16 of the 21 drill holes in the program.

Blank samples used at Kenbridge were taken from previously drilled gabbro units. These gabbro units can contain pyrite and other mineralization, and therefore SRK had reservations about whether this material can effectively be used as a reliable source of blank material. The results of the assayed nickel, copper and cobalt 'blanks' is shown in Figure 11.1, where the particularly wide variance in nickel percentage results confirms that the gabbro is not a suitable 'blank' sample material.

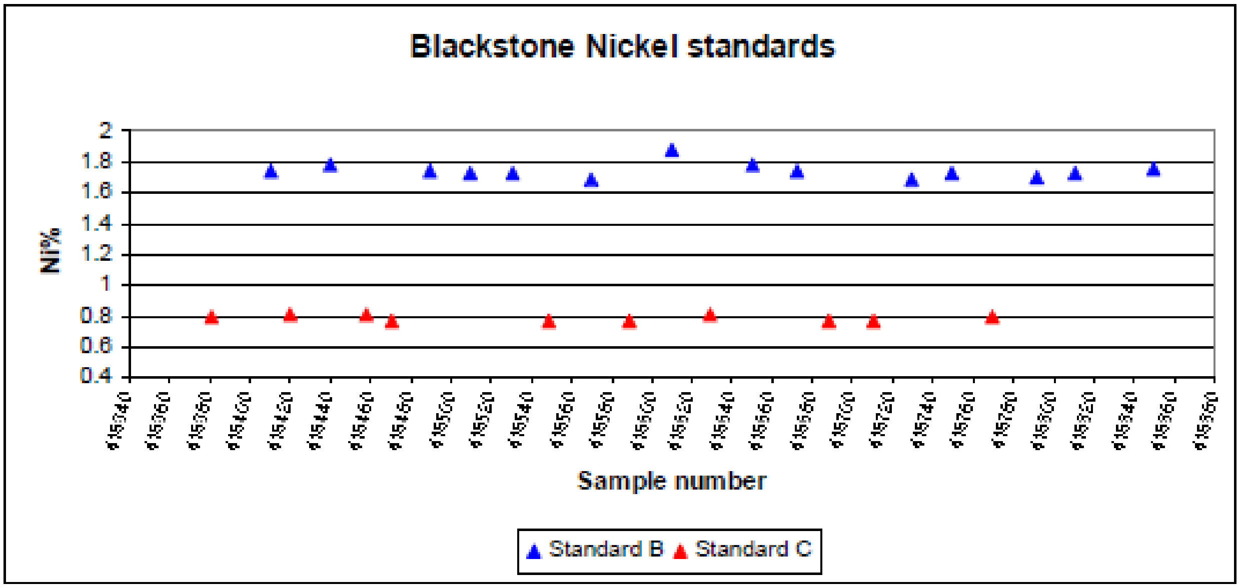
Two 'uncertified' CRMs were applied by Blackstone. The results of the Blackstone standards for nickel, copper and cobalt percentages are plotted in Figure 11.2. SRK was unable to determine what the certified values of these CRMs were, therefore could not comment on the deviation of these results from these CRM values.

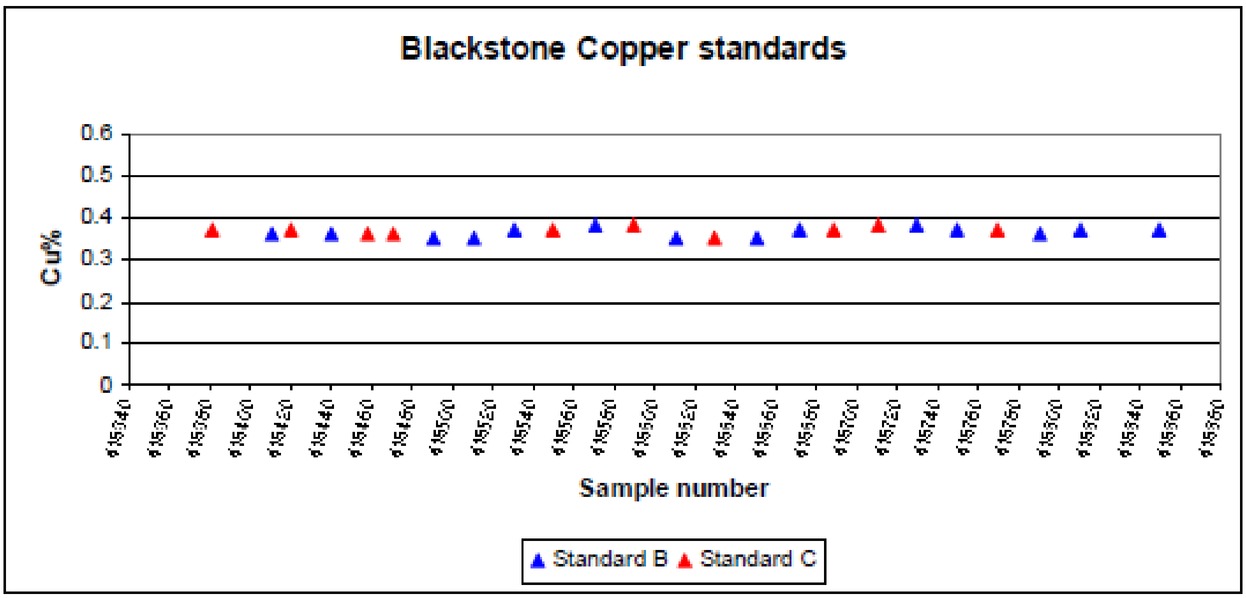
FIGURE 11.1 PLOT OF BLACKSTONE "BLANK" ANALYSES FOR NICKEL, COPPER AND COBALT

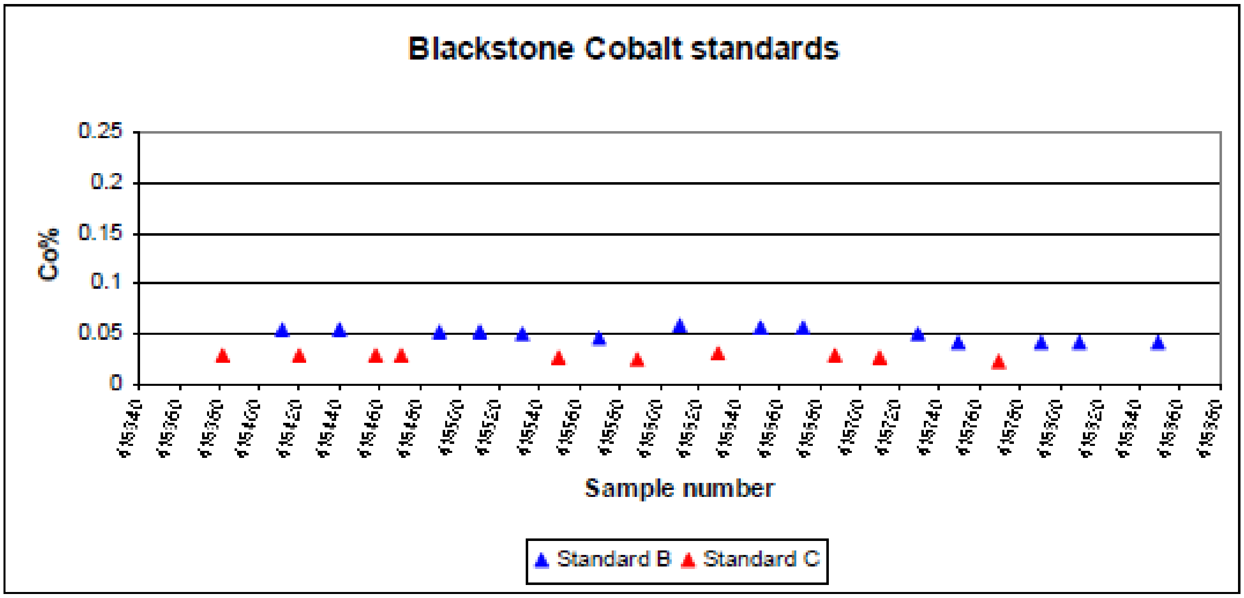


Source: *Buck et al. (2008)*

FIGURE 11.2 PLOT OF THE BLACKSTONE NICKEL, COPPER AND COBALT CRM ASSAY RESULTS







Source: *Buck et al. (2008)*

Three external CRMs were used during the Canadian Arrow core sampling program in 2007; two semi-massive sulphide "intermediate grade" materials (LBE-1, LBE-3) and one from non-mineralized "barren" mafic volcanic material ("KNMV"). For Canadian Arrow exploration, staff added a total of 704 CRMs and blanks to the other regular drill core samples submitted for analysis.

There were 377 KNMV blanks, 230 LBE-1 CRMs, and 97 LBE-3 CRMs. CRMs and blanks were inserted into the drill core sample stream at irregular intervals. The general protocol was to insert one blank and one CRM into approximately every 15 to 20 samples. The accepted assay grades for LBE-1 and LBE-3 are tabulated in Table 11.1.

TABLE 11.1
REFERENCE GRADES FOR CRMS LBE-1 AND LBE-3

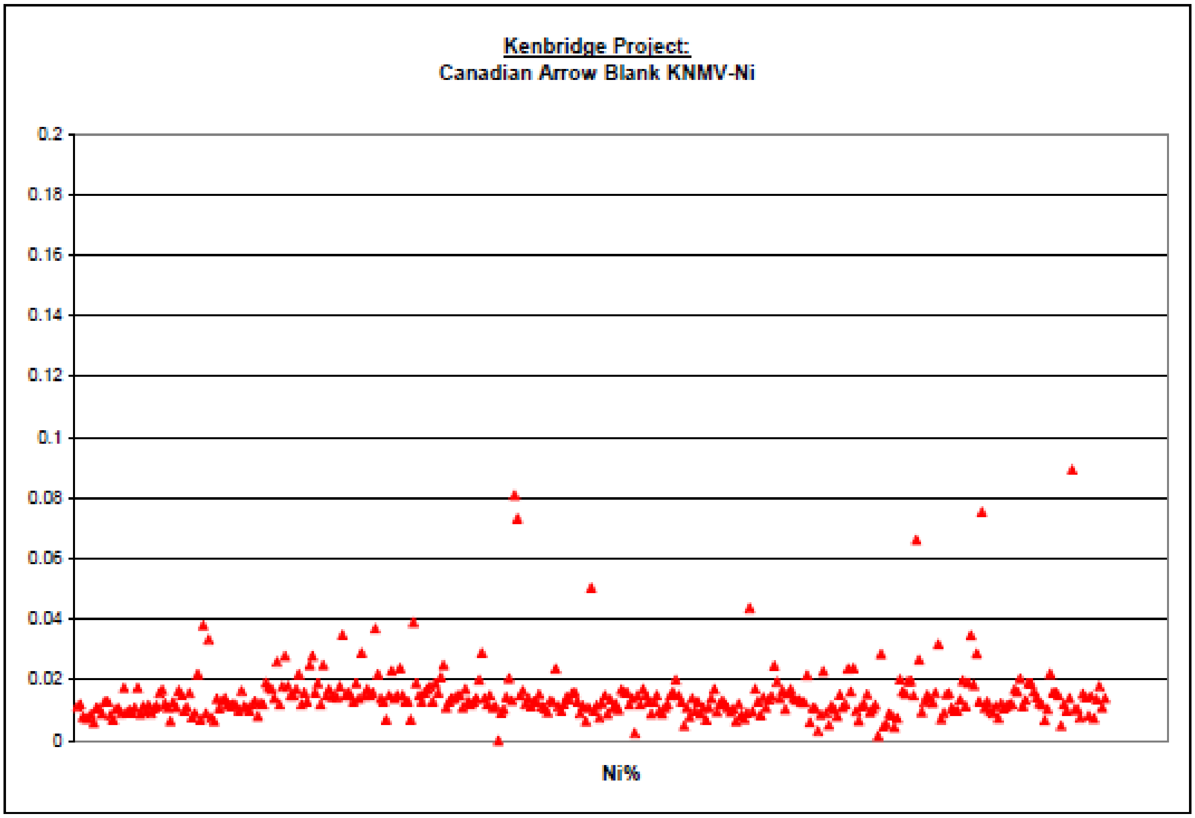
CRM	Ni (%)	Cu (%)	Co (%)
LBE-1	1.09	0.07	0.01
LBE-3	1.54	0.78	0.06

Source: *Buck et al. (2008)*

Acceptable value ranges for the two CRMs, both for individual assays and averages were established using the mean and standard deviation ("SD") values. The performance of KNMV blank was judged a failure if the result returned was greater than three times the detection limit. The performance of Accurassay Laboratories and ALS Chemex are measured by the results of the external CRMs and blanks. These are summarized in Figures 11.3, 11.4 and 11.5.

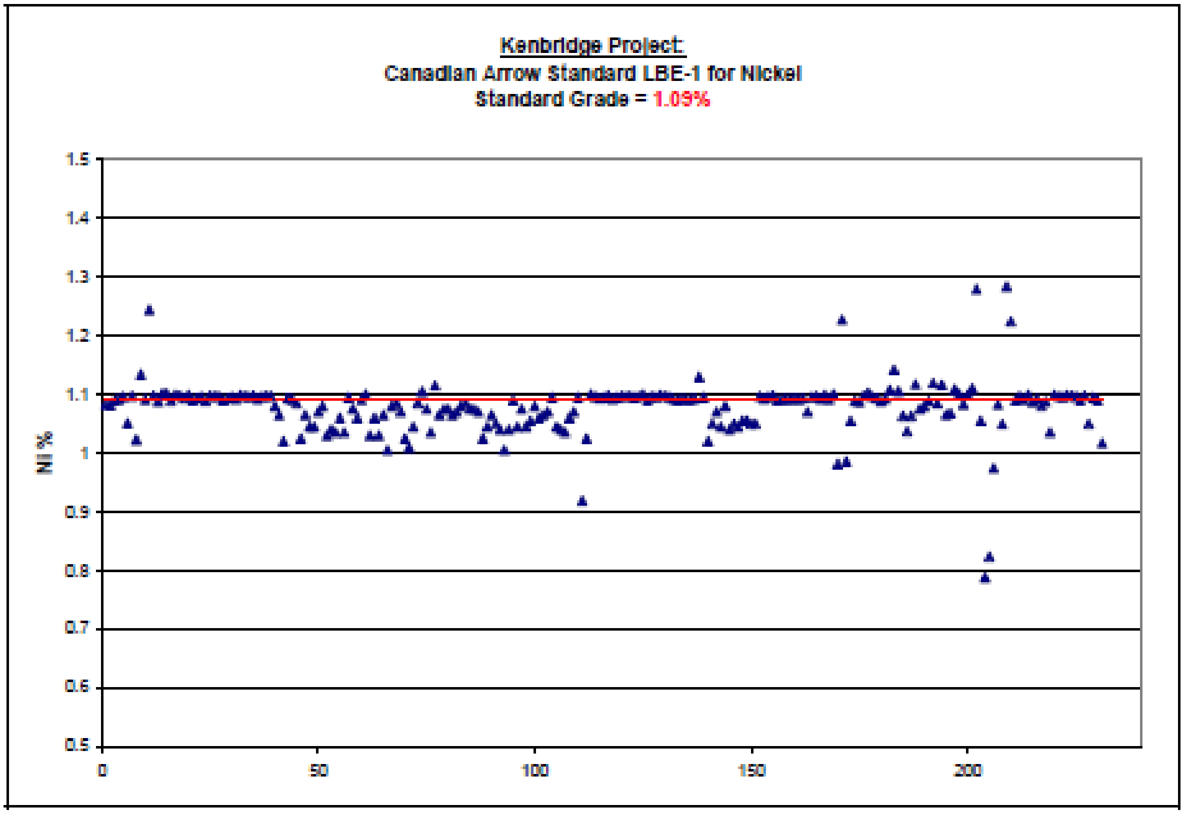
The results showed that the reported assays have fair precision, and that contamination and sample switching were not significant. Canadian Arrow imported assay results into a DH Logger database on a per assay certificate basis. QA/QC control sheets are automatically generated for each certificate import. Control charts are reviewed and laboratory precision, contamination, or sample switching problems are identified and addressed punctually.

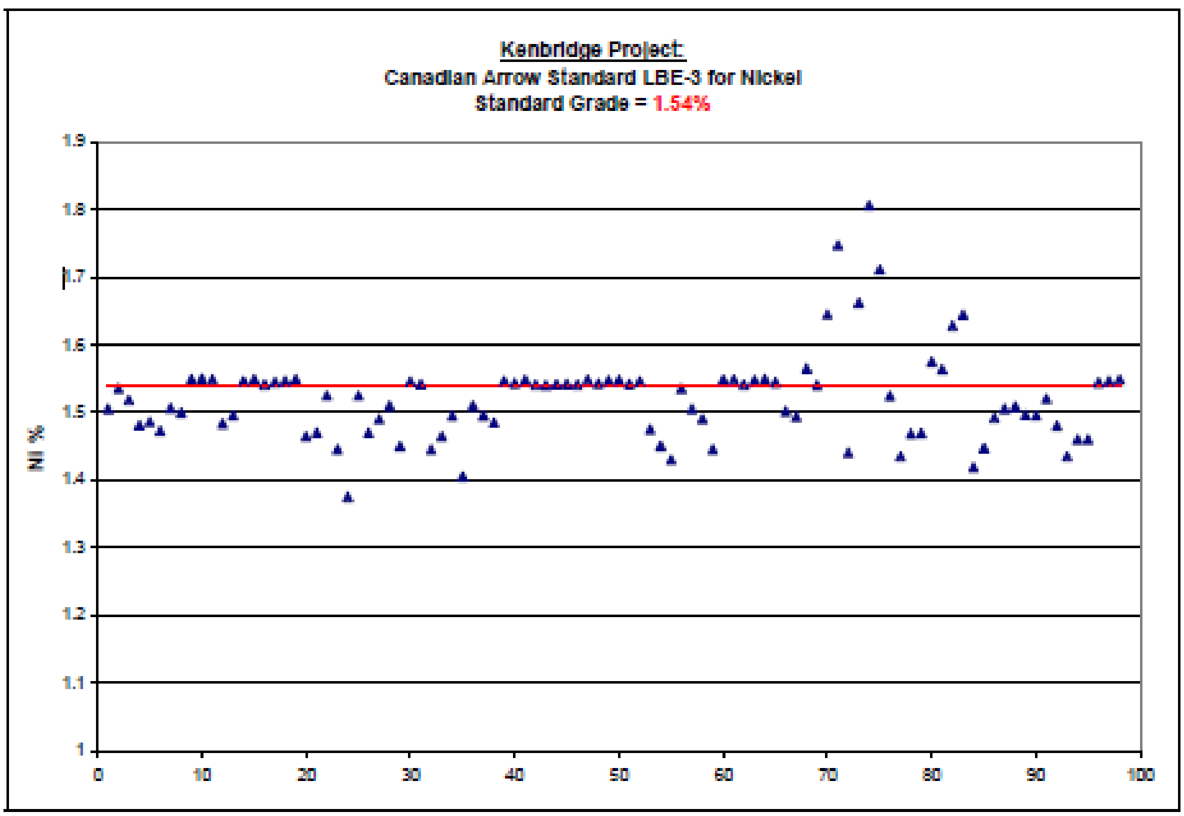
FIGURE 11.3 PLOT OF THE CANADIAN ARROW BLANK KNMV-NI



Source: *Buck et al. (2008)*

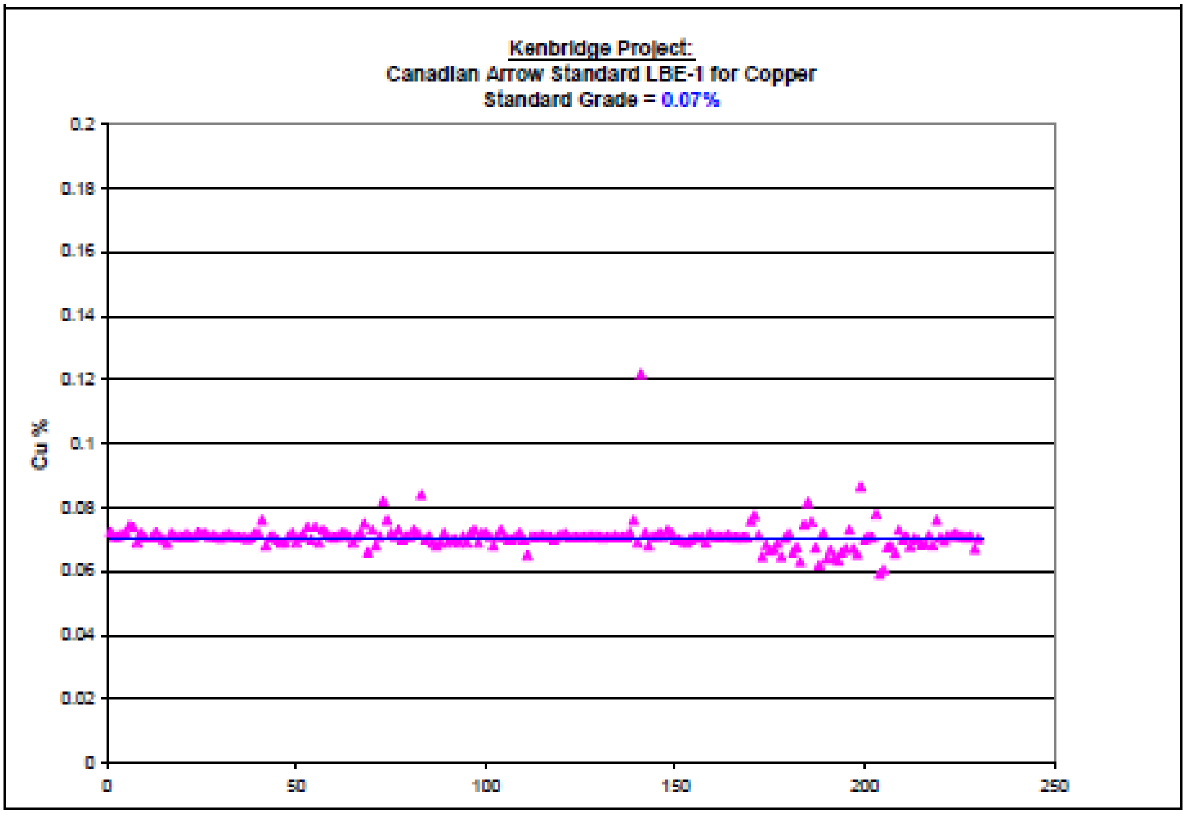
FIGURE 11.4 PLOTS OF CANADIAN ARROW NICKEL CRMS LBE-1 AND LBE-3

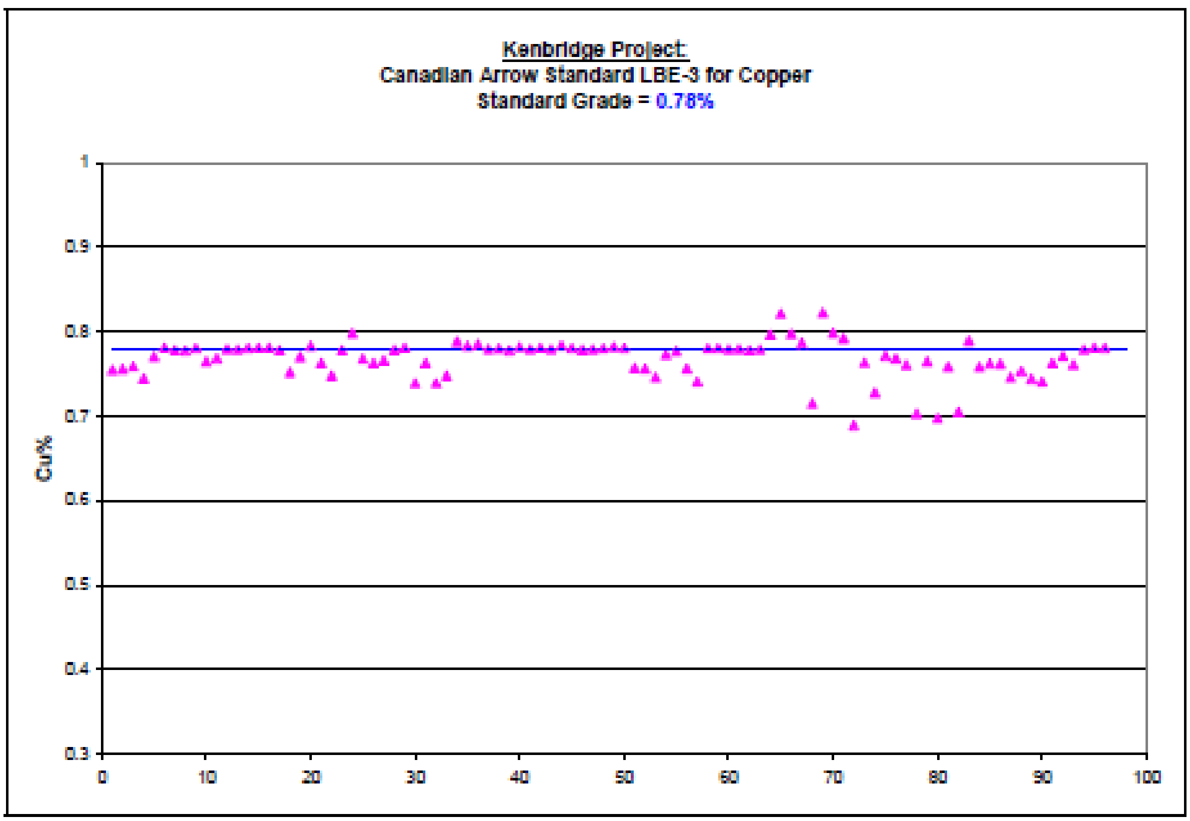




Source: *Buck et al. (2008)*

FIGURE 11.5 PLOTS OF CANADIAN ARROW COPPER CRMS LBE-1 AND LBE-3





Source: *Buck et al. (2008)*

11.1.3 Bulk Density Database

Bulk density measurements were collected during the Blackstone core drilling program in 2005. No reliable bulk density data exist for any of the pre-Blackstone historical drilling programs. A total of 588 determinations are available for the Kenbridge Project and are all assigned to a single weathering profile lacking any geo-domain differentiation. The statistics of the dataset are summarized in Table 11.2.

A histogram of the resultant bulk density data is shown in Figure 11.6. It is significant to note that bulk density measurements were only taken for mineralized samples. As no distinct weathering surfaces were logged, an average of 2.95 t/m^3 has been applied for mineralized samples in this study. A plot highlighting the relationship between nickel grade and bulk density is shown in Figure 11.7. A linear relationship is established by the equation: bulk density = 0.167 x (Ni%) + 2.8583. The correlation coefficient of bulk density to nickel grade is 0.757.

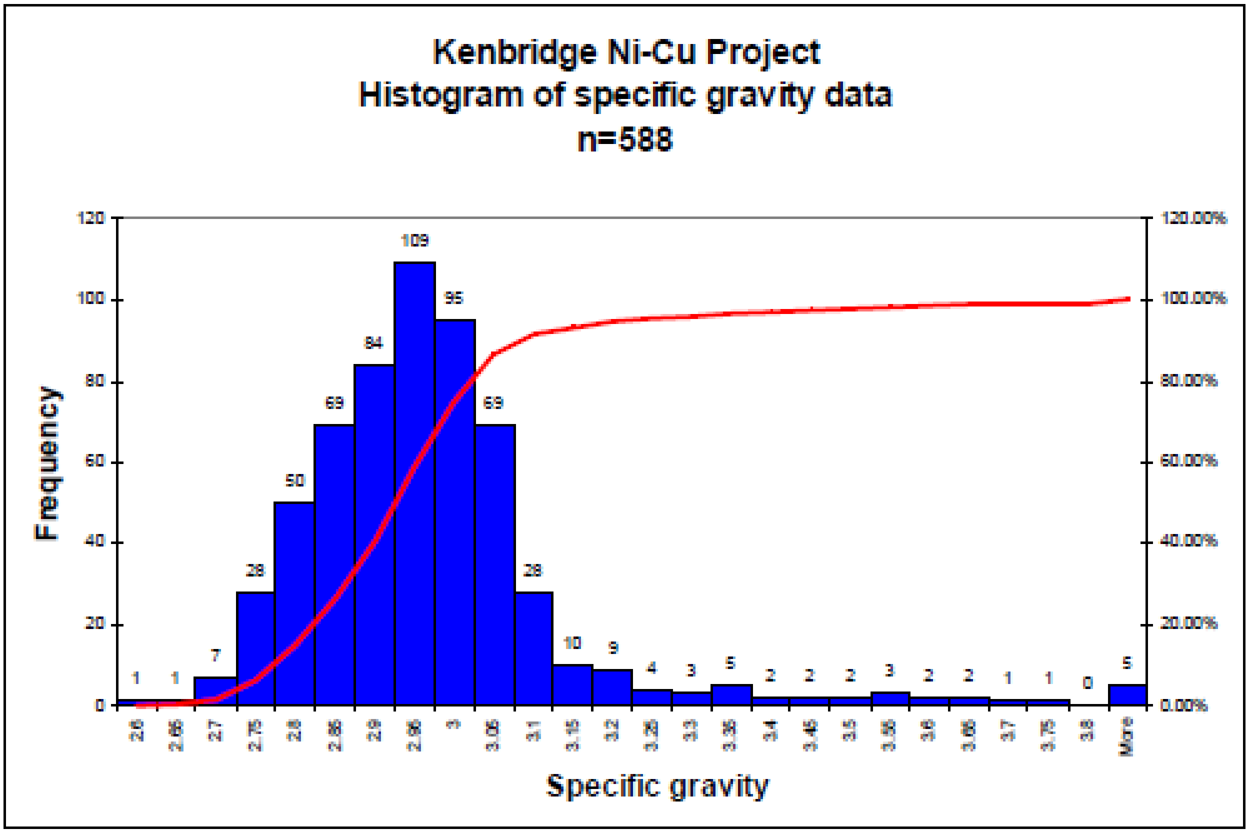
To verify the quality of the Blackstone bulk density dataset, Canadian Arrow selected a set of 41 samples for re-analyses at SGS Lakefield Laboratories. The results of this reconciliation are presented in Figure 11.8. Although the two sources of bulk density yield similar average values, the inter-sample correlation coefficient (R^2) is 0.46. Both bulk density analyses were conducted by water immersion methodologies. The apparent low correlation could be attributed to the use of different lengths of sample from within the same sample measured core interval.

TABLE 11.2
STATISTICS OF THE BULK DENSITY DATABASE FOR MINERAL RESOURCE ESTIMATION

Variable	Value (t/m^3)
Mean	2.95
Standard Error	0.01
Median	2.93
Mode	2.94
Standard Deviation	0.18
Sample Variance	0.03
Kurtosis	18.6
Skewness	3.26
Range	1.89
Minimum	2.64
Maximum	4.53
Sum	1,735
Count	588

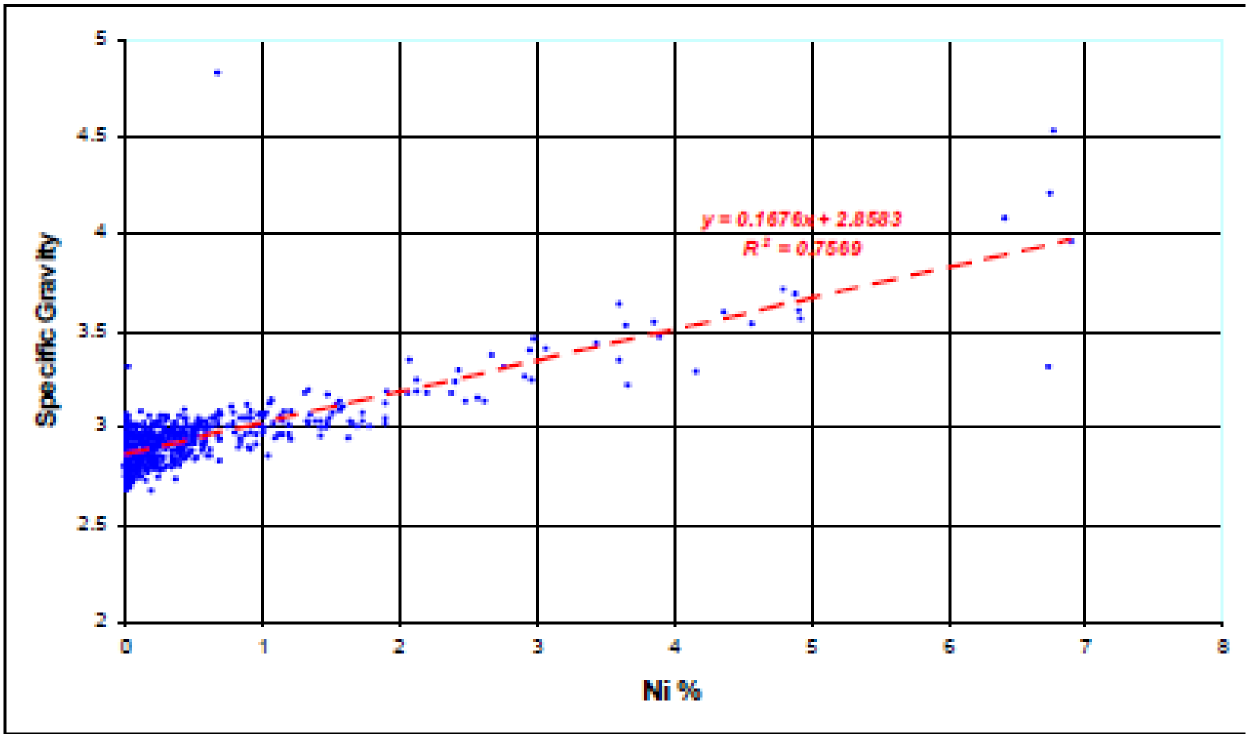
Source: *Buck et al. (2008)*

FIGURE 11.6 HISTOGRAM OF BULK DENSITY DATA FOR THE BLACKSTONE DATASET



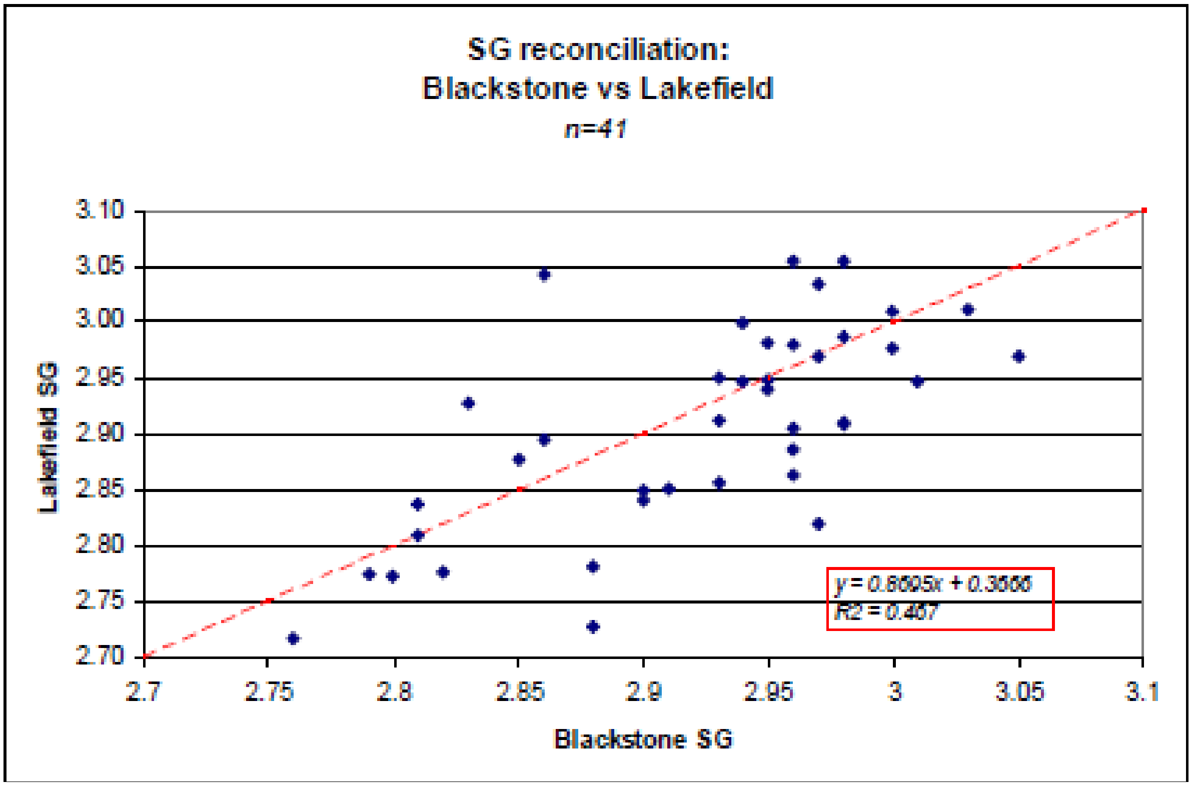
Source: *Buck et al. (2008)*

FIGURE 11.7 SCATTER PLOT SHOWING THE RELATIONSHIP BETWEEN BULK DENSITY AND NICKEL PERCENT FROM THE BLACKSTONE DRILLING DATASET



Source: *Buck et al. (2008)*

FIGURE 11.8 RECONCILIATION PLOT BETWEEN BLACKSTONE AND SGS LAKEFIELD BULK DENSITY DATA



Source: *Buck et al. (2008)*

11.2 TARTISAN DRILLING 2021

11.2.1 Sample Preparation and Security

NQ2 drill core was placed in wooden core boxes with drill core box lids that were taped together using either fibre tape or rubber elastics. The drill core was transported to the on-site drill core shack by employees of Platinum Drilling, approximately 1 km away from the drill site in the rear bed of a UTV/Side x Side. The drill core was placed in order on designated exterior core box racks and received by the GeoTech employees of Tartisan. The drill core samples were brought into the drill core processing facility where they were laid out for logging. The drill core logging procedure was as follows:

- Drill core is laid out in ascending order; the intervals for the blocks are checked to ensure they are placed every 3 m. Drill core is inspected for misplaced or missing drill core.
- The drill core is measured to determine errors in block placement and drilling intervals for each respective box.
- The drill core is measured for RQD.

- The drill core is logged using MxDeposit logging software. The information gathered are as follows:

a. Rock Types	e. Sulphide Mineralization (%)
b. RQD	f. Magnetic Susceptibility using Mag/Susc Meter
c. Alteration	g. XRF Readings for samples taken for Ni, Co, Cu and Ag
d. Mineral Composition	h. Photos of the drill core and photos of the sampled drill core

- Drill core samples are selected after logging, based on the presence of sulphide minerals (pyrrhotite, pyrite, pentlandite, chalcopyrite, sphalerite, bornite). These minerals are sometimes indistinguishable due the massive and semi-massive occurrences of these sulphide zones. The XRF gun is used as a guide as to what elements are present in the drill core sample and then a sulphide mineral can be determined. The XRF is also used to determine what drill core is to be sent for assay.

- Drill core to be sent for assay is processed as follows:

  a. Samples are measured, and the beginning and end of each sample is marked with a red china marker and a sample tag is inserted at the end of each sample run. Sample lengths were a minimum 30 cm to a maximum of 1.5 m

  b. CRMs are inserted into the sample stream every 10^{th} sample, field duplicates every 20^{th} sample and blanks (barren mafic drill core) every 30^{th} sample.

  c. Drill core is cut in half using a Vanconn core cutting wet saw, with Billy Boy 1 diamond blades from Albutt Mining Supplies in Winnipeg, MB.

  d. Split drill core samples are rinsed off and placed in a poly bag with the sample number tag in the bag and the sample number printed onto the outside of the respective bag.

  e. Sample bags are then zip-tied shut, placed into larger rice bags (also secured by zip-ties) and grouped together by drill hole. Each rice bag contains seven sample bags, plus CRMs, blanks and field duplicates, and rice bags are labelled with the relevant drill hole and sample numbers, shipping and origin addresses, bag number and total number of bags for that drill hole.

  f. Information pertaining to the samples being shipped is stored inside of the first bag of the drill hole series and identified by orange flagging tape.

- Drill core samples are transported to the float plane base on Crow Lake in Nestor Falls, ON, by float plane, under the supervision of the Geology Manager. Samples are then transferred to a Tartisan vehicle and driven to Manitoulin Transport in Winnipeg, MB, by the Geology Manager. The samples are subsequently transferred to a Manitoulin Transport Inc. truck, still under the supervision of the Geology Manager, and shipped to SRC Geoanalytical Laboratories ("SRC") in Saskatoon, SK, by Manitoulin Transport Inc.

- The Geology Manager emails the bill of lading from Manitoulin Transport to the lab on the day of shipping samples and confirmation of sample receipt is emailed to the Geology Manager upon delivery to the lab.

11.2.2 Analytical Methods

Drill core samples received at SRC are sorted and verified according to a sample submittal form, with any discrepancies between the actual shipment and the submittal form noted and reported. The shipment is assigned an SRC reference number ("S#") and a worksheet with the analyses requested is generated. Labels for the samples are produced from the worksheet identifying the S# and customer sample number. The labels are placed on tin-tie bags for the pulverized portion (pulp), and plastic bags for the crushed material (rejects).

Drill core samples are crushed in oscillating jaw crushers to 70% passing 10 mesh (1.70 mm) and riffle split; typically a 250 g sub-sample is pulverized, the remaining crushed sample is stored as reject. Ring-mill pulverizers grind samples to 95% passing 150 mesh (106 micron).

At the beginning of each shift and/or the start of a new group, samples are screened to ensure correct particle sizes. Crushers, rifflers, and pans are cleaned with compressed air followed by a visual check to ensure cleanliness between samples. Pulverizing pots and rings are brushed, hand cleaned, and air blown.

Samples at SRC were analyzed for Au, Pt and Pd by 30 g fire assay with ICP finish and for Ag, Co, Cu and Ni by 4-Acid Digest with an ICP finish. Au samples returning assay values greater than 3,000 ppb Au were further analyzed by fire assay with gravimetric finish. A summary of analytical methods used during the Company's drill program is presented in Table 11.3.

TABLE 11.3
SUMMARY OF ANALYTICAL METHODS

Element	Test Method	Reporting
Au	Fire Assay/ICP	5 - 3,000 ppb
	Fire Assay/Gravimetric	0.03 - 6,500 g/t
Pt	Fire Assay/ICP	10 - 3,000 ppb
Pd		5 - 3,000 ppb
Ag	4-Acid Digest/ICP	0.2 - 1,000 g/t
Cu		0.01 - 80%
Ni		
Co		0.001 - 80%

SRC is an independent laboratory whose quality management system and selected methods are ISO/IEC 17025:2005 accredited by the Standards Council of Canada. The laboratory is also compliant to ASB, Requirements and Guidance for Mineral Analysis Testing Laboratories, and participates in regular inter-laboratory tests for many of its package elements.

11.2.3 Quality Assurance / Quality Control

Tartisan implemented and monitored a thorough quality assurance/quality control ("QA/QC" or "QC") program for the diamond drilling undertaken at the Kenbridge Project during 2021. The QA/QC program implemented by the Company comprised the routine insertion of certified reference material ("CRM"), blanks and field duplicates into the drill core sample stream.

CRMs were inserted approximately every 1 in 10 samples and blanks every 1 in 30 samples. In addition, half-core field duplicates were collected approximately every 20 samples.

11.2.3.1 Performance of Certified Reference Materials

CRMs were inserted into the analysis stream approximately every 10 samples. Two CRMs were used during the 2021 drill program to monitor the performance of nickel, copper and cobalt; the CDN-ME-1207 and CDN-ME-1310 CRMs. Both CRMs were purchased from CDN Resource Laboratories Ltd., of Langley, BC.

Criteria for assessing CRM performance are based as follows. Data falling within ±2 standard deviations from the accepted mean value, pass. Data falling outside ±3 standard deviations from the accepted mean value, fail. Two or more consecutive data points falling between ±2 and ±3 standard deviations on the same side of the mean are considered warnings. All failures are followed up by Company personnel.

A summary of CRM results is presented in Table 11.4 and the CRM performance charts are presented in Figures 11.9 through 11.14.

TABLE 11.4
SUMMARY OF REFERENCE MATERIALS USED AT KENBRIDGE

Certified Reference Material	Certified Mean Value (ppm)	+/- 1SD (ppm)	+/- 2SD (ppm)	SRC Lab Results			
				No. Results	No. (-) Failures	No. (+) Failures	Average Result (ppb)
Monitoring Nickel							
CDN-ME-1207	1.572	0.059	0.118	23	0	0	1.578
CDN-ME-1310	0.379	0.0125	0.025	24	1	0	0.410
Monitoring Copper							
CDN-ME-1207	0.407	0.01	0.02	23	0	0	0.418
CDN-ME-1310	0.276	0.011	0.022	24	1	0	0.292
Monitoring Cobalt							
CDN-ME-1207	0.032	0.001	0.002	23	0	0	0.033
CDN-ME-1310	0.019	0.001	0.002	24	1	0	0.020

Note: *1SD = one standard deviation, 2SD = two standard deviations.*

All CRM assay results for nickel, copper and cobalt were within tolerance limits, except for one sample (sample number 859550), which failed low for all elements and was clearly a misallocated blank sample (see Figures 11.12 to 11.14). An obvious positive bias in analytical results is noted from drill hole KB21-205 until the end of the program, likely due to a change in laboratory processes.

FIGURE 11.9 CRM RESULTS FOR CDN-ME-1207 : NICKEL

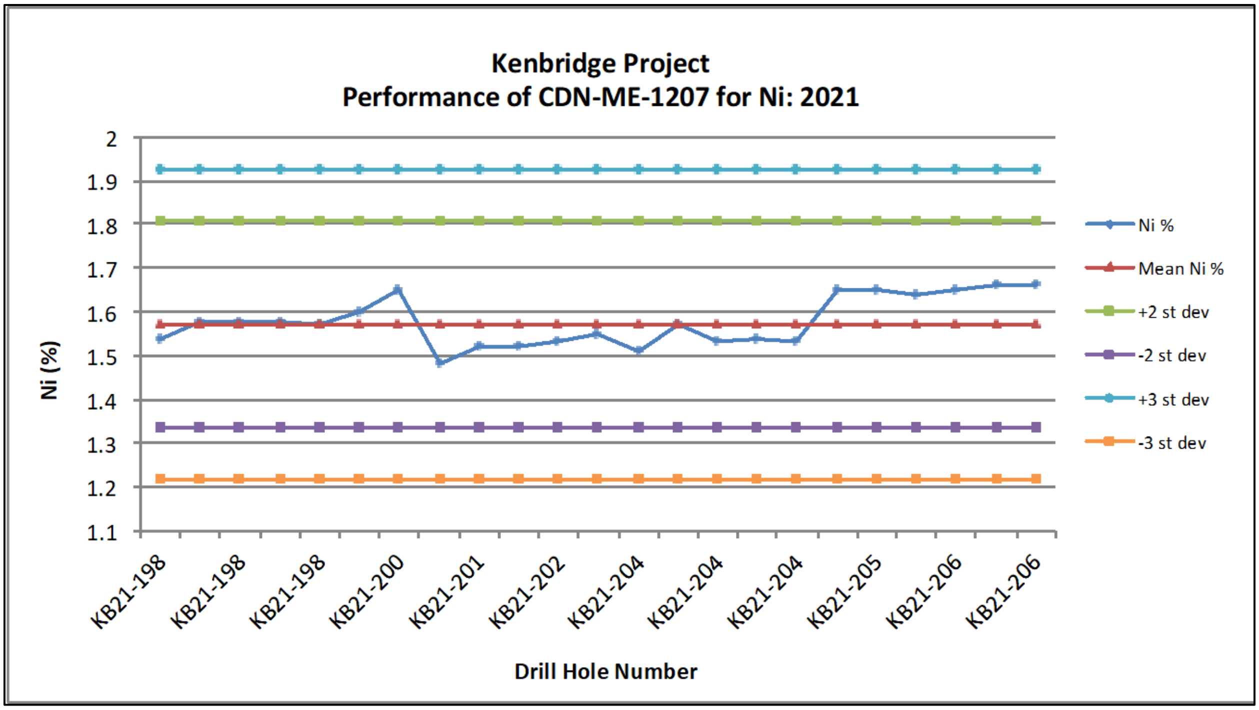


FIGURE 11.10 CRM RESULTS FOR CDN-ME-1207 : COPPER

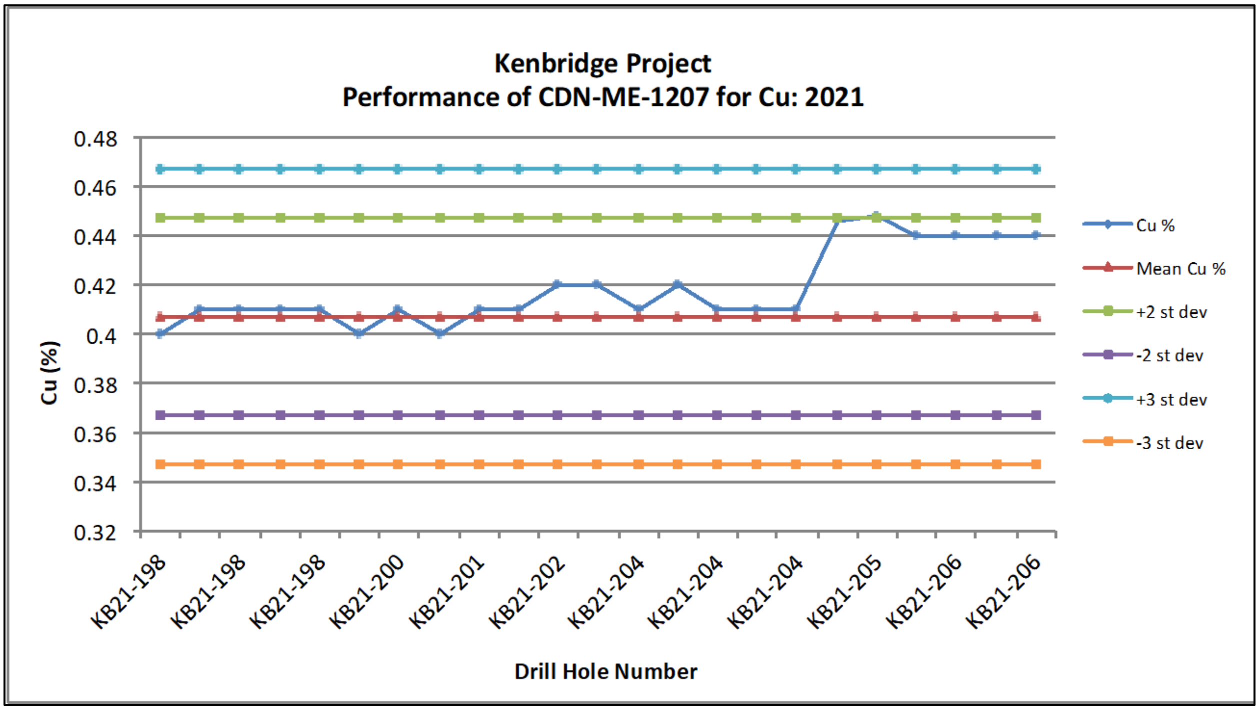


FIGURE 11.11 CRM RESULTS FOR CDN-ME-1207 : COBALT

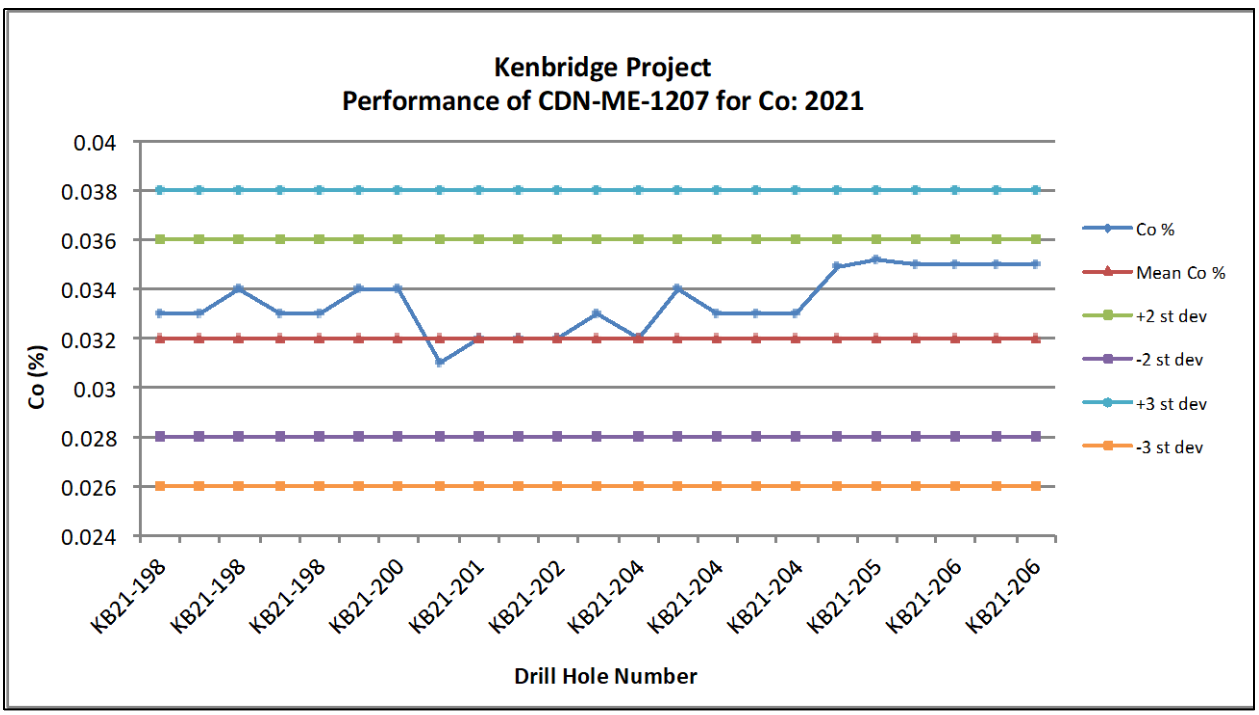


FIGURE 11.12 CRM RESULTS FOR CDN-ME-1310 : NICKEL

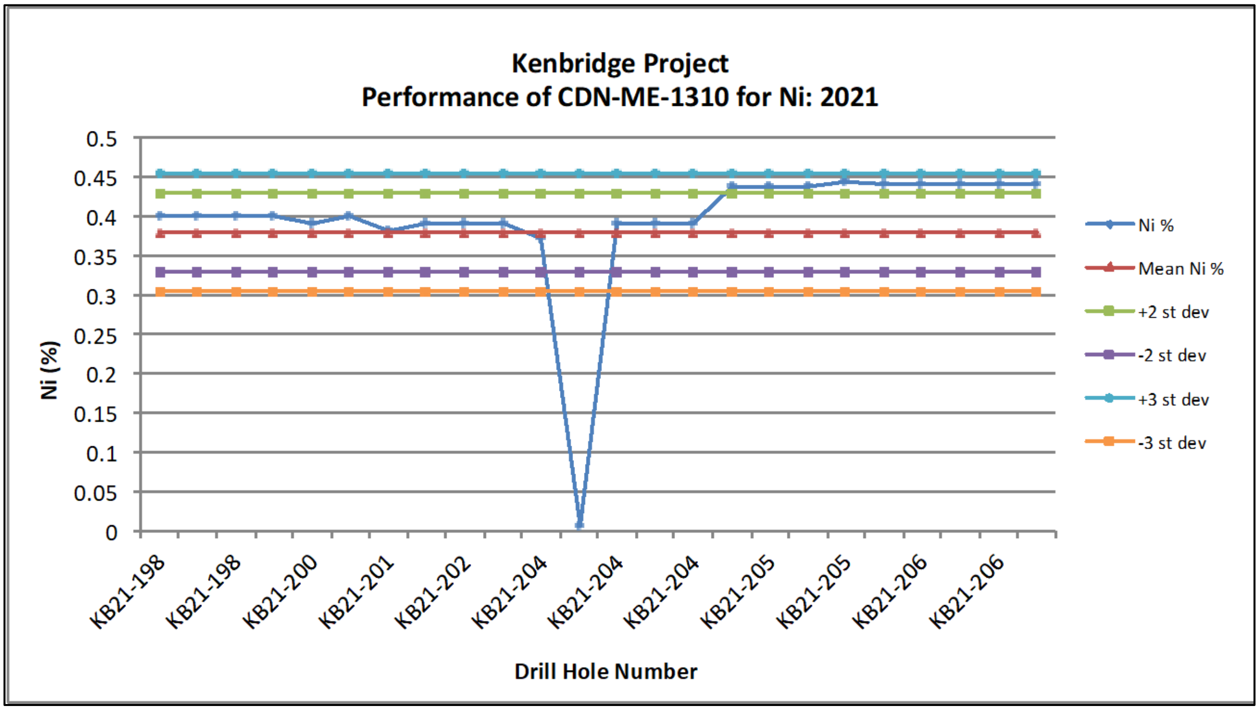


FIGURE 11.13 CRM RESULTS FOR CDN-ME-1310 : COPPER

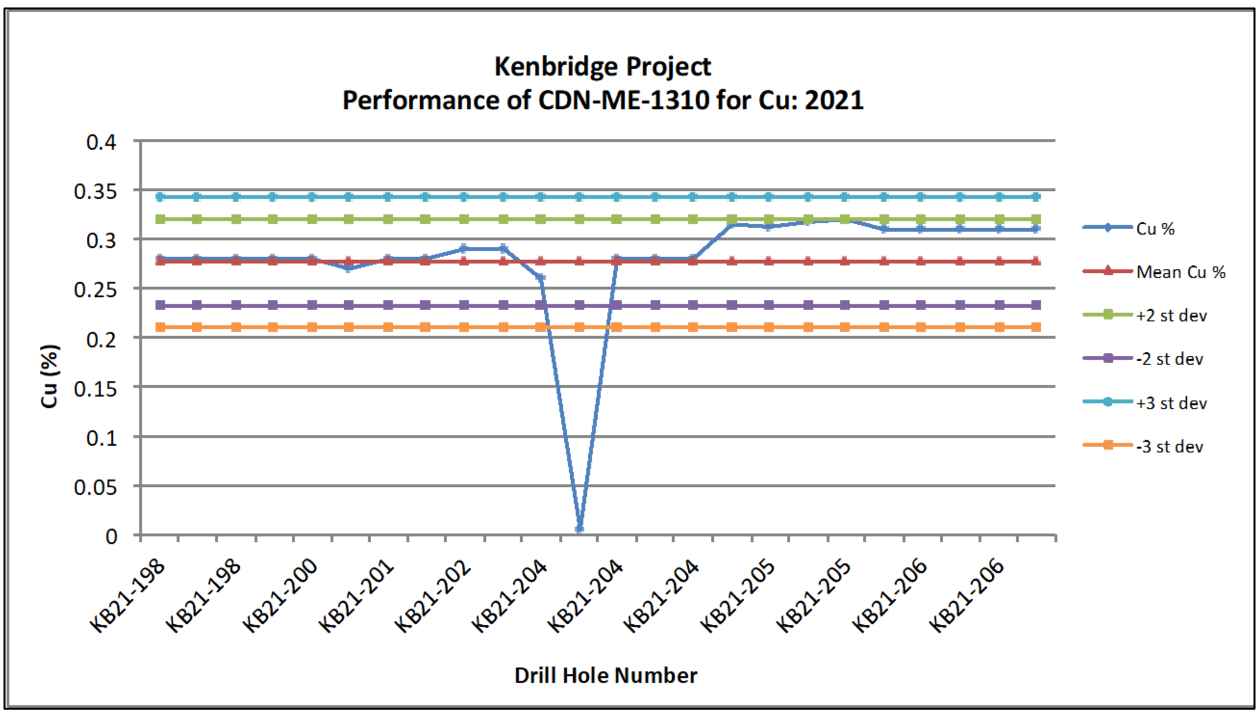
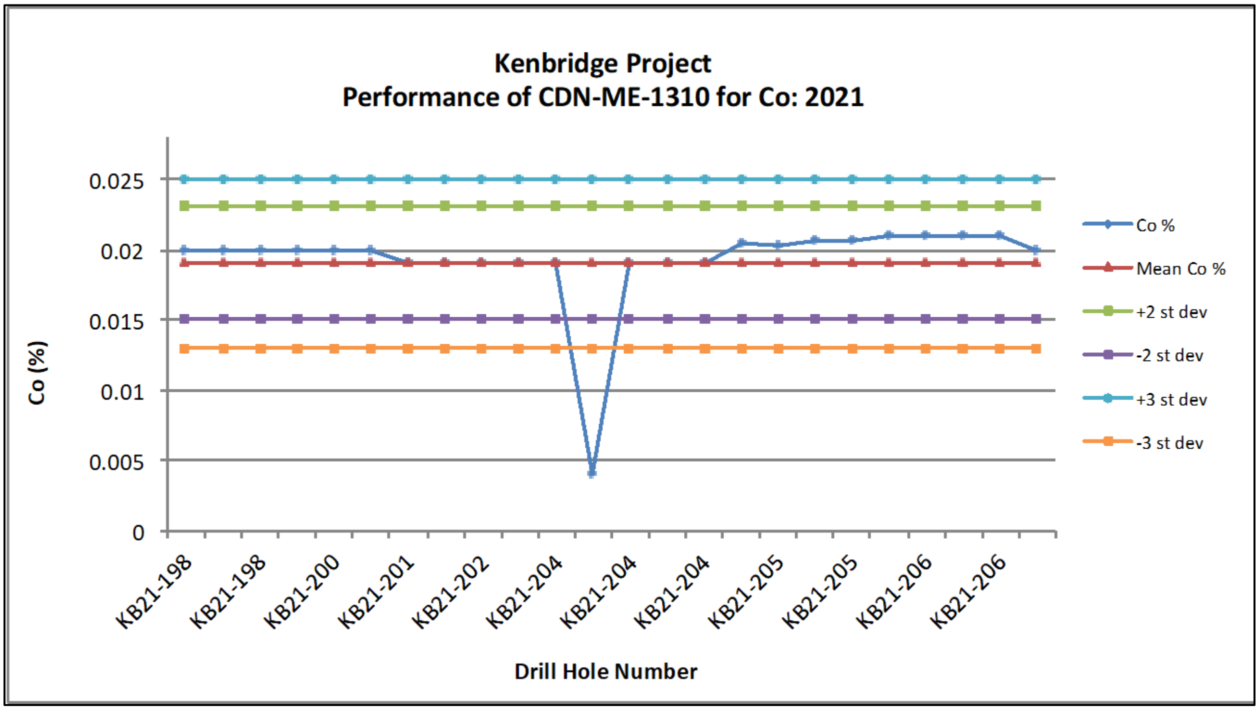


FIGURE 11.14 CRM RESULTS FOR CDN-ME-1310 : COBALT



The Author considers that the CRMs demonstrate acceptable accuracy in the 2021 drill sampling data.

11.2.3.2 Performance of Field Blanks

Blanks were inserted into the analysis stream every 20 samples. All blank data for nickel, copper and cobalt are graphed (Figures 11.15 to 11.17). If the assayed value in the certificate was indicated as being less than detection limit, the value was assigned half the value of the detection limit for data treatment purpose. An upper tolerance limit of ten times the detection limit was set. There were 15 data points to examine. All data plotted below the set tolerance limits.

The Author does not consider contamination to be an issue in the 2021 drill sampling data.

FIGURE 11.15 BL-MV-01 ASSAY RESULTS FOR NICKEL

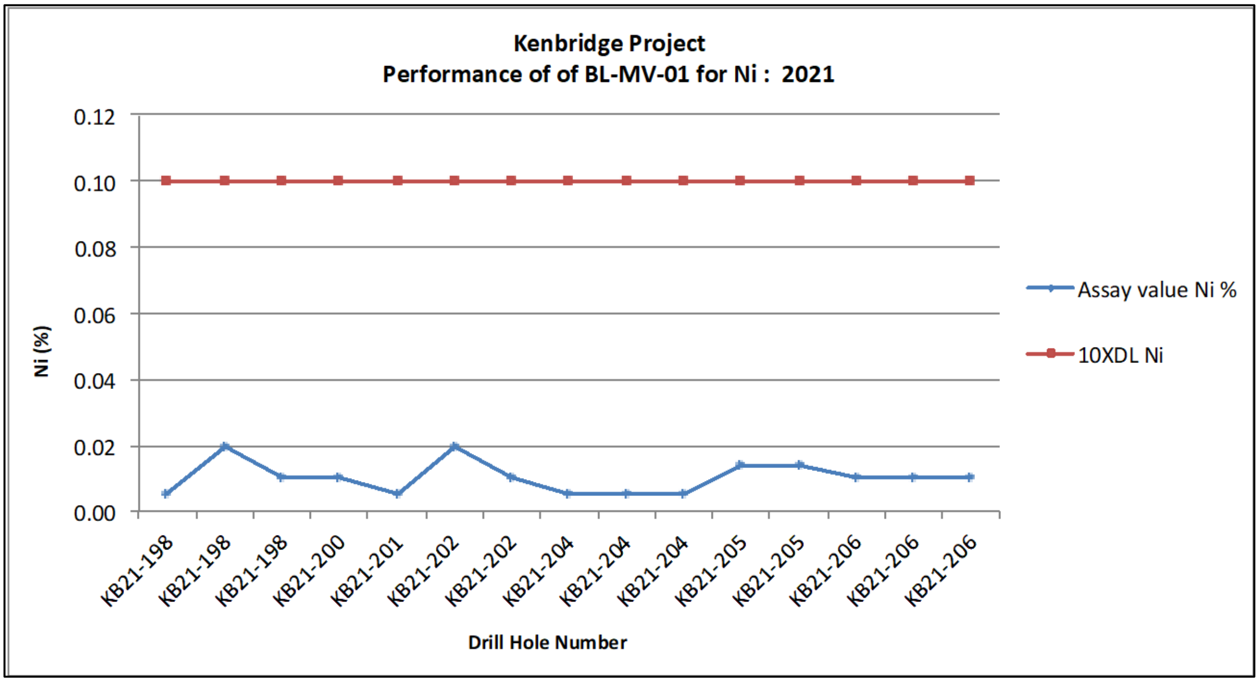


FIGURE 11.16 BL-MV-01 ASSAY RESULTS FOR COPPER

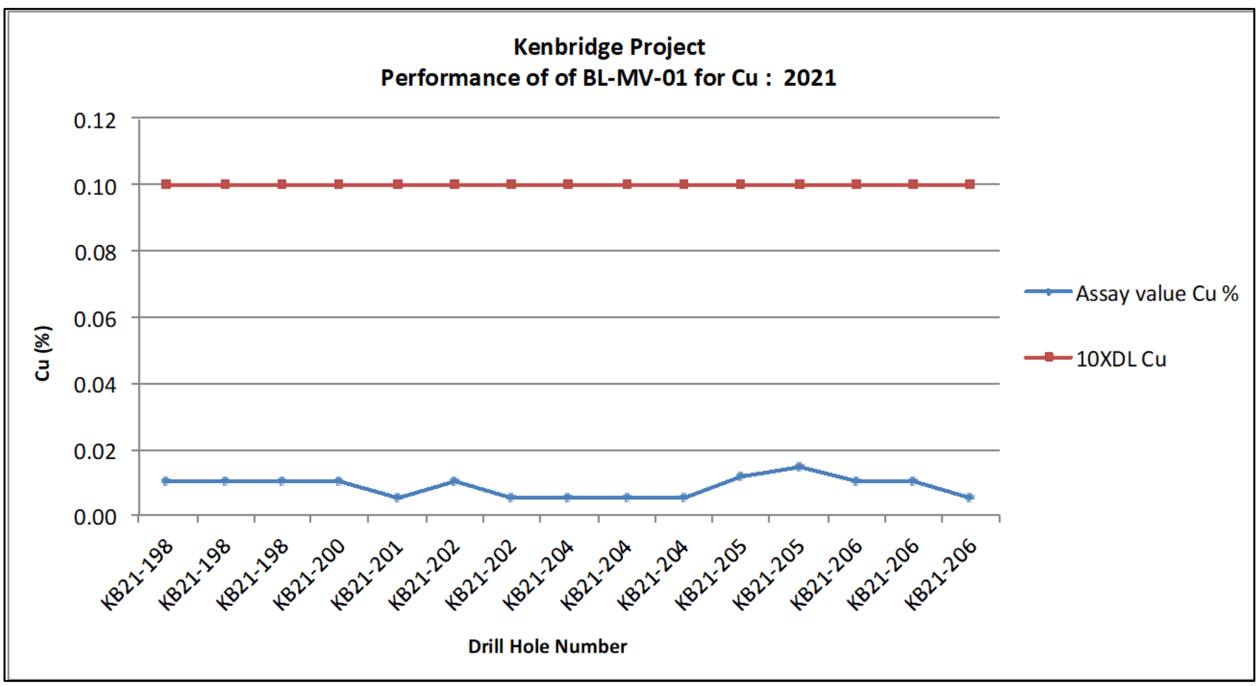
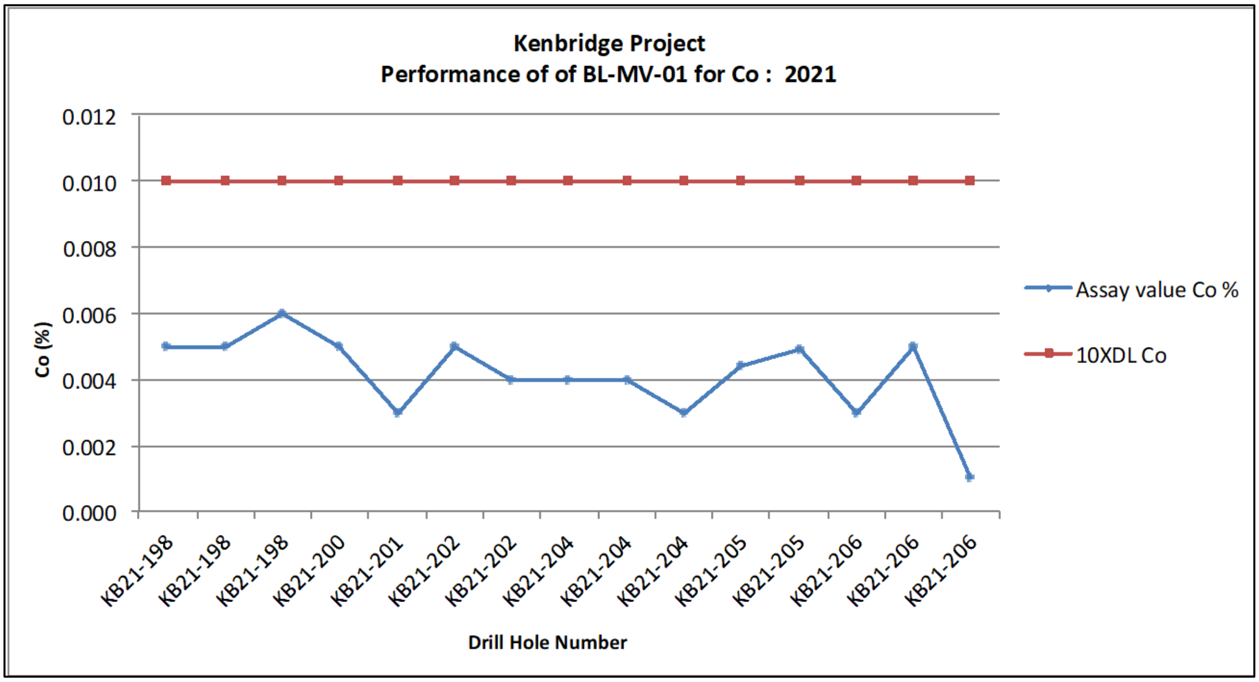


FIGURE 11.17 BL-MV-01 ASSAY RESULTS FOR COBALT



11.2.3.3 Performance of Field Duplicates

The field duplicate data for nickel, copper and cobalt were examined by the Author. There were 23 duplicate pairs in the lab dataset. Data were scatter graphed (Figures 11.18 to 11.20) and the coefficient of determination ("R^2") values for the nickel, copper and cobalt duplicates were estimated to be 0.990, 0.931 for copper and 0.994, respectively.

The average coefficients of variation ("CV_{AV}") were used by the Author to estimate precision and were calculated at 15.5% for nickel, 24.9% for copper and 14.3% for cobalt. Some variance is likely due to a large percentage of the data close to detection limit levels, where higher grade variations are more likely to occur. These results were not removed from the data as there were already limited results in the dataset. Nickel and cobalt appear to show good precision at the field level, while copper precision appears to be poor. With much of the data close to lower detection levels it would be prudent to conduct duplicate sampling in a more contrived manner during future drill programs. A higher percentage of mineralized drill core should be strategically targeted for duplicate sampling, with a smaller proportion being selected randomly. The Author also recommends examination of the laboratory duplicate data.

FIGURE 11.18 SCATTER PLOT OF FIELD DUPLICATES FOR NICKEL

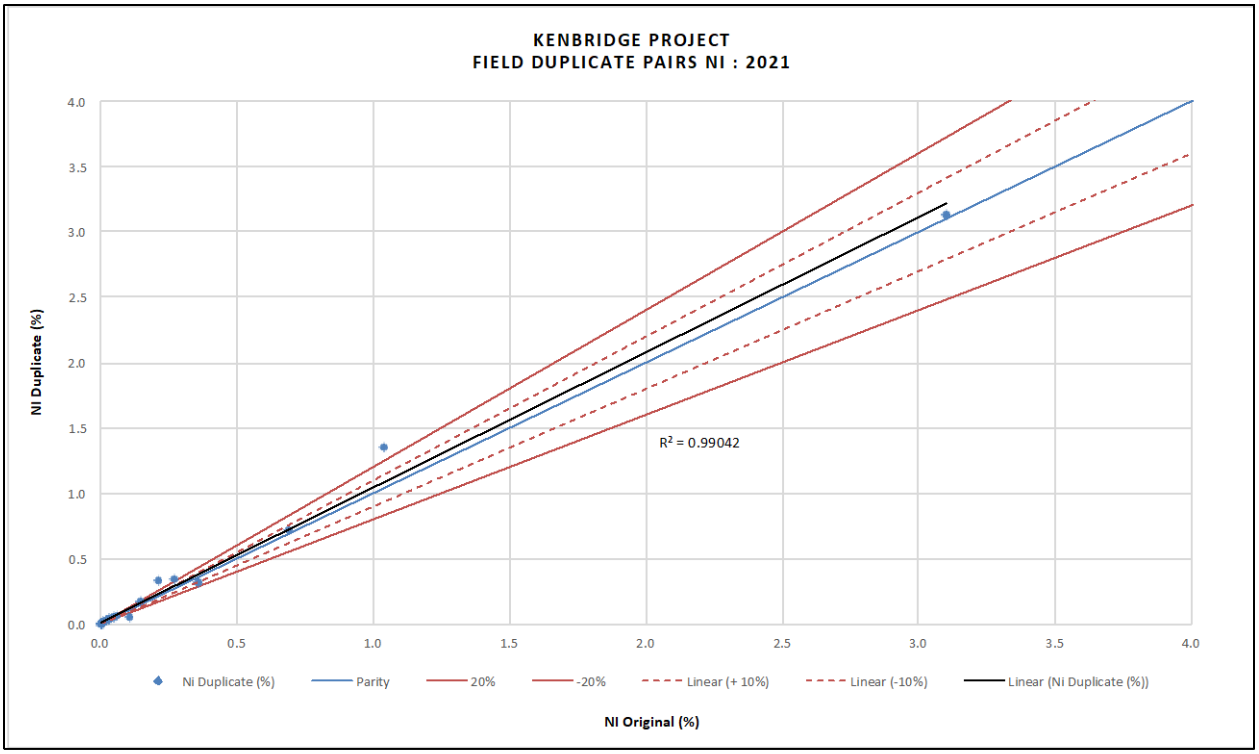


FIGURE 11.19 SCATTER PLOT OF FIELD DUPLICATES FOR COPPER

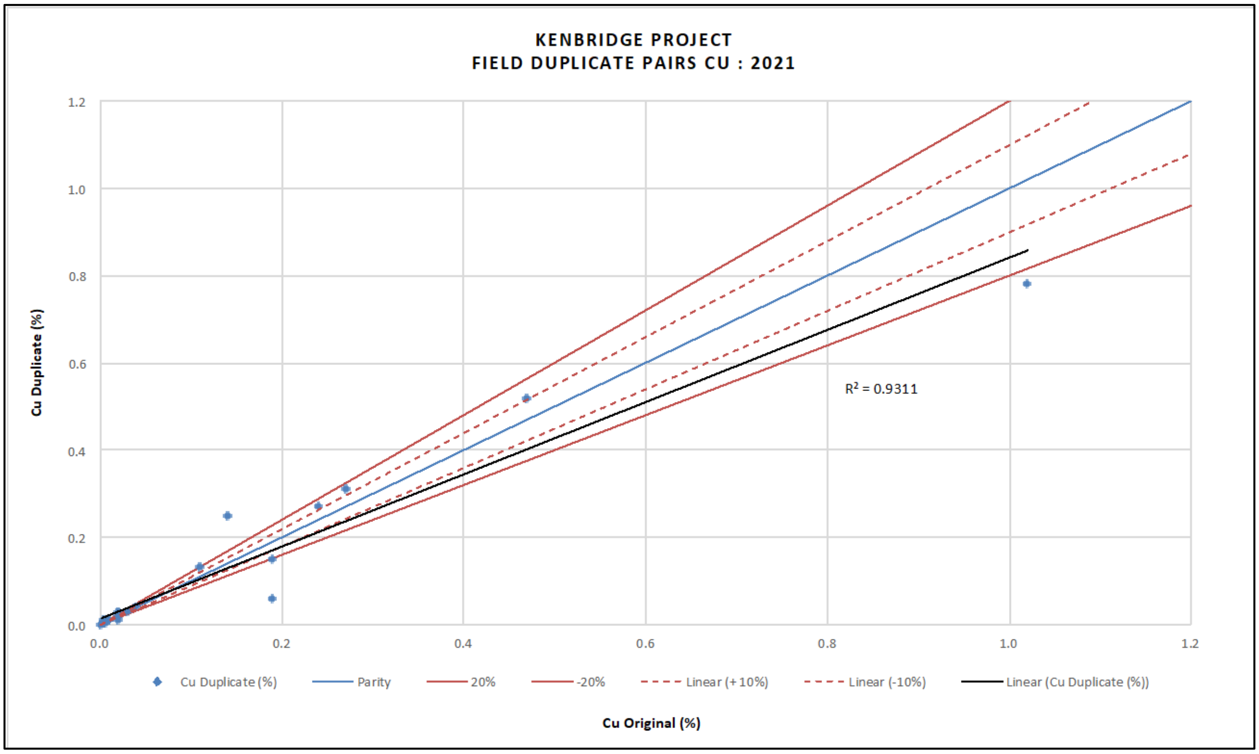
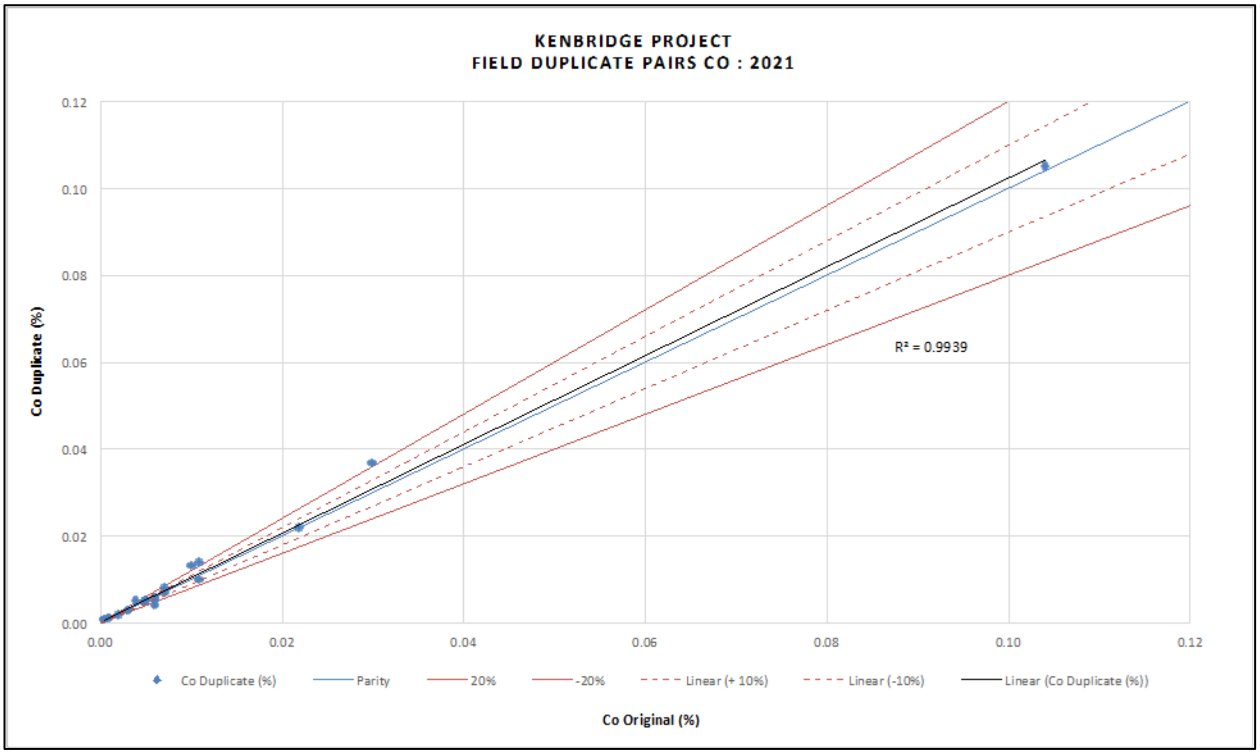


FIGURE 11.20 SCATTER PLOT OF FIELD DUPLICATES FOR COBALT



11.3 CONCLUSIONS

It is the Author's opinion that sample preparation, security and analytical procedures for the Kenbridge Project 2021 drilling are adequate and that the data is of good quality and satisfactory for use in the current Mineral Resource Estimate.

