NI 43-101 TECHNICAL REPORT

ON THE MINERAL RESOURCE ESTIMATE

FOR THE BRAZIL LAKE PROJECT

(LITHIUM-BEARING PEGMATITE DEPOSIT)

NOVA SCOTIA, CANADA

Prepared For:

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1.0 SUMMARY

1.1 Introduction

Champlain Mineral Ventures Ltd. ("Champlain" or the "Company") retained Mercator Geological Services ("Mercator") with respect to completing a Mineral Resource Estimate ("MRE") for the Brazil Lake lithium-bearing pegmatite deposit ("Brazil Lake Deposit") that comprises the Brazil Lake Project ("Project") located in Nova Scotia, Canada. The MRE is the maiden estimate for the Project. This Technical Report ("Technical Report" or "Report") documents the MRE, which was prepared in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves as amended in 2014 ("CIM Standards 2014"). The Technical Report was prepared in accordance with National Instrument 43-101 ("NI 43-101") Form F-1. Champlain is a private company based in Bridgetown, Nova Scotia, Canada.

The Project consists of 4 contiguous exploration licences (5865, 5866, 54137, 54237) held by Champlain containing a total of 87 claims (1408 hectares). Champlain holds a 100% interest in the property.

This Technical Report summarizes recent and historical drilling and other exploration work completed on the Project by Champlain that forms the basis of the MRE and makes recommendations for further exploration and evaluation programs.

1.2 Property Description and Ownership

The Project is located in southern Nova Scotia, Canada approximately 25 km north-northeast of the town of Yarmouth (pop. 7,200) and approximately 300 km southwest of the City of Halifax (pop. 440,000). The closest international airport is the Halifax Stanfield International Airport (YHZ) located approximately 313 km Northeast of the Project and commercial airport facilities can be accessed in the town of Yarmouth, which also supports deep water shipping and ferry services. The region can be accessed via provincial secondary Highway 340 and the Project area is easily accessible through secondary gravel roads. The closest town to offer full services is Yarmouth, which includes full-service accommodations, grocery stores, gas stations and restaurants, tool rental and hardware stores, police and emergency medical services, and a hospital.

The Project consists of 4 contiguous exploration licences (5865, 5866, 54137, 54237) held by Champlain containing a total of 87 claims (1408 hectares). Champlain maintains a 100% interest in the exploration rights and there are currently no option agreements in place.

1.3 History

The first noted occurrence of spodumene-bearing pegmatite on the Property was through mapping conducted by the Geological Survey of Canada in the Yarmouth area in 1960. In the late 1970's Shell Canada Exploration Ltd. completed regional mapping plus grid magnetics surveying, very low frequency electromagnetic surveying and geophysical and till geochemical sampling programs in the area to follow-up anomalous tin values present in an earlier water survey carried out by the company.

Several exploration programs were carried out during the 1980s and early 1990s and the bulk of work performed during this period was directed toward market research and product viability of the main, potentially economic components of Brazil Lake pegmatite.

The Nova Scotia Department of Natural Resources (NSDNRR) completed a regional multi-media geochemical survey in the vicinity of the known pegmatite occurrences. Humus, silt, and spruce bark were used as media in the survey.

The first phase of drilling on the property was undertaken by the NSDNRR in 1993 and consisted of 5 diamond drill holes (BZL-93-1 through BZL-93-5) totaling 576.64 m of drilling.

In 1998, Gwalia Consolidated Ltd. (Sons of Gwalia Ltd.)) of Perth Australia, then operators of the Greenbushes spodumene mining operation in Western Australia, carried out an assessment of the Brazil Lake Project including review and sampling of NSDNRR drill core from 1993.

1.4 Geology and Mineralization

Brazil Lake Deposit pegmatite dikes occur within the White Rock Formation of the Meguma Terrane (Meguma Zone) of southwestern Nova Scotia. The Meguma Terrane is the most outboard, or Eastern-most litho-tectonic zone accreted to the northern Appalachian system during the Mid Devonian Acadian Orogeny and is comprised of rocks ranging in age from Cambrian-Ordovician to Mid Devonian. The Meguma Terrane in the Project area of southwest Nova Scotia can be roughly divided into Northeast to East trending constituent composite stratigraphies of the Cambro-Ordovician Meguma Group (Halifax and Goldenville Formations) plus the Silurian White Rock Formation and granitic igneous intrusions related to the Devonian South Mountain Batholith.

The White Rock Formation refers to rocks of Silurian age predominantly characterized as staurolite and garnet-bearing metasedimentary rocks interbedded with minor mafic metavolcanic (amphibolite) units. These are interpreted to be part of an overstep sequence that covers both the Meguma Group and some similar-aged rocks of the Avalon Terrane. In the Yarmouth (Brazil Lake) area, the White Rock Formation forms a northeast trending belt extending inland from coastal exposures North and South of Yarmouth, that occurs along the northern contact of the South Mountain Batholith. Related sequences are confined within the regionally significant Yarmouth syncline that affects both White Rock Formation and Meguma Group strata. The White Rock Formation is in unconformable contact with surrounding Halifax Formation in this area and, locally, with the Goldenville Formation. Its southeastern contact is inferred to be a brittle fault that follows and post-dates a broader major northeast trending ductile shear zone.

Two highly evolved granitic pegmatite dikes are the current focus of exploration interest and these are hosted by meta-sedimentary and meta-volcanic rocks of the White Rock Formation, which locally include quartzite, amphibolite, and pelitic-schist. The White Rock Formation sequence strikes northeasterly and locally dips steeply to both northwest and southeast.

Mineralization within Brazil Lake pegmatites is paragenetically similar to the mineral sequence typically seen in peraluminous granites. Dominant mineral phases are sodium and potassium feldspar, quartz and minor amounts of mica plus accessory minerals. Sampling results for the Brazil Lake pegmatites show anomalous values of Li, Rb, Sn and Be to be present locally. These correspond, respectively, with dominant host minerals spodumene, potassium feldspar, cassiterite and beryl, all of which have been identified in Project drill core and outcrops. Li hosted within the silicate mineral spodumene is the current focus for the Project.

The QP is of the opinion that the North Dike and South Dike pegmatites are best categorized using the Cerny and Ercit (2005) system as Rare Element Class, with possible association with the spodumene-albite subtype, and Lithium-Cesium-Tantalum (LCT) Family type intrusions.

1.5 Exploration and Drilling

From 1997 to 2002, Champlain focused field efforts on limited prospecting in and around the main pegmatite zones and this resulted in discovery of various new pegmatite float occurrences. Champlain proceeded with exploratory core drilling on the Project in addition to prospecting and baseline water sampling surveys. In total, 32 NQ core drill holes totaling 2,130 m were completed in 2002 and 2003.

A mechanized trenching program was conducted in 2003 on the Project to test areas with abundant pegmatite float occurrences previously defined by prospecting. A total of 5 trenches were completed, these being at Holly Road, Army Road, Church Road, Deerfield and at the South Dike. Continuous exposures of the pegmatite were established at this time and detailed geological mapping and sampling were completed by Champlain as well as by NSDNRR. A second mechanized trenching program was completed in 2004 consisting of four short trenches sited over the northern area of the North Dike

An induced polarization (IP) survey was completed in 2003 on selected portions of the Project with the intention of assessing use of apparent resistivity as a means of outlining areas of potential bedrock pegmatite development beneath till cover. The method was subsequently applied to assessment of regional targets at Deerfield Prospect and Bloomfield Road Prospect. B horizon soil sampling was also carried out in the Army Road - Church Road area, north of Holly Road, to assess target definition potential of this method in areas of known pegmatite glacial dispersion boulder trains.

A mineral beneficiation research program was initiated by Champlain during the 2003 exploration year which included coordinated mineral processing activities by two analytical laboratories and associated mineral engineering specialists. During 2003 and 2004, Champlain continued research and mineral analysis programs to further ascertain processing viability, separation, purification and market conditions related to spodumene, mica, silica and other accessory industrial minerals. To provide context for results of ongoing laboratory studies by the company, Hains Technology and Associates was retained by Champlain in 2004 to carry out research into world markets for lithium metal and lithium chloride.

In 2010 Champlain completed an exploration program of infill core drilling on the North and South Dikes, exploratory core drilling on the Army Road prospect, prospecting and mapping, and a soil survey using Soil Gas Hydrocarbon (SGH) technology. A total of 10 drill holes for 1,298 m were completed on the North Dike and a total of 15 drill holes for 1,102 m were completed on the South Dike. The Army Road prospect was tested with 3 drill holes for 266 m.

The soil survey was initiated with three trial lines using a 50 m sample spacing over the North Dike to define a pegmatite SGH signature for regional targets. Subsequent surveys were executed for the Army Road, Church Road, and Deerfield prospects using 100 m spaced lines and 50 m spaced samples. Additional prospecting and mapping were completed in 2011 for the regional targets. A series of 9 till sample pits were completed in the Church Road area to define the bedrock source of spodumene-bearing pegmatite float identified during previous exploration programs.

In 2015 Champlain acquired and crushed a 60 tonne bulk sample from the South Dike. Wadden's Drilling and Blasting Inc. was retained to complete the drilling and blasting aspects of the project and Brazil Lake Enterprises completed the extraction, crushing, bagging and loading responsibilities. A 20 tonne sub-sample was prepared and shipped to Fancy Mining, located in China through shipping agent and customs broker Kuehne + Nagel.

In 2016 Champlain retained Eastern Geophysics Ltd. to carry out a small-scale gravity survey over the North and South Dikes. A B horizon soil sampling program was carried out in 2017 in the Deerfield area to develop targets for source pegmatites of local spodumene float samples. Samples were collected at 25 m spacings along lines having nominal spacing of 100 m.

Champlain completed two NQ core drilling programs during the 2019 and 2020 period targeting continuity between the North and South Dikes. A total of 5 drill holes for 505 m were completed in 2019 and a total of 6 drill holes for 975.7 m were completed in 2020.

1.6 Sample Preparation, Analysis and Security

Sample preparation, analysis, and security aspects of the diamond drilling programs completed by Champlain plus predecessor exploration firms were reviewed to the degrees possible by the QP.

The QP has concluded that sample preparation and analytical procedures for the 1993 program are consistent with industry standards of the day. Chain of custody and sample security can not be verified but are assumed to have been implemented throughout the program by NSDNRR and Gwalia during their respective management of drill core and samples. Validated data from the drilling program are considered acceptable for use in a mineral resource estimation program and have been verified through subsequent drill programs in the area.

Due to the absence of specific QAQC procedures being implemented during the 2002, 2003, 2019, and 2020 drilling and sampling programs, the QP is of the opinion that they were not designed according to CIM Mineral Exploration Best Practices Guidelines. Champlain implement an QAQC program for the 2010 core drilling and sampling program that consisted of the insertion of blank and certified reference materials, however, results for certified reference materials are incomplete. To address these items, the QP implemented a comprehensive quarter core check sample program to assess the quality of grade determinations for the 2010, 2019 and 2020 programs. The check sample program results correlate well with original samples results and, combined with previous check sample results completed in 2010 for the

2002 and 2003 drilling programs, the QP is satisfied that this meets the data verification requirements under NI 43-101.

The QP is of the opinion that, with exception of the items discussed above, all other aspects of the 2002, 2003, 2010, 2019, and 2020 sample preparation, security, and analytical protocols were acceptably completed to industry standards of the respective periods.

1.7 Data Verification

Data verification procedures carried out by the QP for the Project consisted of two main components:

(1) Review of public record and internal source documents cited by previous operators and Champlain with respect to key geological interpretations, previously identified geochemical or geophysical anomalies, and historical and current diamond drilling results that support the current MRE for the Project. The diamond drilling database was also checked in detail and determined to be acceptable for MRE use; and

(2) Completion of a site visit to the Brazil Lake Property on December 7th, 2021 by Report author Matthew Harrington, which included visual inspection of the Brazil Lake Deposit and independent witness (IW) check sampling of quarter core samples from the 2010, 2019, and 2020 Champlain drilling programs. No issues were identified during the site visit or in associated sampling results that negatively impact the findings and conclusions of this Technical Report.

Mercator staff were responsible for compilation and verification of Project data in addition to interpretation of data sets for the completion of the MRE and future exploration targeting using mining industry standards and CIM Mineral Exploration Best Practice Guidelines. Mercator staff completed data verification procedures throughout the entire process including review of QAQC procedures and results. This included standard database validation procedures that are available in the GEOVIA Surpac™ 2021 (Surpac) and Seequent Leapfrog™ Geo 2021 (Leapfrog) software platforms used to develop the MRE described in this Technical Report.

The QP is of the opinion that results from the data validation program components discussed above, including results of site visits by two of the Report authors, indicate that industry standard levels of technical documentation and detail are evident in the 2002, 2003, 2010, 2019 and 2020 drilling programs for the Project. Technical documentation of the work conducted before 2002 is lacking some of the robustness that would equal a modern industry standard but the QP is of the opinion that it is sufficient for current purposes. The QP is of the overall opinion that the validated drilling digital database is acceptable for MRE use.

1.8 Mineral Processing and Metallurgical Testing

During the 2002-2003 field season, Champlain initiated a program of field and laboratory studies directed toward assessment of mineral processing and extraction techniques for valued Brazil Lake pegmatite components. Representative bulk sample materials to support this work were created from drill core intersections by Champlain staff and then submitted for study at the Minerals Engineering Centre (MEC) of Dalhousie University in Halifax, NS and the Material Research Laboratory Ltd. (MRL) of North Carolina State University in Asheville, North Carolina, USA. Laboratory studies at both facilities led to comparison of mineral recoveries and costing of wet and dry mineral beneficiation processes. Efforts were focused on creating high grade/high purity concentrates of lithium-bearing spodumene, mica, feldspar and silica, all of which were considered to be of importance to economic assessment of Deposit pegmatites.

Initial laboratory analysis was conducted by MEC on a bulk sample created from the entire pegmatite intersection of drill hole BZ-02-13, with further work subsequently conducted at MRL. Test work completed at MEC consisted of crushing, sizing, gravity separation, electrostatic separation, magnetic separation, flotation, and heavy liquid separation. A second bulk sample was created from 36 core samples from drill holes BZ-02-17, 18, 19 and 22 plus BZ-03-23 and 24. Core from each hole constituted a separate component of a six component sample set that was sent to MRL for additional processing. Test work completed at MRL consisted of crushing, sizing, bench-scale flotation and magnetic separation studies.

Preliminary studies on mineral processing and metallurgical testing completed by Champlain during the 2002-2003 period demonstrate that spodumene from Project pegmatite materials can be recovered to concentrate through various means, including magnetic separation, flotation, and heavy media separation. Results show that high recovery percentages of up to 97 % at concentrate grades of up to 7.79 % Li_2O have been obtained and that further research on concentration methods leading to reduction of Fe_2O_3 levels in final associated concentrates is required. The studies by Champlain have also clearly shown that other products, including mica, silica, and feldspar concentrates can be produced from Project pegmatite materials and that these may have future economic potential.

The QP has concluded that (1) acceptable and appropriate care was taken with respect to collection, handling and preparation of bulk sample materials that contributed to the Champlain metallurgical programs described above, and (2) that they adequately represent the various types and styles of mineralization present in the Deposit as a whole. Due to the preliminary nature of the studies carried out by Champlain to date the QP has elected to use a more conservative recovery to concentrate factor of 85% to a 6 % Li_2O spodumene concentrate for pit optimization and cut-off grade aspects of the MRE.

1.9 Mineral Resource Estimate

A tabulation of mineral resource for the Project is presented in Table 1.1. Pit constrained mineral resources were defined within optimized pit shells developed using Hexagon Mine Plan 3D version 16, MineSight® Economic Planner version 4.00-13. Pit optimization parameters include mining at CAN$ 5 per tonne and combined processing plus general and administration (G&A) charges at CAN$ 80 per tonne processed. A metal price of CAN$ 8.86/lb for Li_2O based on a 6.0 % Li_2O spodumene concentrate price of CAN$ 1,270 per tonne and a Li_2O recovery of 85 % was used.

Pit constrained mineral resources are reported at a cut-off grade of 0.48 % Li_2O within the optimized pit shell. The cut-off grade reflects the marginal cut-off grade, which represent the processing and downstream costs but excludes mining costs, used in pit optimization to define reasonable prospects for eventual economic extraction by open pit mining methods.

Underground mineral resources are reported at a cut-off grade of 0.98 % Li_2O %. The cut-off grade reflects total operating costs of CAD$ 150 per tonne processed to define reasonable prospects for eventual economic extraction by underground methods and includes a mining recovery of 85 % and a Li_2O recovery of 85 %.

Table 1.1: Brazil Lake Project Mineral Resource Estimate – Effective Date: April 8th, 2022*

Type	Cut-off (Li2O %)	Category	Rounded Tonnes	Li_2O %
Pit Constrained	0.48	Measured	100,000	1.26
		Indicated	350,000	1.19
		M & IN	450,000	1.21
		Inferred	62,000	1.56
Underground Constrained	0.98	Measured	2,000	1.20
		Indicated	101,000	1.71
		M & IN	103,000	1.70
		Inferred	319,000	1.47
Combined	0.48 / 0.98	Measured	102,000	1.26
		Indicated	451,000	1.31
		M & IN	553,000	1.30
		Inferred	381,000	1.48

Mineral Resource Notes:

1. Mineral resources were prepared in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (MRMR) (2014) and CIM MRMR Best Practice Guidelines (2019).
2. Pit constrained mineral resources are defined within an optimized pit shell with average pit slope angles of 45° and a 14.7:1 strip ratio (waste: mineralized material).
3. Pit optimization parameters include: metal pricing at CAN$ 8.86/lb for Li_2O based on a spodumene concentrate price of CAN$ 1,270/t for 6% Li_2O concentrate, mining cost at CAN$ 5/t, exchange rate of 1.27 CAN$/1.00 USD$, processing plus general and administration cost at CAN$ 80/t processed, and a Li_2O recovery of 85 %.
4. Pit constrained mineral resources are reported at a cut-off grade of 0.48 Li_2O % within the optimized pit shell. The cut-off grade reflects the marginal cut-off grade used in pit optimization to define reasonable prospects for eventual economic extraction by open pit methods.
5. Underground constrained mineral resources are reported at a cut-off grade of 0.98 % Li_2O. The cut-off grade reflects total operating costs of CAN$ 150/t to define reasonable prospects for eventual economic extraction by conventional underground mining methods and includes a mining recovery of 85 % and a Li_2O % recovery of 85 %.
6. Li_2O % deposit grade was estimated using Inverse Distance Cubed methods based on 1 m downhole assay composites. No grade capping was applied. Model block size is 2 m (x) by 2 m (y) by 4 m (z).
7. An average pegmatite bulk density factor of 2.69 t/m^3 was applied.

8. Mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues.
9. Mineral resources are not mineral reserves and do not have demonstrated economic viability.
10. Mineral resource tonnages are rounded to the nearest 1,000.

1.10 Project Risks and Uncertainties

All mineral projects are subject to risks arising from various sources. These include, but are not limited to, the following:

(1) Political instability of the host country or region;
(2) Site environmental conditions that affect deposit access;
(3) Issues associated with legal access to sufficient land areas to support development and mining;
(4) Lack of certainty with respect to mineral tenure and development regulatory regimes;
(5) Lack of social licence for project development;
(6) Unforeseen negative market pricing trends;
(7) Inadequacy of deposit modelling and grade estimation programs with respect to actual metal grades and tonnages contained within the deposit;
(8) Metallurgical recoveries that fall within economically acceptable ranges cannot be attained.

At this time, the QP's do not foresee any significant risks and uncertainties that could reasonably be expected to affect reliability or confidence placed in the drilling and other data that supports the current MRE and associated conclusions disclosed in this Technical Report. Identified future Project risks include metal pricing fluctuations that are beyond the control of a future mining project operator plus failure to development a cost-effective beneficiation flow sheet for production of spodumene concentrate of sufficient grade and purity to meet future market requirements.

1.11 Interpretations and Conclusions

This Technical Report describing a MRE for the Brazil Lake Project was prepared by authors Matthew Harrington, P. Geo., and Michael Cullen, P. Geo., of Mercator, and Lawrence Elgert, P. Eng., of AGP, on behalf of Champlain in accordance with the CIM Standards (2014) and to meet reporting requirements set out in NI 43-101. It is understood that the mineral titles associated with this property were in good standing as of the effective date of the MRE described in this Technical Report.

Conclusions pertaining to Deposit exploration holdings, geology, past exploration and the MRE are summarized below.

- Champlain maintains a 100% interest in the exploration rights and there are currently no option agreements in place. The Project is located on private lands.
- The deposit is comprised of two pegmatite dikes and the primary metal of economic interest at this time is lithium hosted within the silicate mineral spodumene.

- The QP is of the opinion that the North Dike and South Dike pegmatites are best categorized as being of the Rare Element Class, with possible association with the spodumene-albite subtype, and Lithium-Cesium-Tantalum (LCT) Family type of intrusions.
- The current geological interpretation and model for the Deposit are sufficient to support the MRE.
- The MRE focused on the production of a spodumene concentrate of 6.0 % Li_2O grade to define reasonable prospects for eventual economic extraction.
- Preliminary mineral processing and metallurgical testing documentation for the Project indicates that spodumene from the Deposit can be successfully recovered to concentrate through magnetic separation, flotation, and heavy media separation techniques and that further assessment and studies are required in this regard.
- Mica, feldspar, silica, Ta, Rb, Sn, and may be of economic importance to the Project but require further assessment and studies.
- Due to the absence of specific QAQC procedures being implemented during the 2002, 2003, 2019, and 2020 drilling and sampling programs, the QP is of the opinion that these programs as originally designed did not meet related CIM Mineral Exploration Best Practices Guidelines.
- The 2010 QAQC results for certified reference materials are consistent but incomplete and do not show any obvious indications of inaccuracy trends or bias.
- The QP is of the opinion that, with exception of the items discussed immediately above, all other aspects of the 2002, 2003, 2010, 2019, and 2020 drilling, sample preparation, security, and analytical protocols were acceptably completed to industry standards of the respective periods.
- The QP is satisfied that results from Champlain drilling programs are acceptable for use in MRE based on the data verification program completed.

Diamond drilling on the North and South dikes at Brazil Lake has defined a pegmatite deposit that supports a NI 43-101 MRE of 934,000 tonnes grading 1.37% Li_2O. The deposit remains open in both strike and dip dimensions at present. Core logging results and analytical data for mineralized intersections within the area of the current MRE document presence of other mineral phases or metals of potential future economic interest, including Be, Rb, Nb, Sn, and Ta. It is reasonable to infer that with sufficient additional technical investigations, some of these could contribute to a future NI 43-101 MRE and, possibly, to a future economic analysis of the deposit. The anticipated effect would be to increase market value of the deposit.

Prospecting on the Brazil Lake claims owned by the company has resulted in discovery of spodumene-bearing pegmatite boulders and outcrops additional to those directly associated with the current MRE. These constitute good quality targets for future exploration. If proven by drilling to contain economic $L_{i2}O$ mineralization these pegmatites would have potential to expand mineral resources and therefore extend the mine life of any associated future mining project economic evaluation.

Successful future testing of the direct deposit extension areas plus regional target areas by core drilling could result in definition of substantial additions to the current MRE. Future evaluation is warranted in both cases.

1.12 Recommendations

The following recommendations with respect to further evaluation of the Project are based on work completed to date by the Technical Report authors. The premise underlying current recommendations is that technical programs should proceed towards definition of additional mineral resources as well as discovery of new mineralized pegmatite bodies within the Project area. A firm commitment to continued mineral processing and metallurgical testing studies should also be reflected in on-going future evaluation programs. Specific work program recommendations along with associated expenditure estimates are organized within a two-phase budget framework for which commitment to Phase I expenditures is contingent on satisfactory results being attained in Phase II.

- A drone magnetometry (UAV) survey should be carried out as part of a regional exploration program to identify prospective areas for new pegmatite discoveries. High resolution low-flying UAV magnetic surveying may be able to resolve low magnetic susceptibility anomalies associated with pegmatites and differentiate pegmatites from their host lithologies. This survey should include an orientation survey over the known Deposit.

- A regional prospectivity analysis, including all exploration completed to date and the recommended drone magnetometry survey, should be carried out to determine the most prospective targets for new pegmatites.

- Exploratory drilling should be carried out to test prospective pegmatite targets defined from the above recommendations. Initial testing of prospective pegmatite targets should consist of a minimum of two drill holes at a 100 m section spacing. Commitment to a 1,000 m exploratory drill program should be sufficient to test highest priority targets.

- Deposit extension/definition drilling at a 50m section spacing should be carried out to define new Inferred mineral resources associated with the North Dike and South Dike as well as new pegmatite discoveries. Opportunities are present along strike to the south/southwest, down-dip, and down-plunge for both the North Dike and South Dike. Completion of a 2,500 m drilling program is required to adequately test these areas.

- Infill drilling at a 25m section spacing should be carried out to upgrade Inferred mineral resources to the Indicated and Measured mineral resource categories. Completion of a 2,500 m infill drill program is recommended to upgrade a substantial percentage of current mineral resources from the Inferred to Indicated and Measured resource categories.

- Expanded metallurgical testing work leading to development of an optimized processing flow sheet for production of spodumene concentrate should be completed on a priority basis to properly support any future economic analysis of the Project.

- Baseline environmental permitting plus landowner, Indigenous and community consultation programs studies should be initiated to expedite transition of the project, if justified, to the

Preliminary Economic Assessment (PEA) stage of evaluation, potentially leading to a subsequent Pre-Feasibility Study or Feasibility Study.

1.12.1 Phase I and II Estimated Budgets

Implementation of the above recommendations should proceed as a two-phase program. Phase I includes the completion of infill drilling required to upgrade a substantial percentage of Inferred mineral resources of the Brazil Lake Deposit to the Indicated and Measured categories to support a subsequent PEA or PFS in Phase II. Phase I includes completion of additional metallurgical testing as a precursor to a substantial metallurgical program to be carried out to support the PEA included in Phase II. Completion of Phase II is contingent on results from the Phase I programs. Estimated expenditures for Phase I and II programs appear in Table 1.2.

Table 1.2: Budget for Recommended Phase I and Phase II Programs

Item	Phase	Program Component	Estimated Cost (CAD)
1	Phase 1	Drone magnetometry survey and regional exploration program	$25,000
2	Phase 1	Prospectivity analysis	$30,000
3	Phase 1	Exploratory core drilling program, including support costs (1,000 meters)	$250,000
4	Phase 1	Deposit infill and extension drilling, including support costs (minimum 5,000 meters)	$1,000,000
5	Phase 1	Preparation of an updated mineral resource estimate after completion of Item 1 and 2 drilling	$75,000
6	Phase 1	Metallurgical testing to better constrain processes and costs associated with spodumene concentrate production	$250,000
Phase 1	**Subtotal**		**$1,630,000**
		Contingency	*$163,000*
7	Phase 2	Preparation of a PEA study based on the updated MRE from Phase I and optimized metallurgical and mine planning studies; includes geotechnical, metallurgical, and exploratory drilling components plus initial environmental permitting, landowner, Indigenous and community consultation programs	$500,000
Phase 3	**Subtotal**		**$500,000**
		Contingency	*$50,000*
	Total		**$2,343,000**

2.0 INTRODUCTION

2.1 Scope of Reporting

Champlain Mineral Ventures Ltd. (“Champlain” or the “Company”) retained Mercator Geological Services (“Mercator”) with respect to completing a Mineral Resource Estimate (“MRE”) for the Brazil Lake lithium-bearing pegmatite deposit (“Brazil Lake Deposit”) that comprises the Brazil Lake Project (“Project”) located in Nova Scotia, Canada. The MRE is the maiden estimate for the Project. This Technical Report (“Technical Report” or “Report”) documents the MRE, which was prepared in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves as amended in 2014 (“CIM Standards 2014”). The Technical Report was prepared in accordance with National Instrument 43-101 (“NI 43-101”) Form F-1. Champlain is a private company based in Bridgetown, Nova Scotia, Canada.

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2.2 Qualified Persons

The Report authors are independent Qualified Person’s (QP) as defined by NI 43-101 and are responsible for all Sections of this Technical Report as summarized in Table 2.1 and in each Certificate of Qualified Person included in Section 28. Neither the authors of the Report or the firms with which they are employed have any material present or contingent interest in the outcome of this Technical Report, nor do they have any financial or other interest that could be reasonably regarded as being capable of affecting their independence in the preparation of this Technical Report. This Technical Report has been prepared in return for professional fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of the Report. The Report authors are not a director, officer or other direct employee of Champlain and do not have shareholdings in this company.

2.3 Personal Inspection (Site Visit) and Data Verification

QP Matthew Harrington completed a personal inspection (site visit) of the Project on December 7th, 2021. This site visit was completed for the purposes of site inspection, ground truthing, and to satisfy NI 43-101 “personal inspection” and data verification requirements for this Technical Report. During the personal inspection, the QP’s visited exploration licences 5895 and 5866 that contain the Brazil Lake Deposit and MRE and verified the geology, mineralization, local infrastructure, and accessibility into the project area for future exploration and development activities by Champlain. Mercator staff collected a total of 7 quarter core samples from the 2019 and 2020 Champlain drilling programs on December 21st, 2021 and 19 samples from the 2010 Champlain drilling program on January 13th, 2022 for independent witness (IW) sampling and check assay analyses.

Table 2.1: Technical Report Author Responsibilities

Responsible Person - QP	Firm	Area of Responsibility	Relevant Sections (Items)
Michael Cullen, P. Geo.	Mercator	Geology, Mineralization and Deposit Type	1.4, 7, 8, and 14.3.10
Mathew Harrington P. Geo.	Mercator	Overall Responsibility and MRE	1 (except 1.4), 2 though 6, 9 though 28 (except 14.3.10 and 14.3.12),
Lawrence Elgert, P. Eng.	AGP	Pit optimization	14.3.12

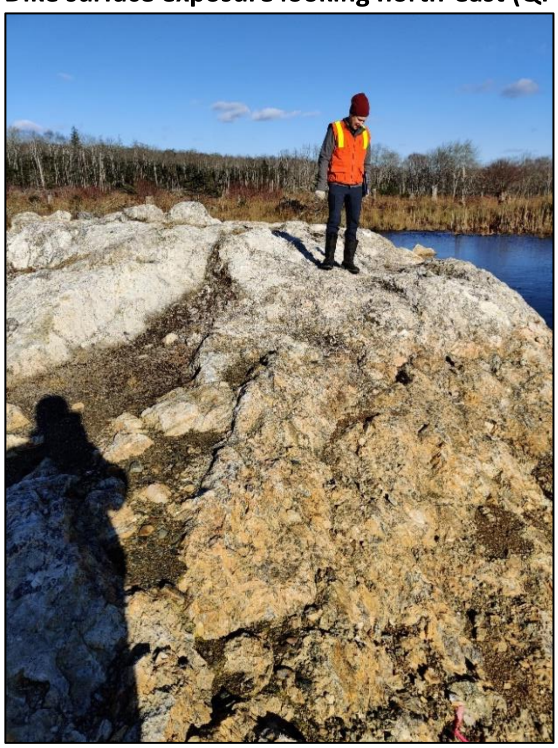
A summary of the results from the IW sampling and check assay program are discussed in Section 12 of this Technical Report (Data Verification).

During the site visit and check sample programs Mr. Harrington completed or supervised the following tasks and inspections:

- Review and inspection of Champlain core storage in Yarmouth, Nova Scotia, and Bridgetown, Nova Scotia, including select core intervals from the 2019 and 2020 drilling programs and visually comparing the core to original drill logs and sampled intervals;
- Acquisition of select core intervals of the 2019 and 2020 drilling program from Bridgetown, Nova Scotia;
- IW sampling of 7 quarter core sample intervals from the 2019 and 2020 Champlain drilling programs for data verification purposes, comparison to the original assay results, and to rectify any errors in the assay database provided by Champlain;
- Supervised sampling of 19 quarter core sample intervals from the 2010 Champlain drilling program for data verification purposes, comparison to the original results, and to rectify any errors in the assay database provided by Champlain;
- Reviewed the data collection and quality assurance/quality control (QAQC) procedures for the Brazil Lake Project drilling and sampling programs completed by Champlain; and
- Completed a field inspection of the Champlain project on December 7th, 2021 (Figure 2.1 and 2.2).

Figure 2.1: Brazil Lake South Dike surface exposure looking north-east

Figure 2.2: Brazil Lake North Dike surface exposure looking north-east (QP Mr. Harrington)



The personal inspection completed by Mr. Harrington on December 7th, confirmed the following:

- The 2019 – 2020 Champlain unmineralized core is bound and stored outside on a third party property in the Brazil Lake area. The 2019 – 2020 Champlain mineralized core is bound and stored outside at Mr. John Wightman's personal residence in Bridgetown, Nova Scotia. Select core pre-dating 2019 is stored at the Nova Scotia Department of Energy and Mines core library in Stellarton, Nova Scotia.
- Drill log lithocodes for the 2010, 2019, and 2020 drilling programs corresponded well with drill core intervals;
- Champlain completed QAQC procedures for the 2010 Brazil Lake drilling program but results for certified standard program are incomplete;
- Champlain did not complete QAQC procedures for the 2002, 2003, 2019, and 2020 Brazil Lake drill core sampling programs;
- Lithium mineralization, in the form of spodumene, is evident in the core samples reviewed and sample intervals were properly documented in core boxes and in the core logging database;
- Access to the Project is excellent through secondary roads and drill roads. The Project is located on property owned by private landowners with private agreements in place. Exploration and drilling activities can be carried out easily without material obstacle.

Due to the absence of specific QAQC procedures being implemented during the 2002, 2003, 2019, and 2020 drilling and sampling programs, the QP is of the opinion that they were not designed according to CIM Mineral Exploration Best Practices Guidelines. In addition, the 2010 QAQC results for certified reference materials are incomplete. To address these items, the QP implemented a comprehensive quarter core check sample program to assess the quality of grade determinations for the 2010, 2019 and 2020 programs. The check sample program results correlate well with original samples results and, combined with previous check sample results completed in 2010 for the 2002 and 2003 drilling programs, the QP is satisfied that this meets the data verification requirements under NI 43-101. It is recommended that any future core drilling or bedrock sampling program carried out by Champlain includes systematic insertion of blank samples and certified reference material samples, analysis of pulp split and quarter core duplicate samples and submission of check sample splits to a third party laboratory.

2.4 Information Sources

Sources of information, data and reports reviewed as part of this Technical Report can be found in Section 27 (References). The Report authors (Qualified Persons) take responsibility for the content of this Report and believe the data review to be accurate and complete in all material aspects.

Exploration licence information, historical assessment reports and Technical Reports, and exploration and drilling data were either acquired by Mercator or supplied by Champlain. Historical and recent drilling data was loaded into a Microsoft Access database, GEOVIA Surpac™ 2021 (Surpac), and Seequent Leapfrog™ Geo 2021 (Leapfrog) and validated by Mercator staff under the supervision of author Harrington prior to evaluation and use in the MRE.

Table 2.2: Table of Abbreviations

Abbreviation	Meaning
3D	three-dimensional
AA	atomic adsorption
Actlabs	Activation Laboratories Ltd.
AGP	AGP Mining Consultants Ltd.
ALS	ALS Laboratories
CALA	Canadian Association for Laboratory Accreditation
CIM	Canadian Institute of Mining and Metallurgy
Champlain	Champlain Mineral Ventures Ltd.
DTM	digital terrain model
DGPS	differential global positioning satellite
EL	exploration licence
EM	electromagnetic
FA-AA	fire assay-atomic absorption
GPS	global positioning satellite
GSC	Geological Survey of Canada
g/t	grams per tonne
ICP-OES	Inductively Coupled Plasma Optical Emission Spectrometry
ICP-AES	Inductively Coupled Plasma Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
LiDAR	light detection and ranging
Mercator	Mercator Geological Services Ltd.
Mt	millions of tonnes
MRE	Mineral Resource Estimate
NI 43-101	National Instrument 43-101
NSDNRR	Nova Scotia Department of Natural Resources
NSDNRRR	Nova Scotia Department of Natural Resources and Renewables
NSR	net smelter return (royalty)
oz	ounce
P.Geo.	Professional Geologist
ppb	parts per billion

ppm	parts per million		
QAQC	quality assurance and quality control		
QP	Qualified Person		
RC	reverse circulation		
UTM	Universal Transverse Mercator		
VLF-EM	very low frequency electromagnetic		
k	thousand	°	degree symbol
Ma	million	%	percent
Ga	billion	Be	Beryllium
ca	circa	PGE	Platinum Group Elements
et al.	and others	REE	Rare Earth Elements
C	Celsius	Pb	Lead
ha	hectare	Pd	Palladium
kg	kilogram	Au	Gold
km	kilometre	Ag	Silver
lbs	pounds	As	Arsenic
ft	foot	Cu	Copper
"	inch	Ni	Nickel
µm	micrometre	Zn	Zinc
m	metre	Fe	Iron
mm	millimetre	Mn	Manganese
cm	centimetre	K	Potassium
ml	millilitre	Th	Thorium
/	per	Co	Cobalt
g	gram (0.03215 troy oz)	Pb	Lead
oz	troy ounce (31.04 g)	Bi	Bismuth
Oz/T to g/t	1 oz/T = 34.28 g/t	Ca	Calcium
Sn	tin	In	Indium
st	short ton (2000 lb or 907.2 kg)	ppm	parts per million
ppb	parts per billion	t	tonne (1000 kg or 2204.6 lb)
tpd	tonnes per day	Rb	Rubidium
Ta	Tantalum	Li	Lithium
Li_2O	Lithium Oxide	Li_2O_3	Lithium carbonate

3.0 RELIANCE ON OTHER EXPERTS

The authors are relying upon information provided by Champlain concerning any legal, political, environmental, or any option, joint venture or royalty matters relating to the Project. The responsible author acquired information on the Champlain mineral exploration licences and constituent claims from the Nova Scotia Registry of Mineral and Petroleum Titles (NovaROC) online claims system and consultation with Mr. John Wightman, P. Eng., President of Champlain. This information showed the subject mineral claims to be in good standing at the effective date of this Technical Report. However, the authors have not independently verified the status of, nor legal titles relating to, the mineral exploration licences and claims. Mr. John Wightman advised the authors that all mineral exploration licences that comprise the Project were in good standing at the effective date of this Technical Report.

No warranty or guarantee, be it express or implied, is made by the author with respect to the completeness or accuracy of the mineral titles comprising the Project.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Location and Description

The Project is situated on the southern shore in Yarmouth County of Nova Scotia, Canada within NTS map sheets 20P/13C and 20O/16D20 (Figure 4.1). The Project is comprised of 4 contiguous exploration licences held by Champlain containing a total of 87 claims covering an area of approximately 1408 hectares (Table 4.1). The Brazil Lake Deposit occurs on exploration licences 05866 and 05865 and is approximately located at 4,875,050 North and 259,990 East UTM NAD83 Zone 20 (Figure 4.2).

Figure 4.1: Brazil Lake Property Location Map

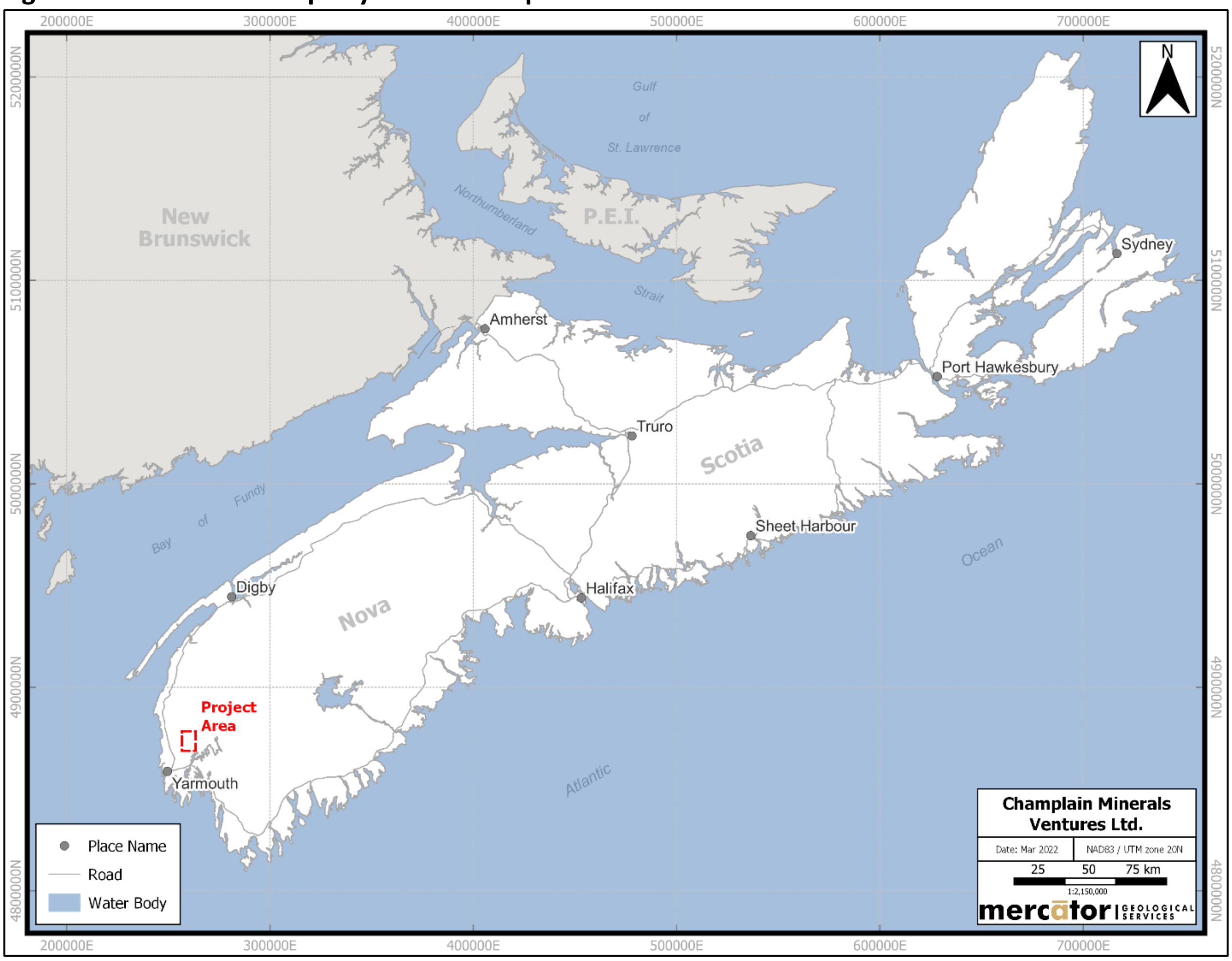
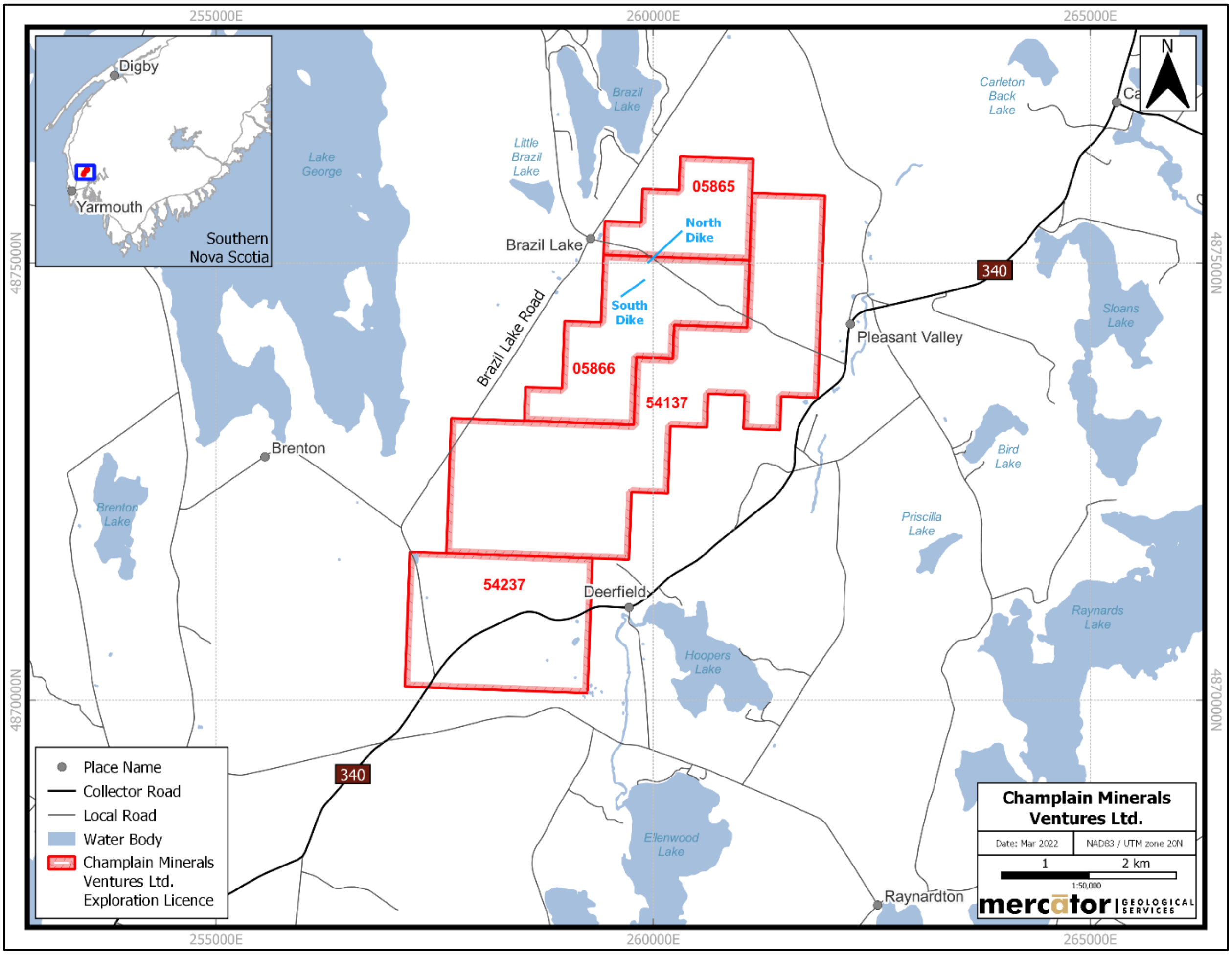


Table 4.1: Exploration Licence Table for the Brazil Lake Project

Exploration Licence	No. of Claims	Issue Date	Expiry Date	Area (Ha)	Age
05865	9	1997-01-27	2023-01-27	145.71	26
05866	16	1997-03-15	2022-04-14	259.04	25
54137	42	2021-03-12	2023-03-12	679.98	2
54237	20	2021-05-14	2023-05-14	323.8	1
	87			**1408.53**	

Figure 4.2: Brazil Lake Property Exploration Licence



The surface rights to lands underlying the Project are held by various private landowners. Champlain does not hold any surface rights in the area. Champlain holds a 100% interest in the Project exploration rights and at the effective date of this Technical Report these were deemed to be good standing, with no lien, mortgage, royalty, or other rights in favour of third parties registered with Nova Scotia Department of Natural Resources and Renewables (NSDNRRR). As noted earlier, Mr. John Wightman, P. Eng., President of Champlain, advised the authors that all mineral exploration licences that comprise the Project were in good standing at the effective date of the Report. Mr. Wightman also advised that an application to renew

Licence 5866 was filed with the Nova Scotia Government prior to the licence anniversary date of April 14th, 2022 and this resulted in the status of the licence changing to “Pending” in the NovaROC system on the anniversary date. At the effective date of this Technical Report, Licence 5866 was recorded as being in good standing in the NovaROC system. Mr. Wightman has further advised that all conditions for successful renewal of Licence 5866 have been met and all necessary documents to facilitate this renewal have been filed with the Nova Scotia Government

The QP consulted NSDNRR records for the purposes of this Technical Report and documented the information set out above. However, reliance has been placed on Champlain with respect to confirmation of title validity and for comment with respect to encumbrances, liens, or royalties, if any, that apply to the title. A legal search of the title was not carried out by the QP for current Report purposes. However, the QP has no reason to question the validity of the information and opinions presented above. The exploration licences have not been legally surveyed to date and there is no requirement to do so at this time.

4.2 Option Agreements and Royalties

Champlain maintains a 100% interest in the exploration rights and there are currently no option agreements in place. No royalty agreements are known by the QP to exist on the property other than the royalty held by the Province of Nova Scotia under the Mineral Resources Act *S.N.S. 2016, c. 3* (the “Act”) that is 2% of net revenue from mining or 15% of net income from mining, with these terms defined under the Act.

4.3 Surface Rights, Permitting, and Mineral Exploration Titles

In the Province of Nova Scotia exploration rights and access to lands for mineral exploration are governed under the Mineral Resources Act. Topographic maps are the basis for determining boundaries of licences and leases and are located and acquired via map staking.

A mineral licence holder has the exclusive right to explore for minerals within the boundaries of their exploration licence, however this does not reflect ownership of corresponding title to surface rights. Land access permission is required from surface rights holders before mineral exploration activities can be undertaken. For both Crown land and private land, mineral exploration licence holders must come to an agreement with the landowner in order to gain the right to access and be able to conduct work on the land. Champlain has advised the QP that no difficulties have been encountered to date with respect to establishment of land access agreements with respect to the Project.