12.0 DATA VERIFICATION

This section of the report summarizes the results of P&E's due diligence activities in 2008, 2021 and 2022 for the Kenbridge Project.

12.1 DRILL HOLE DATABASE

Verification of the Ni, Cu and Co assay database was performed by the authors of this Technical Report section (the "Authors") for the August 2008 Mineral Resource Estimate. The Authors conducted further verification of the Project drill hole assay database for Ni, Cu and Co in 2022, by comparison of the database entries with assay certificates, provided directly to the Authors by SRC, in comma-separated values (csv) format and Portable Document Format (pdf) format. Assay data from 2021 were verified for the Kenbridge Project, with 100% of the data verified for Ni, Cu and Co. No discrepancies were noted in the data and the Authors consider that the supplied database is suitable for Mineral Resource estimation.

The Authors also validated the Mineral Resource database by checking for inconsistencies in analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, survey and missing interval and coordinate fields. A few errors were identified and corrected in the database.

12.2 HISTORICAL DATA VERIFICATION

12.2.1 Falconbridge and Blackstone

According to best industry practices, exploration staff implemented field procedures designed to verify the collection of data and to minimize the potential for data entry error. However, no record is available of the procedures adopted by Falconbridge and Blackstone to carry out data verifications (Buck et al., 2008). The Authors are unable to comment on the procedures adopted by those two companies.

12.2.2 Canadian Arrow

In contrast, Canadian Arrow (whom contributed the single largest contribution to the Updated Mineral Resource Estimate) adopted a strict and well maintained QA/QC program that ensured reliable data inputs (Buck et al., 2008).

Control sampling procedures included techniques such as the following:

- Validation of the assay results in the database compared with the original assay certificates;
- Taking replicate drill core samples from a second split of the pulverized sample at the laboratory;

- Duplicate analyses of selected samples;
- Sieve tests to verify the grinding on the pulp required for assaying;
- Insertion of routine blank samples to check for possible sample contamination during the preparation and assaying process;
- Application of appropriate grade certified control samples (standards); and
- A check assaying program with an umpire laboratory.

12.3 INDEPENDENT VERIFICATIONS

12.3.1 SRK August 2007

During a Kenbridge site visit in August 2007 (Buck et al., 2008), SRK verified historical Blackstone drill collar positions in the field and review the ongoing phase of Canadian Arrow diamond drilling procedures. In addition, SRK selected various drill holes from the Canadian Arrow program for high-level logging, which was compared to database information. Generally, the logging compared well. Canadian Arrow re-logged all Blackstone core to ensure consistency. In addition, all previously unsampled mineralized intervals were sampled.

Assay results were compared to actual core intersections and a good correlation between sulphide mineralization and higher grades was observed. SRK did not consider it necessary to take additional independent drill core samples for comparative analyses.

12.3.2 P&E May 2008

The Authors have undertaken three site visits to the Kenbridge Property since 2007. Mr. Eugene Puritch, P.Eng., FEC, CET, of P&E, visited the Property and took independent drill core samples for comparative analyzes in May 2008. Select core intervals of low-grade to high-grade mineralized material were sampled by taking pulp material. Prior to sampling, employees and other associates of Canadian Arrow were not informed of the location or identification of any of the samples to be collected. The objective of these check samples was to verify the presence and approximate grades of Ni, Cu and precious metals encountered during drilling.

The samples collected by Mr. Puritch were placed in appropriately numbered sample bags, sealed, and sent by him to SGS Minerals (“SGS”) in Toronto, Ontario for analysis. Ni and Cu were analyzed by ICP-OES after Na_2O_2 fusion. Gold, platinum and palladium were analyzed by fire assay with ICP finish, and silver was assayed by atomic absorption spectrometry after aqua regia digest. One sample was assayed in duplicate.

SGS is an independent laboratory operating more than 2,600 offices and labs throughout the world. Sample processing services at SGS are ISO/IEC 17025:2017 accredited by the Standards Council of Canada. Quality Assurance procedures include standard operating procedures for all aspects of the processing and also include protocols for training and monitoring of staff. ONLINE LIMS is used for detailed worksheets, batch and sample tracking including weights and labeling for all the products from each sample.

The Author's independent comparisons of the 2008 drill core sample verification results to the original assay results are illustrated in Figures 12.1 and 12.2.

FIGURE 12.1 2008 SITE VISIT SAMPLE RESULTS FOR NICKEL

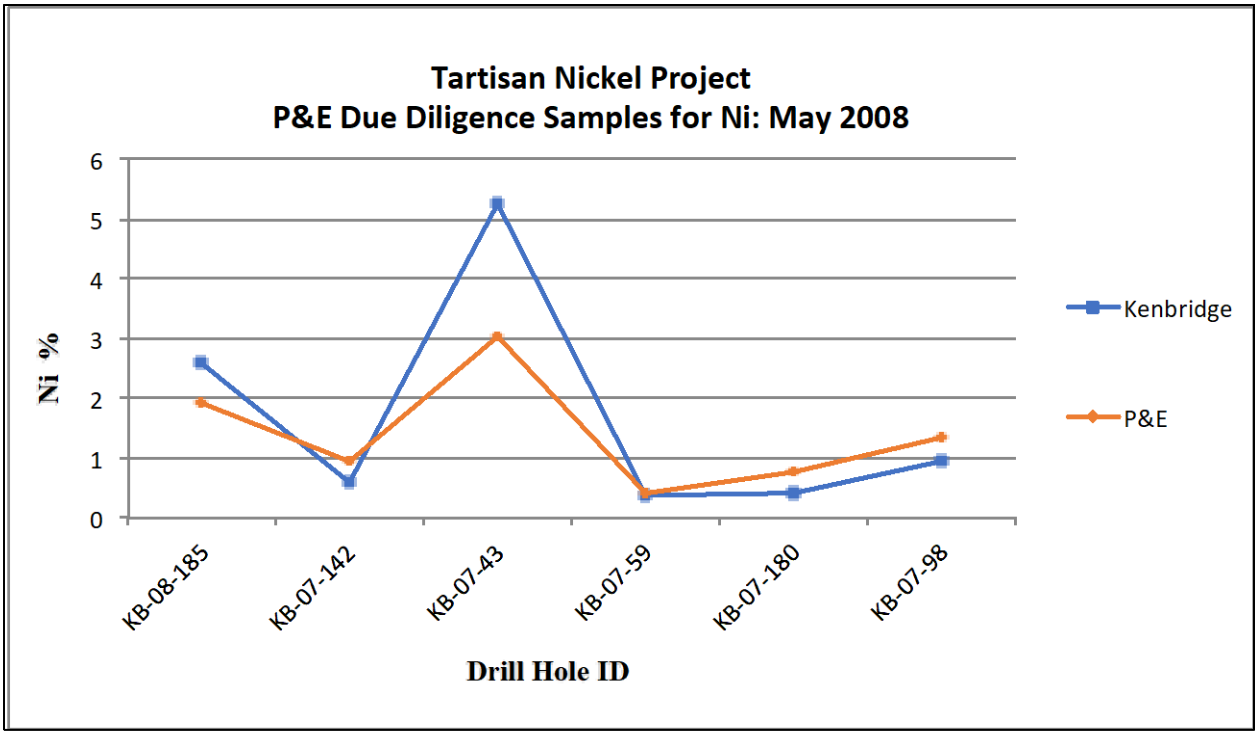
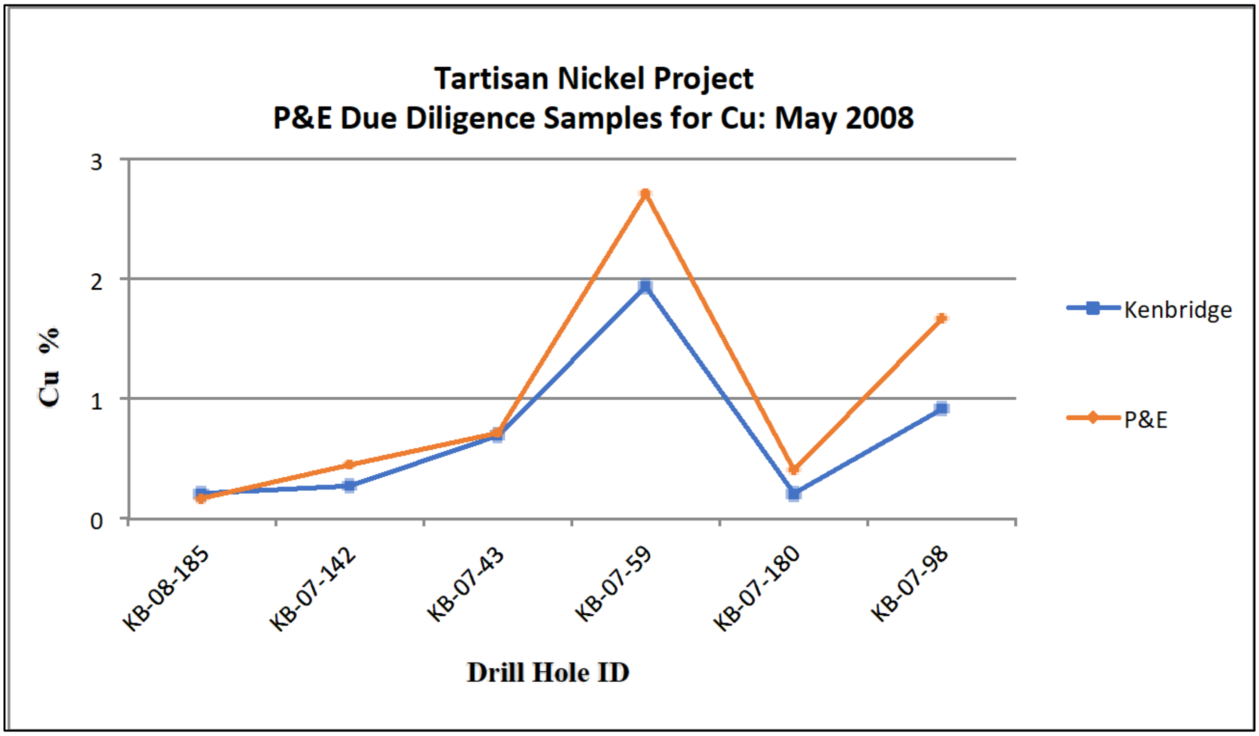


FIGURE 12.2 2008 SITE VISIT SAMPLE RESULTS FOR COPPER



12.3.3 P&E June 2021

The Property was visited by Mr. D. Gregory Robinson, P.Eng., (author) on May 18, 2021 for the purpose of checking Kenbridge site access and infrastructure.

12.3.4 P&E June 2022

The Property was visited by Mr. David Burga, P.Geo., (author) on June 1, 2022 for the purpose of completing a site visit and due diligence sampling.

Mr. Burga collected 25 samples from 13 diamond drill holes. Samples were selected from holes drilled in 2005, 2007 and 2021. Effort was made to select a range of high, medium and low-grade samples from the stored drill core. Samples were collected by taking a quarter drill core, with the other quarter core remaining in the drill core box. Individual samples were placed in plastic bags with a uniquely numbered tag, after which all samples were collectively placed in a larger bag and delivered by Mr. Burga to the Actlabs laboratory in Ancaster, Ontario for analysis.

Samples at Actlabs were analyzed for Ni, Cu, Co and Ag by 4-acid digestion with an ICP-OES finish. Specific gravity determinations were also measured on all samples.

The Actlabs' Quality System is accredited to international quality standards through ISO/IEC 17025:2017 and ISO 9001:2015. The accreditation program includes ongoing audits, which verify the QA system and all applicable registered test methods. Actlabs is also accredited by Health Canada.

Results of the Property site visit verification samples for Ni, Cu, Co and Ag are presented in Figures 12.3 to 12.6.

FIGURE 12.3 2022 SITE VISIT SAMPLE RESULTS FOR NICKEL

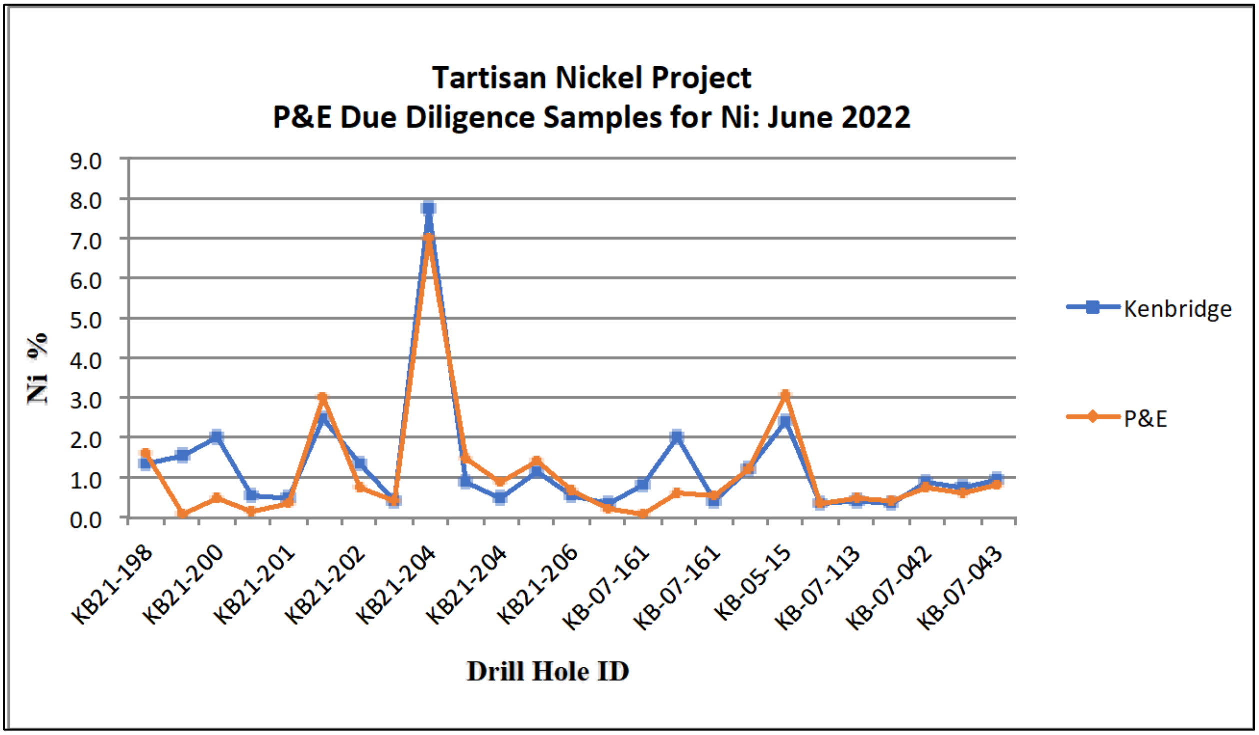


FIGURE 12.4 2022 SITE VISIT SAMPLE RESULTS FOR COPPER

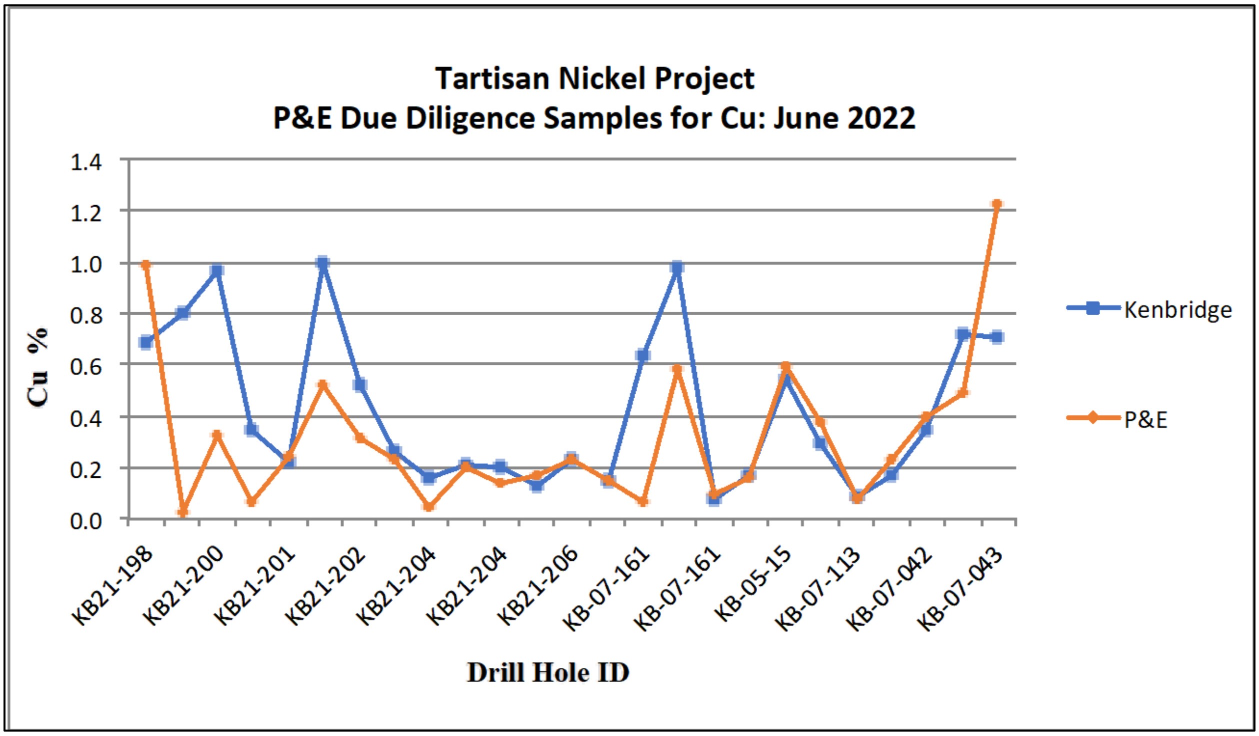


FIGURE 12.5 2022 SITE VISIT SAMPLE RESULTS FOR COBALT

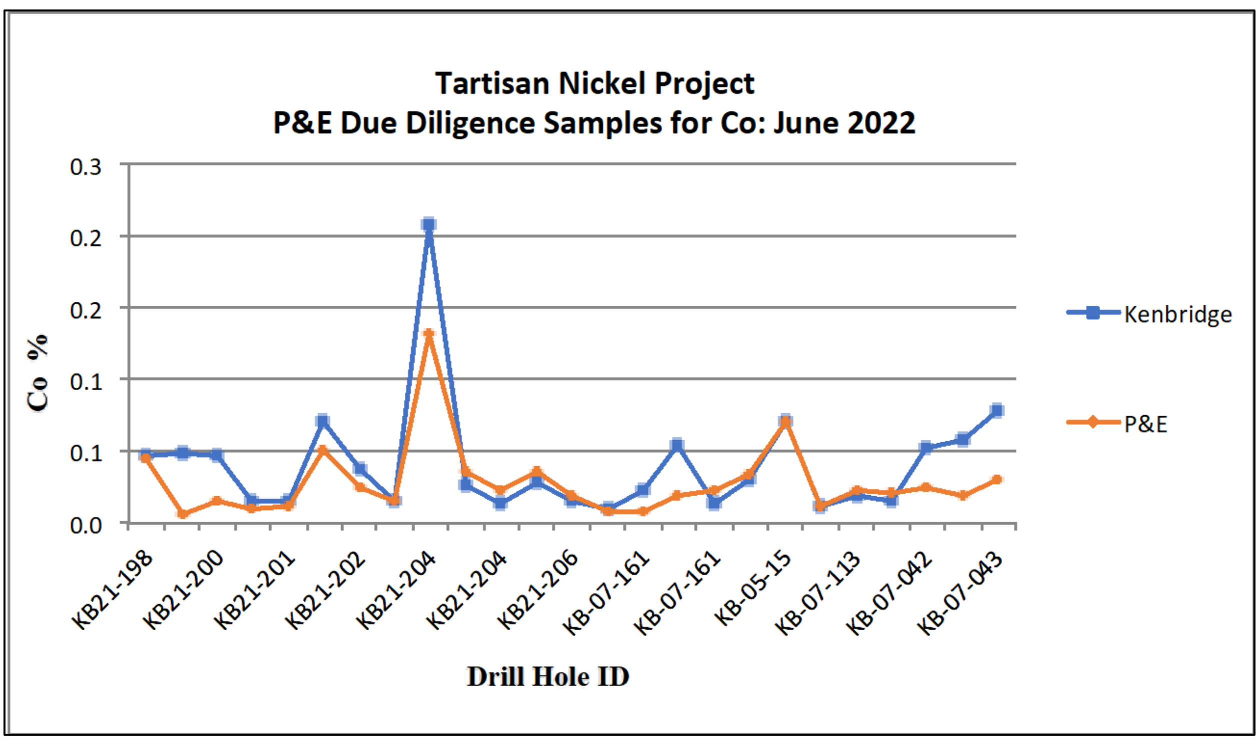
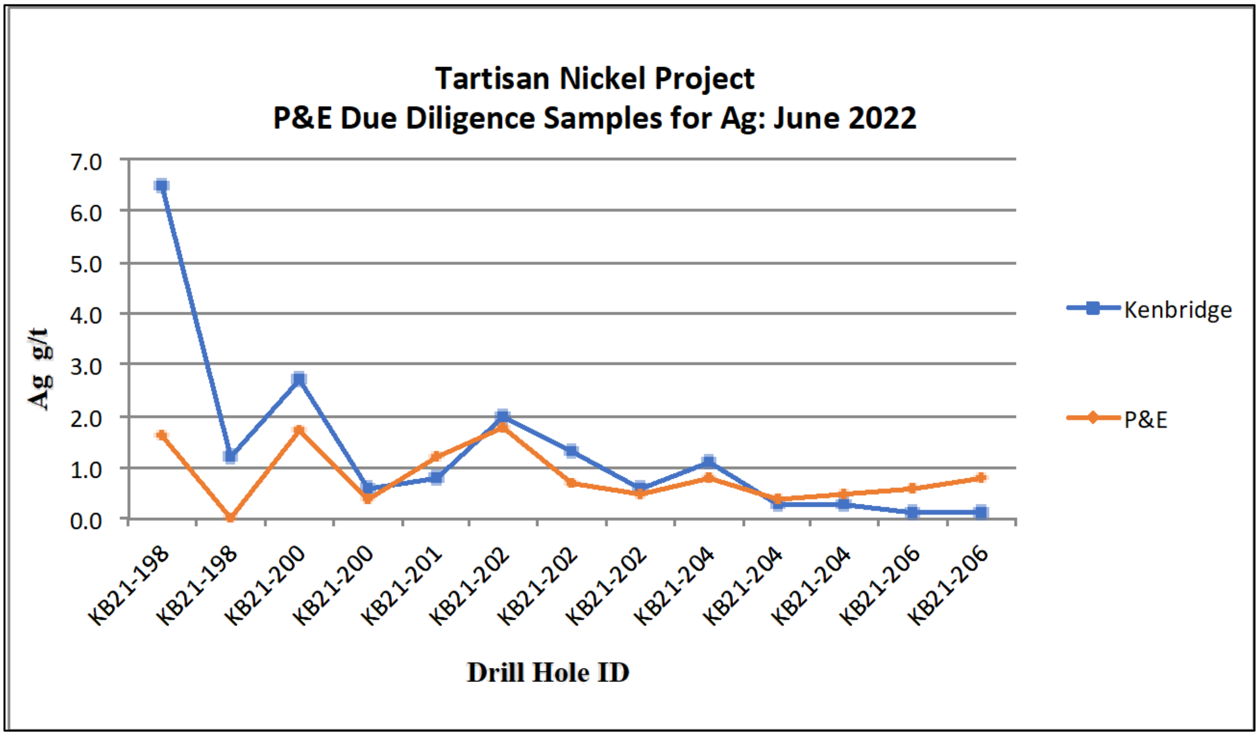


FIGURE 12.6 2022 SITE VISIT SAMPLE RESULTS FOR SILVER



12.4 CONCLUSIONS

The Authors consider that there is good correlation between Ni, Cu, Co and Ag assay values in Tartisan's database and the independent verification samples collected by the Authors and analyzed at SGS and Actlabs. It is the Author's opinion that the data are of good quality and appropriate for use in the current Mineral Resource Estimate.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 SGS LAKEFIELD, MARCH 2006

Approximately 1,250 kg of drill core including 800 kg of waste rock and 450 kg of mineralized core assaying from 0.18 to 0.73% Cu and 0.8 to 1.5% Ni were received at the Lakefield Laboratory in 2006. The mineralized drill core was segregated into three composite samples; a low and a high-grade gabbro, and one talc-rich composite as shown in Table 13.1. Also shown in Table 13.1 are the results of standard Bond Work Index ("BWi") grind tests. The composites show minor hardness variability with the average indicating a softer-than average material.

TABLE 13.1
KENBRIDGE COMPOSITES, 2006

Composite	kg	Ni (%)	Cu (%)	Co (%)	S (%)	Au (g/t)	Pt (g/t)	Pd (g/t)	Bond Work Index (kWh/t)
Low Grade Gabbro ("LGG")	200	0.56	0.29	<0.02	2.38	0.09	0.07	0.04	12.4
High Grade Gabbro ("HGG")	137	1.40	0.55	0.05	5.66	0.14	0.12	0.06	12.7
Talc	104	1.14	0.42	0.02	4.45	0.14	0.10	0.06	11.6

13.2 MINERALOGY – SGS

Extensive mineralogical studies were completed on the composites using X-ray diffraction, QEMSCAN (a computer-controlled electron scanning microscope), optical and microprobe methods. The mineral abundances as determined by QEMSCAN are summarized in Table 13.2

TABLE 13.2
MINERAL ABUNDANCES, KENBRIDGE COMPOSITES

Mineral / Group	LGG (%)	HGG (%)	Talc (%)
Pentlandite	1.2	3.4	3.2
Chalcopyrite	0.9	1.3	0.9
Pyrrhotite	3.1	14.9	5.7
Pyrite	0.8	1.0	3.2
Metal oxides	1.0	0.8	3.3
Talc/Serpentine	2.9	0.7	9.2
Amphibole/Chlorite/Epidote	56.0	49.1	40.0
Micas	1.9	0.7	5.9
Feldspar	8.7	8.7	0.7
Quartz	19.7	11.7	23.4

TABLE 13.2 MINERAL ABUNDANCES, KENBRIDGE COMPOSITES			
Mineral / Group	**LGG (%)**	**HGG (%)**	**Talc (%)**
Carbonates	2.7	3.2	4.4
Other	1.1	4.9	0.1
Total	**100**	**100**	**100**

The copper content was identified by microprobe to be exclusively related to chalcopyrite which was measured as being stoichiometric at 34.5% copper. However, the nickel content was observed to be distributed between pentlandite, pyrrhotite and silicates as summarized in Table 13.3.

TABLE 13.3 DISTRIBUTION OF NICKEL			
Mineral	**LGG (%)**	**HGG (%)**	**Talc (%)**
Pentlandite	82.7	91.6	93.6
Pyrrhotite (solid solution)	3.4	5.2	3.0
Feldspar	0	0	0
Epidote	0	0	0
Chlorite	5.3	1.6	2.5
Amphiboles	8.5	1.5	0.9

The probe analyses indicated that the maximum nickel recovery as a pentlandite concentrate would be 83%, 92% and 94% for LGG, HGG and talc mineralization composites, respectively. In addition, the optical mineralogical studies showed that some of the pentlandite was present as very fine stringers embedded in pyrrhotite. This would have a negative effect on nickel recovery.

13.3 PRECONCENTRATION TESTS

Magnetic separation tests were performed at SGS, Eriez Magnetics in Pennsylvania, and electromagnetics ("EMS") were tested for sorting at Ultrasort in Australia. Magnetic separation was unsuccessful. The best EMS results indicated that 50% of the mass could be rejected at 75% to 89% recovery of nickel and 84% recovery of copper. Interestingly, handpicked separation was equal or slightly better than EMS. This suggests that more recent separation technology (e.g., X-ray transmission ("XRT")), colour sensing, 3-D laser or induction technology could have some potential in increasing the grade of the process feed. XRT is often the preferred technology since the mineralized material does not need to be washed/cleaned.

13.4 SGS FLOTATION TESTING

Flotation testing was completed on the LGG composite sample. Six batch flotation tests were performed to determine preferred grind size and reagent additions. Batch testing LGG showed bulk concentrate 7.5% Cu, 10.4% Ni; recoveries 90.6% Cu, 67.3% Ni; 12% of Ni was lost to scavenger tails. The balance of the nickel (21%) reported to middlings.

One locked cycle test was performed on the LGG composite using the flowsheet shown in Figure 13.1.

FIGURE 13.1 LOCKED CYCLE FLOWSHEET USED BY SGS ON LGG COMPOSITE

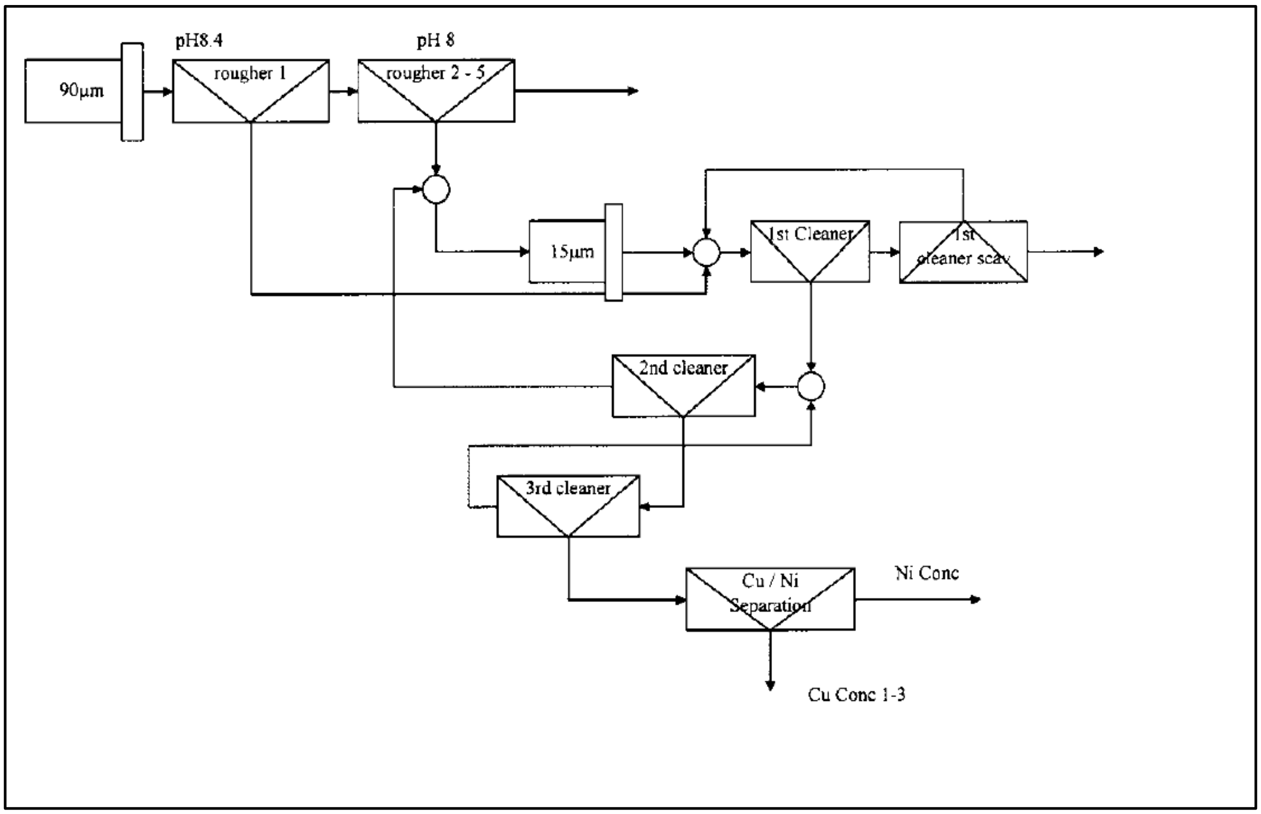


Table 13.4 presents a grade-recovery summary.

TABLE 13.4
LOCKED-CYCLE FLOTATION TEST ON LGG COMPOSITE

Test Material	Wt%	Cu (%)	Ni (%)	Co* (%)	Pt (g/t)	Pd (g/t)	Au (g/t)	Ru (g/t)	Rh (g/t)	Recoveries (%)					
										Cu	Ni	Co*	Pt	Pd	Au
Heads	100	0.31	0.58	<0.02	0.07	0.04	0.09			100	100	100	100	100	100
Cu Conc	0.7	27.5	2.2	0.071	1.09	0.87	3.92	<0.02	0.03	76.7	2.9	2.5	11	15	30
Ni Conc	3.6	1.3	11.0	0.34	1.13	0.71	1.13	0.03	0.06	18.4	73.8	61	58	64	45
Bulk	4.3	5.7	9.5	0.30	1.12	0.73	1.56			95.1	76.7	63.5	69	79	75

** assume heads 0.02% Co.*
Wt% = weight percent.
Elements listed in the Terminology and Abbreviations table.

No flotation tests were reported by SGS on the other composites. Grades and recoveries on the HGG composite would likely have been better than the LGG composite. However, the LGG sample's copper and nickel content closely mirrors previously reported Measured and Indicated Mineral Resource grades (0.32% Cu and 0.58% Ni). The performance of the Talc composite is uncertain due to the requirement to effectively depress the talc and other siliceous minerals in flotation.

13.5 XPS 2008, TECHNICAL REPORT - MICON 2010

Historical metallurgical test data, including work by Falconbridge in the 1970s and SGS Lakefield in 2006, and information resulting from Xstrata Process Support ("XPS") tests in 2008, were summarized by Micon in a 2010 Technical Report. The 2008 XPS mineralogical examinations and flotation tests had been extensive.

XPS had prepared four composite samples representing a potential low-grade open pit, and east and west open pits and underground. The composite grades are shown in Table 13.5.

TABLE 13.5
KENBRIDGE COMPOSITES PREPARED BY XPS

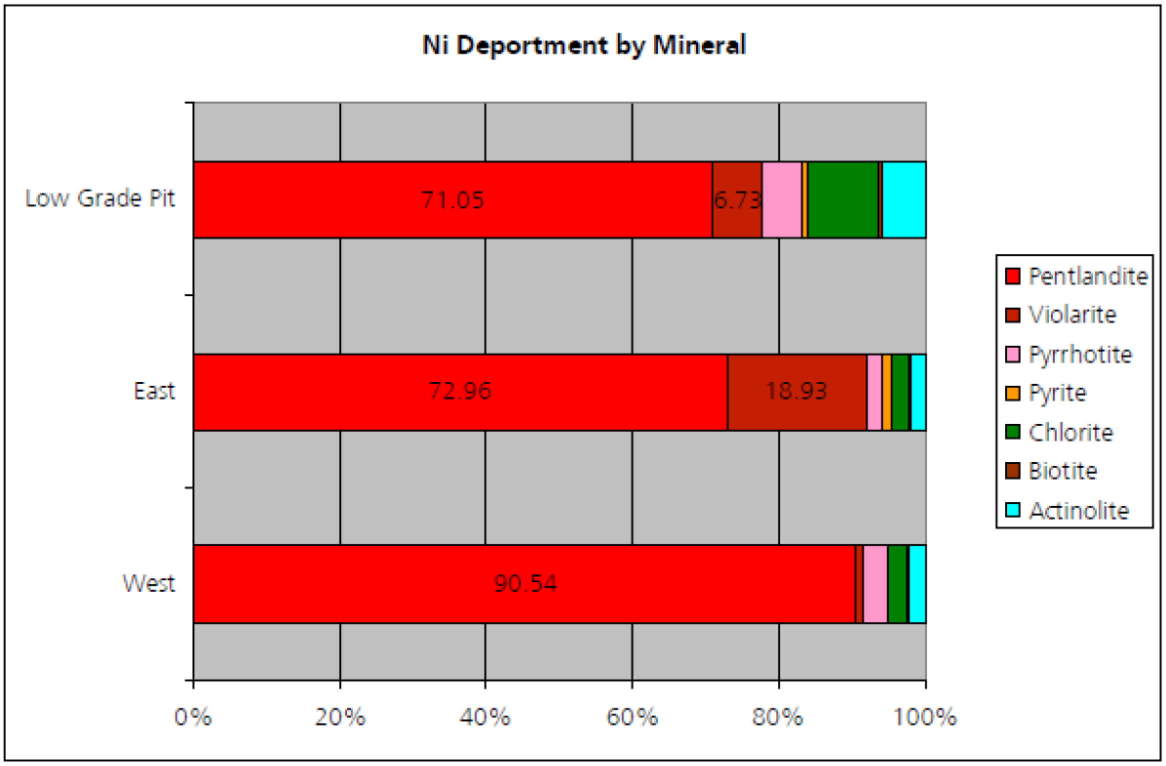
Composite	Ni (%)	Cu (%)	Co (%)	S (%)	MgO (%)	Pt (g/t)	Pd (g/t)	Au (g/t)
OP East Zone	1.27	0.49	0.039	5.42	11.27	0.18	0.05	0/05
OP West Zone	1.03	0.50	0.034	4.29	8.94	0.11	0.06	0.06
Low Grade OP	0.42	0.19	0.018	1.92	9.93	0.06	0.02	0/04
Underground	1.33	0.55		5.67	10.71			

Note: *OP=open pit*

13.5.1 XPS Mineralogy

XPS examined the Ni deportment by mineralization in three of the composites. Between 10% and 29% of the Ni was observed to be locked in other minerals than pentlandite, as shown in Figure 13.2. Between 35% and 63% of the Co was reported to be locked in pyrite.

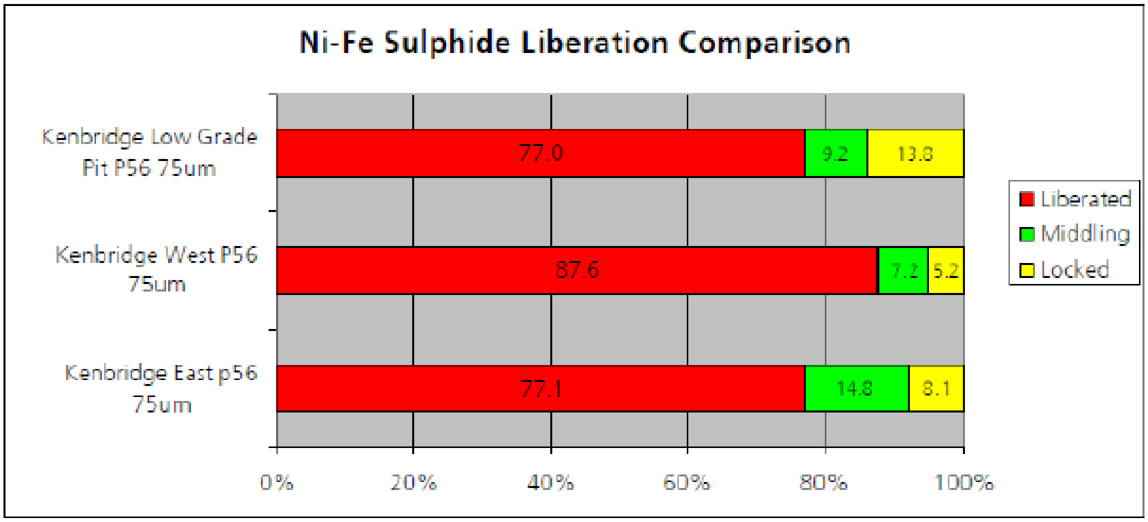
FIGURE 13.2 NICKEL DEPORTMENT IN KENBRIDGE COMPOSITE SAMPLES



From XPS Report "Kenbridge Phase I – Ore Characterisation and metallurgical Testwork", July 2008.

In addition to some of the nickel being present as solid solution in gangue minerals, XPS determined that a significant proportion of the Ni-Fe-Sulphides (pentlandite and violarite) in 200 Mesh ground material was associated with other minerals or locked in other minerals. This is outlined in three of the composites in Figure 13.3.

FIGURE 13.3 NICKEL SULPHIDE MINERAL ASSOCIATION



From XPS Report "Kenbridge Phase I – Ore Characterisation and metallurgical Testwork", July 2008.

13.5.2 Concentration of Copper and Nickel by Grinding and Flotation

50 years ago, Falconbridge had operated a one tonne per day pilot plant that tested the production of a bulk Cu-Ni flotation concentrate and a pyrrhotite magnetic concentrate. The results of steady-state conditions are summarized in Table 13.6. The feed grade was significantly higher than the current Mineral Resource Estimate grades. A concentration ratio of 14.3 was achieved; concentrate grade and recoveries were high.

TABLE 13.6
FALCONBRIDGE PILOT PLANT TEST (1970S)

Wt%	Grind	Test Material	Cu (%)	Ni (%)	S (%)	Recoveries (%)		
						Cu	Ni	S
100	89% -200 Mesh	Heads	0.62	1.22	5.33			
6.99		Concentrate	8.41	14.81	35.0	95.1	85.9	46.7

Wt% = weight percent.

A significant number of batch flotation tests were performed by XPS in 2008 to determine optimum conditions to produce a bulk concentrate. These were followed by four locked-cycle flotation tests; two on low-grade open pit ("LGOP") mineralized material and two on a 50:50 blend of LGOP and underground. The results are summarized in Table 13.7.

TABLE 13.7 XPS LOCKED CYCLE TEST RESULTS										
Sample	**Conc Wt%**	**Heads (%)**			**Concentrate (%)**			**Recoveries (%)**		
		Cu	**Ni**	**Co**	**Cu**	**Ni**	**Co**	**Cu**	**Ni**	**Co**
LGOP	7.5	0.19	0.42	0.018	3.38	6.62		89.7	83.9	
LGOP/UG	8.7	0.37	0.88		5.25	11.52		93.3	89.8	
Resource Grade		0.32	0.58	0.007						

Note: *LGOP = low-grade open pit, UG = underground.*
Wt% = weight percent, Conc = concentrate.

In early testwork, XPS did not attempt to produce separate Cu and Ni concentrates. Instead, XPS suggested that bulk concentrates be subject to QEMSCAN investigations to determine the potential for the production of separate concentrates.

In the January 2010 Technical Report, Micon suggested the following grade recoveries in the production of a **bulk concentrate** containing at least 6% Cu and 10% Ni:

LGOP:

Copper: 0.23% head grade, 82.8% recovery.
Nickel: 0.41% head grade, 74.9% recovery.

Underground:

Copper: 0.37% head grade, 89.5% recovery.
Nickel: 0.85% head grade, 90.8% recovery.
Cobalt recovery 40% for both grade and recovery.

These recoveries appear marginally conservative. Suggested recoveries for a **bulk concentrate** for preliminary NSR calculations are:

Copper: 95%, Nickel: 88%, Cobalt: 40%, Au & PGMs: 50%

13.5.3 Test Production of Separate Copper and Nickel Concentrates

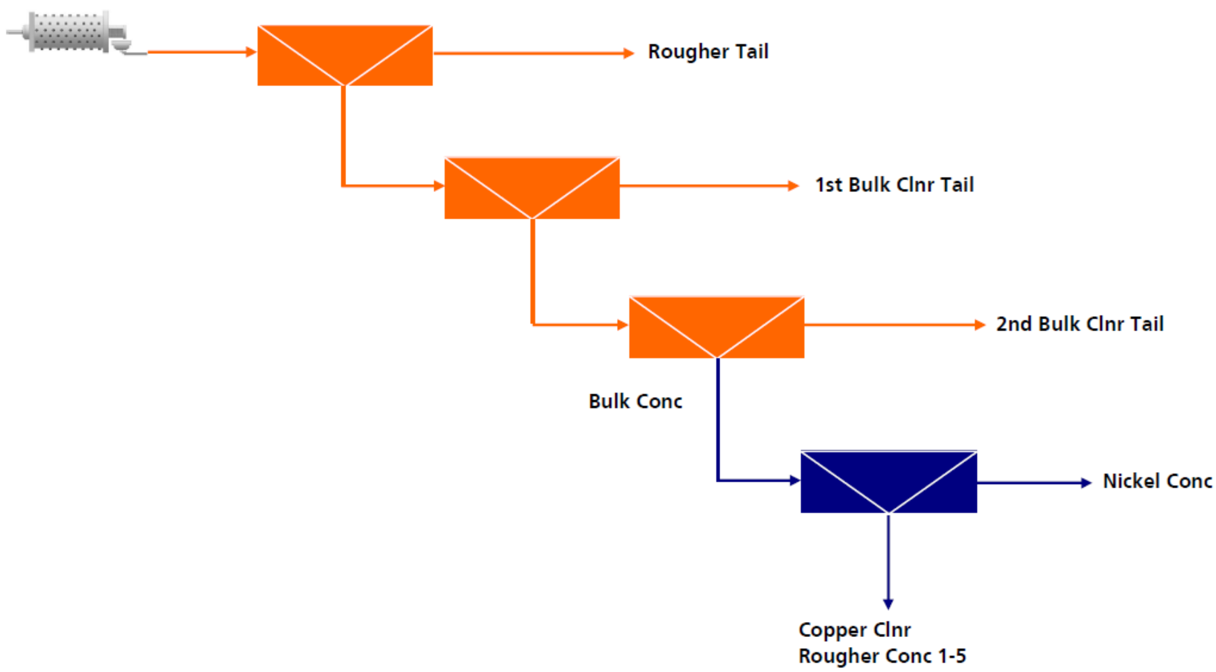
Two sets of test results are available to assess the grades and recoveries in the production of separate copper and nickel concentrates. The first example is shown in the 2006 locked-cycle test conducted by SGS (Table 13.4 above).

Supporting clues indicating the potential for producing separation concentrate are outlined in the XPS mineralogical testwork (QEMSCAN) and the liberation of nickel sulphide (pentlandite, violarite and chalcopyrite) in ground samples are summarized in Table 13.8.

TABLE 13.8 MINERAL LIBERATION IN GROUND SAMPLES (%)						
Zone	**Free Chalco pyrite**	**Middling Chalco pyrite**	**Total Chalco pyrite**	**Free Ni-Fe Sulphide**	**Middling Ni-Fe Sulphide**	**Total Ni-Fe Sulphide**
Low Grade Open Pit	75	13	88	77	9	86
West Zone	89	6	95	88	7	95
East Zone	85	9	94	77	15	92

XPS completed one copper-nickel separation test on a bulk concentrate produced from a 4.4 kg sample of LGOP-UG 50:50 blend. The applied bench scale processes are shown in Figure 13.4.

FIGURE 13.4 XPS COPPER-NICKEL SEPARATION



A summary of the XPS Cu-Ni separation test result is shown in Table 13.9.

TABLE 13.9 **XPS COPPER NICKEL SEPARATION TEST RESULTS**									
Test Material	**Wt%**	**Cu (%)**	**Ni (%)**	**S (%)**	**MgO (%)**	**Recoveries (%)**			
						Cu	**Ni**	**S**	**MgO**
Heads	100	0.37	0.86	3.76	0.07	100	100	100	100
Cu Conc.	1.34	**23.9**	1.7	30.6	2.94	**88.36**	2.66	11.1	0.39
Ni Conc.	4.82	0.39	**14.69**	34.6	1.16	5.19	**82.59**	45.0	0.70
Bulk	6.16	5.52	11.86	33.7	1.55	93.55	85.25	56.0	0.94
Resource Grade		0.32	0.58						

Wt% = weight percent.

The metallurgical result reported by XPS in 2010 indicated good grades and recoveries, excellent separation of copper and nickel, and excellent rejection of magnesium to levels well below concern in smelter feed.

For comparison, a summary of the 2006 SGS locked-cycle copper-nickel separation test results is shown in Table 13.10.

TABLE 13.10 **SGS LOCKED-CYCLE FLOTATION TEST ON LGG COMPOSITE**							
Test Material	**Wt%**	**Cu (%)**	**Ni (%)**	**Co (%)**	**Recoveries (%)**		
					Cu	**Ni**	**Co**
Heads	100	0.31	0.58	<0.02	100	100	100
Cu Conc.	0.7	27.5	2.2	0.071	76.7	2.9	2.5
Ni Conc.	3.6	1.3	11.0	0.34	18.4	73.8	61
Bulk	4.3	5.7	9.5	0.30	95.1	76.7	63.5

Wt% = weight percent.

13.6 CONCENTRATE GRADE AND RECOVERIES

The SGS results suggest the following with feed grades of 0.31% Cu and 0.58% Ni:

Copper Concentrate

28% Cu, 77% recovery
2.2% Ni, 3.0% recovery
No cobalt of interest
No PGM's of interest
0.7% weight of feed.

Nickel Concentrate

11% Ni, 75% recovery
1.8% Cu, 18% recovery
0.35% Co, 40% recovery
Au and Pt, 60% recovery to slightly exceed 1 g/t, Pd < 1 g/t
3.6% weight of feed.

The XPS results suggest the following from slightly higher feed grade, 0.37% Cu, 0.86% Ni, which are representative of the PEA mine plan:

Copper Concentrate

24% Cu, 89% recovery
1.7% Ni, 2.7% recovery
1.3% weight of feed.

Nickel Concentrate

15% Ni, 80% recovery
0.4% Cu. 5% recovery
4.7% weight.

Clean, high-grade copper and nickel concentrates can be anticipated, particularly from Kenbridge Mineral Resources containing more than 0.3% Cu and 0.6% Ni. Early SGS test indications suggest that modern mineralized material sorting technology has the potential to economically increase process plant feed grade.

14.0 MINERAL RESOURCE ESTIMATES

14.1 INTRODUCTION

The purpose of this Technical Report section is to update the Mineral Resource Estimate for the Kenbridge Project in Ontario of Tartisan Nickel Corp. ("Tartisan"). Since the previous Mineral Resource Estimate on the Kenbridge Project with an effective date of May 18, 2021, there were 10 drill holes completed in 2021. This update incorporates the new drill holes into an estimate for a potential underground mining operation study. The Mineral Resource Estimate presented herein is reported in accordance with the Canadian Securities Administrators' National Instrument 43-101 (2014) and has been estimated in conformity with the generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines (2019). Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the Mineral Resource will be converted into a Mineral Reserve. Confidence in the estimate of Inferred Mineral Resource is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Mineral Resources may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent Mineral Resource Estimates.

This Mineral Resource Estimate was based on information and data supplied by Tartisan, and was undertaken by Yungang Wu, P.Geo., Antoine Yassa, P.Geo., and Eugene Puritch, P.Eng., FEC, CET of P&E Mining Consultants Inc. of Brampton, Ontario, all independent Qualified Persons in terms of NI 43-101. The effective date of this Mineral Resource Estimate is July 6, 2022.

14.2 PREVIOUS MINERAL RESOURCE ESTIMATE

A previous public Mineral Resource Estimate for the Kenbridge Deposit with an effective date of May 18, 2021, was prepared by P&E Mining Consultants Inc. ("P&E"). The pit constrained Mineral Resource Estimate at a cut-off value of C$15/t NSR and C$60/t NSR for an out-of-pit Mineral Resource Estimate are presented in Table 14.1. This previous Mineral Resource Estimate is superseded by the Mineral Resource Estimate reported herein.

TABLE 14.1
MAY 18, 2021 MINERAL RESOURCE ESTIMATE (1-6)

Resource Area	Class-ification	Cut-off NSR C$/t	Tonnes (k)	Ni (%)	Ni (Mlb)	Cu (%)	Cu (Mlb)	Co (%)	Co (Mlb)
Pit Constrained	Measured	15	2,966	0.47	30.8	0.26	17.3	0.007	0.5
	Indicated	15	2,270	0.43	21.5	0.26	13.2	0.01	0.5
	M+I	15	5,236	0.45	52.3	0.26	30.5	0.009	1
Out-of-pit	Indicated	60	2,232	0.86	42.5	0.45	22.4	0.006	0.3
	Inferred	60	985	1.00	21.8	0.62	13.5	0.003	0.1
Total	**Measured**	**15**	**2,966**	**0.47**	**30.8**	**0.26**	**17.3**	**0.007**	**0.5**
	Indicated	**15+60**	**4,502**	**0.65**	**64.1**	**0.36**	**35.6**	**0.008**	**0.8**
	M+I	**15+60**	**7,468**	**0.58**	**94.9**	**0.32**	**52.9**	**0.008**	**1.3**
	Inferred	**60**	**985**	**1.00**	**21.8**	**0.62**	**13.5**	**0.003**	**0.1**

Note: *Ni =Nickel, Cu = Copper, Co = Cobalt, NSR = Net Smelter Return, M+I = Measured + Indicated Mineral Resources.*

1. *Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability.*
2. *The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
3. *The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*
4. *The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM"), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.*
5. *The Mineral Resource Estimate was based on US$ metal prices of $7.42/lb nickel, $3/lb copper and $25/lb cobalt.*
6. *The out-of-pit Mineral Resource grade blocks were quantified above the $60/t NSR cut-off, below the constraining pit shell and within the constraining mineralized wireframes. Additionally, only groups of blocks that exhibited continuity and reasonable potential stope geometry were included. All orphaned blocks and narrow strings of blocks were excluded. The longhole stoping with backfill mining method was assumed for the out of pit Mineral Resource Estimate calculation.*

14.3 DATABASE

All drilling/channel and assay data were provided in the form of Excel data files by Tartisan. The GEOVIA GEMS™ V6.8.4 database for this Mineral Resource Estimate, compiled by P&E, consisted of 541 drill holes/channels totalling 71,475 m, of which 10 drill holes totalling 8,988 m were completed in 2021. A total of 422 drill holes intersected the mineralization wireframes used for the Mineral Resource Estimate (see Table 14.2). 50 holes had no assays and were not utilized for this Resource Estimate. A drill hole plan is shown in Appendix A.

TABLE 14.2
DRILL HOLE DATABASE SUMMARY

Data Type	Drilled Year	Number of Drill Holes	Drill Hole Length (m)	Number of drill Holes Intersecting Wireframes	Length* of Drill Holes Intersecting Wireframes (m)
Surface Channels	2008 and older	46	773	2	11
Underground Drill Holes	2008 and older	246	15,310	205	12,992
Surface Drill Holes	2008 and older	239	46,404	209	40,361
Surface Drill Holes	2021	10	8,988	6	5,484
Total		**541**	**71,475**	**422**	**58,848**

Note: **- entire length of hole*

The drill hole and channel database contained assays for Ni, Cu and Co and other lesser elements of non-economic importance as well as bulk density. The basic statistics of all raw assays for the elements of economic interest and bulk density are presented in Table 14.3.

TABLE 14.3
ASSAY DATABASE SUMMARY

Variable	Ni (%)	Cu (%)	Co (%)	Bulk Density (t/m³)
Number of Samples	17,192	17,192	13,538	175
Minimum Value	0.00	0.00	0.00	2.24
Maximum Value	9.65	8.90	0.41	4.94
Mean	0.36	0.20	0.01	3.01
Median	0.09	0.06	0.01	2.94
Variance	0.58	0.14	0.00	0.10
Standard Deviation	0.76	0.38	0.02	0.31
Coefficient of Variation	2.15	1.92	1.49	0.10
Skewness	4.75	6.45	6.91	3.07
Kurtosis	32.01	80.85	81.39	17.16

Note: *Ni =Nickel, Cu = Copper, Co = Cobalt*

All drill hole survey and assay values are expressed in metric units. The coordinates have been converted to UTM NAD83 ZONE 15N from the mine grid.

14.4 DATA VERIFICATION

Verification of Ni, Cu and Co assay database for 2008 and older was performed by the authors of this Technical Report section (the "Authors") during the previous Mineral Resource Estimate. The 2021 assays were verified by the Authors for this estimate against laboratory certificates that were obtained independently from TSL Laboratories Inc. in Saskatoon, Saskatchewan (now SRC Geoanalytical Laboratories). A few insignificant errors were found in the assay data and corrected. Historical data were not checked due to lab certificates being unavailable to the Authors.

The Authors also validated the Mineral Resource database by checking for inconsistencies in analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, survey and missing interval and coordinate fields. A few errors were identified and corrected in the database. The Authors of this Technical Report section believe that the supplied database is suitable for Mineral Resource estimation.

14.5 DOMAIN INTERPRETATION

Three mineralization domains were constructed for a potential underground mining Mineral Resource Estimate. The wireframes were created from successive cross-sectional polylines on northeast-facing vertical sections with 15 m spacing. A C$100/t cut-off NSR value was applied to the mineralization wireframes. The NSR values were calculated with following formula:

NSR = (Ni% x $135.44) + (Cu% x $95.06) + (Co% x $130.10)

The minimum constrained sample length for the wireframes was 2.0 m. In some cases, mineralization below the C$100/t NSR cut-off value was included for the purpose of maintaining zonal continuity and the minimum width. On each cross-section, polyline interpretations were digitized from drill hole to drill hole, but not typically extended more than 15 m and 50 m into untested territory along the strike and down dip respectively.

The resulting Mineral Resource wireframe domains were utilized as constraining boundaries during Mineral Resource estimation, for rock coding, statistical analysis and compositing limits. The 3-D domains are presented in Appendix B.

The topographic and overburden surfaces were created using LIDAR and drill hole collar information from the drill logs.

14.6 ROCK CODE DETERMINATION

A unique rock code was assigned to each rock type in the Mineral Resource model as presented in Table 14.4.

TABLE 14.4
ROCK CODES USED FOR THE MINERAL RESOURCE ESTIMATE

Domain	Rock Code	Volume (m^3)
Central	100	1,343,283
HW	200	351,259
FW	300	577,991
Air	0	
OVB	10	
Waste	99	

14.7 WIREFRAM CONSTRAINED ASSAYS

Wireframe constrained assays were back-coded in the assay database with rock codes that were derived from intersections of the mineralization solids and drill holes. The basic statistics of mineralization wireframe constrained assays are presented in Table 14.5.

TABLE 14.5
BASIC STATISTICS OF ALL CONSTRAINED ASSAYS

Variable	Ni (%)	Cu (%)	Co (%)
Number of Samples	5,736	5,736	3,664
Minimum Value	0.00	0.00	0.000
Maximum Value	9.65	8.90	0.405
Mean	0.81	0.43	0.020
Median	0.44	0.27	0.012
Variance	1.26	0.30	0.00
Standard Deviation	1.12	0.55	0.03
Coefficient of Variation	1.38	1.29	1.27
Skewness	2.87	4.70	4.18
Kurtosis	13.02	43.83	31.84

Note: *Ni =Nickel, Cu = Copper, Co = Cobalt*

14.8 COMPOSITING

In order to regularize the assay sampling intervals for grade interpolation, a 1.5 m composite length was selected for the drill hole intervals that fell within the constraints of the above-mentioned

Mineral Resource wireframe domain. The composites were calculated for Ni, Cu, and Co over 1.5 m lengths starting at the first point of intersection between drill hole assay data and hanging wall of the 3-D zonal constraint. The compositing process was halted upon exit from the footwall of the aforementioned constraint. Un-assayed composite intervals were assigned background values of 0.11% Ni, 0.09% Cu and 0.005% Co. If the last composite interval was less than 0.5 m, the composite length was adjusted to make all composite intervals of the domain intercept equal. The resulting composite length ranged from 0.80 m to 2.22 m. This process would not introduce any short sample bias in the grade interpolation process. The constrained composite data were extracted to a point file for a grade capping analysis. The composite statistics are summarized in Table 14.6.

TABLE 14.6
COMPOSITE/CAP COMPOSITE SUMMARY STATISTICS

Variable	Ni_Com (%)	Ni_Cap (%)	Cu_Com (%)	Cu_Cap (%)	Co_Com (%)	Co_Cap (%)
Number of Samples	6,509	6,509	6,509	6,509	6,509	6,509
Minimum Value	0.00	0.00	0.00	0.00	0.00	0.00
Maximum Value	8.13	8.13	5.12	4.46	0.25	0.25
Mean	0.69	0.69	0.37	0.37	0.01	0.01
Median	0.42	0.42	0.26	0.26	0.01	0.01
Variance	0.74	0.74	0.15	0.15	0.00	0.00
Standard Deviation	0.86	0.86	0.39	0.39	0.02	0.02
Coefficient of Variation	1.25	1.25	1.05	1.04	1.40	1.40
Skewness	2.92	2.92	2.77	2.66	5.44	5.44
Kurtosis	14.78	14.78	16.67	14.75	47.54	47.53

Note: *Ni_Com = nickel composite, Cu_Com = copper composite, Co_Com = cobalt composite, Ni_Cap = capped nickel composite, Cu_Cap = capped copper composite, Co_Cap = capped cobalt composite.*

14.9 GRADE CAPPING

Grade capping was investigated on the 1.5 m composite values in the database within the constraining domain to ensure that the possible influence of erratic high-grade values did not bias the database. Log-normal histograms and log-probability plots for Ni, Cu and Co composites were generated for each mineralized domain and the selected resulting graphs are exhibited in Appendix C. There was no capping required except one Cu composite capped at 4% in the FW domain. The grade capping values are detailed in Table 14.7. The capped composites were utilized to develop variograms and for block model grade interpolation.

TABLE 14.7
GRADE CAPPING VALUES

Domain	Element	Total No. of Composites	Capping Value	No. of Capped Composites	Mean of Composites	Mean of Capped Composites	CoV of Composites	CoV of Capped Composites	Capping Percentile
Central	Ni	2601	No Capping	0	0.74	0.74	1.23	1.23	100.0
	Cu	2601	No Capping	0	0.38	0.38	1.01	1.01	100.0
	Co	2601	No Capping	0	0.011	0.011	1.56	1.56	100.0
HW	Ni	1816	No Capping	0	0.72	0.72	1.32	1.32	100.0
	Cu	1816	No Capping	0	0.35	0.35	1.15	1.15	100.0
	Co	1816	No Capping	0	0.012	0.012	1.43	1.43	100.0
FW	Ni	2092	No Capping	0	0.60	0.60	1.14	1.14	100.0
	Cu	2092	4	1	0.38	0.38	1.00	0.98	99.9
	Co	2092	No Capping	0	0.010	0.010	0.99	0.99	100.0

Note: *Ni = Nickel, Cu = Copper, Co = Cobalt, CoV=Coefficient of Variation*

14.10 VARIOGRAPHY

A variography analysis was performed as a guide to determining a grade interpolation search strategy. Directional variograms were attempted using the Ni composites. Selected variograms are attached in Appendix D.

Continuity ellipses based on the observed ranges were subsequently generated and utilized as the basis for estimation search ranges, distance weighting calculations and Mineral Resource classification criteria.

14.11 BULK DENSITY

A total of 175 bulk density measurements were included in the database provided by Tartisan, of which 80 bulk densities were constrained within the Mineral Resource wireframes. The average of the constrained bulk densities was 3.05 t/m^3 which was applied to all mineralization domains.

14.12 BLOCK MODELING

The Kenbridge block model was constructed using GEOVIA GEMS™ V6.8.4 modelling software. The block model origin and block size are presented in Table 14.8. The block model consists of separate model attributes for estimated grades of Ni, Cu and Co, rock type (mineralization domains), volume percent, bulk density, NSR value, and classification.

TABLE 14.8
BLOCK MODEL DEFINITION

Direction	Origin	No. of Blocks	Block Size (m)
X	453,859.867	106	5.0
Y	5,481,265.949	100	2.5
Z	410	210	5.0
Rotation	50° (counter-clockwise)		

All blocks in the rock type block model were initially assigned a waste rock code of 99, corresponding to the surrounding country rocks. The mineralized domain was used to code all blocks within the rock type block model that contain 0.01% or greater volume within the domain. These blocks were assigned rock type codes as presented in Table 14.4. The overburden and topographic surfaces were subsequently utilized to assign rock code 10 and 0, corresponding overburden and air respectively, to all blocks 50% or greater above the surfaces.

A volume percent block model was set up to accurately represent the volume and subsequent tonnage that was occupied by each block inside the constraining wireframe domain. As a result, the domain boundary was properly represented by the volume percent model ability to measure individual infinitely variable block inclusion percentages within that domain. The minimum percentage of the mineralized block was set to 0.01%.

The Ni, Cu and Co grade blocks were interpolated with Inverse Distance Squared (“ID^2”). Ordinary Kriging (“OK”) and Nearest Neighbour (“NN”) were employed for validation. Multiple passes were executed for the grade interpolation to progressively capture the sample points to avoid over-smoothing and preserve local grade variability. Search ranges and directions were based on the variograms. Grade blocks were interpolated using the parameters in Table 14.9.

TABLE 14.9
BLOCK MODEL INTERPOLATION PARAMETERS

Element	Pass	Major Range (m)	Semi-major Range (m)	Minor Range (m)	Max No. of Samples per Hole	Min No. of Samples	Max No. of Samples
Ni, Cu & Co	I	25	25	15	2	5	12
	II	40	25	40	2	3	12
	III	120	75	120	2	1	12

Selected cross-sections and plans of the Ni grade and NSR blocks are presented in Appendix E and Appendix F respectively.

The NSR values of blocks were manipulated with the following formula:

NSR = (Ni% x \$135.44) + (Cu% x \$95.06) + (Co% x \$130.10).

The average bulk density of 3.05 t/m^3 was applied to the mineralization blocks.

14.13 MINERAL RESOURCE CLASSIFICATION

It is the Authors of this Technical Report section opinion that all the drilling, assaying and exploration work on the Kenbridge Project support this Mineral Resource Estimate and are sufficient to indicate a reasonable potential for economic extraction, and thus qualify it as a Mineral Resource under the CIM definition standards. The Mineral Resource was classified as Measured, Indicated and Inferred based on the geological interpretation, variogram performance and drill hole spacing. The Measured Mineral Resource was qualified for the blocks interpolated with the Pass I in Table 14.9, which used at least five composites from a minimum of three holes; Indicated Mineral Resource was classified for the blocks interpolated with the Pass II, which used at least three composites from a minimum of two holes; and Inferred Mineral Resources were categorized for all remaining grade populated blocks within the mineralized domain. The classifications have been adjusted on a longitudinal projection to reasonably reflect the distribution of each classification. Selected classification block cross-sections and plans are attached in Appendix G.

14.14 NSR CUT-OFF CALCULATION

The Kenbridge Mineral Resource Estimate was derived from applying Net Smelter Return (“NSR”) cut-off values to the block models and reporting the resulting tonnes and grades for potentially mineable areas. The following parameters were used to calculate the NSR values that determine the underground mining potentially economic portions of the constrained mineralization.

NSR Cut-off Value Calculation

US$:CAD$ Exchange Rate	0.76
Ni Price	US$8.25/lb (Approx. Mar 31/22 two-year trailing average)
Cu Price	US$4.00/lb (Approx. Mar 31/22 two-year trailing average)
Co Price	US$26.00/lb (Approx. Mar 31/22 two-year trailing average)
Ni Process Recovery	75%
Cu Process Recovery	77%
Co Process Recovery	40%
Cu Smelter Payable	96%
Ni Smelter Payable	92%
Co Smelter Payable	50%
Mass Pull	28%
Smelter treatment	US$250.00/t
Moisture content	8%
Concentrate freight	C$105/t
Underground Mining Cost	C$77/t
Processing Cost	C$19/t
G&A	C$4/t

The NSR Cut-off for potential underground mining is calculated as = C$100/t.

14.15 MINERAL RESOURCE ESTIMATE

The resulting Mineral Resource Estimate as of the effective date of this Technical Report is tabulated in Table 14.10. The mineralization of the Kenbridge Project is considered by the Authors to be potentially amenable to underground economic extraction.

Table 14.10 Mineral Resource Estimate (1-7)									
Class	**Cut-off NSR (C$/t)**	**Tonnes (k)**	**Ni (%)**	**Ni (Mlb)**	**Cu (%)**	**Cu (Mlb)**	**Co (%)**	**Co (Mlb)**	**NSR (C$/t)**
Measured	100	1,867	0.99	41.0	0.50	20.6	0.017	0.7	184.40
Indicated	100	1,578	0.95	33.0	0.53	18.5	0.009	0.3	180.26
Meas+Ind	**100**	**3,445**	**0.97**	**74.0**	**0.52**	**39.1**	**0.013**	**1.0**	**182.51**
Inferred	100	1,014	1.47	32.7	0.67	14.9	0.011	0.2	263.38

Note: *Ni =Nickel, Cu = Copper, Co = Cobalt, NSR = Net Smelter Return.*

1. *Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.*
2. *The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
3. *The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*
4. *The Mineral Resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines (2014) and Best Practices Guidelines (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.*
5. *The Mineral Resource Estimate is based on US$ metal prices of $8.25/lb Ni, $4.00/lb Cu, $26/lb Co. The US$:CDN$ exchange rate used was 0.76.*
6. *The NSR estimate uses flotation recoveries of 75% for Ni, 77% for Cu, 40% for Co and smelter payables of 92% for Ni, 96% for Cu, 50% for Co.*
7. *Mineral Resources were determined to be potentially extractable with the longhole mining method based on an underground mining cost of $77/t mined, processing of $19/t and G&A costs of $4/t.*

Mineral Resource Estimates are sensitive to the selection of a reporting NSR cut-off value and are demonstrated in Table 14.11.

TABLE 14.11
MINERAL RESOURCE ESTIMATE SENSITIVITY

Classification	Cut-off NSR (C$/t)	Tonnes (k)	Ni (%)	Ni (Mlb)	Cu (%)	Cu (Mlb)	Co (%)	Co (Mlb)	NSR (C$/t)
Measured	250	326	1.98	14.2	0.78	5.6	0.030	0.2	346.41
	200	553	1.67	20.4	0.70	8.5	0.025	0.3	296.14
	150	954	1.35	28.5	0.61	12.8	0.021	0.4	243.88
	100	1,867	0.99	41.0	0.50	20.6	0.017	0.7	184.40
	60	2,826	0.79	49.5	0.42	26.0	0.014	0.9	149.03
Indicated	250	252	1.84	10.2	0.85	4.7	0.007	0.0	330.77
	200	460	1.55	15.7	0.75	7.6	0.008	0.1	281.95
	150	817	1.27	22.8	0.65	11.7	0.008	0.2	234.26
	100	1,578	0.95	33.0	0.53	18.5	0.009	0.3	180.26
	60	2,090	0.81	37.5	0.47	21.9	0.009	0.4	156.40
Inferred	250	534	2.03	23.9	0.89	10.5	0.008	0.1	360.57
	200	647	1.88	26.9	0.85	12.2	0.009	0.1	337.27
	150	743	1.76	28.8	0.80	13.1	0.009	0.2	315.77
	100	1,014	1.47	32.7	0.67	14.9	0.011	0.2	263.38
	60	1,149	1.34	33.9	0.62	15.8	0.010	0.3	242.16

Note: *Ni =Nickel, Cu = Copper, Co = Cobalt, NSR = Net Smelter Return.*

14.16 CONFIRMATION OF ESTIMATE

The block model was validated using a number of industry standard methods including visual and statistical methods.

- Visual examination of composites and block grades on successive plans and sections were performed on-screen in order to confirm that the block models correctly reflect the distribution of composite grades. The review of estimation parameters included:

    - Number of composites used for estimation;
    - Number of drill holes used for estimation;
    - Number of passes used to estimate grade;
    - Mean value of the composites used;
    - Mean distance to sample used;
    - Actual distance to closest point; and
    - Grade of true closest point.

- A comparison of mean grades of composites with the block model is presented in Table 14.12.

TABLE 14.12
AVERAGE GRADE COMPARISON
OF COMPOSITES WITH BLOCK MODEL

Data Type	Ni (%)	Cu (%)	Co (%)
Composites	0.69	0.37	0.01
Capped Composites	0.69	0.37	0.01
Block Model ID^2	0.81	0.43	0.01
Block Model OK	0.81	0.44	0.01
Block Model NN	0.81	0.43	0.01

Notes: *Ni = Nickel, Cu = Copper, Co = Cobalt*
ID^2= block model grades were interpolated with Inverse Distance Squared
OK=block model grades were interpolated with Ordinary Kriging
***NN=** block model grades were interpolated using Nearest Neighbour*

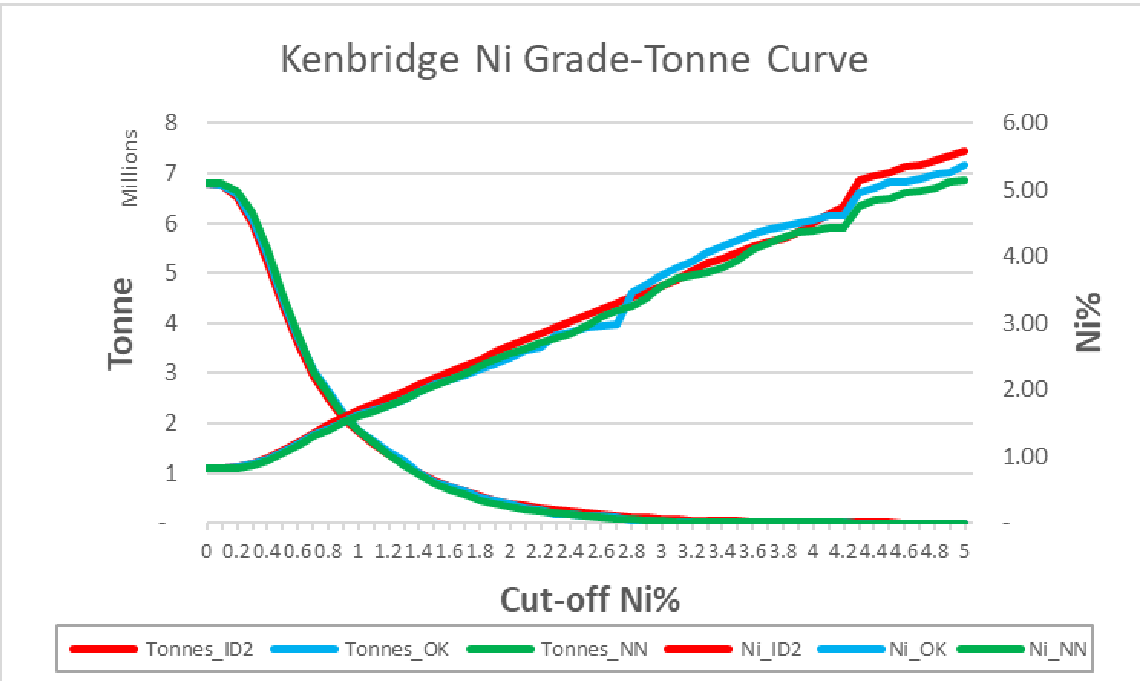
The comparisons above show the average grades of Ni and Cu block models were higher than that of composites used for the grade estimations. These were most likely due to the smoothing by the grade interpolation process. The block model values will be more representative than the composites due to 3-D spatial distribution characteristics of the block models.

- A volumetric comparison was performed with the block model volume versus the geometric calculated volume of the domain solids and the differences are shown in Table 14.13.

TABLE 14.13 **VOLUME COMPARISON OF BLOCK MODEL WITH GEOMETRIC SOLIDS**	
Geometric volume of wireframes	2,272,533 m^3
Block model volume	2,269,670 m^3
Difference %	0.1%

- A comparison of the grade-tonnage curve of the Ni grade model interpolated with Inverse Distance Squared ("ID^2"), Ordinary Kriging ("OK") and Nearest Neighbour ("NN") on a global resource basis are presented in Figure 14.1.

FIGURE 14.1 NI GRADE-TONNAGE CURVE FOR ID^2, OK AND NN INTERPOLATION



- Ni local trends were evaluated by comparing the ID^2, OK and NN estimate against the composites. As shown in Figures 14.2 to 14.4, Ni grade interpolations with ID^2, OK and NN agreed well.