A mineral exploration licence in Nova Scotia is issued for a term of 2 years and may be held in good standing for following terms provided the minimum required work is completed for each term and reported upon to the satisfaction of the Registrar of Mineral and Petroleum Titles. The amount of assessment work required per licence term can be found in Table 4.2. In addition, the following requirements must be met:

1. Before a licence is issued:
    a. The applicant is required to submit Licencee Information (Form #7).
    b. Proprietorship / Partnership / Syndicated Corporate applicants must be registered with the Registry of Joint Stock Companies in Nova Scotia.
2. Before assessment work can begin:
    a. The applicant requires the permission of the landowner (i.e., permission for surface access) before entering on any lands for purposes of mineral exploration
    b. In the case of Crown lands: the applicant needs permission of the Lands and Forestry Department of the Nova Scotia Government.
    c. For any intrusive work that requires removal of vegetation (i.e, such as grid line cutting, trenching, road building or drilling work), an executed land access agreement is required and (as well as a completed notification form for drilling) must be submitted to the Registry of Mineral and Petroleum Titles.
    d. All work conducted pursuant to this Registration must be done in compliance with the Occupational Health and Safety Act, the Environment Act, and all other pertinent legislation.

Table 4.2: Assessment Work Expenditures Required per Licence Term

Number of Terms for Which Licence Issued/Renewed (age of licence at the end of the current licence period)	Expenditure per Term per Claim ($Cdn)
1 to 2 (licence age 0-4 years)	$400
3 to 5 (licence age 5-10 years)	$600
6 to 8 (licence age 11-16 years)	$800
9 and any subsequent renewal term (licence age 17 years and older)	$1600

4.4 Agreements Required for Exploration Activities

The Project is located on private lands. Champlain has executed land access agreements with private landowners to complete exploration work on its exploration licences, including diamond drilling, as reported in the Report. These land access agreements would cover any land disturbance or other damage associated with the intended exploration work and need to be renewed on a regular basis.

4.5 Environmental Liabilities and Site Conditions

Mineral exploration activities must be carried out in compliance with all applicable provincial and federal legislation. This includes, but is not limited to, the Nova Scotia Environment Act and Federal Fisheries Act. Additionally, trenching or surface bulk sampling programs require issuance of an Excavation Permit by NSDNRRR and that department must also be notified in advance of all intentions to carry out diamond drilling programs. Depending upon site conditions and scale, procurement of a trenching permit may require further additional permitting under terms of the Environment Act. It is QP's understanding that no difficulties have been encountered in the past with respect to acquisition of Trenching Permits by Champlain and that no additional permitting was required for those programs. No obvious environmental issues were identified during the 2021 QP site inspection.

4.6 Environmental Approvals Required for Future Mining

Applications for approvals or permits to proceed with mine development, operation, and reclamation have not been made by the Company at the effective date of the Report.

Permits required to proceed with mine development, operation, and reclamation would include the Environmental Assessment Registration and Industrial Approval authorization pursuant to the Nova Scotia Environment Act. Future mining activities at the site will also require the Company to make application and receive, as necessary, various permits associated with land access, mining, and milling operations, water use, wetland alteration, transportation and sewage treatment.

Depending upon Project assessment, any future development of the Brazil Lake Deposit could also be subject to an environmental assessment under the *Canadian Environmental Assessment Act 2012* (CEAA 2012) or to a standard environmental assessment administered by the Canadian Environmental Assessment Agency (CEA Agency). The Project would also be required to comply with the *Metal Mining Effluent Regulations* (MMER – SOR/2002-222).

4.7 Permits or Agreements Required to Carry Out Recommended Future Exploration

Drilling and other field activities recommend in this Technical Report for future investigation of the Brazil Lake Deposit will require land access agreements to be in place and Champlain must provide advance notice to The Government of Nova Scotia with respect to initiation of any drilling programs. Champlain advised the QP that specific agreements addressing the recommended future work identified in the Report were not in place at the effective date of the Report. However, no difficulties have been encountered to date in establishing such agreements and Champlain does not anticipate any difficulties in establishing necessary future agreements.

4.8 Other Liability and Risk Factors

The QP is not aware of any environmental liabilities associated with the Project. As noted above, Champlain will require land access agreements to conduct recommended future exploration work on the property. Champlain has advised the QP that its liability, at the effective date of the Report, was limited to impacts of past trenching and core drilling carried out on the exploration licences, all of which have been addressed to date with respective landowners. These permits are for site activities related to diamond drilling and general site access but do not include impacts associated with historical site use. Development of any future mining operation at the Brazil Lake Deposit would require that the issue of site liabilities be addressed in the related mining and environmental permitting processes.

Brazil Lake Enterprises Ltd. operates an aggregate quarry within the extents of exploration licence 5866. The quarry impinges on the South Dike of the Brazil Lake Deposit and has exposed the pegmatite in one location. The QP understands that advancement of this quarry in the direction of the main South Dike body has been halted and future advancement in that direction will require an agreement between Brazil Lake Enterprises Ltd. and Champlain. The QP was advised by Champlain that no such agreement was in place at the effective date of the Report. The quarry extent does not overlap at this time with volume assigned to the South Dike in the MRE described in this Technical Report.

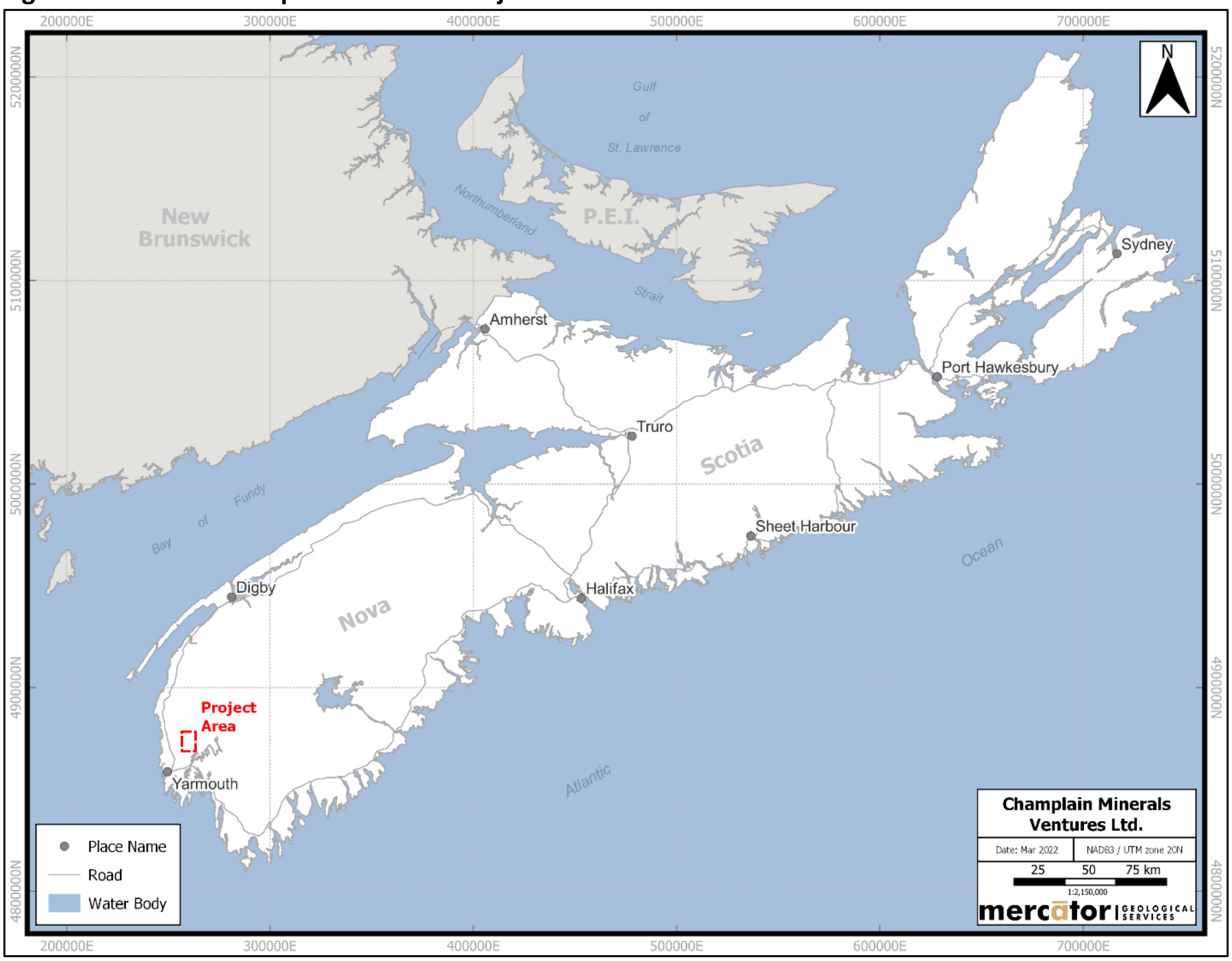
The QP is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the recommended work program on the property.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The Project is located in southern Nova Scotia, Canada approximately 25 km north-northeast of the town of Yarmouth (pop. 7,200) and approximately 300 km southwest of the City of Halifax (pop. 440,000) (Figure 5.1). The closest international airport is the Halifax Stanfield International Airport (YHZ) located approximately 313 km northeast of the Project and commercial airport facilities can be accessed in the town of Yarmouth, which also supports deep water shipping and ferry services. The region can be accessed via provincial secondary Highway 340 and the Project area is easily accessible through secondary gravel roads. The closest town to offer full services is Yarmouth, which includes full-service accommodations, grocery stores, gas stations and restaurants, tool rental and hardware stores, police and emergency medical services, and a hospital.

Figure 5.1: Location Map – Brazil Lake Project



5.2 Climate and Physiography

Nova Scotia is situated on the Eastern seaboard of Canada and is almost completely surrounded by marine waters of the Atlantic Ocean, Bay of Fundy and Northumberland Strait. The climate is temperate and substantively moderated by heat flux of the surrounding waters. Environment Canada records for nearby Yarmouth airport show average yearly temperature to be 7 degrees Celsius and average yearly precipitation to total 1,274.1 mm. Approximately 13 percent of total precipitation accumulates as snow (~204 cm). Winter periods are milder than in many other regions of Nova Scotia, with the average minimum January daily temperature being -7 degrees Celsius. The average July maximum daily temperature is 20.6 degrees Celsius.

The property is located approximately 25 km from the nearest coast and experiences fewer days of fog on an annual basis than coastal areas. Weather conditions generally do not pose substantial challenges for most exploration activities, although soft ground conditions during Spring break-up period can hinder mechanized activities such as drilling. The topography of the region is predominantly rolling hills with rounded broad valleys comprising large catchment and drainage basins. The terrain displays prominent glacial landform features such as drumlins and is further characterized by pervasive presence of locally deep and complex glacial till cover that typically masks recessive bedrock geological features.

5.3 Local Resources and Infrastructure

The Project is well positioned with respect to infrastructure. The town of Yarmouth offers motels, medical services, hardware stores, grocery stores, emergency services, a hospital, and gas stations. Several small communities and hamlets are located in the general vicinity of the Project, most notably Brazil Lake, Carleton, and Deerfield, which collectively offer modest convenience, fuelling and retail services. These are rural in character and typified by relatively sparsely distributed homes located along main highways. Lands within the Project are predominantly forested and owned by individuals or commercial forestry interests. The Project is located within 1 km of regular electrical grid access.

This area of Nova Scotia no longer has railway service, with the closest current rail access points being with the Canadian National Railway system in Halifax, approximately 300 highway kilometers to the northeast.

The surface drainage systems present in the Project area provide readily accessible potential water sources for incidental exploration use such as diamond drilling. It also provides good potential as higher volume sources of water such as those potentially required for future mining and milling operations.

Exploration staff and consultants, as well as forestry, heavy equipment and drilling contractors can be sourced from within Nova Scotia and the adjacent Province of New Brunswick. The agriculture and forestry industries are the dominant employers in the region. The local rural and urban economies provide a large base of skilled trades, professional, and service sector support that can be accessed for exploration and resource development purposes.

6.0 HISTORY

6.1 Brazil Lake Property

The first noted occurrence of spodumene-bearing pegmatite on the Property was through mapping conducted by the Geological Survey of Canada in the Yarmouth area in 1960. Taylor (1967) later reported that this reflected discovery of a large spodumene-bearing pegmatite boulder along the north shoulder of Holly Road, a secondary road connecting Brazil Lake and Highway 340. The boulder still remains on the side of the road today and occurs between what have been designated as the North Dike and South Dike pegmatites. These were initially described in Geological Survey of Canada Memoir 349 (Taylor, 1967) and presented on the associated geological map. Initial outcrop stripping by Taylor exposed a portion of the South Dike in which he determined modal mineralogical analysis to be 52% feldspar (potassium feldspar, or K-spar and albite), 34% quartz, 11% spodumene, 3% muscovite and minor to trace beryl/apatite/tourmaline. In 1971 a 272 kg bulk sample collected by Brian Walsh of the Mineral Engineering Department at the Technical University of Nova Scotia, for the purpose of initial metallurgical work to assess the suitability of Deposit spodumene for ceramic applications (Barrett, 1991).

Little work was subsequently conducted on the property until the late 1970's, when Shell Canada Exploration Ltd. (Shell) completed regional mapping plus grid magnetics surveying, very low frequency electromagnetic surveying and geophysical and till geochemical sampling programs in the area to follow-up anomalous tin values present in an earlier water survey carried out by the company (Palma, 1982). No bedrock mineralized zones were identified as a result of this work in the Project area.

Regional B horizon soil sampling carried out by Shell included analysis of lithium (Li) levels but generally insignificant amounts were returned from the area of mapped deposit pegmatites. As part of an unpublished B.Sc. thesis at Dalhousie University, Hutchinson (1982), in conjunction with Shell, completed regional mineralogical research that included characterization of the geology, geochemistry and genesis of the Project area pegmatites. An important result of this work was recognition of a metasomatic halo in host rocks surrounding the spodumene-bearing pegmatites, this being defined by presence of tourmaline and holmquistite, a lithium bearing amphibole mineral. This alteration factor led to development of an evaluative system for alteration zones surrounding such pegmatites and facilitated identification of non-outcropping pegmatites of similar association.

Several exploration programs were carried out during the 1980s and early 1990s and the bulk of work performed during this period was directed toward market research and product viability of the main, potentially economic components of the pegmatite, these being considered to be Li, rubidium (Rb) and cesium (Cs). Barrett (1987, 1990, 1991, 1992) described these efforts in detail, ultimately for Aurion Minerals Ltd. (Aurion), which completed limited rock sampling as late as 1991, with sustained focus on the K-feldspar market with Rb and Cs being complimentary to Li in spodumene as secondary economic interests. While positive results were returned from some of this work, Aurion did not continue evaluation of the property after 1992. Barret (1992) summarized all Aurion program results in noting that economic potential of the pegmatites was considered to depend upon finding high-value applications for contained minerals such as potassium feldspar, and that spodumene potential was largely limited due to iron content. He also emphasized potential economic significance of staurolite and andalusite that had been found in boulder occurrences in the area but not sourced to bedrock at that time.

Following work by Aurion, the NSDNRRR completed a regional multi-media geochemical survey in the vicinity of the known pegmatite occurrences, with results of the program being reported by Macdonald et al. (1992). Humus, silt, and spruce bark were used as media in the survey but interpretation of results did not definitively outline the pegmatite dikes.

The first phase of drilling on the property was undertaken by the NSDNRR in 1993 and consisted of 5 diamond drill holes (BZL-93-1 through BZL-93-5) totaling 576.64 m of drilling. Corey (1995) reported on this work, which was designed to characterize down dip expression of the partially exposed North Dike pegmatite to a depth of approximately 75 m below surface. Results from 5 holes showed this pegmatite to measure more than 150 m along strike and to range in true thickness between 3.1 m and 20.9 m where drilled, defining promising down-dip potential. The dike was interpreted as being open in all directions after drilling, with thinning at surface recognized near the northern extremity and maintained thickness near the southern extremity. As reported by Corey (1995), substantive analytical investigation of NSDNRR core was not carried out due to presence of elevated (>0.10%) iron levels recognized during electron microprobe analysis of certain core samples of pegmatite spodumene. Additional details of NSDNRR drilling appear in Section 10.2.

Hughes (1995) reported on the Project in an unpublished B.Sc. thesis completed at Saint Mary's University, Halifax, Nova Scotia, that addressed internal zonation and mineralogy of the pegmatites through detailed petrographic investigation. This work expanded the technical data set for the pegmatites but did not have a significant economic impact on exploration methods or assessment of the economic potential of the pegmatite system.

In 1998, Gwalia Consolidated Ltd. (Sons of Gwalia Ltd.)) of Perth Australia, then operators of the Greenbushes spodumene mining operation in Western Australia, carried out an assessment of the Brazil Lake Project in search of pegmatite-hosted tantalum mineralization exceeding a minimum threshold value of 600 parts per million (ppm) Ta_2O_5, including review and sampling of NSDNRR drill core from 1993 as discussed in Section 11.2. Results of the program were reported in Hudgins (1998) and showed that elevated Sn, Ta, Nb, Be and Zr levels were present in pegmatite samples but that Ta_2O^5 values did not consistently meet or exceed the 600 ppm minimum interest threshold. As a result, the company did not carry out any further work on the property.

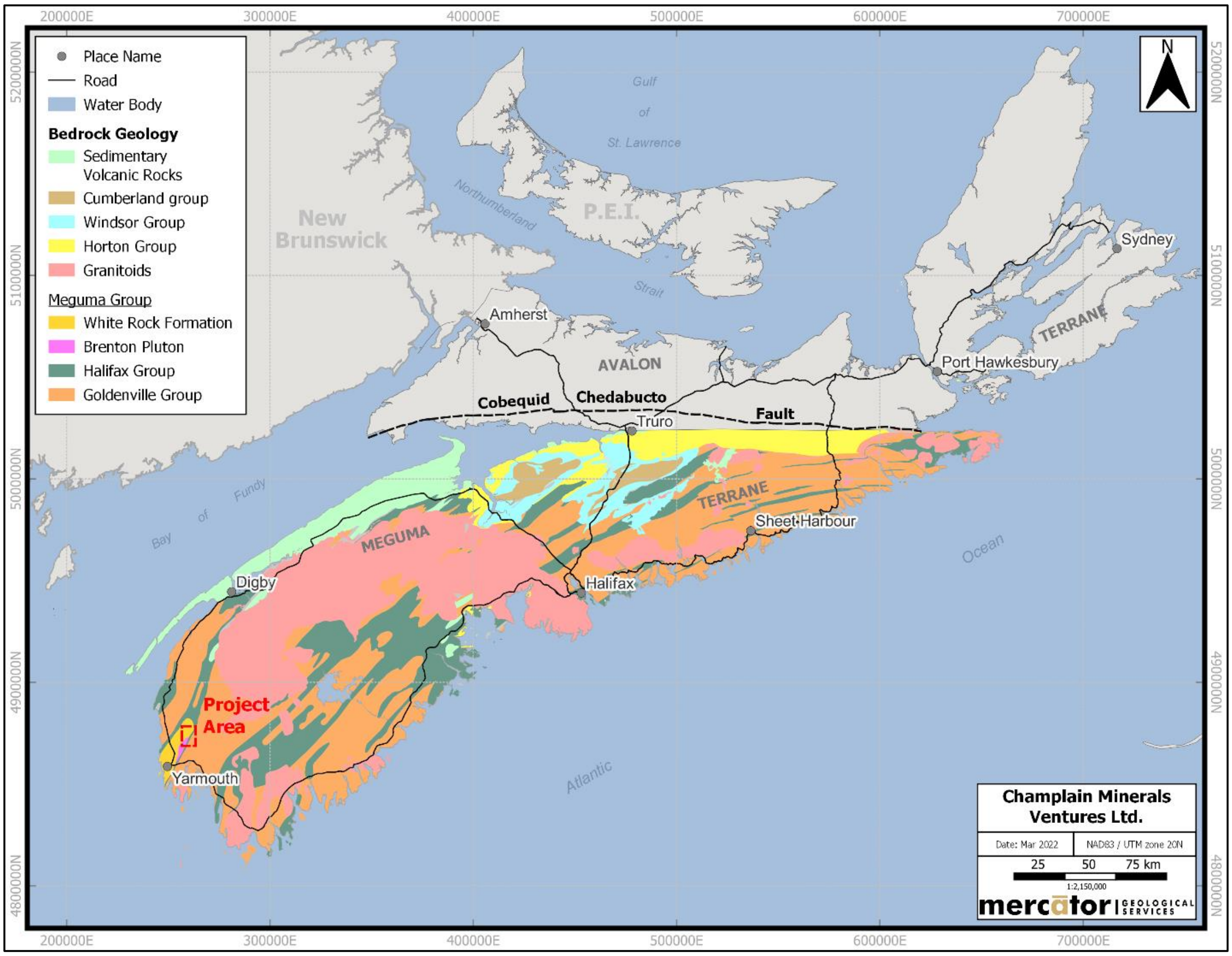
Initial staking of exploration claims in the Brazil Lake area on behalf of Champlain occurred in 1997 in the form of claims registered to Mr. Avard Hudgins, a senior geologist with Champlain at that time. These holdings were subsequently transferred to Champlain in 1999. As such, the work conducted by Gwalia was credited directly to Champlain's exploration interest.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

Brazil Lake Deposit pegmatite dikes occur within the White Rock Formation of the Meguma Terrane (Meguma Zone) of southwestern Nova Scotia. The Meguma Terrane is the most outboard, or eastern-most litho-tectonic zone accreted to the Northern Appalachian system during the Mid Devonian Acadian Orogeny and is comprised of rocks ranging in age from Cambrian-Ordovician to Mid Devonian. The Meguma Terrane in the Project area of southwest Nova Scotia can be roughly divided into northeast to east trending constituent composite stratigraphies of the Cambro-Ordovician Meguma Group (Halifax and Goldenville Formations) plus the Silurian White Rock Formation and granitic igneous intrusions related to the Devonian South Mountain Batholith (Figure 7.1).

Figure 7.1: Regional Geological Map of Nova Scotia



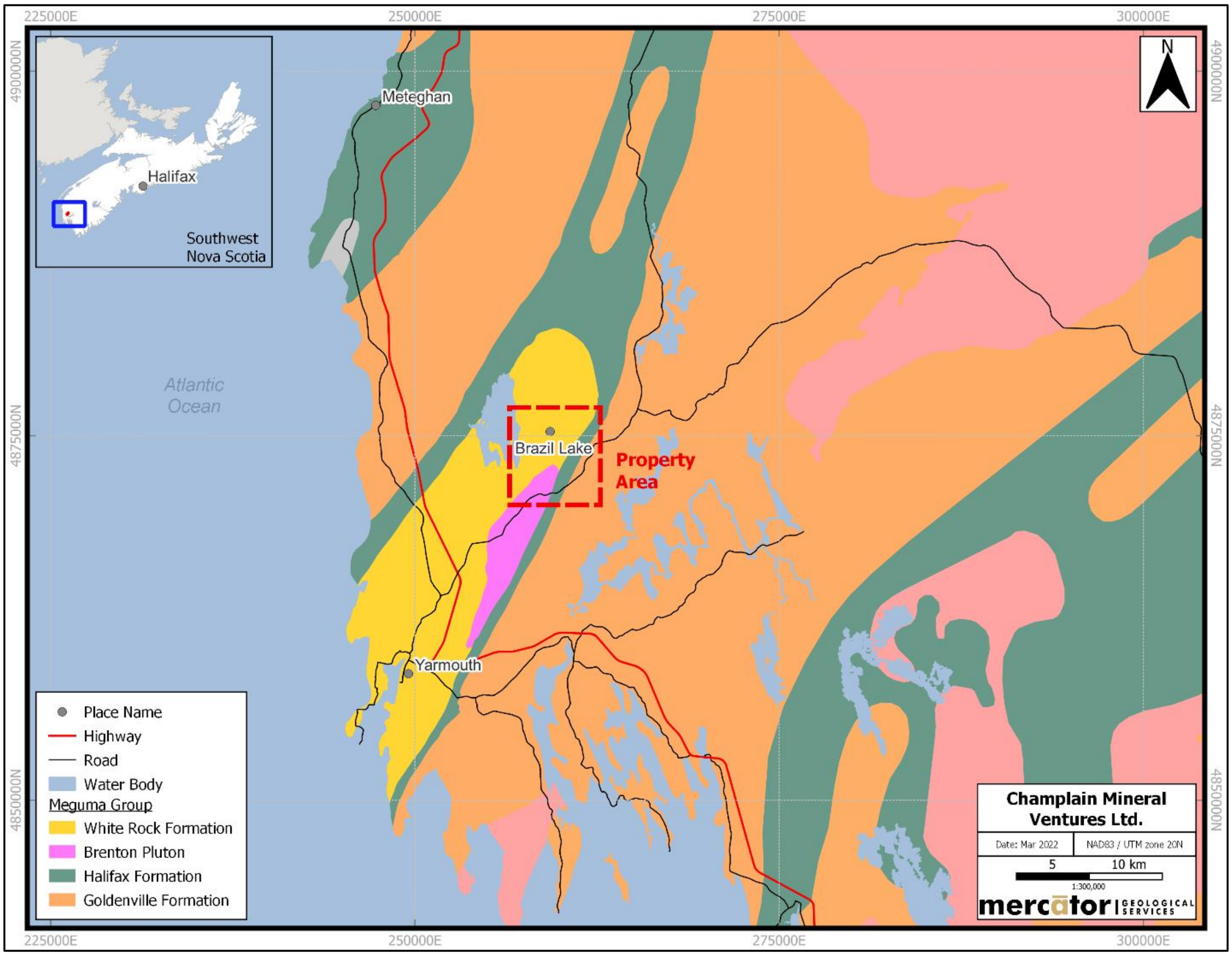
The Meguma Group is comprised of deep-water, turbiditic continental-shelf sediments and is divided into two formations, the older Goldenville Formation and the conformably younger Halifax Formation. The Goldenville Formation is composed of massive meta-sandstones, and locally meta-siltstones, of Cambro-

Ordovician age, whereas the Halifax Formation is predominantly comprised of sulphur-rich meta-siltstones and slates of Ordovician age. The latter reflects deposition in a deeper water abyssal plain environment off the Gondwanan continental shelf. Rocks of both formations were later accreted to unrelated Avalon Terrane (Avalon Zone) sequences to the north and west during closure of the Rheic ocean basin that culminated during the Mid Devonian Acadian Orogeny. This accretionary event is marked by development of the prominent Cobequid-Chedabucto fault system that transects west to east through Nova Scotia and separates the Meguma Terrane from the Avalon Terrane. The rocks of the Meguma Group were deformed into broad northeast trending upright folds which characterize the landscape of southern and eastern Nova Scotia and present the only exposures of these rocks within the broader Appalachian composite stratigraphy.

The White Rock Formation refers to rocks of Silurian age predominantly characterized as staurolite and garnet-bearing metasedimentary rocks interbedded with minor mafic metavolcanic (amphibolite) units. These are interpreted to be part of an overstep sequence that covers both the Meguma Group and some similar-aged rocks of the Avalon Terrane (Keppie and Krogh, 2000). In western Nova Scotia, Silurian age rocks are also found in the Yarmouth, Cape St. Mary, Torbrook, Digby and Wolfville areas, and are commonly associated through presence of interbedded sequences of continental sediments deposited in shallow water environments (MacDonald et al., 2001, White et al., 1999, and Ferguson, 1990). White Rock Formation sequences in the Yarmouth (Brazil Lake), Cape St. Mary and Torbrook areas are unique to those found in other locations in that they record episodes of aqueous to sub-aerial volcanic events (White et al., 1999, Keppie and Krogh, 2000). These events have been attributed to an extensional tectonic regime, dated to have occurred between 442±4 Ma (U-Pb, Keppie and Krogh, 2000) and 438±3 (MacDonald, 2001). Geochemical data indicate that these volcanic rocks display within-plate alkali characteristics (James, 1998) and that contained mafic volcanics show less evidence of crustal contamination than younger Devonian granites (MacDonald et al., 2001).

In the Yarmouth (Brazil Lake) area, the White Rock Formation forms a northeast trending belt extending inland from coastal exposures north and south of Yarmouth, that occurs along the northern contact of the South Mountain Batholith. Related sequences are confined within the regionally significant Yarmouth syncline that affects both White Rock Formation and Meguma Group strata. The White Rock Formation is in unconformable contact with surrounding Halifax Formation in this area and, locally, with the Goldenville Formation (Figure 7.2). Its southeastern contact is inferred to be a brittle fault that follows and post-dates a broader major northeast trending ductile shear zone referred to as the Deerfield Shear Zone by Keppie and Dallmeyer (1995) and, alternatively, the Chebogue Point Shear Zone by Culshaw and Liesa (1997). Both structures cross the property and dextral shearing evidence is interpreted to be present in rocks of both Halifax and White Rock Formations. White Rock Formation meta-sediments reached the staurolite-grade of regional metamorphism in this area and are typically schistose (MacDonald, 2000).

Figure 7.2: Regional Geological Map of Southwestern Nova Scotia



The White Rock Formation is identified as forming the host sequence for the later Brenton Pluton that is located a short distance southwest of the currently defined Brazil Lake Deposit pegmatites. The Brenton pluton is a medium-grained, syeno-granite to monzogranite (O'Reilly, 1976, MacDonald, 2000) that intrudes along the southeastern contact of the White Rock Formation in the Yarmouth-Brazil Lake area. A 439 Ma U/Pb zircon age (Keppie and Krogh, 2000) suggests the pluton is Silurian in age. It lies approximately 3 km southwest of the Brazil Lake Deposit and is fault bounded with both the Halifax Formation to the east and the White Rock Formation to the west. It is typically strongly foliated and lineated but contains local areas in its central region that are less deformed and characterized by equigranular igneous textures. The pluton is interpreted to have moved upward from depth within the Deerfield Shear Zone and as such may not be directly responsible for metamorphism seen in the immediately surrounding White Rock Formation meta-sediments (MacDonald, 2001).

7.2 Brazil Lake Property Geology

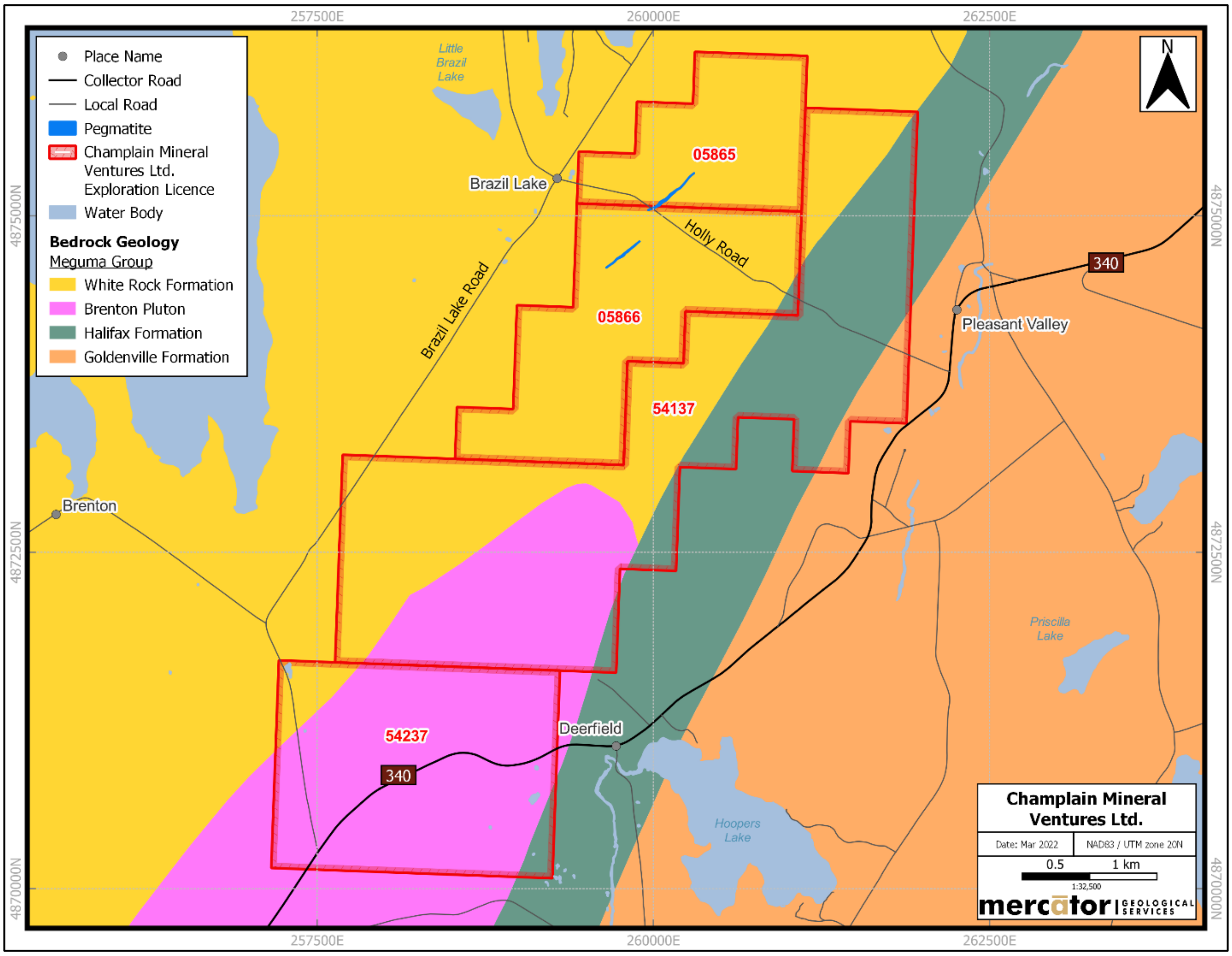
Two highly evolved granitic pegmatite dikes are the current focus of exploration interest and these are hosted by meta-sedimentary and meta-volcanic rocks of the White Rock Formation, which locally include quartzite, amphibolite, and pelitic-schist. The White Rock Formation sequence strikes northeasterly and locally dips steeply to both northwest and southeast in quarry exposures located to the south of the Deposit.

Mapping of outcrop and trenching exposures and drill core results has shown that all three varieties of host rock are in contact with the pegmatite, indicating a low angle oblique intersection between the bedding of host rocks and the pegmatite bodies. Contact zone host rocks are commonly sheared and/or faulted, but penetrative deformation fabrics associated with such are not present in either the pelitic-schists or amphibolites of the host section or within the dikes themselves. Kontak (2004) noted that adjoining quartzite beds locally display bleaching of colour near the pegmatite contacts, attributing this to possible silicification, and described abundance of tourmaline-rich xenoliths, likely altered amphibolites, that occur along the contact zone.

A general lack of penetrative deformation is seen in the pegmatite, suggesting discontinuity between development of metamorphic fabric and mineral assemblages seen in adjacent wallrock and the pegmatites. No obvious regional structural features appear to have been exploited during the emplacement of the pegmatites and it is plausible that the dikes represent a parallel set of extensional features, with dilation possibly related to late shear stresses along the nearby Deerfield Shear Zone (Kontak, 2004). Brittle shearing fabrics along dike contact zones reflect a later event, possibly associated in time with late stages of regional brittle faulting.

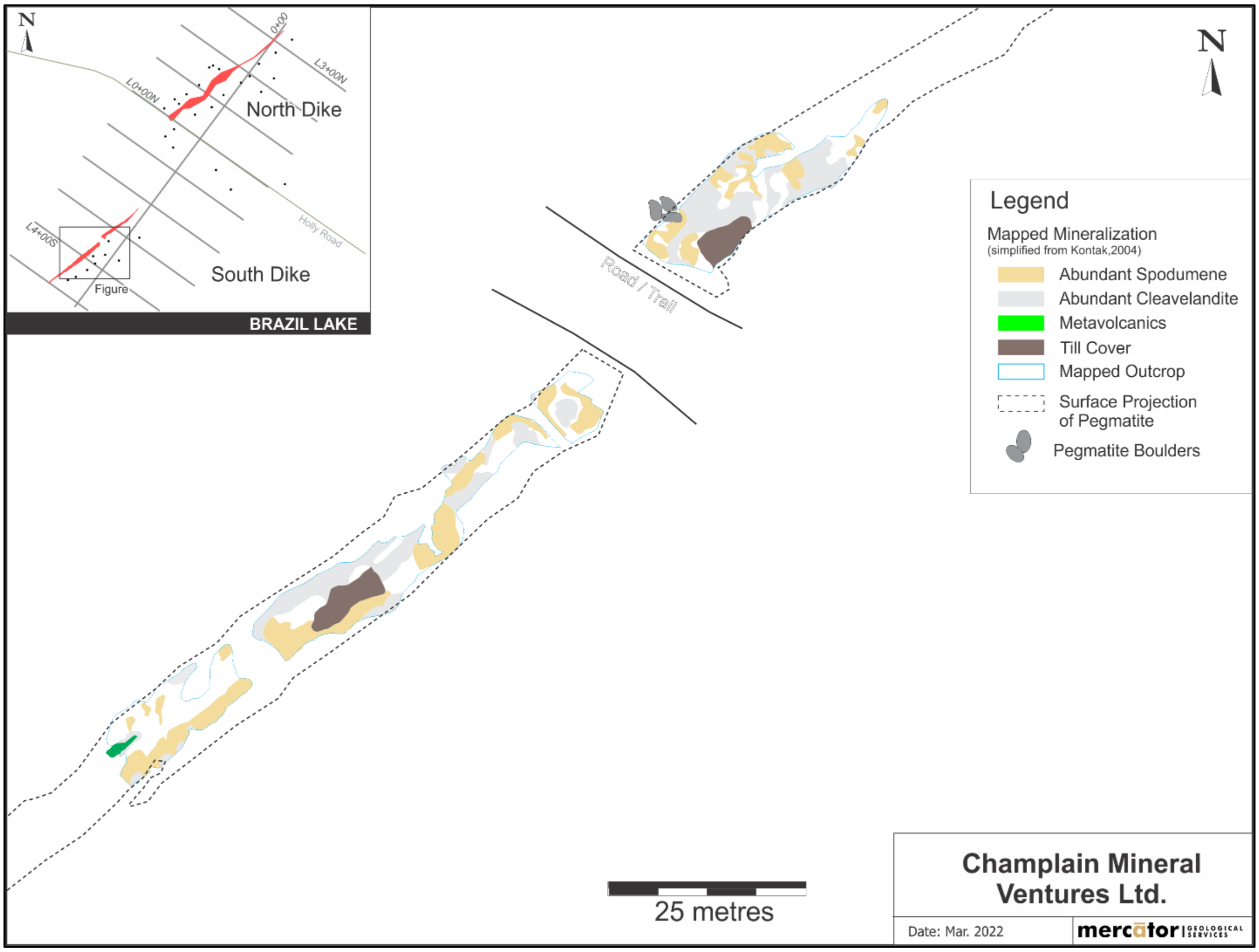
Surface exposures of the North Dike and South Dikes are separated by about 300 m, and the dikes occur in roughly parallel, en-echelon fashion, strike northeasterly (50º azimuth) and dip steeply to the southeast at inclinations between 60° and 85°. Results of drilling and surface trenching to date show the dikes to be lenticular in form, with generally wider cores transitioning to thinly tapered extremities (Figure 7.3). The North Dike is at least 700 m in length and distinctly thickened in its center, where a maximum true thickness value of 20.95 m is defined through drilling results. Interpretation of drilling data also shows that the thickened central zone plunges southwesterly at an angle of approximately 30º – 40º. The South Dike measures about 300 m in defined strike length, varies between 8 and 12 m in true thickness where completely exposed by trenching, and also bears evidence of a southwest plunging trend of approximately 30º - 40º for a thickened zone.

Figure 7.3: Geological Map of the Brazil Lake Property



Four distinct lithological zones were defined by Kontak (2004) within the South Dike on the basis of distinct textures and modal mineral proportions, these being (1) the blocky feldspar zone (BKF), (2) the modally enriched spodumene zone (Spd), (3) the albite zone (Az) and the beaded-quartz texture zone (BQT). Figure 7.4 presents mapped extents of these zones within the limits of surface trenching exposures of the South Dike established by Champlain in 2003. Although the mineralogical zones are spatially distinct, coherent and predictable mineral zonation consistent with pegmatites such as those outlined in Cerny (1991a) are not present in the surface exposures of the South Dike as described by Kontak (2004).

Figure 7.4: South Dike Geological Map



7.3 Mineralization

Mineralization within Brazil Lake pegmatites is paragenetically similar to the mineral sequence typically seen in peraluminous granites. Dominant mineral phases are sodium and potassium feldspar, quartz and minor amounts of mica plus accessory minerals. Due, possibly, to extreme fractionation of chemical constituents from magmatic source granite, an increased modal abundance of Rare Element enriched minerals also characterizes the pegmatites. As described by (Cerny and Ercit, 2005) Rare Element-LCT type pegmatites typically contain anomalous concentrations of lithium (Li), cesium (Cs), tantalum (Ta), rubidium (Rb), beryllium (Be), gallium (Ga), tin (Sn), hafnium (Hf), boron (B), phosphate (P) and fluorine (F). Sampling results for the Brazil Lake pegmatites show anomalous values of Li, Rb, Sn and Be to be present locally. These correspond, respectively, with dominant host minerals spodumene, potassium feldspar, cassiterite and beryl, all of which have been identified in Project drill core and outcrops. The Project pegmatites do not present consistently anomalous values of Cs and Ta which are typically associated with Rare Element-LCT type pegmatites, but tantalite crystals are present in both the North Dike and South Dike as well as in metasomatized quartzitic host rocks.

Accumulation of Rare Elements is generally considered a function of the escape of incompatible elements from a parent magmatic body, combined with presence of volatiles in solution that lower the effective solidus temperature and viscosity of the remaining melt. This combination of factors enables the melt to be transported further into country rocks than the equivalent higher viscosity low-volatile granitic melt. Progressive fractionation and evolution of the contained chemical constituents can result in zonation development along such melt migration pathways. Fractional crystallization can occur at various stages in melt migration and results in mineral assemblage variations. Kontak (2004) estimated that Brazil Lake pegmatite crystallization occurred at confining pressures of 3.5-4 kilobars and temperatures near 600°C. These P-T conditions are permissive of both the Cerny and Ercit (2005) granite emplacement model for LCT pegmatites as well as the Kontak et al. (2005) metamorphic anatexis model.

Li in Brazil Lake pegmatites is specifically hosted within the silicate mineral spodumene which constitutes a significant mineral phase of the North Dike and South Dike pegmatites. Spodumene contains 3.73 % Li (8.03 % Li_2O) in its purest form and is found throughout the pegmatites as both megacrystic (cm to m-scale) and coarse grained (< 1cm) crystal phases. Distribution of spodumene within the extensive South Dike surface exposures developed during 2003 by Champlain trenching was documented through surface mapping. General spatial continuity of spodumene occurrence throughout the exposed length of the mapped dike is apparent, however, it is also clear that the dike is not uniformly mineralized with spodumene across its full width, that spodumene varies dramatically in grain size and crystal orientation, and that a quartz rich marginal phase devoid of spodumene is generally present. Figures 7.5 through 7.9 present examples of Brazil Lake pegmatite mineralization.

Figure 7.5: Megacrystic spodumene crystals in the Brazil Lake South Dike

Figure 7.6: Sodium-metasomatized potassium feldspar with cleavelandite

Figure 7.7: Coarse grained spodumene crystallized at high angle the dike contact

Figure 7.8: Coarse grained spodumene crystallized at high angle the dike contact

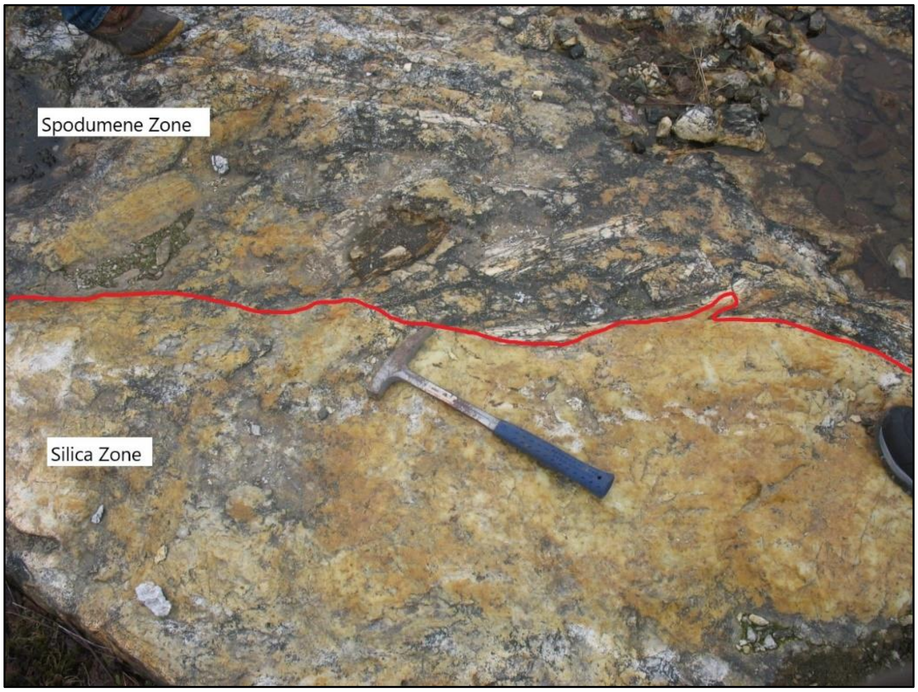


Figure 7.9: Spodumene rich boulder extracted from the South Dike (approximately 1.5 m in length and 1.0 m in height)

Sampling results from the Project show that Rb is enriched within the primary potassium feldspar phase and Kontak (2004) showed that late sodic metasomatism has locally obliterated much of the early potassium feldspar, with this being marked by occurrence of albite along intra-crystalline cleavage planes, fractures and partings. The end member of such alteration is near-complete conversion of megacrystic potassium feldspar to cleavelandite. Formation of secondary mica is also related to albite alteration and is attributed to loss of potassium from the potassium feldspar lattice during alteration and relative enrichment in Rb via substitution within the newly formed mica crystal lattice. Anomalous values of Ta and Be are present within the albite phase. Ta to Nb ratios have been used to identify relative evolution of pegmatites, with higher Ta to Nb ratios indicating a greater degree of fractionation. These elements are hosted in variable proportions within the tantalite-columbite mineral series. Values of Ta noted on the Project from previous drilling range up to 1,070 ppm over a 0.8 m interval (Drill hole BZ-02-22, sampling procedures detailed in Section 11.3). This value was associated with an elevated 8.5% Na_2O level and suggests Ta enrichment associated with secondary albite formation. Mica occurs as both primary and secondary phases and has been a focus in mineral processing studies on the Deposit. Sn in the oxide form cassiterite also occurs locally and infrequently in the pegmatites, as do beryl and isolated crystals of tantalite.

8.0 DEPOSIT TYPES

Classification of granitic pegmatites has evolved as documentation of globally distributed pegmatites has increased. The classification system used in this Technical Report is that of Cerny and Ercit (2005) and is based on earlier work by Ginsburg (1979) and Cerny (1991a, 1991b). Revision of the classification system has resulted in 2 schemes which reflect enhanced consideration given to petrologic, petrogenetic and geochemical characteristics of pegmatites. One system deals with the geological emplacement environment as a major consideration and is grouped in a Class-Subclass-Type-Subtype arrangement, whereas the other considers the provenance of granitic pegmatites though igneous differentiation processes and is organized within 3 distinct Family populations.

Table 8.1 presents a summary of Cerny and Ercit (2005) Rare Element (REL) Class category and its descriptive characteristics. This Class is further subdivided into 2 Subclasses, namely the Rare Earth Element (REL-REE) and Lithium (REL-Li). This classification system is akin to the Family Classification seen in Table 8.2 which is comprised of 3 components, these being (1) the NYF (niobium-yttrium-flourine) type, (2) the LCT (lithium-cesium-tantalum) type and (3) combined NYF-LCT types. These systems assume that pegmatites have been derived through igneous differentiation of plutonic parent magmas that have not been significantly influenced by assimilation of host and/or country rock materials. Intrusion emplacement depth and relationship to metamorphism reflect retained elements of earlier classification systems. As noted in Cerny and Ercit (2005), an association exists between the two classification systems in which the LCT Family pegmatite populations consist of members of the REL-Li Subclass.

Based on combined results of work carried out on the Project to date, the QP is of the opinion that the North Dike and South Dike pegmatites are best categorized using the Cerny and Ercit (2005) system as Rare Element Class, with possible association with the spodumene-albite subtype, and Lithium-Cesium-Tantalum (LCT) Family type intrusions. LCT pegmatites are associated with S-type, peraluminous granites that are typically the product of partial melting of pre-existing sedimentary source rock. The major distinction of NYF and LCT pegmatite sub-classes is the level of fractionation observed in incompatible lithophile element components. Increased abundance of the Rare Elements occurs in association with the more evolved LCT rocks. Fractionation is amplified by included volatiles within such melts, which promotes rapid crystallization of a few large crystals and otherwise lowers melt viscosity, thereby allowing greater transportation distances from the parent granite to be attained by partial melt products. Peraluminous composition of the fertile parent granites is considered to be a common attribute of LCT pegmatites.