FIGURE 14.2 NI GRADE SWATH EASTING PLOT

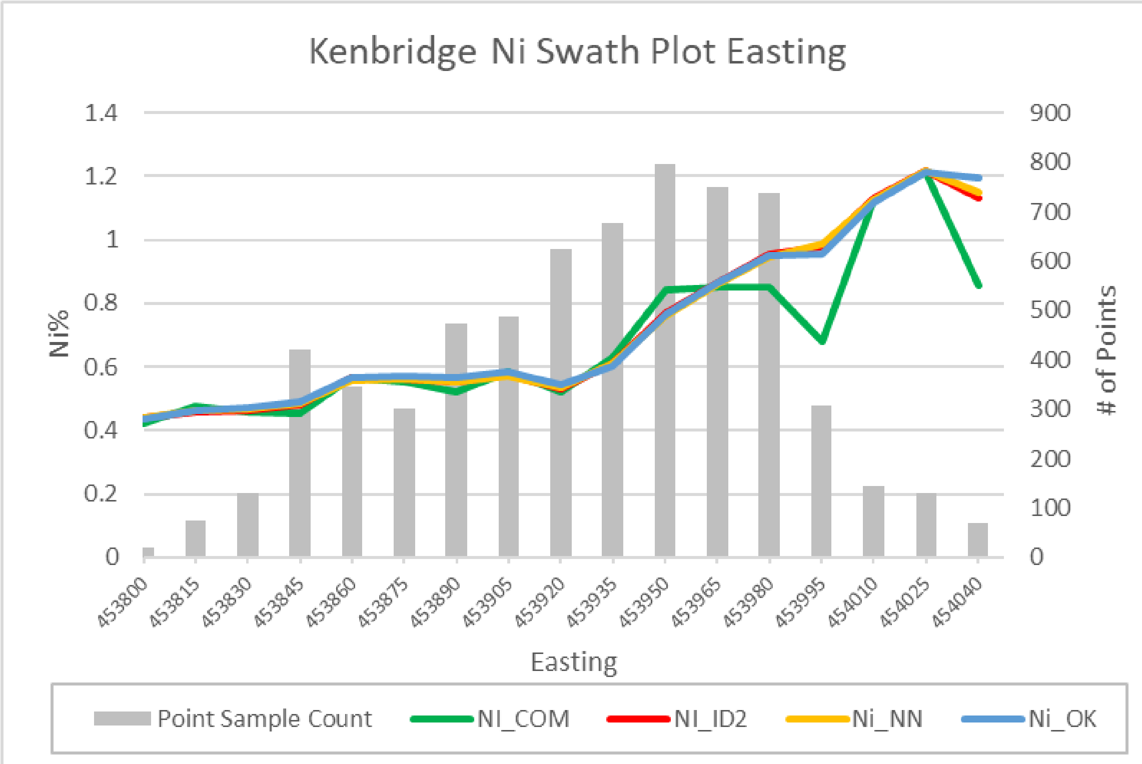


FIGURE 14.3 NI GRADE SWATH NORTHING PLOT

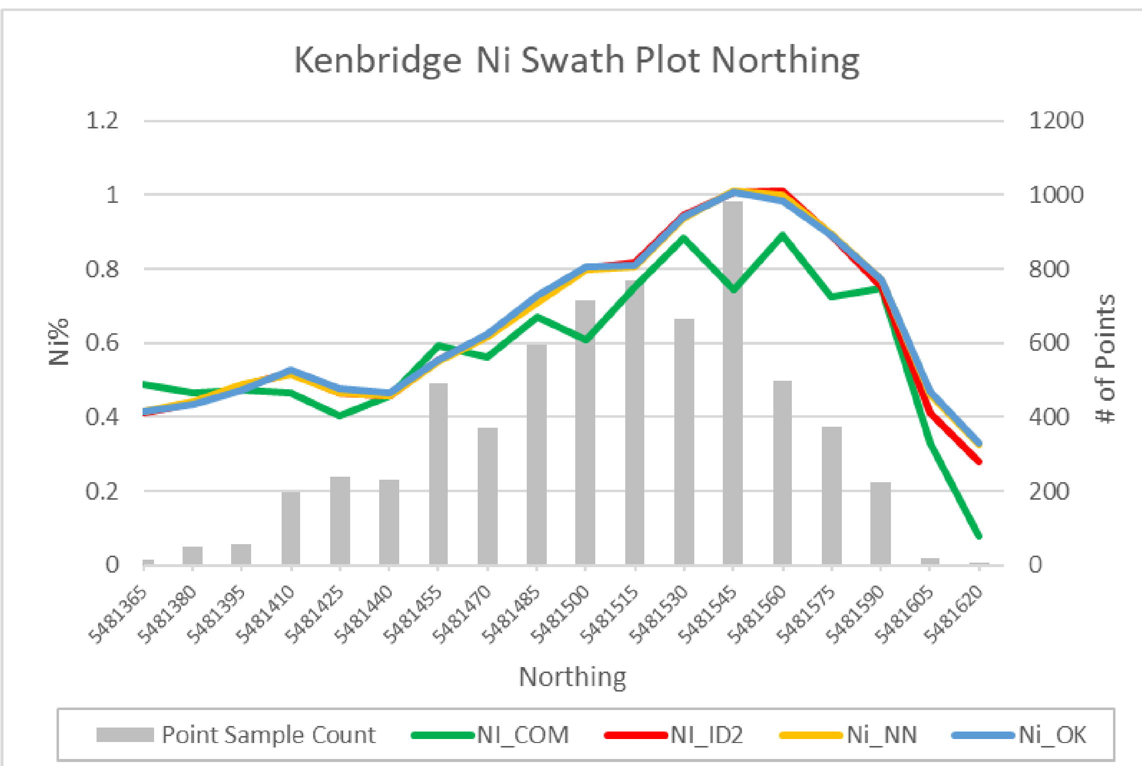
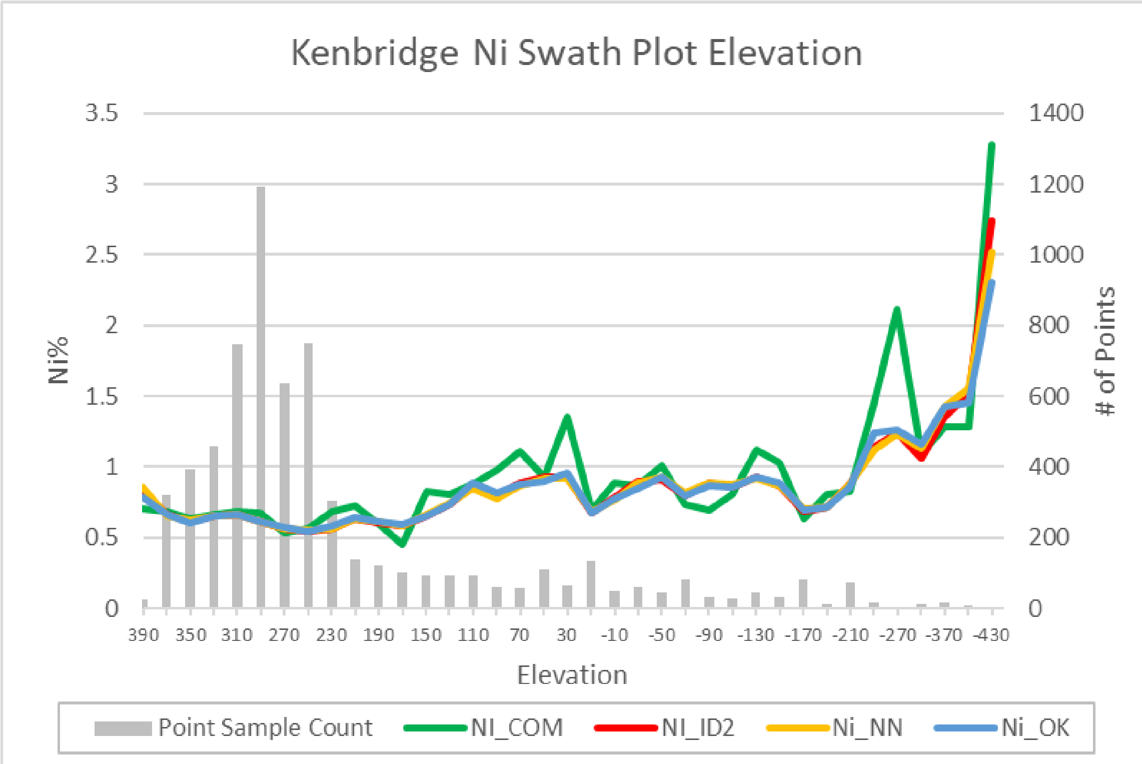


FIGURE 14.4 NI GRADE SWATH ELEVATION PLOT



15.0 MINERAL RESERVE ESTIMATE

No NI 43-101 Mineral Reserve currently exists for the Kenbridge Project. This section is not applicable to this Technical Report.

16.0 MINING METHODS

The Kenbridge Deposit is comprised of three steeply-dipping sub-parallel structures (HW, FW and Central) of varying extents, as shown in Figure 16.1. The largest structure (Central) extends approximately 1 km from surface; the smallest (HW) extends approximately 300 m from surface; and the remaining structure (FW) extends to approximately 600 m from surface. All three structures outcrop at the existing surface/overburden interface. Mineralization is planned to be extracted from all three structures over the Life of Mine ("LOM").

Open pit mining was studied and was found to be less economic than underground mining. However, the potential exists to mine a shallow open pit at any time during the mine production life in case emergency or incremental feed for the process plant is required.

A historical exploration shaft exists on the Property and extends to a depth of approximately 625 m from surface (the extent of the FW structure), with 13 shaft stations cut approximately every 46 m (150 ft). This shaft will be rehabilitated, expanded, and refitted with a new hoist and headframe to support mining in the upper areas above the shaft bottom, and hoisting of material excavated from areas below the extent of the shaft. Mining areas from the bottom shaft station and below the extent of the shaft will be accessed via a ramp from the lowest shaft station (Level 13), with material being trucked to the Loading Pocket ("LP") at the bottom of the shaft for crushing and final hoisting to surface. This method of access was chosen to minimize lead time to mining and maximize scheduling flexibility, in addition to minimizing transportation costs of broken rock.

Level spacing in the upper (shaft-access) part of the mine will be 46 m to utilize existing shaft stations and levels (Levels 2 and 3 have significant historical lateral development) where possible to minimize capital expenditures. These areas will be mined using a 16 m uphole blast followed by a 30 m downhole blast into the void created by the upholes. This methodology decreases overall dilution and allows for smaller longhole ("LH") drilling equipment. Levels in the lower (ramp-access) part of the mine will be spaced on 30 m intervals, since there is no historical development to incorporate, and 30 m level spacings will allow fleet continuity (same drilling and loading units as in the upper mine) while reducing the complexity of the stoping process by eliminating the 16 m uppers blast. Stopes are expected to be approximately 20 m long and an average of 11 m wide. To maximize productivity and limit lead time to production, the mine will be divided into five mining blocks: three in the shaft-access areas and two in the ramp-access areas below the shaft, as shown in Figure 16.2.

Extraction of material in all areas will use LH retreat stoping with Cemented Hydraulic Fill ("CHF") at nominal 3% binder by mass to eliminate in-situ pillars and maximize the extraction of the Mineral Resource. Artificial sill pillars comprised of higher-strength CHF (nominally 6% by mass) will be used to segregate the blocks where required, and allow for undermining of the pillars in a safe and controlled manner to maximize the extraction of mineralized material. It is expected that four artificial sill pillars will be required over LOM, with a pillar being located in the bottom level of each mining block, except the lowest block. In addition to artificial sill pillars, a crown pillar extending 46 m from Level 1 to the overburden/host rock contact will be left until extracted at the end of mine life. Figure 16.2 shows the details of these pillars.

FIGURE 16.1 HW, FW AND CENTRAL DOMAINS

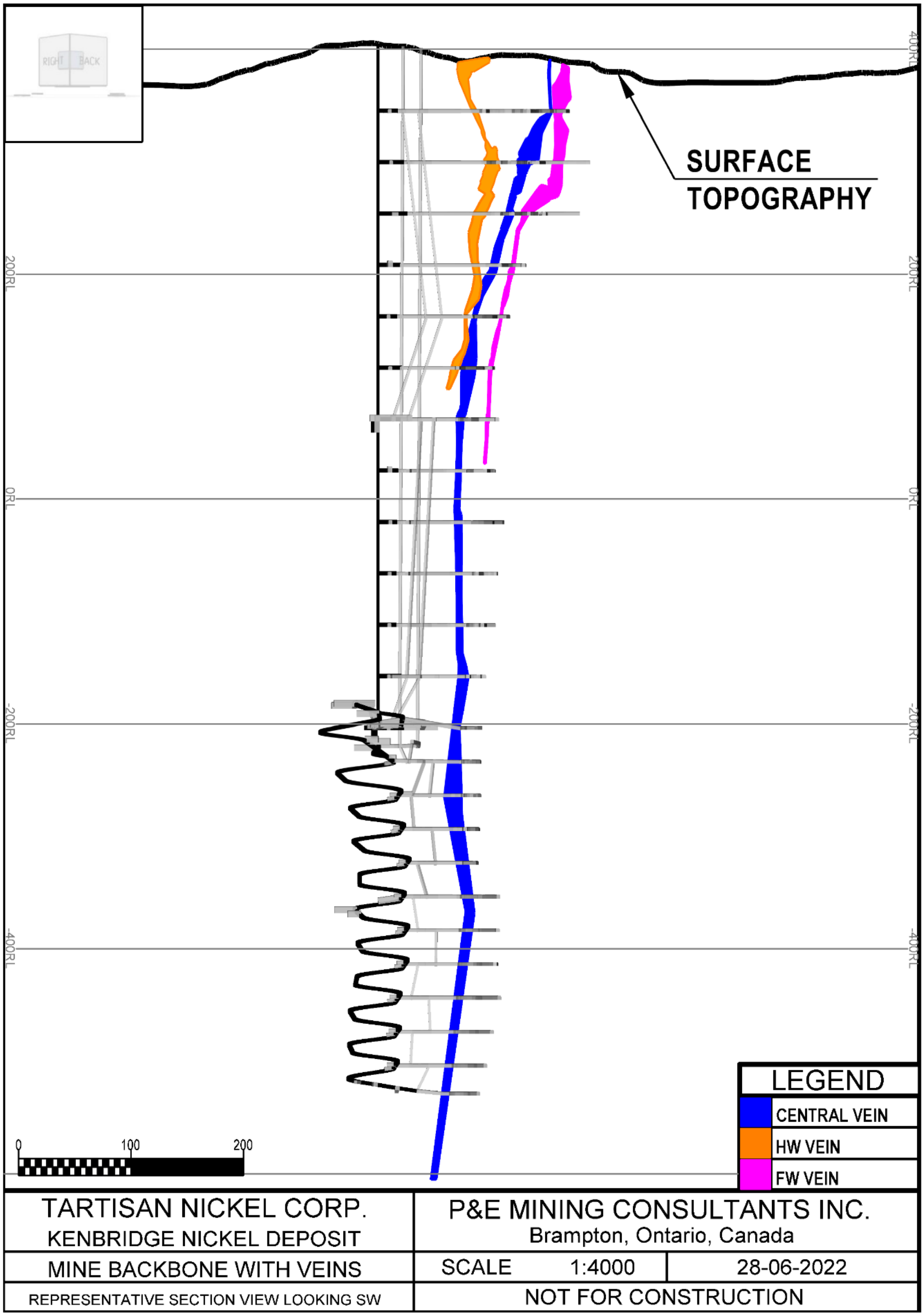
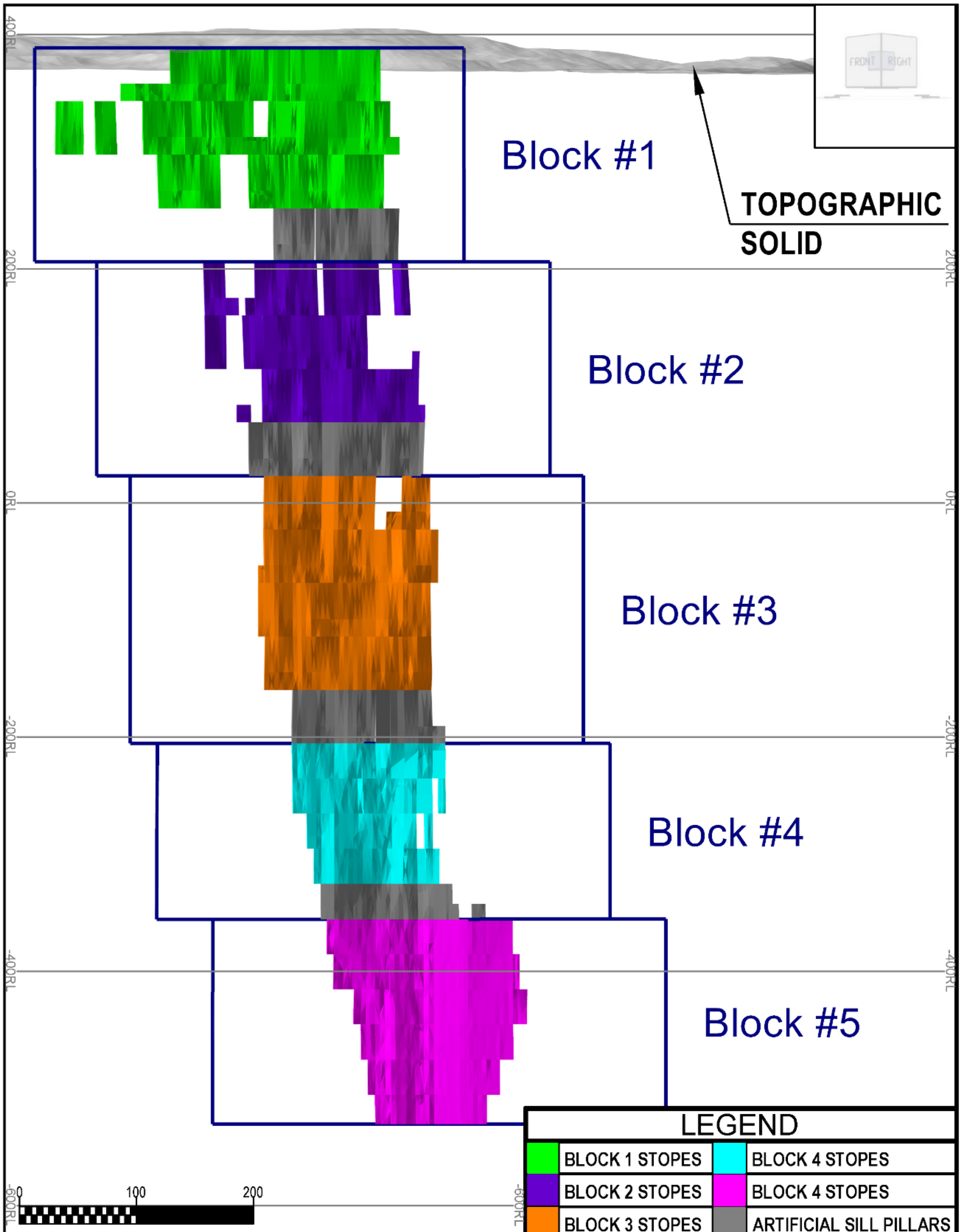


FIGURE 16.2 FIVE MINING BLOCKS



TARTISAN NICKEL CORP. KENBRIDGE NICKEL DEPOSIT	P&E MINING CONSULTANTS INC. Brampton, Ontario, Canada	
MINING BLOCKS AND SILL PILLARS	SCALE 1:4000	28-06-2022
SECTION OF STOPES & SILL PILLARS LOOKING NW	NOT FOR CONSTRUCTION	

Since material transport to surface will include hoisting via the shaft, a materials handling system will be installed, including: mineralized material and waste passes; truck dumps; grizzlies; bins; crusher; and LPs. Two LPs are utilized: the Upper LP located at Level 7 and the Lower LP at Level 13. Both pockets are equipped with crushers to reduce the particle size of mineralized material to a nominal 102 mm (4 inch) maximum. The Lower LP additionally services the ramp-access area of the mine below the shaft, and is equipped with truck dumps and storage bins.

Services will be supplied via the shaft, and then via boreholes down the ramp below the shaft extents. Electrical power will be supplied at a nominal 15 kV prior to on-level distribution at 1 kV. Compressed air will be provided in a similar fashion, with a peak draw of 2.0 m^3/s (4,300 scfm) early in mine life. Initial dewatering of the historical workings will be by submersible electric pump and staged pump boxes and is expected to take approximately six months. Ongoing dewatering of the mine will utilize compressed-air face pumps to move water to level sumps, which will cascade to sequential pump stations located at intervals in the mine. A main pump station at the bottom of the shaft will be equipped with electric centrifugal pumps to pump water to surface. Pump stations are designed for an operating flow rate of 40 L/s and a 33% duty cycle to accommodate the expected average inflow of 13 L/s.

Ventilation will be provided by a raisebored Fresh Air Raise ("FAR") and parallel Return Air Raise ("RAR") in the shaft areas, with the ramp area being provided with fresh air through a series of drop-raised FARs and exhausting air back up the ramp to the bottom of the main RAR. Total required airflow at maximum depth and full production is estimated at 150 m^3/s. This air will be provided by fans on surface and an underground booster fan installation located near the shaft bottom. Since the climate at the Kenbridge site includes significant periods of freezing temperatures, Compressed Natural Gas ("CNG") heaters will be installed to heat the air and keep the underground intake air at a nominal 2°C over the winter months to prevent freezing of water and compressed air lines and improve the working environment.

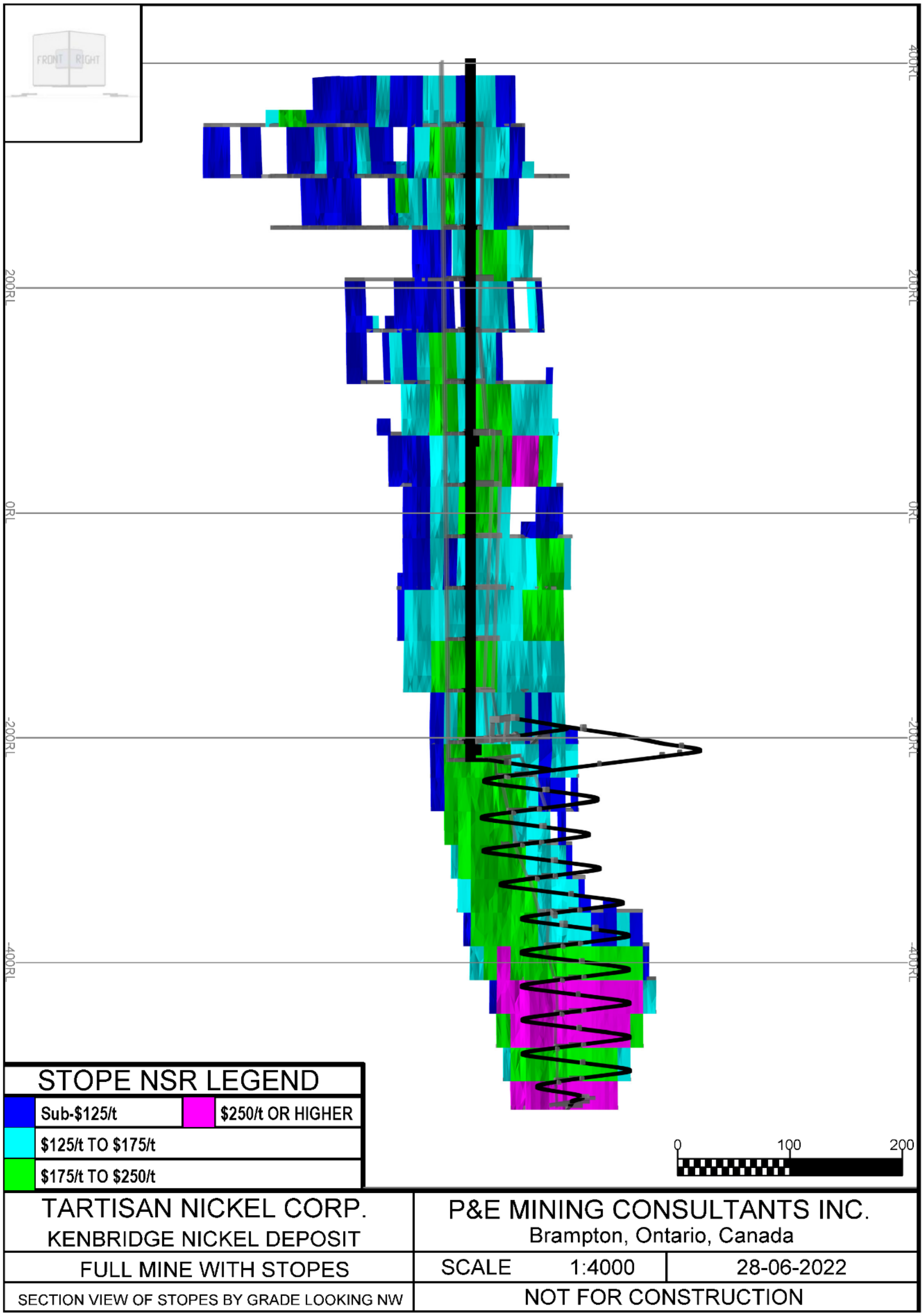
Mining and development will be carried out by Company personnel, with a fleet acquired through a lease-to-own strategy. To limit diesel consumption, Battery Electric Vehicles ("BEVs") have been utilized as much as possible in the fleet, and compressed-air powered machinery has been used in the shaft access areas for drilling and initial loading out of areas near the historical workings.

Processing will be performed on-site at the process plant, and tailings will be incorporated into the CHF as much as possible to reduce tailings pond requirements while maintaining the required properties of the backfill to support continued adjacent mining.

The Kenbridge Project is expected to produce a total of 4.52 Mt of plant feed over a nine-year mine life, with an average metal content of 0.81% Ni, 0.40% Cu and 0.01% Co. It is expected to operate for 352 days per year at a daily rate of 1,500 tpd, for a nominal yearly production rate of 528 ktpa.

Figure 16.3 shows the extents of the underground mine and stoping areas at the Kenbridge Project.

FIGURE 16.3 UNDERGROUND MINE AND STOPING AREAS EXTENTS



16.1 DESIGN METHODOLOGY AND CUT-OFF VALUE

The initial design of the underground mining complex was driven by the following parameters:

- Longhole mining as a primary extraction method.

- Use of CHF to eliminate in-situ pillars and simplify backfill supply in historical areas.

- Initial estimate of:
  - Marginal Cut-Off-Value ("COV") estimated at $100/t.
  - 46 m level spacing in levels accessed via historical shaft.
    - 16 m uphole
    - 30 m downhole
  - 30 m level spacing in levels below the historical shaft (30 m downhole only).
  - 20 m stope strike.
  - Stope production of 200 tpd per stope and an average of 3.5 active stopes per block.

- Hill-of-Value analysis using:
  - Deswik Stope Optimizer ("DSO") automated diluted stope generation at COVs from $90-150/t in $10 increments.
  - Mining loss of 5% and additional dilution of 10% for backfill.
  - Preliminary production rate estimates by Long's modification to Taylor's Rule (Long, 2009) based on recoverable diluted tonnage (varies from 1,100 - 1,400 tpd).

- Trade-off studies to determine:
  - Optimum access method (all ramp, all shaft, ramp below shaft).
  - Optimum shaft rehab/expansion method (conventional sinking, Alimak slashing).
  - Optimum quantity and positioning of loading pockets (1, 2, or 3 pockets).

Analysis showed that a mine using a shaft with a ramp below it to access the additional vertical extents of the Deposit would have the best financial outcome, and that the optimum COV was approximately $120/t. Further iteration of the Hill-of-Value work in $5/t increments based on the outcomes of the initial analysis resulted in analyses showing that the best financial outcome occurs at $115/t economic COV with a 1,400 tpd production rate.

Since the selected economic COV is well above the marginal COV, certain areas where development passed through mineralized areas with values between the marginal and economic COV were added back to the mine plan, since development costs were already sunk and therefore actual value above marginal cost was significantly above cut-off. These tonnes make up approximately 5.7% of total tonnes, and 3.2% of total revenues for the Project.

16.2 GEOTECHNICAL AND GEOLOGICAL CONSIDERATIONS

No significant faults or discontinuities have been identified at the Kenbridge site, however a talc schist zone has been identified. This zone is not generally contiguous with the stoping areas, however, it does intersect a minority of stopes. Further investigation of the impacts of this geological structure is recommended at a later stage of study, however, its impact is expected to be minor.

Geotechnical analysis was performed on the Kenbridge site by Knight Piésold ("KP") in April of 2021 for a previous version of the mine design. Their findings suggest that the rock is generally of good quality, with RMR89 in the range of 60-80, and Q' values of approximately 10 for most stoping areas in the Mafic Volcanic units and 18 for stoping areas in the Gabbro-Pyroxenite units. No ground support recommendations were made. As such, the authors of this Technical Report section (the "Authors") have estimated ground support requirements and stope sizes based on experiences at similar sites in Northwestern Ontario. Ground support is expected to be comprised of rebar and screen in permanent installations (ramps, shaft, and other infrastructure), with split-sets and screen used in temporary installations (production access development). Shotcrete is not expected to form a significant portion of the ground support regime at the Kenbridge site, however, as it will be used in construction operations (fill fences, ventilation seals, etc.), equipment is provided for its use as necessary.

A modified stability number (N') of 5 has been used where necessary for geotechnical calculations. N' is the product of Q' and three modifying factors (A, B and C) related to the geometry of stopes and the structures intersecting them. The Authors have estimated the A and B factors at the conservative end of the scale, with the C factor being directly calculated by formula using a dip of 75°. The factors and modified stability numbers calculation are shown in Table 16.1.

TABLE 16.1
MODIFIED STABILITY NUMBER BY ROCK TYPE

Rock Type	Q'	A	B	C = 8-6*cos(Dip)	N' = Q' x A x B x C
Mafic Volcanic	10.0	0.4	0.2	6.4	5.1
Gabbro-Pyroxenite	18	0.4	0.2	6.4	9.2
Talc Schist	1.1	0.4	0.2	6.4	0.5

Stope sizing varies throughout the mine, however, stopes in the upper mine are nominally 46 m H x 20 m L, with thickness varying based on the span of the vein (generally 5-15 m). In the lower mine, the stope height is reduced to 30 m. This reduction is for operational, rather than geotechnical, reasons. Stope Hydraulic Radii ("HR") are presented in Table 16.2.

TABLE 16.2
HYDRAULIC RADII BY STOPE DIMENSION

Length (m)	Height (m)	Thickness (m)	Endwall HR	Sidewall HR	Back HR
20	46	5	2.25	6.97	2.00
20	46	15	5.63	6.97	4.29
20	30	5	2.14	6.00	2.00
20	30	15	5.00	6.00	4.29

In special cases it may be necessary to increase CHF binder content or add cable bolts where conditions vary significantly from normal (stopes are wider, or talc schist zone is intersected). Allowances have been made for this to occur in up to 5% of stoping areas.

Artificial sill pillars will be used in four locations in the mine, and will be comprised of CHF with 6% binder content by mass. These pillars have been assigned a thickness equal to one complete level (46 m thick in the shaft-access areas of the mine and 30 m thick in the ramp-access areas), however, future study work should be able to significantly reduce this thickness and reduce cost. All other areas of the mine are assumed to use CHF with 3% binder backfill to provide for the exposure of a full height end wall when mining adjacent stopes.

A crown pillar is left above Level 1 until the end of mine life, when it is expected to be extracted using downholes drilled from surface, with CHF backfill. KP's previous study work suggests that a pillar of 20 m thickness over a 10 m span stope (2:1 thickness to span ratio) is sufficient. Since level spacing in this area is 46 m, with the downhole portion extending for 30 m from the overcut (surface), it is expected that the downhole portion of the stopes will form a sufficient crown pillar for the extraction of the uphole portion of stopes in Level 1 prior to the final extraction of the crown pillar.

A shaft pillar of 60 m exists between the historical shaft and the mineralized zones. In areas below the shaft, the ramp has been maintained at an offset of 40 m from the Deposit. Major infrastructure (passes and ventilation raises, shop, etc.) maintain a minimum 25 m pillar in the shaft-access zone where permanent usage is required. In the ramp-access zone they maintain a stand-off of at least 15 m to the Deposit, however, their lifespan is significantly shorter than in the shaft-access zone due to the mining sequence. The Authors recommend that future studies review the spacing between infrastructure and stoping.

16.3 HISTORICAL WORKINGS CONSIDERATIONS

The Kenbridge site has historical workings developed by Falconbridge in the late 1950s. These workings consist of a shaft with 13 stations, two levels, and a bulk sample. Section and plan view drawings from that era exist for all shaft stations except Level 2 (Level 3 has plan view only), however, the drawings do not match AutoCAD data provided to the Authors. Additionally, no section data for Levels 2 and 3 is available. As such, it is expected that a complete check survey of existing shaft and station workings, excluding further lateral development on Levels 2 and 3, will be made during the dewatering and shaft refit stage of the Project to ensure safe and efficient operations later in mine life.

16.3.1 Shaft

The existing shaft was developed at dimensions of 2.4 m L x 6.7 m W to a depth of 560 m (1,700 ft), at which point the shaft was widened to 8.9 m to accommodate potential future deepening. The shaft continues at 8.9 m wide to a depth of 622 m (~2,040 ft). The shaft extends approximately 12 m (40 ft) below Level 13. Stations start 61 m below collar and are installed at a nominal spacing of 46 m (150 ft), however, nomenclature from Falconbridge suggests that Level 10 (nominally 1,500 ft below collar) may differ from the standard, before Level 11 (nominally 1,700 ft below collar) returns to standard. AutoCAD data provided to the Authors shows the stations at consistent intervals in the shaft. Check survey data gathered during shaft dewatering will confirm the location of the Level 10 shaft station, and any modifications to the design that may be required will be done after that point.

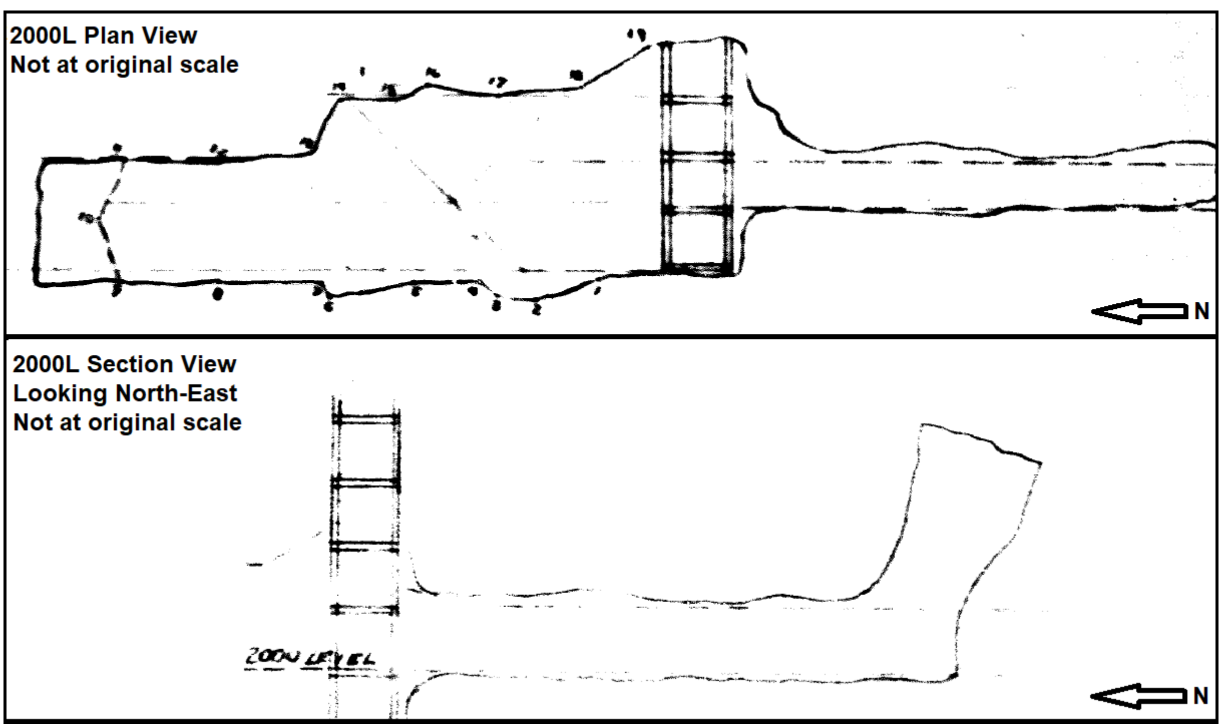
The shaft is currently flooded to a level between the collar and Level 1. It utilizes timber guides which are visible in camera surveys of the shaft. While the timbers appear to be in acceptable condition, they will be removed and replaced during the shaft expansion and refit phase of the Project. The condition of the shaft walls is anecdotally good, however, full scaling and rehabilitation will be completed during the dewatering phase, prior to expansion and refit.

16.3.2 Existing Levels

Levels 2 and 3 have significant existing development, including level accesses and exploration drifts along the strike of the Deposit in both directions from the access. Provided survey data for these levels does not match historical expectations for development sizing (survey data is essentially extruded wall strings), therefore, the Authors have assumed development sizing of 2.4 m W x 2.4 m H in these areas. Based on level geometry, the levels were driven using tracked machinery, and it is expected that rail may still be in place, although unusable.

Level 13 has an additional diamond drill bay excavated on the opposite side of the shaft from the station that is not shown in the AutoCAD data. Historical surveys suggest there is a large open excavation above the diamond drill area, whose original purpose is unclear. This area is unlikely to have significant influence on mine operations, but will be permanently barricaded off after the shaft expansion is completed. Figure 16.4 shows the existing survey data for this area.

FIGURE 16.4 LEVEL 13 ADDITIONAL DIAMOND DRILL BAY EXCAVATED ON THE OPPOSITE SIDE OF THE SHAFT



16.3.3 Dewatering

The Kenbridge underground is currently flooded to between surface and Level 1. Dewatering of the shaft will be via submersible pump lowered below an Alimak raise climber. Since each successive level is dewatered, a pump box will be installed in the existing shaft station area and will be used to pump to the next level using centrifugal pumps generating an approximate 50 m head. This method will be used until each existing shaft station has a pump box, and the shaft is dewatered. Initial dewatering is expected to take approximately six months. A total volume of 22,000 m^3 of existing workings is expected to be dewatered. Accounting for an inflow rate of 0.6 L/s from the host rock, a total of approximately 25,000 m^3 of water will be pumped to surface during this initial phase of work. The water will be directed to a settling pond and then to a water treatment plant before being released to the environment.

16.3.4 Rehabilitation

Existing camera surveys of the shaft indicate that it is in good condition, however, no information exists for the quality of Levels 2 and 3. During initial dewatering, the shaft will be accessed via an Alimak raise climber. Initial scaling, screening and bolting of the shaft will be performed during this process, using temporary ground support (splitsets and screen). During this period, the shaft stations will be cleared of broken rock, and subsequently scaled, screened and bolted using permanent ground support (rebar and screen, with additional long support or shotcrete as needed).

Levels 2 and 3 are assumed to be excavated as tracked drifts at 2.4 m W x 2.4 m H with minimal gradient for drainage. No rehabilitation of these areas is required, since the openings that will be re-used need to be expanded by slashing to 3.5 m W x 3.5 m H to support the size of equipment planned for use on the levels. Remaining unused areas will be barricaded off to prevent entry.

16.4 DEVELOPMENT

Development at the Kenbridge Project includes expansion of historical workings as well as development in virgin rock. For clarity, development using historical workings as void for the blast is referred to as “slashing” throughout this Technical Report.

16.4.1 Vertical Development

Vertical development in the Kenbridge underground will use a combination of: Alimak raise driving; slashing of existing historical workings from an Alimak raise climber; raiseboring and drop raising. Table 16.3 shows the nominal dimensions and linear metres of development by vertical development profile.

TABLE 16.3 VERTICAL DEVELOPMENT			
Development Profile	**Usage**	**Method**	**Qty (m)**
1.2 m diameter	Emergency Egress	Raisebore	625
1.8 m W x 1.8 m L	Finger Raise for Passes	Drop Raise	202
2.4 m W x 2.4 m L	Ramp-Access Area FAR/RAR	Drop Raise	370
	Material Handling (Pass)	Alimak	1,116
3.0 m diameter	Shaft-Access Area FAR/RAR	Raisebore	1,247
4.0 m W x 4.0 m L	Truck Dump Bin	Alimak	37
3.7 m W x 8.9 m L	Slashing of Historical Development	Alimak Slashing	626
5.0 m W x 10.0 m H	Loading Pocket	Alimak / Galloway	31
Total			**4,254**

16.4.1.1 Shaft Slashing and Refit

The historical shaft is insufficiently large to support the equipment planned for use in the underground, as well as insufficient to support the production rates required from the new mine plan. As such, it will be slashed out to larger dimensions to accommodate the revised mine plan.

The historical shaft profile is nominally 2.4 m W x 6.7 m L for the majority of its length, with an expansion to 2.4 m W x 8.9 m L below Level 11. The historical shaft will be widened to 3.7 m W x 8.9 m L for its entire length. Blasting will be done by drilling lateral holes from an Alimak raise platform to slash the shaft from the bottom up. The existing shaft void volume is 185% of the blast volume where the historical shaft profile is largest, and 90% of the blast volume where the historical dimensions are smaller. Therefore, the void available for blasting swell will greatly exceed the required void for the slash blasts, meaning that the entire shaft can be slashed before any removal of broken rock is necessary. It is expected that the level of blasted rock in the shaft after all slashing is complete will be approximately at Level 8. During this process, existing shaft timber will be removed, and loading pockets will be excavated using manual methods (jack-legs and slushers). Even accounting for the volume of the Lower LP, sufficient void exists from the historical shaft in the area to excavate the main pocket without removal of the blasted material being required.

Once blasting is complete, a larger Alimak deck with fold-out platforms will be installed and shaft guides will be installed down to the depth of the broken rock. The hoist will be installed concurrently. Once this installation is complete, the Alimak will be removed and a Galloway will be used to excavate the blasted rock from the shaft and provide a working platform to install ground support and shaft guides.

It is expected that the expansion and refit of the shaft will take approximately eight months after initial dewatering of the shaft is complete.

16.4.1.2 Ventilation and Emergency Egress Raises

Ventilation and egress raises in the shaft-access area of the mine are driven using raiseboring methods. Raises are vertical, with ventilation raises nominally 3.0 m diameter, and emergency egress raises nominally 1.2 m diameter. The raises will be driven in two sections: initially from parallel with the shaft bottom to Level 6, and then from Level 6 to surface. The longer leg of each raise is approximately 335 m in length, with the shorter leg approximately 290 m in length.

Below shaft bottom, the emergency egress is a ladderway inside the FAR. All ventilation raises below this point are 2.4 m W x 2.4 m L in profile, 33 m or less in length, and can be driven using drop raises with support and ladderways installed off the broken rock pile. RARs from Level 13 to 15 are excavated in the same manner but are unsupported since they do not contain ladderways.

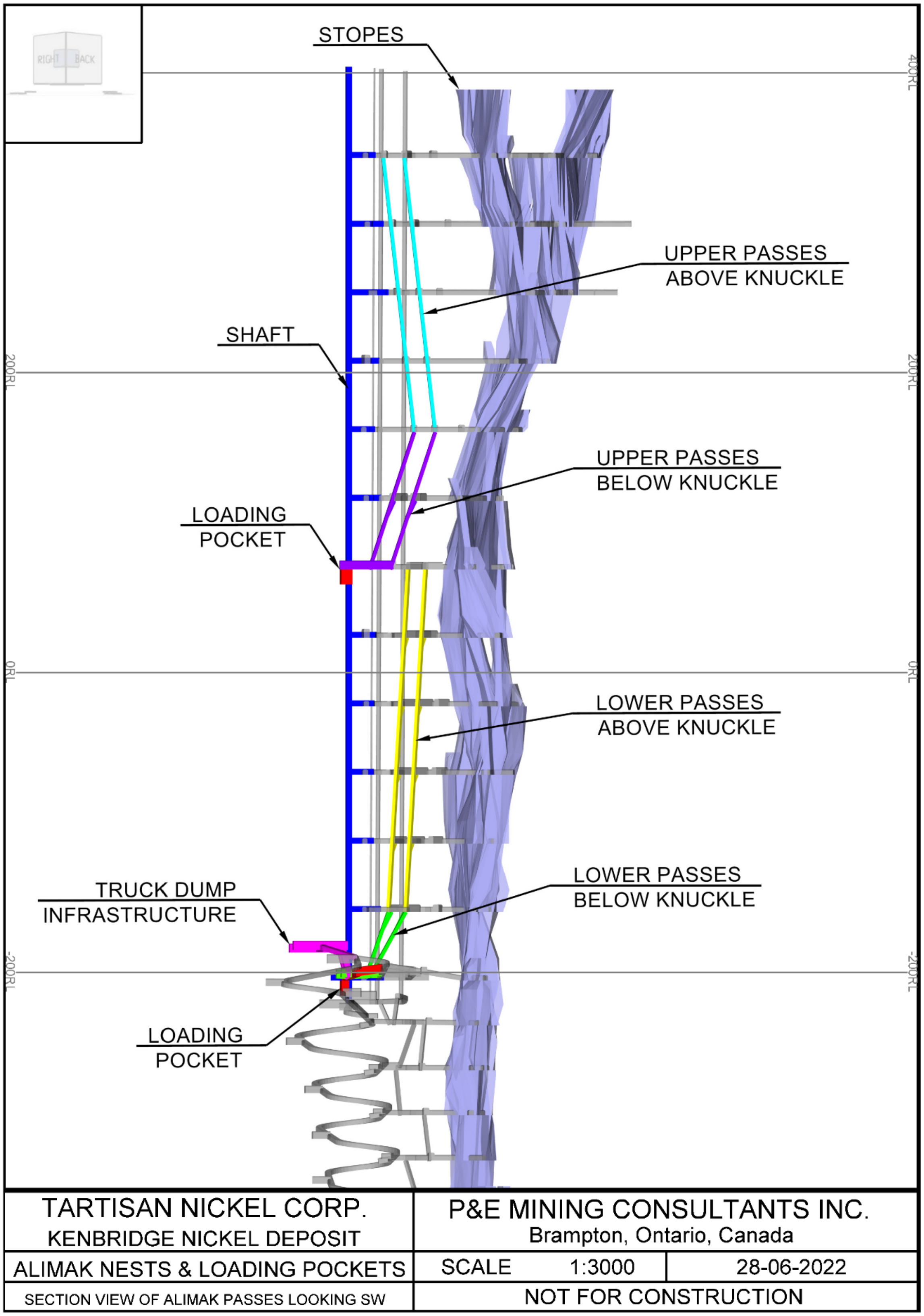
16.4.1.3 Passes, Bins and Pockets

All vertical development for the materials handling system is planned to be excavated using Alimak raise climbers. Access development is oriented in order to be usable as an Alimak "nest", and the vertical extent is then excavated to the required profile. Passes for waste and mineralized material are excavated at a nominal 2.4 m W x 2.4 m L, while truck dump bins are excavated at 4.0 m W x 4.0 m L. Loading pockets are excavated using a combination of Alimak methods during the shaft refit, and lateral development afterwards.

Since Alimak raises are constrained to one degree of freedom and cannot change azimuth, certain portions of the materials handling system will be excavated in multiple legs, with each leg having its own "nest" and being driven at a different azimuth than the other leg. The opening will be continuous, however, there will be a "knuckle" where the azimuth and dip of the pass change. Prior to completion of the lower leg, the upper "nest" will be excavated, intersecting the raise at the knuckle. Once the raise breaks through from below, the Alimak will be moved from the lower nest to the upper nest and continue driving the raise upwards on a different azimuth/dip. Material from the raise will continue to fall to the original nest for removal. Figure 16.5 shows the areas of the mine that will be excavated by Alimak, and the associated "nests" for each segment of development.

Loading pockets do not require a nest, as they are excavated from an Alimak sinking deck instead of a raise climber. The headframe acts as a nest for this process.

Figure 16.5 Mine to be Excavated by Alimak and Associated "Nests"



16.4.2 Lateral Development

Standard lateral development practices will be used in the Kenbridge underground. Table 16.4 shows the nominal dimensions and linear metres by lateral development profile.

TABLE 16.4
LATERAL DEVELOPMENT

Development Profile (width x height, m)	Usage	Qty (m)
3.5 x 3.5	Operating Dev	5,744
	Level Access	1,359
	Ventilation Drift	1,027
	Pass Access	516
	Electrical Bay	167
	Sump	122
	Refuge	108
	Slashing of Historical Dev	574
4.0 x 3.5	Ramp	2,868
	Truck Turn Around	28
4.0 x 4.0	Ramp Area Magazine	64
4.0 x 5.0	Remuck Bay	448
	Fuel/Lube Bay	20
	Loading Pocket Access	270
4.0 x 6.0	Maintenance Shop	115
	Pump Station	100
Total		**13,529**

16.4.2.1 Full-Face Development

Full-face development is used in most of the lateral development. This development uses a standard “Dice Five” burn cut to generate void for the blast. Larger diameter (76 mm) holes are drilled in the corners and centre of a 3 x 3 hole grid to generate initial void, and subsequent holes are slashed into the void. The dominant free face is the open face of the drift. Approximately 96% of all lateral development in the underground is full face lateral development.

16.4.2.2 Slashing in Old Workings

Historical workings are estimated to have a profile of 2.4 m W x 2.4 m H based on existing survey data and knowledge of historical development methods and equipment. New level development profiles are 3.5 m W x 3.5 m H, necessitating slashing out of the historical workings on the majority of the historical development on Levels 2 and 3. Slashing will be done around the walls and back, leaving only the original floor of the drift in place, with the free face of the blast being into the existing opening, which allows for more efficient blasting. Approximately 70% of the existing

Level 2 and Level 3 workings will be slashed to the larger size. The remaining 30% will be permanently barricaded off to prevent personnel access. A total of 574 m of existing lateral development will be slashed out to a larger size over LOM, representing approximately 4% of all lateral development.

16.5 PRODUCTION

Production mining at the Kenbridge Project uses LH retreat mining with CHF backfill. The mine production rate is nominally 528 ktpa, with daily rates of 1,500 tpd expected for 352 days/year. The backfill plant will be sized for a nominal production rate of 45 m^3/h of CHF. Average demand over a year is approximately 470 m^3/d.

16.5.1 Mining

Subsequent to stope access to a lens being developed for the LH retreat method, the stope furthest from the access commences mining, with mining progressing closer to the access with each consecutive stope in the lens. The precise process differs slightly between levels in the shaft-access area of the mine versus the ramp access area.

16.5.1.1 Shaft Access Areas

Shaft access levels are nominally spaced 46 m floor-to-floor. A trade-off study was performed on the efficacy of large electro-hydraulic drills capable of accurately drilling holes to these depths, and smaller machines that would need to segregate the blasts into two pieces (upholes and downholes), and it was found that smaller drills using two blasts was more effective. Each slice of a stope is therefore broken into two portions: a 16 m (less initial level development height of 3.5 m) uphole blast, and a 30 m downhole blast.

Initially an inverse V30 raise (760 mm diameter drill hole) is drilled from the back of the undercut to a height of approximately 12 m, and the remainder of the slot raise is drilled around it. After blasting the slot, one or more uphole blasts is used to excavate the bottom 16 m of the stoping area. All holes outside of the V30 are nominally 76 mm in diameter. After blasting and removing rock in the undercut is complete, another V30 is drilled from the overcut into the blast void, and the remainder of the slot raise is drilled around it. After blasting the slot, the rest of the stope is drilled and blasted into the undercut. Once the blasted rock is removed from the undercut, a fill wall with drains is constructed at the drawpoint, and the stope is filled with CHF from the overcut. Once filling is completed, a curing period of 14 days is required prior to blasting in adjacent stopes.

16.5.1.2 Ramp-Access Areas

In ramp-access levels, the process is essentially the same, only without the initial uphole blasting: all drilling is from the overcut since the level spacing is only 30 m instead of 46 m, and the LH drills can accurately drill holes to this depth.

16.5.1.3 Blind Uphole Stopes in All Areas

In a minority of cases, economic mineralized material is not continuous from level to level. In these cases, partial height stopes are extracted using blind upholes in a similar manner to the uphole blasting process in the shaft-access areas, however, the height of the stope can vary from 10-20 m. Since there is no overcut, filling of these stopes will be by lateral flow from an adjacent open full-height stope's filling cycle. In a minority of cases (less than 1% of total mined tonnes), stopes will be left empty after excavation since they are isolated from other stoping areas and do not pose a geotechnical risk. In the unlikely event that these stopes require filling, boreholes can be drilled from nearby overcut development to allow for CHF pours.

16.5.2 Mining Loss

Mining loss is the portion of a planned excavation that is drilled and blasted, but not excavated. This can happen due to poor blasting practices, poor drawpoint geometries, or geotechnical issues requiring early evacuation from the stoping area. For the Kenbridge underground, downhole blasts are expected to have mining loss of 5%, and uphole blasts are expected to have a mining loss of 10% due to reduced ability to perform QA/QC on blasts, and reduced ability to recover from issues that may be identified. Development mining losses are assumed to be 1%.

Average mining loss of blasted mineralized material in the underground is estimated at 5.8%, for an overall mining recovery of 94.2%.

16.5.3 Dilution

Dilution, either internal (from deliberate inclusion in a mining shape) or external (incidental as a result of overbreak or poor drilling/blasting practices) adds additional tonnes below COV to a mining plan. Estimation of external sidewall dilution from blasting overbreak in the Kenbridge underground is based on Estimated Linear Overbreak and Slough ("ELOS") methods, along with hole deviation. Table 16.5 shows the external dilution parameters by location in the mine and blast type.

TABLE 16.5
DILUTION OVERBREAK

Area	Hole Type	Length (m)	ELOS (m)	Deviation (%)	Average Overbreak (m)
Shaft Access	Downholes	30.0	1.0	2.0%	1.30
	Upholes*	12.0	0.5	2.0%	0.62
	Full Level	42.0	0.9	2.0%	1.11
Ramp Access	Downholes	30.0	1.0	2.0%	1.30

** Uphole dilution estimates are also applied to blind uphole stopes throughout the mine.*

Additional external dilution is included as a result of backfill dilution (from endwall overbreak into filled stopes, or from floor gouging or poor fill wall locations) is then added to the overbreak to get the final external dilution. In the shaft area where level-to-level spacing is 46 m, an additional 10% of the diluted stope mass is added for backfill dilution. In the ramp area, where level-to-level spacing is 30 m, 8% is added.

Table 16.6 shows the overall dilution estimated by source. It should be noted that both Internal and External dilution can contain valuable material, and often have an NSR value above zero. Backfill dilution contains no economic material.

TABLE 16.6
DILUTION ESTIMATES

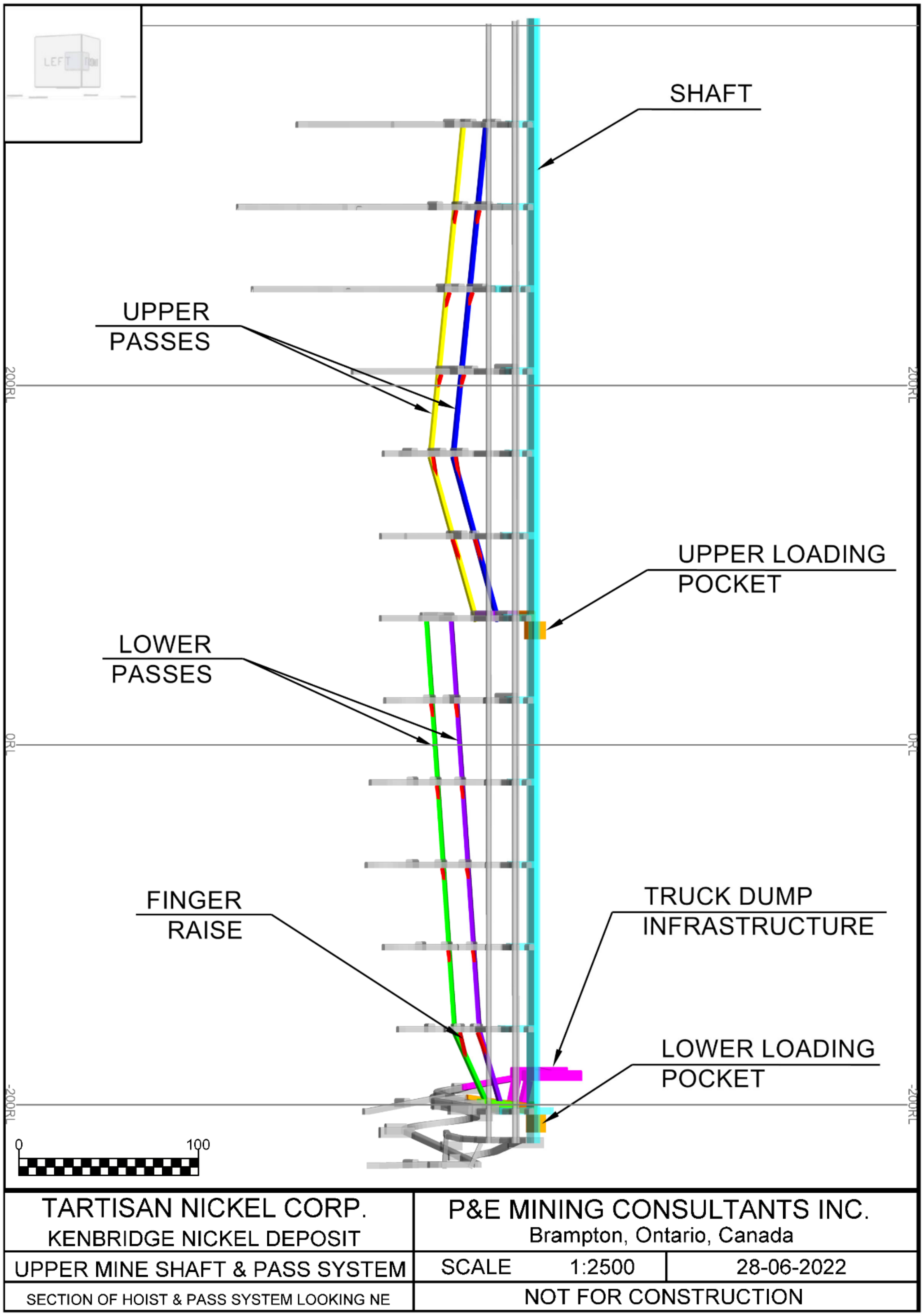
Item	Item Type	Mined Mass (kt)[1]	% Dilution (by mass)
A	Undiluted Core of Stopes	3,076	-
B	Internal Dilution	554	18.0%[2]
C	Overbreak Dilution	501	16.3%[2]
D	Backfill Dilution	390	12.7%[2]
A + B + C + D	Total Mined Material	4,521	-
A + B	Internally Diluted Stopes	3,629	18.0%[3]
C + D	Total External Dilution	891	29.0%[4]
B + C + D	Total Dilution	1,445	47.0%[4]

[1] Totals may not sum due to rounding.
[2] Dilution is calculated as ($Mass_{Item}$ / $Mass_{Core}$)
[3] Dilution is calculated as ($Mass_{Internal\_Dilution}$ / $Mass_{Internally\_Diluted\_Stopes}$)
[4] Dilution is calculated as ($Mass_{Item}$ / $Mass_{Undiluted\_Stopes}$)

16.6 MATERIAL HANDLING

As material transport to surface will include hoisting via the shaft, a materials handling system will be installed in the shaft-access area. This system will utilize two LPs, one at Level 7 (Upper LP) and one at Level 13 (Lower LP), with two passes into each LP (one for mineralized material, one for waste). The Lower LP will additionally handle all material coming from the ramp-access area of the mine, using two truck dump bins (one for mineralized material, one for waste). Each shaft-access mining level will have a drop-raised finger raise connecting to the main pass, with a grizzly on the top of the finger to prevent oversize material from entering the pass. Each LP will be equipped with a crusher to further reduce the particle size for more efficient handling and reduced complexity at the process plant. A double-drum hoist equipped with 8 t capacity skips will be used to move material to surface from the LPs, where it will be segregated into mineralized material and waste rock prior to transport to its final location. Figure 16.6 shows the material handling system for the mine.

FIGURE 16.6 MINE MATERIAL HANDLING SYSTEM



16.6.1 Crushers and Loading Pockets

During initial refit of the shaft, LPs will be excavated below Levels 8 and 13. Each LP will be equipped with all infrastructure necessary to selectively direct material from each pass (and each bin, in the case of the lower LP) into a crusher. Crushers will be single-toggle jaw crushers with 0.7 m x 0.7 m openings, powered by 120 kW motors, and will reduce the particle size to a nominal 102 mm. From the crusher, the material will be directed to a measuring bin prior to eventual loading into the skip.

16.6.2 Passes and Bins

Initial development at Levels 7 and 13 will include the excavation of Alimak nests to allow the excavation of Alimak raises above the levels. Due to the existing geometry of the shaft and the mineralized zones, it will be necessary to repeat this process at Levels 5 and 12 to maintain efficient connection to the levels above, and minimize development requirements, creating “knuckles” in the passes at those levels. From the knuckle to the top of the pass will be a straight Alimak raise. The entire pass will be supported and lined to increase longevity.

At the Lower LP, both material from the shaft-access area and the ramp-access area will need to be handled. Material from levels above the LP will be handled as previously described. Material coming from the ramp-access area will be dumped from trucks into one of two material bins. These bins will be excavated from the LP using Alimak raise climbers after the passes to the levels above the LP are completed. It is expected that these bins will be supported and lined to increase longevity. Bin capacity is planned to be approximately 500 t per bin and the bins will be equipped with grizzlies to prevent oversize material entering the system. Opposite each bin there will be an additional remuck bay with an approximate capacity of 500 t to allow production to temporarily continue from the ramp-access levels in the event of planned maintenance in the LP.

As only approximately 10% of total material produced in the underground is waste material, a strategy to balance wear on the passes will be implemented. After approximately half of the expected throughput of each mining area has moved through the system, the mineralized passes/bins and waste passes/bins will be switched in order that total wear on the passes and bins will be approximately even. Since infrastructure for each pair of passes/bins is identical, no physical changes are required for this switch, only changes to policies. Table 16.7 shows the expected throughputs (mineralized and waste tonnes) and the required life of each pass, bin, and pocket in the material handling system.

<table>
<tr><th colspan="6">TABLE 16.7
MATERIAL HANDLING SYSTEM THROUGHPUTS</th></tr>
<tr><th>Descriptor</th><th>Level</th><th>LP</th><th>Movement By</th><th>Source Throughput (kt)</th><th>Required Life of Infrastructure (kt)</th></tr>
<tr><td rowspan="13">Location Summary</td><td>1</td><td rowspan="4">Upper</td><td rowspan="4">Passes (total, above knuckle)</td><td>327</td><td>327</td></tr>
<tr><td>2</td><td>557</td><td>884</td></tr>
<tr><td>3</td><td>328</td><td>1,212</td></tr>
<tr><td>4</td><td>169</td><td>1,381</td></tr>
<tr><td>5</td><td rowspan="2">Upper</td><td rowspan="2">Passes (total, below knuckle)</td><td>150</td><td>1,531</td></tr>
<tr><td>6</td><td>158</td><td>1,689</td></tr>
<tr><td>7</td><td rowspan="5">Lower</td><td rowspan="5">Passes (total, above knuckle)</td><td>259</td><td>259</td></tr>
<tr><td>8</td><td>341</td><td>600</td></tr>
<tr><td>9</td><td>206</td><td>806</td></tr>
<tr><td>10</td><td>211</td><td>1,017</td></tr>
<tr><td>11</td><td>240</td><td>1,257</td></tr>
<tr><td>12</td><td>Lower</td><td>Passes (total, below knuckle)</td><td>249</td><td>1,506</td></tr>
<tr><td>13-24</td><td>Lower</td><td>Truck Dumps (total)</td><td>1,667</td><td>1,667</td></tr>
<tr><td rowspan="5">Area Summary*</td><td>1-4</td><td rowspan="2">Upper</td><td>Pass (each, through knuckle)</td><td>691</td><td>691</td></tr>
<tr><td>5-6</td><td>Pass (each, below knuckle)</td><td>154</td><td>844</td></tr>
<tr><td>7-11</td><td rowspan="3">Lower</td><td>Pass (each, through knuckle)</td><td>628</td><td>628</td></tr>
<tr><td>12</td><td>Pass (each, below knuckle)</td><td>125</td><td>753</td></tr>
<tr><td>13-24</td><td>Truck dump (each)</td><td>834</td><td>834</td></tr>
<tr><td rowspan="2">Pocket Summary</td><td>1-6</td><td>Upper</td><td>Pocket (total)</td><td>1,689</td><td>1,689</td></tr>
<tr><td>7-24</td><td>Lower</td><td>Pocket (total)</td><td>3,173</td><td>3,173</td></tr>
</table>

** Area summary includes balancing throughput through the passes and bins for even wear.*

16.6.3 Shaft Access Levels

During initial development of shaft-access levels, direct loading into skips at the shaft station will be used to remove blasted material from the level. Early in level life, however, access to the materials handling system will be developed, after which point all material from the level will be directed to one of two passes: a pass for waste and a pass for mineralized material.

Finger raises into each pass will be equipped with a grizzly and a pneumatically actuated cover to limit airflow through the passes and prevent “dusting out” of levels. Oversize material will be handled on the level by blasting in remuck bays: no pneumatic hammers are expected to be installed on levels. Each level (except Level 13) will be equipped with a remuck bay (approximate capacity of 350 t) to allow material to be stored on the level in the event of planned maintenance in the materials handling system without interrupting production.

Level 13, at the interface between shaft-access and ramp-access levels, will initially be excavated using the same system as previously mentioned. Since it is located at the bottom of the pass system, however, instead of material being directed into passes for movement to an LP, a short ramp to the truck bins will be excavated, after which all material for this level will pass through the bins to the LP. The actual mining portion of Level 13 (outside of the LP infrastructure and the shop) will be excavated in the same manner as a ramp-access level.

16.6.4 Ramp and Ramp Access Levels

The vast majority of the ramp, and all ramp-access levels, will be excavated after the Lower LP is operational. Material will be excavated and transferred to either a remuck bay (located in each ramp loop and on each level access), or directly into a truck (side loading in the ramp will be used as total maximum required trucking is approximately 20 trucks per shift). Trucks will drive to the truck dumps and deposit material in the appropriate bins (or remuck bays if necessary). If the remuck bays at the bins become full, load-haul-dump ("LHD") machines can be used to empty them directly into the appropriate bins. Any oversized material will be handled by blasting it in the remuck bays: no pneumatic hammers are expected to be installed at the bins.

16.6.5 Hoist and Surface Infrastructure

The primary method of entrance to the Kenbridge underground is via the shaft. Initially, access will use Alimak raise climbers until the shaft refit is completed, at which point a headframe and hoist will be installed to facilitate more efficient movement of material in the shaft. Skips and cages will be configured as cage-over-skip and share a compartment. Cages are expected to be double-deck, skips are expected to be of 8 t capacity. No auxiliary ("Mary-Anne") cage will be installed. Hoisting details are shown in Table 16.8.

TABLE 16.8
HOIST DETAILS

Skipping Parameters		**Availability Parameters**	
Skip Size	8.0 t	Available Time per Week	168 hrs
Fill Mass	6.5 t	Inspection	10.5 hrs
Fill Factor	81%	Shift Change (Man Cage)	21.0 hrs
Skip Load Time	30 sec	Lunch	7.0 hrs
Skip Dump Time	15 sec	Swap Mineralized/Waste	7.0 hrs
Acceleration Time	1 sec	Systematic Maintenance	14.0 hrs
Creep Time	6 sec	Unplanned Maintenance	10.5 hrs
Upper LP Cycle Time	150 sec	Remaining Hours	98.0 hrs
Lower LP Cycle Time	220 sec	Production Availability	58%

Maximum nominal hoisting from the underground, for both waste and mineralized material, is estimated at 1,900 tpd. To move this amount of material exclusively from the Upper LP will take approximately 6 hours of continuous skipping. To move it from the Lower LP will take approximately 9 hours. It is anticipated that waste will be skipped during dayshift, while mineralized material will be skipped at night. Automation systems will be installed and controlled from the headframe to remotely control the loading pocket infrastructure and allow skipping during blast clearances.

The headframe will be equipped with a splitter/diverter to direct waste material onto an exterior stockpile, from where it will be loaded into a 30 t truck using the Front End Loader ("FEL") from the process plant and transported to the tailings storage facility for use in embankments. Mineralized material will be diverted to a covered conveyor transporting it directly to a 5,000 t capacity covered stockpile near the process plant.

16.7 BACKFILL

No backfill testwork has been performed for the Kenbridge site. The Authors has estimated capacities, percent solids, and binder contents based on experience at other sites using similar backfill methods. The Authors recommend a detailed analysis of the backfill system at a later stage of study.

The CHF plant will be located near the headframe and be sized for a nominal 45 m^3/hr flow rate when in operation. For shaft-access levels, the main supply line will be run in the services compartment of the shaft using a 75 mm pipe to maintain turbulent flow and prevent settling. A second identical pipe will be run in parallel with the primary pipe for redundancy. For ramp-access levels, a borehole cased with 75 mm pipe will be drilled from surface, intersecting the ramp near Level 14. From this point, 75 mm pipe will be run in the FARs to the bottom of the mine. The redundant line from the shaft will be extended to Level 14 and run in parallel with the main line to the bottom of the mine. On-level distribution will be with 50 mm pipe, since individual level flows are expected to be approximately half of total plant capacity (two stopes on different levels are expected to be filling simultaneously).

Backfill will be comprised of 70-75% solids by mass, including binder, cyclone tailings, and a sand component. It is expected that 3-6% of the solids will be binder (depending on the required strength of the tailings), and that 80% of the remaining solids will be tails, with 20% sand. Sand will be acquired from standard commercial contracts if a nearby borrow pit cannot be found. Approximately 1.1 t of tails will be deposited underground for every cubic metre of hydraulic fill. The fill will have a wet density of approximately 1.9-2.0 t/m^3 and a dry density of approximately 1.4-1.6 t/m^3 depending on binder content.

To retain backfill in the stopes prior to curing, fill walls will be constructed at the drawpoint for each stope. It is expected that the walls will be formed of steel cable, fabric, and shotcrete, with mousetrap drains to allow decant and flush water to depart the stope.

16.8 MINE SERVICES

The Kenbridge underground mine services are relatively extensive due to the hybrid shaft and ramp design. Major services include: electrical power supply; compressed air; dewatering; ventilation and heating; maintenance; and emergency response (refuges and egress).

16.8.1 Electrical

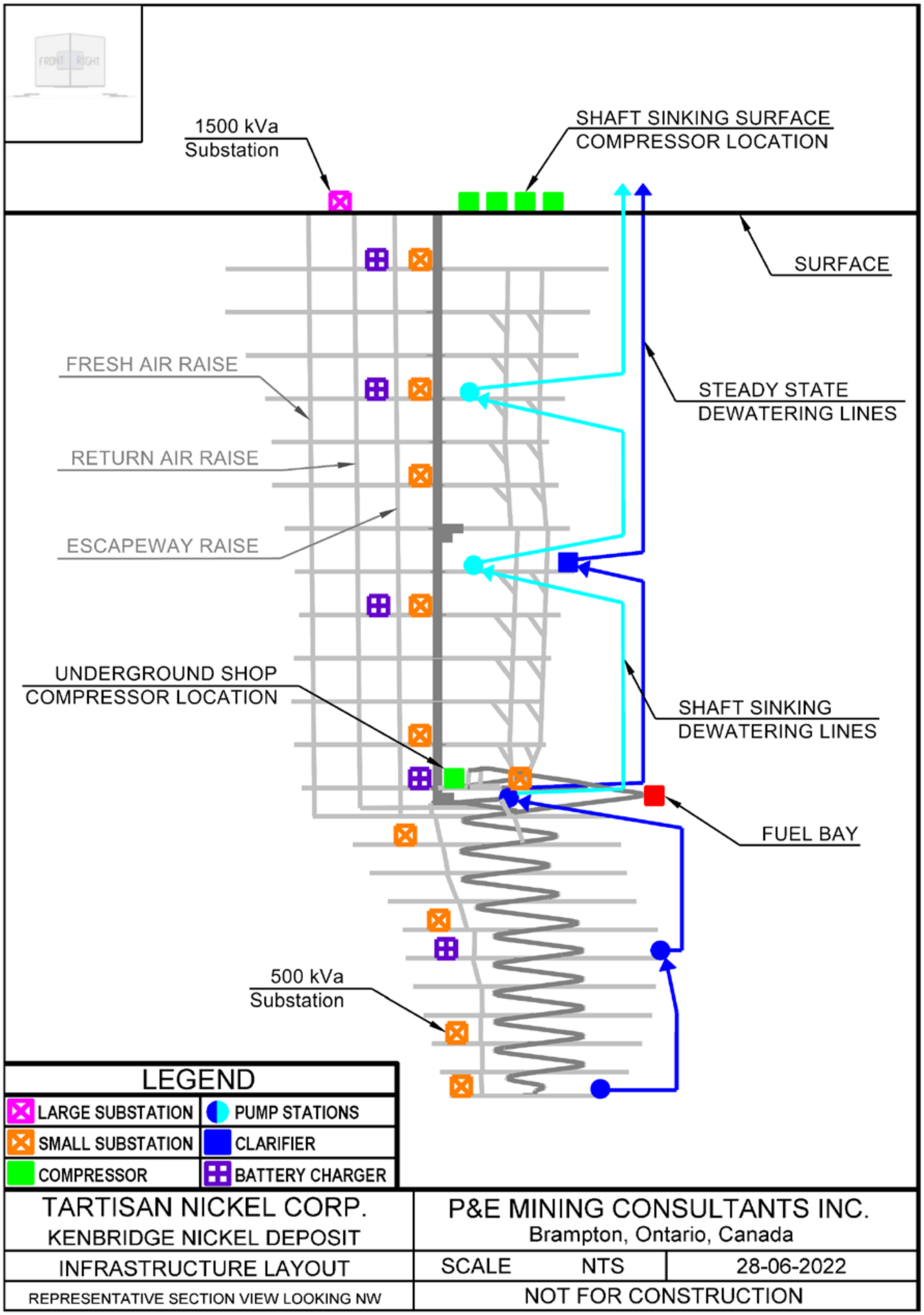
The electrical system for the underground will be supplied from an on-site CNG-powered generator facility at a nominal voltage of 15 kV to reduce supply losses. This voltage is carried underground through a main supply line in the shaft, and then continued down boreholes near the ventilation system in areas below the shaft. Transformers will be used to reduce the on-level distribution voltage to a nominal 1 kV.

It is expected that one 500 kVA substation will be installed every three levels in the shaft, and that cables will be run from the substation through boreholes to Power Take-Offs ("PTOs") at the adjacent levels. In the upper four levels of the mine, which have the largest extents, one 500 kVA transformer station will be installed for every two levels to account for additional active faces and longer cable runs. Major surface infrastructure (headframe, compressors and primary vent fans) will be provided with 1,500 kVA transformers. The ramp face, once active, will be supplied with an additional 300 kVA skid-mounted portable load centre to allow active mining in levels immediately above the ramp face.

Battery charging stations for BEVs will be installed on the overcut level for each mining block in the shaft access area, at the maintenance shop at Level 13, and on Level 19 in the ramp-access area. Charging stations are expected to draw 65 kW and be installed in pairs (one for LHD batteries, one for service vehicle and UTV batteries).

Figure 16.7 shows the services layout for the Kenbridge underground.

FIGURE 16.7 UNDERGROUND SERVICES LAYOUT



16.8.2 Compressed Air

During initial development of the Project, significant compressed air facilities will be required. Alimak raise climbers, development drills and loading machines will all be powered by compressed air. Therefore, the compressed air infrastructure in the upper mine will be comprised of a 150 mm supply line in the shaft, reducing to 100 mm at each shaft station, prior to eventual distribution at 50 mm. Four 12 bar (175 psi) electric 340 kW compressors will be installed near the headframe with one operating as a redundant spare or to reduce average load on the other compressors.

After the shaft refit is complete and initial level development around the historical shaft stations is finished, the loading machines will be removed from the underground fleet. At the same time, loading pocket infrastructure will be added (gates, measuring boxes, actuators, etc), as will actuators for covers on the grizzlies in the shaft-area material handling system (this will prevent air recirculation through the passes, and "dusting out" of levels). Overall, a net reduction of roughly 30% draw is expected. At this stage, a second compressor will become redundant and can be relocated underground to act as a booster compressor if needed. Once mining begins in the ramp-access areas where electro-hydraulic development jumbos are used, compressed air demand will decrease further.

A maximum required flow of 2.0 m^3/s (4,300 scfm) is expected. Accounting for 40% system leakage, the system is designed to provide an input of 2.9 m^3/s (6,100 scfm). Actual flows are expected to be lower, as the mine will be able to manage operations to minimize peaks and valleys in instantaneous demand. Once the mine transitions away from compressed air loading machines, maximum compressed air flow requirements are expected to reduce to approximately 0.8 m^3/s (1,600 scfm).

16.8.3 Dewatering

Initial dewatering of the historical workings is detailed in Section 16.3.3. This dewatering work is expected to take approximately six months to complete.

After shaft dewatering is complete, the expansion of the shaft will commence. During this period, the pump boxes will be removed from Levels 9 to 13 inclusive, and the shaft will be allowed to temporarily refill during the blasting phase of the expansion (it is expected that blasted rock will fill the existing shaft void up to slightly below Level 8). During the shaft broken rock removal phase, where shaft stations are excavated prior to reaching the water level, the pump boxes will be reinstalled. Inevitably, the water level in the shaft will rise until the shaft broken rock removal intersects it. At this point, a borehole will be drilled from the last dry shaft station to the first wet station, and a borehole pump will be used to draw down the water in the shaft in order that broken rock removal can continue. Once the next station is excavated, a pump box will be reinstalled, a new borehole will be drilled to the next shaft station, and the pump reinstalled to dewater the level below. This process will continue until the expanded shaft is dewatered again.

Once the shaft is expanded and the hoist is operating, the main pump station will be excavated between Level 13 and Level 14, at the approximate depth of the shaft bottom. This will allow the removal of the level sump pump boxes, since small level sumps will be used to cascade water to the pump station via gravity. The pump station will pump directly to surface using multi-stage centrifugal pumps and a 200 mm pipe. Clarifiers will be installed at the pump station, and at Level 8, to allow the cleaning and recirculation of water into the mine system for use by machinery.

When the ramp is being excavated, each level will be provided with a level sump and pump box (reusing the redundant ones from the shaft), which will pump in sequence to the shaft bottom pump station. As the face progresses, a small pump station will be installed at Level 19, with a clarifier and a multi-stage pump to pump water to the main pump station directly, which will allow the conversion of all sumps in Levels 14-18 to cascade sumps. This same process will be repeated once the ramp reaches its end at Level 24, installing another clarifier and multi-stage pump and allowing the removal of all remaining pump boxes and the final conversion of all sumps to cascade to pump stations via gravity.

Ramp areas are designed to direct flows away from the level access and down ramp to level sumps. Shaft areas are designed to direct flows away from the level and the shaft, and into the level sumps, with boreholes to direct water to lower levels and away from the shaft. The pumping system is designed to handle an average inflow of 13 L/s, and operate at a 33% duty cycle with a flow rate of 40 L/s.

16.8.4 Ventilation and Heating

During initial dewatering and shaft refit work, fresh air will be supplied via 1.07 m diameter semi-rigid ventilation duct using auxiliary fans located on surface. A two-stage 1.2 m diameter auxiliary fan will be used to supply 20 m^3/s to the underground during this stage. This fan will be equipped with a 110 kW motor and will eventually be repurposed for ventilating the ramp development face.

Once the shaft refit is complete, a 3.0 m raisebored FAR will be used to supply fresh air to the underground during initial development of shaft-access levels. A maximum flow of 110 m^3/s is required at the greatest extent of mining, which will be supplied from a 2.57 m diameter main fan (similar to Howden 10150-AMF-5000) equipped with a 186 kW motor and Variable Frequency Drive ("VFD"). Fresh air will be drawn off each level using 15 kW auxiliary fans and regulators located on the FAR and RAR. This system ensures that the shaft and egress are always in fresh air, and that all gases from exhaust or blasting return are isolated from the mine accesses. Additionally, shaft stations are equipped with doors to isolate the shaft from all level infrastructure if needed. Fresh air will be provided to the face using semi-rigid 0.61 m x 0.91 m oval ducting and 37 kW fans.

As mining continues, the ramp will be developed below the shaft. The shaft ventilation system extends parallel to the shaft to slightly below Level 13, at which point a crossover level with two 1.67 m diameter booster fans (similar to Howden 6600-VAX-2700) equipped with 130 kW motors and VFDs will be installed to provide sufficient pressures and flows to ventilate the furthest extents of the ramp-access area. Below this level, 2.4 m W x 2.4 m L drop raises will be used to provide fresh air to the ramp, with the ramp face being ventilated by 0.61 m x 1.22 m oval semi-rigid ducting and a 110 kW fan. On-level ventilation will use the same auxiliary duct and fan setup as shaft levels. At this stage, a total flow of 150 m^3/s will be provided to the mine, with a minimum flow of 25 m^3/s at the lowest point of the mine. Figure 16.8 shows a schematic of the ventilation system the maximum extents of mining. Table 16.9 presents the expected ventilation requirements of various areas of the mine.

FIGURE 16.8 MINE VENTILATION SYSTEM

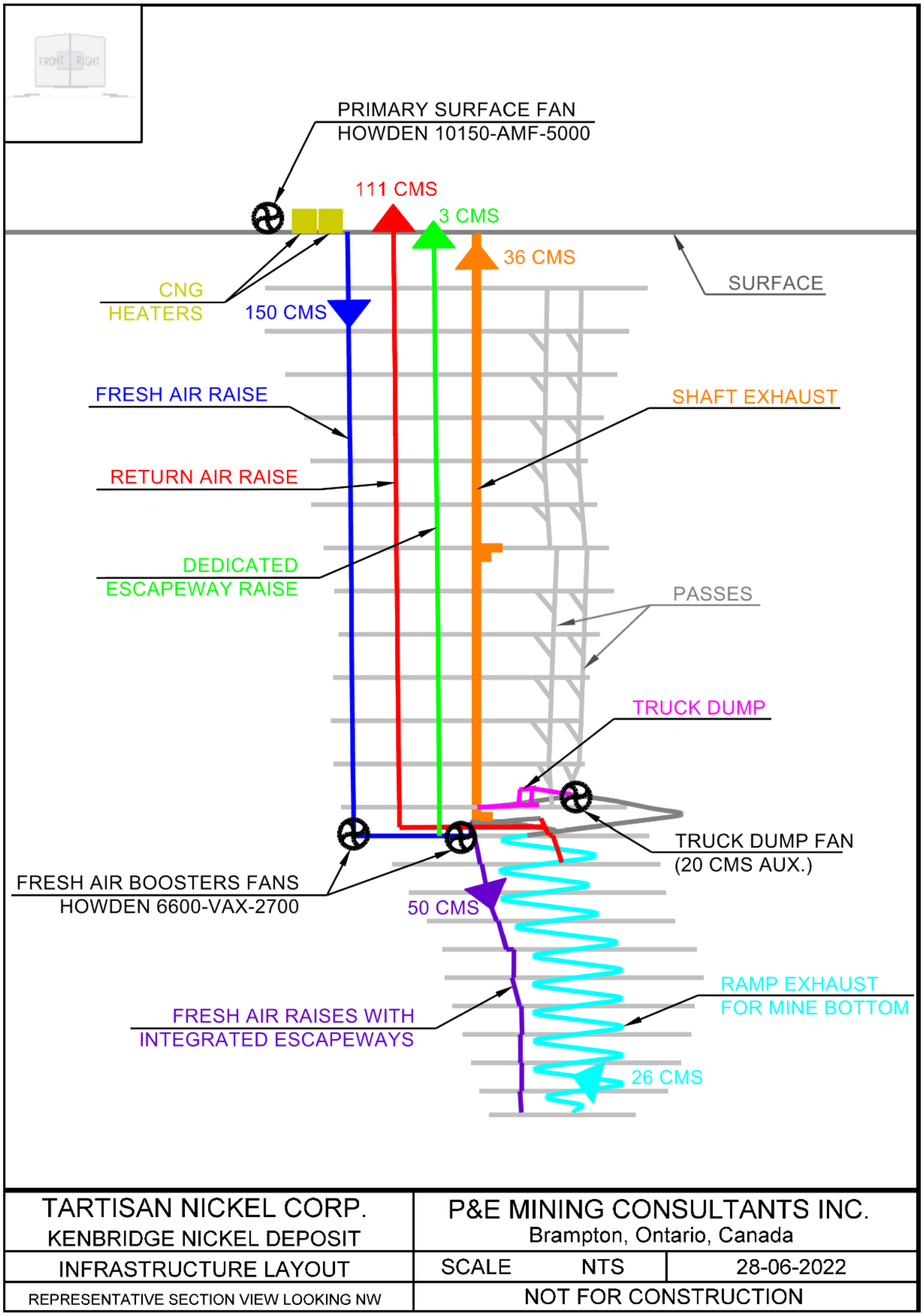


Table 16.9 Ventilation Requirements	
Location	**Minimum Required Flow (m^3/s)**
Shaft	10*
Shaft-Access Level	10
Ramp-Access Level	15
Truck Bins	20
Ramp Decline Face	25

** During expansion, a minimum flow of 15 m^3/s is provided to reduce gas clearance times*

Since the climate at the Kenbridge site includes significant periods of freezing temperatures, CNG heaters will be installed to heat the air and keep the underground intake air at a nominal 2°C over the winter months to prevent freezing of water and compressed air lines and improve the working environment. To limit the CNG consumption and associated greenhouse gas emissions, the heaters will be supported by a waste heat recovery system from the site generators, utilizing the waste heat from power generation to preheat the air going to the heaters. It is estimated that approximately 38% of the heating requirements over the winter months can be supplied from waste heat from the generators. Since situations may arise where the heat recovery system is inoperable, a total of 3,600 kW of CNG heating capacity will be installed in three modules, ensuring that the minimum temperature can be maintained by heaters alone.