Table 8.1: Excerpt of Rare Element Class Pegmatite Classification from Cerny and Ercit (2005)

Class / Subclass	Type	Subtype	Minerals	Typical Minerals	Metamorphic Environment	Relation to Granites
Rare-element						
REL-REE	allanite-monazite		LREE, U, Th (Be,Nb>Ta, F, [P])	allanite, monazite, zircon, rutile, fluorite, ilmenite	Variable largely shallow and postdating regional events affecting the host rocks	Interior to marginal (rarely exterior)
	euxenite		L-H-REE, Y, Tl, Zr, Nb>Ta (F, P)	euxenite, monazite, xenotime, zircon, rutile, ilmenite, (fergusonite, aeschynite, zinnwaldite)		
	gadolinite		Be, Y, HREE, Zr, Tl, Nb>Ta, F(P)	gadolinite, fergusonite, samarskite, zircon, rutile, ilmenite, fluorite, (zinnwaldite)		
REL-Li	beryl	beryl-columbite	Be, Nb-Ta, (+/- sn, B)	beryl, columbite, tantalite, (rutile)	Low-P, Abakuma amphibolite (andalusite-sillimanite) to upper greenschist facies, ~2 to 4 kbar, ~650 to 450ºC	(Interior to marginal) to exterior
		beryl-columbite phosphate	Be, Nb-Ta, P (Li, F, +/- Sn, B)	beryl, columbite, tantalite, triplite, triphylite		
	complex	spodumene	Li, Rd, Cd, Be, Ta-Nb (Sn, P, F, +/-B)	spodumene, beryl, columbite-tantalite, (amblygonite, lepidolite, pollucite)		
		petalite	as above	petalite, beryl, columbite-tantalite, (amblygonite, lepidolite, pollucite)		
		lepidolite	Li, F, Rb, Cs, Be, Ta-Nb (Sn, P, B)	lepidolite, beryl, columbite-tantalite, (amblygonite, lepidolite, pollicite)		
		elbaite	Li, F, Rb, Cs, Be, Ta-Nb (Ta, Be, Cs)	tourmaline, hambergite, danburite, datolite, microlite, (polylthlonite)		
		amblygonite	Li, Rb, Cs, Ta-Nb, Be (Sn)	amblygonite, beryl columbite-tantalite, (lepidolite, pollucite)		
	albite - spodumene		Li, (Sn, Be, Ta-Nb +/- B)	spodumene, (cassiterite, beryl, columbite-tantalite)		
	albite		Ta-Nb, Be (Li, +/- Sn, B)	columbite-tantalite, beryl (cassiterite)		

Table 8.2: Petrogenetic Family Classification of Cerny and Ercit (2005)

Family	Dominant Subclass of Pegmatites	Geochemical Signature	Bulk Composition of Pegmatites	Associated Granites	Bulk Composition of Granites	Source Lithologies
NYF	REL-REE, MI-REE	Nb>Ta, Ti, Y, Sc, REE, Zr, U Th, F	subaluminous to metaluminous (to subalkaline)	(syn-, late, post) to maily anorogenic, quasi homogeneous	(peraluminous to) subaluminous and metaluminous: A and I types	depleted middle to lower crust granulites, juvenile granites, mantle metasomatized crust
LCT	REL-Li, MI-Li	Li, Rb, Cs, Be, Sn, Ga, Ta>Nb, (B, P, F)	peraluminous to subaluminous	(synorogenic to) late orogenic (to anorogenic); largely hereogeneous	peraluminous, S/I or mixed S + I	undepleted upper to middle crust, supracrustal rocks and basement gneisses
Mixed (LCT-NYF)	Cross-bred LCT and NYF	mixed	metaluminous to moderately peraluminous	(postorogenic to) anorogenic; heterogeneous	subaluminous to slightly peraluminous	mixed protoliths or assimlation of supracrustal rocks by NYF granites

Granitic pegmatite bodies of variable compositions are found throughout the world and represent a range of emplacement environments. Within Canada, a noticeable association exists between pegmatitic occurrences and major orogenic events, these being (1) the Kenoran Orogeny of the Archean Superior Structural Province (2,750-2,550 Ma), (2) the Hudsonian Orogeny of the Proterozoic Churchill Structural Province (1,800-1,600 Ma), (3) the Grenville Orogeny of the Grenville Province (1,200-900 Ma) and (4) the Acadian Orogeny of the Appalachian Structural Province (375-325 Ma) (Vanstone, 2002). The Brazil Lake pegmatites discussed in this Technical Report occur within the Appalachian Structural Province.

Fertile peraluminus granitic magmas are generally considered to be the sources of Rare Element LCT type pegmatites, with these giving rise to S-type granite signatures in pegmatites emplaced into meta-pelite supracrustal rock sequences (Cerny, 1991b). In southwest Nova Scotia this model seems applicable, since some granitic plutons associated with the Mid Devonian South Mountain Batholith were emplaced during late stages of the Acadian Orogeny and could be sources of Brazil Lake pegmatite fluids. The slightly older Brenton Pluton, located adjacent to the deposit, is also a possible candidate for pegmatite source association, but was structurally disturbed subsequent to emplacement, thereby complicating definition of a direct relationship. Regional pluton emplacement appears to have been influenced by northeast orientated regional fold and shear zone structures. In the case of the Brenton Pluton, ductile shearing along the Deerfield Shear Zone may have in part accompanied intrusion emplacement. Under these emplacement conditions, pegmatite derived from melt components could have invaded country rock along dilational trends related to doming, fracturing or shearing and evolution of granitic melt geochemistry could have occurred along associated magma pathways.

Notwithstanding a possible fit of the granitic source model to the Deposit, their genetic association with a specific granitic pluton in southwestern Nova Scotia has not yet been rigorously established. Other mechanisms may also be applicable and Kontak (2005) considered Brazil Lake pegmatite development to be related to anatectic melting of deep sialic crust within a high gradient metamorphic environment. In that model, siliceous partial melts were generated through anatexis and migrated via emplacement conduits defined by zones of high ductile shear strain. The northeast trending Deerfield Shear Zone is invoked as a high strain corridor that could have been related to emplacement of the Brazil Lake pegmatites.

9.0 EXPLORATION

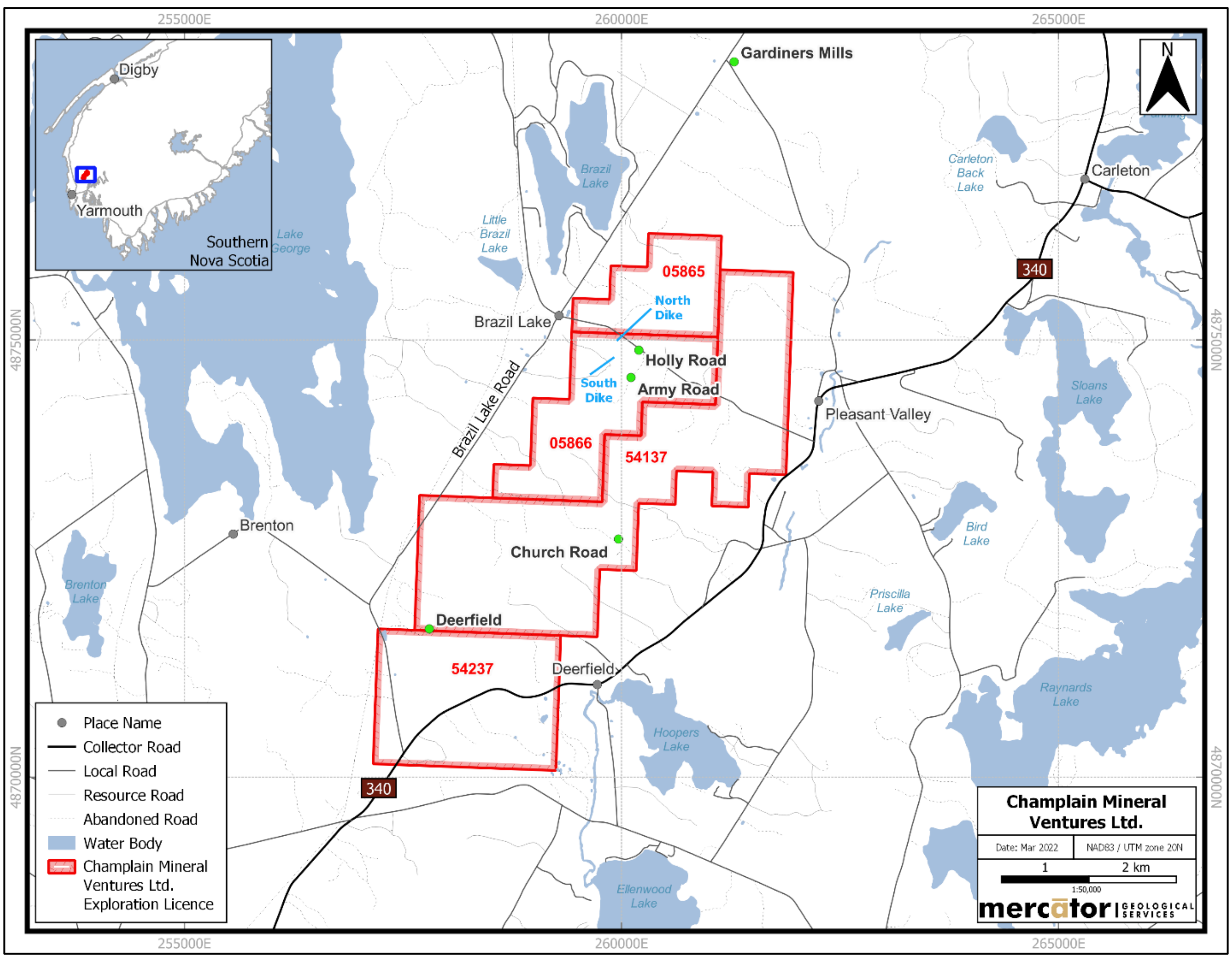
9.1 Introduction

Initial staking of exploration claims in the Brazil Lake area on behalf of Champlain occurred in 1997 in the form of claims registered to Mr. Avard Hudgins, a senior geologist with Champlain at that time. These holdings were subsequently transferred to Champlain in 1999. The work conducted by Gwalia in 1998 described in Section 6.1 was credited directly to Champlain's exploration interest.

9.2 1997 to 2004

From 1997 to 2002, Champlain focused field efforts on limited prospecting in and around the main pegmatite zones and this resulted in discovery of various new pegmatite float occurrences. The most promising of these was the discovery of Gardiners Mills prospect north of the main property (now north of current property limits, Figure 9.1).

Figure 9.1: Brazil Lake Deposit and main prospect areas



In 2002, Champlain proceeded with exploratory core drilling on the Project in addition to prospecting and baseline water sampling surveys. In total, 32 NQ core drill holes totaling 2,130 m were completed in 2002 and 2003. Results of the 2002 – 2003 drilling are discussed in detail in Report Sections 10.3 and 10.4.

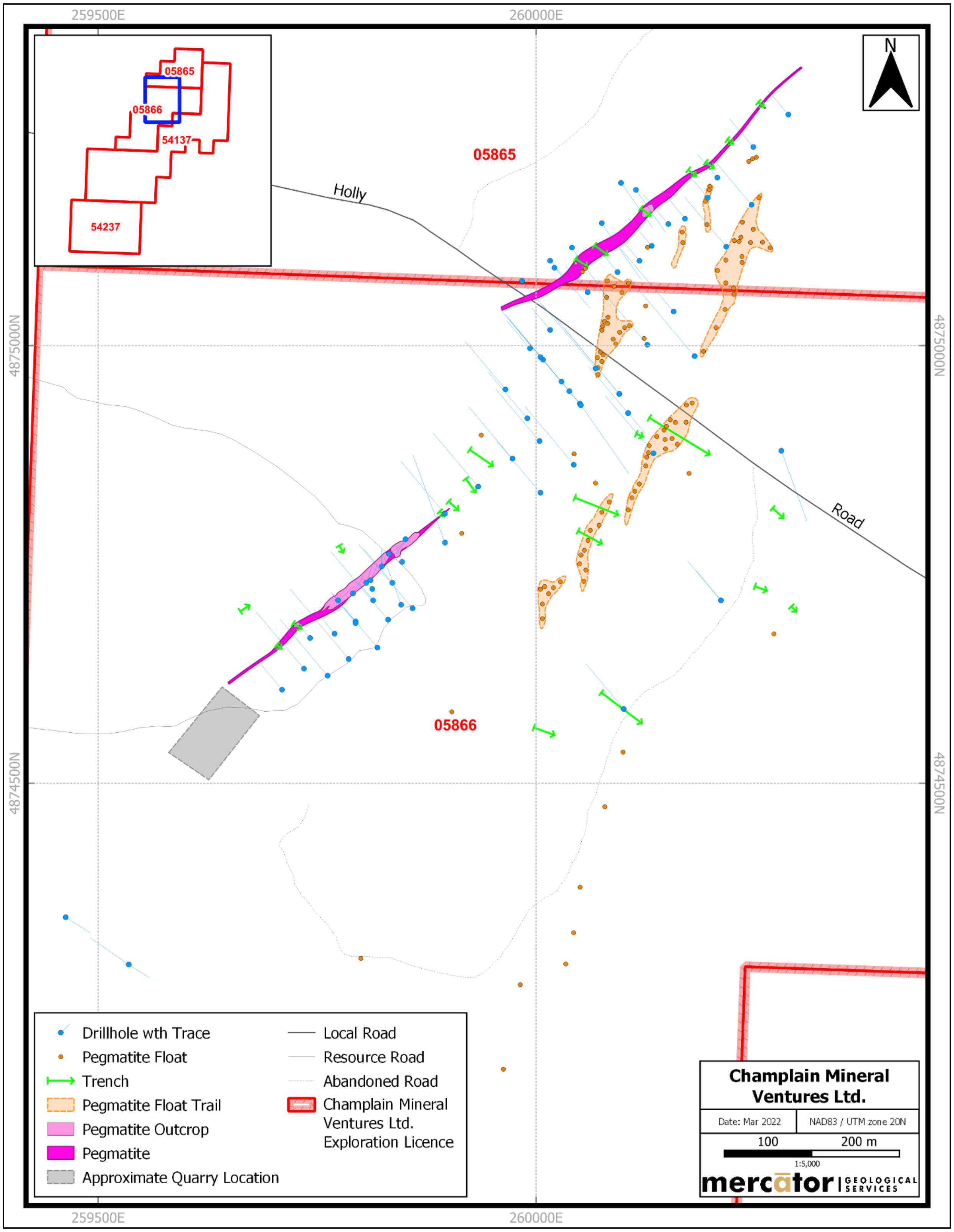
Results of prospecting on the property in 2002 outlined two additional areas of interest along strike from the North and South pegmatite dikes. The Bloomfield Road and Deerfield prospects (Figure 9.1) both reflect occurrence of abundant fine grained cleavelandite-muscovite rich pegmatite material distributed along float trails located sub-parallel to and down-ice from the extrapolated strike of the known North and South pegmatite dikes. Both prospects are located along a common, northeast striking trend that extends from 2.3 kilometers northeast to 4.2 kilometers southwest of the known dikes. Analytical results of Deerfield pegmatite float samples showed an increase in Li levels towards the south. Pegmatite float rich in coarse-grained cleavelandite demonstrated higher levels of Ta and Nb locally.

A mechanized trenching program was conducted on the Project to test areas with abundant pegmatite float occurrences previously defined by prospecting. A total of 5 trenches were completed, these being at Holly Road, Army Road, Church Road, Deerfield and at the South Dike (Figure 9.1 and Figure 9.2). With the exception of the South Dike area, where extensive stripping of the previously drilled main pegmatite body was carried out, no new bedrock occurrences of pegmatite were detected through trenching. Trenching and stripping of the South Dike confirmed the body to exceed 280 m in strike length and showed that its true thickness at surface ranged between 8 m and 12 m over much of the area tested. Continuous exposures of the pegmatite were established at this time and detailed geological mapping and sampling were completed by Champlain as well as by NSDNRR. The relatively systematic zoned character of the dike was clearly documented through this work and detailed mapping of the well-developed spodumene mineralization was completed.

An induced polarization (IP) survey was completed on selected portions of the Project with the intention of assessing use of apparent resistivity as a means of outlining areas of potential bedrock pegmatite development beneath till cover. The dikes were thought to exhibit higher bulk resistivity values in comparison to foliated amphibolite and quartzite host rocks of the White Rock Formation. Orientation survey lines over the known dikes confirmed that anomalously high apparent resistivity values delineated the pegmatite bodies from surrounding foliated host sequences in areas with shallow overburden cover. On this basis the method was subsequently applied to assessment of regional targets at Deerfield Prospect and Bloomfield Road Prospect. Anomalous apparent resistivity results were encountered at both prospect areas.

A mineral beneficiation research program was initiated by Champlain during the 2003 exploration year which included coordinated mineral processing activities by two analytical laboratories and associated mineral engineering specialists. Project sample material used for this analysis was extracted from the North Dike pegmatite intersection of Champlain drill hole BZ-02-13 that had been completed in the early part of 2002. The pegmatite was drilled at HQ core size and the associated sample comprised an 18 m long pegmatite intersection that provided 108 kg of material. Head analysis results showed a modal

Figure 9.2: Exploration Map of the Main Project Area



pegmatite composition of 13.15 % spodumene, 29.14 % sodium feldspar, 5.52 % potassium feldspar, 15 % muscovite and 37.19 % quartz for this sample. Trace minerals/metals included 0.25 % beryl, 213 ppm columbo-tantalite, and 0.47 % apatite. Additional laboratory processing and assessment were carried out on South Dike material during 2003. Results of this work are discussed in Report Section 13.0.

During 2003 and 2004, Champlain continued research and mineral analysis programs to further ascertain processing viability, separation, purification and market conditions related to spodumene, mica, silica and other accessory industrial minerals. These studies concluded that concentration of economically important mineral fractions such as mica, spodumene and K-feldspar had been successfully accomplished in several instances. Both dry processing and flotation processing options were considered. Results of this work are discussed in Report Section 13.0.

To provide context for results of ongoing laboratory studies by the company, Hains Technology and Associates was retained by Champlain in 2004 to carry out research into world markets for lithium metal and lithium chloride. This research provided an in-depth perspective on supply and demand for lithium chloride (LiCl) as an industrial feedstock and also into potential applications of other mineral products.

A second mechanized trenching program was completed in 2004 consisting of four short trenches sited over the northern area of the North Dike (Figure 9.2). Trenching showed narrowing of the structure to approximately 3 m in thickness at surface towards the northern limit, plus transition to aplitic character lacking substantial spodumene mineralization.

B horizon soil sampling was carried out in the Army Road - Church Road area, north of Holly Road, to assess target definition potential of this method in areas of known pegmatite glacial dispersion boulder trains. Samples were collected at 25 m spacings along lines having nominal spacing of 100 m. Samples were analyzed at XRAL Laboratories and a few elevated sample sites from this survey were considered worthy of follow up with respect to definition of new spodumene-bearing pegmatite targets.

9.3 2010 – 2011

In 2010 Champlain completed an exploration program of infill core drilling on the North and South Dikes, exploratory core drilling on the Army Road prospect, prospecting and mapping, and a soil survey using Soil Gas Hydrocarbon (SGH) technology. A total of 10 drill holes for 1,298 m were completed on the North Dike and a total of 15 drill holes for 1,102 m were completed on the South Dike. The Army Road prospect was tested with 3 drill holes for 266 m. Results of the 2010 drilling are discussed in detail in Report Section 10.5.

The soil survey was initiated with three trial lines using a 50 m sample spacing over the North Dike to define a pegmatite SGH signature for regional targets. A signature of a pronounced hydrocarbon low surrounded by a halo of high hydrocarbon content was interpreted to be indicative of the Deposit pegmatites. Subsequent surveys were executed for the Army Road, Church Road, and Deerfield prospects using 100 m spaced lines and 50 m spaced samples. A total of 487 soil samples, including the trial lines, were collected and sent to Activation Laboratories Ltd. (Actlabs) for analyses. The SGH signature was observed at the Army Road and Church Road areas and were considered worthy of follow up with respect of new spodumene-bearing pegmatite targets.

Additional prospecting and mapping were completed in 2011 for the regional targets. A series of 9 till sample pits were completed in the Church Road area to define the bedrock source of spodumene-bearing pegmatite float identified during previous exploration programs. Results were interpreted as showing that a north-northeast source was responsible for spodumene till grains and float in the Church Road area.

9.4 2015 – 2017

In 2015 Champlain acquired and crushed a 60 tonne bulk sample from the South Dike. Wadden's Drilling and Blasting Inc. was retained to complete the drilling and blasting aspects of the project and Brazil Lake Enterprises completed the extraction, crushing, bagging and loading responsibilities. A 20 tonne sub-sample was prepared and shipped to Fancy Mining, located in China through shipping agent and customs broker Kuehne + Nagel. The sample was to be evaluated in their floatation facilities to assess suitability of Brazil Lake pegmatite for their operations. Full details and results of this assessment are not available. The remaining crushed material has been stockpiled in Brazil Lake Enterprises quarry parking lot, located adjacent to the south end of the South Dike, as a reserve for future testing.

In 2016 Champlain retained Eastern Geophysics Ltd. to carry out a small-scale gravity survey over the North and South Dikes. The program was a registration survey to determine if the density contrast between the pegmatite and host lithologies of amphibolite and hornblende schists would provide a gravity signature that could be used as an exploration method for new pegmatite discoveries. It was concluded that a gravity signature could not be defined for the Deposit pegmatites.

A B horizon soil sampling program was carried out in 2017 in the Deerfield area to develop targets for source pegmatites of local spodumene float samples. Samples were collected at 25 m spacings along lines having nominal spacing of 100 m. A total of 318 samples were collected and analyzed at Actlabs. Results were considered to provide no new pegmatite targets for follow-up drilling or trenching.

9.5 2019 – 2020

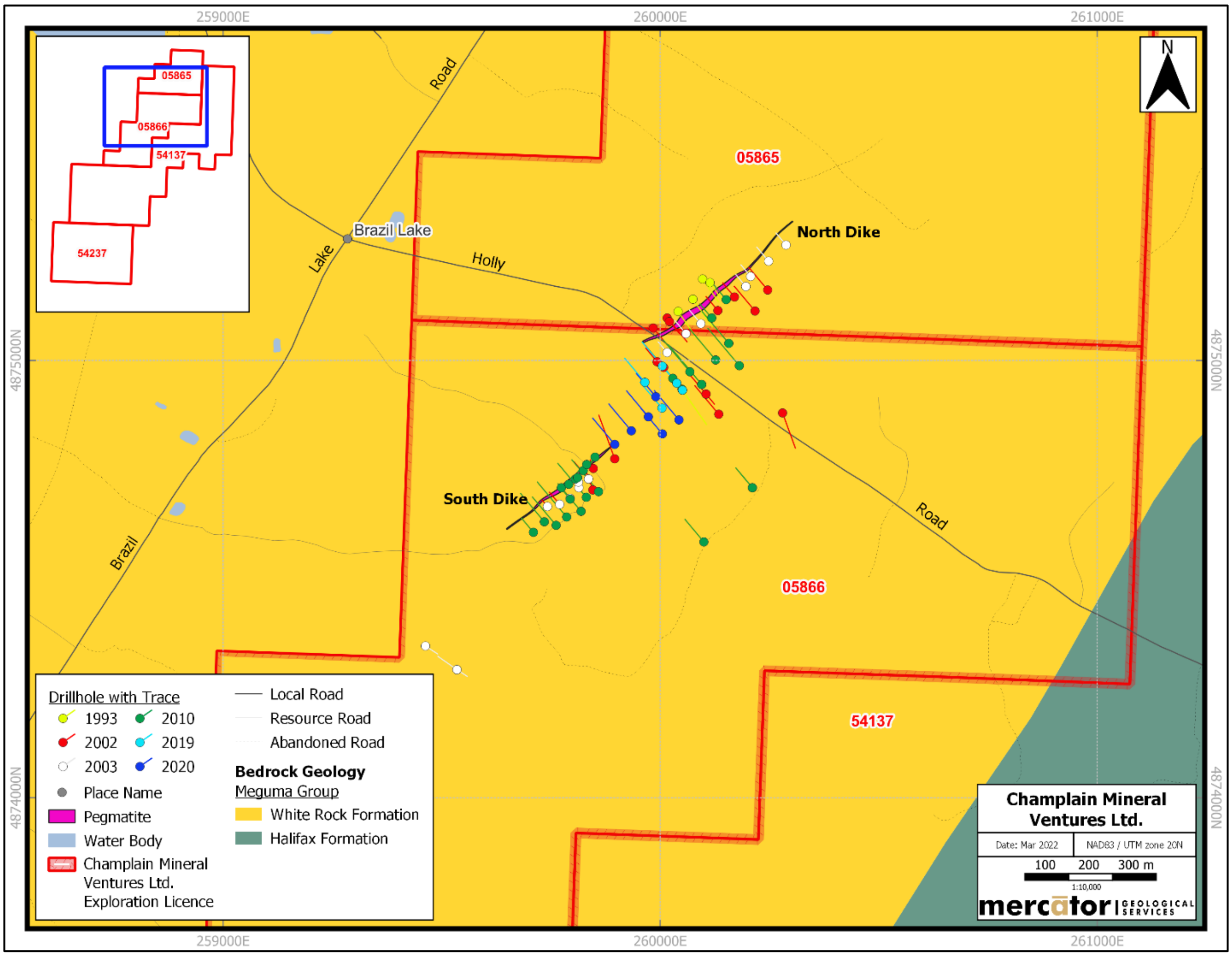
Champlain completed two NQ core drilling programs during the 2019 and 2020 period targeting continuity between the North and South Dikes. A total of 5 drill holes for 505 m were completed in 2019 and a total of 6 drill holes for 975.7 m were completed in 2020. Results of 2019 – 2020 drilling are discussed in detail in Report Sections 10.6 and 10.7.

10.0 DRILLING

10.1 Introduction

This section describes the diamond drilling programs completed on the Project by Champlain and previous operators. Champlain completed diamond drilling programs in 2002, 2003, 2010, 2019, and 2020 and the holes associated with these programs provide the main base of technical information that supports the current MRE (Figure 10.1). Prior to Champlain's operation, NSDNRR completed the inaugural diamond drilling program on the Project in 1993.

Figure 10.1: Drill Hole Plan Map of the Brazil Lake Deposit



The 2002, 2003, 2010, and 2020 drilling programs completed by Champlain were contracted to Maritime Diamond Drilling Ltd. of Stewiacke, Nova Scotia, Canada. The 2019 drill program completed by Champlain was contracted to Rally Drilling Services of Penobsquis, New Brunswick, Canada. Site supervision, logging, sampling, and project record keeping were the responsibility of Champlain personnel in accordance with Champlain field operations and Quality Assurance and Quality Control (QAQC) protocols that are discussed in Report Sections 10 and 11 of this Technical Report.

Project exploration and drill hole locations prior to 2010 were coordinated relative to a staked local grid. Surveying of drill hole locations, trenching features, and key regional exploration features from pre-2010 exploration programs was carried out in 2010 by Champlain staff using a handheld GPS in Universal Transverse Mercator (UTM) coordinate system (NAD83 Zone 20). Exploration and drilling programs completed in 2010 and later were subsequently surveyed in UTM NAD83 Zone 20 coordination at the time of completion.

10.2 1993 Drilling Program (NSDNRR)

In 1993, NSDNRR completed a 577 m diamond drilling program at the Brazil Lake Deposit consisting of five holes. This program was part of a provincial initiative in 1993 to test several known pegmatite occurrences due to interest in lithium and other industrial minerals traditionally known to be hosted in pegmatites. Drilling was targeted on the North Dike and tested the down dip continuity of dike outcrops north of Holly Road. Angled holes were drilled beneath documented dike outcrops to a maximum vertical depth of 75 metres. Drilling was carried out by government drilling crews and recovered NQ size core (47.6mm diameter). Collar coordinates and drill hole orientation data for the 1993 program are presented in Table 10.1 and hole locations are presented in Figure 10.2. Drill hole BZL-93-3 was not located during the 2010 collar surveying program and the collar location is estimated from registered drill plan maps. The coordinate error margin for BZL-93-3 is estimated to be 10's of meters and on that basis is excluded from use in the MRE.

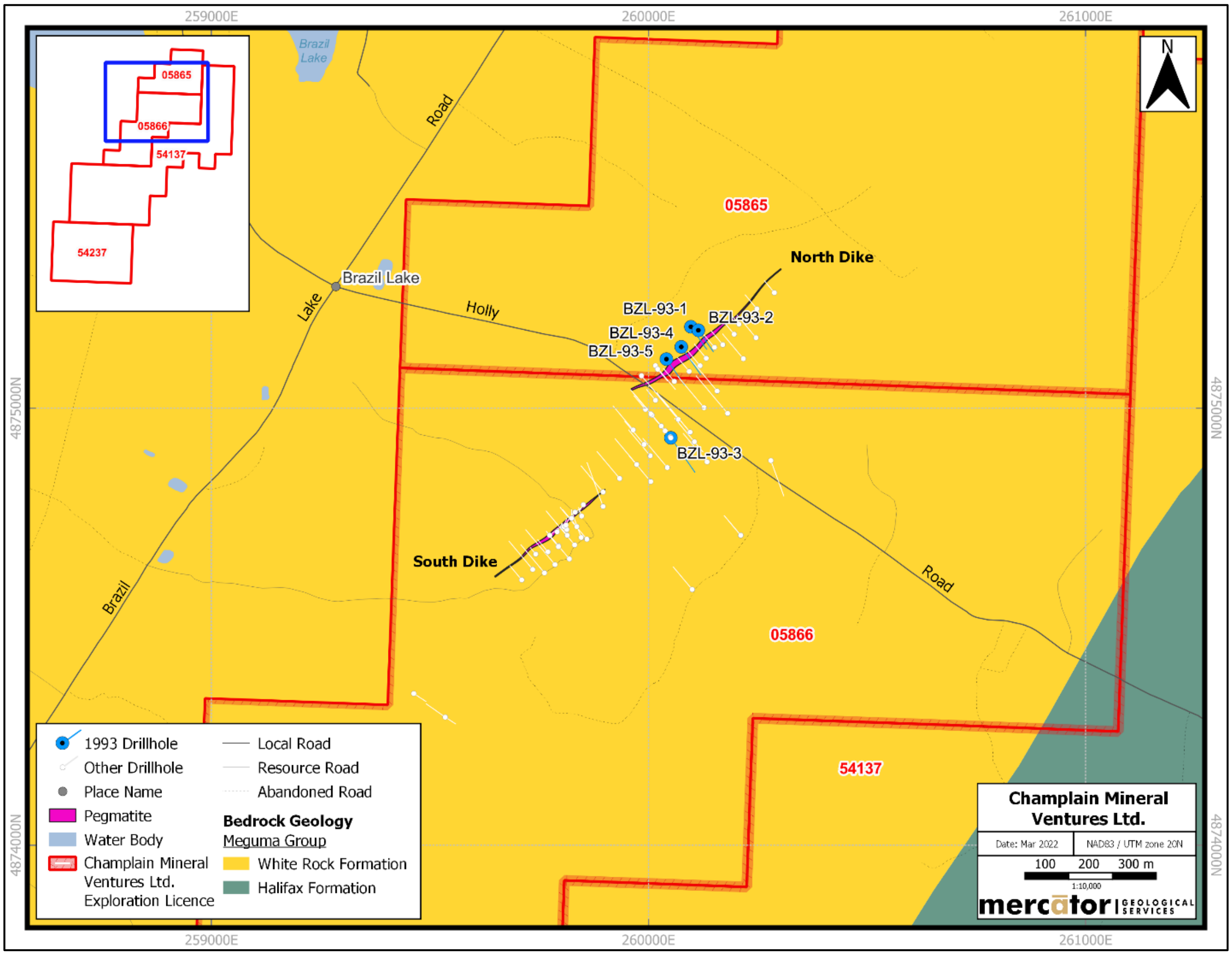
Table 10.1: Brazil Lake 1993 Drill Hole Locations

Hole Id	Northing (m)*	Easting (m)*	Elevation (m)*	Depth (m)	Dip (°)	Azimuth (°)
BZL-93-1	4,875,186	260,097	73	97.54	-50	145
BZL-93-2	4,875,178	260,114	73	92.6	-50	145
BZL-93-3	4,874,932	260,051	70	149	-50	145
BZL-93-4	4,875,140	260,075	75	120.6	-50	145
BZL-93-5	4,875,112	260,041	74	112.8	-50	145

**UTM NAD 83 Zone 20 Coordination and above sea level elevation datum*

All five NSDNRR holes intersected pegmatite, with down hole intercept lengths ranging between 6.2 m and 41.8 m. Holes were drilled roughly normal to the 50° azimuth dike trend but due to the pegmatite's steep southeasterly dip of 60° to 80° to the horizontal, the holes are interpreted to have intersected the dike at a moderate angle. True width calculations resulted in estimated true width intersections for these early drill holes to be approximately 50% of their actual down hole lengths. The true widths of the dike defined by 1993 drilling results ranged between 3.1 m and 20.9 m, with width increasing from northeast to southwest along the length of the dike.

Figure 10.2: 1993 Drilling Program Plan Map of the Brazil Lake Deposit



Following the NSDNRR field campaign, down hole geophysical logging of the drill hole BZL-93-4 was carried out by NSDNRR. This included collection of natural gamma-ray spectrometry, density, spectral gamma-gamma, induced polarization/resistivity/self-potential, magnetic susceptibility, and temperature data sets. It was concluded that pegmatites are typically outlined by low magnetic susceptibility, high natural gamma count, low density and low spectral gamma-gamma signatures and that spodumene-bearing intervals within the logged pegmatite zone had a lower radiometric signature than enclosing pegmatite.

Spodumene-bearing pegmatite intercepted by NSDNRR drilling contained concentrations of Fe_2O_3 that exceeded levels considered to be generally acceptable for industrial ceramic and glass markets (>0.10%), with this determination based on data returned from electron microprobe analysis. As a result, core was not sampled by NSDNRR and was instead sent for storage at the NSDNRRR core library in Stellarton, Nova Scotia. This core was, however, subsequently sampled by Sons of Gwalia Ltd. in 1998 as described in Report Section 11.2. Significant results from the core sampling program are presented below in Table 10.2.

Table 10.2: Significant Intercepts from the 1993 Drill Program

Hole Id	From (m)	To (m)	Width (m) *	Li_2O (%)	Be (ppm)	Nb (ppm)	Rb (ppm)	Sn (ppm)	Ta (ppm)
BZL-93-1	89.11	97.54	8.43	0.25	90	82	497	160	77
BZL-93-2	34.81	58.85	24.04	1.34	174	98	890	1223	100
BZL-93-2	88.33	94.52	6.19	0.91	157	132	669	186	87
BZL-93-4	47.10	88.90	41.80	1.27	113	80	800	159	69
BZL-93-5	38.26	71.11	32.85	0.86	109	104	776	57	96

** Widths are downhole lengths. True widths are estimated to average 50 % of downhole widths*

10.3 2002 Drilling Program (Champlain)

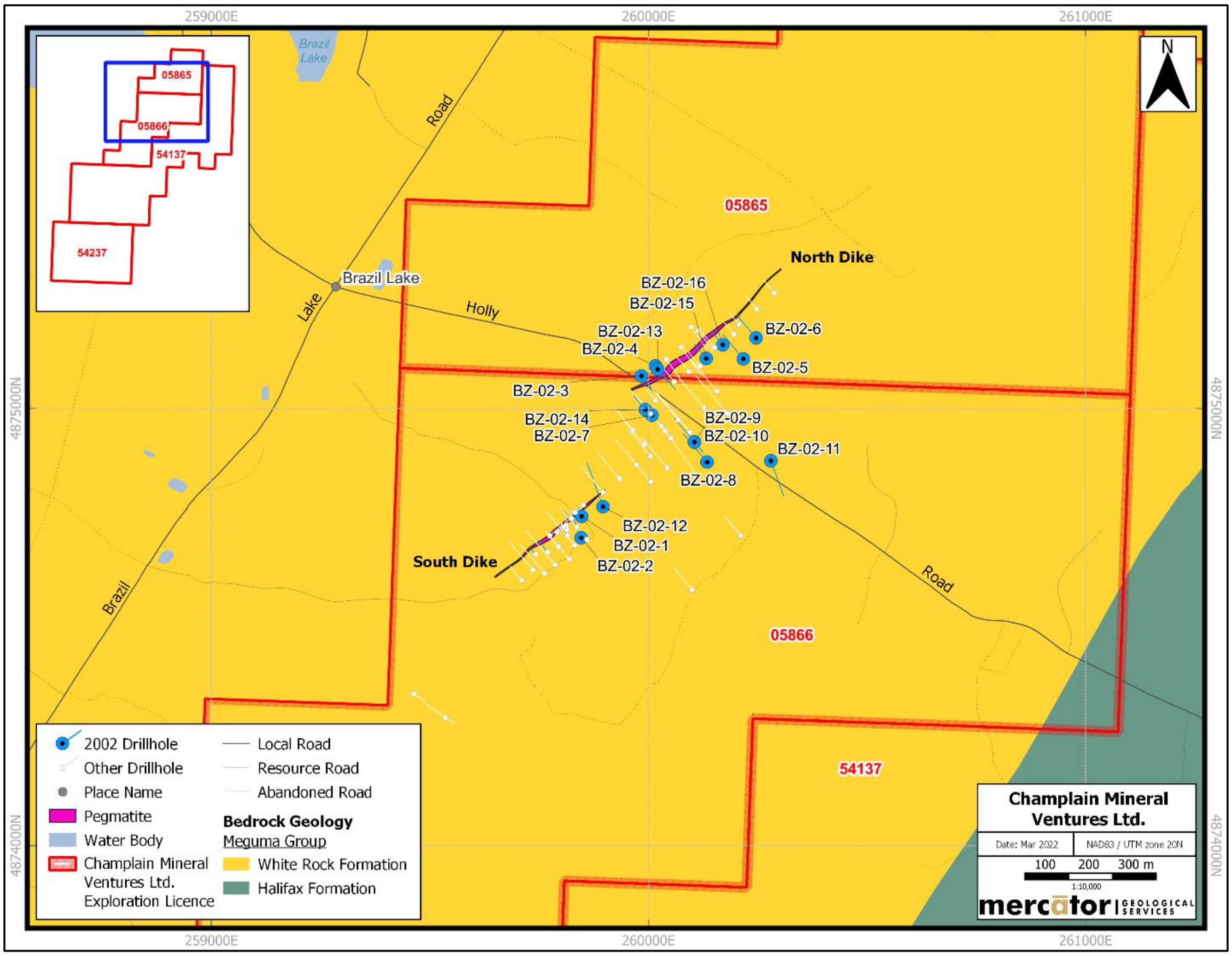
Champlain carried out a drill program in 2002 that consisted of 16 drill holes, totaling 1,328 m, of which 9 tested the North Dike, 3 tested the South Dike and 4 tested other targets. The program was designed to (1) outline subsurface extensions of the North Dike, (2) confirm North Dike and South Dike strike continuity, and (3) test certain regional target areas showing abundant surface pegmatite floats. Maritime Diamond Drilling Limited of Hilden, NS provided contract drilling services for this program and recovered NQ size core (47.6mm diameter) for all drill holes except one. HQ size core (63.5mm diameter) was recovered from BZ-02-13 to provide sample material for bulk analysis and mineral processing studies. Collar coordinates and drill hole orientation data for the 2002 program are presented in Table 10.3 and hole locations are presented in Figure 10.3.

Table 10.3: Brazil Lake 2002 Drill Hole Locations

Hole Id	Northing (m)*	Easting (m)*	Elevation (m)	Depth (m)	Dip (^{o})	Azimuth (^{o})
BZ-02-1	4,874,753	259,847	72	29	-45	340
BZ-02-2	4,874,704	259,846	68	82	-45	340
BZ-02-3	4,875,074	259,984	75	69	-45	140
BZ-02-4	4,875,097	260,016	75	100	-45	140
BZ-02-5	4,875,113	260,217	65	104	-45	320
BZ-02-6	4,875,161	260,246	62	95	-45	320
BZ-02-7	4,874,984	260,008	74	93	-45	320
BZ-02-8	4,874,877	260,134	64	120	-45	320
BZ-02-9	4,874,923	260,105	67	98	-45	320
BZ-02-10	4,874,923	260,105	67	42	-45	140
BZ-02-11	4,874,880	260,280	61	121	-45	160
BZ-02-12	4,874,775	259,896	70	150	-45	340
BZ-02-13	4,875,089	260,021	75	50	-45	140
BZ-02-14	4,874,997	259,993	74	57	-45	320
BZ-02-15	4,875,114	260,132	72	59	-45	320
BZ-02-16	4,875,145	260,170	71	59	-45	320

**UTM NAD 83 Zone 20 Coordination and above sea level elevation datum*

Figure 10.3: 2002 Drilling Program Plan Map of the Brazil Lake Deposit



The 2002 drilling campaign confirmed the North Dike as being continuous from surface to a vertical depth of approximately 75 m and to dip 60° to 80° to the southeast. A southwesterly plunge of approximately 50° to a central zone defined by thickest pegmatite intervals was also defined, with thinning along strike to both north and south noted. Drill hole BZ-02-14 was drilled near surface along the southerly strike extension of the North Dike but did not intersect an extension pegmatite seen down dip in BZ-02-07. Intersections from these holes provided definition of the southwesterly plunge noted above and indicate fairly abrupt pinch-out of the dike at near surface elevations in this area. However, promising down plunge continuity to the south along the thickened central zone is also indicated.

All significant pegmatite intersections recovered in the 2002 program were sampled and highlights of associated laboratory analyses for respective intervals appear below in Table 10.4. In total, 90 pegmatite samples were collected. Of particular note are results of hole BZ-02-1 which tested an area immediately down dip from a zone of significant spodumene mineralization defined during the 2002 surface trenching and mapping programs on the South Dike. This drill hole intersected 2.75 m (2.25 m estimated true width) of pegmatite grading 1.42 % Li_2O, beginning at a depth of 16.25 m, and included a 1.10 m interval (0.9 m

Table 10.4: Significant Intercepts from the 2002 Drill Program

Hole Id	From (m)	To (m)	Width (m) *	Li_2O (%)	Be (ppm)	Nb (ppm)	Rb (ppm)	Sn (ppm)	Ta (ppm)
BZ-02-1	16.25	19.00	2.75	1.42	9	69	213	213	50
BZ-02-2	76.80	78.60	1.80	0.01	27	60	112	46	87
BZ-02-3	47.70	61.80	14.10	1.14	123	52	572	106	43
BZ-02-4	51.70	87.50	35.80	1.38	201	88	900	207	63
BZ-02-5	81.70	85.90	4.20	0.25	159	102	278	536	156
BZ-02-6	82.40	83.00	0.60	not sampled					
BZ-02-7	70.50	73.00	2.50	0.51	2	24	297	66	16
BZ-02-8	no pegmatite intercepted								
BZ-02-9	no pegmatite intercepted								
BZ-02-10	no pegmatite intercepted								
BZ-02-11	no pegmatite intercepted								
BZ-02-12	no pegmatite intercepted								
BZ-02-13	18.50	36.50	18.00	HQ for bulk analysis and mineral processing studies					
BZ-02-14	no pegmatite intercepted								
BZ-02-15	30.90	46.20	15.30	1.47	157	33	1393	140	23
BZ-02-16	32.30	41.30	9.00	0.39	219	10	1403	41	11

** Widths are downhole lengths. True widths are estimated to average 80 % of downhole widths*

true width) grading 3.44 % Li_2O. In addition, North Dike drill hole BZ-02-15 intersected 15.3 m (12.6 m true width) grading 1.47 % Li_2O, beginning at a downhole depth of 30.9 m, and included a 1.2 m interval (0.99 m true width) grading 4.90 % Li_2O.

BZ-02-9 to BZ-02-11 were drilled 150 to 300 meters to the southeast of the North Dike (Figure 10.3) to test separate exploration targets. BZ-02-09 intersected 1.8 m of veining characterized by quartz, coarse grained potassium feldspar and irregular calcite lenses. This was interpreted as possibly marking the edge of a new and distinct pegmatite dike occurring in a zone broadly along strike from the South Dike. No further assessment of the target has been carried out.

Results of a bulk mineralogical analysis of the North Dike pegmatite intercept from BZ-02-13 showed the dike at that location to be comprised of 16.3% spodumene, 11% microcline (potassium feldspar), 33% cleavelandite (sodium feldspar), 6% muscovite and 34% quartz by weight.

10.4 2003 Drilling Program (Champlain)

Champlain initiated another drill program in the later part of 2002 that was completed in 2003. The drill program consisted of 16 drill holes for a total of 802 m and follows up on results from the 2002 program. Maritime Diamond Drilling Limited of Hilden, NS again provided contract drilling services. HQ size (63.5mm diameter) drill core was recovered from all holes. Collar coordinates and drill hole orientation data for the 2003 program are presented in Table 10.5 and hole locations are presented in Figure 10.4.

Table 10.5: Brazil Lake 2003 Drill Hole Locations

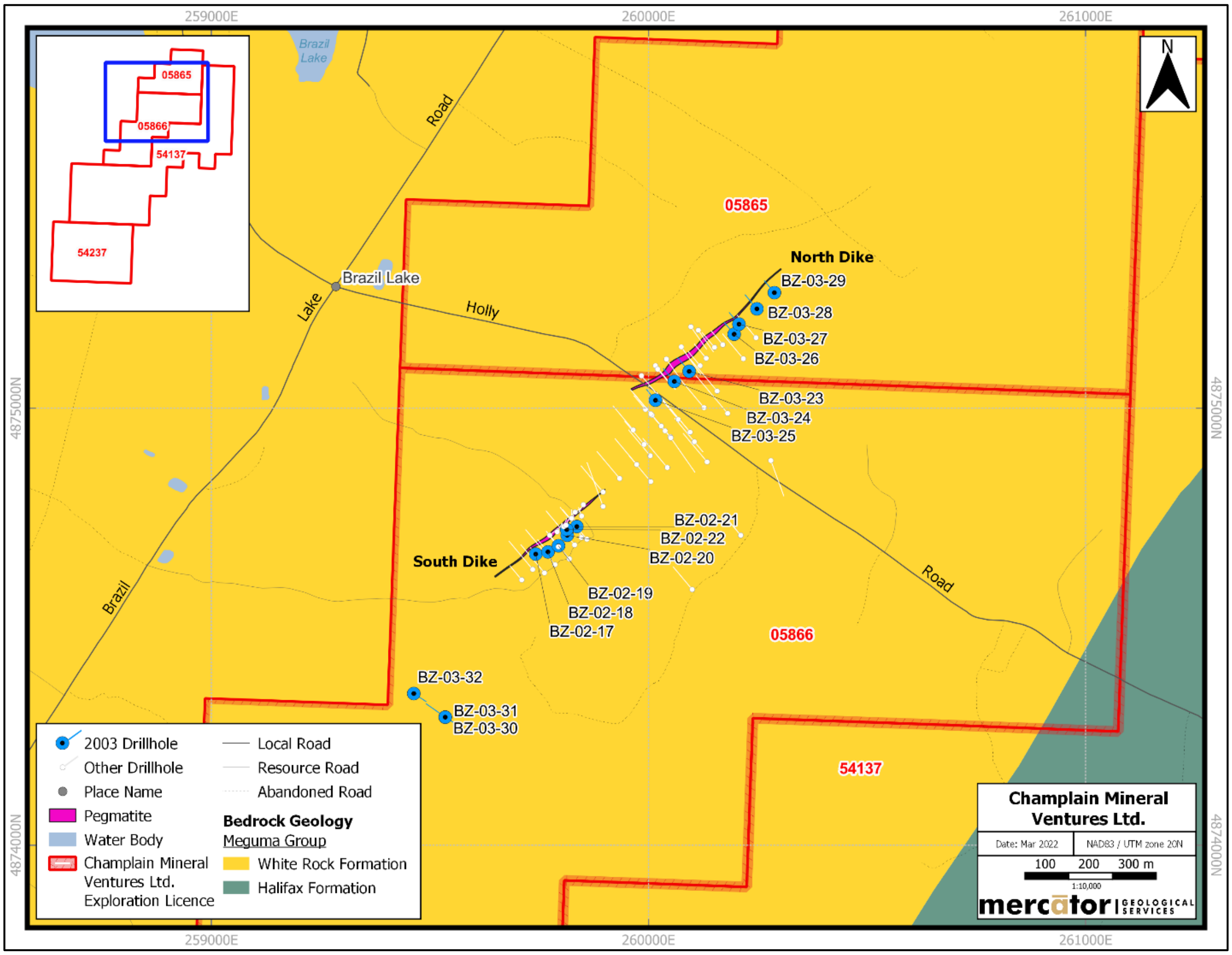
Hole Id	Northing (m)*	Easting (m)*	Elevation (m)	Depth (m)	Dip (º)	Azimuth (º)
BZ-02-17	4,874,666	259,742	70	27	-45	320
BZ-02-18	4,874,671	259,770	70	51	-45	320
BZ-02-19	4,874,685	259,794	69	58	-45	320
BZ-02-20	4,874,709	259,814	70	35	-45	320
BZ-02-21	4,874,729	259,836	70	71	-45	320
BZ-02-22	4,874,722	259,813	70	22	-45	320
BZ-03-23	4,875,084	260,093	73	57.5	-45	320
BZ-03-24	4,875,061	260,059	73	54.5	-45	320
BZ-03-25	4,875,018	260,016	74	45	-45	320
BZ-03-26	4,875,169	260,196	69	50	-45	320
BZ-03-27	4,875,192	260,207	68	60	-55	320
BZ-03-28	4,875,227	260,248	63	59	-45	320
BZ-03-29	4,875,264	260,288	65	50	-45	320
BZ-03-30	4,874,293	259,535	54	75	-45	305
BZ-03-31	4,874,293	259,535	54	40	-45	123
BZ-03-32	4,874,347	259,463	54	47	-45	123

**UTM NAD 83 Zone 20 Coordination and above sea level elevation datum*

Drill holes BZ-02-17 through BZ-02-22 targeted the South Dike, with hole BZ-02-17 proving the most southerly extent of the pegmatite at the time. This hole intersected 3.78 m (3.10 m estimated true width) of pegmatite comprised mainly of coarse grained quartz, potassium feldspar and cleavelandite. Drill hole BZ-02-19 was drilled 40 meters down dip from the southern limit of the South Dike surface trench, located in the central area of the South Dike, and intersected 6.9 m of pegmatite (5.65 m estimated true width) grading 0.92 % Li_2O including 1.43 m (1.17 m true width) grading 2.89 % Li_2O. Significant intercepts of the 2003 program are presented in Table 10.6.