Ventilation-on-Demand (“VOD”) systems will be installed to control level fans and main fan VFDs in conjunction with the heater system to allow local and remote control of fans during shift changes and blast clearing. These systems will be controlled through Programmable Logic Controllers (“PLCs”) in the underground areas, with a virtual Human Machine Interface (“HMI”) accessible through the site network. Power generation is a significant source of greenhouse gases, as well as a major cost component at the site: the VOD system will be used to significantly reduce power consumption in the underground in periods of reduced ventilation demand to limit CNG consumption.

16.8.5 Refuge Stations and Egresses

In the event of a situation where the shaft is inoperable, or a blockage exists in the ramp, emergency egresses are provided over the vertical extent of the mine. The ventilation system is designed to keep the shaft areas and emergency egresses in fresh air at all times.

In the ramp-access areas, enclosed ladderways are installed in the ventilation raises. In the shaft-access areas, a separate 1.2 m diameter raisebored raise is installed near the FAR. A modular ladderway (similar to SafeScape LadderTube) will be installed to allow emergency egress. Additionally, an enclosed ladderway will be installed in the shaft for services access and level-to-level transit of personnel when the cage is not available.

Small refuge stations (nominal 12-person capacity) will be installed on each level in the shaft-access area of the mine. In the ramp-access area of the mine, a large permanent refuge station (nominal 30-person capacity) will be installed at Level 18, and a portable modular refuge station (nominal 12-person capacity) will be installed near the ramp face before eventual installation at Level 24. Excepting the portable station, these stations will double as lunchrooms and fresh-air bases for mine rescue. Loading pockets will be equipped with refuge tents at compressed air headers.

16.8.6 Other Infrastructure

Since all equipment and material in the Kenbridge underground needs to enter via the shaft, significant permanent maintenance facilities are installed underground, as moving large pieces of equipment through the shaft is time consuming and difficult. Each level in the shaft-access area will be equipped with a maintenance bay since it is not feasible to move the equipment to surface or the underground shop for repair work. These bays will be equipped with a concrete floor, lighting, spill containment berms, and general light maintenance facilities sufficient for basic preventive maintenance work. Larger equipment brought down the shaft will be assembled in these bays before beginning work on the level. Once levels are exhausted, the equipment will be disassembled and moved to new levels for reassembly.

In the ramp-access area, equipment can readily move between levels, therefore a centralized maintenance shop has been planned at Level 13 (the lowest level in the shaft-access area and first level in the ramp access area). This maintenance shop will be equipped with facilities sufficient for general preventative and scheduled maintenance. The maintenance shop will initially be used to assemble the equipment for the ramp-access area, prior to converting to a general maintenance facility. For added safety, the shop will be equipped with a fire suppression system and fire doors, and is designed to be easily isolated from the fresh air system.

Battery charging stations will be excavated at each level near the shaft-access area, and also at Level 13 (the UG maintenance shop) and Level 19 in the ramp area. A total of five battery charging stations will be installed and operational at any one time, with the shaft-area chargers being located on the overcut level, and the shaft used to transport charged batteries to the undercut level as necessary. When a shaft-access level is completed, the charging station will be moved to the next level in the mining sequence. It is expected that BEVs without onboard charging (LHDs and some service vehicles) will drive to the nearest charging station to change batteries, however, provisions exist to bring batteries to vehicles unable to get to a charging station.

Fuel and lube bays will be installed in the ramp below the shop to service the ramp-access areas. For shaft-access areas, fuel and lube will be brought to the shaft station containers and filling will take place in the maintenance bays. Additionally, the modular service vehicles can be used to bring fuel/lube containers to any equipment that cannot travel to the designated fuel/lube areas.

Explosives for the shaft-access areas will be stored in day boxes, while those for the ramp-access areas will be stored in centralized magazines located below Levels 13 and 18. A surface magazine will be used to store initial deliveries of explosives prior to bringing them underground.

16.9 EQUIPMENT

The underground fleet used at the Kenbridge Project is comprised of two sub-sets of equipment, with certain units replicated between the sub-sets where possible to minimize maintenance complexity. In the lower parts of the mine, equipment can move between levels using ramps. In the upper areas of the mine, where access is via a shaft, smaller equipment is more desirable since movement between levels requires slinging in the shaft. As an additional result of shaft access, each active mining block in the upper mine requires its own dedicated equipment, which results in a total fleet that is larger than would normally be expected from a ramp-access mine of the same size.

Where possible, zero-emissions equipment (either compressed air or battery powered) has been selected to reduce emissions and associated ventilation requirements. Due to limited market offerings, it was necessary to include diesel haul trucks in the ramp-access area, however, it is likely that 20 t class electric trucks will soon be available and will replace the present truck selection.

16.9.1 Shaft Access Levels

Levels with shaft access will be initially excavated using small equipment powered by compressed air until sufficient excavated areas exist that would support bringing larger diesel- or electrically-powered equipment on to the level. Initial development work in the shaft station and surrounding areas will be performed as follows:

- Drilling: Jack-leg, stoper, or "Long Tom" drilling machine.
- Blasting: Manual loading with stick powder.
- Loading: Loading machine (similar to an Atlas Copco Cavo).
- Bolting: Same as drilling.

Immediately outside the shaft stations there are several crosscut development areas suitable for the re-assembly of larger equipment brought down the shaft. This includes 7 t class battery-electric LHDs (similar to Epiroc ST7B) and modular service vehicles (similar to Kovatera MC100 series) to assist in ground support, materials transport, bolting, shotcreting, and other services. From this point on, development on the level will be performed as follows:

- Drilling: Long Tom.
- Blasting: Diesel modular service vehicle w/ man basket and explosive charger.
- Loading: Battery-electric 7 t LHD.
- Bolting: Diesel modular service vehicle w/ scissor deck and manual drilling.

Development blasthole drilling and ground support drilling will continue to be done with the Long Tom and stopers for the duration of level development since the opening size is small (3.5 m W x 3.5 m H) and compressed air is readily available. Services will be installed using the modular service vehicles. Production drilling will be done using a small crawler-mounted electro-hydraulic drill (similar to a Sandvik DU311-T) equipped with 1.2 m (4 ft) rods and a canister drill for initial slot raises (similar to Machine-Roger V30). An auxiliary atmospheric compressor will be used to provide additional compressed air when necessary. Movement of blasted material from stopes or development to materials handling passes will be done entirely by the LHD. Personnel transport on all levels will be done with battery-electric UTVs (similar to Polaris Ranger EV), which are capable of being transported between levels in the cage without disassembly.

16.9.2 Ramp Access Levels

Levels below the extent of the shaft (including Level 13 at shaft bottom) will utilize rubber-tired equipment for all development. Initial development on Level 13 will be done with the same methods as shaft-access levels, however, as soon as larger equipment can be brought down to the level, a maintenance shop will be excavated that will allow for the assembly and maintenance of the fleet for the ramp-access levels. This fleet will include equipment for the following tasks:

- Drilling: 2-boom electro-hydraulic jumbo (similar to Epiroc Boomer S2).
- Blasting: Battery-electric explosive loader (similar to Maclean EC3).
- Loading: Battery-electric LHD (similar to Epiroc ST7B).
- Bolting: Diesel-electric bolter (similar to Epiroc Boltec 235).
- Hauling: 22 t class diesel truck (similar to Epiroc MT2200).

Services will be installed using a larger battery-electric cassette-type service vehicle (similar to a Maclean CS3-EV), which will be equipped with cassettes for: fuel and lube, scissor deck, crane, flatbed and shotcrete. Production drilling and personnel transport will be the same for ramp-access levels as for shaft-access levels. Haulage trucks will be used to transport excavated material up to feed bins adjacent to the shaft bottom loading pocket, from where it will be hoisted to surface.

16.9.3 Specialized Equipment for Vertical Development

During initial dewatering, rehabilitation and expansion of the shaft, Alimak raise climbers will be used for access to the necessary areas, in both climber and sinking deck arrangements. Additionally, Alimak climbers will be used to excavate the material handling system (passes, loading pockets, bins) where access cannot be provided from lateral drifts. All Alimak work is expected to be done by a specialized contractor.

The FAR, RAR and escapeway egress raises in the upper mine area are expected to be excavated using raisebores. Similarly to the Alimak work, raiseboring is expected to be done by a specialized contractor.

16.9.4 Fleet Size and Replace/Repair Strategy

The fleet size varies over the life of the mine as mining blocks come online or are exhausted. Table 16.10 shows the equipment quantities by unit type over the LOM.

TABLE 16.10
EQUIPMENT REQUIREMENTS

Type	Similar To	Fuel Type	YR-2	YR-1	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9
2-boom Development Jumbo	Epiroc Boomer S2	Diesel / Electric	-	2	2	2	2	2	2	2	2	1	1
Long Tom	Maclean Engineering Long Tom	Compressed Air	-	4	4	4	4	4	4	4	3	2	1
Explosive Loader	Maclean EC-3	Battery Electric	-	2	2	2	2	2	2	2	2	2	2
Explosive Loader	Kovatera MC100 - ANFO	Diesel	-	3	3	3	3	3	3	2	2	2	2
Rock Bolter	Epiroc Boltec 235	Diesel / Electric	-	2	2	2	2	2	2	2	2	2	1
Carrier w/ Forks & X-Deck	Kovatera MC100 - Forklift	Diesel	-	5	5	5	5	4	3	3	3	3	3
Modules (Fuel / Lube / Crane / Basket)		N/A	-	6	6	6	6	6	4	4	4	4	4
Carrier	Maclean CS3-EV	Battery Electric	-	2	2	2	2	2	2	2	2	2	2
Modules (Fuel / Lube / Flatbed / Services / X-Deck)		N/A	-	4	4	4	4	4	3	3	3	3	3
Load-Haul-Dump	Epiroc ST7B	Battery Electric	-	5	5	5	5	5	5	5	5	5	5
Mucking Machine	Atlas Copco Cavo 320	Compressed Air / Electric	4	4	4	4	3	3	2	-	-	-	-
Truck (Underground)	Eprico MT2200	Diesel	-	2	2	2	2	2	2	2	2	2	2
Truck (Surface)	Volvo A30D	Diesel	1	1	1	1	1	1	1	1	1	1	1
Electric UTV	Polaris Ranger EV	Battery Electric	-	4	4	4	4	4	6	6	6	6	4
Personnel Carrier	Kovatera MC100 - Personnel	Diesel	-	1	1	1	1	1	1	1	1	1	1
LH Drill	Sandvik DU 311T	Diesel / Electric	-	4	4	4	4	4	4	4	4	4	4
Raisebore - Contractor	Redbore	Electric	-	2	-	-	-	-	-	-	-	-	-
Raise Climber and Sinking Deck - Contractor	Alimak	Compressed Air / Electric	1	2	-	-	-	-	-	-	-	-	-

Note: *YR = year*

Equipment is generally expected to last five years from its in-service date before replacement or a major rebuild is required. The Authors have selected a strategy of replacement instead of rebuilding for all underground equipment: once equipment has reached the end of its expected service period and its lease has been paid off, it will be sold and replaced with new equipment under similar lease-to-own conditions as the initial fleet. This strategy also allows the fitment of the underground shop at Level 13 to be minimized, since no major rebuild work will take place underground. The sole exception to the replacement strategy is the surface haul truck, which is expected to be rebuilt on surface (offsite) once during LOM due to its relatively light duty and low overall utilization.

16.9.5 Zero-Emissions Vehicles

Where feasible, zero-emissions vehicles have been selected for the underground fleet at Kenbridge. This includes: LHDs, some service equipment, shaft-access drilling machinery, initial shaft-area loading units, personnel transport, and more. Machinery that still utilizes diesel engines is limited to: modular service vehicles (Kovatera MC100s); haul trucks (Epiroc MT2200); development jumbos and bolters for the ramp (Epiroc Boomer S2 and Boltec 235 respectively); and LH drills (Sandvik DU311-T). Of these, only the modular services vehicles and haul trucks run primarily on diesel fuel (the others use diesel for motive power only). Limitations on market-ready equipment in the same classes (sizes, abilities, performance) has resulted in the selection of these units, however, it is expected that BEV versions of most, or all, of these machines will be on the market in the relatively near future. As such, the Authors recommend that future studies update the fleet with new zero-emissions product offerings as they reach the market.

16.10 PERSONNEL

The underground mine is expected to operate with a 3-crew roster (day-shift, night-shift, off-shift) Non-roster personnel will work a nominal 4-4-4-2 schedule, averaging 4 days on and 3 days off per week, however, maintaining coverage Monday to Friday. All personnel will work an 11-hour day (this allows for a 1-hour gas clear at the end of each shift). Table 16.11 shows the number of personnel in roster and non-roster roles for the underground operation by year and expected additional contractors on site for special development roles (Alimak and raisebore).

TABLE 16.11
PERSONNEL REQUIREMENTS

Group	YR -2	YR -1	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9
Mining	23	35	58	64	61	61	61	58	53	53	34
Maintenance	7	13	19	19	19	19	19	19	19	19	13
Technical Services	7	14	20	20	20	20	20	20	20	20	14
Surface & Admin	5	9	13	13	13	13	13	13	13	13	9
Alimak & Raisebore Contractors	12	12	-	-	-	-	-	-	-	-	-
Mine Total	**54**	**83**	**110**	**116**	**113**	**113**	**113**	**110**	**105**	**105**	**70**

16.11 MINING SCHEDULE

The Kenbridge Project has a combined production rate of 1,500 tpd over an 11-year mine life. A total of 36.8 kt Ni, 18.0 kt Cu and 0.4 kt Co will be extracted from the underground over this period from 4.52 Mt of mineralized material with an average NSR of $149.10/t.

16.11.1 Portion of Mineral Resource for Underground Mine Plan

Table 16.12 shows the portion of the Mineral Resource that was considered for the PEA underground mine plan.

TABLE 16.12
UNDERGROUND MINE PLAN

Step	Class	Tonnes (k)	Ni (%)	Cu (%)	Co (%)	NSR ($/t)
Stope (Internally Diluted)	Measured	1,401	0.99	0.48	0.02	182.21
	Indicated	1,213	0.99	0.53	0.01	185.38
	Inferred	762	1.71	0.79	0.01	307.16
	Waste Rock	478	-	-	-	-
	Backfill	-	-	-	-	-
External Dilution	Measured	11	0.32	0.19	0.01	62.57
	Indicated	10	0.42	0.26	0.01	82.40
	Inferred	1	0.64	0.23	0.02	110.86
	Waste Rock	510	-	-	-	-
	Backfill	414	-	-	-	-
Stopes (Fully Diluted)	**Measured**	**1,412**	**0.99**	**0.47**	**0.02**	**181.25**
	Indicated	**1,223**	**0.99**	**0.53**	**0.01**	**184.51**
	Inferred	**763**	**1.71**	**0.79**	**0.01**	**306.89**
	Waste Rock	**988**	**-**	**-**	**-**	**-**
	Backfill	**414**	**-**	**-**	**-**	**-**
Mining Loss	Measured	78	0.98	0.47	0.02	179.41
	Indicated	74	1.00	0.53	0.01	186.47
	Inferred	46	1.65	0.75	0.01	295.80
	Waste Rock	58	-	-	-	-
	Backfill	24	-	-	-	-
Portion of Mineral Resource in UG Mine Plan	**Measured**	1,334	0.99	0.48	0.02	181.36
	Indicated	1,149	0.98	0.53	0.01	184.38
	Measured and Indicated	**2,483**	**0.99**	**0.50**	**0.02**	**182.76**
	Inferred	717	1.71	0.79	0.01	307.60
	Waste Rock	930	-	-	-	-
	Backfill	390	-	-	-	-

TABLE 16.12 UNDERGROUND MINE PLAN						
Step	**Class**	**Tonnes (k)**	**Ni (%)**	**Cu (%)**	**Co (%)**	**NSR ($/t)**
Portion of Mineral Resource in UG Mine Plan*	**Measured**	1,884	0.70	0.34	0.01	128.39
	Indicated	1,624	0.70	0.37	0.01	130.53
	Measured and Indicated	**3,508**	**0.70**	**0.35**	**0.01**	**129.38**
	Inferred	1,013	1.21	0.56	0.01	217.76

**Note: Includes waste rock and backfill dilution*

16.11.2 Development Schedule

Table 16.13 shows the lateral and vertical development schedule by year in linear metres.

TABLE 16.13
UNDERGROUND DEVELOPMENT SCHEDULE IN METRES BY YEAR

Type	Description	Profile[1]	YR-2	YR-1	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	Total[2]
Lateral Development	Operating Dev (Mineralized)	3.5 x 3.5	-	273	104	83	292	135	53	193	-	-	-	1,134
	Operating Dev (Waste)	3.5 x 3.5	-	500	592	529	1,078	597	472	842	-	-	-	4,610
	Historical Workings Slashing	3.5 x 3.5	-	275	-	149	149	-	-	-	-	-	-	574
	Accesses (Vent, Level, etc.)	3.5 x 3.5	121	1,125	693	640	85	228	406	-	-	-	-	3,298
	Ramp/Truck Turn-Around	3.5 x 4.0	-	227	1,294	1,374	-	-	-	-	-	-	-	2,896
	LPs/Remuck Bays/Fuel Bay	5.0 x 4.0	102	304	104	72	36	36	84	-	-	-	-	738
	Pump Station/ Maintenance Shop	6.0 x 4.0	40	115	20	40	-	-	-	-	-	-	-	215
	Explosive Magazines	4.0 x 4.0	-	-	32	32	-	-	-	-	-	-	-	64
	Total[2]	**All**	**263**	**2,819**	**2,839**	**2,918**	**1,641**	**996**	**1,015**	**1,036**	**-**	**-**	**-**	**13,529**
Vertical Development	FAR/RAR Raisebores	3.0 m Dia	-	1,247	-	-	-	-	-	-	-	-	-	1,247
	Escapeway Raisebore	1.2 m Dia	-	625	-	-	-	-	-	-	-	-	-	625
	FAR/RAR in Ramp	2.4 x 2.4	-	-	193	177	-	-	-	-	-	-	-	370
	Fingers	1.8 x 1.8	-	110	-	33	28	14	17	-	-	-	-	202
	Passes	2.4 x 2.4	-	1,116	-	-	-	-	-	-	-	-	-	1,116
	Bins	4.0 x 4.0	-	37	-	-	-	-	-	-	-	-	-	37
	Shaft Slashing	3.7 x 8.5	626	-	-	-	-	-	-	-	-	-	-	626
	Loading Pockets	5.0 x 10.0	31	-	-	-	-	-	-	-	-	-	-	31
	Total[2]	**All**	**657**	**3,135**	**193**	**210**	**28**	**14**	**17**	**-**	**-**	**-**	**-**	**4,254**

[1] Lateral Development profiles in mW x mH, Vertical Development profiles in mW x mL. *[2] Totals may not sum due to rounding.*

16.11.3 Production Schedule

Table 16.14 shows the production schedule by year.

TABLE 16.14
UNDERGROUND PRODUCTION SCHEDULE BY YEAR

Item	YR-2	YR-1	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	Total[1]
Mine Plan (t)	-	-	308,000	528,000	528,000	528,000	528,000	528,000	528,000	528,000	516,771	4,520,771
Development Waste (t)	48,926	159,623	111,190	114,745	22,233	18,122	25,548	8,232	-	-	-	508,618
Placed High-Strength CHF (m^3)	-	-	20,892	53,914	60,510	54,887	54,948	54,593	53,293	53,039	50,029	456,106
Placed Low-Strength CHF (m^3)	-	-	75,535	111,177	105,562	111,438	111,561	110,841	108,201	107,686	101,574	943,574
Mined Ni Grade (%)	-	-	0.78	0.80	0.92	1.13	0.84	0.76	0.74	0.70	0.63	0.81
Mined Cu Grade (%)	-	-	0.38	0.42	0.44	0.44	0.44	0.43	0.39	0.34	0.30	0.40
Mined Co Grade (%)	-	-	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01
Mined NSR ($/t)	-	-	142.55	149.16	166.67	196.18	157.05	144.90	138.64	128.85	115.16	149.18
Mined Ni Mass (t)	-	-	2,389	4,218	4,837	5,988	4,456	4,031	3,910	3,703	3,242	36,773
Mined Cu Mass (t)	-	-	1,171	2,210	2,303	2,315	2,341	2,260	2,071	1,815	1,559	18,045
Mined Co Mass (t)	-	-	32	48	46	37	25	33	43	48	60	371
Mined Value ($M)	-	-	44	79	88	104	83	77	73	68	60	674

1 Totals may not sum due to rounding.

16.11.4 Graphic Schedule

Figures 16.9 to 16.20 show the mine development and production by year.

FIGURE 16.9 EXISTING UNDERGROUND WORKINGS

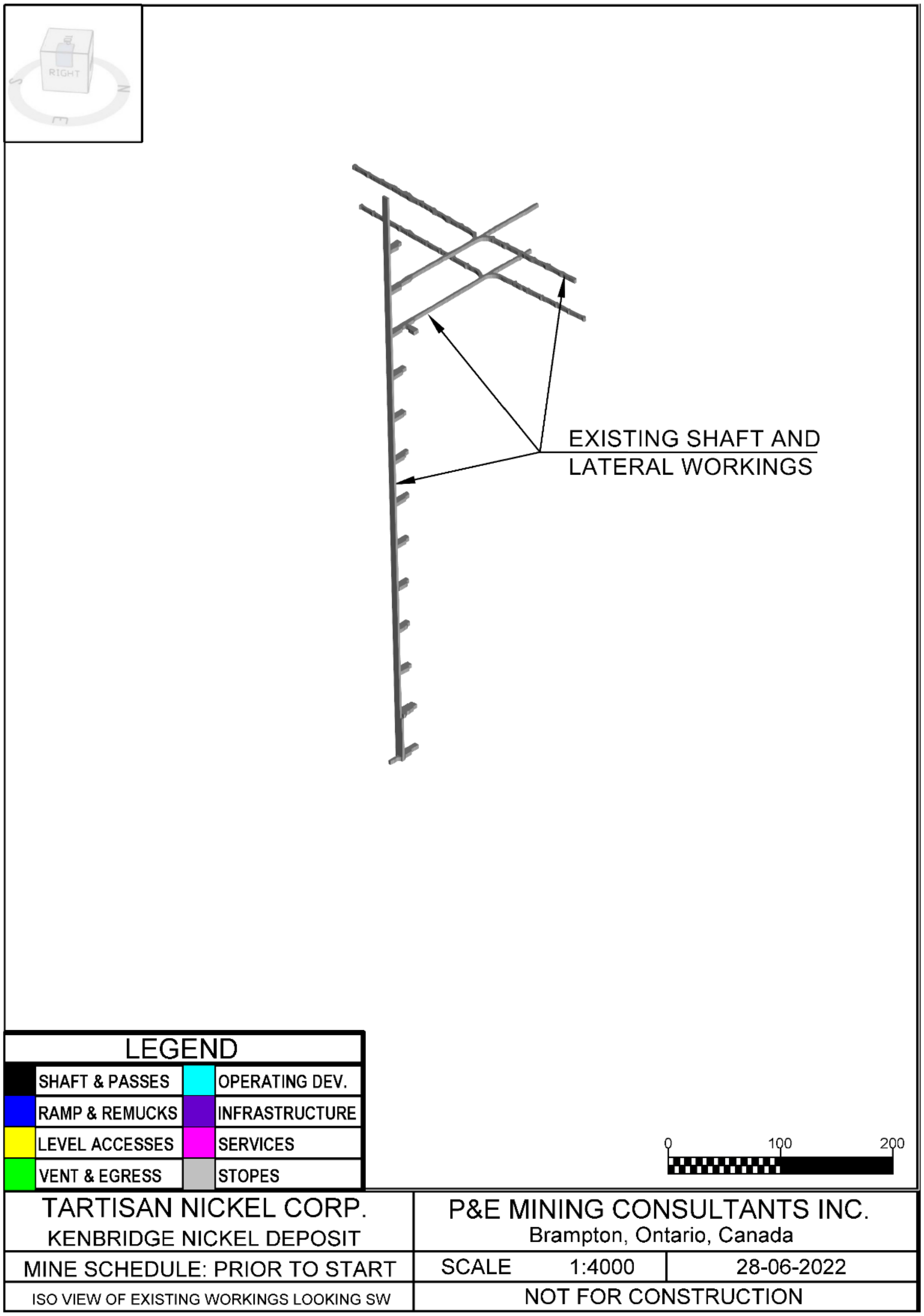


FIGURE 16.10 MINE DEVELOPMENT AND PRODUCTION YEAR -2

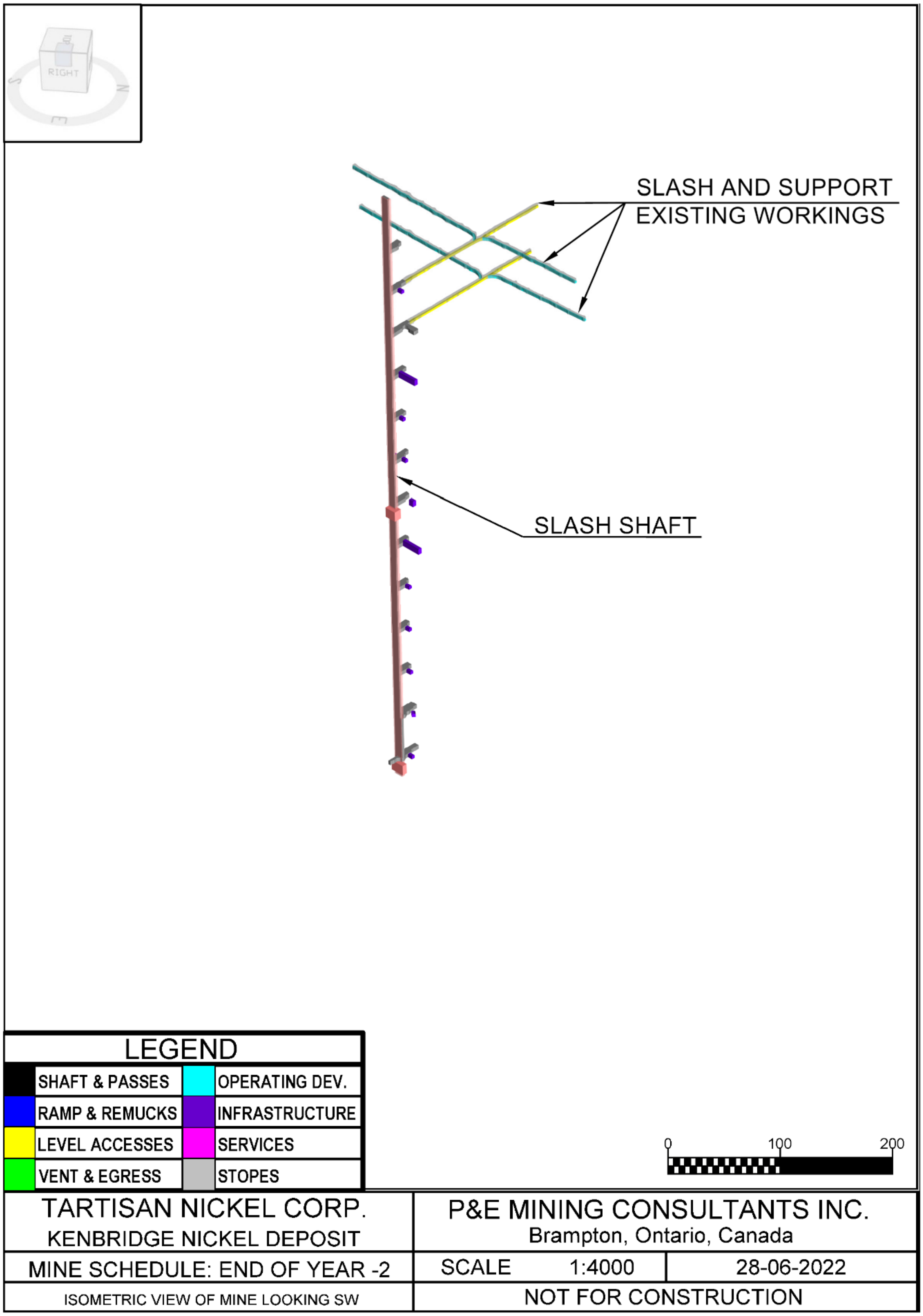


FIGURE 16.11 MINE DEVELOPMENT AND PRODUCTION YEAR -1

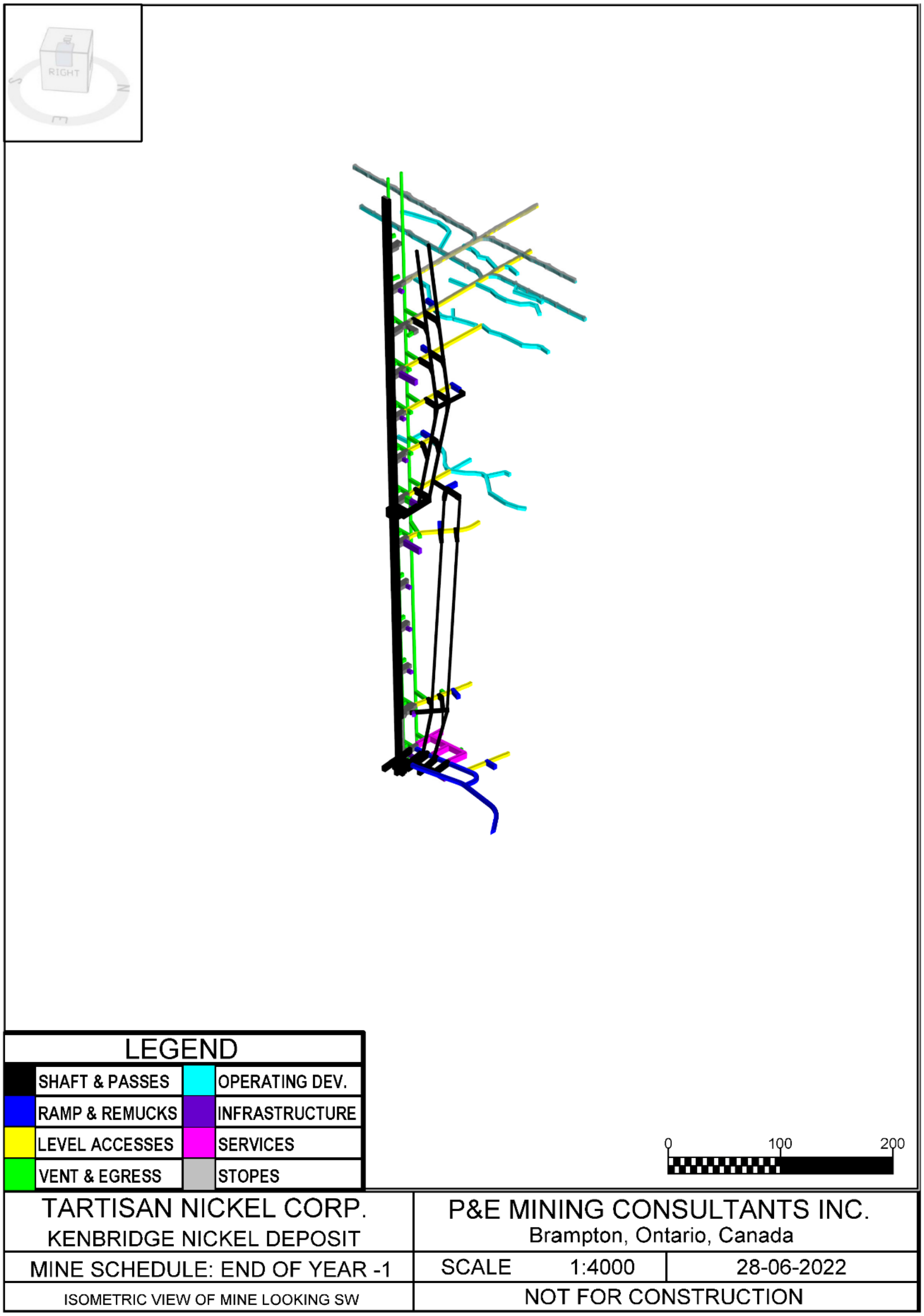


FIGURE 16.12 MINE DEVELOPMENT AND PRODUCTION YEAR 1

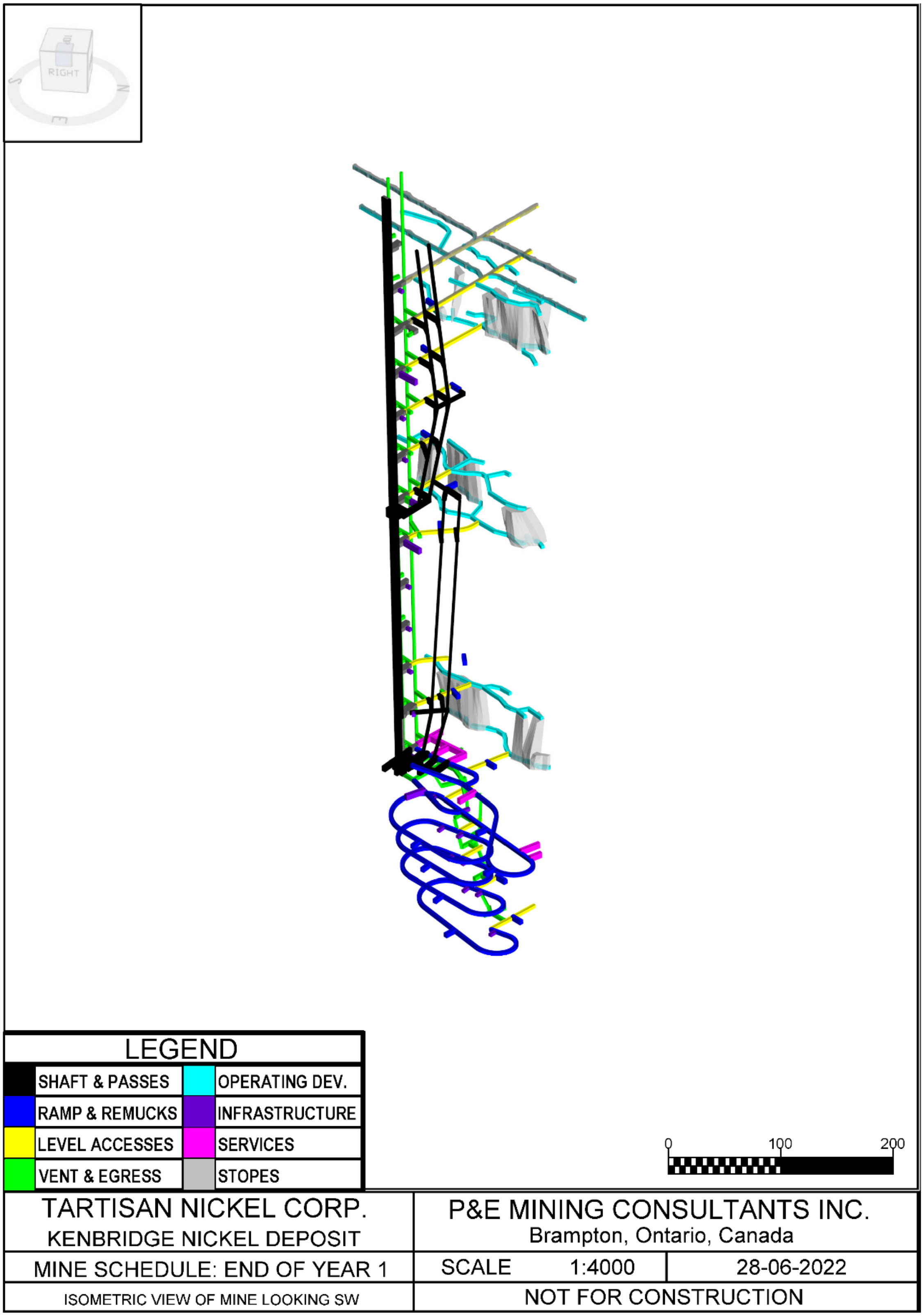
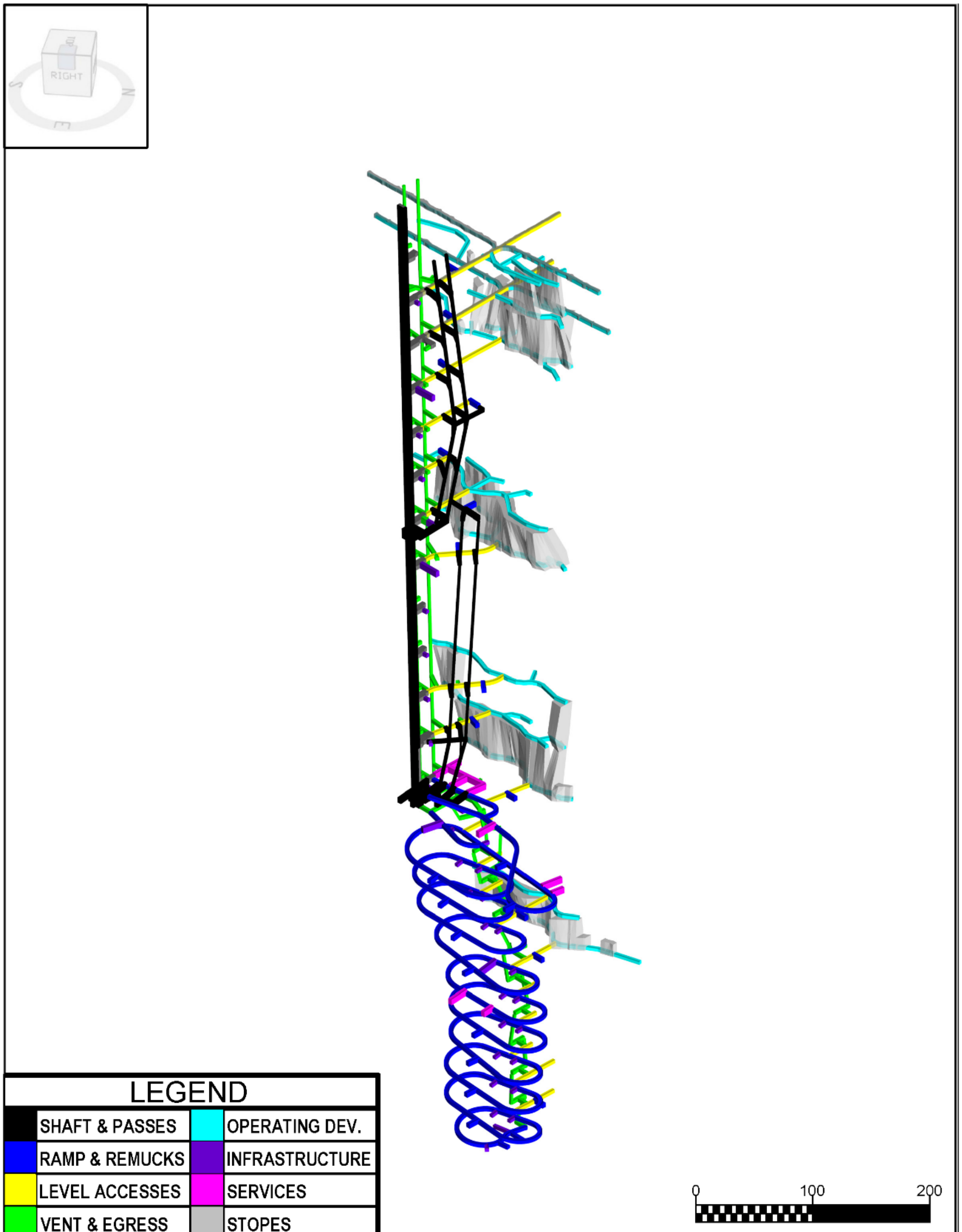


FIGURE 16.13 MINE DEVELOPMENT AND PRODUCTION YEAR 2



TARTISAN NICKEL CORP. KENBRIDGE NICKEL DEPOSIT	P&E MINING CONSULTANTS INC. Brampton, Ontario, Canada
MINE SCHEDULE: END OF YEAR 2	SCALE 1:4000 | 28-06-2022
ISOMETRIC VIEW OF MINE LOOKING SW	NOT FOR CONSTRUCTION

FIGURE 16.14 MINE DEVELOPMENT AND PRODUCTION YEAR 3

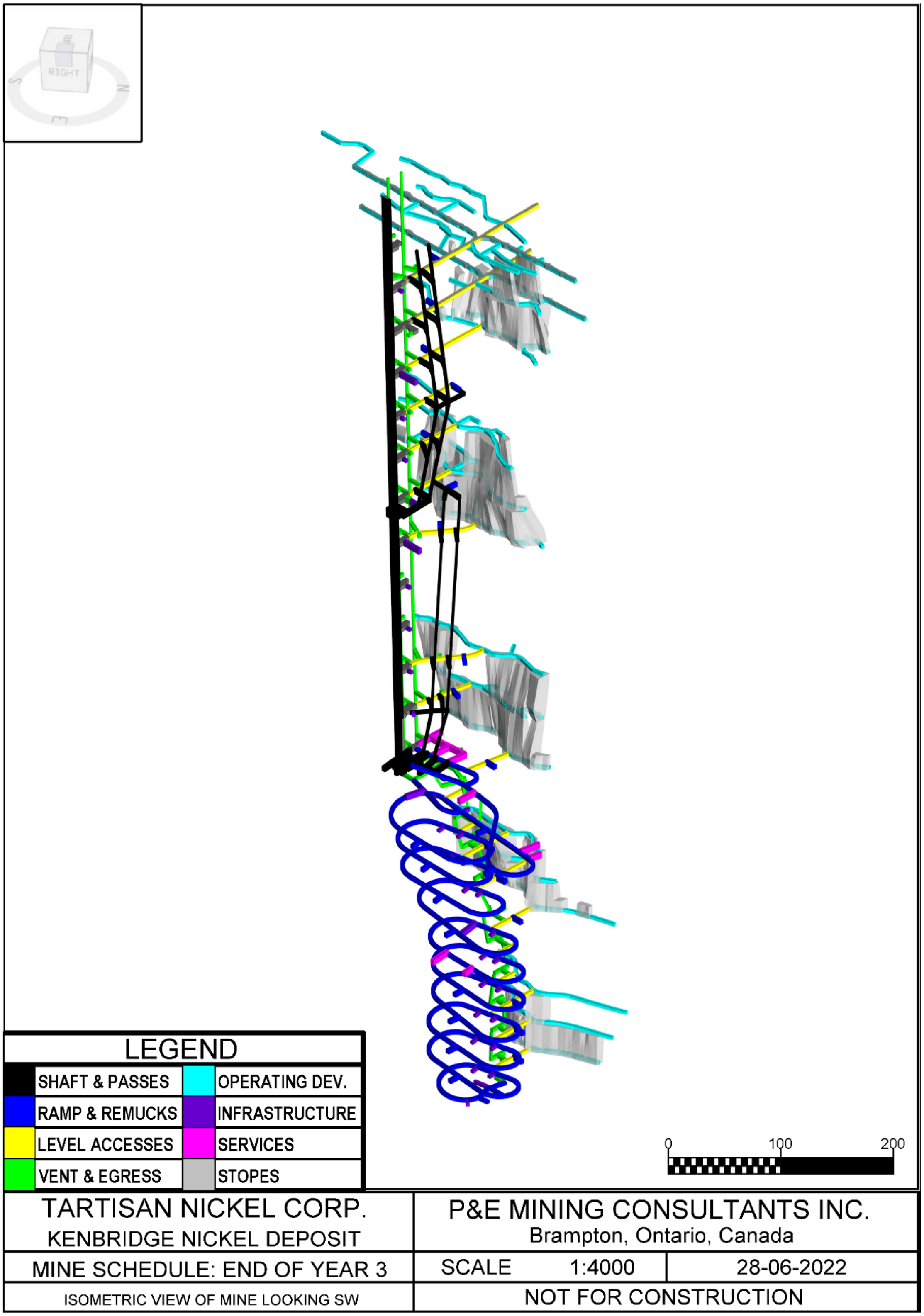


FIGURE 16.15 MINE DEVELOPMENT AND PRODUCTION YEAR 4

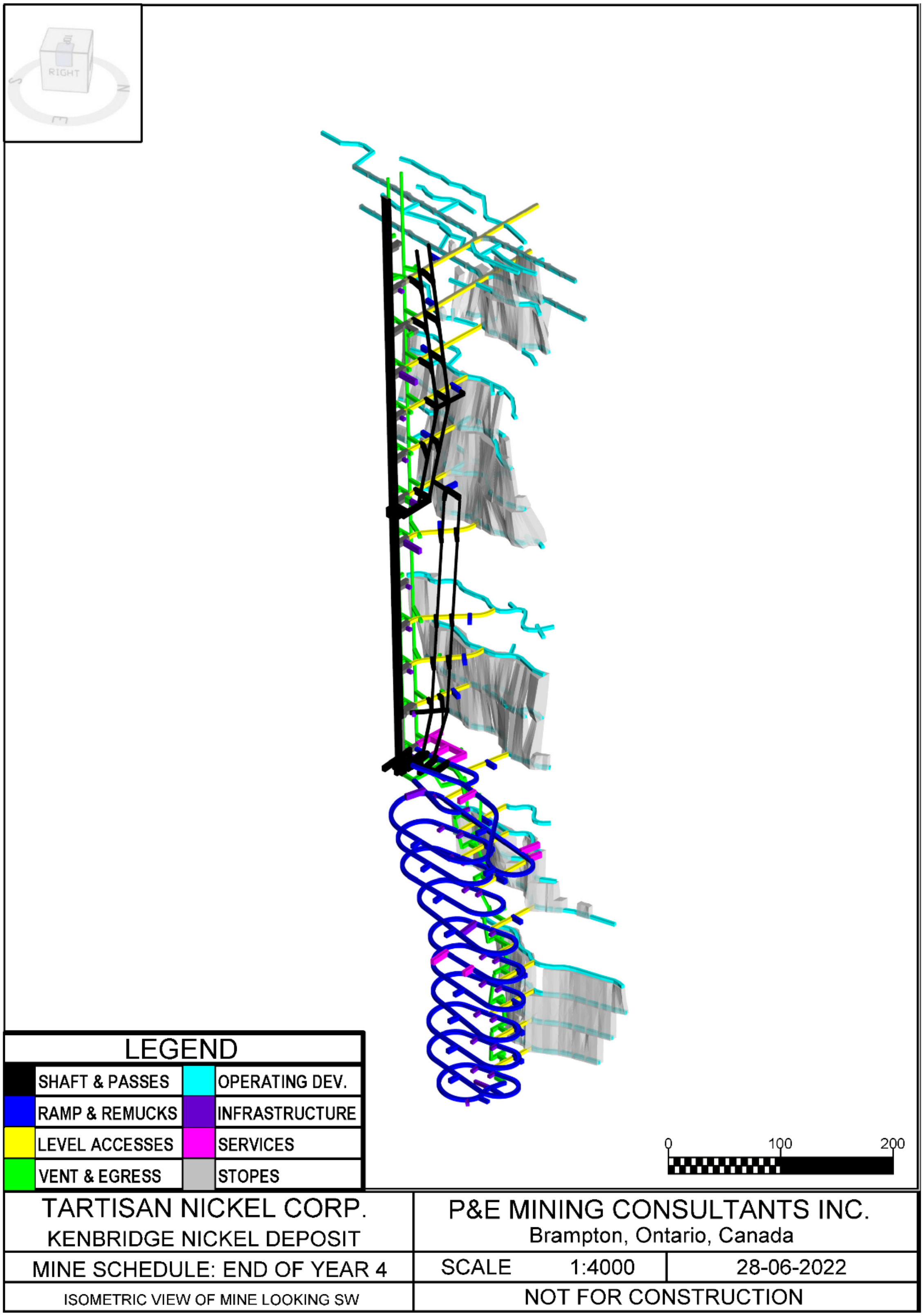


FIGURE 16.16 MINE DEVELOPMENT AND PRODUCTION YEAR 5

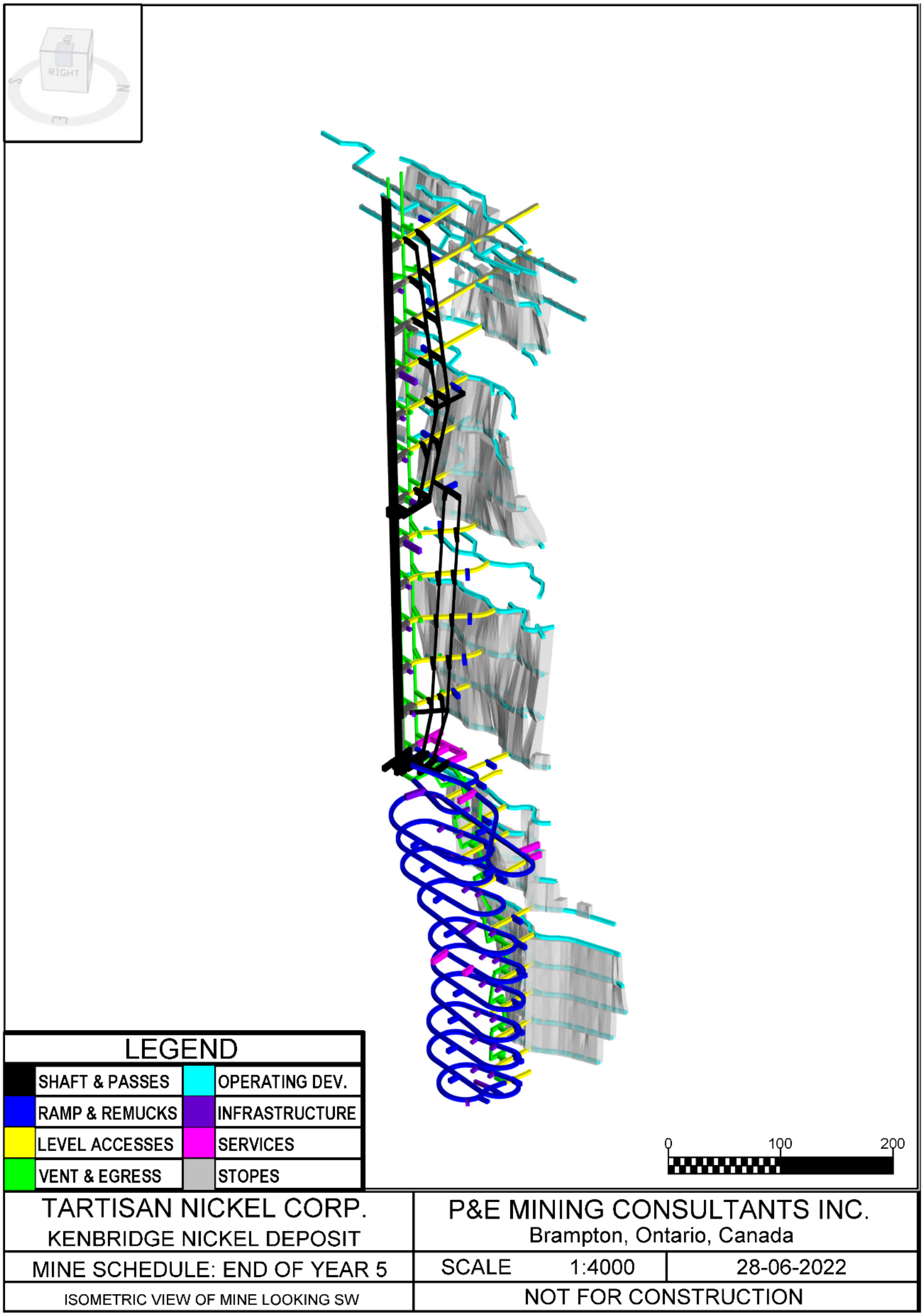


FIGURE 16.17 MINE DEVELOPMENT AND PRODUCTION YEAR 6

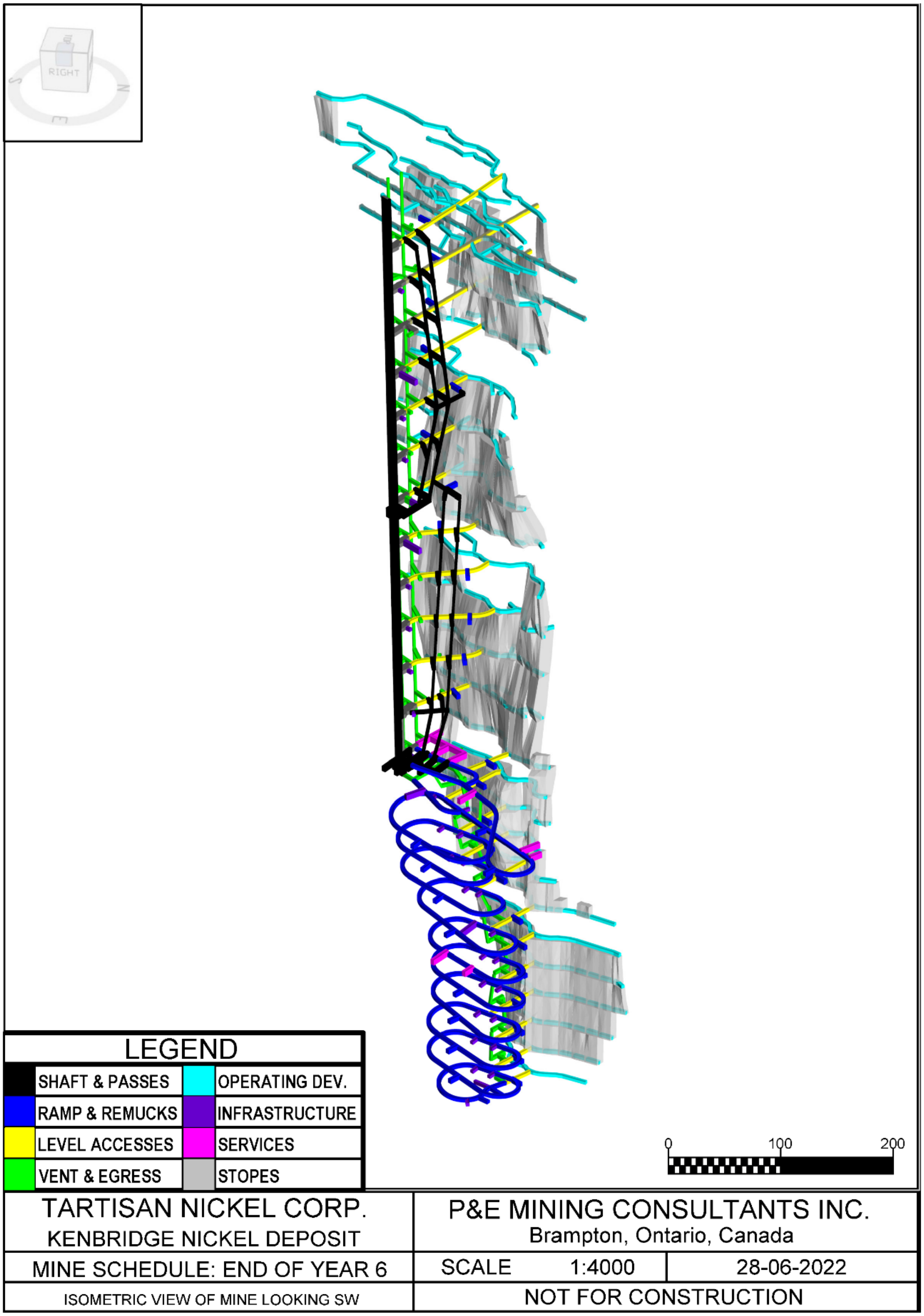


FIGURE 16.18 MINE DEVELOPMENT AND PRODUCTION YEAR 7

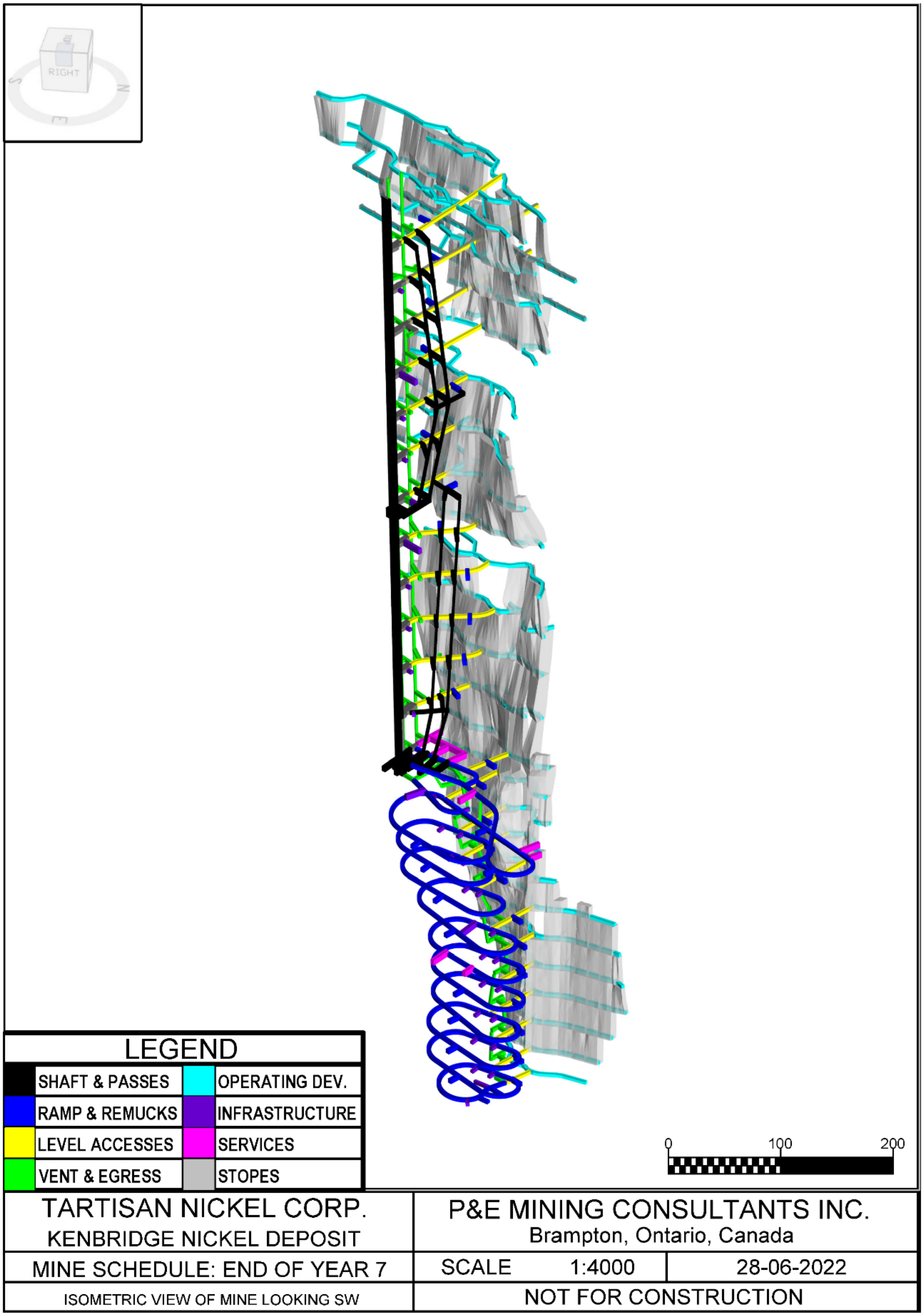


FIGURE 16.19 MINE DEVELOPMENT AND PRODUCTION YEAR 8

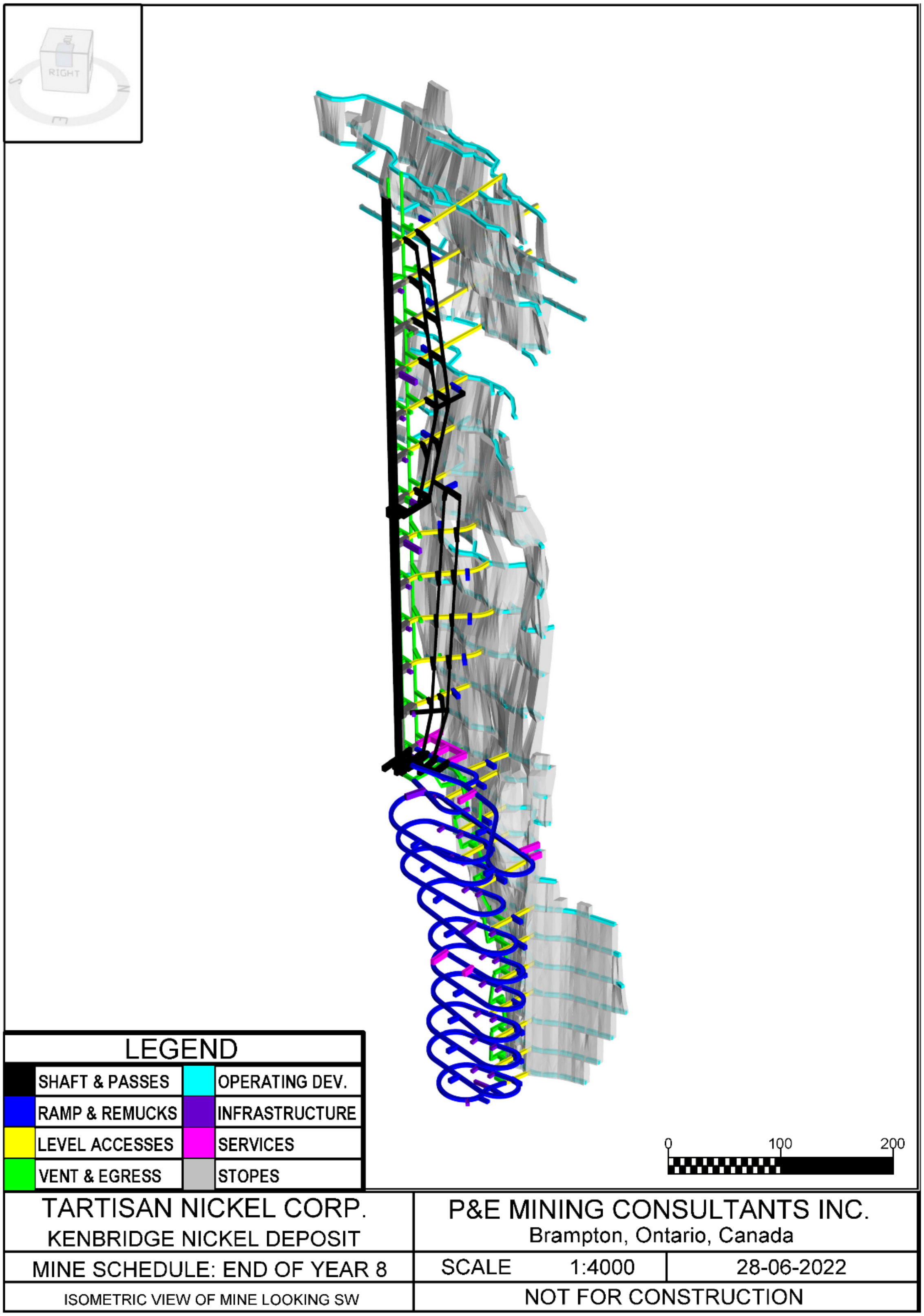
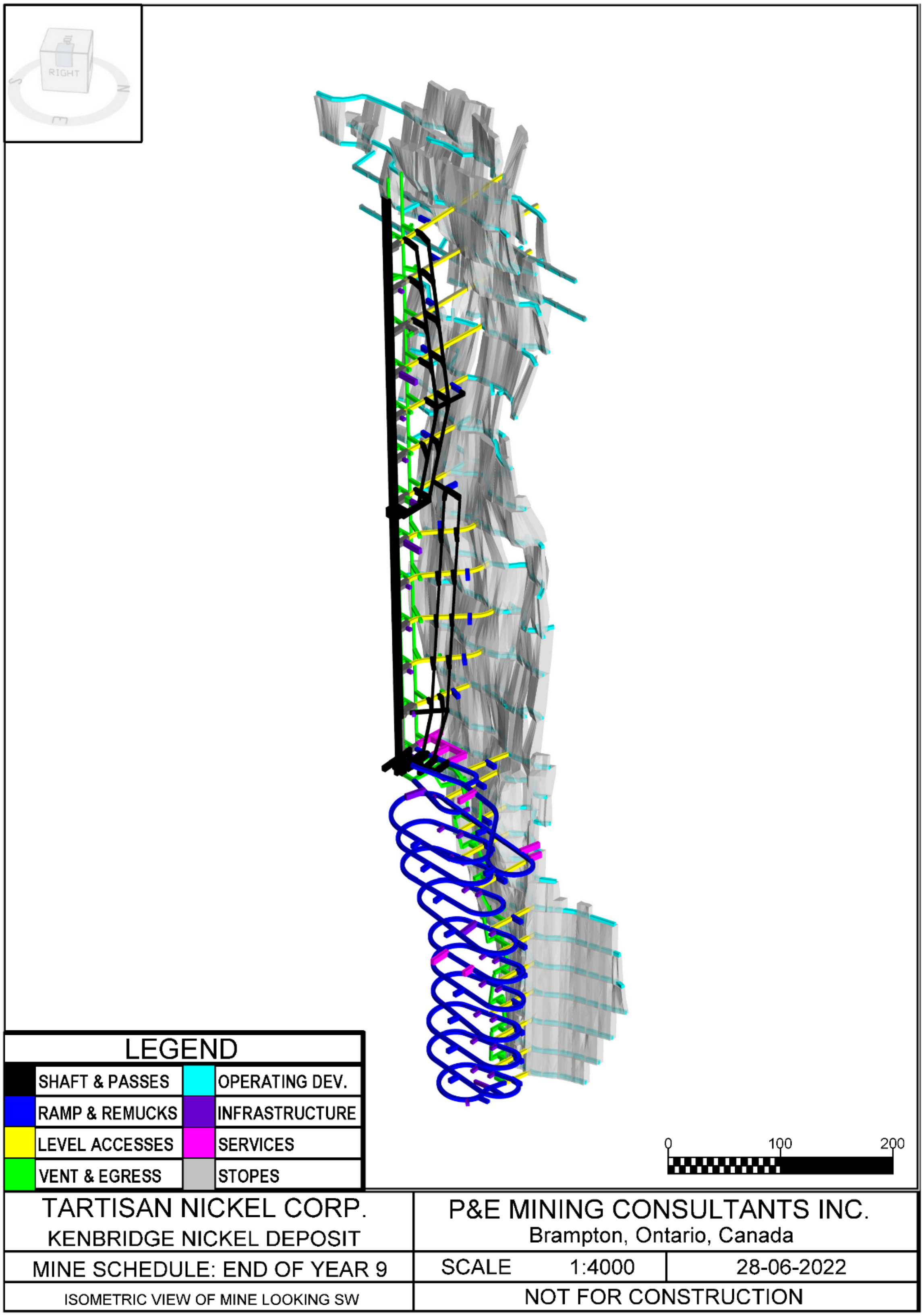


FIGURE 16.20 MINE DEVELOPMENT AND PRODUCTION YEAR 9



17.0 RECOVERY METHODS

A summary of available metallurgical testwork on the Kenbridge Mineral Resource has been presented in Section 13 of this Technical Report. While test process data is minimal, particularly for the production of separate copper and nickel concentrates, it can be assumed that a new process plant will be a conventional facility with crushing, grinding, flotation, concentrate thickening and filtration, and tailings thickening for backfill preparation and disposal. The process plant will be sized for a nominal capacity of 1,500 tpd with a surge capability of 2,000 tpd.

17.1 MINERALIZED PROCESS PLANT FEED HANDLING

Mineralized material will come from underground mining. A primary crusher will be located underground. The crusher size could be as large as 700 mm by 700 mm (28 inches by 28 inches) and powered by a 120 kW drive to produce a -102 mm product. A grizzly above a bin in advance of the jaw crusher will have 450 mm square openings. The crusher feed will be drawn from a surge bin by an apron feeder discharging on to a conveyor equipped with metallic scrap removal magnets. Process plant feed will be sent to skips and hoisted to surface, then delivered by a conveyor belt from the headframe to a 5,000 t capacity covered stockpile near the process plant. The material would be drawn from the stockpile by at least three feeders to a grinding feed conveyor equipped with a belt weightometer. The process plant feed stockpile would be manipulated with a propane-fueled loader to reduce stockpile segregation by size and to compensate for freezing.

17.2 FEED MATERIAL SORTING POTENTIAL

As noted in Section 13.3, there appears to be beneficial potential for process plant feed sorting at Kenbridge. This could reduce the amount of mineralized material to be processed, increase the process plant feed grade, and reduce capital and operating costs. The use of XRT sorting technology is probably the most appropriate and its application could avoid the costly step of washing sorter feed.

Conceptually, ROM material would be crushed and screened to one or more size ranges – e.g., 10-30 mm, 30-80 mm and pass each through size-dedicated sorters. On the order of 40% rejection could be assumed. Sorter rejects would be stockpiled for end-of-mine processing or disposal. The installation of sorting technology would likely affect the selection of crushing and grinding equipment. With sorting, crushing-grinding could be multi-stage crushing combined with ball milling.

However, with the absence of sorting test results, conventional crushing-grinding is selected for this Kenbridge PEA.

17.3 GRINDING

Conventional SAG and ball mill grinding is proposed. SAG feed is automatically weighed and grab sampled for moisture content. With a target grind size P_{80} of 90 µm, a SAG size of approximately 5 m diameter by 4 m long and a ball mill of 5 m by 7 m long should be suitable. In

2008, Xstrata conducted a detailed assessment of grinding design, using SGS laboratory 2006 data, around a used 7.0 m by 2.7 m SAG mill. A processing rate of 110 t/h, which is equivalent to 2,400 tpd with downtime, was selected. Xstrata's ball mill size estimate was 3.7 m diameter (12 ft) by 5.5 m long (18 ft). Based on the authors of this Technical Report (the "Authors") experience, steel ball consumption could be in the order of 3-4 kg/t and energy draw approximately 25-30 kWh/t.

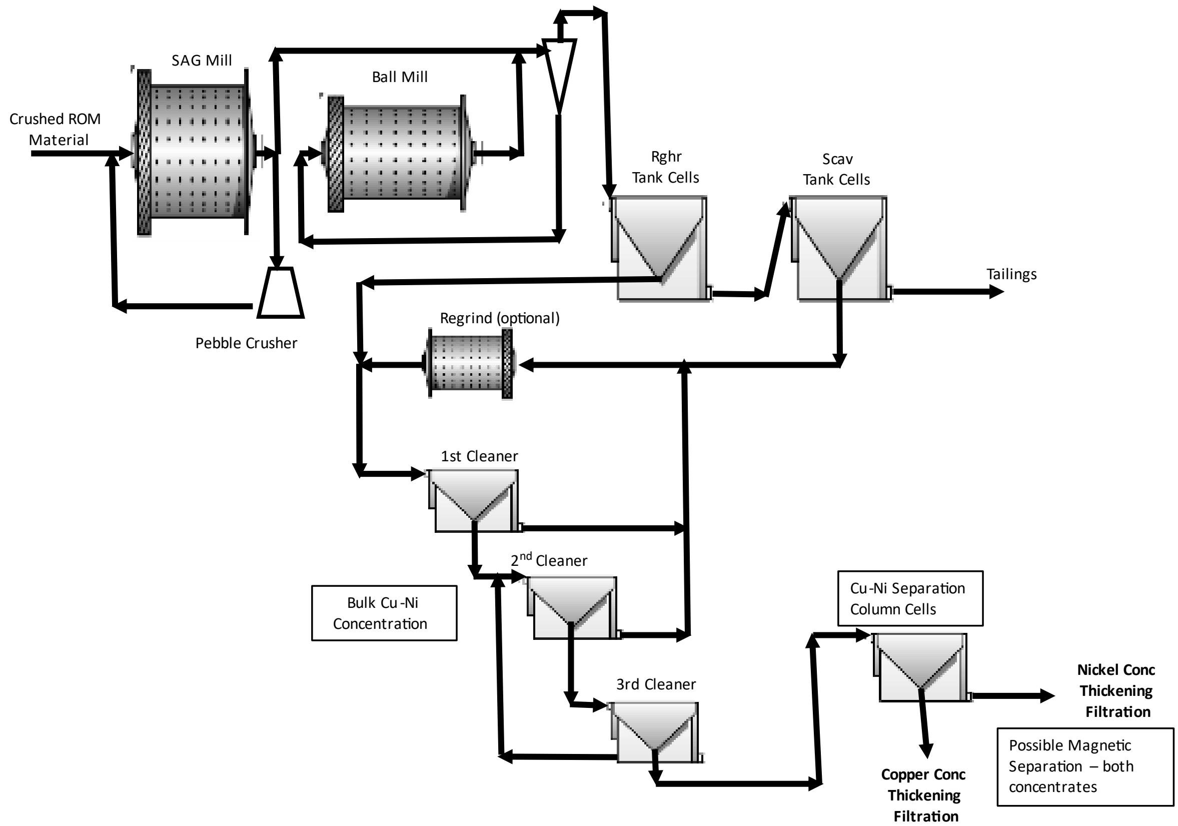
The SAG mill could be equipped with a pebble circuit where +20 mm pebbles screened from SAG feed are recycled to the SAG mill feed. Pebble return is expected to be low, at less than 5% of feed. At this low rate, a pebble crusher (gyratory) is optional, and could be installed later to increase the grinding circuit capacity. A ball mill will be in closed circuit with two banks of cyclones in a combined array (one operating, one standby) with cyclone overflow sent to a flotation conditioner following automatic two-stage slurry sampling for metal content.

17.4 FLOTATION

The conceptual grinding and concentration circuit is shown in Figure 17.1. A medium grade copper-nickel bulk concentrate is obtained in a rougher-scavenger circuit which will have a retention time of 20 minutes. The rougher-scavenger tailings will be automatically sampled with a two-stage Vezin-type sampler. The rougher-scavenger concentrate is finely ground to be approximately P_{80} 20-25 µm. This smaller grinding unit could be rubber-lined ball mill, but a vertical attrition-grinding mill using ceramic grinding media may be preferred. A little more than 6% (150 tpd, 8.3 t/h) of the process plant feed will report to the regrind mill and to the subsequent flotation circuits.

The finely ground rougher-scavenger bulk concentrate will be cleaned at least twice and the final bulk cleaner concentrate directed to a copper-nickel separation flotation step, with tailings reporting to a nickel concentration/cleaner circuit. The copper concentrate may also be subject to copper cleaner stages.

FIGURE 17.1 CONCEPTUAL KENBRIDGE GRINDING AND FLOTATION CIRCUIT



Some considerations to the definition of a Kenbridge processing plant flowsheet include:

- Regrinding of the bulk concentrate may not be needed – mineralogical examination indicated a relatively high liberation of all sulphides in the rougher concentrate; very fine grinding could reduce flotation kinetics and increase difficulty in achieving clean copper-nickel separation;

- Column flotation cells in copper-nickel separation should result in reduced nickel distribution to the copper concentrate as a result of the benefit of froth washing;

- XRD analyses by Xstrata indicated that the pyrrhotite in both the copper and nickel concentrates was the magnetically-susceptible monoclinic variety. This indicates that both concentrates could be upgraded by magnetic separation; and

- A continuous mini-pilot plant campaign can be considered to validate several process variables – including grind size(s), retention times and cleaner stages, use of column flotation in cleaners and magnetic separation.

17.5 CONCENTRATE HANDLING

The two flotation concentrates will be separately thickened in conventional-type thickeners and filtered using plate and frame pressure filters. Up to four filters will be installed to provide back-up capacity for either concentrate. The filtered concentrate moisture content is expected to be 10% or slightly greater – higher than desirable moisture content will be caused by the fine particle size of each of the concentrates. The concentrates will be stored between partitions in a heated warehouse.

The moist concentrate is expected to be trucked to smelters in Sudbury, ON (nickel) and Rouyn-Noranda, QC (copper). Subject to confirmation of no liquefaction potential in transport, the shipments will be as separate bulk nickel and copper concentrates in warm weather and in one tonne tote bags in colder weather. No on-site concentrate drying is proposed.

Concentrates will be automatic-sampled as thickener feed slurry and weighed and manually sampled for each shipment with batch pipe-samplers after filtration. The copper concentrate would be expected, on a dry basis, to be approximately 35 dry tpd, while a copper-nickel concentrate may be as much as 120 dry tpd.

17.6 TAILINGS AND WATER MANAGMENT

Tailings will be transferred to a backfill plant, possibly located in a separate structure, thickened to approximately 55% solids using a conventional hi-rate thickener located in the process plant where the fines will be separated out by cyclones and the coarse fraction sent underground as hydraulic cemented backfill. The residual fines will be thickened to approximately 45% solids and sent to a conventional tailings facility with lined embankments.

Subject to confirmation that fine tailings thickener overflow water quality is not detrimental to flotation performance, process water will be a combination of tailings thickener reclaim water and tailings facility reclaim water. Mine water is an additional potential process water source.

18.0 PROJECT INFRASTRUCTURE

18.1 EXISTING INFRASTRUCTURE

Existing infrastructure at the Kenbridge Property consists of an access road, exploration camp, core logging facility, workshop facility, old building foundations, shaft and underground development (Figures 18.1, 18.2 and 18.3).

In a press release dated December 4, 2008 Canadian Arrow announced receipt of a work permit from the Ontario Ministry of Natural Resources for construction of an all-weather road into the Kenbridge Nickel Project site. The 10 km construction was to involve widening and surfacing of an existing trail that provided seasonal access to the Project site from the Maybrun Mine road. A single, temporary bridge crossing was already in place over the Atikwa River. In a press release dated May 25, 2022 Tartisan announced it had received the necessary updated work permit from the Ministry of Northern Development, Mines, Natural Resources and Forestry to conduct and complete the road maintenance and all necessary upgrades, including brushing, ditching, graveling and installing culverts. Construction completion is anticipated by September 2022.

Past exploration development on the Property includes a three-compartment timber lined shaft to a depth of approximately 623 m. The shaft has outside timber dimensions of approximately 5.0 m by 2.1 m. The 3 compartments have dimensions of 1.5 m by 1.5 m between the timbers. The shaft is presently flooded and capped with a concrete bulkhead. A video camera has been lowered through the shaft cap and initial indications, from the video, are that the shaft excavation and timbers are in excellent condition. To provide access to the shaft and existing development of the underground mine, the concrete cap would have to be removed and the shaft dewatered. The shaft location is offset approximately 50 m to 90 m from the footwall of the mineralized zones. Shaft stations of 15 m to 20 m in length were developed at 46 m vertical intervals.

Underground lateral development includes access drifting to the mineralized zones and sill drifting in the zones on the 110 m and 150 m levels. Underground lateral development totals approximately 775 m.

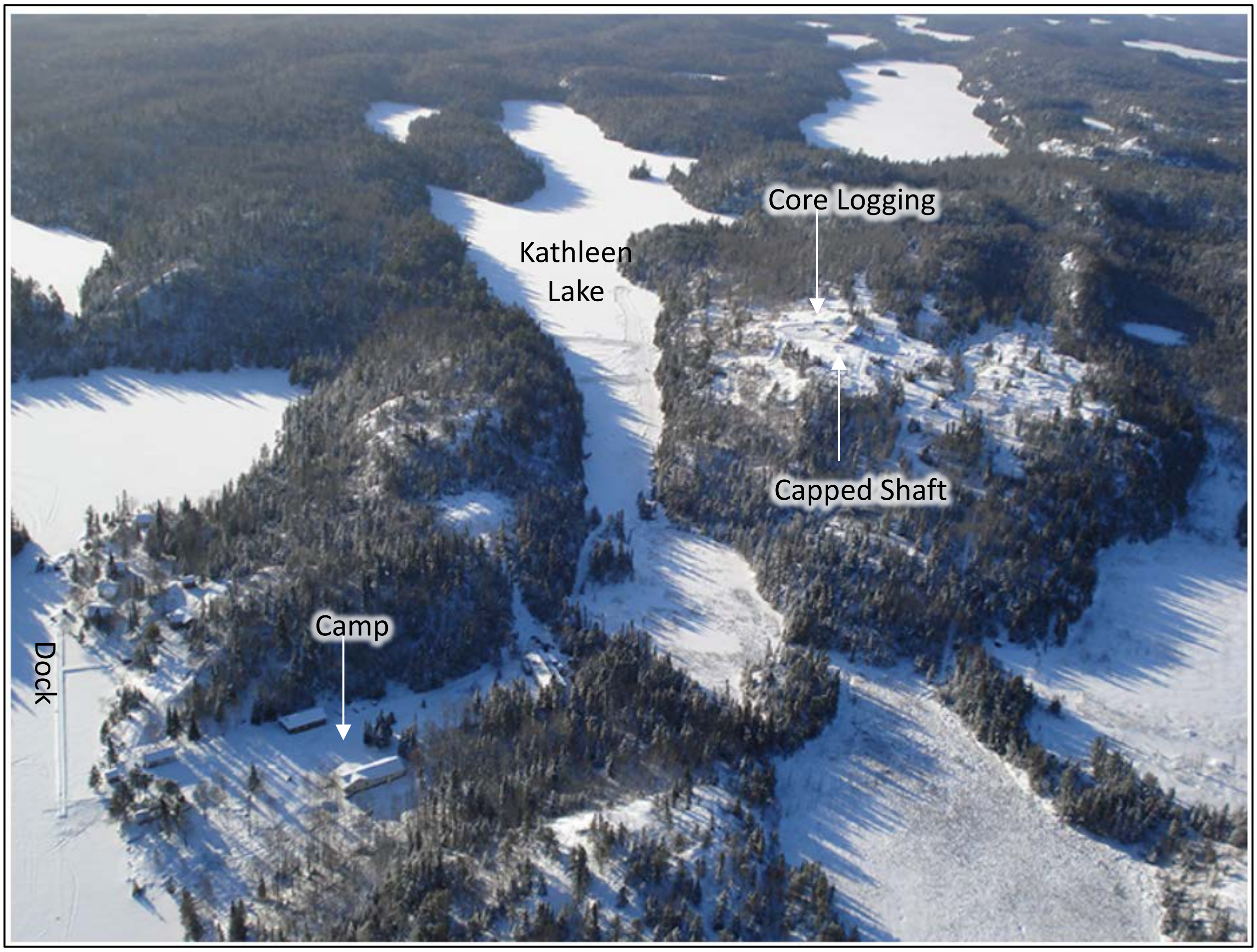
18.2 PROPOSED INFRASTRUCTURE

A site layout plan of the proposed surface infrastructure for underground mining of the Project is presented in Figure 18.4. The building locations are for illustrative purposes only, and will require more detailed engineering studies to finalize the exact locations. Sufficient space exists on the Property to build mining infrastructure.

A 1,500 tpd process plant and laboratory will be located approximately 100 m from the shaft. Nickel and copper concentrates will be produced and temporarily stored in a covered building before transport by truck to smelters. A truck weigh scale will be installed at the concentrate storage and load-out facility. A hydraulic backfill plant will be located at the process plant. Other infrastructure located near the shaft will include a change house, administration offices, first aid station and mine rescue training facility, diesel storage and fuelling facilities, a maintenance shop, warehouse, cold storage building, and water retention and treatment facilities. A septic system will be installed for sanitary waste water. Potable water will be sourced from a nearby lake and will be treated to make it potable if necessary. A tailings storage facility will be situated approximately 1.5 km south of the process plant. An explosives storage facility will be located just north of the tailings storage facility.

There will be no camp at the mine site for production personnel or contractors, and employees will be expected to travel from nearby communities.

FIGURE 18.1 AERIAL VIEW OF EXISTING INFRASTRUCTURE ON THE KENBRIDGE PROPERTY (LOOKING SOUTH)



Source: *Tartisan website (2020)*

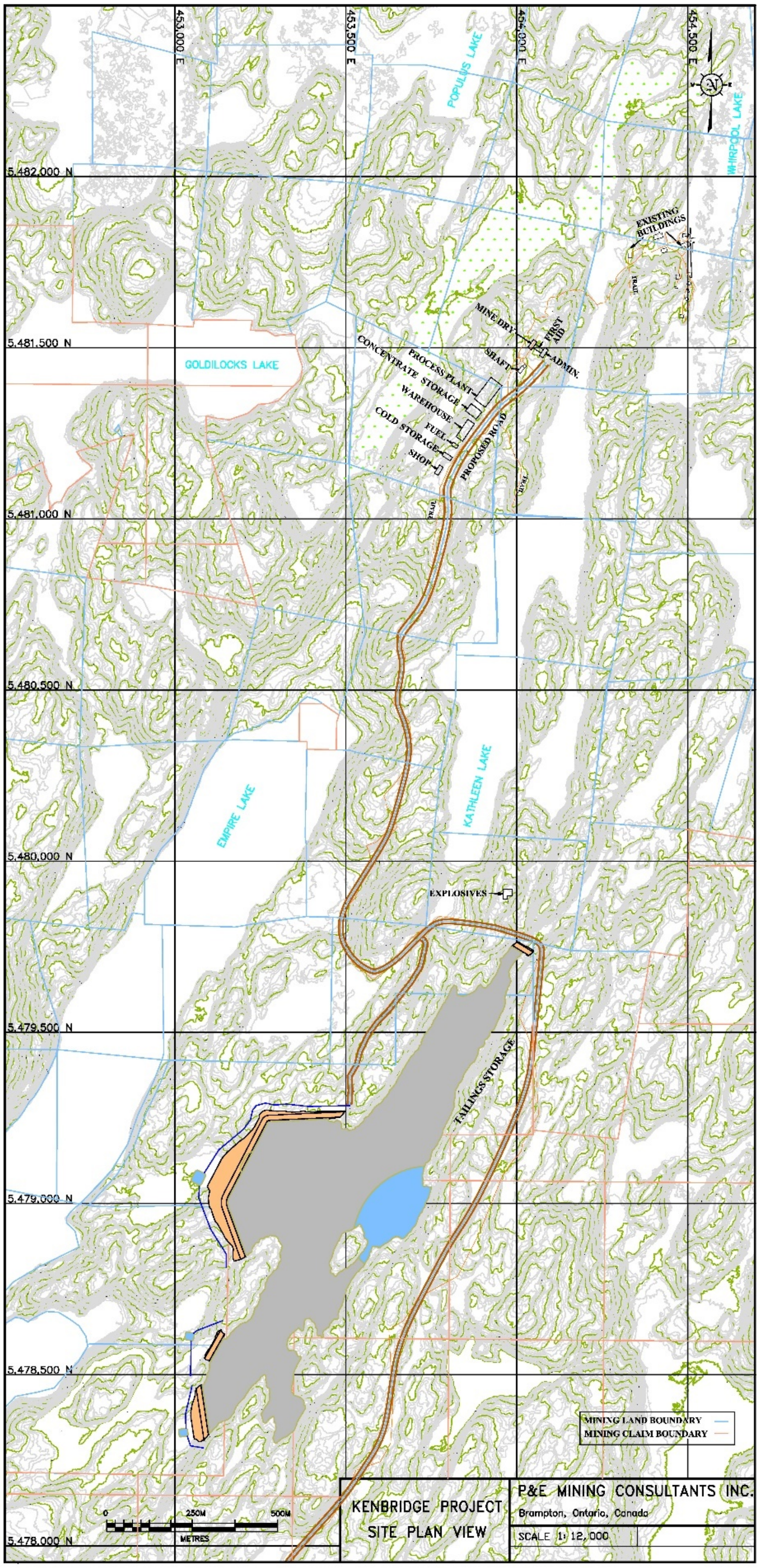
FIGURE 18.2 CORE LOGGING FACILITIES AT THE KENBRIDGE PROPERTY

Source: *Tartisan (2022)*

FIGURE 18.3 WORKSHOP FACILITIES AT THE KENBRIDGE PROPERTY

Source: *Tartisan (2022)*

FIGURE 18.4 PROPOSED PROJECT SITE LAYOUT



18.3 TAILINGS STORAGE FACILITY

Recommendations on a tailings storage facility ("TSF") were provided in July 2021 by KP for a larger project. The recommendations were for a combined open pit and underground operation that included the storage of approximately 6.6 Mt of tailings, and the authors of this Technical Report section (the "Authors") subsequently revised the construction quantities to suit an underground-only operation that required a smaller tailings storage capacity. Excerpts from the KP report are provided below.

Although no geotechnical investigations have been completed in the area of the TSF, DST carried out a site investigation in November 2007 to characterize the general soil, bedrock and foundation conditions at a planned settlement pond south of the Deposit, where 11 boreholes were completed (DST, 2008e).

The foundations soils were generally noted to consist of the following:

- Topsoil - A topsoil layer was encountered at the surface of all of the drill holes. The average thickness of the layer was 0.1 m below ground surface.
- Peat - The peat layer ranges from 0.3 to 4.5 m thick.
- Silt - A fine layer of silt was observed between the peat and the bedrock contact, typically found where the peat thickness was more prominent.
- Bedrock - Typically seen directly below the peat layer.

Site specific geotechnical investigations will be required for future levels of study to confirm the assumptions.

Key criteria for the TSF design basis are summarized below:

- The TSF embankment concepts have been developed to meet local and international standards for the design of mining facilities (CDA, 2019; MAC, 2019). The embankments include for adequate freeboard to provide ongoing tailings storage, operational water management, temporary storage of the environmental design storm ("EDS"), and conveyance up to and including the inflow design flood ("IDF"), plus an allowance for dry freeboard.
- The TSF is sized for the storage of 3.0 Mt of tailings. Thickened slurry tailings (typically 50% to 60% solids content by weight) will be deposited into the TSF from an overland pipeline and discharged into the basin from spigots installed around the perimeter of the facility. The settled dry density of the tailings had been assumed to be 1.5 t/m^3 for the duration of the Project.
- Surface water management systems (i.e., ditches and ponds) will be constructed to collect and temporarily contain all surface run-off from the 1 in 50 year, 24 hour storm.

Following settling/clarification, collected run-off will either be transferred to the process plant as process water, or released to the environment if water quality is acceptable. Run-off from storms greater than the design storm will report directly to the environment.

The TSF will be constructed as a single cell valley impoundment east of the Empire Lake and south of the proposed process plant location. The impoundment will be formed through the construction of three dams (North, West and South Embankments) with natural topography providing containment along the east side and ultimately over approximately 70% of the basin perimeter. The TSF development will include an initial starter embankment (Stage 1) followed by subsequent raises using the downstream construction method as required over the approximate nine-year mine life. The Stage 1 embankment has been sized for approximately 1.5 years of tailings storage plus capacity for water management, and wet and dry freeboard allowances. The Stage 1 facility includes the West and South embankments only. The North embankment will be required for later construction stages. The embankment will be raised in stages beyond Year 1 to its ultimate configuration to provide a total storage capacity of 3.0 Mt of tailings plus water management and freeboard.

The embankments will be constructed using non-PAG material sourced from mine waste rock and locally available materials. Select materials will be processed, as required, to produce bedding and transition zones with specific grain size distributions. The zoned embankment will be constructed with filter graded materials consisting of an upstream liner bedding (till, sand, processed mine rock), followed by a transition zone (crushed mine rock), and a downstream Run-of-Mine ("ROM") rockfill zone. The embankment will be constructed on a prepared foundation with organics and unsuitable materials removed from the embankment footprint. The embankment will be constructed with a 2.5 H:1 V upstream slope, a 2 H:1 V downstream slope and a 15 m wide embankment crest. A toe drain and foundation drain will be installed below the embankment to collect potential seepage and ensure adequate drainage of the embankment base.

A geomembrane lining system consisting of 80 mm, high density polyethylene ("HDPE") geomembrane underlain by 12 oz/yd^2 non-woven geotextile will be installed along the upstream face of the perimeter of the embankments. The geomembrane will be tied into anchor trenches along the embankment crest. The toe of the geomembrane will be placed in key-in trenches excavated and backfilled within the existing foundation soils along the upstream toe of the embankment (where applicable). Areas with exposed or near surface bedrock or steep topography will require the installation of a concrete plinth to anchor the lining system at the upstream toe of the dam.

Instrumentation consisting of vibrating wire piezometers, survey monuments and slope inclinometers will be installed within the foundation and embankment fill materials as required. The instrumentation will be monitored to verify embankment performance. Monitoring wells will be installed at suitable locations.

Tailings will be pumped as a thickened slurry tailing (typically 50% to 60% solids content by weight) from the process plant to the TSF via pipeline(s). Tailings will be deposited from multiple spigot locations around the perimeter of the TSF basin and upstream face of the TSF embankments to establish the supernatant pond against the eastern side of the natural valley impoundment. The tailings deposition strategy will allow for even filling of the basin and maximize tailings storage within the impoundment.

Although a detailed water balance has not been completed, the TSF is expected to operate in a water surplus. Meteoric and supernatant inflows to the TSF basin will be temporarily stored prior to reclaim to the process plant via a floating pump barge located at the east side of the basin. Adequate freeboard allowances for temporary storage of the EDS have been included within the proposed staging plan. The TSF will be equipped with an overflow spillway to accommodate flows above the EDS and up to the IDF.

Excess water from the TSF will be treated (if required) in a water treatment plant and discharged to the environment. Pump and pipeline systems for tailings deposition, water transfer, and water reclaim will be required to manage supernatant inflows and meteoric water within the TSF.

18.4 SITE WATER MANAGEMENT

The water management measures were designed to collect run-off from the overall site infrastructure areas and route the collected water to temporary settling ponds for sedimentation control. Run-off water will be discharged to the environment provided that acceptable water quality has been achieved. If the water quality objectives cannot be met within the ponds, treatment may be required. A water treatment has been planned to be installed at site.

The water management measures consist of diversion and collection ditches, settling ponds and excavated sumps. All water retaining structures will be constructed with non-PAG materials (i.e., mine rock) and will include a geosynthetic lining system to minimize seepage. Appropriate bedding and transition layers will be included. The settling ponds around the site have been sized to adequately retain the 1 in 50 year EDS with an additional metre of freeboard.

The following summarizes the water management details for key areas around the Project site:

- Process Plant Site - The water management measures will consist of two diversion ditches that will divert non-contact run-off away from the process plant site and into the adjacent valley. The process plant site will have a perimeter collection ditch that will drain into an excavated sump.

- TSF Perimeter - The water management measures for the TSF perimeter will consist of a series of collection ditches and excavated sumps to collect run-off from the downstream slopes of the TSF embankments. The retained run-off will be settled and discharged to the environment provided that adequate water quality can be achieved. Otherwise, the water will either be returned to the TSF or treated as required. Seepage collection drains, ditches, sumps, and pump back systems will also be installed to collect potential embankment seepage below the embankments.

18.5 RECOMMENDATIONS FOR FUTURE WORK

Key items recommended for further advancement and optimization of the TSF and site water management during the next level of design are summarized as follows:

- Complete geotechnical/hydrogeological site investigations to further characterize foundations of the TSF embankments and identify suitable borrow locations for construction materials.

- Perform stability analysis to refine and optimize embankment sections. The analysis should take into account the potential for soil liquefication and undrained strength conditions based on the updated site investigations.

- Perform seepage analysis to refine and optimize lining requirements and evaluate potential basin lining alternatives.

- Collection of site specific meteorological and hydrology data. This data will be used to refine seasonal run-off values and design storms to be used in future work.

- The catchment areas contributing run-off to the process plant, and the amount of groundwater inflow to the underground workings, should be confirmed based on the ultimate mine plan and site layout.

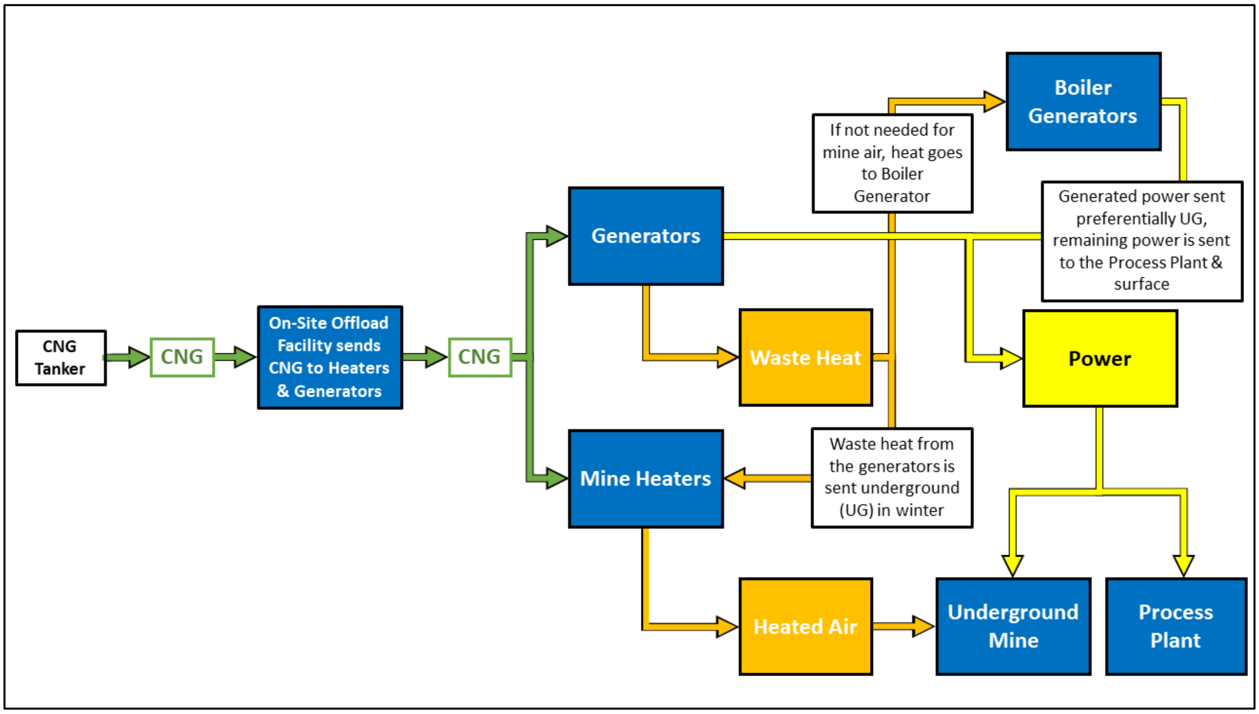
- A water balance should be completed for the TSF and site water management infrastructure.

- A predictive water quality model should be completed in conjunction with the water balance to review the requirements for water treatment and/or discharge.

18.6 PROJECT POWER GENERATION

The Kenbridge Project is located in a moderately remote area of north-western Ontario, and as such is not serviced by the existing power grid or hydrocarbon pipelines. Trade-off studies were performed to compare the cost of connecting to the Ontario Hydro power grid versus generating power on site, and it was determined that on-site power generation using Compressed Natural Gas (“CNG”) delivered overland by tanker truck was the most cost-effective method. Initial capital costs are much lower than constructing a high-voltage line to site, which more than balances out the higher cost per kWh over the LOM, and CNG provides a more environmentally friendly source of power compared to diesel generators since it produces approximately 25-30% less greenhouse gases. Additionally, the same fuel will be used for heating the mine intake air in winter, and for heating the surface facilities at the site, simplifying the supply chain. Waste heat from the CNG-powered generators will be recovered and used to pre-heat the air entering the underground mine in cold conditions or directed to a steam turbine to generate additional electrical power in warm conditions. Figure 18.5 shows the energy flow through this system.

FIGURE 18.5 POWER GENERATION PROJECT ENERGY FLOW



18.6.1 CNG Delivery and Storage Infrastructure

Compressed natural gas ("CNG") will be delivered by truck from facilities located off-site (either Red Rock, ON, or Winnipeg, MN). A trailer-mounted decant station will be installed at the site to reduce the tank pressures to suitable pressures for use in electrical generators and direct-fueled heaters. Total system throughput is estimated at 3.1 kt of CNG for power generation and 1.6 kt for direct-fueled heaters, for a total yearly throughput of 4.6 kt of CNG. Consumption of CNG varies significantly over the course of the year, with the maximum demand occurring in winter months when mine air heating is required. Demand during summer is approximately 8.4 tpd, while demand during winter (when mine air heating is required) is higher at 13.7 tpd.

On-site facilities for the storage of ~100 t of CNG will be installed to retain a one-week supply of fuel during periods of maximum consumption (winter months). Storage will be in tanker trailers at approximately 9.3 t/unit requiring 11 tankers on site to maintain the supply. It is expected that full tankers will be exchanged for empty ones on a daily basis. An average of six tanks per week during periods when there is no mine air heating, and 11 tanks per week during periods when there is mine air heating, will be required. Average demand over the year is approximately 9.5 tanks per week.

18.6.2 CNG Power Generation

Power generation for the Kenbridge site will utilize five 1,000 kW generators powered by CNG. A redundant generator will be installed to provide backup during periods of maintenance. Total maximum load for the site is expected to be approximately 4.7 MW under peak conditions.

18.6.3 Waste Heat Capture and Re-use

As generating power using CNG creates a significant quantity of waste heat, and the logistics and cost of moving and storing CNG is significant, any reduction in consumption will have a positive benefit to the site. As such, the waste heat from the generators will be directed to one of two paths: preheating the intake air for the underground (when necessary), or to a steam turbine electrical generator plant.

18.6.3.1 Pre-Heating of Mine Air

Modern heat exchangers are approximately 90% efficient. The Authors have estimated that 80% of the waste energy from the generators can be captured and directly exchanged with cold intake air to pre-heat it before it reaches the CNG-fueled heaters. It is estimated that approximately 43% of mine air heating demand can be provided from the heat exchangers over LOM, equivalent to 49 GWh of energy over LOM.

18.6.3.2 Steam Turbine Generator

During months where pre-heating of the mine air is not required, waste heat from the CNG generators will be directed to a steam turbine generator plant for conversion into electrical power. Modern large-scale industrial power plant efficiencies range from 65–90% for units over 1 MW. The Authors have assumed an efficiency of 80%, as the plant will be comprised of two 0.75 MW units. Over LOM, these units are expected to recover approximately 56 GWh of energy.

18.6.4 Batteries

Excess power generated from the steam turbine can also be used to charge on-site capacitor batteries.

18.6.5 Other Power Generation and Storage Methods

In an effort to reduce greenhouse gas, the Authors recommend that other power generation and storage methods be studied during future engineering work. Some alternatives would be:

- Wind and solar microgrid with battery storage. The Canadian Federal government is offering significant grants to projects that include Indigenous ownership; and
- On-site electricity storage options such as a gravity battery, compressed air battery, water battery, regular battery/capacitor.

19.0 MARKET STUDIES AND CONTRACTS

19.1 METAL PRICES AND FOREIGN EXCHANGE

The Author of this Technical Report section used the approximate Consensus Economics Inc. long-term metal price forecasts as of May 31, 2022 of US$10.00/lb Ni, US$4.00/lb Cu and US$26.00/lb Co for this PEA, with an exchange rate of 0.78 US$ per CAD$.

19.2 CONTRACTS

There are currently no material contracts in place pertaining to the Kenbridge Project. The Project is open to the spot metal price market and there are no streaming, forward sales contracts or concentrate off-take agreements in place.

19.3 MARKETS

The following is summarized from an article by Richard Mills published by Kitco Metals Inc. in March 2022.

19.3.1 Nickel

Nickel is used in stainless steel and electric-vehicle batteries. The largest-ever price increase on the LME began shortly after the US considered banning Russian crude oil imports in March 2022, as a result of the Russian invasion of Ukraine. Nickel prices have since subsided to approximately US$10/lb. Nickel prices were already increasing before the crisis began in late February 2022. Warehouse inventories were low and demand was strong for nickel to be processed into EV battery cathode material.

Russia is the third largest nickel producer in the world, in 2021 mining 250,000 t, including 193,006 t from Nornickel, the globe's top producer of refined nickel. Nornickel's output amounts to around 7% of global mine production, which in 2021 was 2.7 Mt, according to the US Geological Survey. Nornickel mines sulphide nickel, the kind best suited to lithium-ion batteries. Sulphide nickel deposits comprise 40% of nickel deposits found worldwide. The other 60% are nickel laterites. Sulphide nickel can be processed at relatively low cost, and with minimal waste, using simple flotation, compared to the more expensive processes used to refine nickel from nickel laterites found in the world's top nickel producers Indonesia, the Philippines and New Caledonia.

By 2030, UBS Group AG forecasts a large deficit of 2.2 Mt for battery metal. A more conservative estimate from Rystad Energy shows that demand for high-grade nickel used in electric vehicle (“EV”) batteries will outstrip supply by 2024. By then, global demand is forecast to climb to 3.4 Mt, compared to 2.5 Mt this year, while supply will grow to 3.2 Mt. The gap is then forecast to widen to a deficit of 0.56 Mt by 2026, driven by increased demand from the battery sector.

While batteries are not the dominant usage for nickel, that being stainless steel, electric vehicles' share of nickel demand has been growing at a faster rate and is forecast to continue to increase.

Wood Mackenzie estimates that of the 2.8 Mt demanded last year, 69% was used to make stainless steel and 11% to make batteries, up from 71% and 7% respectively in 2020. Batteries' share of demand is forecast to rise to 13% in 2022.

According to Rystad's latest report, nickel demand from the stainless-steel industry is forecast to grow at approximately 5% per year, while the market for batteries is forecast to increase substantially. "In an unconstrained supply scenario, batteries could require more than 1 Mt of nickel metal by 2030, quadrupling from the current demand of 0.25 Mt," the energy research firm said.

19.3.2 Copper

Copper has been subject to fast-rising demand over the past two years and plays a critical role in the modern economy. More than 20 Mt of the metal are consumed each year by a variety of industries; these include building construction, power generation and transmission, and electronic product manufacturing.

Roskill Information Services forecasts total copper consumption will more than double and exceed 43 Mt by 2035, driven by population and GDP growth, urbanization and electricity demand. In recent years, the global transition towards clean energy has increased demand. More copper will be required for renewable energy infrastructure, such as photovoltaic cells used for solar power and wind turbines. The metal is also a key component in transportation vehicles, and with increasing emphasis on electrification, its demand is forecast to increase as the modern EV uses approximately four times as much copper as regular internal combustion engine vehicles.

Copper consumption by green energy sectors alone is forecast to increase five-fold in the ten years to 2030, according to data from mining and metals consultancy CRU Group. S&P Global Market Intelligence predicts that due to a shortage of projects, copper supply will lag demand starting as early as 2025, with global mine production dropping from last year's 21.5 Mt to roughly 15.9 Mt in 2030. Diminishing supply from currently operating mines, combined with the projected increase in demand for copper concentrate over 2021-2030, would result in a production shortfall in 2025.

A similar timeline was recently forecast by Bank of America, which predicts the copper market to turn into a deficit as early as 2025 following the completion of the current wave of project buildouts.

Bloomberg NEF estimates that in 20 years, the world's copper miners must double the amount of global production, from the current 20 Mt annually to 40 Mt, just to match the demand for a 30% penetration rate of electric vehicles. This will be difficult considering some of the world's largest mines are seeing depleted copper reserves and lower ore grades, therefore it may be difficult for global production to even maintain a 20 Mtpa pace.

CRU estimates that without new capital investments, global copper mined production will drop below 12 Mt in 2034, leading to a supply shortfall of more than 15 Mt. According to CRU, there are over 200 copper mines that are expected to run out of ore before 2035, with not enough new mines in the pipeline to take their place.

Chile currently accounts for 30% of the world's copper supply. Recent data from Chile's statistics bureau shows that the nation's copper output decreased 2% in 2021 after weak performances from some of its largest mines. Escondida, the world's largest deposit, saw its production fall 4.4%, while the Collahuasi Mine recorded a 10% decrease. At just under 430,000 tonnes, Chile's January 2022 copper output represents its lowest monthly output since 2011, which may be a sign of what's to come in the copper market and a harbinger of declining mine production. Copper grades have declined approximately 25% in Chile over the last decade. Water scarcity is also forecast to hinder Chile’s ability to produce. Additionally, Chile has proposed nationalization of its copper industry, although the constitution still has several hurdles to overcome.

20.0 ENVIRONMENTAL STUDIES, PERMITS, AND SOCIAL OR COMMUNITY IMPACTS

A summary of historical consultations with local First Nations, nearby communities, and regulatory provincial and federal government agencies is presented in section 6 of this Technical Report, along with discussions on historical environmental baseline studies.

20.1 SUMMARY

The Property owned by Tartisan is located approximately 70 km southeast of the Town of Kenora, Ontario. The Property is accessible via gravel roads from paved Ontario Highway 71. The Property consists of both patented and unpatented mining claims covering an area of 3,877.58 ha and 230.84 ha of mining leases. The Property was previously developed between 1956 and 1958 by Kenbridge Nickel Mines Limited. Historical development included the construction of a 622 m deep exploration shaft and associated underground workings including drifts and crosscuts to allow for underground exploration. Surface structures on the Property include an access road, camp facility, drill core logging facility, old building foundations, and waste rock.

The underground mine and process plant will produce mineralized material at a nominal rate of 1,500 tpd to produce approximately 70 tpd and 23 tpd respectively of nickel and copper concentrates.

In 2007, Canadian Arrow Mines Limited ("Canadian Arrow") began evaluating the Property by completing a National Instrument 43-101 Technical Report and initiated environmental baseline studies and First Nation consultation activities. The environmental baseline studies were conducted by DST Consulting Engineers Inc. ("DST") and provided information regarding the following baseline components:

- surface water quality; and
- hydrogeology.

Knight Piésold Consulting and Blue Heron Environmental were retained by Tartisan to reinitiate the baseline study program in the spring of 2022. Additional environmental studies will be required to support the development and permitting of the Project. The permitting process and environmental studies are outlined in the following sections.

20.2 REGULATORY FRAMEWORK

The construction, operation, and closure of the Project will require both federal and provincial regulatory approvals/authorizations. The preliminary federal and provincial permitting processes and regulatory requirements are outlined in the following sections.

20.2.1 Federal Permitting Process

The Project does not fall under the applicable Physical Activities Regulations (SOR/2019-285) of the Impact Assessment Act, 2019 ("IAA"), which include:

- Section 18(c): "The construction, operation, decommissioning and abandonment of a new metal mine, other than a rare earth element mine, placer mine or uranium mine, with an ore production capacity of 5,000 tpd or more"; and
- Section 18(d): "The construction, operation, decommissioning and abandonment of a new metal mill, other than a uranium mill, with an ore input capacity of 5,000 tpd or more".

The potential federal regulatory requirements for the Project are summarized in Table 20.1.

TABLE 20.1
POTENTIAL FEDERAL ENVIRONMENTAL REGULATIONS, PERMITS, AND APPROVALS

Item	Applicable Act/Regulation	Responsible Agency	Description
Species at Risk Agreement or Permit	Species at Risk Act	Environment and Climate Change Canada	Required if the Project will harm or disturb a listed species or a species critical habitat.
Migratory Birds	Migratory Birds Convention Act	Environment and Climate Change Canada	Protection and conservation of migratory birds and their nests.
Manufacturing, Storage and Transportation of Explosives	Explosives Act	Natural Resources Canada	The explosives contractor will be required to hold any applicable permits.
Metal and Diamond Mining Effluent Regulations	Fisheries Act	Environment and Climate Change Canada	Compliance – Environmental monitoring and reporting if discharges exceed a flow rate of 50 m^3 per day.
Authorization under section 35(2) - Harmful Alteration, Disruption or Destruction of Fish Habitat	Fisheries Act	Fisheries and Oceans Canada	May be required for the development of site infrastructure and construction of the tailings storage facility.
Authorization under Section 36(5) and Schedule 2 Listing under Metal and Diamond Mining Effluent Regulations	Fisheries Act	Environment and Climate Change Canada	Overprinting of water frequented by fish through the construction of the tailings storage facility.

20.2.2 Provincial Permitting Process

There are no specific provincial environmental assessment ("EA") requirements for mining projects in Ontario; however, some of the activities related to the development of the Project, including some ancillary infrastructure components, may require approval under one or more provincial Class EAs related to provincial permitting or approval activities.

The anticipated provincial permits and approvals are summarized in Table 20.2.

TABLE 20.2
POTENTIAL PROVINCIAL ENVIRONMENTAL PERMITS AND APPROVALS

Item	Applicable Act/Regulation	Responsible Agency	Description
Industrial Sewage Works – Environmental Compliance Approval	Ontario Water Resources Act	Ministry of the Environment, Conservation and Parks	Approval to construct sewage works for the treatment and discharge of water (effluent) to the environment.
Permit to Take Water	Ontario Water Resources Act	Ministry of the Environment, Conservation and Parks	Required for mine dewatering and the taking of surface water for domestic and/or industrial purposes (i.e., drilling) at rates greater than 50,000 litres per day.
Work Permits	Public Lands Act	Ministry of Natural Resources and Forestry	Approval for certain work activities on Crown land and shorelines of lakes and rivers (i.e., construction of an effluent outfall, pumphouse and intake pipe). Installation of culverts or bridges.
Closure Plan	Mining Act	Ministry of Mines	To allow for mine development, operation, and rehabilitation.
Work Permit/Approval	Lakes and Rivers Improvement Act/Mining Act	Ministry of Natural Resources and Forestry / Ministry of Mines	Construction of dams and dykes for settling ponds and tailings storage facilities. Further engineering design and consultation with the Ministries is required to determine if approval under the Lakes and Rivers Improvement Act will be required.
Forest Resource License or Permit	Crown Forest Sustainability Act	Ministry of Natural Resources and Forestry	Harvesting of merchantable timber as necessary for the construction of the Project.

TABLE 20.2 **POTENTIAL PROVINCIAL ENVIRONMENTAL PERMITS AND APPROVALS**			
Item	**Applicable Act/Regulation**	**Responsible Agency**	**Description**
Endangered Species Act Permit	Endangered Species Act	Ministry of the Environment, Conservation and Parks	Permit to authorize activities that are otherwise not allowed under the Endangered Species Act (e.g., harm or harass a species at risk or damage or destroy its habitat). Additional terrestrial studies are required to determine permitting requirements.
Class Environmental Assessment – Disposition of Crown Resources	Public Lands Act	Ministry of Natural Resources and Forestry	Approval to obtain surface rights/easement for the construction of Project related infrastructure on Crown Land (e.g., shoreline or bed of lakes/streams and any offsite infrastructure).
Class Environmental Assessment – Electricity Projects	Ontario Environmental Assessment Act	Ministry of the Environment, Conservation and Parks	Construction of Category B or C[1] transmission line or transformer stations

Notes: *1. Refer to Guide to Environmental Assessment Requirements for Electricity Projects (Ontario, 2011)*

20.3 SOCIAL OR COMMUNITY IMPACT

20.3.1 Land and Resource Use

The Property is located within the Kenora Mining Division, approximately 70 km east-southeast of the Town of Kenora, Ontario. The closest community to the Property is Sioux Narrows, which is located approximately 35 km west of the Project. The Property is situated between the southwest bay of Populus Lake, Betula Lake, and Empire Lake and the centre of the Property is located at 93° 38’ W Longitude and 49° 29’ N Latitude.

A maintained logging road, the Maybrun Road, connects the former producing Maybrun Mine, which produced nickel and molybdenum, with Highway 71 (north of Sioux Narrows). The turn-off to the Property, a bush road, is approximately 2 km along the Maybrun Road. The Property is located approximately 11 km along the bush road. The bush road was cleared of overgrowth and logs in late-2018 and early-2019 and was mostly accessible by ATV and snowmobile. The bush road is in the process of being upgraded in 2022 for vehicles. Access is also possible by float or ski-equipped aircraft from either Kenora, Sioux Narrows, or Nestor Falls, Ontario.

As mentioned previously, the Property consists of both patented and unpatented mining claims covering 3,877.58 ha and 230.84 ha of mining leases. The area forms a major component of the Kenora Forest and is a significant recreational tourist area. The Ministry of Natural Resources and Forestry (“MNRF”) Crown Land Use Policy Atlas has designated the Crown land surrounding the

Property as General Land Use Area (Policy ID G2250: Atikwa Lake) (MNRF, 2011). The Atikwa Lake area is situated within Kenora District and mineral potential in the area is considered to be relatively high (MNRF, 2011).

The area forms part of the Township of Sioux Narrows-Nestor Falls. The Ojibways of Onigaming First Nation and their Sabaskong Bay No. 35-D reserve is located approximately 38 km from the Property.

The primary land use in this area is for resource extraction and commercial tourism in a manner which recognizes the importance of sport fishing and the lake trout environment (MNRF, 2011). The property boundary of the Eagle-Dogtooth Provincial Park (W-LL-2363) is also located approximately 2 km north of the Property. The Rushing Winds Retreat Centre (i.e., a fly-in camp) is located nearby on the south end of Populus Lake; however, Canadian Arrow holds an agreement, made originally between the owners of the camp and Falconbridge Limited (now Glencore), to acquire the facility if a mining operation at the Property were to be constructed.

20.3.2 Archaeology Resources

Archaeological assessments have not yet been completed on the Property. As such, Stage 1 and Stage 2 archaeological assessments will be required prior to future Project development. The Stage 1 archaeological assessment is currently underway.

20.3.3 Indigenous Engagement and Consultation

Canadian Arrow (2010) indicated that Indigenous engagement activities began in 2008 to negotiate an Exploration Agreement with the Indigenous Communities located near the Project. A task force was formed by Treaty 3 with the direction of the Anishinaabeg of Kabapikotawangag Resource Council and representatives from the following communities:

- Naotkamegwanning First Nation (aka Whitefish Bay);
- Northwest Angle #33 First Nation;
- Northwest Angle #37 First Nation;
- Onigaming First Nation (aka Sabaskong);
- Big Grassy River First Nation; and
- Big Island First Nation.

Early engagement activities focused on communicating plans for exploration programs and project development. In 2008, Canadian Arrow developed an Exploration Agreement, with the task force, for the Project.

The Exploration Agreement is similar to a Memorandum of Understanding ("MOU") and provides a legal framework for the parties to respect each other's interests in the area and formalizes processes for employment and business opportunities for participating First Nations members and companies. In addition, and as part of the Exploration Agreement, Canadian Arrow in cooperation with the First Nations agreed to finance a community fund based on the level of exploration work completed at the Property, or in the Property area, and to complete a Traditional Ecological Knowledge (“TEK”) study on the Property.

The first ever Great Earth Law authorization, for a resource company, was also received from the Treaty 3 Grand Council for the Kenbridge access road construction.

Tartisan continues to develop positive relationships with its surrounding First Nations through its First Nation consulting partner Talon Resources and Community Development Inc.

Development of MOUs with each First Nation community will most likely be required prior to the Project entering the production phase.

20.3.4 Public and Agency Consultation

In 2007, Canadian Arrow held numerous public information sessions, in the surrounding communities, as well as inter-agency meetings with the various ministries of the Provincial and Federal governments to provide information about a mining project envisaged at that time.

One other owner is present on the Project lands – the Rushing Winds Retreat Centre, located nearby on the south end of Populus Lake. However, as mentioned above, Canadian Arrow holds an agreement between the Rushing Winds Retreat Centre owners and Falconbridge Limited (now Glencore) to acquire the facility if a mining operation at the Property were to be constructed.

20.4 ENVIRONMENTAL STUDIES

An overview of the environmental studies that were previously completed, and those that remain to support the future development of the Project, are outlined below. Tartisan has retained Knight Piésold Consulting and Blue Heron Environmental to reinitiate environmental baseline studies in 2022 to support the various permitting and approvals processes for the Project.

Phase 1 of the baseline study program was completed this spring and focused on the completion of the following time sensitive work:

- surface water quality sampling from 10 sites and stream flow monitoring during spring freshet;
- terrestrial baseline assessments, including breeding bird, vegetation, bat, and Species at Risk surveys; and
- installation of groundwater monitoring wells.

Phase 2 of the baseline study program has been initiated and includes the work:

- Fish community and habitat assessments on creeks and lakes surrounding the Project;
- Surface water quality sampling at the established sampling sites;
- Stream flow monitoring at the established hydrology sites;
- Groundwater quality sampling and groundwater level monitoring;

- Stage 1 archeology assessment; and
- Stage 1 geochemistry assessment.

20.4.1 Climate

The Project is located within a temperate zone with annual precipitation exceeding 100 mm. Temperatures range between -40°C in the winter to +30°C in the summer.

Regional long-term climate data can be obtained from the Environment Canada Kenora A Climate Station (1981 to 2010 climate normal). This station is located approximately 62 km from the Property and collects climate normal data and metadata for air temperature, precipitation, relative humidity, pressure, wind direction, wind speed, frost-free, visibility (hours), and cloud amount (hours).

Based on the close proximity of the Kenora A Climate Station to the Project, the collection of onsite weather data is not anticipated to be required.

20.4.2 Atmospheric Environment

The Ministry of Environment, Conservation and Parks ("MECP") has a network of ambient air monitoring stations across the province that collect air quality data. The information is provided to the public through Ontario's Air Quality Health Index ("AQHI") and has hourly concentrations of each pollutant.

The monitoring station closest to the Property (approximately 345 km away) is located in Thunder Bay, Ontario and is consistently in the range of low risk on the AQHI, which means the area has "ideal air quality for outdoor activities". The station measures the following air pollutants: ozone ("O_3"), particulate matter (< 2.5 microns in diameter ("$PM_{2.5}$")) and nitrogen dioxide ("NO_2"). There have been no recent exceedances of the Ambient Air Quality Criteria for any of the three measured pollutants in the Thunder Bay area (MECP, 2021).

Based on the remoteness of the Property and current knowledge of the surrounding land use, it is anticipated that the available atmospheric data will be suitable for the Project. Project specific air quality studies are not anticipated to be required to support the proposed Project unless a Federal Environmental Assessment is required under the IAA.

20.4.3 Surface Water Hydrology and Quality

DST was retained by Canadian Arrow in June of 2007 to undertake hydrological monitoring at the Property. Results from the study are provided in DST (2008d) and summarized below.

Hydrometric stations were installed at the proposed tailings storage facility outlet ("proposed TSF outlet") to Empire Lake, the Goldilocks Lake outlet, and the Empire Lake outlet. A monitoring location was also proposed for the Betula Lake inlet; however, the area did not have a suitable, confined channel to install a hydrometric station.

The hydrometric stations were installed at the TSF outlet on 15 July 2007, the Goldilocks Lake outlet on 16 July 2007, and the Empire Lake outlet on 22 August 2007. The stations were set to gather data from the time they were installed to the time they were removed on 30 November 2007 (proposed TSF outlet) and 1 December 2007 (Goldilocks Lake and Empire Lake outlets). Highly correlated stage-discharge curves were generated for all three hydrometric stations, based on the manual measurements collected throughout 2007. The hydrology network was re-established and expanded upon in the spring of 2022. Monitoring should continue for at least one year and the data should be compared to available regional long-term data (e.g., nearby Water Survey of Canada hydrometric stations).

Three locations were identified for the collection of surface water quality data in 2007. This previous study did not analyze samples for the parameters in Ontario Regulation 240/00 ("O. Reg. 240/00"), Part 5, or for field pH, temperature, dissolved oxygen, total ammonia, and unionized ammonia to compare to Provincial Water Quality Objectives. Water quality sampling was reinitiated in 2022 and should continue for a period of at least one year within the potentially impacted water bodies to support future permitting and engineering design.

An assimilative capacity study will be required to support the Industrial Sewage Works Environmental Compliance Approval application. As such, surface water quality sampling, as well as ongoing characterization of the local hydrological regime, throughout all hydrologic conditions, should be continued within the proposed receiving waters and continue until production commences (to support permitting activities), at which time the permits and approvals will dictate the operational and post-closure monitoring requirements.

20.4.4 Hydrogeology and Groundwater Quality

20.4.4.1 Water Well Records

There are no domestic water wells within 24 km of the historical mine shaft. The Rushing Winds Retreat Centre is located 4.6 km from the shaft location. This facility pumps water from Whirlpool Lake for domestic water purposes.

Groundwater monitoring wells have not been installed. The previous baseline hydrogeology and groundwater quality study utilized the existing diamond drill holes and temporary monitoring wells installed by hand to monitor for changes in water levels within the local wetlands during a pump test.

20.4.4.2 Local Hydrogeology and Groundwater Quality

DST was contacted by Canadian Arrow to carry out a hydrogeological study, which concluded that a screening of potential impacts related to dewatering the existing shaft workings had indicated that an adjacent wetland (located down gradient and to the northeast of the shaft) was potentially at risk and may require mitigation. In 2007, five existing boreholes were selected as pump and/or observations wells for this study. Results from the study are provided in DST (2008e) and summarized below.

The field investigation was carried out between 18 December 2007 and 22 December 2007, and consisted of the following tasks:

- selection of observation wells and pumped well locations;
- installation of standpipes and soil sampling in the wetland;
- a preliminary specific yield test and well recovery test at the pumped well; and
- a 48-hour constant discharge pumping test and monitoring of water levels in the pumped well and observation wells.

Preliminary calculations of groundwater flow predicted a groundwater flow into the shaft of 3,500 m^3 per day. The actual flow rate may vary from 500 to 3,500 m^3 per day, due to the non-uniform subsurface conditions, the radius of the cone of depression, and the recharge/barrier boundary condition.

To support the development of the underground mine it is recommended that a numerical groundwater model be developed to predict inflow rates into the underground workings and to further characterize the potential impacts. The results of the numerical modelling will also support future permitting activities and design of the water management infrastructure for the Project.

A groundwater quality monitoring program was initiated in the spring of 2022 to characterize the aquifers within the vicinity of the proposed Project including the tailings storage facility. The groundwater quality program should be conducted monthly for at least one year to capture any temporal variations. Additional hydrogeological studies (continuous groundwater level measurements, slug tests, and packer testing) should be completed to support the numerical groundwater model and to better characterize the local hydrogeological conditions.

20.4.5 Aquatic Environment

The Property is located within Fisheries Management Zone 5 ("FMZ 5"), which is an area of 44,360 square kilometres consisting of 5,000 lakes (Ontario, 2021). The lakes within FMZ 5 are prominent fisheries for Walleye, Lake Trout, Northern Pike, Smallmouth Bass, Black Crappie, Lake Whitefish, and Muskellunge. As per MNRF (2021a), Goldilocks Lake is known to contain Walleye and Populous Lake is known to contain a variety of cold and cool water fish species including: Burbot, Cisco, Lake Trout, Lake Whitefish, Northern Pike, Rock Bass, Smallmouth Bass, Pumpkinseed, Walleye, White Sucker, and Yellow Perch.

Baseline aquatic assessments were initiated in the summer of 2022 within the creeks and lakes surrounding the Project. Baseline aquatic studies will characterize the existing fish communities, fish habitat, sediment quality, and benthic macroinvertebrate communities within potentially impacted waterbodies. The baseline fish and fish habitat assessments within streams and/or lakes that may be overprinted by Project infrastructure, such as the tailings storage facility, will require multiple season data collection to support future permitting activities.

20.4.6 Terrestrial Environment

Terrestrial baseline studies, including breeding bird, vegetation, bat, and Species at Risk surveys were initiated in the spring of 2022. Terrestrial information for the Property and surrounding area was obtained from the MNRF Natural Heritage Area Maps (MNRF, 2021b). In the surrounding area (100 km), the MNRF has identified natural and wildlife concentration areas such as:

- Dryberry Lake Conservation Reserve;
- Eagle-Dogtooth Provincial Park;
- Forest Reserves;
- Colonial Waterbird Nesting Areas; and
- Mixed Wader Nesting Colonies.

Forested or wetland vegetation in the area that are considered to be of conservation concern included the following: the Hooker's Orchid, Northern Marsh Violet, Slim-leaved Goosefoot, Western Wheatgrass, Vasey's Rush, Greater-round Leaved Orchid, Fan Ramalina Lichen, Heart-leaved Alexanders, Golden-eye Lichen, Floating Marsh Marigold, and Dryland Ragwort.

The Yellow-banded Bumble Bee was identified as the only inspect Species at Risk documented within this area; however, its status was only considered "Special Concern" as of 2016, which means it is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats (MNRF, 2021b).

Woodland Caribou (Threatened) and the American Badger (Endangered) were the only mammals that were identified within 100 km of the Property as Species at Risk.

Seven bird species were also identified as Species at Risk (Special Concern), including the Bald Eagle, Olive-sided Flycatcher, Yellow Rail Bobolink, Short-eared Owl, Canada Warbler, and the Red-necked Grebe.

The only fish species identified in the area as a Species at Risk was Lake Sturgeon (Endangered), which was located in the Whitewater and Crackshot Lake areas (approximately 83 km northeast of the Property), while the Snapping Turtle was the only reptile species considered to be at risk in the area (MNRF, 2021b).

The need for additional terrestrial baseline studies will be determined based on the results of the desktop and field studies completed in 2022.

20.4.7 Geochemical Characterization

Geochemical characterization of mineralized material, concentrate, tailings, and waste rock materials has been initiated by Knight Piésold. Geochemical characterization of these materials will be required to determine their acid rock drainage and metal leaching potential. This geochemical data will be used to inform the development of operational waste and water management plans and rehabilitation measures.

20.5 MINE CLOSURE PLAN

The Project involves the development of an underground mine, process plant, tailings and water management infrastructure including collection ditches, settling pond(s), water treatment system, and ancillary infrastructure. A production phase Closure Plan, and associated financial assurance, will need to be filed with the Ministry of Mines before development of the Project can begin.

The production phase Closure Plan will be prepared for submission to the Ministry of Mines in accordance with O. Reg. 240/00. *Mine Development and Closure Under Part VII of the Act.* The scope of the Closure Plan will also include the rehabilitation of any remaining unrehabilitated historical mine hazards and infrastructure (i.e., exploration shaft, underground workings, buildings, foundations, waste rock, etc.).

Closure of the Project will be completed in accordance with the O. Reg. 240/00 (as amended) with the fundamental considerations being to ensure physical and chemical stability of the Property in order to protect human health and the environment. Rehabilitation of the Property will meet the requirements of the Mine Rehabilitation Code of Ontario (Schedule 1 of O. Reg. 240/00 (as amended)); (the "Code")).

The five main closure activities include:

- decontamination/decommissioning;
- asset removal;
- demolition and disposal;
- rehabilitation; and
- monitoring and reporting.

Progressive rehabilitation will be completed throughout the life of the Project whenever feasible. Progressive rehabilitation activities will focus on the demolition and disposal of unused buildings and infrastructure, as well as the removal of unused equipment and machinery. Progressive rehabilitation of tailings areas, waste rock piles, and other inactive areas will take place when these areas become available. Progressive rehabilitation reports will be filed with the Ministry of Mines in accordance with O. Reg. 240/00.

20.5.1 Decontamination/Decommissioning

Surface facilities and the underground workings will be decontaminated and decommissioned as necessary. Surplus chemicals and other hazardous materials will be removed and stored in designated temporary storage facilities. Sumps will be cleaned. All hazardous materials will be disposed of at approved offsite facilities licenced to receive the specific waste materials.

Empty tanks will be removed from the Property and sold as scrap or for reuse by others. Otherwise, they will be transported to an approved waste management facility. Old fuel tanks will be managed by a contractor licensed to handle these types of tanks. Any remaining fuel will be removed by the contractor and then the contractor will remove the tanks from the Property.

No waste management sites will be present upon completion of the Project as waste materials (e.g., domestic and industrial hazardous and non-hazardous) will be hauled offsite and disposed as mandated by the applicable regulations.

20.5.2 Asset Removal

Salvageable machinery, equipment, and other materials will be dismantled and taken offsite for resale or recycling. Remaining items will be transported to an offsite waste management facility.

20.5.3 Demolition and Disposal

All permanent structures that cannot be removed from the Property as a saleable asset, will require demolition. Most process equipment and non-supporting structures will be removed from buildings prior to demolition and the buildings will be demolished.

During demolition, dust control will be required due to the potential presence of mineral dust. An initial wash down may be necessary in addition to the dust control of demolition debris as structures are disturbed during demolition. The requirement and duration of misting will be determined on a case-by-case basis.

A review prior to the start of demolition will identify areas requiring additional mitigation. Where possible, dust generating materials will be removed prior to demolition. Appropriate personal protective equipment and personnel decontamination procedures will be employed.

Valuable recyclable materials will be separated and processed for transport and sale concurrent with demolition. Excavators equipped with grapples will sort the recyclable products from the non-recyclables. Shears will be used to size recyclables for shipping and sale. Cleaning procedures of recyclables will be integrated into demolition, as necessary.

Concrete basements and foundations will be left in place. Any portions of concrete foundations remaining above grade will be levelled and rebar will be cut-off at grade. Basements will be backfilled. Large slabs will be perforated on a 2 m grid to permit drainage. Concrete slabs will be covered with 0.3 m of development rock or locally stockpiled overburden.

The demolition process will produce:

- saleable recyclable materials (steel, stainless steel, copper, steel sections, and sheet metal);
- hazardous materials;
- roofing materials and insulation;
- wood; and
- concrete.

Saleable recyclable materials will also be transported offsite as scrap or recycled.

Hazardous materials will be handled and disposed of in accordance with the appropriate regulations and industry standard practice. Where possible, chemicals will be mixed to produce a neutral solution and disposed of in the tailings pond. Remaining hazardous materials such as spent chemicals (that cannot be managed onsite), waste oil, and sludges will be disposed offsite at licensed facilities.

Non-hazardous waste materials such as roofing materials, insulation, wood, co-mingled concrete and all recyclables will be disposed offsite in a licenced landfill.

20.5.4 Rehabilitation Activities

An overview of the rehabilitation activities that will be completed for main project components is provided below. The main project components that will require rehabilitation at closure include the:

- underground workings and openings to surface from the underground workings;
- tailings storage facility;
- transportation corridors and laydown areas;
- ancillary infrastructure;
- contaminated soils;
- waste rock and overburden piles;
- water impoundments; and
- historic mine hazards which have not already been progressively rehabilitated.

Detailed descriptions of the rehabilitation requirements for the above components are provided below.

20.5.4.1 Underground Workings and Openings to Surface

The closure of the underground mine will require the following activities:

- removing pumps, rolling equipment, oils, fuels, solvents, and all hazardous materials;
- allowing the underground workings to naturally flood;
- demolishing aboveground infrastructure (i.e., fans, heaters, collars, etc.);
- backfilling or construction of a barricade in the portal, to prevent inadvertent access while the workings are flooding, in accordance with the Code;
- capping or backfilling raises and other openings to the surface, to prevent inadvertent access, in accordance with the Code; and
- assessing the stability of any remaining crown pillars, and if required, rehabilitating them in accordance with the Code.

20.5.4.2 Tailings Storage Facility

The tailings dams will be designed and/or modified at closure to ensure their long-term physical stability. Decant structures will be decommissioned and replaced with engineered spillways. The dams will be inspected on a defined monitoring schedule during the active and passive closure phase in accordance with applicable legislation.

Once the geochemistry data is available for the tailings, the closure plan for the tailings will have to be finalized. However, it is assumed that the closure of the tailings storage facility may involve the following activities:

- recontouring of the tailings surface to promote drainage; and
- construction of an engineered soil cover consisting of a low permeability layer to minimize infiltration of water; placement of topsoil; and revegetation.

20.5.4.3 Transportation Corridors and Laydown Areas

Transportation corridors will be graded to promote drainage, scarified, and revegetated. Access roads required for post-closure monitoring will be left “as is” and maintained to permit access.

Laydown areas will be scarified, covered with 0.1 m of stockpiled overburden or topsoil, and vegetated with native self-sustaining species.

20.5.4.4 Ancillary Infrastructure

Rehabilitation of ancillary infrastructure components involves the following:

- decommissioning and removal of power transmission lines and electrical infrastructure once they are no longer required to support passive closure activities (e.g., post closure water treatment if required);
- decommissioning and removal of pipelines;
- scarifying corridors and allowing them to naturally revegetate; however, portions of the corridor located near sensitive environments, or that are easily eroded, will be seeded to enhance the physical stability; and
- decommissioning and removing the water treatment plant and appurtenances once water quality meets discharge requirements without treatment.

20.5.4.5 Contaminated Soils

Soil testing will be conducted in any areas of known or suspected contamination and/or potential spills, including areas around chemical, fuel, and explosive storage areas. Testing will be conducted according to industry standard procedures and the analytical results compared to the soil standards for use under Part XV.1 of the Environmental Protection Act. Table 3, Full Depth Generic Site Condition Standards in a Non-Potable Groundwater situation. This assessment will determine whether any soils require remediation/management. Contaminated soils will be excavated and hauled offsite by licenced contractors to licensed facilities.

20.5.4.6 Waste Rock and Overburden Piles

Any remaining waste rock will be rehabilitated, based on the geochemistry results. This rehabilitation may involve contouring to ensure long-term stability, application of a layer of growth media such as overburden, and vegetating with self-sustaining species.

Remaining portions of the overburden stockpile will be re-contoured and vegetated with native self-sustaining species. The footprint of the overburden stockpile will be scarified to reduce compaction and vegetated with native self-sustaining species.

20.5.4.7 Water Impoundments

Water impoundment structures will be decommissioned once they are no longer required for water management. Berms and/or dams will be breached and re-contoured to restore natural drainage. Any liners will be removed and hauled to an offsite landfill. The footprints of impoundment areas will be vegetated with native self-sustaining species.

20.5.4.8 Historic Mine Hazards

Any remaining historical mining hazards or features will be secured in compliance with the Code.

20.5.5 Monitoring and Reporting

Following closure, physical, chemical, and biological monitoring of the Property will be conducted to ensure that the Property is chemically and physically stable. The monitoring programs will be designed and conducted in accordance with the Code. The following is a summary of the anticipated monitoring programs:

- Surface Water Quality Monitoring Program;
- Groundwater Quality Monitoring Program;
- Physical Stability Monitoring Program; and
- Biological Monitoring Program.

The monitoring programs will be conducted until the objectives of the Closure Plan are met. Reports will be submitted to the Ministry of Mines in accordance with the Closure Plan.

21.0 CAPITAL AND OPERATING COSTS

The total estimated cost of the Kenbridge Project is $541.4M, equivalent to $114.79/t, over two years of pre-production and nine years of producing life, including all capital costs, operating costs, and royalty payments, excluding a $10.0M closure cost. Costs are provided in Q1 2022 Canadian dollars. The following subsections provide details of these costs.

As the Kenbridge site utilizes existing historical development, capital costs make up a larger portion of overall costs than would otherwise be expected, as mineralization exists in relatively close proximity to the shaft (limiting on-level transport costs), existing level spacings in the top 600 m of mineralization are on 46 m intervals (reducing on-level development costs), and mineralization below the shaft has a relatively short truck haul (averaging ~ 160 vertical metres) prior to being hoisted to surface (limiting transport costs). These influences combine to decrease operating costs, increasing the overall proportion of capital costs.

The underground fleet, CNG infrastructure, and portions of the process plant machinery are acquired via a lease-to-own strategy. Terms include an initial down payment of 15%, 8.75% APR, and monthly payments for four years, and a small fee for contracts.

21.1 CAPITAL COSTS

The capital cost estimate addresses the engineering, procurement, and start-up costs of the Kenbridge Project, as well as ongoing sustaining capital expenditures over the life of the mine. These costs consist of: the initial preparation of the site; dewatering of old workings; expansion of the shaft; construction of surface infrastructure (process plant, backfill plant, headframe, tailings dam, etc); capital development; fleet and infrastructure purchases; and also costs for labour and expendables that would normally be associated with operating expenses, but occur prior to production and are therefore capitalized.

Major capital expenditures for the Project include:

- Expansion and refit of the existing shaft.
- Construction of the process and backfill plants.
- Installation of material handling systems, including passes, crushers and loading pockets.
- Underground capital development, including a ramp to access material below the shaft bottom, and a full underground shop.
- Installation of the underground ventilation system (including heaters).
- Acquisition of the underground mobile fleet.
- Installation of site utilities and services.

Initial capital expenditures (“CAPEX”) for the Project are estimated at $118.0M before contingency, $133.7M after, and include the preparation of the site for mining and processing; engineering, procurement, construction and management (“EPCM”); and owner’s costs during the pre-production process. Sustaining CAPEX for the Project is estimated at $82.5M before contingency, $93.1M after. Total CAPEX for the Project is estimated at $200.5M before contingency, $226.8M after.

No provision has been included in the capital cost to offset future escalation. All capital costs accrue a 15% contingency, excluding capital development. Table 21.1 presents a breakdown of capital cost estimates for the Project.

TABLE 21.1
CAPITAL COSTS

Area	Pre-Production Capital Costs ($ M)	Sustaining Capital Costs ($ M)	Total Capital Costs ($ M)[1]	LOM Cost per Tonne ($/t)
Site Preparation, Utilities, Services and General	7.9	4.1	12.0	2.65
Process Plant Equipment[2], Tailings, and Water Treatment	21.8	8.3	30.2	6.68
Process Plant Indirects, Laboratory and EPCM	15.0	0.1	15.1	3.33
Underground Fleet[2]	8.8	46.6	55.4	12.25
Underground Fixed Plant and Infrastructure	35.2	11.4	46.6	10.3
Underground Capital Development[3]	13.7	12.1	25.7	5.69
Capitalized Operating Costs	15.6	-	15.6	3.45
Subtotal	**118.0**	**82.5**	**200.5**	**44.36**
Contingency[3] @ 15%	15.7	10.6	26.2	5.80
Total[1]	**133.7**	**93.1**	**226.8**	**50.16**

1 Totals may not sum due to rounding.
2 Underground fleet is leased, as is a portion of the machinery in the process plant.
3 No contingency is applied to underground capital development as contingency has already been applied at the design stage.
EPCM = engineering, procurement, construction and management.

21.2 PRE-PRODUCTION CAPITAL COSTS

Pre-production capital costs are all costs incurred in YR-2 and YR-1. These include, but are not limited to:

- Preparation of the site and construction of facilities at the site (utilities, offices, etc.).
- Construction of the process plant, tailings dam, and water treatment infrastructure.
- Construction of the backfill plant and associated facilities at site.
- Acquisition of the underground fleet and fixed plant infrastructure.
- Expansion and refit of the shaft, and initial mine development.

- Costs that would normally be considered to be operating expenses ("OPEX"), but occur prior to the start of production and are therefore capitalized.
- Cost contingencies.

As provided in Table 21.1 above, pre-production capital costs total $118.0M before contingency, $133.7M after. The following subsections provide additional detail.

21.2.1 Site Preparation, Utilities, Services, and General Costs

Site surface infrastructure includes:

- Offices, gatehouse, warehousing, mine dry, reagent storage, fire protection.
- Roads, communications, potable water and water treatment, sewage infrastructure.
- CNG offload facility, generators, boilers, and heat recovery systems.

Total pre-production capital cost for this category is estimated at $7.9M, prior to contingency, and is shown in Table 21.2. The CNG offload facility, generators, boilers and heat recovery systems are acquired through a lease-to-own strategy. Lease interest on these items incurred during the pre-production period is capitalized and shown in Section 21.2.7.

TABLE 21.2
SITE PREPARATION, UTILITIES, SERVICES AND GENERAL CAPEX

Cost Area	Pre-Production Cost ($M)
Offices, gatehouse, warehousing, etc	3.4
Roads, communications, potable water and water treatment, etc.	2.4
CNG offload facilities, generators, boilers etc.	2.2
Total (pre-contingency)[1]	**7.9**

1 Totals may not sum due to rounding.

21.2.2 Process Plant, Tailings, and Water Management Costs

The process plant and associated tailings and water management systems include:

- Clearing, stripping/grubbing, excavation, construction, liners and instrumentation for the process plant and Tailings Storage Facility ("TSF"), including: ditching; ponds; basins; sumps; spillways; embankments, and general structure.

- Buildings, machinery, piping and fitment for the process plant.

Total pre-production capital cost for this category is $21.8M, prior to contingency, and is shown in Table 21.3. A portion of the process plant machinery is acquired through a lease-to-own strategy. Lease interest on these items incurred during the pre-production period is capitalized and is described later in this report section.

TABLE 21.3 PROCESS PLANT EQUIPMENT, TAILINGS AND WATER CAPEX	
Cost Area	**Pre-Production Cost ($M)**
Buildings, machinery, piping and fitment for process plant	19.3
Excavation, construction and fitment for TSF, process plant and water management facilities	2.6
Total (pre-contingency)[1]	**21.8**

1 Totals may not sum due to rounding.

21.2.3 Indirects, EPCM and Owner's Costs

Costs associated with the start-up of the project include:

- Equipment installation, freight, start-up, commissioning, critical spares for the process plant.
- General Engineering, Procurement, Construction and Management ("EPCM") costs.
- Owner's senior management, travel, supplies, equipment, and accommodation costs.

Total pre-production capital cost for this category is $15.0M, prior to contingency, and is shown in Table 21.4.

TABLE 21.4 PROCESS PLANT INDIRECTS, EPCM, OWNER'S CAPEX	
Cost Area	**Pre-Production Cost ($M)**
Process plant indirects	9.2
EPCM	3.4
Owner's costs	2.4
Total (pre-contingency)[1]	**15.0**

1 Totals may not sum due to rounding.
EPCM = engineering, procurement, construction and management.

21.2.4 Underground Fleet

The total pre-production capital cost for the UG fleet is estimated at $8.8M, prior to contingency. The entire UG fleet is planned to be acquired via a lease-to-own strategy. Lease interest on these items incurred during the pre-production period is capitalized. Mobilization is included in capital costs, as are costs associated with setting up financing.

21.2.5 Underground Fixed Plant and Infrastructure

The underground fixed plant and infrastructure category includes the purchase and fitment of materials, but excludes the cost of development and excavation, for:

- Ventilation systems, refuge stations and emergency egresses.
- Dewatering systems.
- Compressed air systems.
- Materials handling infrastructure, including grizzlies, dumps, and loading pockets.
- Backfill plant and distribution systems.
- Other general underground infrastructure and fitment, including the main UG maintenance shop and headframe/hoist.

Total pre-production capital cost for this category is $35.2M, prior to contingency, and is shown in Table 21.5.

TABLE 21.5
UNDERGROUND FIXED PLANT AND INFRASTRUCTURE CAPEX

Cost Area	Pre-Production Cost ($M)
Ventilation and emergency egress	7.3
Dewatering	2.6
Compressed air	1.0
Materials handling	4.0
Backfill plant and systems	7.9
Other UG infrastructure and fitment	12.4
Total (pre-contingency)[1]	**35.2**

1 Totals may not sum due to rounding

21.2.6 Underground Capital Development

Costs associated with underground capital development include:

- Shaft expansion (slashing, excavation and support).
- Levels and ramps.
- Ventilation and egresses.
- Materials handling (passes, pockets, dumps, bins, remuck bays, etc.).
- Other infrastructure.

Total pre-production capital development cost for the mine is estimated at $13.7M, prior to contingency, and is shown in Table 21.6.

TABLE 21.6 **UNDERGROUND DEVELOPMENT CAPEX**	
Cost Area	**Pre-Production Cost ($M)**
Shaft expansion	3.5
Ramp and level development	2.0
Ventilation and escapeways	2.3
Materials handling	5.1
Other infrastructure	0.7
Total (pre-contingency)[1]	**13.7**

1 Totals may not sum due to rounding

21.2.7 Capitalized Operating Costs

Items that would normally be considered OPEX that are incurred during pre-production YR-2 and YR-1 have been capitalized. These costs include, but are not limited to:

- Expenditures associated with operating underground development.
- Interest on lease payments.
- Indirect and G&A costs, including dayworks and sundries.
- Production operations, including test stoping, haulage and hoisting.
- Provision of underground services (power, water, compressed air, heating).

Total pre-production capital cost for this category is estimated at $15.6M, prior to contingency, and is shown in Table 21.7.

TABLE 21.7 **CAPITALIZED OPEX**	
Cost Area	**Pre-Production Cost ($M)**
Operating development	2.0
Interest on lease payments	1.6
Indirect and G&A costs	0.5
Production operations	8.0
Underground services	3.5
Total (pre-contingency)[1]	**15.6**

1 Totals may not sum due to rounding

21.2.8 Contingency

Contingencies are calculated as 15% of all capital expenditures, excluding capital development. Capital development has contingencies applied to development metres at the design stage equivalent to 15% of total metres.

Total pre-production capital cost for contingencies is estimated at $15.7M.

21.3 SUSTAINING CAPITAL COSTS

Sustaining capital ("SCAP") costs include all CAPEX associated with the expansion, upgrade, relocation or replacement of facilities and machinery necessary to support the operations of the Kenbridge mine that are incurred after the commencement of production in YR 1. These include, but are not limited to:

- Expansion or construction of additional surface facilities at the site.
- Expansion of the backfill distribution piping system.
- Acquisition and replacement of items of the underground fleet and fixed plant infrastructure.
- Underground capital development (ramps, remuck bays, level access in waste rock, infrastructure, raises, materials handling system, etc.)
- Cost contingencies.

Sustaining capital costs are estimated to total $82.5M. Table 21.1 above provides a summary of these costs, while the following sub-sections provide additional detail.

21.3.1 Site Preparation, Utilities, Services, and General Costs

Additional surface infrastructure CAPEX includes the ongoing lease payments for the CNG offload facility, generators, boilers, and heat recovery systems, as well as upgrades to the water treatment plant. The total SCAP cost for this category is estimated at $4.1M over the LOM, prior to contingency, and is shown in Table 21.8.

TABLE 21.8 **SURFACE INFRASTRUCTURE SCAP**	
Cost Area	**SCAP Cost ($M)**
Roads, communications, potable water, water treatment, etc.	1.5
CNG offload facilities, generators, boilers, etc.	2.6
Total (pre-contingency)[1]	**4.1**

1 Totals may not sum due to rounding.

21.3.2 Process Plant, Tailings, and Water Management Costs

Additional CAPEX for this category includes the ongoing expansion of surface water management facilities, as well as the ongoing lease payments for the leased portion of the process plant machinery. The total SCAP cost for this category is estimated at $8.3M over the LOM, prior to contingency, and is shown in Table 21.9.

TABLE 21.9 **PROCESS PLANT, TAILINGS, WATER MANAGEMENT SCAP**	
Cost Area	**SCAP Cost ($M)**
Buildings, machinery, piping and fitment for process plant	5.6
Excavation, construction and fitment for TSF and water management facilities	2.7
Total (pre-contingency)[1]	**8.3**

1 Totals may not sum due to rounding.

21.3.3 Underground Mobile Fleet

The underground mobile fleet is initially acquired during the pre-production phase of the Project, however, as all mobile equipment is acquired via a lease-to-own process, payments continue to occur into the production phase. As equipment reaches a point where it is no longer efficient to operate (nominally five years), it is replaced with new units of the same type under similar financial terms, with the exception of the surface haul truck, which is rebuilt once during the LOM instead of being replaced. Quantities of units in the fleet vary somewhat over time as usage requirements change: not all units taken out of service after reaching the five-year point are replaced, and additional units are added to the original fleet after this point in some cases.

The total SCAP cost for the underground fleet is estimated at $46.6M over the LOM, prior to contingency, as shown in Table 21.10.

Table 21.10 Underground Fleet SCAP	
Cost Area	**SCAP Cost ($M)**
Lease capital and mobilization	46.0
Rebuilds	0.6
Total (pre-contingency)[1]	**46.6**

1 Totals may not sum due to rounding.

21.3.4 Underground Fixed Plant and Infrastructure

Fixed plant and infrastructure for the Kenbridge mine includes costs for the same subcategories of items as described above in the pre-production CAPEX section, except that costs are incurred during production years. Costs of major rebuilds are included in the hourly operating costs of equipment and are included in OPEX. The total SCAP cost for underground fixed plant and infrastructure is estimated at $11.4M over the LOM, prior to contingency, as shown in Table 21.11.

Table 21.11 Underground Fixed Plant and Infrastructure SCAP	
Cost Area	**SCAP Cost ($M)**
Ventilation and emergency egress	3.9
Dewatering	0.4
Materials handling	2.2
Backfill plant and systems	0.5
Other UG infrastructure and fitment	4.7
Total (pre-contingency)[1]	**11.4**

1 Totals may not sum due to rounding.

21.3.5 Underground Capital Development

During the production period, capital development supporting the expansion of the mine to depth, as well as level development in existing areas, will be undertaken. This includes the development of ramps, level accesses, materials handling infrastructure, and both lateral and vertical infrastructure development. The total SCAP cost of underground capital development over the LOM is estimated at $12.1M, pre-contingency, as shown in Table 21.12.

TABLE 21.12 UNDERGROUND DEVELOPMENT SCAP	
Cost Area	**SCAP Cost ($M)**
Ramp and level development	8.1
Ventilation and escapeways	1.9
Materials handling	1.3
Other infrastructure	0.7
Total (pre-contingency)[1]	**12.1**

1 Totals may not sum due to rounding.

21.3.6 Contingency

Contingencies are calculated as 15% of all SCAP expenditures, excluding capital development. Capital development has contingencies applied to development metres at the design stage equivalent to 15% of total metres.

Total SCAP cost for contingencies is estimated at $10.6M over the LOM.

21.4 OPERATING COSTS

The operating cost estimate addresses the costs associated with ongoing operation of the Kenbridge mine after the start of production. These costs include, but are not limited to:

- Operating development within the mineralized zone, whether mineralized or waste rock.
- Mine production, including all operations at the working face/stope, transport to the loading pockets, hoisting to surface, and backfilling with pastefill.
- Processing of mineralized material, including all rehandling and transport on surface.
- Underground power consumption and mine air heating.
- Interest on leases.
- Indirect and G&A costs.
- Other items, including dayworks and sundries, delineation drilling and assaying.

Total OPEX for the operation is estimated at $292.2M from YR1 to YR9. Items normally considered to be OPEX that are incurred during the pre-production period (YR-2 and YR-1) have been capitalized.

No provision has been included in the operating cost to offset future escalation. No contingency is applied to operating costs. Table 21.13 presents a breakdown of operating costs for the mine.

TABLE 21.13
LIFE OF MINE OPERATING COSTS

Area	Total Operating Costs ($M)[1]	LOM Cost ($/t)
Sustaining Development	10.5	2.31
Production	105.0	23.23
Processing	80.2	17.74
Underground power consumption and mine air heating	16.7	3.69
Interest on leases	6.4	1.41
Indirect and G&A costs	67.6	14.95
Other items	5.9	1.31
Total	**292.2**	**64.64**

1 Totals may not sum due to rounding.

21.4.1 Sustaining Development

Sustaining development includes all direct costs associated with accessing the mineralized material after the initial development of the level access and infrastructure. It includes both waste material developed to access mineralized material, and in-stope development through mineralized material. Costs are inclusive of all consumables (including wear parts, fuel and lube), accrued equipment maintenance and rebuild costs, and direct maintenance labour, but exclusive of electrical power. Total OPEX cost for underground operating development is estimated at $10.5M over the LOM.

21.4.2 Production

Production includes all direct costs associated with drilling, blasting, excavating, transport (by mobile equipment, the hoist, and surface machinery), and backfilling of non-development areas. Included in the production cost are costs to hoist waste rock to surface and place it in temporary waste stockpiles for subsequent transport to the tailings pond embankment walls. Costs are inclusive of all consumables (including wear parts, fuel and lube), accrued equipment maintenance and rebuild costs, and direct maintenance labour, but exclusive of electrical power. Total OPEX cost for production is estimated at $105.0M over the LOM, as shown in Table 21.14.

TABLE 21.14 PRODUCTION OPEX	
Cost Area	**OPEX Cost ($M)**
Production	57.9
Backfilling	29.6
Haulage and hoisting	17.5
Surface waste transport	0.2
Total[1]	**105.0**

1 Totals may not sum due to rounding.

21.4.3 Processing

Processing includes all direct and indirect costs associated with the processing of mineralized material at 1,500 tpd, and the treatment and placement of tailings not used for CHF backfilling operations. Total OPEX cost for processing is estimated at $80.2M over the LOM.

21.4.4 Underground Electrical Power and Mine Air Heating

All electrical power consumed on the site is generated (directly or indirectly) from the combustion of CNG. Direct power generation comes from CNG generators, and indirect power generation from waste heat recovered from the generators. In addition, waste heat from the generators can be diverted from indirect power generation to preheat the mine air in cold conditions, although additional direct heating from CNG-fired burners will still be required.

Indirect power generation consumes no additional CNG and is itemized as a credit at the same cost per kWh as directly generated power ($0.117 / kWh). The unit cost for directly generated power includes all costs associated with the transport, offload, storage, and regulation of the CNG supply system, along with wear parts, fuel, and lubricants for the generators and steam turbine.

Total OPEX cost for power generation and mine air heating is estimated at $16.7M over the LOM, as shown in Table 21.15.

TABLE 21.15 POWER GENERATION AND MINE AIR HEATING OPEX	
Cost Area	**OPEX Cost ($M)**
Fleet power	6.7
Ventilation system	5.5
Dewatering system	5.2
Compressed air system	4.7
Mine air heating	0.5
Waste heat recovery	(5.9)
Total[1]	**16.7**

1 Totals may not sum due to rounding.

21.4.5 Interest on Leases

Interest on outstanding lease capital for the mobile fleet, CNG system, and process plant machinery is accrued during production years as OPEX. Total OPEX cost for interest on leases is estimated at $6.4M over the LOM, as shown in Table 21.16.

TABLE 21.16 INTEREST CHARGES ON LEASES	
Cost Area	**OPEX Cost ($M)**
Mobile fleet interest	5.4
CNG system and generators interest	0.3
Process plant equipment interest	0.6
Total[1]	**6.4**

1 Totals may not sum due to rounding.

21.4.6 Indirect Salaries and G&A

In addition to direct labour costs for the operation of the Kenbridge mine, significant quantities of support personnel are required to perform duties including, but not limited to: technical services (including assaying); site services; maintenance; supervision and management; health, safety and training; administrative, security, cleaning and IT roles. Furthermore, indirect items such as PPE, insurance, software licenses, community relations, consulting fees, etc., are also required to support the ongoing operations. Total OPEX cost for indirects and G&A is estimated at $67.6M over the LOM, as shown in Table 21.17.

TABLE 21.17 INDIRECT SALARIES AND G&A OPEX	
Cost Area	**OPEX Cost ($M)**
Indirect salaries	27.4
G&A	40.2
Total[1]	**67.6**

1 Totals may not sum due to rounding.

21.4.7 Other Items

Other OPEX items include items such as general underground construction (outside of major projects), delineation drilling, and assaying. Total OPEX cost for this category is estimated at $5.9M over the LOM, as shown in Table 21.18.

TABLE 21.18 OTHER OPEX	
Cost Area	**OPEX Cost ($M)**
Delineation drilling and assaying	4.8
Dayworks and sundries	1.1
Total[1]	**5.9**

1 Totals may not sum due to rounding.

21.5 ROYALTIES

The Project is subject to royalties of 3.5% of NSR, with the option to buy out 1% of the NSR for $1.5M. This buyout is planned to occur at the start of production (YR1). Table 21.19 shows the total estimated royalty cost over the LOM.

TABLE 21.19 ROYALTY COST		
Cost Area	**Operating Cost ($M)**	**LOM Cost per Tonne ($/t)**
NSR Royalty buy out	1.5	0.33
Royalty payable at 2.5% of NSR	20.9	4.63
Total[1]	**22.4**	**4.96**

1 *Totals may not sum due to rounding.*

Total costs associated with NSR royalty payments are estimated at $22.4M over the LOM.

21.6 CLOSURE AND SEVERANCE COSTS

Closure and severance costs are estimated at $10M to seal the shaft collar, cap the ventilation and egress raises, rehabilitate the Project site, and pay severance costs for employees.

21.7 CASH COSTS AND ALL-IN SUSTAINING COSTS

Cash costs over the LOM, including royalties, are estimated to average US$3.76/lb NiEq (CAD$4.82/lb NiEq). All-In Sustaining Costs ("AISC") over the LOM are estimated to average US$4.99/lb NiEq (CAD$6.40/lb NiEq) and include closure and severance costs.

22.0 ECONOMIC ANALYSIS

Cautionary Statement - The reader is advised that the PEA summarized in this Technical Report is intended to provide only an initial, high-level review of the Project potential and design options. The PEA mine plan and economic model include numerous assumptions and the use of Inferred Mineral Resources. Inferred Mineral Resources are considered to be too speculative to be used in an economic analysis except as allowed by NI 43-101 in PEA studies. There is no guarantee the Project economics described herein will be achieved.

Economic analysis for the Kenbridge Project has been undertaken for the purposes of evaluating potential financial viability. NPV and IRR estimates are calculated based on a series of inputs: costs (described in Section 21) and revenues (detailed in this section). Revenues are derived from estimated process recoveries and smelter payables.