The next 7 holes targeted the North Dike and, with the exception of hole BZ-03-25 that failed to intersect an interpreted southern strike extension of the dike, all holes intersected the pegmatite and served to extend its proven strike extension to the North. Drilling on the northeasterly strike extension of the North Dike generally intersected pegmatite over narrow widths and thereby defined a gradual thinning or tapering of the dike near surface and along strike in this direction. This is consistent with trenching results. Drill hole BZ-03-29, the most northerly completed, intersected pegmatite over 1.3 m (1.06 m estimated true width) which contained coarse grained quartz and cleavelandite but lacked spodumene and potassium feldspar. Significant drill hole highlights from the North Dike program include those from BZ-03-23, which intersected 14.2 m (11.63 m true width) grading 0.64 % Li2O, beginning at a down hole depth of 29 m, and included 1.89 % Li Li_2O over 1.40 m (1.15 m true width).

Figure 10.4: 2003 Drilling Program Plan Map of the Brazil Lake Deposit



Drill holes BZ-03-30 to BZ-03-32 were completed in a fence located approximately 400 m southwest of the South Dike exposures and tested a target area defined by abundant pegmatite boulders and a coincident apparent resistivity anomaly. These holes failed to intersect pegmatite but did successfully intersect hydrothermal veining, most prominently seen in hole BZ-03-32 as feldspar-chlorite-quartz veinlets hosted in black, chloritic schist.

Table 10.6: Significant Intercepts from the 2003 Drill Program

Hole Id	From (m)	To (m)	Width (m) *	Li_2O (%)	Be (ppm)	Nb (ppm)	Rb (ppm)	Sn (ppm)	Ta (ppm)
BZ-02-17	21.47	25.25	3.78	0.16	35	86	985	82	44
BZ-02-18	30.28	36.86	6.58	0.24	121	66	406	80	79
BZ-02-19	29	35.9	6.9	0.92	65	52	1601	82	70
BZ-02-20	31	33.1	2.1	not sampled					
BZ-02-21	28.94	29.54	0.6	not sampled					
BZ-02-22	14.3	21.1	6.8	0.31	223	364	946	104	155
BZ-03-23	29	43.2	14.2	0.64	44	47	906	221	54
BZ-03-24	21.9	33	11.1	0.85	224	61	1336	84	50
BZ-03-25	no pegmatite intercepted								
BZ-03-26	41	44	3	0.01	2	30	999	134	74
BZ-03-27	19.64	22.96	3.32	not sampled					
BZ-03-28	23.2	25.5	2.3	0.78	2	65	604	3770	100
BZ-03-29	33.5	34.8	1.3	0.01	2	44	310	58	23
BZ-03-30	no pegmatite intercepted								
BZ-03-31	no pegmatite intercepted								
BZ-03-32	no pegmatite intercepted								

** Widths are downhole lengths. True widths are estimated to average 80 % of downhole widths*

10.5 2010 Drilling Program (Champlain)

In 2010 Champlain completed an infill core drilling program on the North and South Dikes to provide sufficient definition to support a MRE. The program consisted of 28 drill holes for a total of 2,666 m including 10 drill holes for 1,298 m on the North Dike, 15 drill holes for 1,102 m on the South Dike, and 3 drill holes for 266 m on the Army Road Prospect located 400 m to the southeast of the North and South Dikes. Maritime Diamond Drilling Limited of Hilden, NS, provided contract drilling services. NQ size (47.6mm diameter) drill core was recovered from all holes. Collar coordinates and drill hole orientation data for the 2010 program are presented in Table 10.7 and hole locations are presented in Figure 10.5.

Drill holes BZ-10-01 to BZ-10-08, BZ-10-27, and BZ-10-28 were targeted on the North Dike and focused on infilling the interpreted trend of spodumene-bearing pegmatite. All drill holes completed on the North Dike intersected spodumene-bearing pegmatite and confirmed the main zone of spodumene mineralization to extend 250 m along strike and 150 m down dip, compared to an overall dike extent of 400 m along strike and 150 m down dip as defined by drilling. While the North Dike supports an azimuth of 50^o and a dip of 60^o to 70^o to the southeast, the 2010 drill program verified a plunge of spodumene mineralization of 25^o to 35^o to the southwest. This orientation is characterized by down plunge drill holes BZ-10-04 and BZ-10-05, intersecting 11.3 m (11.25 m true width) of 1.3 % Li_2O and 5.04 m (4.70 m true width) of 1.63 % Li_2O respectively, and up plunge drill holes BZ-10-07 and BZ-10-27, intersecting 3.65 m

Table 10.7: Brazil Lake 2003 Drill Hole Locations

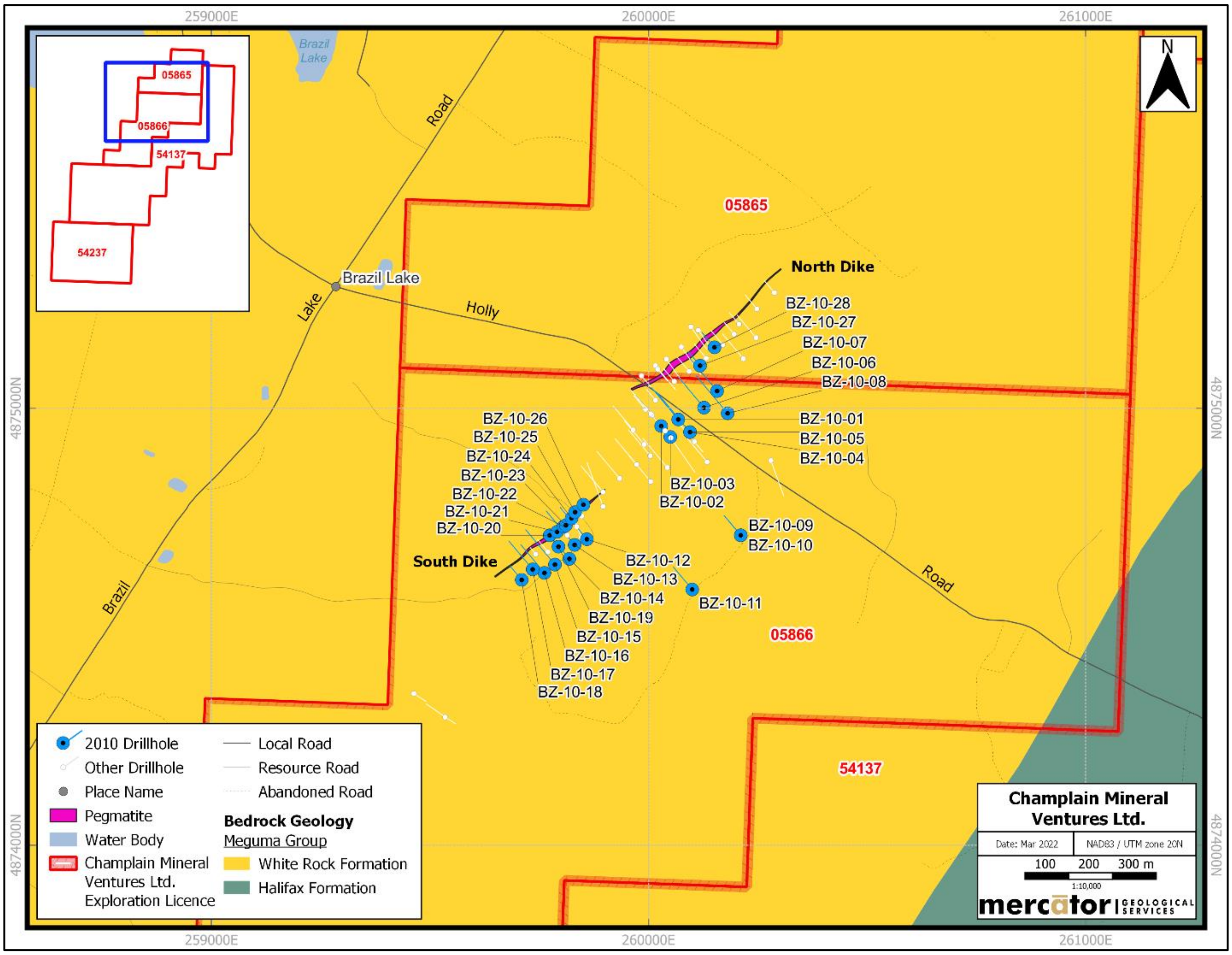
Hole Id	Northing (m)*	Easting (m)*	Elevation (m)	Depth (m)	Dip (°)	Azimuth (°)
BZ-10-01	4,874,974	260,068	71	134	-45	320
BZ-10-02	4,874,959	260,029	72	131	-45	320
BZ-10-03	4,874,934	260,050	70	152	-45	320
BZ-10-04	4,874,945	260,095	69	167	-45	320
BZ-10-05	4,874,945	260,095	69	170	-55	320
BZ-10-06	4,875,001	260,127	69	131	-45	320
BZ-10-07	4,875,039	260,157	69	134	-45	320
BZ-10-08	4,874,988	260,181	65	158	-45	320
BZ-10-09	4,874,709	260,211	65	83	-45	320
BZ-10-10	4,874,709	260,211	65	88	-60	320
BZ-10-11	4,874,585	260,100	64	95	-45	320
BZ-10-12	4,874,700	259,859	69	134	-45	320
BZ-10-13	4,874,687	259,831	69	143	-45	320
BZ-10-14	4,874,655	259,819	68	116	-45	320
BZ-10-15	4,874,642	259,786	68	147	-45	320
BZ-10-16	4,874,623	259,762	68	119	-45	320
BZ-10-17	4,874,631	259,735	70	119	-45	320
BZ-10-18	4,874,607	259,710	68	59	-45	320
BZ-10-19	4,874,683	259,794	70	71	-60	320
BZ-10-20	4,874,709	259,774	70	32	-40	50
BZ-10-21	4,874,717	259,791	70	29	-40	30
BZ-10-22	4,874,729	259,806	70	26	-40	20
BZ-10-23	4874732	259811	70	26	-40	24
BZ-10-24	4874748	259824	70	25	-40	
BZ-10-25	4874762	259832	70	30	-40	55
BZ-10-26	4874779	259851	71	26	-40	212
BZ-10-27	4875097	260118	73	59	-45	320
BZ-10-28	4875139	260151	72	62	-45	320

**UTM NAD 83 Zone 20 Coordination and above sea level elevation datum*

(3.6 m true width) of 1.38 % Li_2O and 11.7 m (11.25 m true width) of 1.42 % Li_2O respectively. Significant intercepts for the 2010 drill program are presented in Table 10.8.

Drill holes BZ-10-12 to BZ-10-26 were targeted on the South Dike to evaluate both infill and extensional opportunities. All drill holes completed on the South Dike intersected pegmatite and provided better definition to the zonation of spodumene mineralization. Drill hole BZ-10-18 was drilled 60 m south of BZ-02-17 and intersected 2.48 m (2 m true width) grading 0.70 % Li_2O, providing the most southerly limit defined by current drilling (Table 10.8). Combined with the results of BZ-10-17, drilled 30 m south of BZ-

Figure 10.5: 2010 Drilling Program Plan Map of the Brazil Lake Deposit



02-17 and intersected 5.39 m (4.60 m true width) grading 1.42 % Li_2O (Table 10.8), the southern limit of the South Dike is shown to host spodumene mineralization and to be open in both the strike and dip directions. These results upgrade the exploration potential of the South Dike from previous drill programs that defined the southerly extent to be narrowing and comprised mainly of coarse grained quartz, potassium feldspar and cleavelandite with little to no spodumene.

Drill holes BZ-10-12 to BZ-10-16 tested the down dip extension of the South Dike to a 50 to 60 m vertical depth. BZ-10-12 to BZ-10-14 was targeted 60 m below the 2002 surface trench and demonstrated spodumene bearing pegmatite at depth. BZ-10-12 returned the best results of these holes and intersected 8.48 m (5.9 m true width) grading 1.97 % Li_2O (Table 10.8). Drill holes BZ-10-15 and BZ-10-16 were targeted 50 m below surface beneath the low spodumene zone defined by drill hole BZ-02-17 and comparable results were returned.

Table 10.8: Significant Intercepts from the 2010 Drill Program

Hole Id	From (m)	To (m)	Width (m) *	Li_2O (%)	Be (ppm)	Nb (ppm)	Rb (ppm)	Sn (ppm)	Ta (ppm)
BZ-10-01	91.17	102.68	11.51	0.41	125	71	380	63	51
BZ-10-01	110.02	115.26	5.24	2.15	5	46	1517	128	27
BZ-10-02	89.77	97.95	8.18	1.14	113	68	624	75	47
BZ-10-03	115.11	126.05	10.94	1.24	201	69	996	122	35
BZ-10-04	119.00	130.30	11.30	1.30	106	67	653	77	45
BZ-10-04	138.51	139.39	0.88	0.29	221	61	320	73	21
BZ-10-05	140.16	145.20	5.04	1.63	253	77	329	183	28
BZ-10-06	108.31	115.73	7.42	1.15	124	60	583	76	29
BZ-10-07	102.15	105.80	3.65	1.38	334	78	384	271	35
BZ-10-08	145.15	148.44	3.29	0.26	240	64	302	66	26
BZ-10-09	34.52	37.08	2.56	0.03	207	67	450	105	105
BZ-10-10	33.47	37.52	4.05	0.02	151	73	231	67	69
BZ-10-11	78.81	79.65	0.84	0.01	212	58	315	78	60.1
BZ-10-12	76.62	85.10	8.48	1.97	319	125	1033	173	78
BZ-10-13	73.30	77.43	4.13	0.13	204	91	639	33	94
BZ-10-14	84.25	90.23	5.98	0.64	530	106	316	113	70
BZ-10-15	75.72	79.17	3.45	0.02	42	75	576	70	54
BZ-10-16	71.65	77.00	5.35	0.32	211	99	517	66	66
BZ-10-17	39.57	44.96	5.39	1.42	54	77	461	88	52
BZ-10-18	52.53	55.01	2.48	0.70	117	113	279	61	77
BZ-10-19	46.12	51.78	5.66	0.40	243	72	147	47	64
BZ-10-20	1.50	29.90	28.40	1.33	159	64	1223	128	36
BZ-10-21	12.25	26.86	14.61	2.24	126	51	650	110	23
BZ-10-22	5.00	18.52	13.52	0.46	205	78	290	133	64
BZ-10-23	6.44	20.62	14.18	0.93	227	70	272	165	58
BZ-10-25	6.77	8.24	1.47	not sampled					
BZ-10-26	1.50	3.99	2.49	0.03	123	77	1008	60	37
BZ-10-26	6.33	8.55	2.22	0.06	199	140	665	76	113
BZ-10-26	15.28	20.39	5.11	0.03	108	37	164	23	16
BZ-10-27	30.31	42.01	11.70	1.42	134	57	579	121	32
BZ-10-28	33.84	40.55	6.71	0.73	143	97	354	88	39

** Widths are downhole lengths. BZ-10-01 to BZ-10-08, BZ-10-27, and BZ-10-28 were drilled on the North Dike and true widths are estimated to average 95 % of downhole lengths. Drill holes BZ-10-12 to BZ-10-16 were drilled on the South Dike and true widths are estimated to average 75% of downhole lengths. Drill holes BZ-10-20 to BZ-10-26 were drilled on the South Dike and true widths are estimated to average 30% of downhole lengths. Drill holes BZ-10-09 to BZ-10-11 were drilled on the Army Road Prospect and true widths are not known at this time.*

Drill holes BZ-10-20 to BZ-26 were drilled sub-parallel to the strike of the South Dike along the area of the 2002 surface trench. Drill holes BZ-10-20, BZ-10-25, and BZ-26 did not provide a complete transect of the pegmatite and results provide a biased view of local spodumene distribution. Drill holes BZ-10-21 to BZ-10-23 provided complete transects of the pegmatite and confirmed surface trenching results of abundant spodumene in that area. BZ-10-21 returned the best results of these holes and intersected 14.61 m (4.7 m true width) grading 2.24 % Li_2O (Table 10.8). Drill hole BZ-10-24 is excluded from the MRE due to uncertainty in hole orientation.

Drill holes BZ-10-09 to BZ-10-11 were drilled in the Army Road Prospect area 300 to 350 m to the southeast of the North and South Dikes. The drill holes were focused on testing a pegmatite occurrence initially discovered by soil sampling completed in 2004. A total of 266 m was drilled and several closely spaced pegmatites were intersected, however, all were of the cleavelandite/muscovite variety and no spodumene was returned.

10.6 2019 Drilling Program (Champlain)

In 2019 Champlain completed a core drilling program consisting of 5 drill holes for a total of 505 m. The 2019 program targeted infill and deposit extension opportunities along the Southern limit of the North Dike. Rally Drilling Services of Penobsquis, NB, provided contract drilling services. NQ size (47.6mm diameter) drill core was recovered from all holes. Collar coordinates and drill hole orientation data for the 2019 program are presented in Table 10.9 and hole locations are presented in Figure 10.6.

Table 10.9: Brazil Lake 2019 Drill Hole Locations

Hole Id	Northing (m)*	Easting (m)*	Elevation (m)	Depth (m)	Dip (^{o})	Azimuth (^{o})
BL19-01	4,874,987	260,005	74	101	-45	320
BL19-02	4,874,950	259,965	74	101	-45	320
BL19-03	4,874,948	260,038	71	154	-60	320
BL19-04	4,874,932	260,051	70	149	-60	320
BL19-05	4,874,891	260,004	71	154	-60	320

**UTM NAD 83 Zone 20 Coordination and above sea level elevation datum*

All drill holes except for BL19-02 completed during the 2019 program intersected pegmatite and provided better definition to the southern limit of the North Dike. Drill holes BZ19-01, BZ19-03 and BZ19-04 provided infill drilling at a spacing of 25 m or less along the previously defined southern limit of the North Dike and confirmed that the thickest spodumene bearing pegmatite zone plunges approximately 30^o to the southwest, highlighted by BZ19-03 that intersected 12.6 m (11.84 true width) grading 0.67 % Li_2O including 2.5 m (2.35 m true width) grading 2.1 % Li_2O. Significant intercepts for the 2019 program are presented in Table 10.10.

Figure 10.6: 2019 Drilling Program Plan Map of the Brazil Lake Deposit

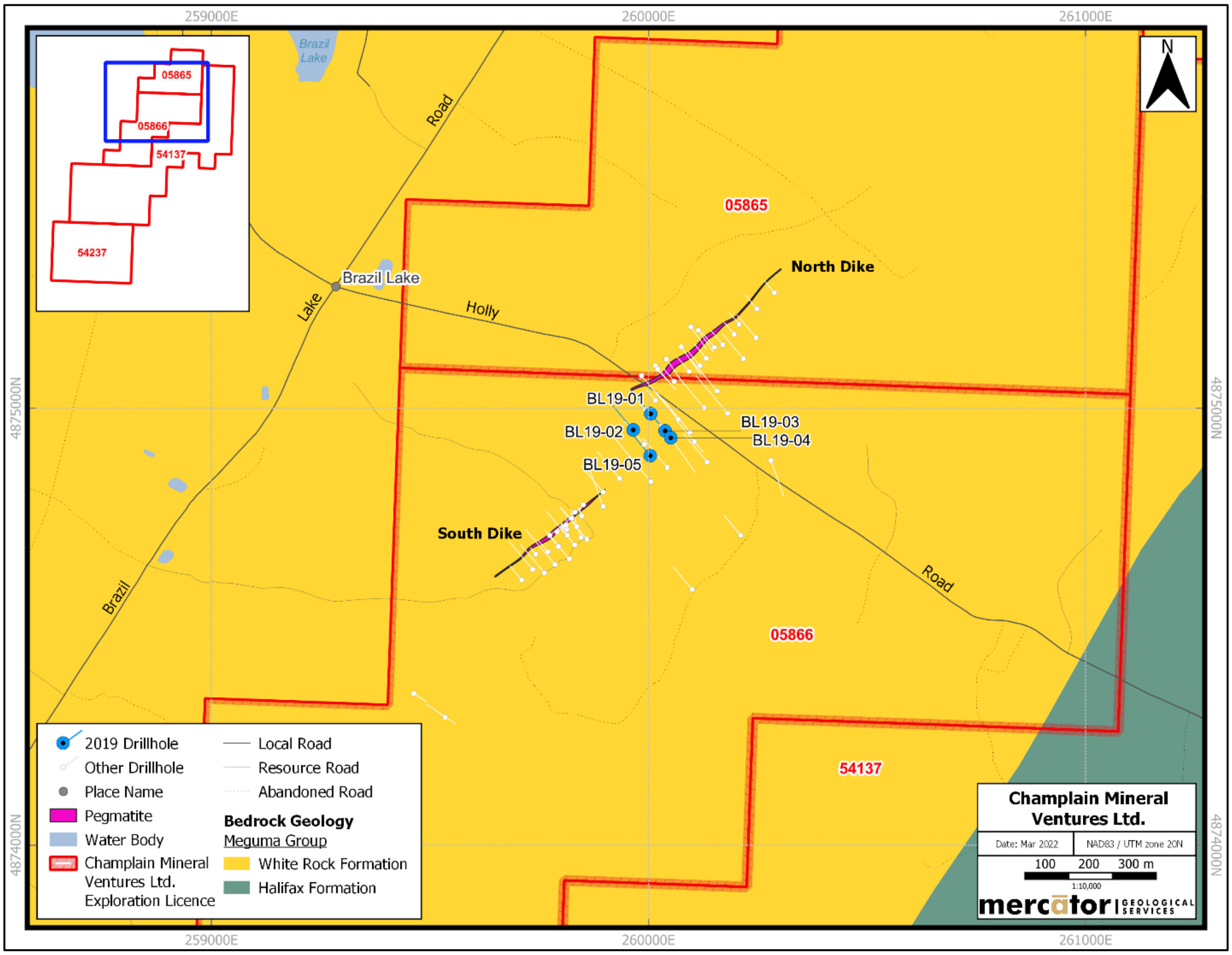


Table 10.10: Significant Intercepts from the 2019 Drill Program

Hole Id	From (m)	To (m)	Width (m)	Li_2O (%)	Be (ppm)	Nb (ppm)	Rb (ppm)	Sn (ppm)	Ta (ppm)
BL19-01	69.3	71.4	2.1	not sampled					
BL19-02	no pegmatite intercepted								
BL19-03	103.4	116	12.6	0.67	199	31	562	50	8
BL19-03	125	131.5	6.5	1.25	1107	8	174	36	6
BL19-04	125	142.08	17.08	0.45	280	50	810	34	24
BL19-05	134.78	146.54	11.76	2.05	178	31	592	45	12

** Widths are downhole lengths and true widths are estimated to average 85 % of downhole lengths.*

Drill hole BZ19-01 was completed as part of the infill program and was drilled within 5 m of BZ-02-07. BZ19-01 intersected 2.1 m (1.8 m true width) of pegmatite characterized by presence of very fine cleavelandite, grey quartz, minor lithiophilite, apatite, tantalite, and spodumene. BZ-19-01 width and pegmatite characteristics are comparable to that BZ-02-07 and based on the relative proximity of the two holes it was not sampled by Champlain.

Drill holes BZ19-02 and BZ19-05 targeted the southwest strike extension of the North Dike. Drill hole BZ19-02 was completed 50 m southwest of BZ-02-07 to test the near surface continuity of the pegmatite. Previous results of BZ-02-07 that suggested the pegmatite was narrowing along strike to the southwest were further confirmed and no pegmatite was intersected. Drill hole BL19-05 was drilled 50 m to the southwest of BL19-04 to assess the strike extension of the pegmatite 125 m below surface and continuity of spodumene trends. BL19-05 intersected 11.76 m (10.51 true width) grading 2.05 % Li_2O, demonstrating that the North Dike is open in both the strike and dip directions at depth.