Under baseline scenarios (financial parameters as per Table 22.1, OPEX and CAPEX as set out in Section 21), the overall after-tax NPV of the Project at a 5% discount rate is estimated at $109.1M ($182.5M pre-tax), with an IRR of 20% (26% pre-tax). This results in a payback period of approximately 3.5 years (3.4 years pre-tax).

TABLE 22.1
BASELINE FINANCIAL PARAMETERS

Item	Value	Units
Nickel Price	10.00	US$ / lb
Copper Price	4.00	US$ / lb
Cobalt Price	26.00	US$ / lb
Exchange Rate	0.78	US$ / CAD$
Discount Rate	5.0	Percent

A sensitivity analysis has been completed for after-tax NPV and IRR on a range of values, as shown in Table 22.2.

Table 22.2 Ranges of Analysis for Sensitivity by Variable						
Area	**Type**	**Units**	**Range of Values**		**Variance from Baseline**	
			Low	**High**	**Low**	**High**
Metal Price	Nickel	US$ / lb	$7.00	$11.00	-30%	+10%
	Copper		$2.80	$4.40		
	Cobalt		$18.20	$28.60		
	All Metals[1]		N/A	N/A		
Recovery to Concentrate[2]	Nickel	Percent	70%	86%	-15%	+5%
	Copper		76%	93%		
Payable	Nickel		78%	97%		
	Copper		64%	79%		
	Cobalt		35%	55%		
Discount Rate	Project		0%	10%	-100%	+100%
CAPEX	Project	CAD$ / t	$45.14	$65.21	-10%	+30%
OPEX	Project		$58.17	$84.03		

1 Calculation performed by varying all metal prices, not by NiEq calculation. As such, there is no specified Low or High range value.
2 Metal recovery to metal concentrate, e.g., Ni to Ni Concentrate. Co is ignored as there is no Co concentrate.

Exchange rate sensitivity has not been performed, as both costs and revenues are expected to be accrued in Canadian dollars. All costs in the financial analysis are in Q1 2022 Canadian dollars unless otherwise stated (metal prices are in US$).

22.1 PARAMETERS

The revenue, and therefore profit and NPV, of the Project are influenced by the parameters detailed in Sections 22.1 to 22.1.5. Cost estimates are detailed in Section 21.

22.1.1 Metal Prices and Exchange Rate

The metal prices are based on the approximate long-term nominal metal price forecasts from Consensus Economics Inc., as of May 31, 2022, and are detailed in Table 22.1.

An exchange rate of 0.78 US$ per CAD$, equivalent to 1.28 CAD$ per US$, has been used.

22.1.2 Discount Rate

A 5% discount rate was selected for the Project, as it is located near established mining areas, and has significant historical excavations. The local district hosts producing mines, giving the Project access to a significant skilled labour pool. Year-round road access is currently being constructed to the site. CNG supply, storage and power generation systems are available on the open market from existing companies in the area. Additionally, the primary commodity (nickel) is expected to experience demand outstripping supply for the foreseeable future.

22.1.3 Costing

Costing has been performed from first principles using input from industry databases (CostMine), factors derived from the experience of the Authors of this Technical Report at mines in northwest Ontario, and the current Canadian labour market. The mining method utilizes a proven extraction methodology (longhole stoping with CHF backfill) with predictable costs for consumables, equipment and labour.

22.1.4 Other Inputs

The economic analysis presented herein is valid for the production schedule in Section 16 of this Technical Report. The schedule includes a ramp-up period in YR 1 resulting in 58% of nominal process plant throughput in the first year. This ramp-up is modelled as an initial 35% throughput in Q1 of YR 1, increasing by a 1.35x multiplier each quarter until reaching 100% throughput in Q1 of YR 2, and remaining at nameplate capacity until production ends in Q4 of YR 9.

The production rate is set at 528 ktpa, which is assumed to be a 1,500 tpd throughput rate for 96% process plant availability providing 352 days per year of processing. Alternatively, the production rate can be viewed as ~1,450 tpd for 365 days per year.

LOM processing is estimated to recover 200,900 tonnes of nickel concentrate at 15% Ni and 66,900 tonnes of copper concentrate at 24% Cu, which results in 52.6 Mlb of payable Ni and 30.7 Mlb of payable Cu.

22.1.5 Royalties, Taxes and Depreciation

The Kenbridge Project is subject to a 3.5% NSR royalty. An agreement exists to buy out 1% of the NSR royalty for $1.5M, which is expected to be exercised, with payments occurring at the start of YR 1.

Taxes are estimated at 15% for Federal income tax, 11.5% for Provincial income tax, and an additional 10.0% for the Ontario Mining Tax, for a maximum tax rate of 36.5% on taxable income. The Author of this Technical Report section relied upon Tartisan's auditors and Chartered Professional Accountants at Clearhouse LLP in Mississauga, Ontario, for assistance with the taxation calculations in the financial model.

Over the LOM, it is estimated that a total of $104.7M will be paid in taxes on pre-tax cashflows of $285.6M, for a cumulative after-tax cashflow of $180.9M.

22.2 SIMPLIFIED FINANCIAL MODEL

Table 22.3 shows a simplified financial model for the Kenbridge underground Project, using baseline inputs (financial parameters as per Table 22.1, OPEX and CAPEX as set out in Section 21).

Table 22.3 Simplified Financial Model														
Item	**Units**	**YR-2**	**YR-1**	**YR 1**	**YR 2**	**YR 3**	**YR 4**	**YR 5**	**YR 6**	**YR 7**	**YR 8**	**YR 9**	**YR10**	**Total[1]**
Tonnes Mined & Processed	kt	-	-	308	528	528	528	528	528	528	528	517	-	4,521
Mined Grade (Nickel)	% Ni	-	-	0.78	0.80	0.92	1.13	0.84	0.76	0.74	0.70	0.63	-	0.81
Mined Grade (Copper)	% Cu	-	-	0.38	0.42	0.44	0.44	0.44	0.43	0.39	0.34	0.30	-	0.40
Mined Grade (Cobalt)	% Co	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	0.01
Nickel Concentrate Revenue	C$M	-	-	44.6	78.5	90.1	110.3	82.4	74.7	72.7	68.7	60.6	-	682.40
Copper Concentrate Revenue	C$M	-	-	10.0	19.0	19.9	19.9	19.9	19.5	17.7	15.4	13.3	-	154.57
Total NSR Revenue	**C$M**	**-**	**-**	**54.6**	**97.5**	**110.0**	**130.2**	**102.3**	**94.1**	**90.3**	**84.1**	**73.9**	**-**	**836.98**
Operating Cost	C$M	-	-	(26.1)	(35.2)	(36.1)	(34.2)	(34.7)	(35.4)	(31.6)	(30.4)	(28.5)	-	(292.2)
Royalties	C$M	-	-	(2.9)	(2.4)	(2.7)	(3.3)	(2.6)	(2.4)	(2.3)	(2.1)	(1.8)	-	(22.4)
CAPEX[2]	C$M	(36.8)	(96.8)	(20.7)	(17.5)	(12.1)	(9.9)	(11.5)	(4.7)	(4.8)	(5.1)	(6.7)	-	(226.8)
Working Capital	C$M	-	-	(4.4)	-	-	-	-	-	-	-	4.4	-	-
Closure Costs	C$M	-	-	-	-	-	-	-	-	-	-	-	(10.0)	(10.0)
Cash Flow (Pre-Tax)	**C$M**	**(36.8)**	**(96.8)**	**0.6**	**42.4**	**59.0**	**82.8**	**53.5**	**51.6**	**51.7**	**46.5**	**41.2**	**(10.0)**	**285.6**
Income Taxes	C$M	-	-	-	(0.1)	(0.4)	(17.5)	(20.1)	(18.0)	(18.3)	(16.6)	(13.5)	-	(104.7)
Cash Flow (After-Tax)	**C$M**	**(36.8)**	**(96.8)**	**0.6**	**42.2**	**58.6**	**65.3**	**33.3**	**33.6**	**33.4**	**29.9**	**27.6**	**(10.0)**	**180.9**
Cumulative Cash Flow (After-Tax)	C$M	(36.8)	(133.7)	(133.1)	(90.9)	(32.2)	33.0	66.4	99.9	133.4	163.3	190.9	180.9	180.9
Yearly After-Tax NPV Addition	C$M	(36.8)	(92.2)	0.6	36.5	48.2	51.1	24.9	23.9	22.6	19.3	17.0	(5.8)	109.1
Cumulative After-Tax NPV at EOY	**C$M**	**(36.8)**	**(129.1)**	**(128.5)**	**(92.0)**	**(43.8)**	**7.3**	**32.2**	**56.1**	**78.7**	**98.0**	**114.9**	**109.1**	**109.1**

1 Totals may not sum due to rounding

2 CAPEX expenditures include 15% contingency. All expenditures in YR-2 and YR-1 have been capitalized, including items that would normally be OPEX. The OPEX component accrues a 15% contingency.

C$M = millions of Canadian dollars.

Table 22.4 shows the NPV, IRR and payback period of the Project under baseline inputs.

TABLE 22.4
PAYBACK PERIOD, NPV AND IRR FOR BASELINE FINANCIAL MODEL

Item	Payback Period (years)	NPV_5 ($M)	IRR[1] (%)
Pre-Tax	3.4	182.5	26
After-Tax	3.5	109.1	20

1 IRR value was calculated using Microsoft Excel's IRR function

22.3 SENSITIVITY

The Project NPV is sensitive to several factors, with the largest impacts coming from factors affecting revenue from the nickel concentrate stream, such as: nickel price, process recovery to the nickel concentrate, and payable factor (value of nickel in concentrate less smelter charges). Macro-scale factors (changes to global metal prices, and Project CAPEX and OPEX) also have significant effects. Changes to factors affecting revenue from the copper concentrate stream have moderate to minor impacts, as do changes to the discount rate.

Table 22.5 shows the ranking of Project NPV sensitivities by magnitude of impact per percent change in input value, with 1 being the strongest sensitivity. All NPV calculations are in Canadian Dollars.

TABLE 22.5
PROJECT NPV SENSITIVITY RANKINGS

Sensitivity To	Rank	NPV_5 Change ($M) per Percent Change in Baseline
Macro-scale Metal Prices	1	5.18
Nickel Price	2	4.26
Nickel Payable Ratio	3	4.03
Nickel Recovery to Nickel Concentrate	4	3.62
Project CAPEX	5	(2.03)
Project OPEX	6	(1.65)
Copper Price	7	0.98
Copper Payable Ratio	8	0.93
Copper Recovery to Copper Concentrate	9	0.82
Discount Rate	10	(0.61)
Cobalt Payable Ratio	11	0.06
Cobalt Price	12	0.03

Table 22.6 shows the ranking of Project IRR sensitivities by magnitude of impact per percent change in input value, with 1 being the strongest sensitivity.

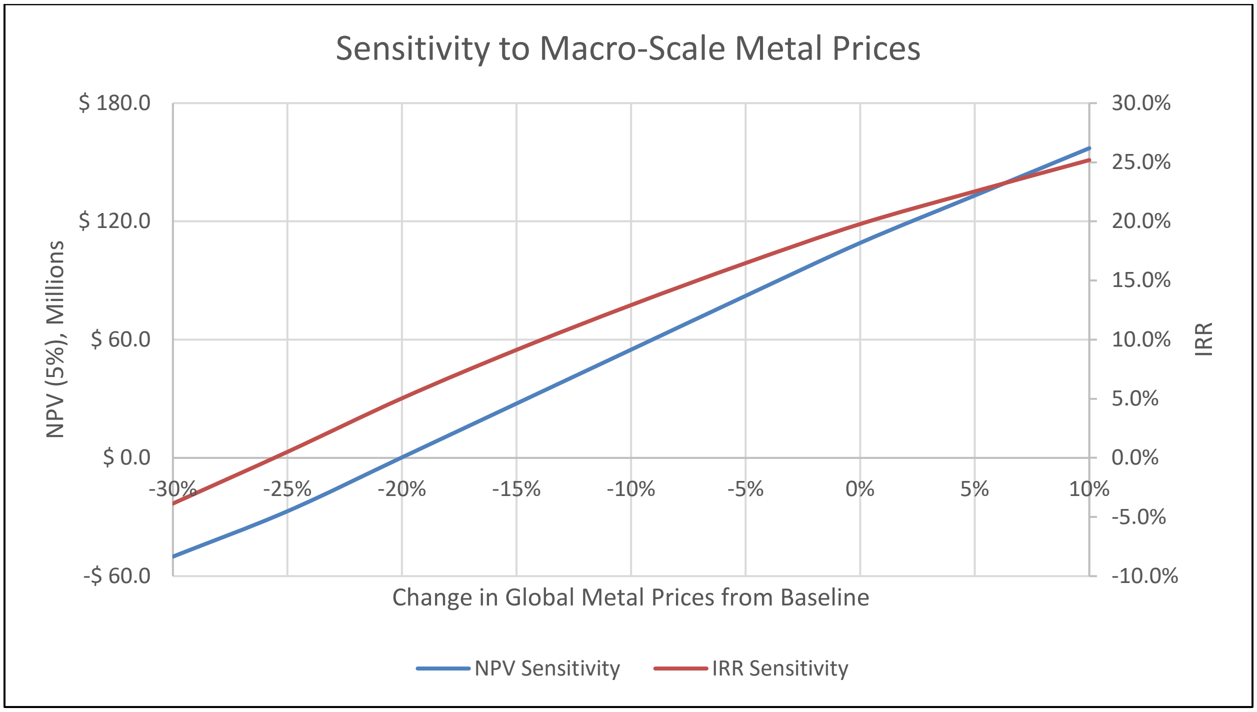
TABLE 22.6 PROJECT IRR SENSITIVITY RANKINGS		
Sensitivity To	**Rank**	**IRR Change (%) per Percent Change in Baseline**
Macro-scale Metal Prices	1	0.73
Nickel Price	2	0.57
Nickel Payable Ratio	3	0.50
Nickel Recovery to Nickel Concentrate	4	0.45
Project CAPEX	5	(0.33)
Project OPEX	6	(0.21)
Copper Price	7	0.12
Copper Payable Ratio	8	0.11
Copper Recovery to Copper Concentrate	9	0.10
Cobalt Payable Ratio	10	0.00
Cobalt Price	11	0.00
Discount Rate[1]	12	-

1 IRR is unaffected by discount rate as it is calculated from undiscounted cash flows.

22.3.1 Macro Revenue Factors

The sole macro revenue factor analyzed for sensitivity is a change in metal prices across a range of commodities, encompassing all payable metals in the Kenbridge Deposit. A variance in all prices would likely only be caused by a global event, and would have significant other knock-on effects, however sensitivity to metal price has been analyzed in isolation from all other factors. This change has the largest impact of any factor analyzed, and is shown in Figure **22.1**.

FIGURE 22.1 PROJECT SENSITIVITY TO MACRO-SCALE METAL PRICE CHANGES



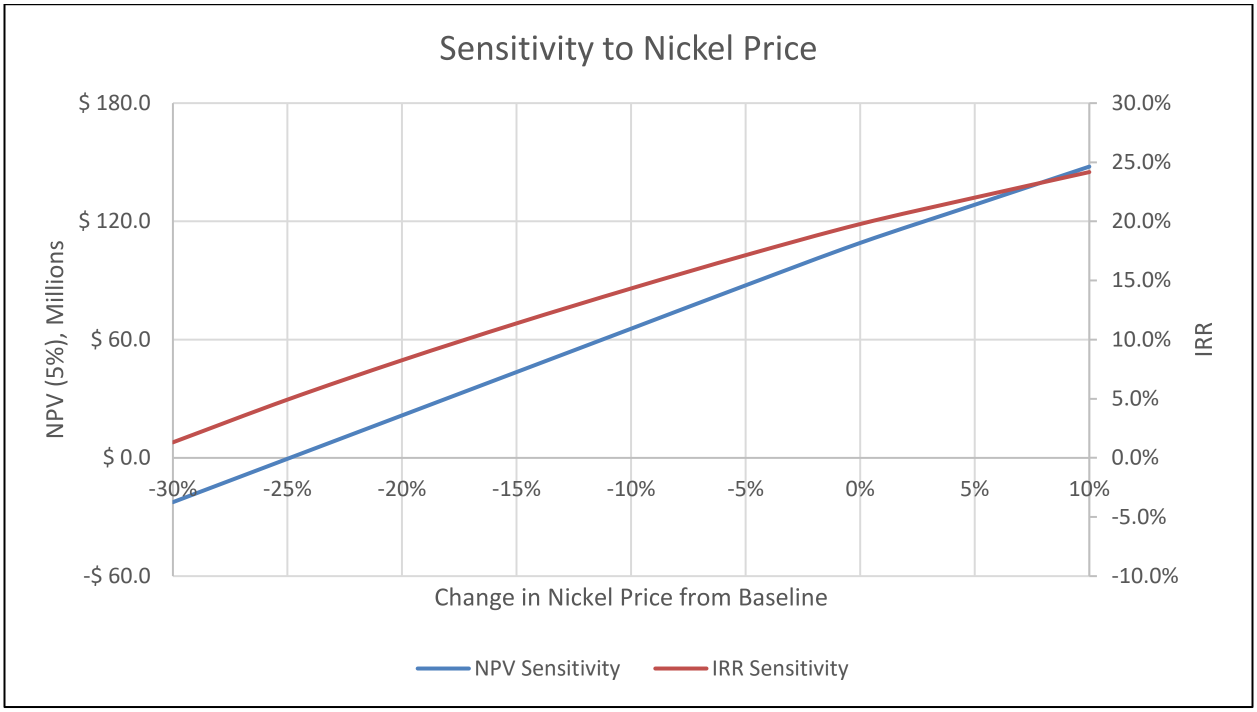
22.3.2 Factors Affecting Revenue from Nickel

Factors affecting revenue derived from nickel production have the greatest impact on the overall NPV and IRR of the Kenbridge Project of any metal. These factors include the price of nickel, the nickel payable factor and process recovery of nickel to the nickel concentrate stream.

22.3.2.1 Nickel Price

The baseline nickel price used in the financial evaluation of the Project is US$10.00/lb, however, spot prices at time of writing are over US$9.02/lb, with 5-year highs exceeding US$15.00/lb and lows falling below US$5.00/lb. A variance in the price of nickel prior to the commencement of production has the greatest overall impact on Project financials of any non-macro factor analyzed. Figure 22.2 shows the Project sensitivity to nickel price.

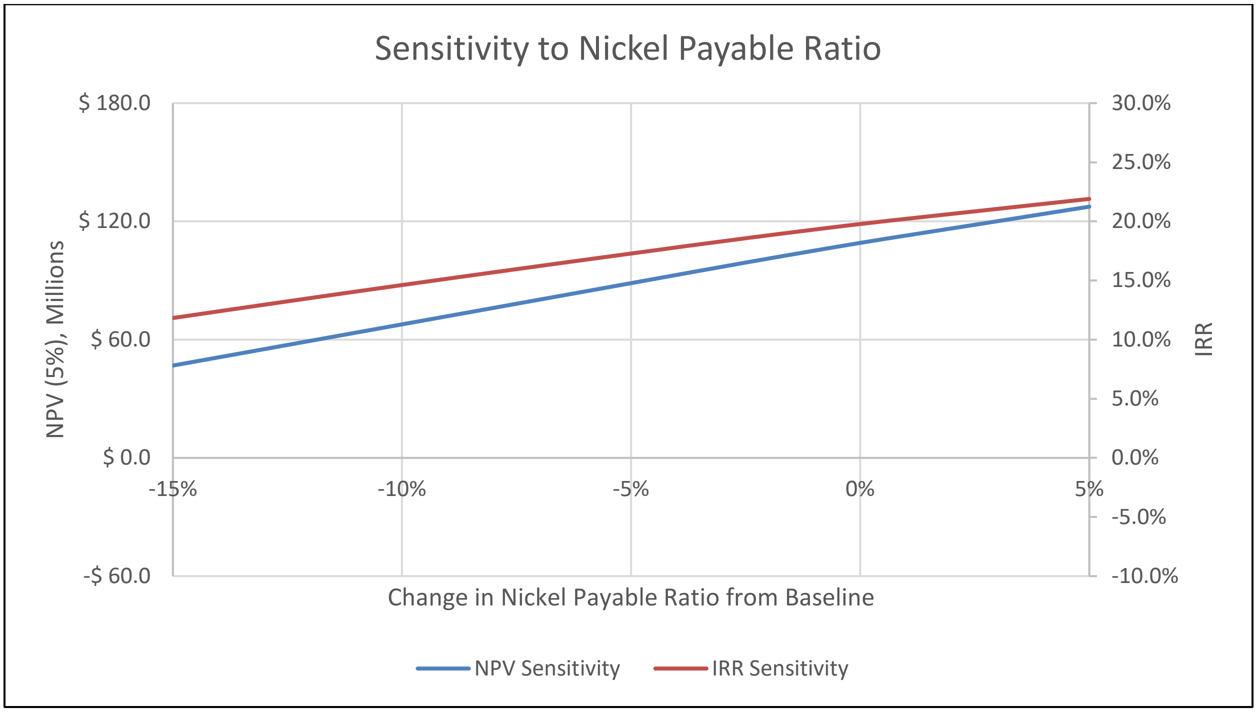
FIGURE 22.2 PROJECT SENSITIVITY TO NICKEL PRICE



22.3.2.2 Nickel Payable Factor

The baseline nickel payable factor for the Project is estimated at 92% on the nickel concentrate stream, with no nickel payable from the copper concentrate stream. The Project does not currently have any contracts with smelters, and while it is possible that payable factors may vary from this estimate, it is unlikely that significant variance will occur. Figure 22.3 shows the Project sensitivity to the nickel payable factor.

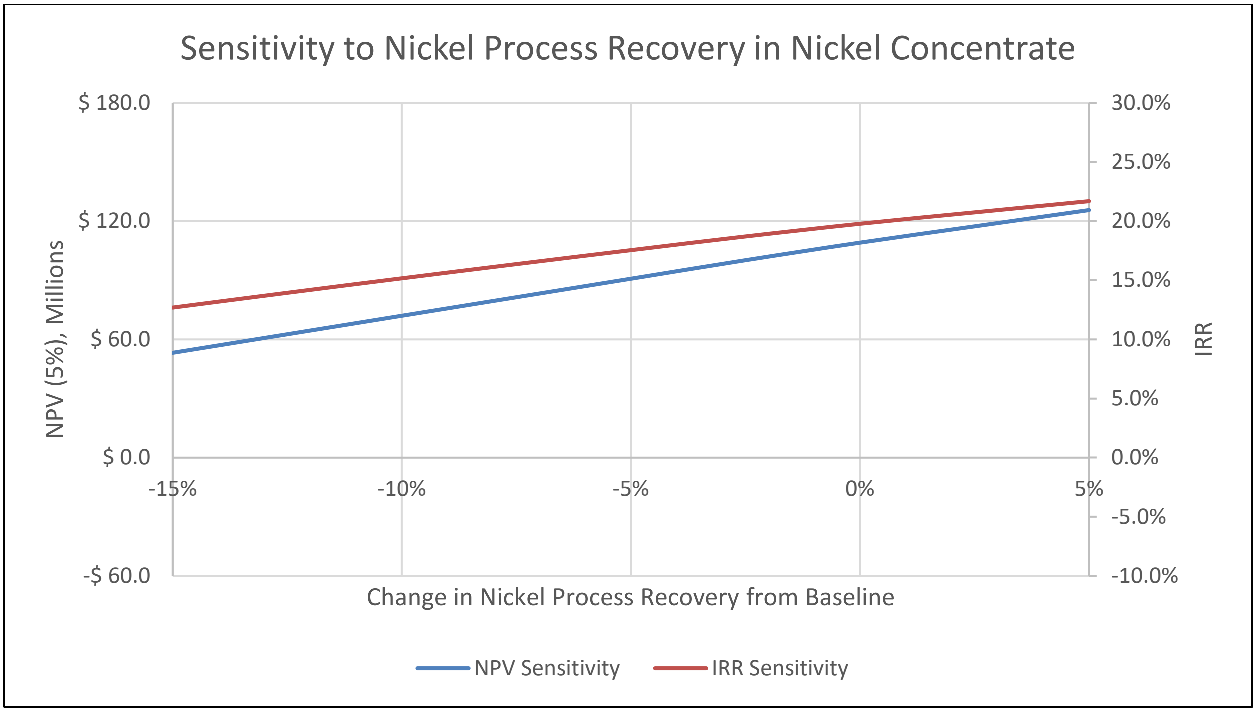
FIGURE 22.3 PROJECT SENSITIVITY TO NICKEL PAYABLE RATIO



22.3.2.3 Nickel Process Recovery to Nickel Concentrate

The baseline nickel process recovery to the nickel concentrate stream for the Project is estimated at 82%, based on the planned process plant flowsheet. Some of the mined nickel mass will not be recovered by this stream, but rather by the copper concentrate stream, however, it is minor, and is therefore ignored in this analysis. Approximately 4% of all recovered nickel is recovered through the copper concentrate stream. Figure 22.4 shows the Project sensitivity to nickel concentrate nickel process recovery factor.

FIGURE 22.4 PROJECT SENSITIVITY TO NICKEL PROCESS RECOVERY



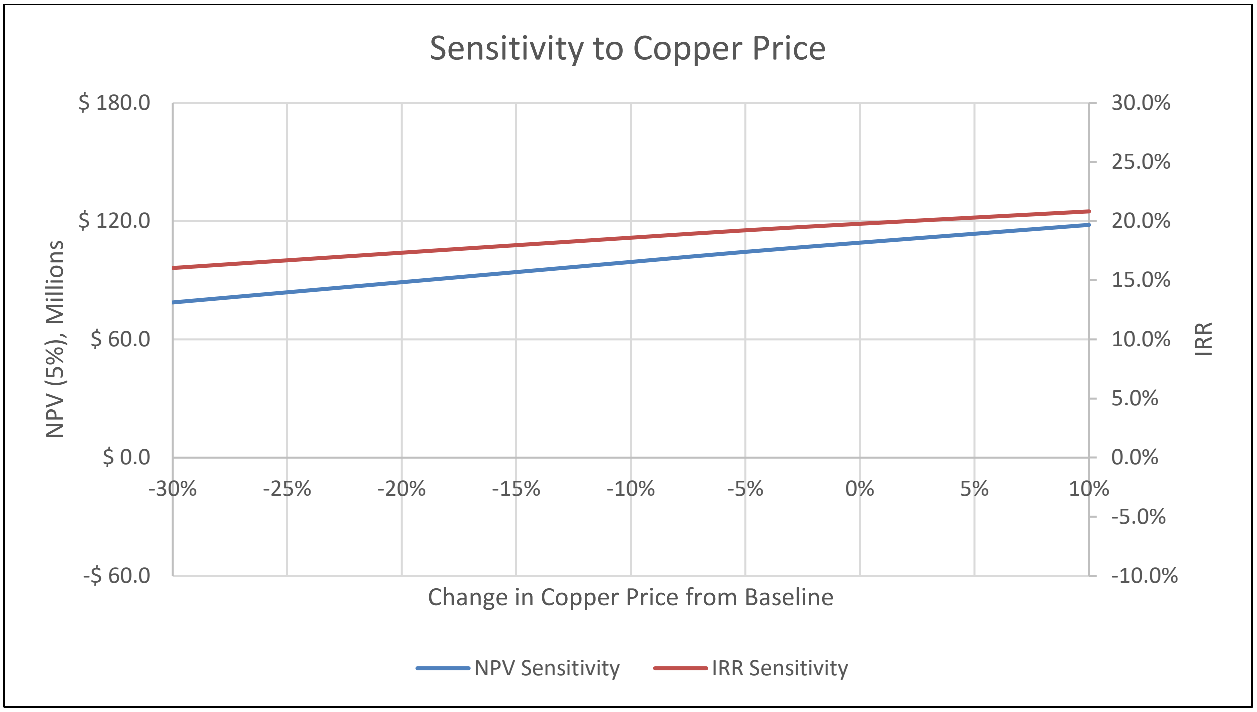
22.3.3 Factors Affecting Revenue from Copper

Factors affecting revenue derived from copper production have a moderate impact on the overall NPV and IRR of the Kenbridge Project. These factors include the price of copper, the copper payable factor and process recovery of copper to the copper concentrate stream.

22.3.3.1 Copper Price

The baseline copper price used in the financial evaluation of the Project is US$4.00/lb, however, spot prices at time of writing are over US$3.22/lb, with 5-year highs exceeding US$4.85/lb and lows falling below US$2.10/lb. Figure 22.5 shows the Project sensitivity to copper price.

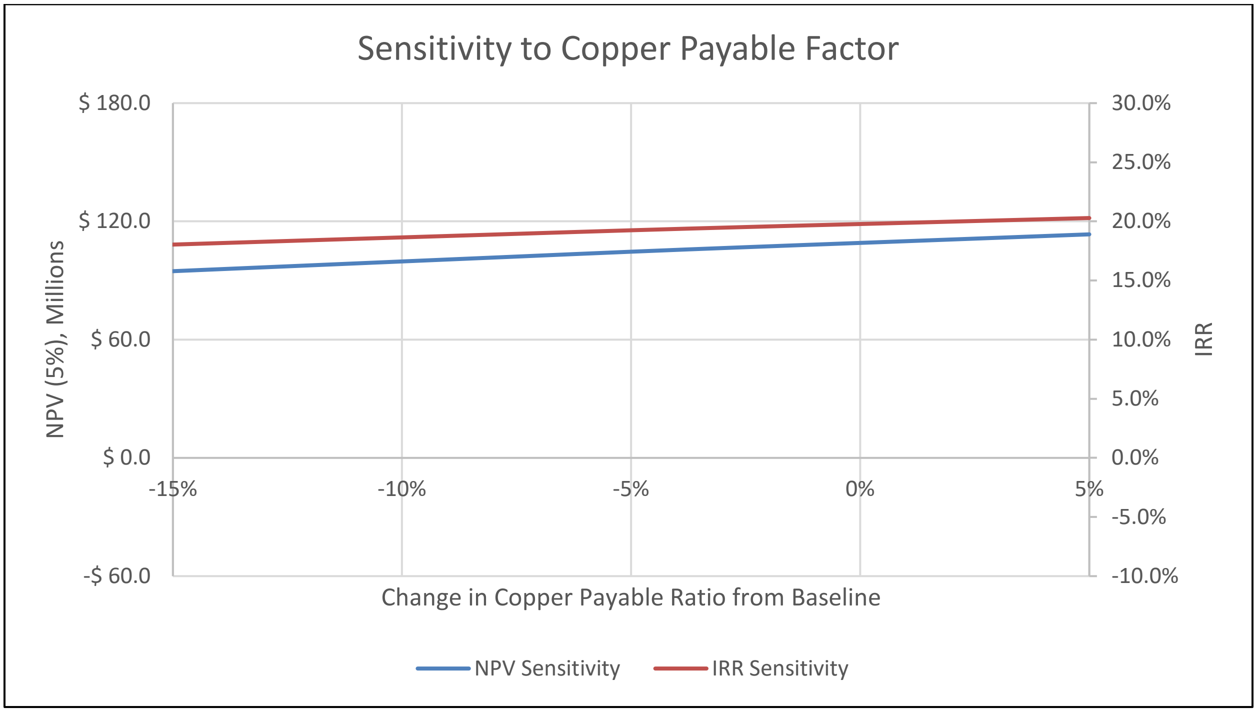
FIGURE 22.5 PROJECT SENSITIVITY TO COPPER PRICE



22.3.3.2 Copper Payable Factor

Copper is the only metal at the Kenbridge project with payables from both concentrate streams. The baseline copper payable factor for the Project is estimated at 75% for the nickel concentrate stream and 96.5% for the copper concentrate stream. The Project does not currently have any contracts with smelters, and while it is possible that payable factors may vary from this estimate, it is unlikely that significant variance will occur. Figure 22.6 shows the Project sensitivity to the copper payable factor.

FIGURE 22.6 PROJECT SENSITIVITY TO COPPER PAYABLE FACTOR



It should be noted that due to having two payable streams, variance is calculated as:

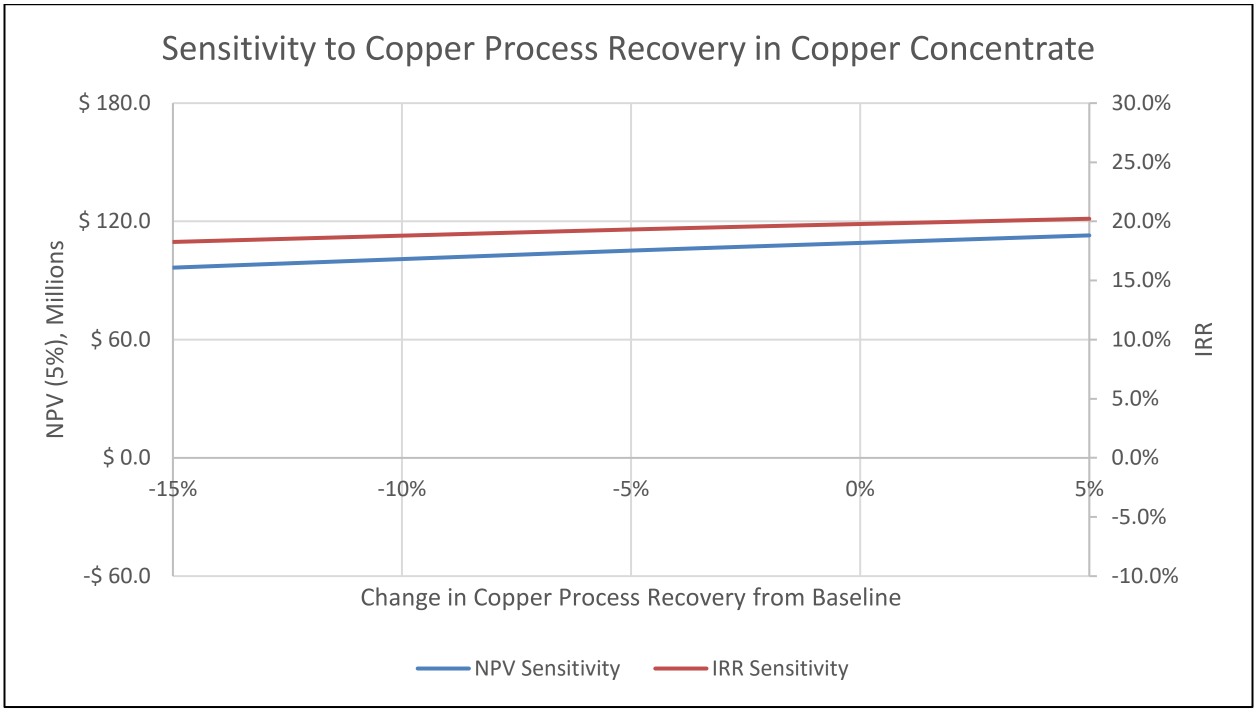
(1+Variance)*(Stream Baseline Payable Factor)

for each stream, therefore a 10% decrease in the payable will result in a 67.5% copper payable ratio for the nickel concentrate stream and an 86.9% copper payable ratio to the copper concentrate stream, with NPV and IRR sensitivity being calculated from the sum of the impacts on both streams.

22.3.3.3 Copper Process Recovery to Copper Concentrate

The baseline copper process recovery for the Project is estimated at 82% to the copper concentrate stream, based on the planned process plant flowsheet. Some of the mined copper mass will not be recovered by this stream, but rather by the nickel concentrate stream, however, it is minor, and is therefore ignored in this analysis. Approximately 5% of all recovered copper is recovered through the nickel concentrate stream. Figure 22.7 shows the Project sensitivity to copper concentrate copper process recovery factor.

FIGURE 22.7 PROJECT SENSITIVITY TO COPPER PROCESS RECOVERY



22.3.4 Factors Affecting Revenue from Cobalt

Factors affecting revenue derived from cobalt production have negligible impact on the overall NPV and IRR of the Kenbridge Project. Table 22.7 below shows the variance in project NPV and IRR across the analyzed range. Cobalt is payable only from the nickel concentrate stream, and metal mass recovery is split approximately equally between the nickel and copper concentrate streams.

TABLE 22.7
PROJECT SENSITIVITY TO COBALT REVENUE FACTORS

Factor	Units	Variance from Baseline (%)		NPV_5 ($M)		IRR (%)	
		Low	High	Low	High	Low	High
Cobalt Price	US$/lb	-30	+10	108.1	109.4	19.7	19.8
Cobalt Payable	Percent	-15	+5	108.2	109.4	19.7	19.8

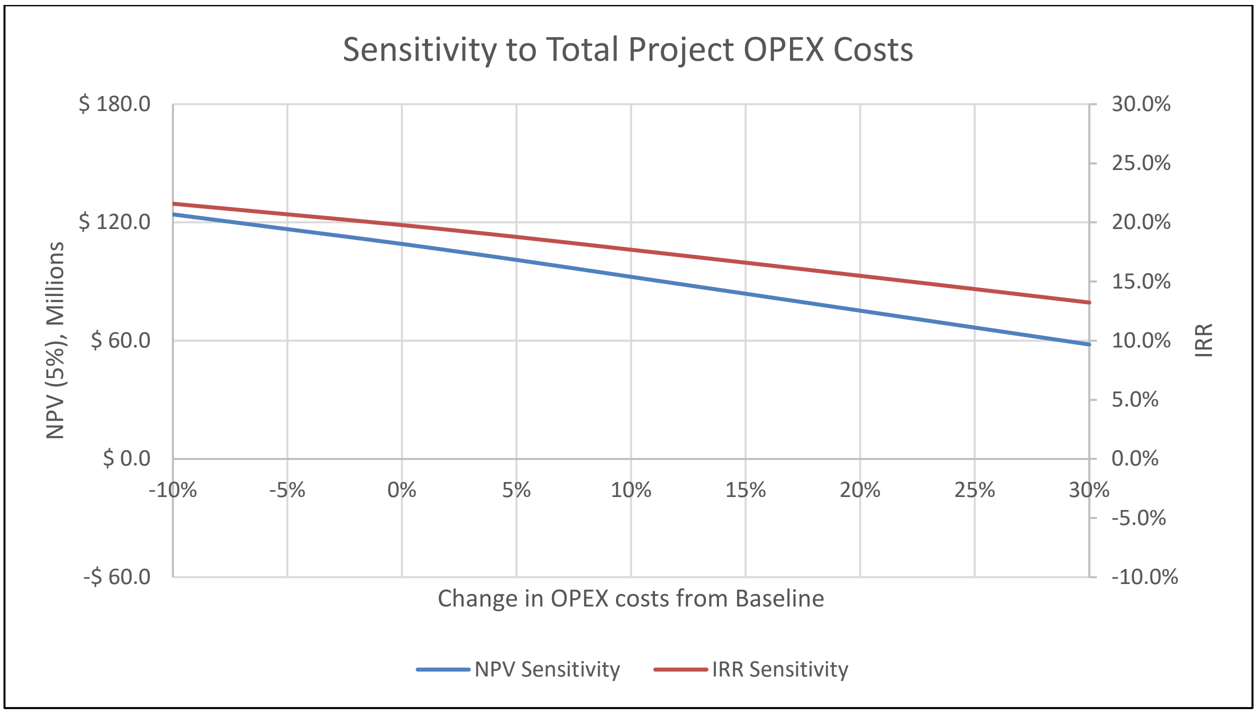
22.3.4.1 Macro Cost Factors

Macro cost factors analyzed for sensitivity include CAPEX and OPEX. The Project NPV is more sensitive to CAPEX than OPEX, as the majority of development is capitalized, and CAPEX costs make up 41% of total Project costs. Project IRR, while sensitive to variances in both CAPEX and OPEX, is significantly more sensitive to variances in CAPEX than OPEX due to the timing of these costs (capital is spent earlier in the life of the Project, increasing the impact of the spending on time-sensitive calculations like NPV and IRR).

22.3.5 OPEX Costs

OPEX includes all costs associated with direct development (mineralized and waste drifts for production access), production and processing, in addition to indirect salaries, services costs, leasing costs and G&A, excluding costs accrued in the two years of pre-production. Baseline per-tonne OPEX is estimated at $64.64/t over the LOM. Variance in OPEX can be the result of changes in the Canadian labour market, increase in raw materials costs, changes in mining or processing parameters, general inflation, and other sources. The sensitivity of the Project NPV and IRR to changes in OPEX over the analyzed range is shown in Figure 22.8.

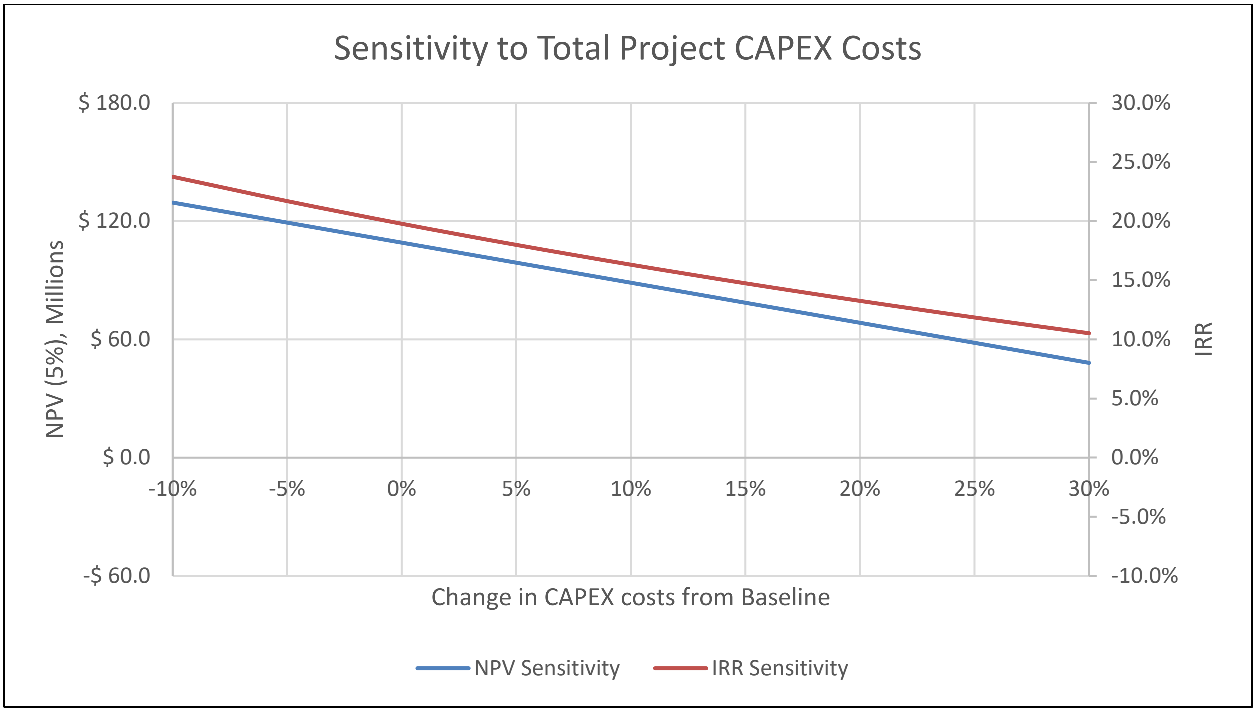
FIGURE 22.8 PROJECT SENSITIVITY TO MACRO-SCALE OPERATING COSTS



22.3.6 CAPEX Costs

Baseline CAPEX is estimated at $50.16/t over the LOM. Variance in CAPEX can be the result of changes in technology, required total quantities of items, increase in raw materials costs, and other sources. The sensitivity of the Project NPV and IRR to changes in CAPEX over the analyzed range is shown in Figure 22.9.

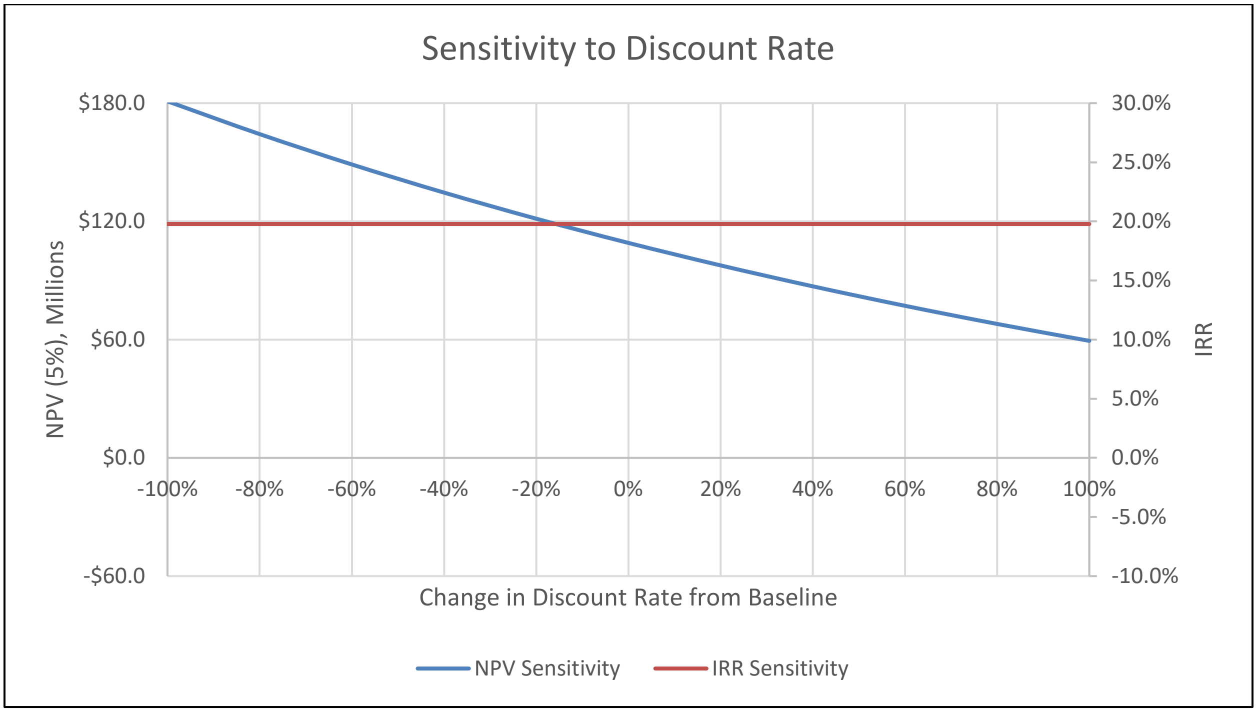
FIGURE 22.9 PROJECT SENSITIVITY TO MACRO-SCALE CAPITAL COSTS



22.3.7 Discount Rate

A variance in the discount rate could occur as a result of numerous factors, from market confidence to political or social risk. For the Kenbridge underground Project, as it is located in stable political climate in a district with a history of mining and several producing mines, a baseline discount rate of 5% has been selected. Note that since IRR is calculated from undiscounted cash flows, IRR is completely insensitive to changes in the discount rate. The Project NPV and IRR sensitivity to discount rate in the analyzed range is shown in Figure 22.10.

FIGURE 22.10 PROJECT SENSITIVITY TO DISCOUNT RATE



22.4 SUMMARY AND RECOMMENDATIONS

The Kenbridge Project is most sensitive to items directly affecting the nickel revenue, with nickel price, process recovery and payable being the three most impactful factors on both after-tax NPV and IRR. Of cost factors, CAPEX is the next most impactful, with OPEX following. Factors affecting copper revenue have moderate impacts on the Project NPV and IRR, as does discount rate. Factors affecting revenues from cobalt have the least overall impact on Project after-tax NPV and IRR.

It is the opinion of the Author of this Technical Report section that the Kenbridge underground Project has potential to be financially viable. As such, the Author recommends advancing the Project to the next phase of study.

23.0 ADJACENT PROPERTIES

There are currently no significant adjacent third-party exploration or mineral development properties in the immediate area of Tartisan's Kenbridge Property.

24.0 OTHER RELEVANT DATA AND INFORMATION

Risks and opportunities have been identified for the Project. The anticipated impact on the Project is listed in brackets after each item, using low-medium-high categories.

24.1 RISKS

The risks associated with this Project are summarized below.

- The Project is sensitive to nickel and copper prices. (high)
- The contingency on CAPEX is low 15%. (medium)
- Rising inflation could lead to higher salaries and costs. (medium)
- A higher interest rate environment means more expensive fleet leasing, resulting in additional OPEX (interest on lease or on capital loan). (medium)
- 46 m level spacing in shaft areas could result in blasting issues, especially if an uppers drilling blast fails. It will be difficult to install cable bolts to support the walls if ground support is required. (medium)
- There is no hydrology study. Water inflows could be larger than expected, resulting in slower dewatering and delayed Project start. (low)
- The existing shaft could be in worse condition than expected, requiring significant rebolting and scaling prior to expansion. (low)
- Levels 2 and 3 may have deteriorated or could be full of slimes, resulting in a schedule delay and higher development costs. (low)
- The shaft survey drawings are unreliable and could result in needing to establish a new shaft station at Level 10, resulting in schedule delay. (low)
- CNG costs may be higher than expected, or CNG could become unavailable, and power costs could be higher than anticipated. (low)
- There has been no backfill testwork completed. If hydraulic backfill turns out not to be appropriate, and paste backfill is required, this would lead to higher CAPEX and OPEX. (low)
- Only one preliminary study on geotechnical aspects of underground mining has been completed, with the risk that higher stope overbreak than planned could be encountered. (low)
- Lack of a camp at the mine site may make recruitment and retention more difficult, perhaps requiring higher base salaries. (low)

- A 5% discount rate may be low given the recent increase in interest rates. (low)

24.2 OPPORTUNITIES

There are potential opportunities for the Project that could improve the Project costs and possibly the LOM.

- Geological evaluation of the Kenbridge Deposit indicates there is significant potential to expand the Mineral Resource laterally and at depth. (high)

- A concentrate off-take agreement could be negotiated to assist with Project financing. (high)

- Power generation from solar/wind is available and may improve costs. Federal grants are available for operations that partner with First Nations. (medium)

- Additional electrified underground machinery could reduce compressed air equipment requirements in shaft areas and replace diesel equipment throughout the mine, leading to lower ventilation requirements and potential lower OPEX. Electric haul trucks 20 to 30 t are not currently available, however, are anticipated to be on the market in the near future. (low)

- There are many types and configurations of non-chemical battery storage options that could be installed at the site (gravity, compressed air, water, etc.), which could reduce power costs. (low)

25.0 INTERPRETATION AND CONCLUSIONS

The Kenbridge Property is located 70 km east-southeast of the Town of Kenora in northwestern Ontario, Canada.

The Archean Kenbridge gabbro-related nickel sulphide deposit ("Kenbridge Deposit") occurs within a vertically dipping, lenticular gabbro and gabbro breccia with surface dimensions of approximately 250 m by 60 m. The host volcanic rocks of the Deposit are composed of medium-green, strongly foliated and sheared, tuffaceous units with fragments defined by a lensoid banding of matrix carbonate. Very fine-grained, massive green-rock, possibly volcanic flow or well-indurated tuff, occurs throughout the volcanic sequence.

The mineralization has been investigated in detail on two underground levels and with drilling to a depth of 880 m from surface. Mineralization (pyrrhotite, pentlandite, chalcopyrite ± pyrite) occurs as massive to net-textured and disseminated sulphide zones, primarily in gabbro breccia with smaller amounts in gabbro and talc schist. Nickel grades within the Deposit are proportional to the total amount of sulphide, with massive sulphide zones locally grading in excess of 6% Ni. Mineralization undergoes rapid changes in thickness and grades. At least three sub-parallel mineralized zones were intersected in the current drilling and range in thickness from 2.6 m to 17.1 m.

From 1937 to 2008, a total of 79,414 m in 575 surface and underground drill holes were completed. In 1956 a shaft was developed to a depth of 622 m with level stations at 46 m intervals below the shaft collar and two levels developed at 107 m and 152 m below the shaft collar. Development work included 244 m of drifts and 168 m of crosscuts on the two levels. Drilling recommenced on the Kenbridge Property in 2021. Ten drill holes totalling 8,988 m were completed on the Deposit.

It is the opinion of the authors of this Technical Report (the "Authors") that sample preparation, security and analytical procedures for the Kenbridge Project 2021 drilling are adequate and that the data is of good quality and satisfactory for use in the current Mineral Resource Estimate. The Authors are of the opinion that the sample assay data have been adequately verified for the purposes of a Mineral Resource Estimate. All data included in the current Mineral Resource Estimate appear to be of adequate quality.

Based on the evaluation of the QA/QC program undertaken by Canadian Arrow (as evaluated by SRK) and the due diligence sampling and assay program performed by the Authors, it is the Author's opinion that the assay data are suitable for use in the current Mineral Resource Estimate.

Mineral processing and metallurgical testwork on Kenbridge Deposit materials were completed by Falconbridge in the 1970s, SGS Lakefield in 2005-06, and XPS in 2008-10. The testwork included mineralogical, grindability, pre-concentration and flotation studies. The XPS results suggest that at feed grades inline with the current PEA mine plan, a 24% Cu concentrate at 89% Cu recovery and a 15% Ni concentrate at 80% Ni recovery could be anticipated.

Mineral Resources at an NSR $100/t cut-off value are estimated at 1,867 kt grading 0.99% Ni, 0.50% Cu and 0.017% Co in the Measured classification, 1,578 kt grading 0.95% Ni, 0.53% Cu and 0.009% Co in the Indicated classification, and 1,014 kt grading 1.47% Ni, 0.67% Cu and

0.011% Co in the Inferred classification. The effective date of this Mineral Resource Estimate is July 6, 2022.

The drilling database contains 495 surface and underground diamond drill holes and 46 surface channels totalling 71,475 m, of which 422 drill holes were used to create the domain mineralized wireframes for constraining the Mineral Resource Estimate. The metal prices used were US$8.25/lb Ni, US$4.00/lb Cu and US$26/lb Co with an exchange rate of CAD$1.00 = US$0.76. Process recoveries were 75% for Ni, 77% for Cu and 40% for Co, and smelter payables were 92% for Ni, 96% for Cu and 50% for Co. Mineral Resources were determined to be potentially extractable with the longhole mining method based on an underground mining cost of $77/t mined, processing of $19/t and G&A costs of $4/t.

The Mineral Resources in this Technical Report were estimated in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM"), CIM Standards on Mineral Resources and Reserves, Definitions (2014) and Best Practices Guidelines (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could potentially be upgraded to an Indicated Mineral Resource with continued exploration.

The Kenbridge Deposit is open along strike and down dip, and further drilling may provide additional Mineral Resources.

Open pit mining was studied and was found to be less economic than underground mining. However, the potential exists to mine a shallow open pit at any time during the LOM in case emergency or incremental feed for the process plant is required.

The Kenbridge Deposit is comprised of three steeply-dipping sub-parallel structures (HW, FW and Central) of varying extents from surface (300 m, 600 m, and 1,000 m, respectively). Mineralization is planned to be extracted from all three structures over the Life of Mine ("LOM").

The existing 625 m deep shaft will be rehabilitated, expanded, and refitted with a new hoist and headframe to support mining in the upper areas above the shaft bottom, and hoisting of material excavated from areas below the extent of the shaft. Mining areas from below the extent of the shaft will be accessed via a ramp from the lowest shaft station, with material being trucked to the loading pocket at the bottom of the shaft for crushing and final hoisting to surface.

Level spacing in the upper (shaft-access) part of the mine will be 46 m to utilize existing shaft stations and levels. These areas will be mined using a 16 m uphole blast, followed by a 30 m downhole blast into the void created by the upholes. Levels in the lower (ramp-access) part of the mine will be spaced on 30 m intervals. Stopes are expected to be approximately 20 m long and an average of 11 m wide. To maximize productivity and limit lead time to production, the mine will be divided into five mining blocks: three in the shaft-access areas and two in the ramp-access areas below the shaft.

Extraction of material in all areas will use long hole ("LH") retreat stoping with Cemented Hydraulic Fill ("CHF") at 4% binder by mass to eliminate in-situ pillars and maximize the extraction of the Mineral Resource. Artificial sill pillars comprised of higher-strength CHF (nominally 6% by mass) will be used to segregate the blocks where required, and allow for undermining of the pillars in a safe and controlled manner to maximize the extraction of mineralized material.

As material transport to surface will include hoisting via the shaft, a materials handling system will be installed, including: mineralized material and waste passes; truck dumps; grizzlies; bins; crushers; and loading pockets.

Initial dewatering of the historical workings will be by submersible electric pump and staged pump boxes and is expected to take approximately six months. Services such as electricity and compressed air will be supplied via the shaft, and then via boreholes down the ramp below the shaft extents. Electrical power will be supplied at a nominal 15 kV prior to on-level distribution at 1 kV. Ongoing dewatering of the mine will utilize compressed-air face pumps to move water to level sumps, which will cascade to sequential pump stations located at intervals in the mine.

Ventilation will be provided by a raisebored Fresh Air Raise ("FAR") and parallel Return Air Raise ("RAR") in the shaft areas, with the ramp area being provided with fresh air through a series of drop-raised FARs and exhausting air back up the ramp to the bottom of the main RAR. Compressed Natural Gas ("CNG") heaters will be installed to heat the air and keep the underground intake air at a nominal 2°C over the winter months.

Mining and development will be carried out by Company personnel, with a fleet acquired through a lease-to-own strategy. To limit diesel consumption, Battery Electric Vehicles ("BEVs") have been utilized as much as possible in the fleet, and compressed-air powered machinery has been used in the shaft access areas for drilling and initial loading out of areas near the historical workings.

A new process plant on site has been planned to be a conventional facility with crushing, grinding, flotation, concentrate thickening and filtration, and tailings thickening for backfill preparation and disposal. The process plant will be sized for a nominal capacity of 1,500 tpd with a surge capability of 2,000 tpd. Conventional SAG and ball mill grinding is proposed with a target grind size P80 of 90 µm. Process plant tailings will be incorporated into the CHF as much as possible to reduce tailings pond requirements while maintaining the required properties of the backfill to support continued adjacent mining. Tailings will be transferred to a backfill plant, thickened to approximately 55% solids using a conventional hi-rate thickener where the fines will be separated out by cyclones and the coarse fraction sent underground as CHF. The residual fines will be thickened to approximately 45% solids and sent to a conventional tailings facility with lined embankments.

The Kenbridge Project is expected to produce a total of 4.52 Mt of process plant feed over a nine-year mine life, with an average metal content of 0.81% Ni, 0.40% Cu and 0.01% Co. It is expected to operate for 352 days per year at a daily rate of 1,500 tpd, for a nominal yearly production rate of 528 ktpa.

The two nickel and copper flotation concentrates will be separately thickened in conventional-type thickeners and filtered using plate and frame pressure filters. The concentrates will be stored between partitions in a heated warehouse. The concentrates are expected to be trucked to smelters in Sudbury, ON (nickel) and Rouyn-Noranda, QC (copper). Subject to confirmation that fine tailings thickener overflow water quality is not detrimental to flotation performance, process water will be a combination of tailings thickener reclaim water and tailings facility reclaim water. Mine water is an additional potential process water source.

The access road to the Property is currently being upgraded for all-season vehicle use and is anticipated to be completed in September 2022. Sufficient space exists on the Property to build the required mining and processing infrastructure, with facilities such as a change house, administration offices, first aid station and mine rescue training facility, diesel storage and fuelling facilities, a maintenance shop, warehouse, cold storage building, and water retention and treatment facilities. A tailings storage facility ("TSF") for approximately 3.0 Mt of tailings will be situated 1.5 km south of the process plant. The TSF will be constructed as a single cell valley impoundment.

It was determined that on-site power generation using Compressed Natural Gas ("CNG") delivered overland by tanker truck was the most cost-effective method. Power generation for the Kenbridge site will utilize five 1,000 kW generators powered by CNG.

There will be no camp at the mine site for production personnel or contractors, and employees will be expected to travel from nearby communities.

There are currently no material contracts in place pertaining to the Kenbridge Project. The Project is open to the spot metal price market and there are no streaming, forward sales contracts or concentrate off-take agreements in place. Approximate long-term nominal metal price forecasts as of May 31, 2022 of US$10/lb Ni, US$4/lb Cu and US$26/lb Co from Consensus Economics Inc. have been used for this PEA, with an exchange rate of 0.78 US$ per CAD$.

The construction, operation, and closure of the Project will require both federal and provincial regulatory approvals/authorizations. The Project does not fall under the applicable Physical Activities Regulations (SOR/2019-285) of the Impact Assessment Act; however, depending on how the Projects proceeds, there are federal permits and authorizations which would be necessary.

Tartisan has and will continue to engage and consult with public, provincial, and federal agency stakeholders, regarding the Project. A task force has been formed by Treaty #3 with the direction of the Anishinaabeg of Kabapikotawangag Resource Council and representatives of six First Nation Communities. Tartisan continues to develop positive relationships with its surrounding First Nations through its First Nation consulting partner Talon Resources and Community development Inc. Development of MOUs with each First Nation community will most likely be required prior to the Project entering the production phase.

Tartisan has retained two firms to reinitiate environmental baseline studies in 2022 to support the various permitting and approvals processes for the Project. Geochemical characterization of mineralized material, concentrate, tailings, and waste rock is underway.

Initial Project CAPEX is estimated at $134M. The majority of initial capital costs will be for building the process plant and for underground mine development and infrastructure. Sustaining

CAPEX is estimated at $93M over nine production years and is primarily for underground mine development and equipment. Total CAPEX over the life-of-mine ("LOM") is estimated at $227M, which is equivalent to $50.16/t processed.

OPEX is estimated to total $292M over the LOM, at a unit cost of $64.64/t processed. Mining and development will be performed entirely by Company personnel, with an owned equipment fleet that will be leased over five-year terms.

The Project is subject to a 3.5% NSR royalty with the option to buy out 1.0% of the NSR for $1.5M. This buyout is planned to occur at the start of production and the total royalty cost over the LOM is estimated at $22M including the buyout.

Closure and severance costs at the end of mine life are estimated at $10M to seal the shaft collar, cap the ventilation and egress raises, rehabilitate the Project site, and pay severance costs for employees.

Cash costs over the LOM, including royalties, are estimated to average US$3.76/lb NiEq (CAD$4.82/lb NiEq). All-In Sustaining Costs ("AISC") over the LOM are estimated to average US$4.99/lb NiEq (CAD$6.40/lb NiEq) and include closure and severance costs.

This PEA indicates that the Kenbridge Project has potential economic viability for an underground mining and processing operation. At a 5% discount rate, metal prices of US$10/lb Ni, US$4/lb Cu, US$26/lb Co, and an exchange rate of 0.78 US$/CAD$, the after-tax NPV of the Project is estimated at $109M ($183M pre-tax), with an IRR of 20% (26% pre-tax). This results in a payback period of approximately 3.5 years. The Project NPV is most sensitive to factors affecting revenue from the nickel concentrate stream, such as: nickel price, process recovery to the nickel concentrate, and payable factor (value of nickel in concentrate less smelter charges).

26.0 RECOMMENDATIONS

The authors of this Technical Report (the "Authors") consider that the Kenbridge Project contains a significant nickel, copper and cobalt Mineral Resource associated with a well-defined mineralized trend and model. The Authors also consider that the Project has significant potential for an increase in the size of the Mineral Resource, conversion of Inferred Mineral Resources to Indicated Mineral Resources, and advancement to a Pre-Feasibility Study.

Specific recommendations are listed below.

- A higher percentage of mineralized drill core should be strategically targeted for duplicate sampling, with a smaller proportion being selected randomly, and examination of the laboratory duplicate data.

- Assay rock and drill core samples for precious metals, particularly Pd, Pt and Au.

- Collect more bulk density measurements from the various host and wall rock types and metal grade ranges.

- No significant faults or discontinuities have been identified at the Kenbridge site, however a talc schist zone has been identified. This zone is not generally contiguous with the stoping areas; however, it does intersect a minority of stopes. Further investigation of the impacts of this geological structure is recommended at a later stage of study, however, its impact is expected to be minor.

- Detailed analysis of the backfill system is recommended at a later stage of study, with laboratory testwork.

- Future studies could update the underground mining fleet with new zero-emissions product offerings as they become available on the market.

- In an effort to reduce greenhouse gases, alternative energy sources and storage methods should be studied during future engineering work.

- To support the development of the underground mine it is recommended that a numerical groundwater model be developed to predict inflow rates into the underground workings and to further characterize the potential impacts.

- A geomechanical model should be generated based on geotechnical drilling and analysis of existing drill core. The geotechnical program should also be designed to provide geotechnical information on the sites of possible facilities (tailings dam, process plant, and water management).

- Continue mineral processing and metallurgy testwork. Future testwork programs should include: continued copper nickel separation tests with the objective of producing higher grade copper and nickel concentrates; a mini-pilot plant program to include column copper nickel separation to prove that copper concentrates containing less than 1% Ni can be produced; and magnetic separation tests on the copper and nickel concentrates to determine whether the magnetic pyrrhotite can be effectively removed and the concentrates upgraded with minimal reductions in copper and nickel recovery. If warranted, consideration should be given to recoveries of precious metals. Mineralized material sorting studies could also be considered.

- Key items recommended for further advancement and optimization of the TSF and site water management during the next level of design are summarized as follows:

    - Complete geotechnical/hydrogeological site investigations to further characterize foundations of the TSF embankments and identify suitable borrow locations for construction materials.

    - Perform stability analysis to refine and optimize embankment sections. The analysis should take into account the potential for soil liquefication and undrained strength conditions based on the updated site investigations.

    - Perform seepage analysis to refine and optimize lining requirements and evaluate potential basin lining alternatives.

    - Continue the collection of site specific hydrology data. This data will be used to refine seasonal run-off values and design storms to be used in future work.

    - The catchment areas contributing run-off to the process plant, and the amount of groundwater inflow to the underground workings, should be confirmed based on the ultimate mine plan and site layout.

    - A water balance should be completed for the TSF and site water management infrastructure.

    - A predictive water quality model should be completed in conjunction with the water balance to review the requirements for water treatment and/or discharge.

- Continue environmental baseline studies.

- Continue geochemistry studies on representative waste rock, tailings, and mineralized material to determine the potential for acid generation, metal leaching and groundwater contamination.

- Continue community relations programs with the local First Nations groups, nearby communities, and pertinent government regulatory agencies.

26.1 RECOMMENDED WORK PROGRAM

The Authors recommend advancing the Project in a two-phase approach, with infill and step-out drilling first. Once the drill program has been completed and analyzed, the second phase could be undertaken assuming successful results from phase one. Implementation of phase two is contingent on positive results from phase one.

The phase two work program would include geological, geochemical and geotechnical studies, further environmental baseline studies, and metallurgical testing, leading up to a Pre-Feasibility Study.

The recommended work program is estimated to cost $7.8M (Table 26.1) including a contingency of $1.0M. Phase one is estimated at $3.5M for drilling, and phase two study work is estimated at $3.3M, before contingency.

TABLE 26.1
RECOMMENDED WORK PROGRAM FOR KENBRIDGE

Description	Total Cost ($M)
Phase One	
Extensional and Additional Exploration Drilling 8,000 m	3.5
Subtotal	**3.5**
Phase Two	
Environmental, Social, Community, Access Road	1.0
Geological, Geophysical & Geochemical Exploration	0.3
Geotechnical Drilling and Testing	0.2
Mineral Processing and Metallurgical Testing	0.3
Pre-Feasibility Study	1.0
Management G&A	0.5
Subtotal	**3.3**
Contingency 15%	**1.0**
Total	**7.8**

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28.0 CERTIFICATES

CERTIFICATE OF QUALIFIED PERSON

JARITA BARRY, P.GEO.

I, Jarita Barry, P.Geo., residing at 9052 Mortlake-Ararat Road, Ararat, Victoria, Australia, 3377, do hereby certify that:

1. I am an independent geological consultant contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Preliminary Economic Assessment of the Kenbridge Nickel Project, Kenora, Ontario", (The "Technical Report") with an effective date of July 6, 2022.
3. I am a graduate of RMIT University of Melbourne, Victoria, Australia, with a B.Sc. in Applied Geology. I have worked as a geologist for over 17 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by Engineers and Geoscientists British Columbia (License No. 40875) and Professional Engineers and Geoscientists Newfoundland & Labrador (License No. 08399). I am also a member of the Australasian Institute of Mining and Metallurgy of Australia (Member No. 305397);

   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.

   My relevant experience for the purpose of the Technical Report is:

• Geologist, Foran Mining Corp.	2004
• Geologist, Aurelian Resources Inc.	2004
• Geologist, Linear Gold Corp.	2005-2006
• Geologist, Búscore Consulting	2006-2007
• Consulting Geologist (AusIMM)	2008-2014
• Consulting Geologist, P.Geo. (EGBC/AusIMM)	2014-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Section 11, and co-authoring Sections 1, 12, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Project that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this 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.

Effective Date: July 6, 2022
Signed Date: August 26, 2022

{SIGNED AND SEALED}
[Jarita Barry]

____

Jarita Barry, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

ANDREW BRADFIELD, P. ENG.

I, Andrew Bradfield, P. Eng., residing at 5 Patrick Drive, Erin, Ontario, N0B 1T0, do hereby certify that:

1. I am an independent mining engineer contracted by P&E Mining Consultants.
2. This certificate applies to the Technical Report titled "Preliminary Economic Assessment of the Kenbridge Nickel Project, Kenora, Ontario", (The "Technical Report") with an effective date of July 6, 2022.
3. I am a graduate of Queen's University, with an honours B.Sc. degree in Mining Engineering in 1982. I have practiced my profession continuously since 1982. I am a Professional Engineer of Ontario (License No.4894507). I am also a member of the National CIM.

   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.

   I have practiced my profession continuously since 1982. My summarized career experience is as follows:
   - Various Engineering Positions – Palabora Mining Company, 1982-1986
   - Mines Project Engineer – Falconbridge Limited, 1986-1987
   - Senior Mining Engineer – William Hill Mining Consultants Limited, 1987-1990
   - Independent Mining Engineer, 1990-1991
   - GM Toronto – Bharti Engineering Associates Inc, 1991-1996
   - VP Technical Services, GM of Australian Operations – William Resources Inc, 1996-1999
   - Independent Mining Engineer, 1999-2001
   - Principal Mining Engineer – SRK Consulting, 2001-2003
   - COO – China Diamond Corp, 2003-2006
   - VP Operations – TVI Pacific Inc, 2006-2008
   - COO – Avion Gold Corporation, 2008-2012
   - Independent Mining Engineer, 2012-Present
4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 2, 3, 15, 19, 22, and 24, and co-authoring Sections 1, 18, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had no prior involvement with the Project that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the effective date of this 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.

Effective Date: July 6, 2022
Signed Date: August 26, 2022

{SIGNED AND SEALED}
[Andrew Bradfield]

Andrew Bradfield, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

DAVID BURGA, P.GEO.

I, David Burga, P. Geo., residing at 3884 Freeman Terrace, Mississauga, Ontario, do hereby certify that:

1. I am an independent geological consultant contracted by P & E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Preliminary Economic Assessment of the Kenbridge Nickel Project, Kenora, Ontario", (The "Technical Report") with an effective date of July 6, 2022.
3. I am a graduate of the University of Toronto with a Bachelor of Science degree in Geological Sciences (1997). I have worked as a geologist for over 20 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by the Association of Professional Geoscientists of Ontario (License No 1836).

   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.

   My relevant experience for the purpose of the Technical Report is:
   - Exploration Geologist, Cameco Gold 1997-1998
   - Field Geophysicist, Quantec Geoscience 1998-1999
   - Geological Consultant, Andeburg Consulting Ltd. 1999-2003
   - Geologist, Aeon Egmond Ltd. 2003-2005
   - Project Manager, Jacques Whitford 2005-2008
   - Exploration Manager – Chile, Red Metal Resources 2008-2009
   - Consulting Geologist 2009-Present
4. I have visited the Property that is the subject of this Technical Report on June 1, 2022.
5. I am responsible for co-authoring Sections 1, 12, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Property that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the effective date of this 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.

Effective Date: July 6, 2022
Signed Date: August 26, 2022

{SIGNED AND SEALED}
[David Burga]

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David Burga, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

D. GRANT FEASBY, P. ENG.

I, D. Grant Feasby, P. Eng., residing at 12,209 Hwy 38, Tichborne, Ontario, K0H 2V0, do hereby certify that:

1. I am currently the Owner and President of:
   FEAS - Feasby Environmental Advantage Services
   38 Gwynne Ave, Ottawa, K1Y1W9
2. This certificate applies to the Technical Report titled "Preliminary Economic Assessment of the Kenbridge Nickel Project, Kenora, Ontario", (The "Technical Report") with an effective date of July 6, 2022.
3. I graduated from Queens University in Kingston Ontario, in 1964 with a Bachelor of Applied Science in Metallurgical Engineering, and a Master of Applied Science in Metallurgical Engineering in 1966. I am a Professional Engineer registered with Professional Engineers Ontario. I have worked as a metallurgical engineer for over 50 years since my graduation from university.

   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.

   My relevant experience for the purpose of the Technical Report has been acquired by the following activities:
   - Metallurgist, Base Metal Processing Plant.
   - Research Engineer and Lab Manager, Industrial Minerals Laboratories in USA and Canada.
   - Research Engineer, Metallurgist and Plant Manager in the Canadian Uranium Industry.
   - Manager of Canadian National Programs on Uranium and Acid Generating Mine Tailings.
   - Director, Environment, Canadian Mineral Research Laboratory.
   - Senior Technical Manager, for large gold and bauxite mining operations in South America.
   - Expert Independent Consultant associated with several companies, including P&E Mining Consultants, on mineral processing, environmental management, and mineral-based radiation assessment.
4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 13 and 17, and co-authoring Sections 1, 21, 25, and 26 of this Technical Report.
6. I am independent of the issuer applying the test in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Project that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this 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.

Effective Date: July 6, 2022
Signed Date: August 26, 2022

{SIGNED AND SEALED}
[D. Grant Feasby]

____
D. Grant Feasby, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

EUGENE PURITCH, P. ENG., FEC, CET

I, Eugene J. Puritch, P. Eng., FEC, CET, residing at 44 Turtlecreek Blvd., Brampton, Ontario, L6W 3X7, do hereby certify that:

1. I am an independent mining consultant and President of P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Preliminary Economic Assessment of the Kenbridge Nickel Project, Kenora, Ontario", (The "Technical Report") with an effective date of July 6, 2022.
3. I am a graduate of The Haileybury School of Mines, with a Technologist Diploma in Mining, as well as obtaining an additional year of undergraduate education in Mine Engineering at Queen's University. In addition, I have also met the Professional Engineers of Ontario Academic Requirement Committee's Examination requirement for a Bachelor's degree in Engineering Equivalency. I am a mining consultant currently licensed by the: Professional Engineers and Geoscientists New Brunswick (License No. 4778); Professional Engineers, Geoscientists Newfoundland and Labrador (License No. 5998); Association of Professional Engineers and Geoscientists Saskatchewan (License No. 16216); Ontario Association of Certified Engineering Technicians and Technologists (License No. 45252); Professional Engineers of Ontario (License No. 100014010); Association of Professional Engineers and Geoscientists of British Columbia (License No. 42912); and Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (No. L3877). I am also a member of the National Canadian Institute of Mining and Metallurgy.

   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.

   I have practiced my profession continuously since 1978. My summarized career experience is as follows:

   - Mining Technologist - H.B.M.& S. and Inco Ltd., 1978-1980
   - Open Pit Mine Engineer – Cassiar Asbestos/Brinco Ltd., 1981-1983
   - Pit Engineer/Drill & Blast Supervisor – Detour Lake Mine, 1984-1986
   - Self-Employed Mining Consultant – Timmins Area, 1987-1988
   - Mine Designer/Resource Estimator – Dynatec/CMD/Bharti, 1989-1995
   - Self-Employed Mining Consultant/Resource-Reserve Estimator, 1995-2004
   - President – P&E Mining Consultants Inc, 2004-Present
4. I have visited the Property that is the subject of this Technical Report in May 2008.
5. I am responsible for co-authoring Sections 1, 12, 14, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for a Technical Report titled: "(Amended) Technical Report and Updated Mineral Resource Estimate of the Kenbridge Nickel Project, Northwestern Ontario", prepared for Tartisan Nickel Corp. with an effective date of May 18, 2021; and "Technical Report and Updated Mineral Resource Estimate of the Kenbridge Nickel Project, Northwestern Ontario", prepared for Tartisan Nickel Corp. with an effective date of September 2, 2020. I was a "Qualified Person" for a press release titled "Canadian Arrow Mines Upgrades Kenbridge Nickel Resource Estimate – 87% Increase in Nickel Contained in Measured and Indicated Classes", dated August 19, 2008, in which an Updated Mineral Resource Estimate for Kenbridge was disclosed.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the effective date of this 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.

Effective Date: July 6, 2022

Signed Date: August 26, 2022

{SIGNED AND SEALED}

[Eugene Puritch]

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Eugene Puritch, P.Eng., FEC, CET

CERTIFICATE OF QUALIFIED PERSON

GREG ROBINSON, P. ENG.

I, David Gregory (Greg) Robinson, P. Eng. (ON), residing at 1236 Sandy Bay Road, Minden, ON, K0M 2K0, do hereby certify that:

1. I am an independent engineering consultant working for P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Preliminary Economic Assessment of the Kenbridge Nickel Project, Kenora, Ontario", (The "Technical Report") with an effective date of July 6, 2022.
3. I am a graduate of Dalhousie University, Queens University and Cornell University, and Professional Engineer of Ontario (License No. 100216726).

   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.

   I have practiced my profession continuously since 2008. My summarized career experience is as follows:
   - Associate Engineer, P&E Mining Consultants — Aug 2017 - Present
   - Mine Engineer, Lac des Iles Mine, North American Palladium — May 2016 – Jun 2017
   - Senior Underground Engineer, Phoenix Gold, Rubicon Minerals — Sep 14 – Jan 2016
   - Mine Engineer, Diavik Diamond Mine, Rio Tinto Diamonds — Sep 2011 – Sep 2014
   - Mine Engineer, Bengalla Mine, Rio Tinto Coal and Allied — Dec 2008 – Sep 2011
   - EIT, Creighton Mine, Vale-Inco — May2008 – Dec 2008
4. I have visited the Property that is the subject of this Technical Report on May 18, 2021.
5. I am responsible for authoring Section 16, and co-authoring Sections 1, 12, 18, 21, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for a Technical Report titled "(Amended) Technical Report and Updated Mineral Resource Estimate of the Kenbridge Nickel Project, Northwestern Ontario", prepared for Tartisan Nickel Corp. with an effective date of May 18, 2021.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the effective date of this 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.

Effective Date: July 6, 2022
Signed Date: August 26, 2022

{SIGNED AND SEALED}
[Greg Robinson]

____
Greg Robinson, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

WILLIAM STONE, PH.D., P.GEO.

I, William Stone, Ph.D., P.Geo, residing at 4361 Latimer Crescent, Burlington, Ontario, do hereby certify that:

1. I am an independent geological consultant working for P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Preliminary Economic Assessment of the Kenbridge Nickel Project, Kenora, Ontario", (The "Technical Report") with an effective date of July 6, 2022.
3. I am a graduate of Dalhousie University with a Bachelor of Science (Honours) degree in Geology (1983). In addition, I have a Master of Science in Geology (1985) and a Ph.D. in Geology (1988) from the University of Western Ontario. I have worked as a geologist for a total of 35 years since obtaining my M.Sc. degree. I am a geological consultant currently licensed by the Professional Geoscientists of Ontario (License No 1569).

   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.

   My relevant experience for the purpose of the Technical Report is:

   - Contract Senior Geologist, LAC Minerals Exploration Ltd. 1985-1988
   - Post-Doctoral Fellow, McMaster University 1988-1992
   - Contract Senior Geologist, Outokumpu Mines and Metals Ltd. 1993-1996
   - Senior Research Geologist, WMC Resources Ltd. 1996-2001
   - Senior Lecturer, University of Western Australia 2001-2003
   - Principal Geologist, Geoinformatics Exploration Ltd. 2003-2004
   - Vice President Exploration, Nevada Star Resources Inc. 2005-2006
   - Vice President Exploration, Goldbrook Ventures Inc. 2006-2008
   - Vice President Exploration, North American Palladium Ltd. 2008-2009
   - Vice President Exploration, Magma Metals Ltd. 2010-2011
   - President & COO, Pacific North West Capital Corp. 2011-2014
   - Consulting Geologist 2013-2017
   - Senior Project Geologist, Anglo American 2017-2019
   - Consulting Geoscientist 2020-Present
4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 4 to 10, and 23, and co-authoring Sections 1, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for a Technical Report titled: "(Amended) Technical Report and Updated Mineral Resource Estimate of the Kenbridge Nickel Project, Northwestern Ontario", prepared for Tartisan Nickel Corp. with an effective date of May 18, 2021; and "Technical Report and Updated Mineral Resource Estimate of the Kenbridge Nickel Project, Northwestern Ontario", prepared for Tartisan Nickel Corp. with an effective date of September 2, 2020.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the effective date of this 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.

Effective Date: July 6, 2022

Signed Date: August 26, 2022

{SIGNED AND SEALED}

[William Stone]

____

William E. Stone, Ph.D., P.Geo.

CERTIFICATE OF QUALIFIED PERSON

YUNGANG WU, P.GEO.

I, Yungang Wu, P. Geo., residing at 3246 Preserve Drive, Oakville, Ontario, L6M 0X3, do hereby certify that:

1. I am an independent consulting geologist contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Preliminary Economic Assessment of the Kenbridge Nickel Project, Kenora, Ontario", (The "Technical Report") with an effective date of July 6, 2022.
3. I am a graduate of Jilin University, China, with a Master's degree in Mineral Deposits (1992). I have worked as a geologist for 25 plus years since graduating. I am a geological consultant and a registered practising member of the Association of Professional Geoscientists of Ontario (Registration No. 1681).

   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.

   My relevant experience for the purpose of the Technical Report is as follows:

   - Geologist –Geology and Mineral Bureau, Liaoning Province, China 1992-1993
   - Senior Geologist – Committee of Mineral Resources and Reserves of Liaoning, China 1993-1998
   - VP – Institute of Mineral Resources and Land Planning, Liaoning, China 1998-2001
   - Project Geologist–Exploration Division, De Beers Canada 2003-2009
   - Mine Geologist – Victor Diamond Mine, De Beers Canada 2009-2011
   - Resource Geologist– Coffey Mining Canada 2011-2012
   - Consulting Geologist 2012-Present
4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for co-authoring Sections 1, 14, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for a Technical Report titled: "(Amended) Technical Report and Updated Mineral Resource Estimate of the Kenbridge Nickel Project, Northwestern Ontario", prepared for Tartisan Nickel Corp. with an effective date of May 18, 2021; and "Technical Report and Updated Mineral Resource Estimate of the Kenbridge Nickel Project, Northwestern Ontario", prepared for Tartisan Nickel Corp. with an effective date of September 2, 2020.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this 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.

Effective Date: July 6, 2022
Signed Date: August 26, 2022

{SIGNED AND SEALED}
[Yungang Wu]

____
Yungang Wu, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

MARIA STORY, B.A.SC., P.ENG.

I, Maria Story, B.A.Sc., P.Eng., residing at 770 Lakeshore Rd., Haileybury, Ontario, do hereby certify that:

1. I am an independent Environmental/Chemical Engineer, President of Story Environmental Inc., working for P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Preliminary Economic Assessment of the Kenbridge Nickel Project, Kenora, Ontario", (The "Technical Report") with an effective date of July 6, 2022.
3. I am a graduate of the University of Toronto with a Bachelor of Arts and Science degree in Chemical Engineering (1990). I have worked as an Environmental Engineer for a total of 32 years since graduating in 1990. I am a chemical engineer currently licensed by the Professional Engineers of Ontario (License No. 90341611).

   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.

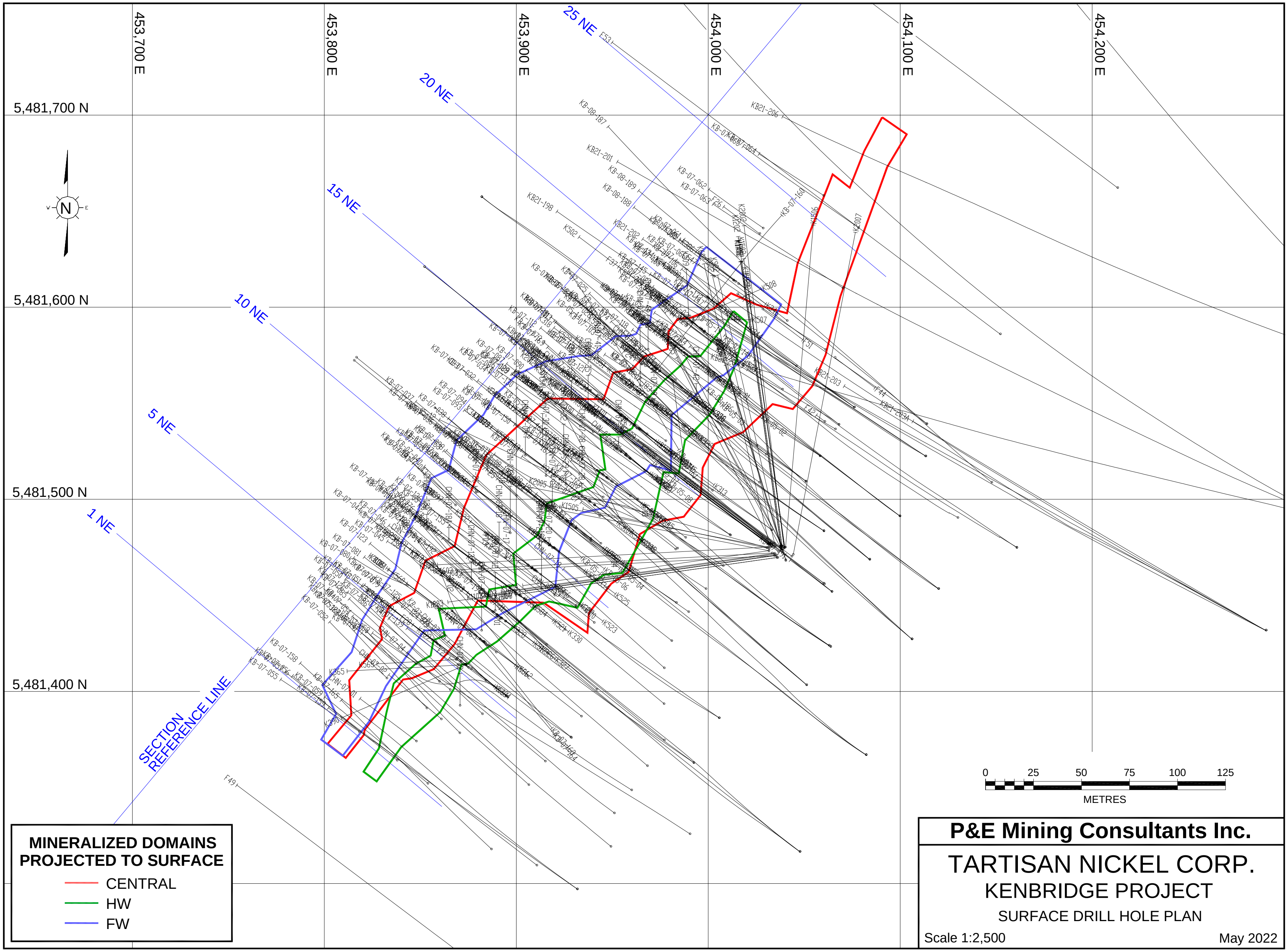
   My relevant experience for the purpose of the Technical Report is:
   - President, Story Environmental Inc. 1996-present
   - Environmental Engineer, ICI Canada Inc. 1990-1996
4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Section 20 and co-authoring Sections 1, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Property that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the effective date of this 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.

Effective Date: July 6, 2022
Signed Date: August 26, 2022

{SIGNED AND SEALED}
[Maria Story]

____
Maria Story, P.Eng.

APPENDIX A SURFACE DRILL HOLE PLAN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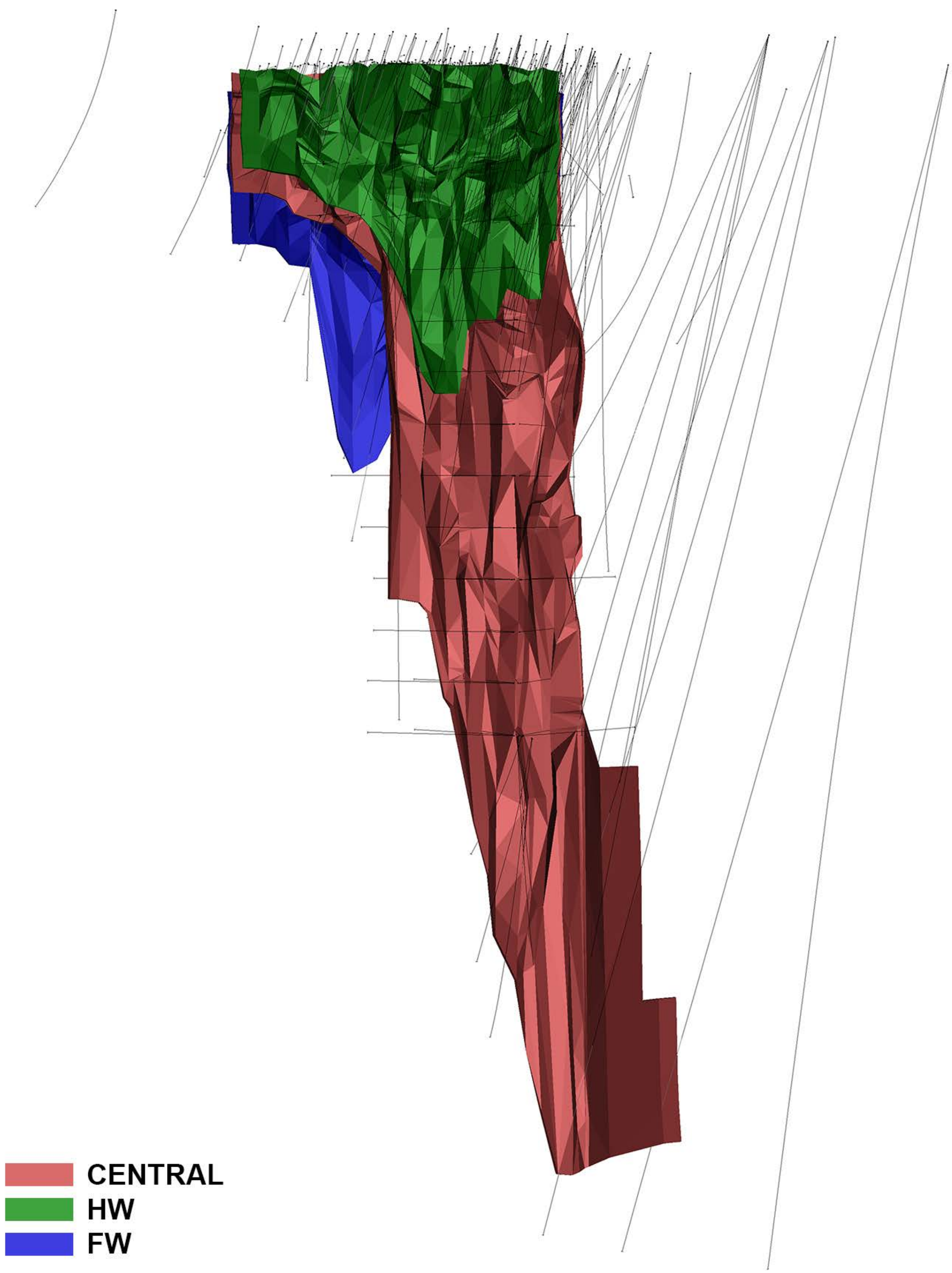
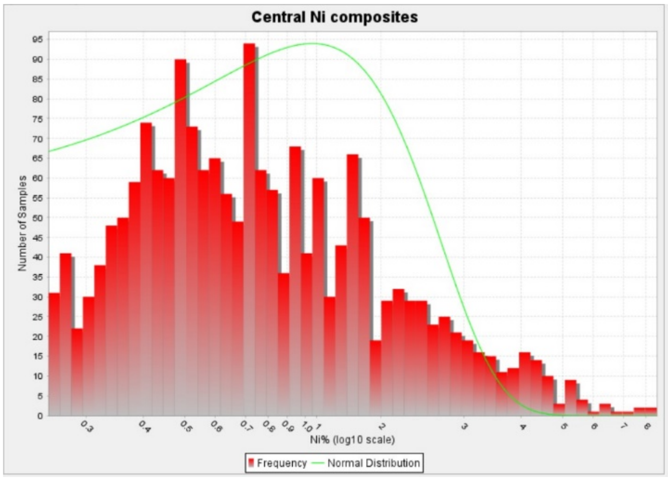
5,481,400 N
25 NE
20 NE
15 NE
10 NE
5 NE
1 NE
SECTION REFERENCE LINE
N
MINERALIZED DOMAINS PROJECTED TO SURFACE
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
SURFACE DRILL HOLE PLAN
Scale 1:2,500
May 2022

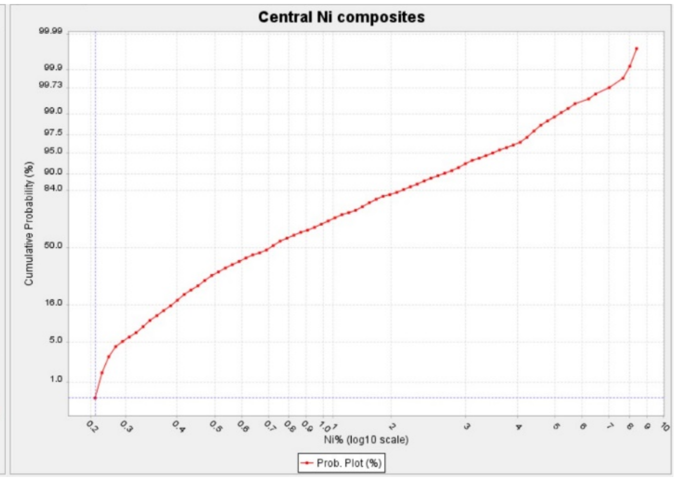
APPENDIX B 3-D DOMAINS

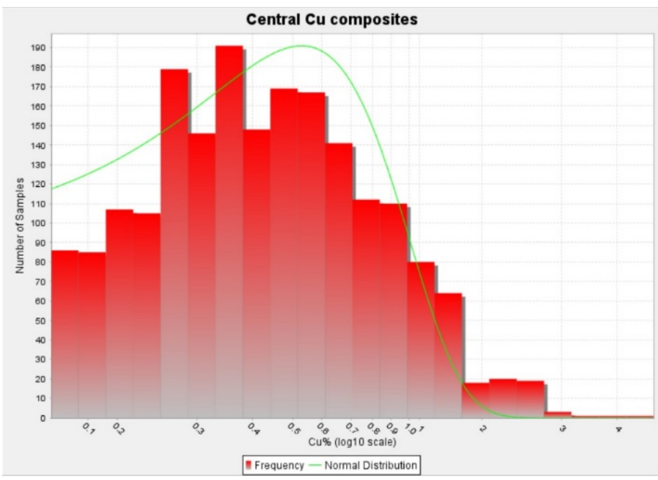
KENBRIDGE PROJECT - 3D DOMAINS

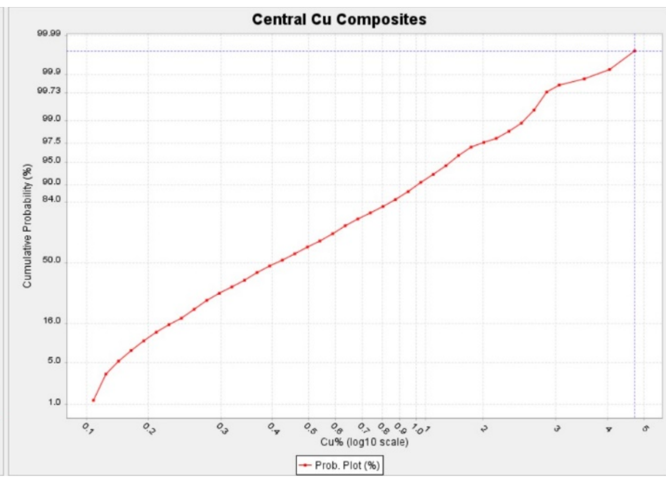


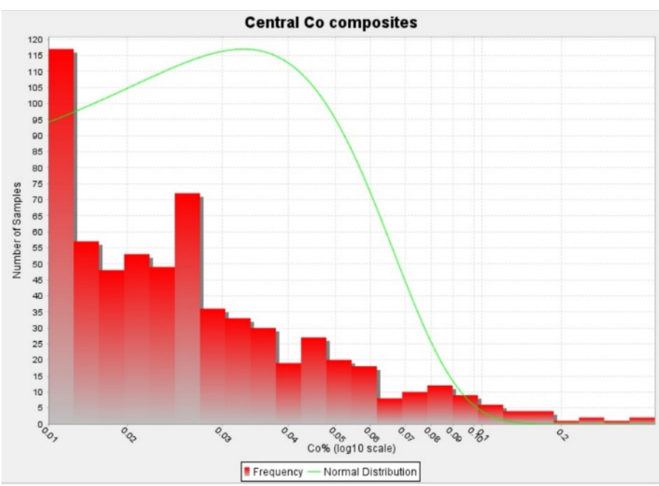
APPENDIX C LOG NORMAL HISTOGRAMS AND PROBABILITY PLOTS

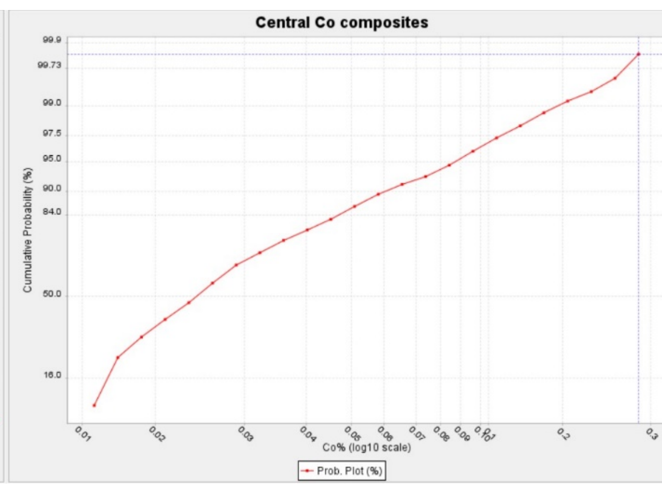


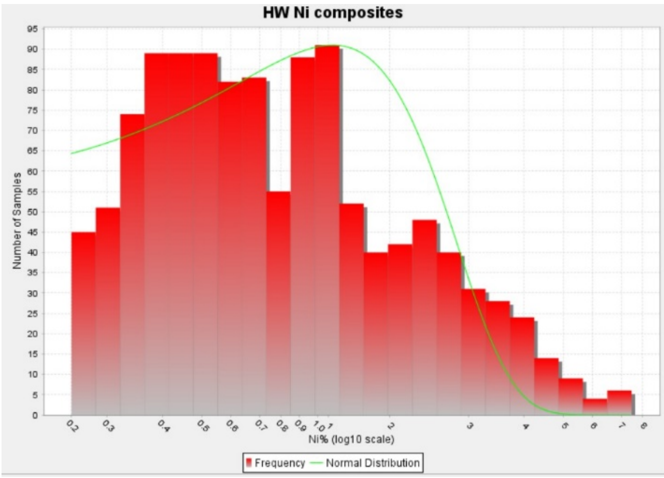








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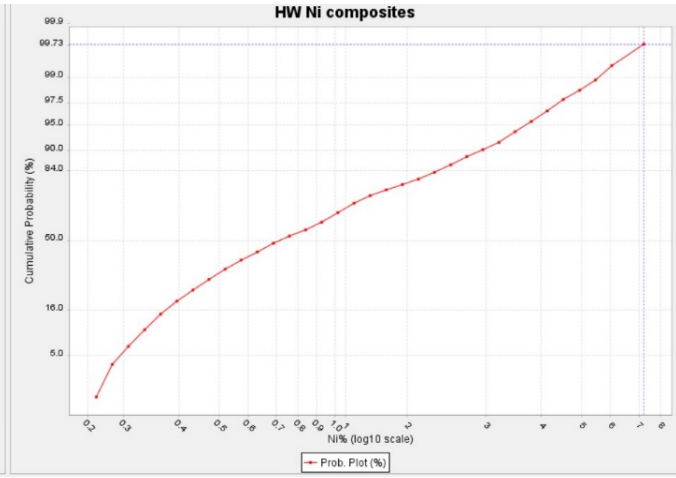
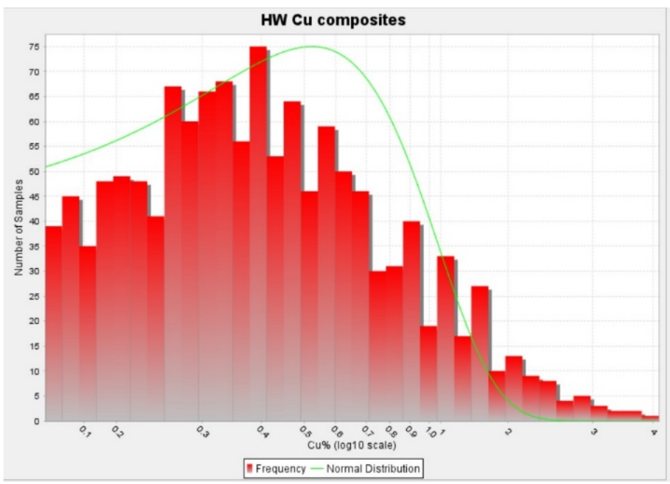
Number of Samples
Ni% (log10 scale)
Frequency
Normal Distribution

HW Ni composites
Cumulative Probability (%)
Ni% (log10 scale)
Prob. Plot (%)

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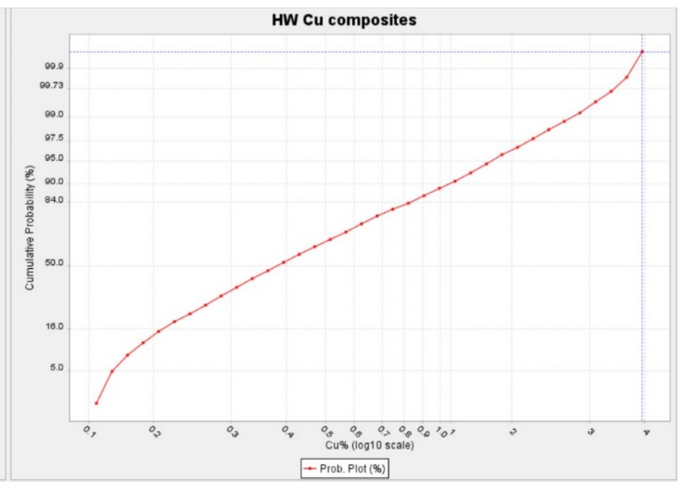
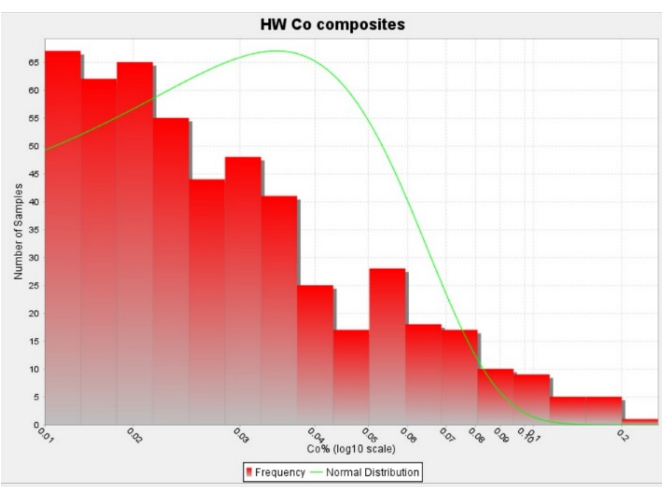
Number of Samples
Cu% (log10 scale)
Frequency
Normal Distribution

HW Cu composites
Cumulative Probability (%)
Cu% (log10 scale)
Prob. Plot (%)

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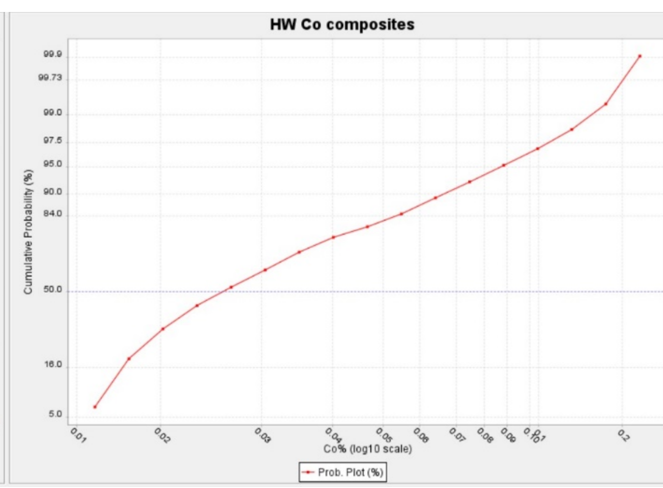
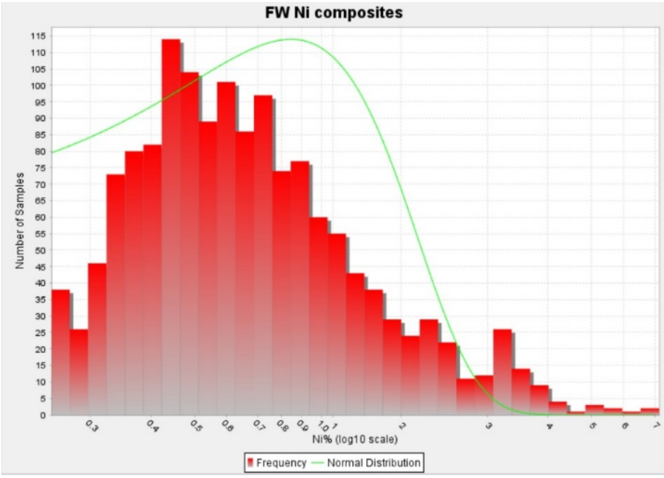
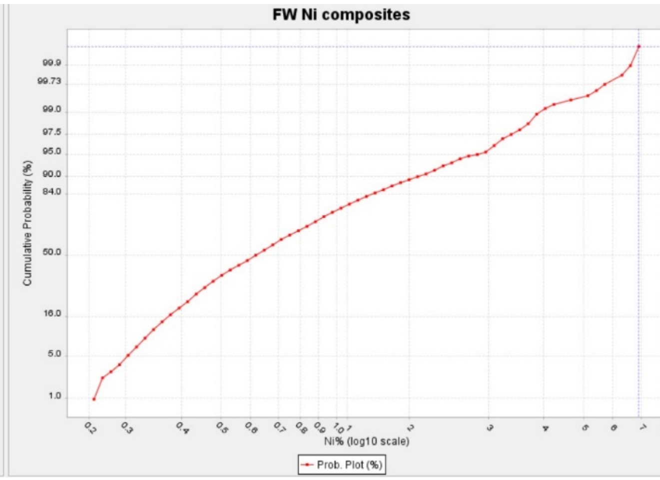
Number of Samples
Co% (log10 scale)
Frequency
Normal Distribution

HW Co composites
Cumulative Probability (%)
Co% (log10 scale)
Prob. Plot (%)


FW Ni composites
Number of Samples
Ni% (log10 scale)
Frequency
Normal Distribution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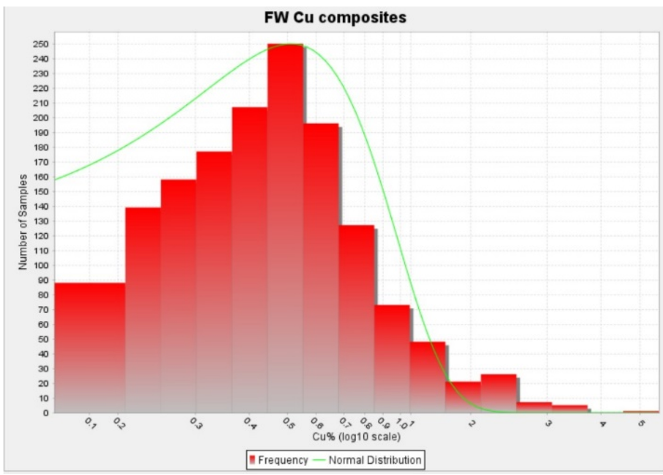
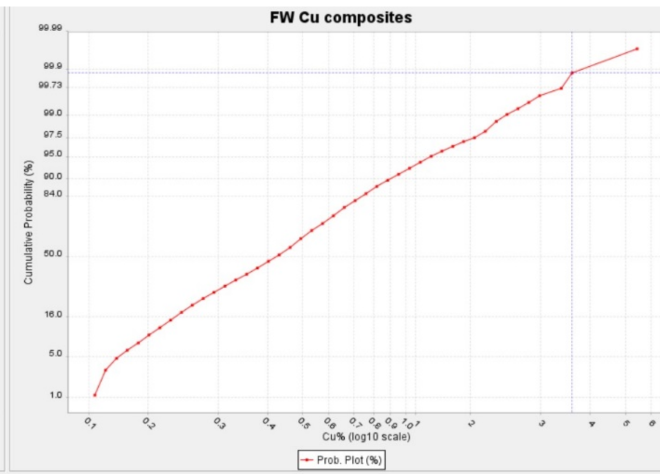
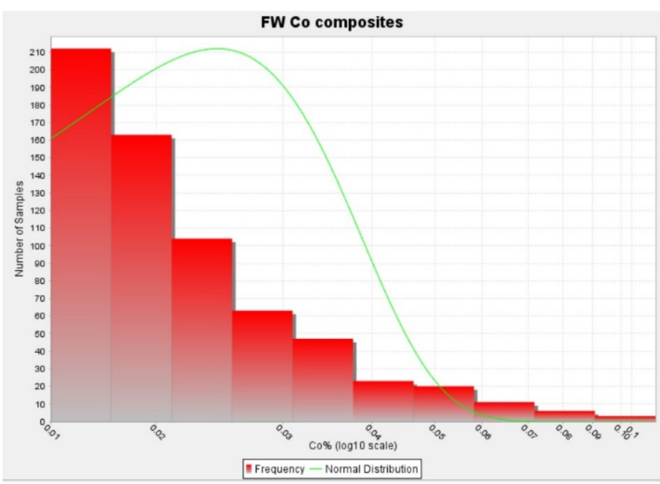
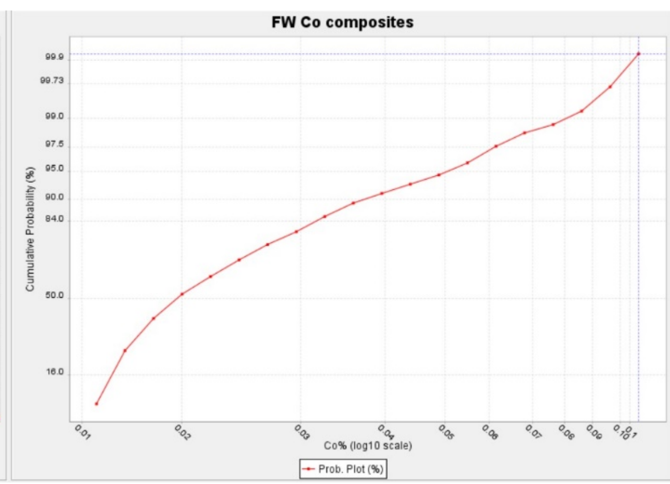
Cumulative Probability (%)
Ni% (log10 scale)
Prob. Plot (%)

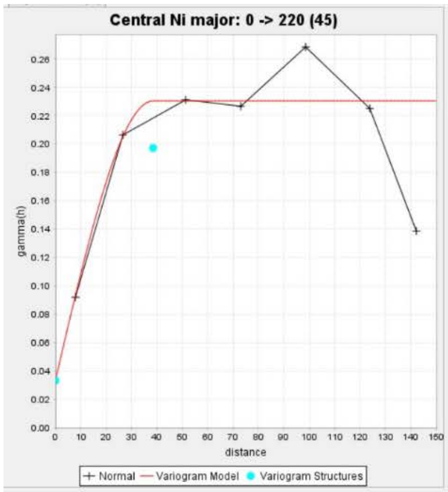

FW Cu composites
Number of Samples
Cu% (log10 scale)
Frequency
Normal Distribution

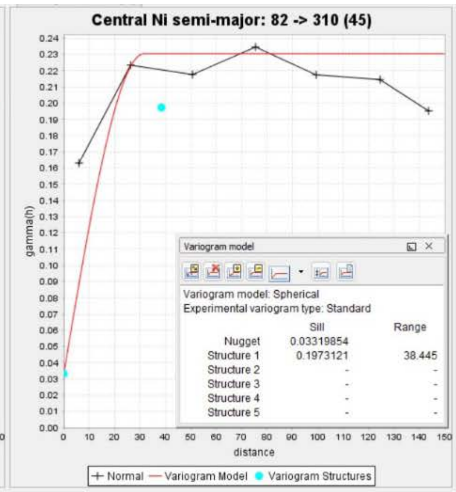

FW Cu composites
Cumulative Probability (%)
Cu% (log10 scale)
Prob. Plot (%)

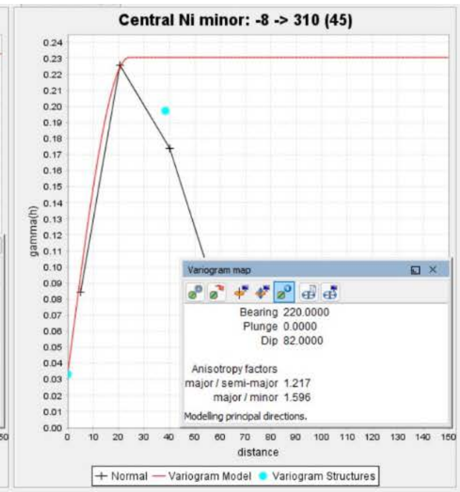

FW Co composites
Number of Samples
Co% (log10 scale)
Frequency
Normal Distribution

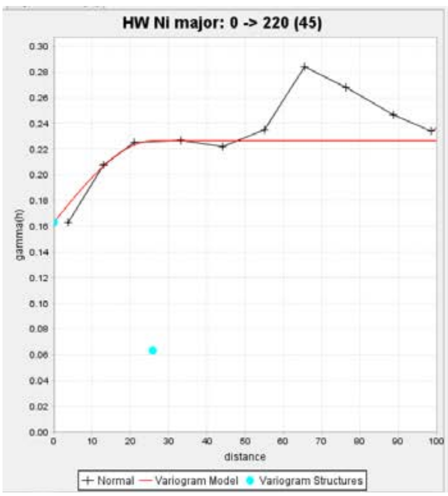

FW Co composites
Cumulative Probability (%)
Co% (log10 scale)
Prob. Plot (%)

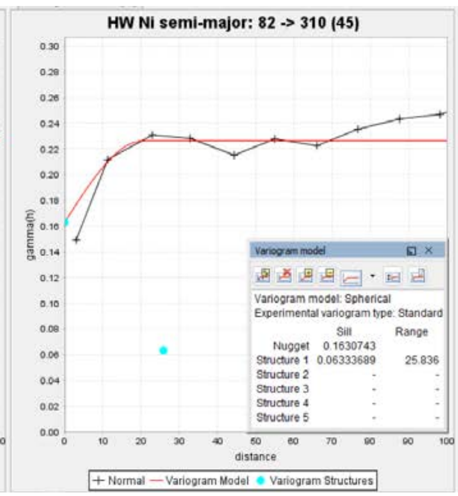
APPENDIX D VARIOGRAMS

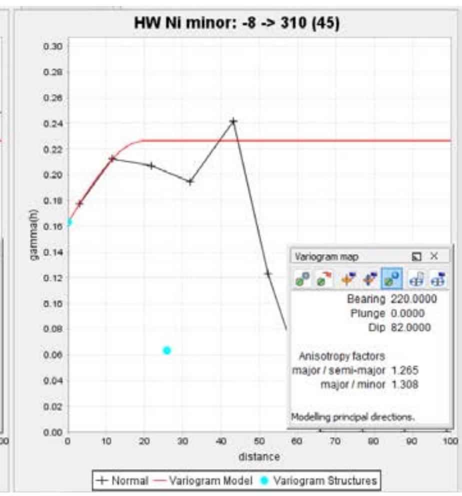


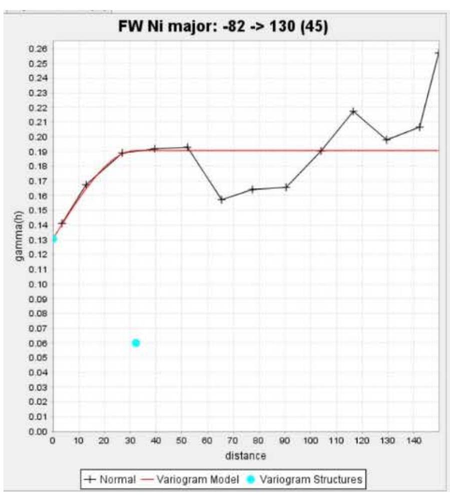


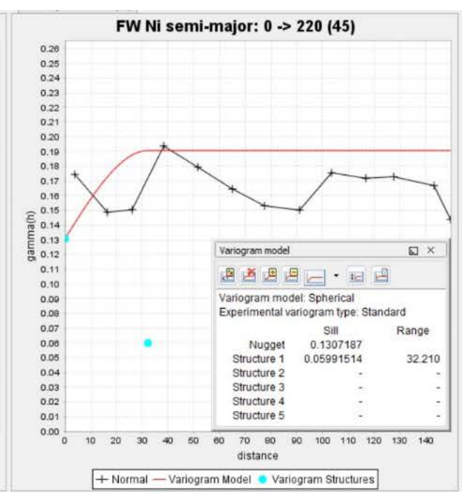


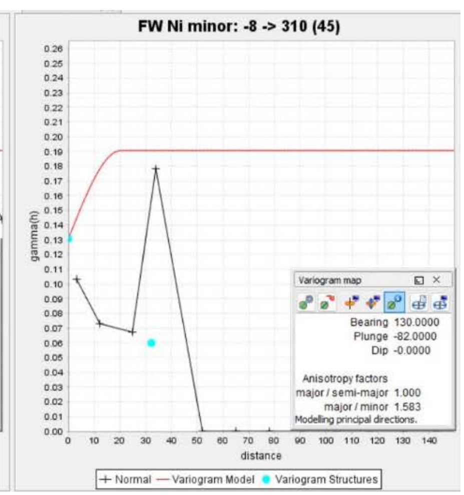




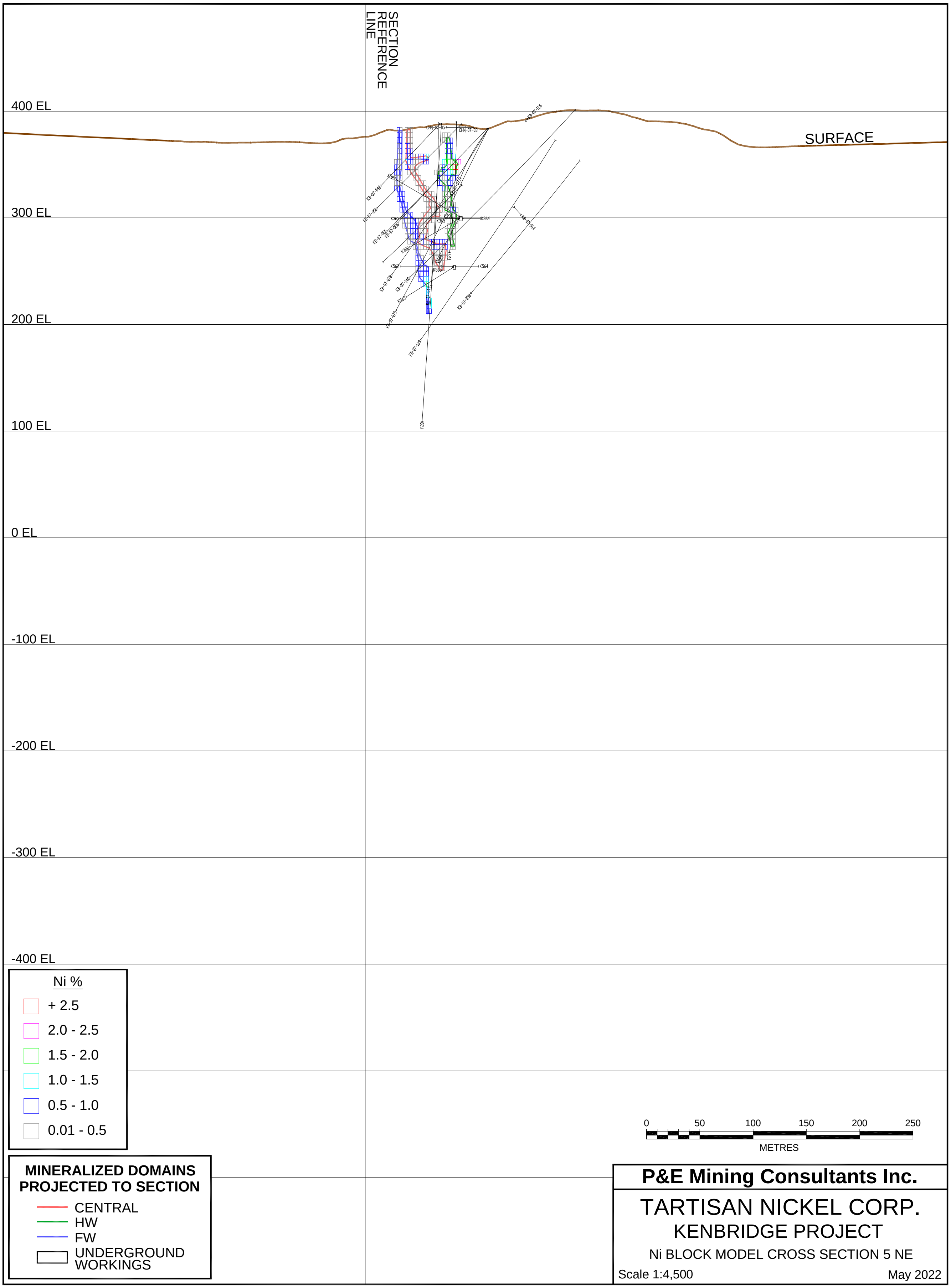








APPENDIX E NI BLOCK MODEL CROSS SECTIONS AND PLANS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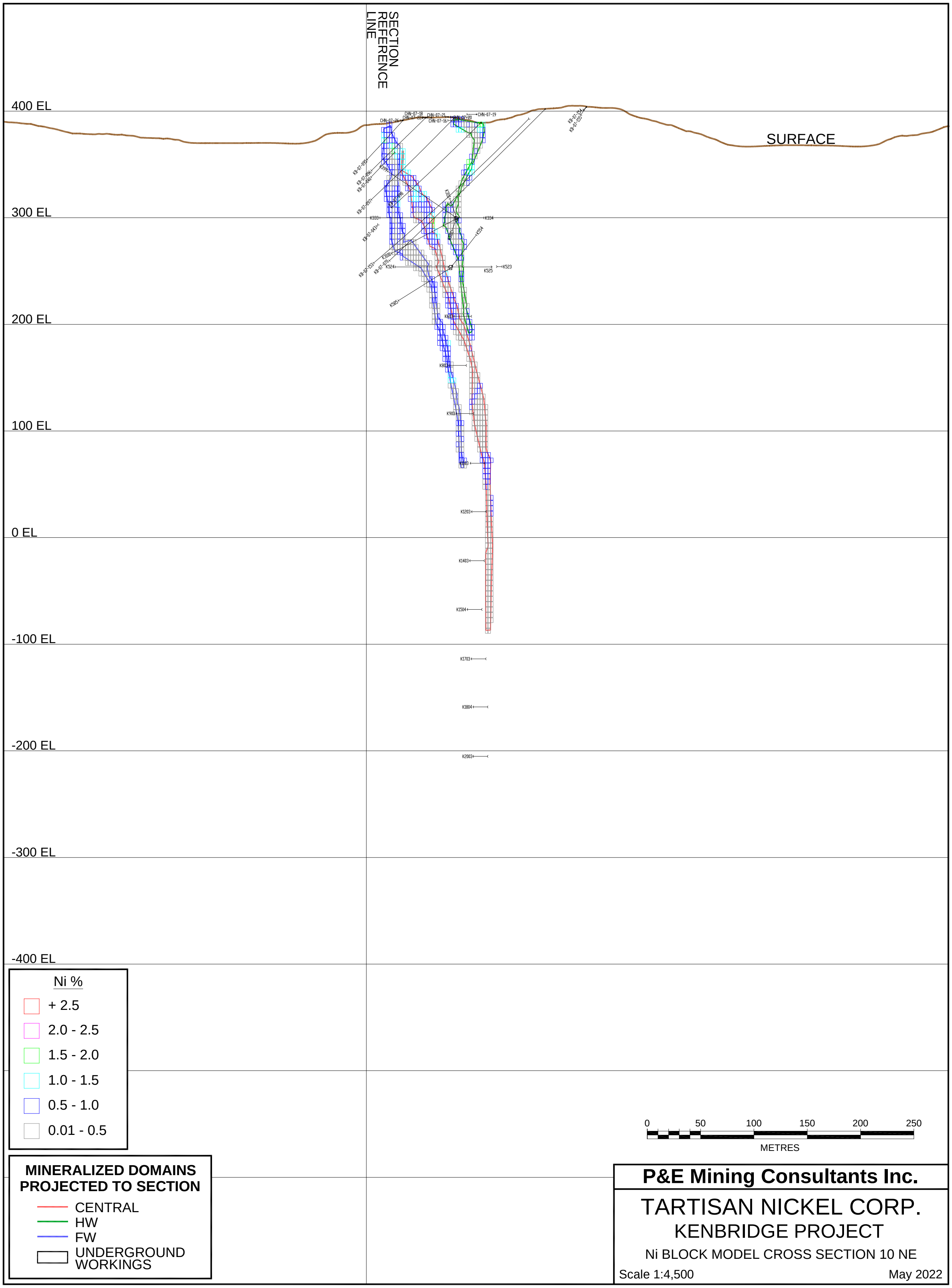
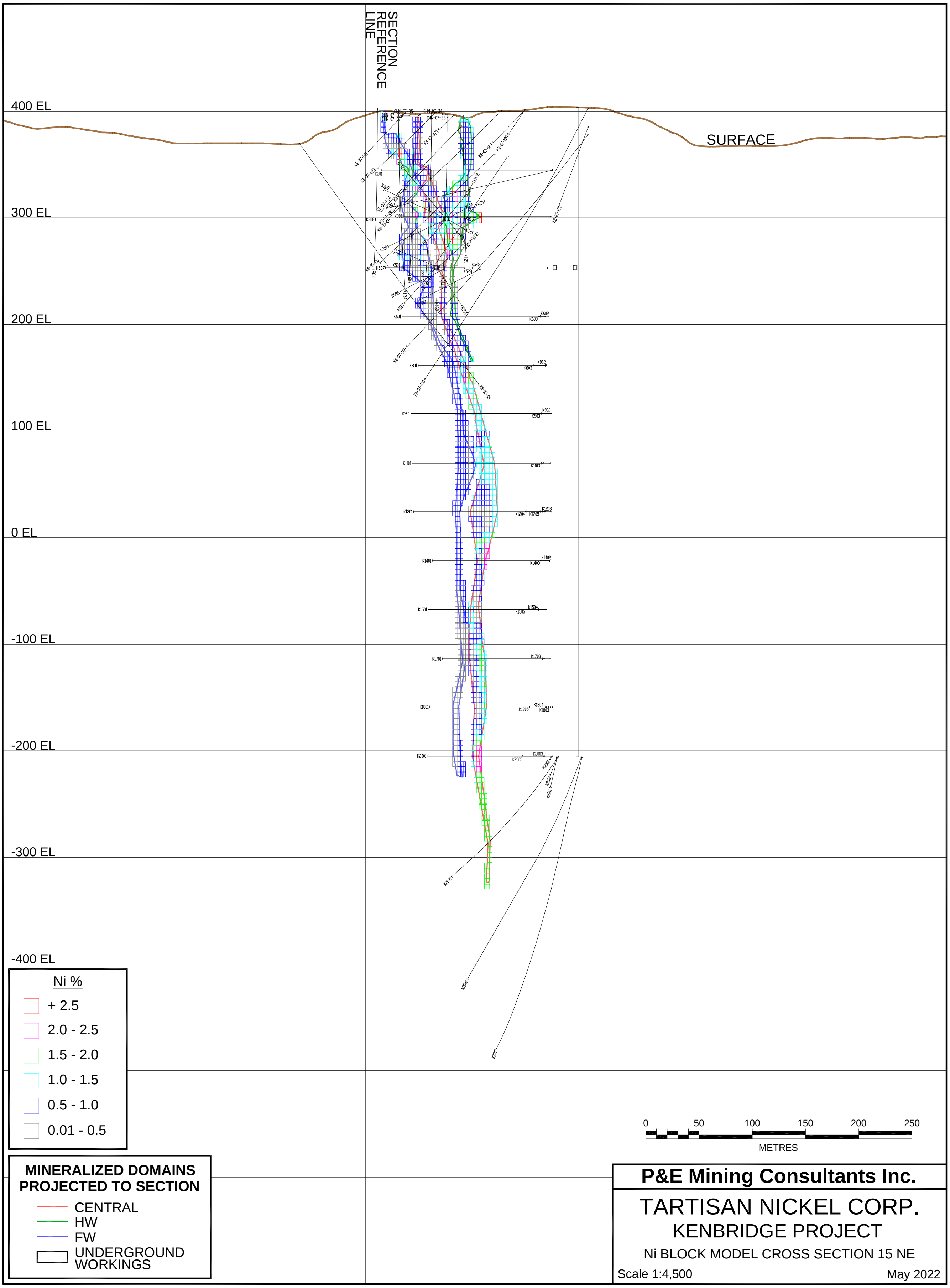
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
SURFACE
Ni %
+ 2.5
2.0 - 2.5
1.5 - 2.0
1.0 - 1.5
0.5 - 1.0
0.01 - 0.5
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
Ni BLOCK MODEL CROSS SECTION 5 NE
Scale 1:4,500
May 2022



SECTION REFERENCE LINE
400 EL
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
SURFACE
Ni %
+ 2.5
2.0 - 2.5
1.5 - 2.0
1.0 - 1.5
0.5 - 1.0
0.01 - 0.5
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
Ni BLOCK MODEL CROSS SECTION 10 NE
Scale 1:4,500
May 2022


SECTION REFERENCE LINE
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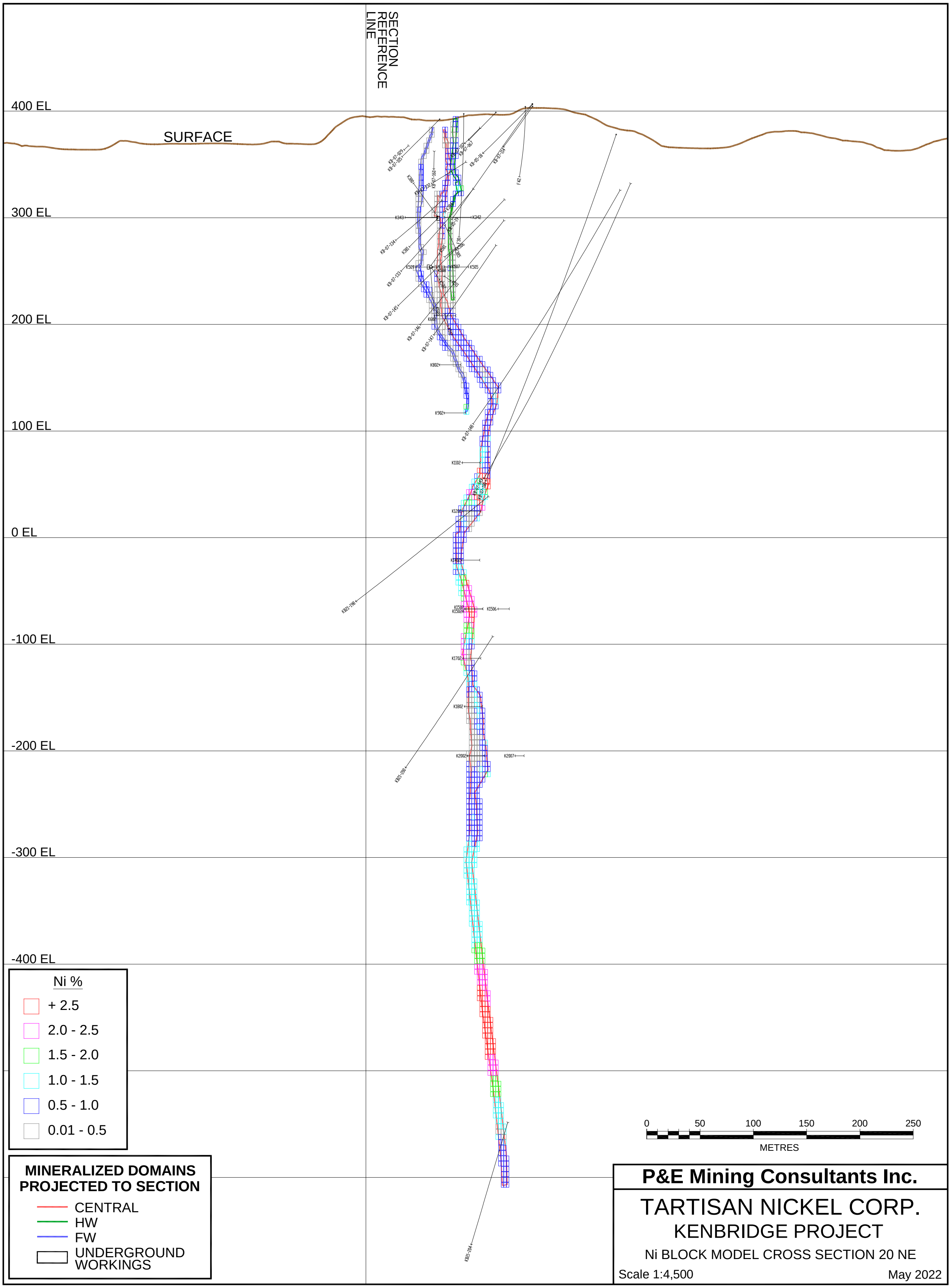
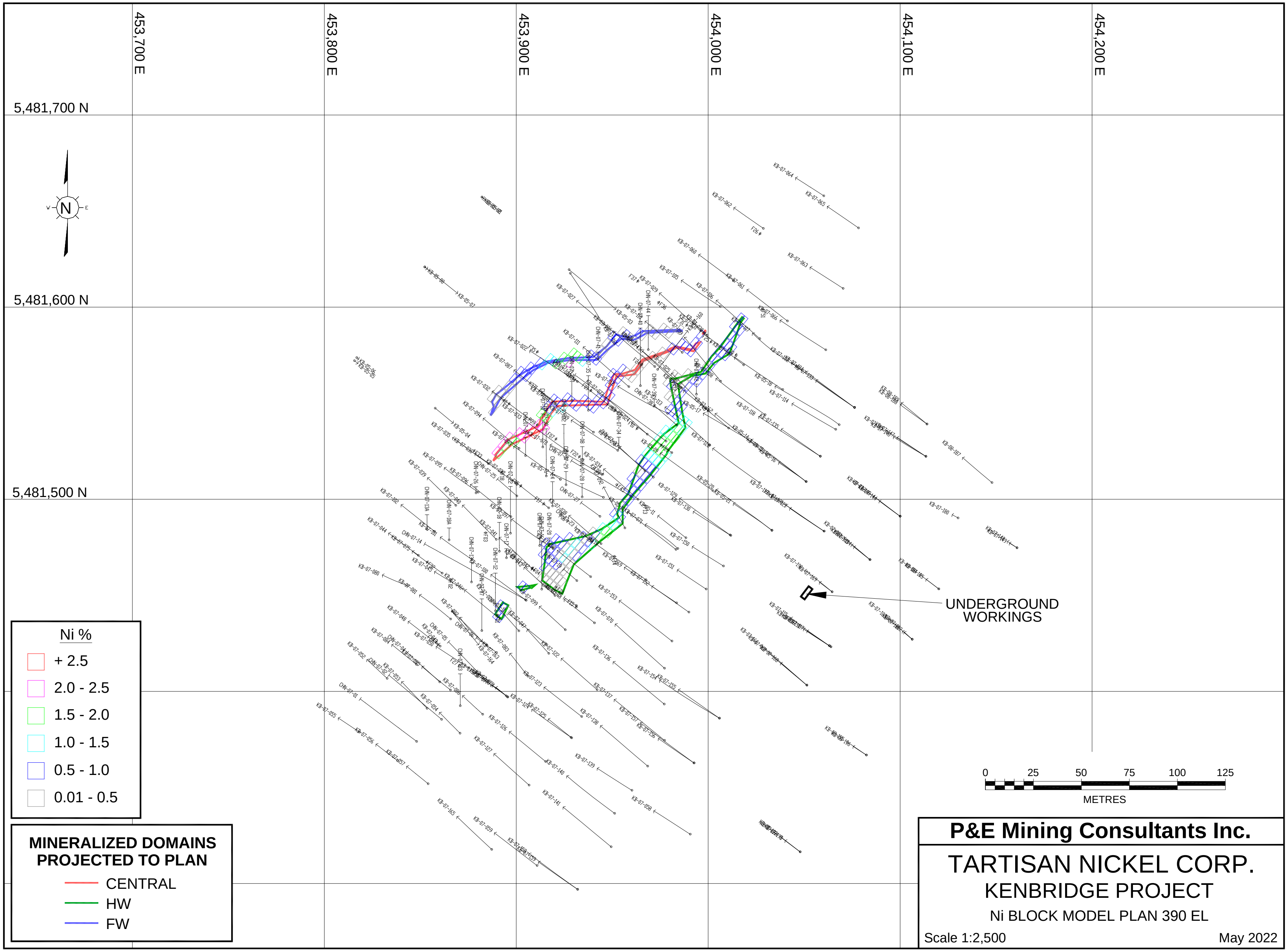
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
SURFACE
Ni %
+ 2.5
2.0 - 2.5
1.5 - 2.0
1.0 - 1.5
0.5 - 1.0
0.01 - 0.5
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
Ni BLOCK MODEL CROSS SECTION 15 NE
Scale 1:4,500
May 2022



SECTION REFERENCE LINE
400 EL
SURFACE
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
Ni %
+ 2.5
2.0 - 2.5
1.5 - 2.0
1.0 - 1.5
0.5 - 1.0
0.01 - 0.5
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
Ni BLOCK MODEL CROSS SECTION 20 NE
Scale 1:4,500
May 2022



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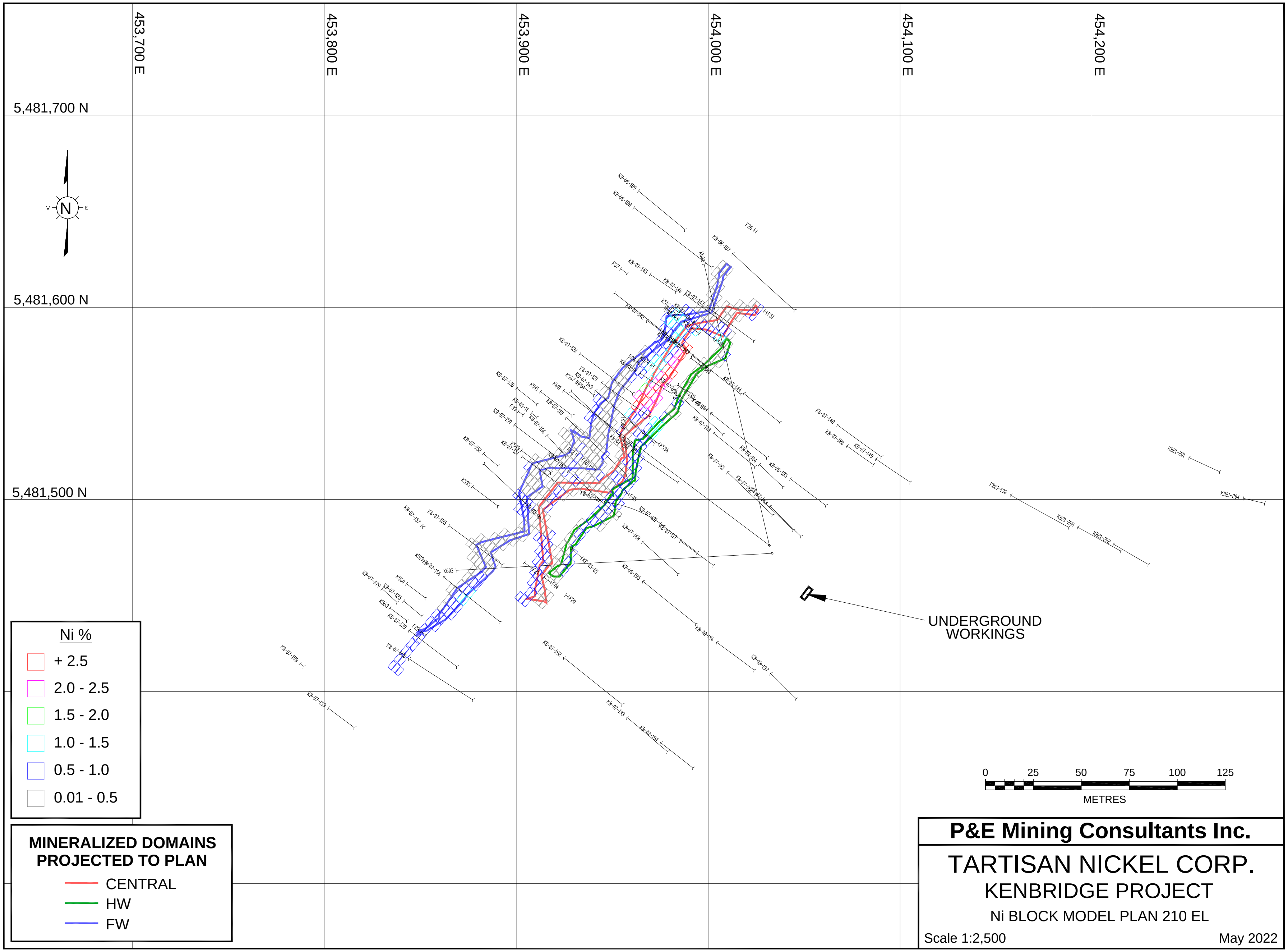
453,800 E
453,900 E
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
N
UNDERGROUND
WORKINGS
Ni %
+ 2.5
2.0 - 2.5
1.5 - 2.0
1.0 - 1.5
0.5 - 1.0
0.01 - 0.5
MINERALIZED DOMAINS
PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
Ni BLOCK MODEL PLAN 390 EL
Scale 1:2,500
May 2022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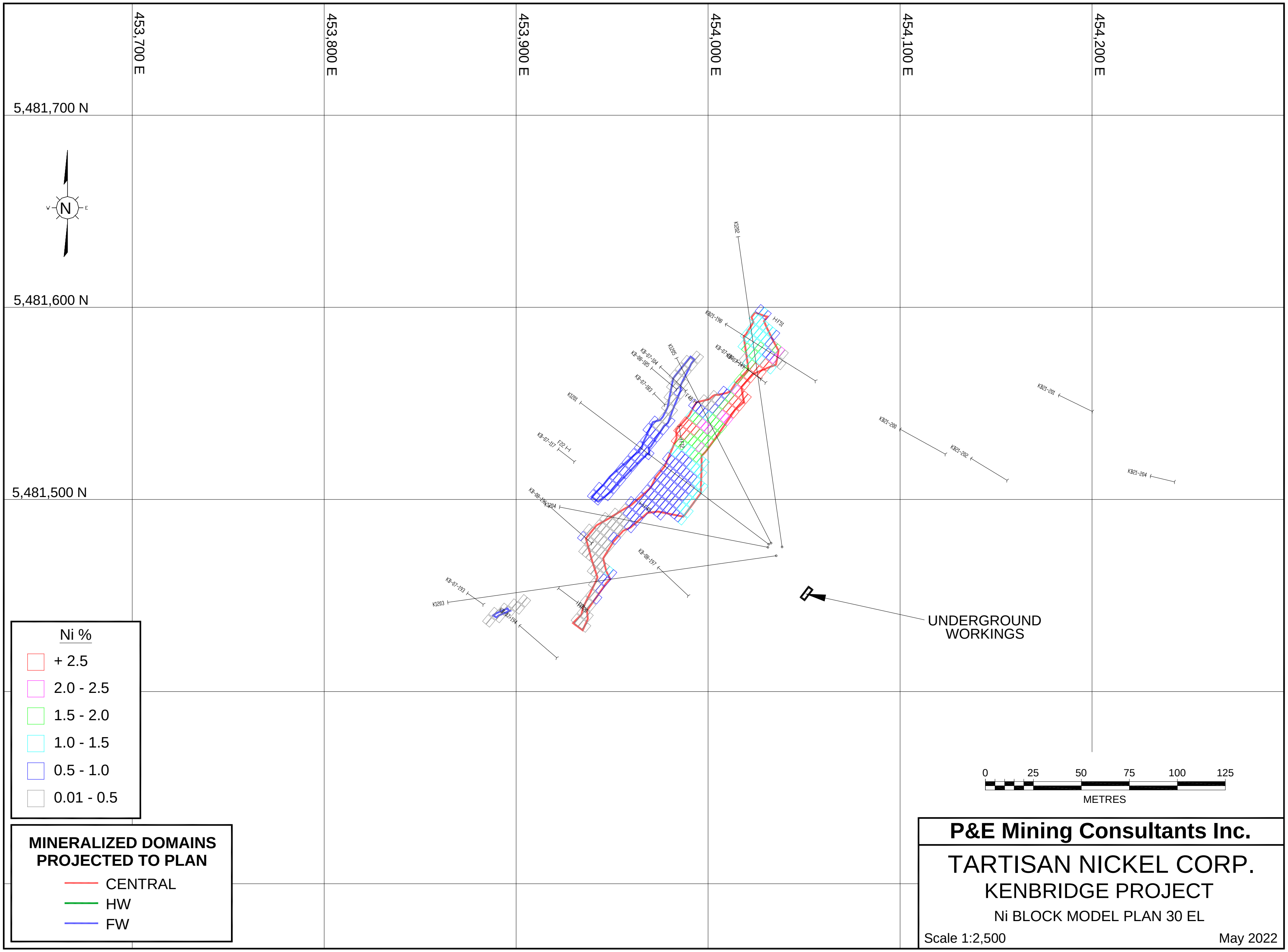
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
N
UNDERGROUND
WORKINGS
Ni %
+ 2.5
2.0 - 2.5
1.5 - 2.0
1.0 - 1.5
0.5 - 1.0
0.01 - 0.5
MINERALIZED DOMAINS
PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
Ni BLOCK MODEL PLAN 210 EL
Scale 1:2,500
May 2022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453,800 E
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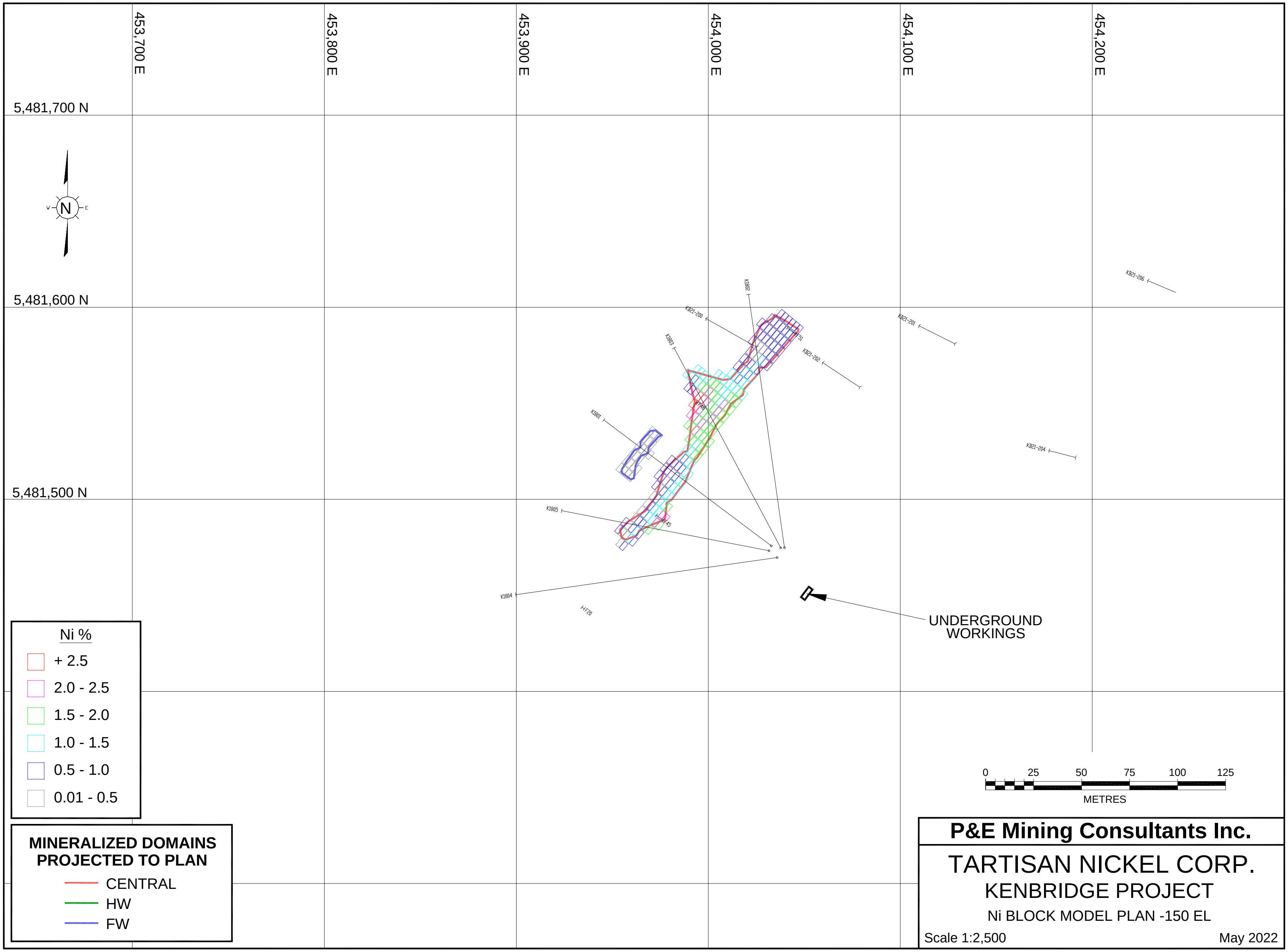
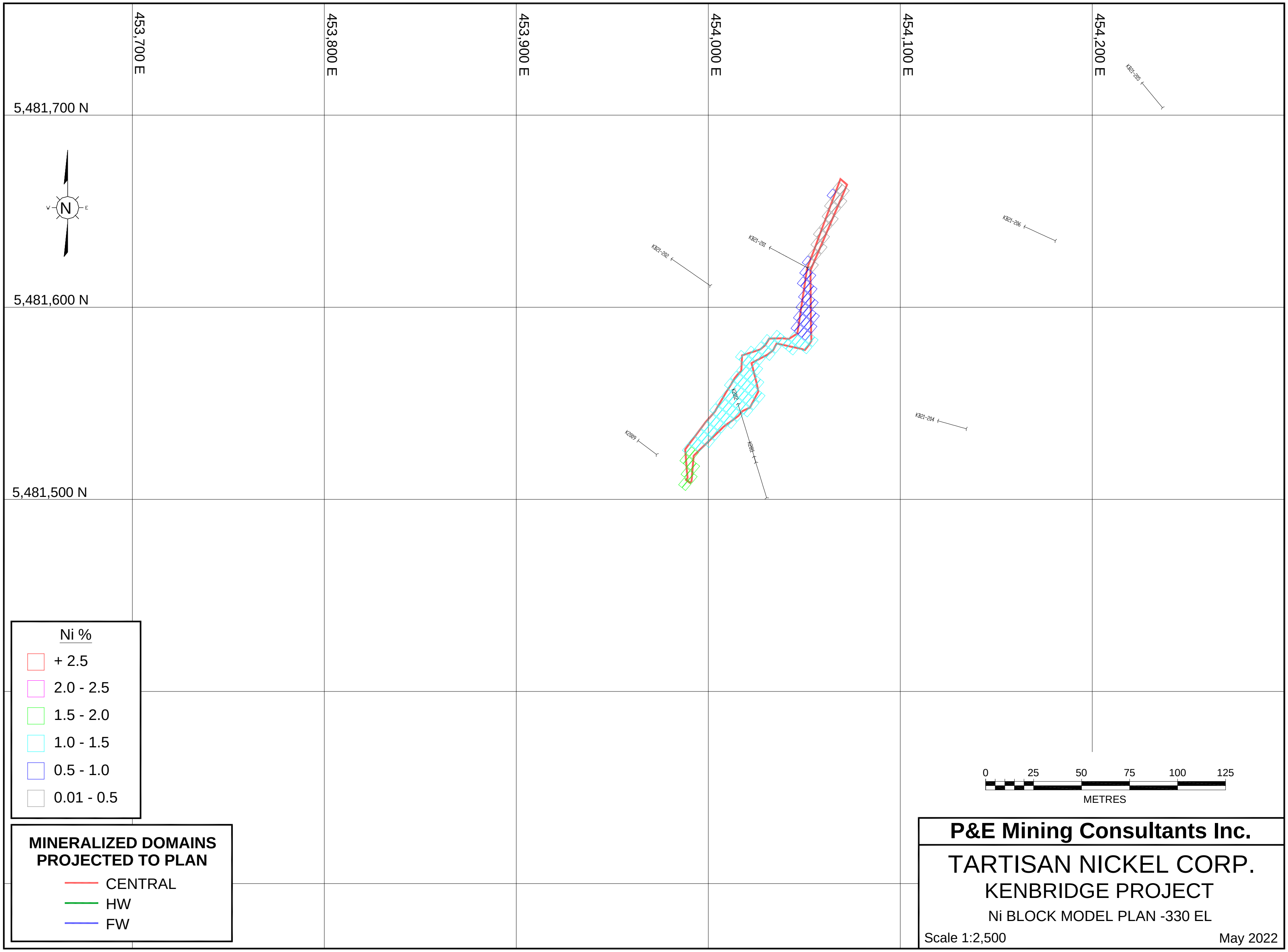
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
N
UNDERGROUND
WORKINGS
Ni %
+ 2.5
2.0 - 2.5
1.5 - 2.0
1.0 - 1.5
0.5 - 1.0
0.01 - 0.5
MINERALIZED DOMAINS
PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
Ni BLOCK MODEL PLAN 30 EL
Scale 1:2,500
May 2022



453,700 E
453,800 E
453,900 E
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
N
UNDERGROUND WORKINGS
Ni %
+ 2.5
2.0 - 2.5
1.5 - 2.0
1.0 - 1.5
0.5 - 1.0
0.01 - 0.5
MINERALIZED DOMAINS PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
Ni BLOCK MODEL PLAN -150 EL
Scale 1:2,500
May 2022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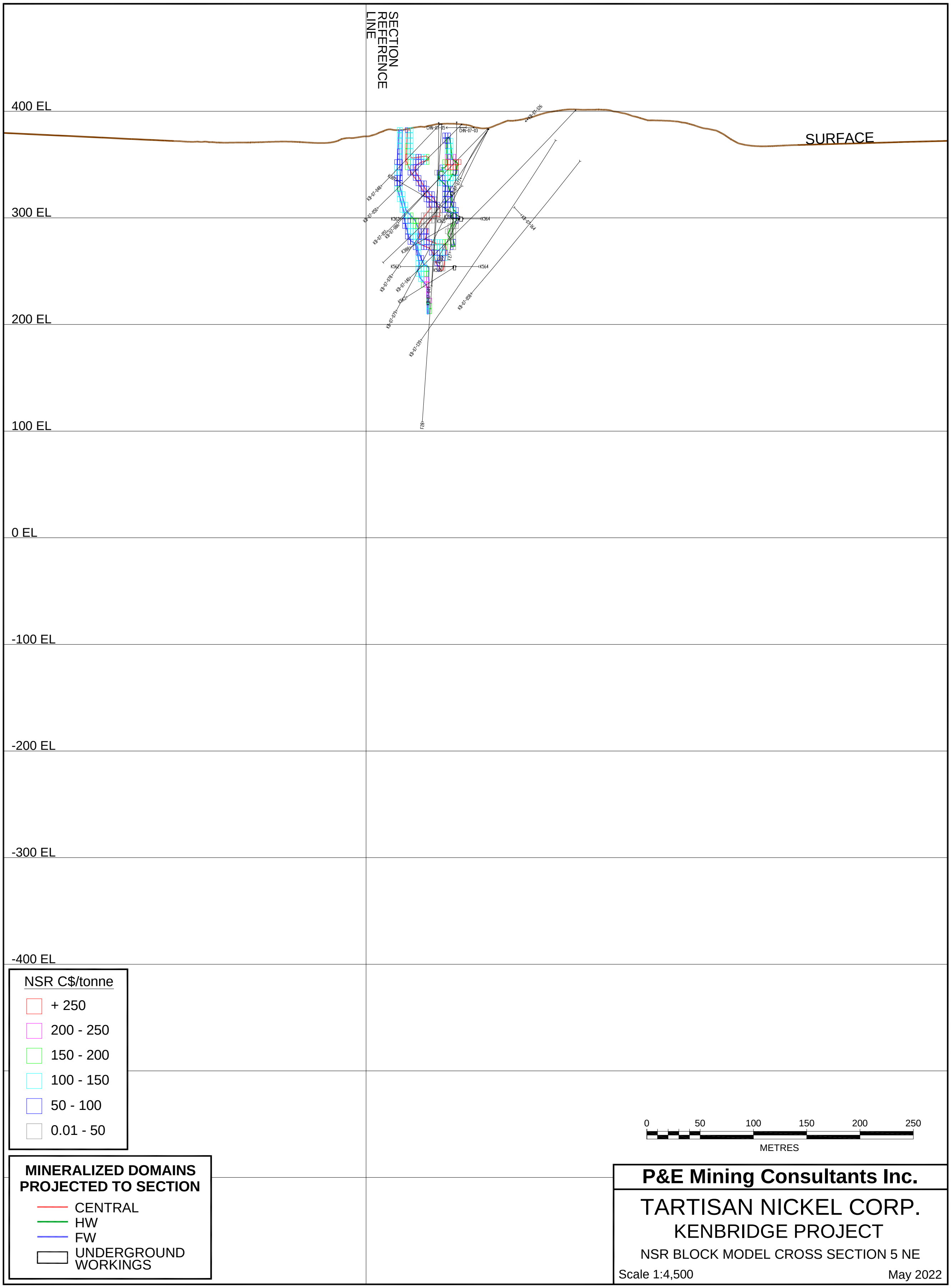
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
N
Ni %
+ 2.5
2.0 - 2.5
1.5 - 2.0
1.0 - 1.5
0.5 - 1.0
0.01 - 0.5
MINERALIZED DOMAINS PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
Ni BLOCK MODEL PLAN -330 EL
Scale 1:2,500
May 2022

APPENDIX F NSR BLOCK MODEL CROSS SECTIONS AND PLANS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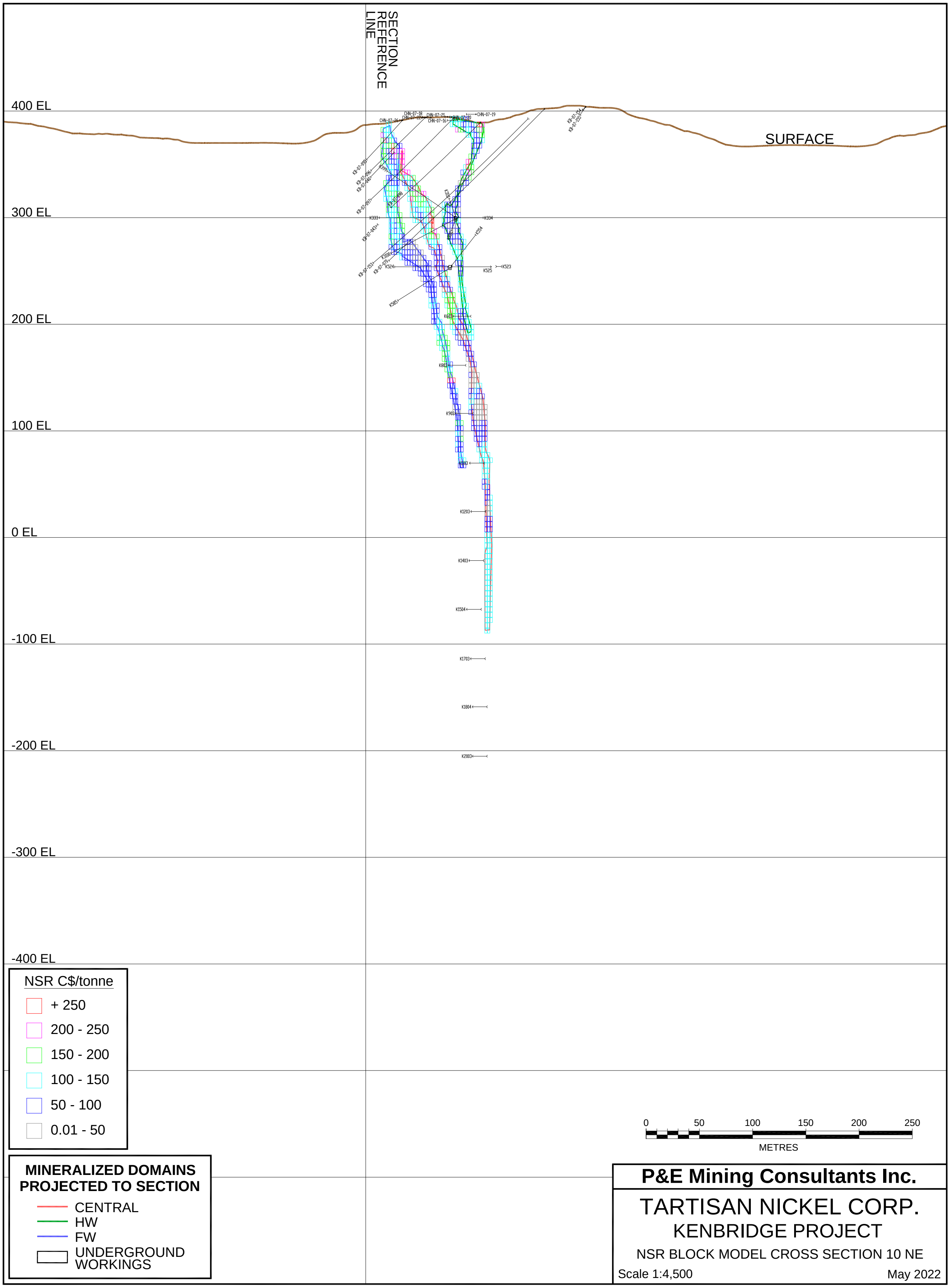
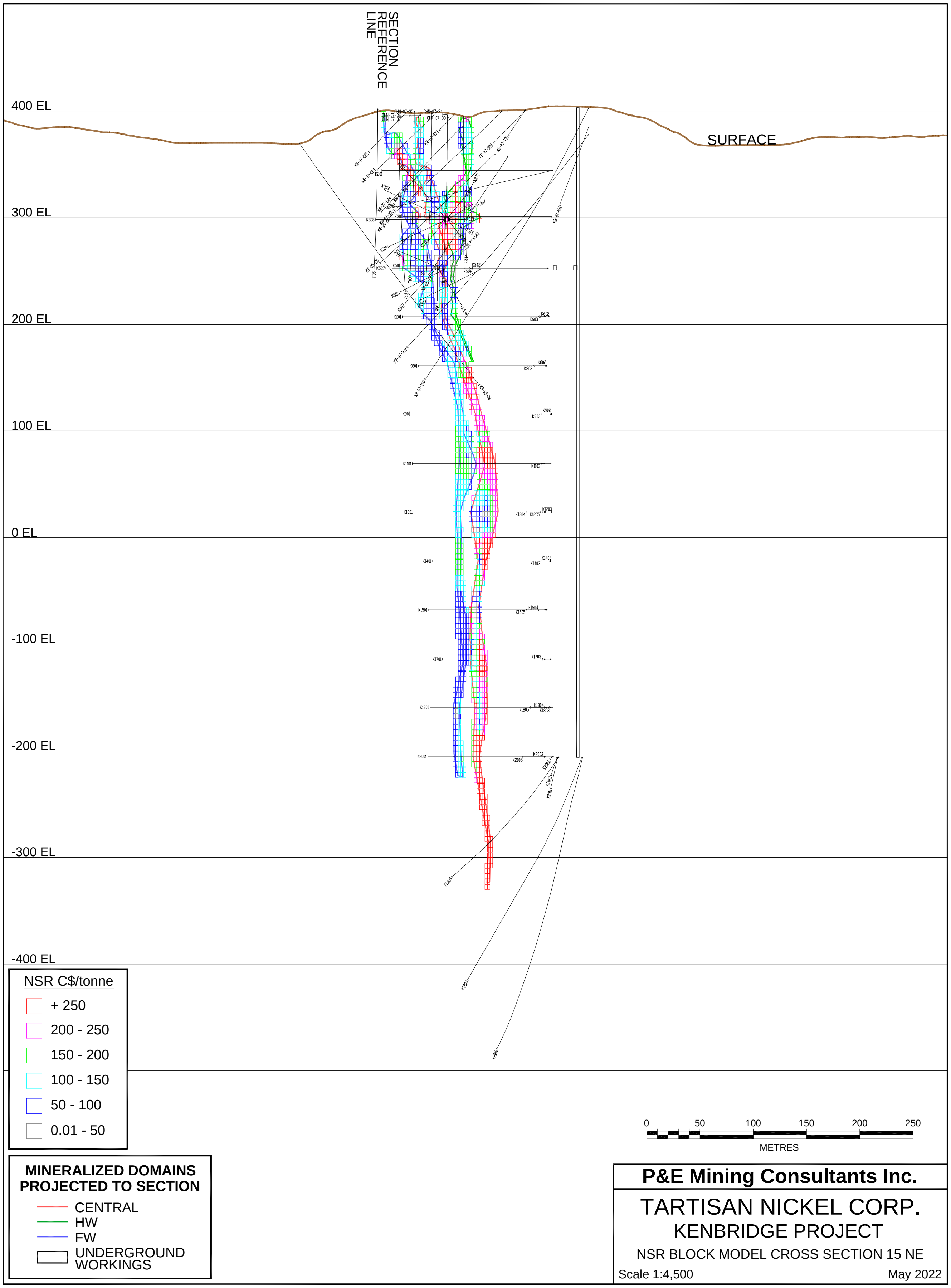
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
SURFACE
NSR C$/tonne
+ 250
200 - 250
150 - 200
100 - 150
50 - 100
0.01 - 50
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
NSR BLOCK MODEL CROSS SECTION 5 NE
Scale 1:4,500
May 2022


SECTION REFERENCE LINE
400 EL
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
SURFACE
NSR C$/tonne
+ 250
200 - 250
150 - 200
100 - 150
50 - 100
0.01 - 50
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
NSR BLOCK MODEL CROSS SECTION 10 NE
Scale 1:4,500
May 2022


SECTION REFERENCE LINE
400 EL
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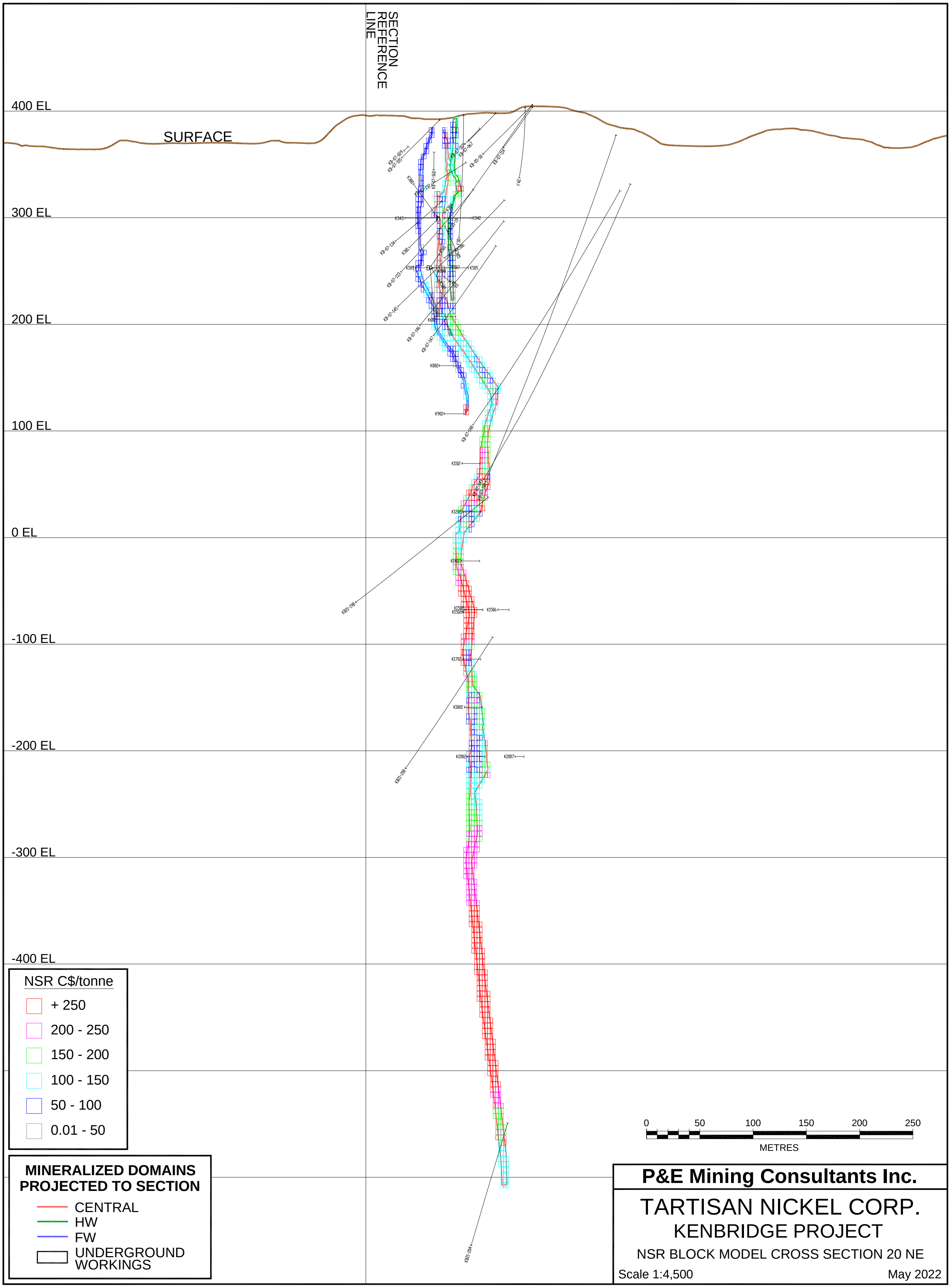
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
SURFACE
NSR C$/tonne
+ 250
200 - 250
150 - 200
100 - 150
50 - 100
0.01 - 50
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
NSR BLOCK MODEL CROSS SECTION 15 NE
Scale 1:4,500
May 2022


SECTION REFERENCE LINE
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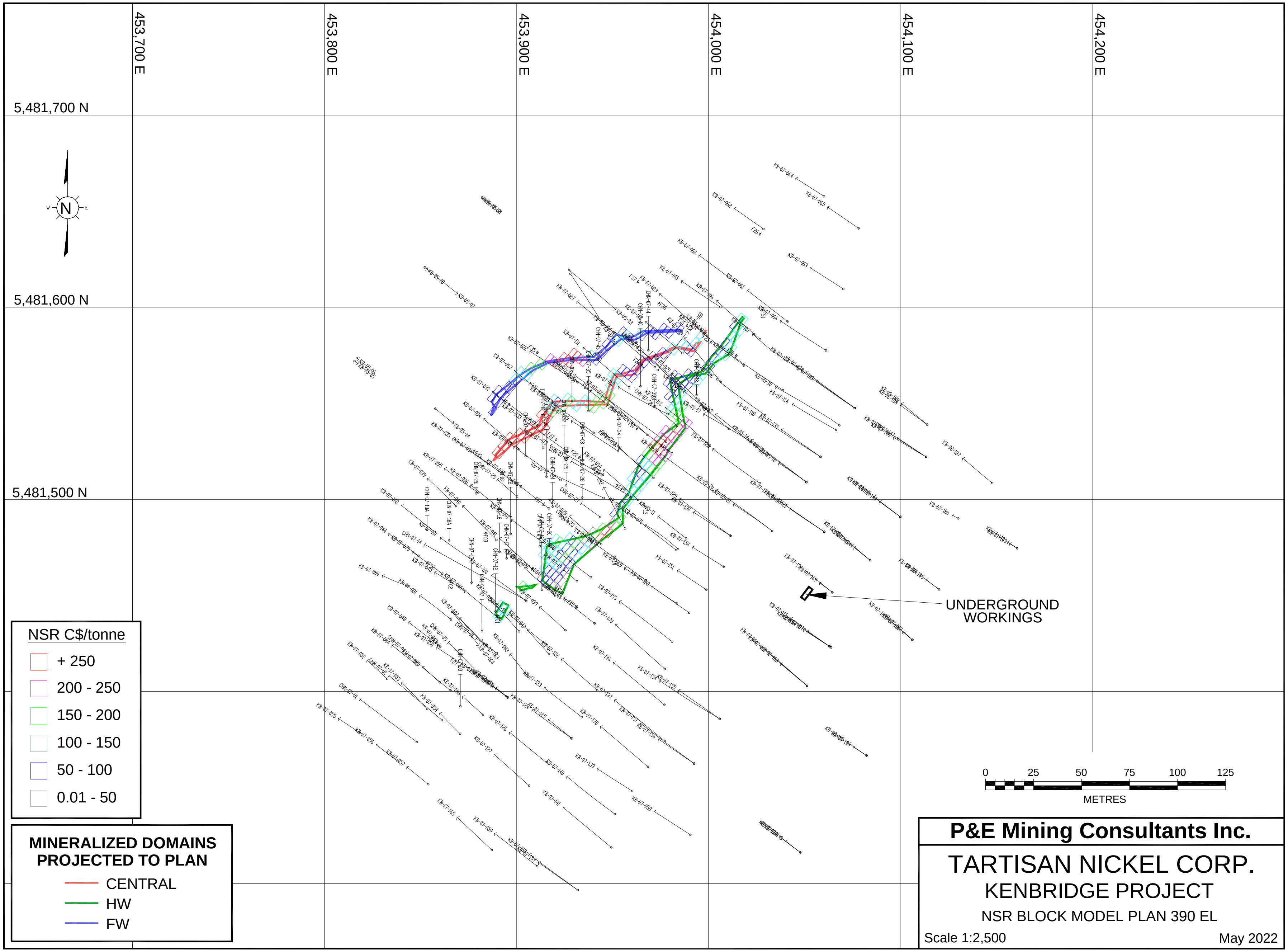
SURFACE
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
NSR C$/tonne
+ 250
200 - 250
150 - 200
100 - 150
50 - 100
0.01 - 50
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
NSR BLOCK MODEL CROSS SECTION 20 NE
Scale 1:4,500
May 2022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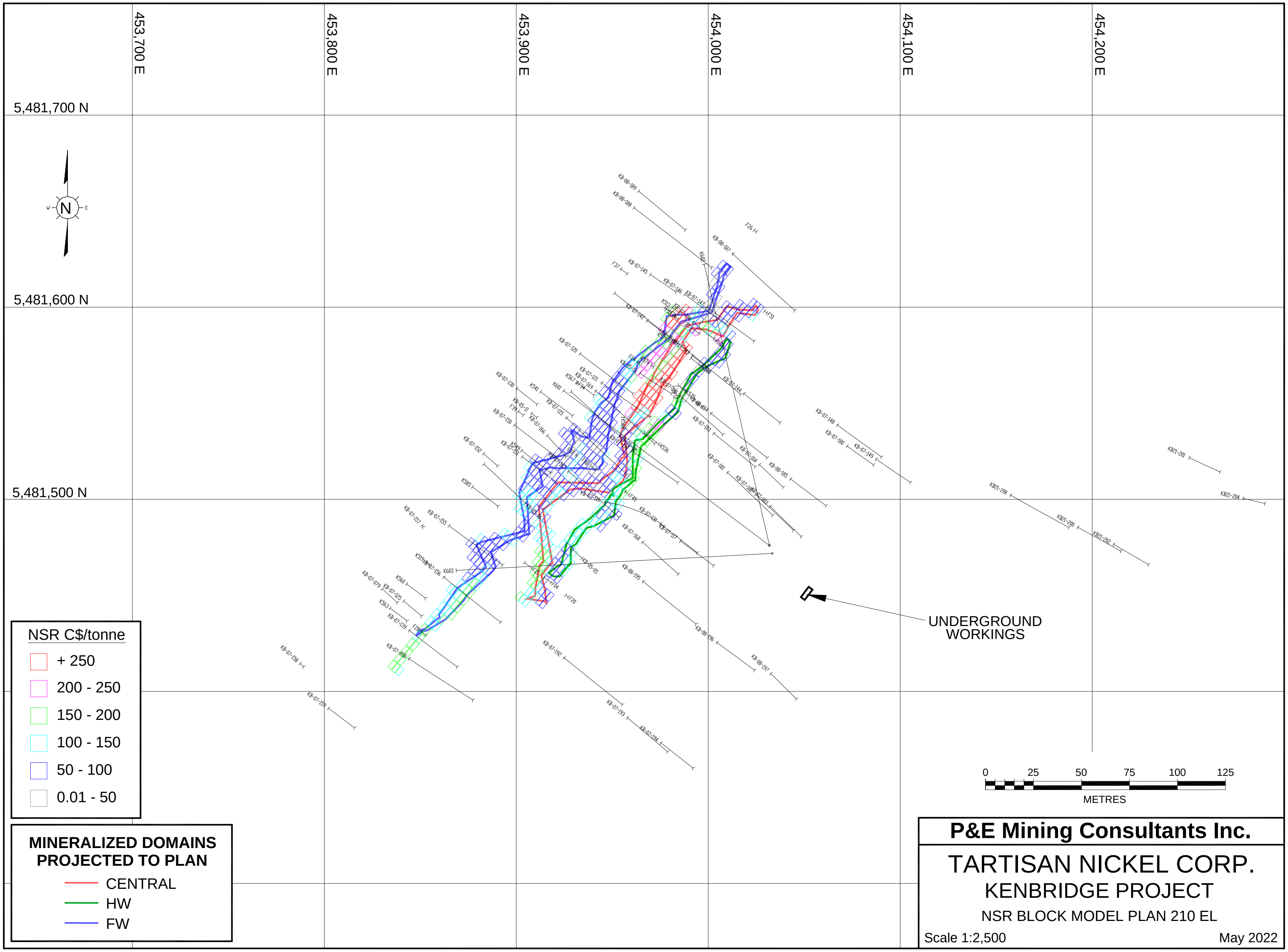
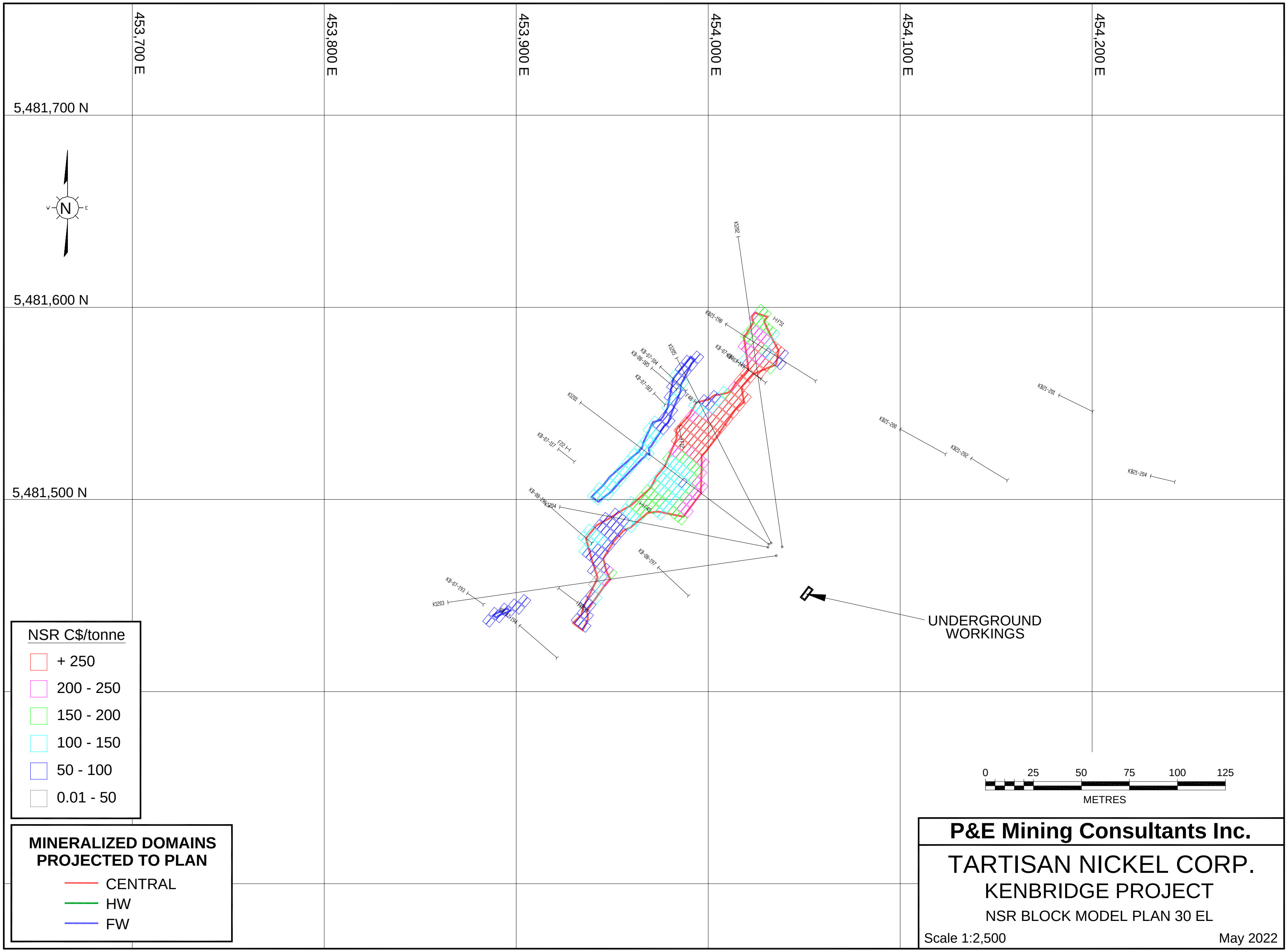
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
N
UNDERGROUND WORKINGS
NSR C$/tonne
+ 250
200 - 250
150 - 200
100 - 150
50 - 100
0.01 - 50
MINERALIZED DOMAINS PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
NSR BLOCK MODEL PLAN 390 EL
Scale 1:2,500
May 2022



453,700 E
453,800 E
453,900 E
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
N
UNDERGROUND WORKINGS
NSR C$/tonne
+ 250
200 - 250
150 - 200
100 - 150
50 - 100
0.01 - 50
MINERALIZED DOMAINS PROJECTED TO PLAN
CENTRAL
HW
FW
0 25 50 75 100 125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
NSR BLOCK MODEL PLAN 210 EL
Scale 1:2,500
May 2022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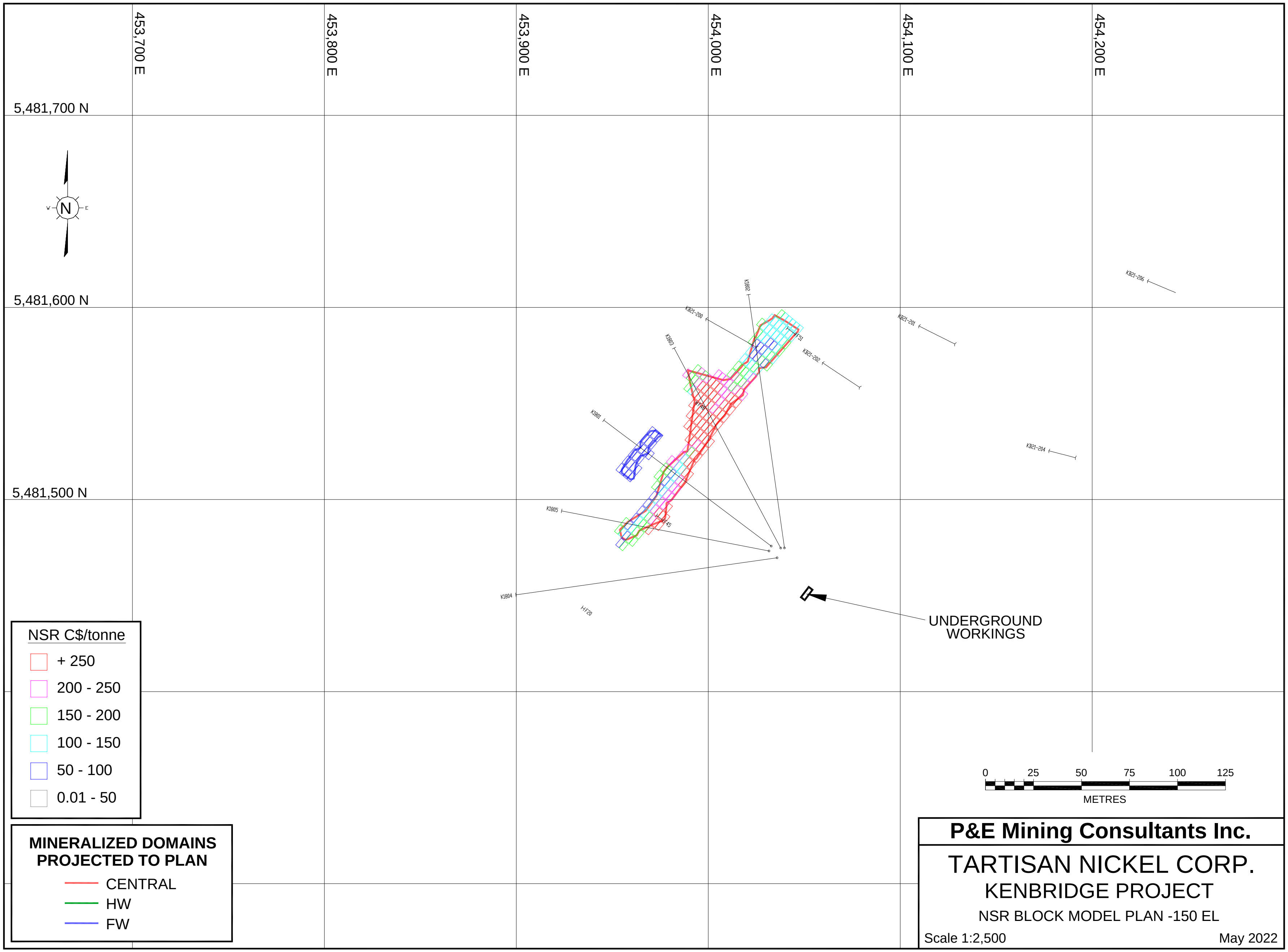
453,900 E
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
N
UNDERGROUND
WORKINGS
NSR C$/tonne
+ 250
200 - 250
150 - 200
100 - 150
50 - 100
0.01 - 50
MINERALIZED DOMAINS
PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
NSR BLOCK MODEL PLAN 30 EL
Scale 1:2,500
May 2022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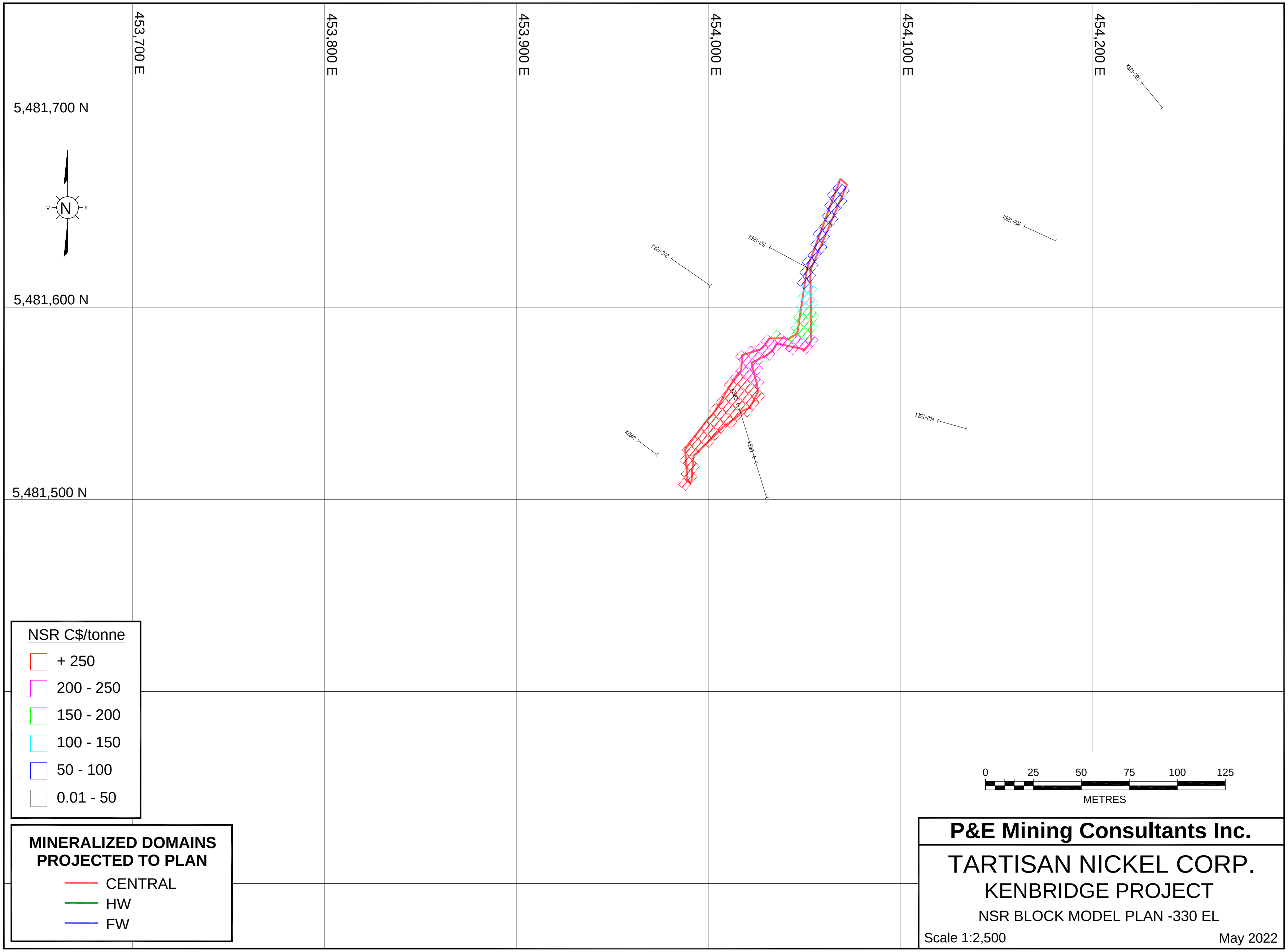
453,900 E
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
N
UNDERGROUND
WORKINGS
NSR C$/tonne
+ 250
200 - 250
150 - 200
100 - 150
50 - 100
0.01 - 50
MINERALIZED DOMAINS
PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
NSR BLOCK MODEL PLAN -150 EL
Scale 1:2,500
May 2022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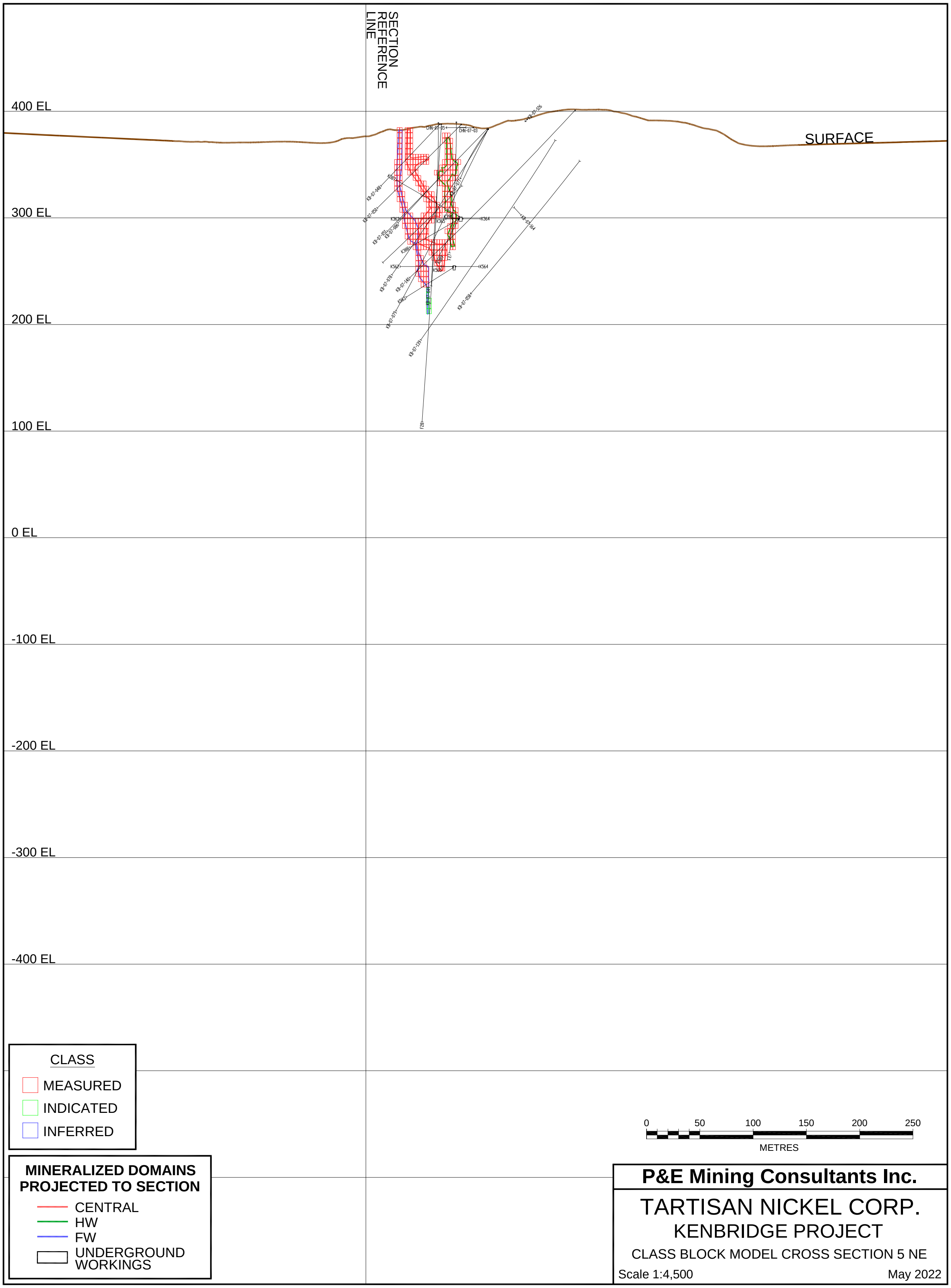
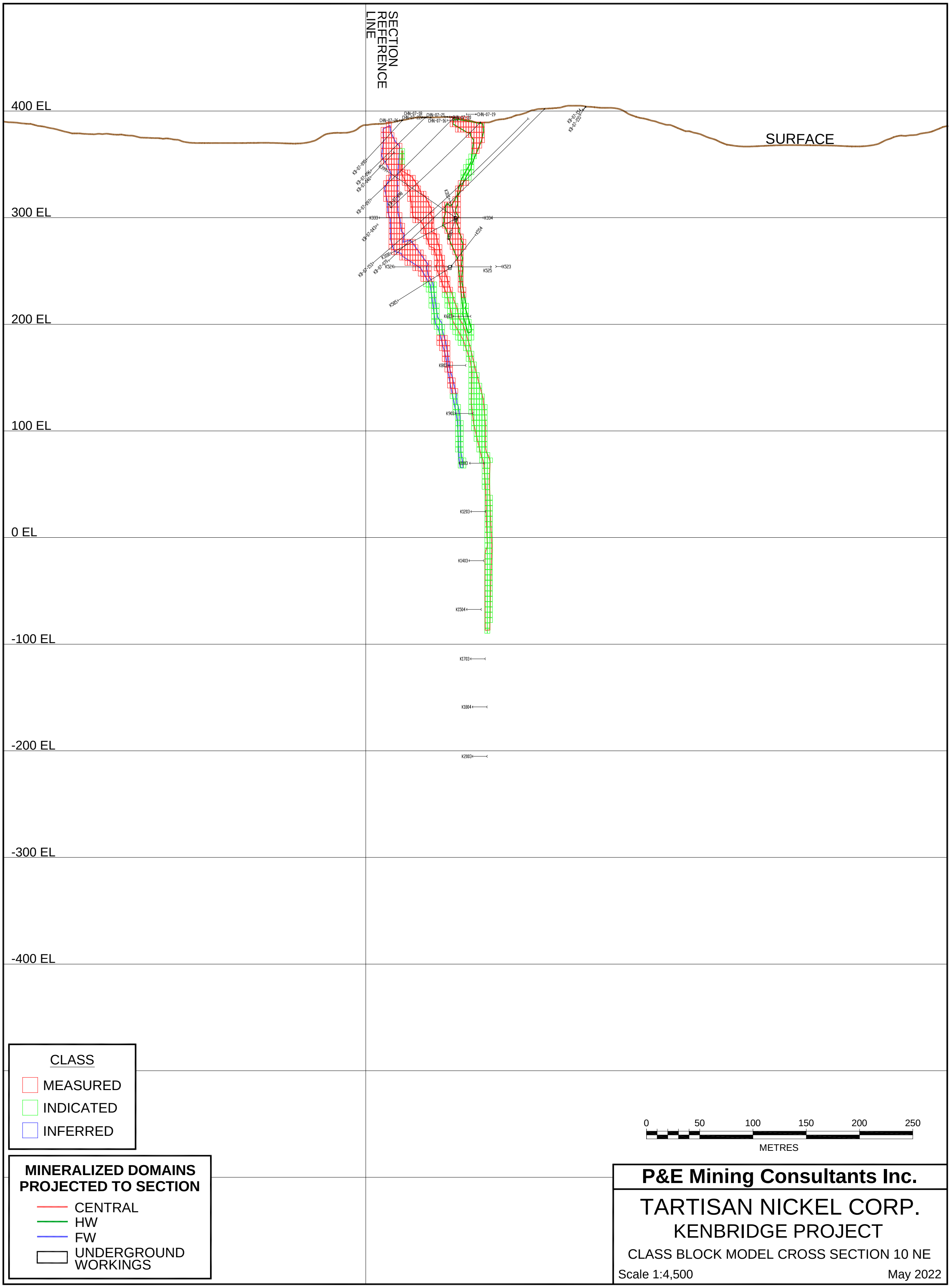
453,800 E
453,900 E
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
N
NSR C$/tonne
+ 250
200 - 250
150 - 200
100 - 150
50 - 100
0.01 - 50
MINERALIZED DOMAINS PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
NSR BLOCK MODEL PLAN -330 EL
Scale 1:2,500
May 2022

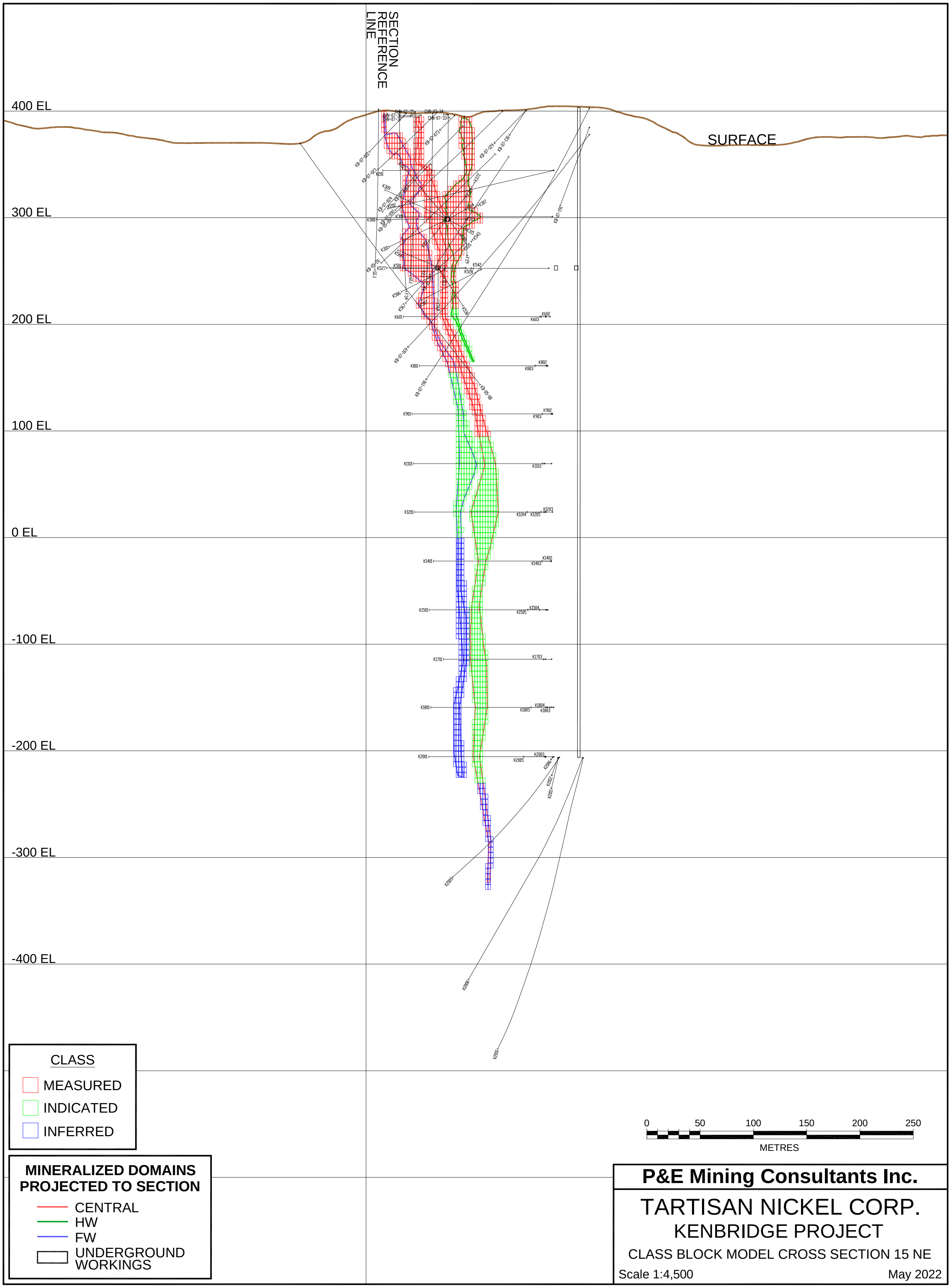
APPENDIX G CLASSIFICATION BLOCK MODEL CROSS SECTIONS AND PLANS

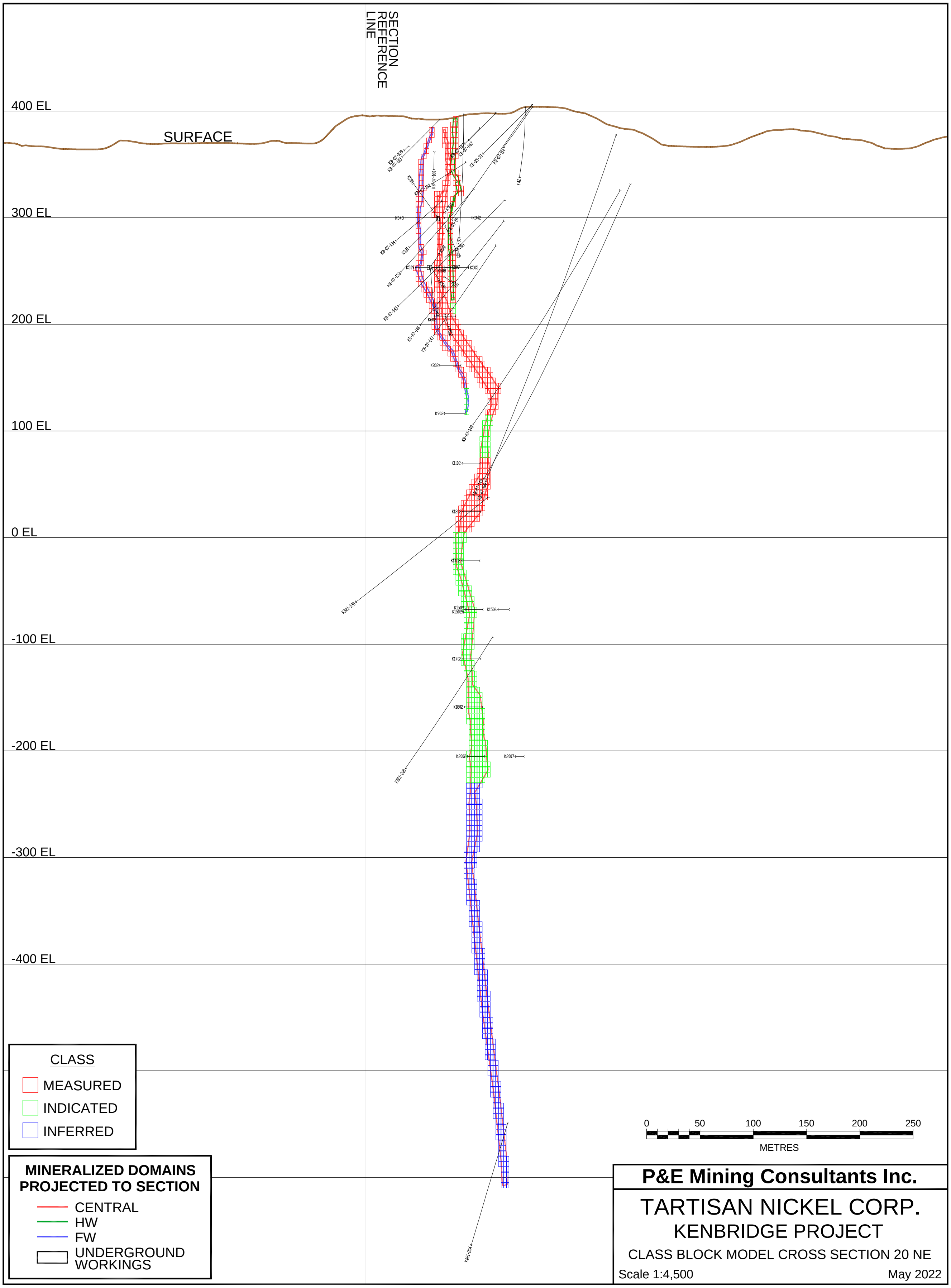


SECTION REFERENCE LINE
400 EL
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
SURFACE
CLASS
MEASURED
INDICATED
INFERRED
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
CLASS BLOCK MODEL CROSS SECTION 5 NE
Scale 1:4,500
May 2022

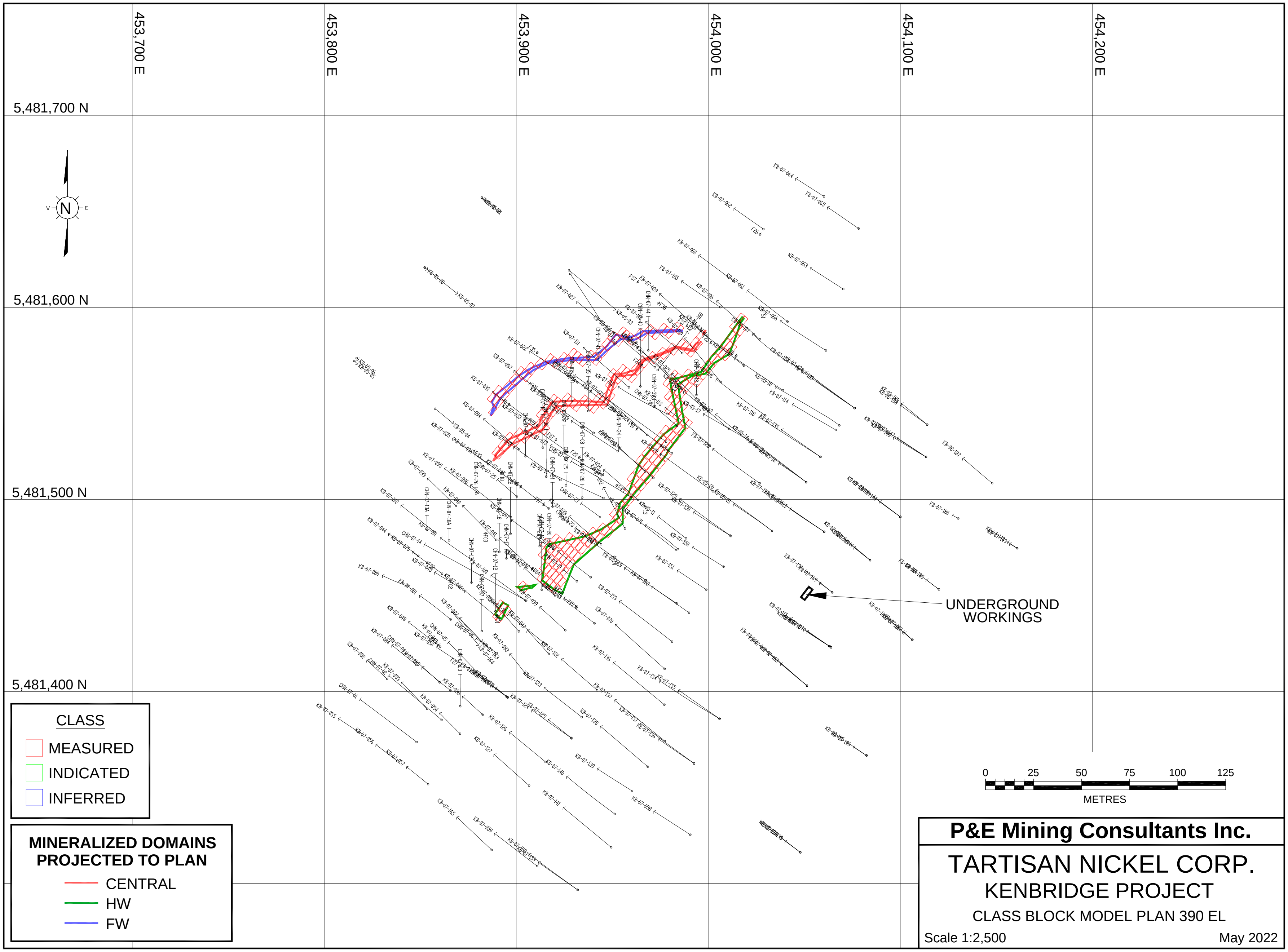


SECTION REFERENCE LINE
400 EL
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
SURFACE
CLASS
MEASURED
INDICATED
INFERRED
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
CLASS BLOCK MODEL CROSS SECTION 10 NE
Scale 1:4,500
May 2022


SECTION REFERENCE LINE
400 EL
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
SURFACE
CLASS
MEASURED
INDICATED
INFERRED
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
CLASS BLOCK MODEL CROSS SECTION 15 NE
Scale 1:4,500
May 2022



SECTION REFERENCE LINE
400 EL
SURFACE
300 EL
200 EL
100 EL
0 EL
-100 EL
-200 EL
-300 EL
-400 EL
CLASS
MEASURED
INDICATED
INFERRED
MINERALIZED DOMAINS PROJECTED TO SECTION
CENTRAL
HW
FW
UNDERGROUND WORKINGS
0
50
100
150
200
250
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
CLASS BLOCK MODEL CROSS SECTION 20 NE
Scale 1:4,500
May 2022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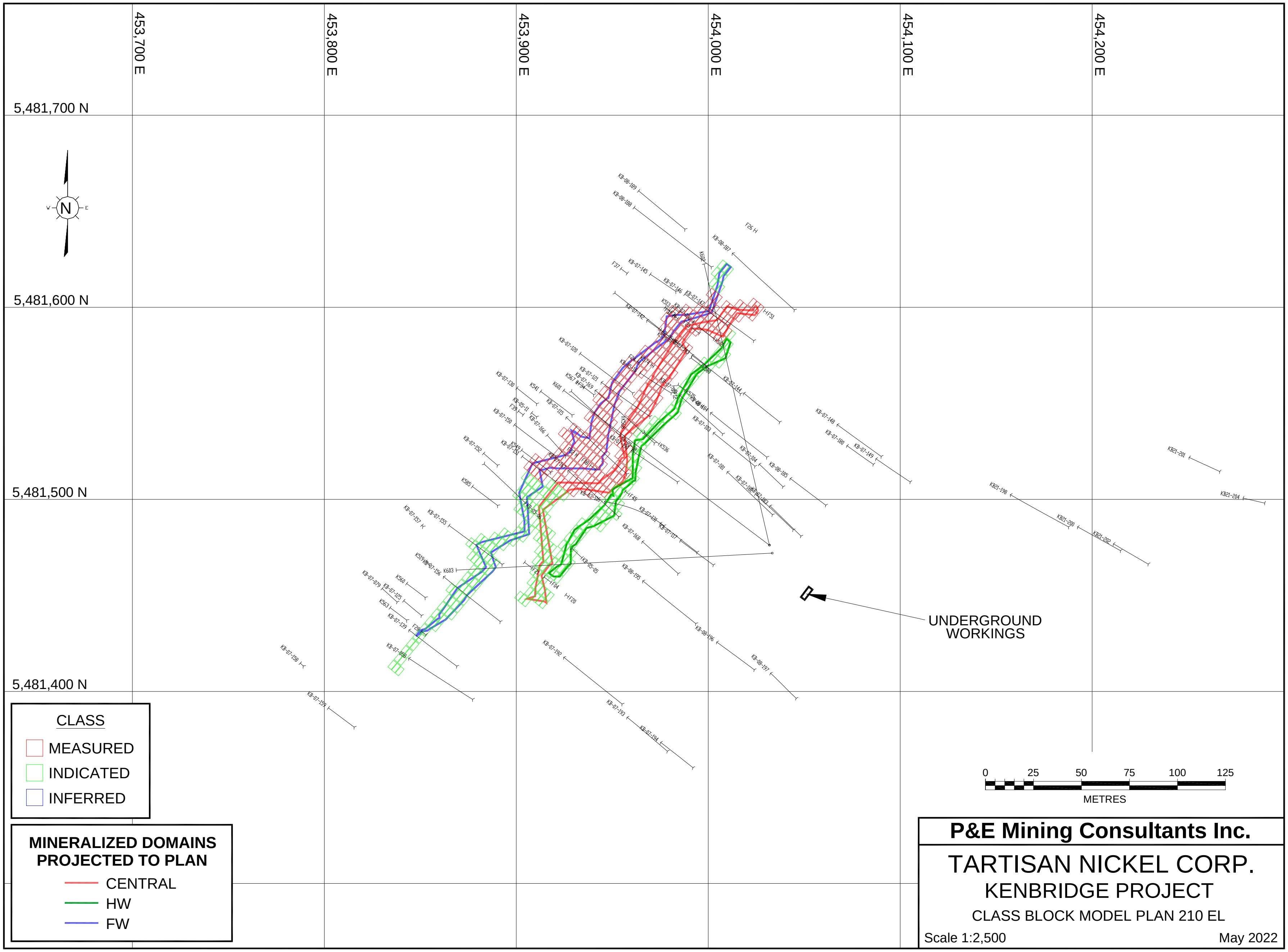
453,800 E
453,900 E
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
5,481,400 N
N
UNDERGROUND WORKINGS
CLASS
MEASURED
INDICATED
INFERRED
MINERALIZED DOMAINS PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
CLASS BLOCK MODEL PLAN 390 EL
Scale 1:2,500
May 2022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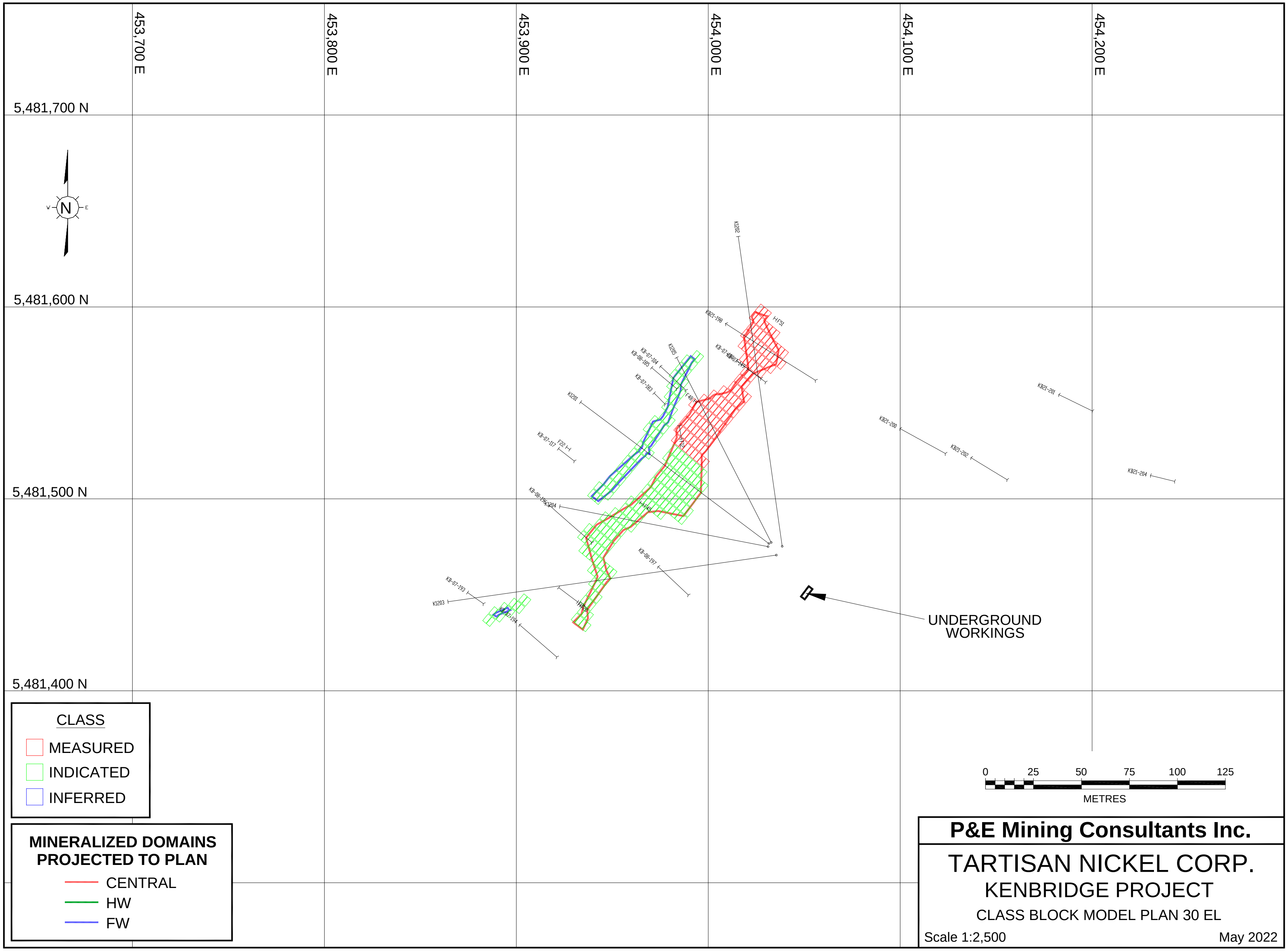
453,800 E
453,900 E
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
5,481,400 N
N
UNDERGROUND WORKINGS
CLASS
MEASURED
INDICATED
INFERRED
MINERALIZED DOMAINS PROJECTED TO PLAN
CENTRAL
HW
FW
0 25 50 75 100 125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
CLASS BLOCK MODEL PLAN 210 EL
Scale 1:2,500
May 2022



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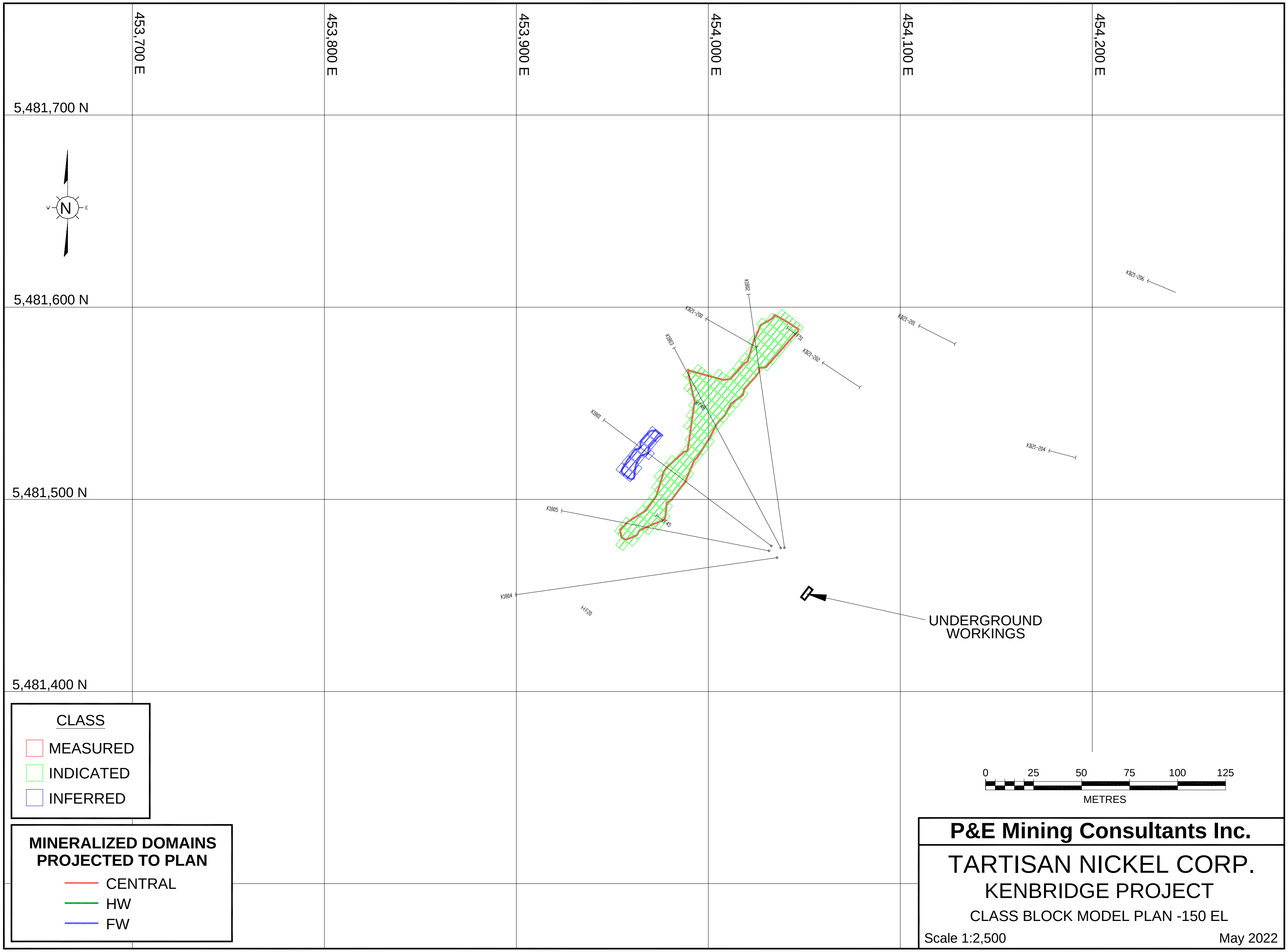
453,900 E
454,000 E
454,100 E
454,200 E
5,481,700 N
5,481,600 N
5,481,500 N
5,481,400 N
N
UNDERGROUND
WORKINGS
CLASS
MEASURED
INDICATED
INFERRED
MINERALIZED DOMAINS
PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
CLASS BLOCK MODEL PLAN 30 EL
Scale 1:2,500
May 2022



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454,000 E
454,100 E
454,200 E
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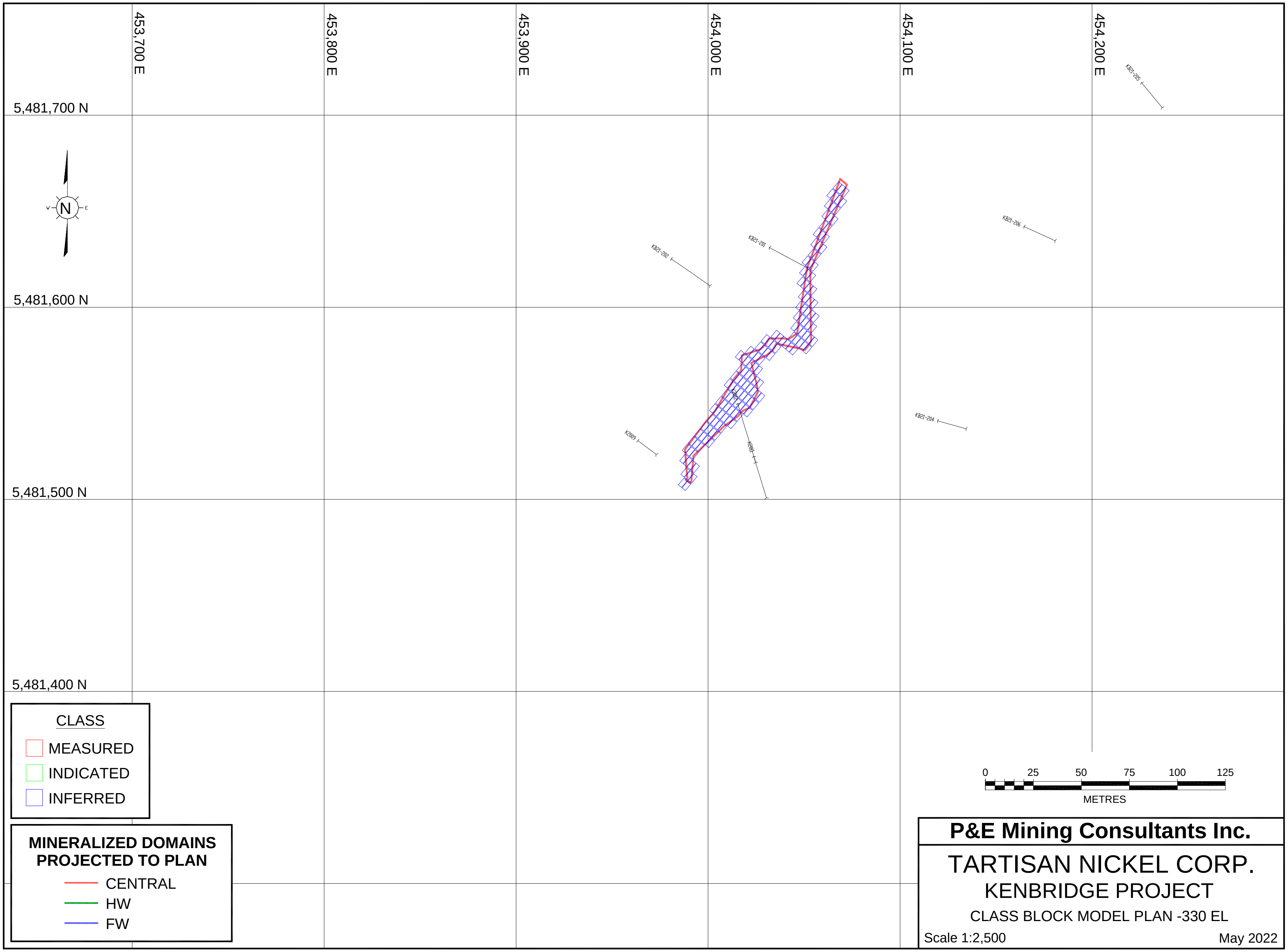
5,481,600 N
5,481,500 N
5,481,400 N
N
UNDERGROUND WORKINGS
CLASS
MEASURED
INDICATED
INFERRED
MINERALIZED DOMAINS PROJECTED TO PLAN
CENTRAL
HW
FW
0 25 50 75 100 125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
CLASS BLOCK MODEL PLAN -150 EL
Scale 1:2,500
May 2022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453,900 E
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454,100 E
454,200 E
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5,481,600 N
5,481,500 N
5,481,400 N
N
CLASS
MEASURED
INDICATED
INFERRED
MINERALIZED DOMAINS PROJECTED TO PLAN
CENTRAL
HW
FW
0
25
50
75
100
125
METRES
P&E Mining Consultants Inc.
TARTISAN NICKEL CORP.
KENBRIDGE PROJECT
CLASS BLOCK MODEL PLAN -330 EL
Scale 1:2,500
May 2022

APPENDIX H LAND TENURE RECORDS

TABLE APPENDIX H-1 LAND TENURE RECORD FOR KENBRIDGE PROPERTY - MINING CLAIMS							
Tenure ID	**Tenure Type**	**Tenure Status**	**Due Date**	**Holder (100%)**	**Area (ha)**	**Work Required (C$)**	**Work Applied (C$)**
516386	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	18.48	400	800
516387	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	6.21	400	800
516388	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	21.00	400	800
516389	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	21.00	400	800
516390	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	2.06	400	800
516391	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	18.80	400	800
516394	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	21.00	400	800
516395	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	1.90	400	800
516396	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	21.00	400	800
516397	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	12.63	400	800
516398	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	5.76	400	800
516399	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	1.84	400	800
516400	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	20.99	400	800
516401	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	7.37	400	800
516403	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	20.38	400	800
516404	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	15.96	400	800
516405	Single Cell Mining Claim	Active	13/04/2023	Canadian Arrow Mines Limited	17.10	400	800
516899	Single Cell Mining Claim	Active	16/04/2023	Canadian Arrow Mines Limited	13.40	400	800
516900	Single Cell Mining Claim	Active	16/04/2023	Canadian Arrow Mines Limited	11.18	400	800
516901	Single Cell Mining Claim	Active	16/04/2023	Canadian Arrow Mines Limited	1.75	400	800
516902	Single Cell Mining Claim	Active	16/04/2023	Canadian Arrow Mines Limited	4.37	400	800
516967	Single Cell Mining Claim	Active	16/04/2023	Canadian Arrow Mines Limited	7.74	400	800
516985	Single Cell Mining Claim	Active	16/04/2023	Canadian Arrow Mines Limited	1.36	400	800
601250	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	21.00	400	0
601251	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.71	400	0
601252	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	21.00	400	0

TABLE APPENDIX H-1
LAND TENURE RECORD FOR KENBRIDGE PROPERTY - MINING CLAIMS

Tenure ID	Tenure Type	Tenure Status	Due Date	Holder (100%)	Area (ha)	Work Required (C$)	Work Applied (C$)
601253	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.27	400	0
601254	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.99	400	0
601255	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.99	400	0
601256	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.98	400	0
601257	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.98	400	0
601258	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.98	400	0
601259	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.98	400	0
601260	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.98	400	0
601261	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.98	400	0
601262	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.97	400	0
601263	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.97	400	0
601264	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.97	400	0
601265	Single Cell Mining Claim	Active	28/07/2023	Canadian Arrow Mines Limited	20.97	400	0
607748	Single Cell Mining Claim	Active	12/08/2023	Canadian Arrow Mines Limited	20.99	400	0
607749	Single Cell Mining Claim	Active	12/08/2023	Canadian Arrow Mines Limited	20.99	400	0
607750	Single Cell Mining Claim	Active	12/08/2023	Canadian Arrow Mines Limited	21.00	400	0
607751	Single Cell Mining Claim	Active	12/08/2023	Canadian Arrow Mines Limited	21.00	400	0
622194	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622195	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622196	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622197	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622198	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622199	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622200	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622201	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622202	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622203	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622204	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0

TABLE APPENDIX H-1
LAND TENURE RECORD FOR KENBRIDGE PROPERTY - MINING CLAIMS

Tenure ID	Tenure Type	Tenure Status	Due Date	Holder (100%)	Area (ha)	Work Required (C$)	Work Applied (C$)
622205	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622206	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622207	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622208	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622209	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622210	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622211	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622212	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622213	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622214	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622215	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622216	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	14.74	400	0
622217	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622218	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622219	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.83	400	0
622220	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622221	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622222	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.33	400	0
622223	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622224	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622225	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.14	400	0
622226	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622227	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.99	400	0
622228	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	7.49	400	0
622229	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	21.00	400	0
622230	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.75	400	0
622231	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	6.15	400	0
622232	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	21.00	400	0

TABLE APPENDIX H-1 **LAND TENURE RECORD FOR KENBRIDGE PROPERTY - MINING CLAIMS**							
Tenure ID	**Tenure Type**	**Tenure Status**	**Due Date**	**Holder (100%)**	**Area (ha)**	**Work Required (C$)**	**Work Applied (C$)**
622233	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	8.93	400	0
622234	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622235	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622236	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622237	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622238	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622239	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622240	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622241	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622242	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622243	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622244	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622245	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622246	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622247	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622248	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622249	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.97	400	0
622250	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622251	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622252	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622253	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622254	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622255	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622256	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622257	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622258	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622259	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622260	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0

TABLE APPENDIX H-1
LAND TENURE RECORD FOR KENBRIDGE PROPERTY - MINING CLAIMS

Tenure ID	Tenure Type	Tenure Status	Due Date	Holder (100%)	Area (ha)	Work Required (C$)	Work Applied (C$)
622261	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622262	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622263	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	20.98	400	0
622264	Single Cell Mining Claim	Active	05/12/2022	Canadian Arrow Mines Limited	19.11	400	0
644741	Single Cell Mining Claim	Active	22/03/2023	Canadian Arrow Mines Limited	13.38	400	0
710150	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	2.67	400	0
710151	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	10.79	400	0
710152	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710153	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710154	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710155	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	20.96	400	0
710156	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710157	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710158	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710159	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710160	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710161	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710162	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	9.61	400	0
710163	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	14.08	400	0
710164	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710165	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710166	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710167	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	6.94	400	0
710168	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	19.52	400	0
710169	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.01	400	0
710170	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.01	400	0
710171	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.01	400	0
710172	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	8.75	400	0

Table Appendix H-1 Land Tenure Record for Kenbridge Property - Mining Claims							
Tenure ID	**Tenure Type**	**Tenure Status**	**Due Date**	**Holder (100%)**	**Area (ha)**	**Work Required (C$)**	**Work Applied (C$)**
710173	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.01	400	0
710174	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710175	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
710176	Single Cell Mining Claim	Active	17/02/2024	Canadian Arrow Mines Limited	21.00	400	0
Total	**142**				**2,636.88**	**56,400**	**18,400**

Note: *Land tenure information effective July 6, 2022*

Table H-2 **Land Tenure Record For Kenbridge Property - Mining Patents**			
Tenure Number	**Tenure Type**	**Legal Rights**	**Area (ha)**
PAT-5589	Patent	Mining and Surface Rights	13.25
PAT-5590	Patent	Mining and Surface Rights	14.09
PAT-5591	Patent	Mining and Surface Rights	17.41
PAT-5592	Patent	Mining and Surface Rights	18.21
PAT-5593	Patent	Mining and Surface Rights	18.31
PAT-5594	Patent	Mining and Surface Rights	16.52
PAT-5595	Patent	Mining and Surface Rights	10.52
PAT-5596	Patent	Mining and Surface Rights	14.16
PAT-5597	Patent	Mining and Surface Rights	15.49
PAT-5598	Patent	Mining and Surface Rights	19.19
PAT-5599	Patent	Mining and Surface Rights	17.92
PAT-5600	Patent	Mining and Surface Rights	10.15
PAT-5601	Patent	Mining and Surface Rights	12.41
PAT-5602	Patent	Mining and Surface Rights	24.13
PAT-5603	Patent	Mining and Surface Rights	15.78
PAT-5604	Patent	Mining and Surface Rights	16.75
PAT-5605	Patent	Mining Rights	18.65
PAT-5606	Patent	Mining and Surface Rights	12.55
PAT-5607	Patent	Mining and Surface Rights	15.04
PAT-5608	Patent	Mining and Surface Rights	13.59
PAT-5609	Patent	Mining and Surface Rights	14.30
PAT-5610	Patent	Mining and Surface Rights	13.14
PAT-5611	Patent	Mining and Surface Rights	18.10
PAT-5612	Patent	Mining and Surface Rights	19.55
PAT-5851	Patent	Mining Rights	18.13
PAT-5852	Patent	Mining Rights	14.93
PAT-5853	Patent	Mining Rights	17.60
PAT-5854	Patent	Mining Rights	19.87
PAT-5855	Patent	Mining Rights	18.35
PAT-5856	Patent	Mining Rights	18.45
PAT-5857	Patent	Mining Rights	6.03
PAT-5989	Patent	Mining and Surface Rights	20.64
PAT-5990	Patent	Mining and Surface Rights	24.28
PAT-6092	Patent	Mining and Surface Rights	29.95
PAT-6093	Patent	Mining and Surface Rights	16.19
PAT-6273	Patent	Mining and Surface Rights	8.81
PAT-6274	Patent	Mining and Surface Rights	5.02
PAT-6335	Patent	Mining and Surface Rights	16.14
PAT-6336	Patent	Mining and Surface Rights	14.22

Table H-2 Land Tenure Record For Kenbridge Property - Mining Patents			
Tenure Number	**Tenure Type**	**Legal Rights**	**Area (ha)**
PAT-6337	Patent	Mining and Surface Rights	11.67
PAT-6338	Patent	Mining and Surface Rights	16.76
PAT-6339	Patent	Mining and Surface Rights	13.33
PAT-6340	Patent	Mining and Surface Rights	10.30
PAT-6341	Patent	Mining and Surface Rights	21.80
PAT-6342	Patent	Mining and Surface Rights	11.42
PAT-6343	Patent	Mining and Surface Rights	13.16
PAT-6344	Patent	Mining and Surface Rights	12.26
PAT-6345	Patent	Mining and Surface Rights	4.22
PAT-6346	Patent	Mining and Surface Rights	15.42
PAT-6347	Patent	Mining and Surface Rights	1.83
PAT-6348	Patent	Mining and Surface Rights	12.87
PAT-6349	Patent	Mining and Surface Rights	12.66
PAT-6350	Patent	Mining and Surface Rights	12.71
PAT-6351	Patent	Mining and Surface Rights	12.06
PAT-6352	Patent	Mining and Surface Rights	14.64
PAT-6353	Patent	Mining and Surface Rights	11.91
PAT-6354	Patent	Mining and Surface Rights	15.58
PAT-6355	Patent	Mining and Surface Rights	16.88
PAT-6356	Patent	Mining and Surface Rights	13.58
PAT-6357	Patent	Mining and Surface Rights	16.15
PAT-6358	Patent	Mining and Surface Rights	14.42
PAT-6359	Patent	Mining and Surface Rights	11.15
PAT-6360	Patent	Mining and Surface Rights	5.80
PAT-6361	Patent	Mining and Surface Rights	5.98
PAT-6362	Patent	Mining and Surface Rights	9.35
PAT-6363	Patent	Mining and Surface Rights	3.31
PAT-6364	Patent	Mining and Surface Rights	8.43
PAT-6365	Patent	Mining and Surface Rights	2.63
PAT-6366	Patent	Mining and Surface Rights	8.67
PAT-6367	Patent	Mining and Surface Rights	11.74
PAT-6368	Patent	Mining and Surface Rights	0.99
PAT-6369	Patent	Mining and Surface Rights	12.64
PAT-6370	Patent	Mining and Surface Rights	8.92
PAT-6371	Patent	Mining and Surface Rights	12.87
PAT-6372	Patent	Mining and Surface Rights	9.32
PAT-6373	Patent	Mining and Surface Rights	14.85
PAT-6374	Patent	Mining and Surface Rights	2.58
PAT-6375	Patent	Mining and Surface Rights	10.37
PAT-6376	Patent	Mining and Surface Rights	8.15

TABLE H-2 LAND TENURE RECORD FOR KENBRIDGE PROPERTY - MINING PATENTS			
Tenure Number	**Tenure Type**	**Legal Rights**	**Area (ha)**
PAT-6377	Patent	Mining and Surface Rights	8.80
PAT-6378	Patent	Mining and Surface Rights	8.61
PAT-6379	Patent	Mining and Surface Rights	1.10
PAT-6380	Patent	Mining and Surface Rights	10.51
PAT-6381	Patent	Mining and Surface Rights	8.68
PAT-6382	Patent	Mining and Surface Rights	17.32
PAT-6383	Patent	Mining and Surface Rights	11.85
PAT-6384	Patent	Mining and Surface Rights	22.08
PAT-6484	Patent	Mining and Surface Rights	16.71
PAT-6485	Patent	Mining and Surface Rights	9.22
PAT-6507	Patent	Mining and Surface Rights	20.86
PAT-6508	Patent	Mining and Surface Rights	14.21
PAT-6509	Patent	Mining and Surface Rights	15.68
PAT-6510	Patent	Mining and Surface Rights	13.91
MLO-12955	Mining Licence of Occupation	Mining Rights	32.63
MLO-12956	Mining Licence of Occupation	Mining Rights	76.65
MLO-12957	Mining Licence of Occupation	Mining Rights	79.48
MLO-12958	Mining Licence of Occupation	Mining Rights	42.08
Total			**1,471.53**

Note: *Land tenure information effective July 6, 2022.*