10.7 2020 Drilling Program (Champlain)

In 2020 Champlain completed a drilling program consisting of 6 drill holes for 975.7 m. The 2020 program targeted continuity between the North and South Dikes and testing the down plunge area of the North Dike. Maritime Diamond Drilling Limited of Hilden, NS, provided contract drilling services. NQ size (47.6mm diameter) drill core was recovered from all holes. Collar coordinates and drill hole orientation data for the 2020 program are presented in Table 10.11 and hole locations are presented in Figure 10.7.

Table 10.11: Brazil Lake 2020 Drill Hole Locations

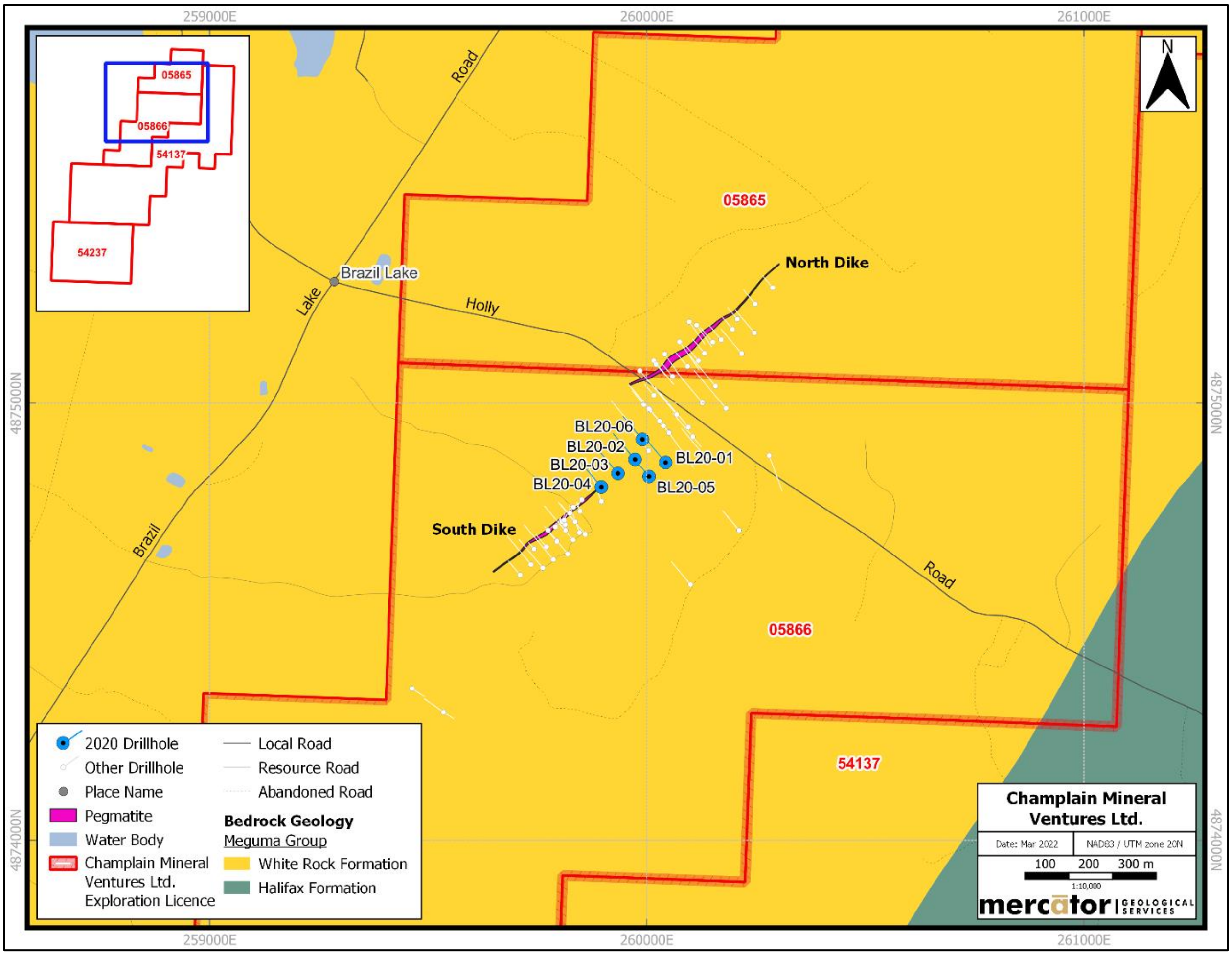
Hole Id	Northing (m)*	Easting (m)*	Elevation (m)	Depth (m)	Dip (°)	Azimuth (°)
BL20-01	4,874,864	260,043	67	206	-65	320
BL20-02	4,874,871	259,973	71	154	-60	320
BL20-03	4,874,839	259,934	72	160	-60	320
BL20-04	4,874,808	259,896	72	156	-60	320
BL20-05	4,874,832	260,005	68	181	-65	320
BL20-06	4,874,917	259,990	73	120	-55	320

**UTM NAD 83 Zone 20 Coordination and above sea level elevation datum*

The 2020 drill program was completed at a spacing of 50 m and focused on extension targets 75 m to 150 m below surface due to the poor near surface results in the area returned by BZ19-02. BL20-03 intersected 5.45m (4.66 m true width) grading 1.04 % Li_2O 100 m along strike from BL19-05, successfully extending the North Dike south limit of spodumene bearing pegmatite. Significant intercepts for the 2019 program are presented in Table 10.12.

Drill hole BL20-04 tested the North Dike an additional 50 m along strike from BL20-03 to the southwest and intersected pegmatite at a down hole depth of 155.31 m hosting primarily cleavelandite with no spodumene. BL20-04 was terminated in the North Dike pegmatite but was also collared in the north limit of the South Dike and intersected 2.03 m (1.25 m true width) grading 1.45 % Li_2O (Table 10.12), proving the most northerly limit of the South Dike to date. Drill hole BL20-01 defined spodumene bearing

Figure 10.7: 2020 Drilling Program Plan Map of the Brazil Lake Deposit



pegmatite in the North Dike to a vertical depth of 160 m (180 m dip extent) and intersected 10.16 m (8.82 m true width) grading 0.96 % Li_2O including 5 m (4.34 m true width) grading 1.47 % Li_2O (Table 10.12). Drill hole BL20-05 was targeted 50 m along strike to the southwest of BL20-01 but was terminated prior to intersecting the North Dike. Based on the results of the 2020 drill program the southern limit of the North Dike should be considered open in both the strike and dip directions. Future drilling is warranted to assess both infill and extension opportunities and the near surface potential in this area should be fully evaluated.

The majority of 2020 drill holes intersected a discrete pegmatite unit, supporting true widths of 0.25 m to 1.5 m, occurring approximately 50 m to the Northwest of the South Dike. The associated pegmatite body trends sub-parallel to the main pegmatites and is characterized mineralogically by presence of cleavelandite with apatite, tantalite, muscovite, and only minor spodumene. Champlain sampled this pegmatite unit when it was intersected but no significant Li_2O results were returned.

Table 10.12: Significant Intercepts from the 2019 Drill Program

Hole Id	From (m)	To (m)	Width (m)	Li_2O (%)	Be (ppm)	Nb (ppm)	Rb (ppm)	Sn (ppm)	Ta (ppm)
BL20-01	188.64	198.8	10.16	0.96	119	78	765	64	25
BL20-02	139.35	149.93	10.58	0.9	141	60	1364	252	27
BL20-03	150.08	155.53	5.45	1.04	161	63	629	284	34
BL20-04	2.45	4.48	2.03	1.45	49	28	1664	99	12
BL20-04	155.31	155.7	0.39	0.02	829	116	573	103	83
BL20-05	no pegmatite intercepted								
BL20-06	110.6	115.35	4.75	1.87	129	32	608	107	13

** Widths are downhole lengths and true widths are estimated to average 85 % of downhole lengths.*

There are 7 core samples that returned the upper detection limit value of 10,000 ppm for Li in the 2020 program. Drill hole database values for these samples were set at 1.0% Li for the purpose of calculating significant intercepts and preparing the MRE. At the effective date of this Technical Report pulp splits for these samples were being analyzed at Activation Laboratories Ltd..

10.8 Adequacy of Core Drilling Programs

The QP is of the opinion that the data associated with the core drilling programs carried out on the Project to date are acceptable for use in a MRE program. Standard industry practices for each program were implemented by Champlain and NS Government staff, respectively, during the core drilling and logging phases of their programs. Drill holes with uncertainty in location or orientation have been omitted for use in the MRE. Due to the absence of robust QAQC procedures being implemented by Champlain during the 2002, 2003, 2019, and 2020 core sampling programs, and recognizing the incomplete nature of the 2010 QAQC core sampling program, the QP is of the opinion that they were not designed according to current CIM Mineral Exploration Best Practices Guidelines. As a result, the QP implemented a comprehensive check sample program to assess the quality of analytical determinations for these programs. The check sample program results are detailed below in Report Section 12 and confirmed results of original samples. These results, in combination with similar results for the previous Mercator check sample program carried out in 2010, have satisfied the QP that Project analytical results for associated drilling programs are satisfactory for application in a MRE and that data verification requirements in this regard as set out under NI 43-101 have been met.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Introduction

Laboratory analysis of drill core samples has been the predominant method of grade evaluation used to date on the Project. Grab sampling of bedrock and trench exposures has also been carried out and a limited program of bedrock excavation through blasting was used to obtain sample material for potential mineral processing purposes. Sample preparation, analysis, and security aspects of the diamond drilling programs completed on the Project by Champlain and previous operators are presented below. Details of laboratory analyses pertaining to soil and till geochemistry surveys carried out by Champlain are also included. The following summary descriptions were developed from documentation available though NSDNRRR assessment reporting and direct communications with Champlain staff.

11.2 Sons of Gwalia Ltd. Core Sampling (1998)

Sons of Gwalia Ltd (Gwalia) carried out a sampling program on drill core from the 1993 NSDNRRR drilling campaign archived at the NSDNRRR core library in Stellarton, NS. The program recovered NQ sized core (47.6mm diameter) and had not previously been sampled. Core samples were marked out within the pegmatite intersections by a Gwalia geologist and then cut in half by diamond saw at the NSDNRR core facility. The half cores were logged and sampled at approximately 1.0 m intervals and half core from the full length of each sample interval was then packaged and air freighted to Perth, Western Australia. The material was further transported to Gwalia's Greenbushes mining operation where laboratory analysis was completed.

Drill core sample preparation performed at the company's Greenbushes Mine laboratory in Western Australia included two stages of crushing, first to -6 mm followed by a second to -2 mm, followed by single stage pulverization to a nominal sub-fraction grain size of 100µm. A split of the 100µm pulp material was analyzed for a wide range of pegmatite-associated elements using X-ray fluorescence (XRF) methods and analysis for elements Li and Be were determined using atomic absorption spectroscopy (AAS) methods. No documentation regarding industry certification of Gwalia's mine site laboratory was included in reporting. Information regarding a formal quality assurance and quality control program (QAQC) implemented by Gwalia was also not available in reporting. Representative half core splits of the Gwalia samples are retained at the NSDNRRR core facility.

11.3 Champlain Mineral Ventures Core and Outcrop Sampling (2002 – 2003)

Champlain completed 15 NQ drill holes and 17 HQ drill holes totaling 2,130 m during the 2002 and 2003 period. Aspects of the sample preparation, security and analytical procedures were available in Project reporting and details were discussed with Champlain staff during the 2010 site inspections.

Sample intervals were selected according to pegmatite lithological units defined by the core logging geologist. Sampling protocols within pegmatite intervals were determined by the texture of the pegmatite recovered. Fine grained, aplitic intervals were sampled at regularly spaced intervals through the entire pegmatite intersection. Within coarse grained and megacrystic intersections sample intervals were constrained based on the predominant modal mineral composition distinguished between spodumene dominant, potassium feldspar dominant, and quartz dominant. The nominal sample length in both instances ranged between 0.5 m and 1.5 m.

Drill core intervals selected for sampling were mostly halved using a diamond bladed tile saw with a small number of samples divided using a mechanical core splitter. Archived half cores were retained in safe storage by Champlain for future reference. Champlain field staff were responsible for all aspects of sample security and all samples were bagged, labeled with sample numbers, and recorded in field records prior to commercial shipment to the analytical laboratory. Float boulders identified during regional prospecting programs were also systematically sampled by Champlain. Chip or grab subsamples were created where necessary from boulders considered too large for normal processing.

Samples collected from drill core and regional prospecting programs carried out by Champlain were sent to XRAL Laboratories in Don Mills, Ontario (now part of SGS Canada Inc.) for preparation and analysis. All samples were subjected to standard crushing and pulverizing routines to obtain analytical pulp material of -200 mesh grain size. Major element oxide and primary lithium value analysis was carried out using lithium metaborate fusion followed by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES) methods (SGS code ICP95). Multi-element analysis was performed using sodium peroxide fusion with an ICP-AES finish (SGS code ICP90). Additional trace element analysis following lithium metaborate fusion was carried out using Inductively Coupled Plasma-Mass Spectrometry methods (ICP-MS) described under SGS code MS95. XRAL Laboratories was certified to ISO 9002 standards during the work program period.

XRAL utilized an internal quality assurance program of one standard, one blank, and one duplicate sample insertion per 20 samples, with a minimum of one each per work order. The accuracy and precision of these quality control measures are statistically verified prior to release. Champlain did not implement a QAQC program for drill core samples. Specific gravity determinations, either through field or laboratory measurements, were not part of the 2002 – 2003 sampling protocol.

11.4 Champlain Mineral Ventures B Horizon Soil Sampling (2002 – 2003)

The nature and quantity of sampling for this program was not well documented in assessment reporting. It is assumed by the QP that sampling protocols and procedures implemented for this program were consistent with other comparative programs completed by Champlain. In that regard, "B" horizon samples were acquired at a nominal depth of 18 inches and placed in Kraft soil bags. Samples were collected at 25 m intervals along 100 m spaced sample lines. Collected samples were analyzed at XRAL Laboratories using lithium metaborate fusion followed by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES) methods (SGS code ICP95) and Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) methods (SGS code MS95). Champlain staff were responsible for all aspects of sample security prior to delivery to XRAL Laboratories.

11.5 Champlain Mineral Ventures Core Sampling (2010)

The 2010 program consisted of 28 NQ size (47.6mm diameter) drill holes for a total of 2,666 m. Aspects of the sample preparation, security and analytical procedures were available in Project reporting and details were discussed with Champlain staff during the 2021 site inspection.

Champlain implemented the same approach as the 2002 – 2003 program for the 2010 drill program with respect to drill core logging and analytical sample selection. Aplitic pegmatite intersections were sampled at relatively equal length intervals from the hanging wall to the footwall contact of the pegmatite intersection. Samples through coarse grained or megacrystic intersections were primarily constrained by the logging geologist’s interpretation of the dominant mineral phase and delineated observed transitions between spodumene dominated, potassium feldspar dominated, and quartz dominated intervals of the pegmatite. The nominal sample length in both instances ranged between 0.5 m and 1.5 m.

Drill core intervals selected for sampling were halved with a diamond bladed tile saw and individually packaged in plastic bags with unique sample identification numbers for shipment to the analytical facility. Champlain field staff were responsible for all aspects of sample security and management of sample records. Following completion of the program, unsampled core and the retained halves of sampled core intervals were shipped to a secure storage facility leased by the company. A representative selection of drill core from Champlain’s 2010 drilling program is now preserved in the NSDNRRR and Provincial Core Library in Stellarton, NS.

Half core samples were shipped to the Minerals Engineering Center (MEC) at Dalhousie University in Halifax, Nova Scotia for preparation prior to analysis. Sample preparation included multi-stage jaw crushing to produce a -10 mesh sample from which a 200 – 250 gram subsample was riffle split and then pulverized with a ring and puck pulverizer to a nominal grain size of 0.15 microns. The prepared pulps were transferred from MEC to SGS for geochemical analysis. The rejects were retrieved from MEC by Champlain and transferred to their secure storage facility. SGS determined the concentration of the major element oxides and primary lithium values by using lithium metaborate fusion, where a 0.10 g sample of the prepared material was fused with lithium metaborate and dissolved using dilute HNO_3, and Inductively Coupled Plasma-Optical Emission Spectrometry (ICP-OES) methodologies (SGS code ICP95). Multi-element analysis was performed using sodium peroxide fusion followed by ICP-AES (SGS code ICP90).

SGS performed instrument calibration protocols for each batch or work order and inserted quality control blank, standard, and duplicate samples at a frequency of approximately 14 %. The accuracy and precision of these quality control measures are statistically verified prior to release. Champlain’s implemented a QAQC program that consisted of randomly inserting one blank or one standard at frequency of approximately 14 %. A duplicate sample protocol was not included in the QAQC program. Specific gravity determinations, either through field or laboratory measurements, were not part of the 2010 sampling protocol.

SGS is an independent, accredited, commercial analytical services firm registered to the ISO/IEC 17025:2017 standard.

11.6 Champlain Mineral Ventures B Horizon Soil Sampling (2017)

A B horizon soil sampling program was carried out in 2017 in the Deerfield Prospect. Samples were collected at 25 m spacings along lines having nominal spacing of 100 m. “B” horizon samples were acquired at a nominal depth of 18 inches and are placed in Kraft soil bags. A total of 318 samples were collected and analyzed at Activation Laboratories Ltd. (Actlabs) using a complete digestion by 4 acids followed by Inductively Couple Plasma Mass Spectrometry (ICP-MS) and Instrumental Neutron Activation Analysis (INAA). Champlain staff were responsible for all aspects of sample security prior to delivery to Actlabs.

Actlabs was an independent, accredited, ISO/IEC registered commercial analytical services firm at this time.

11.7 Champlain Mineral Ventures Core Sampling (2019 – 2020)

Champlain completed 13 NQ size (47.6mm diameter) drill holes for a total of 1,481 m during the 2019 to 2020 period. Aspects of the sample preparation, security and analytical procedures were available in Project reporting and details were discussed with Champlain staff during the 2021 site inspection.

Champlain’s 2019 – 2020 diamond drilling programs implemented the same drill core logging and analytical sample selection methodologies as the company’s previous drilling campaigns completed in 2002 – 2003 and 2010. Aplitic pegmatite intersections were sampled at relatively equal length intervals from the hanging wall to the footwall contact of the pegmatite intersection. Samples through coarse grained or megacrystic intersections were primarily constrained by the logging geologist’s interpretation of the dominant mineral phase and delineated observed transitions between spodumene dominated, potassium feldspar dominated, and quartz dominated intervals of the pegmatite. The nominal sample length in both instances ranged between 0.5 m and 1.5 m.

Drill core intervals selected for sampling were halved with a diamond bladed tile saw and individually packaged in plastic bags with unique sample identification numbers for shipment to the analytical facility. Champlain field staff were responsible for all aspects of sample security and management of sample records. Following completion of the program, unsampled core intervals were stacked on wooden pallets bound with steel strapping and stored outdoors in a private gravel quarry on Champlain’s mineral exploration license 05866. A subset of drill core that included the retained halves of sampled core are securely held at the private residence of Mr. John Wightman, President of Champlain, in Bridgetown NS where it is stacked and stored outdoors.

Analytical services were provided by Actlabs for the 2019 core sample program. Half core rock samples were delivered to the Actlabs facility in Fredericton, New Brunswick, Canada for preparation and were shipped to other Actlabs facilities for analysis. Lithium and beryllium values were determined through sodium peroxide fusion digestion followed by ICP-OES. This is a total digestion method intended for total metal recovery. A multi-element suite of 48 elements was determined through four-acid solution digestion followed by ICP-OES and ICP-MS (Actlabs code UT-6M). This is a near total digestion method.

Actlabs was also retained for analytical services for the 2020 sample program. Half core rock samples were delivered to the Actlabs facility in Fredericton, New Brunswick, Canada for preparation and were shipped to other Actlabs facilities for analysis. A multi-element suite of 55 elements was determined through total digestion in a sodium peroxide solution with analysis though ICP-OES and ICP-MS (Actlabs code UT-7). There are 7 core samples that returned the upper detection limit value of 10,000 ppm for Li in the 2020 program and these are identified in Table 11.1. At the effective date of this Report pulp splits for these samples were being analyzed at Actlabs.

Table 11.1: Drill core samples pending overlimit analytical results

Hole ID	From	To	Sample ID	Certificate Number
BL20-01	191.64	192.7	539503	A20-07188
BL20-01	193.64	195.14	539505	A20-07188
BL20-02	144.1	145	539516	A20-07188
BL20-02	146	147.4	539518	A20-07188
BL20-02	147.4	148.5	539519	A20-07188
BL20-03	151.08	152.08	539523	A20-07189
BL20-03	152.08	153.08	539524	A20-07189

Actlabs conducted an internal quality control and quality assurance program including certified reference material standards, blank samples, and duplicate analyses. The accuracy and precision of these quality control measures are statistically verified prior to release. Champlain did not implement a QAQC program for drill core samples. Specific gravity determinations, either through field or laboratory measurements, were not part of the 2019 – 2020 sampling protocol.

Actlabs was an independent, commercial analytical services firm at this time accredited to the ISO/IEC 17025 standard by the Standards Council of Canada.

11.8 Quality Control and Quality Assurance (QAQC) Programs By Champlain

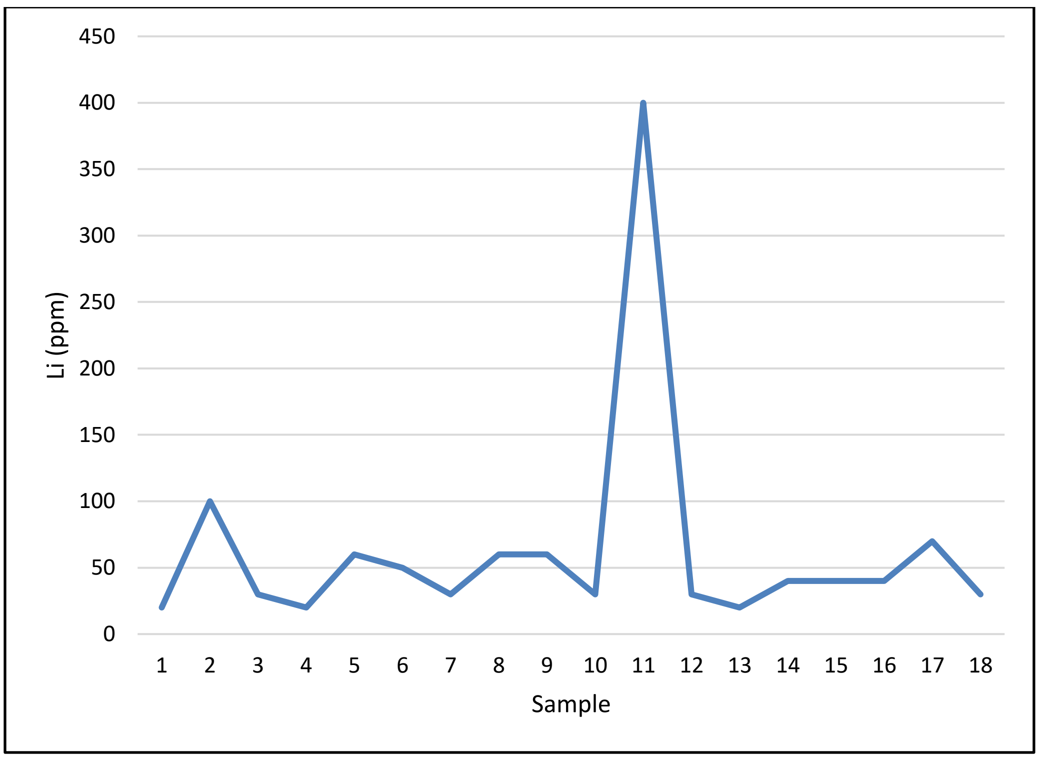
Review of historical reporting for the 1993 NSDNRR drilling program and 1995 Gwalia core sampling program for the Project showed that no formal QAQC programs were applied. Furthermore, documentation regarding industry certification of Gwalia's mine site laboratory or laboratory quality assurance and quality control programs was not available in reporting.

No formal QAQC programs were applied by Champlain for the 2002, 2003, 2019, and 2020 drilling programs. Champlain implemented a QAQC program for the 2010 drilling program that consisted of insertion of certified reference materials and blank samples at frequency of approximately 14 %. SGS was the accredited laboratory used for the 2010 analytical program and provided independent quality control blank, standard, and duplicate samples at a frequency of approximately 14 %. The accuracy and precision of these quality control measures are statistically verified prior to release. SGS was an independent, fully accredited, ISO/IEC registered firm that provided analytical services domestically and internationally during the periods of the Champlain programs.

11.8.1 2010 Champlain QAQC Program Results

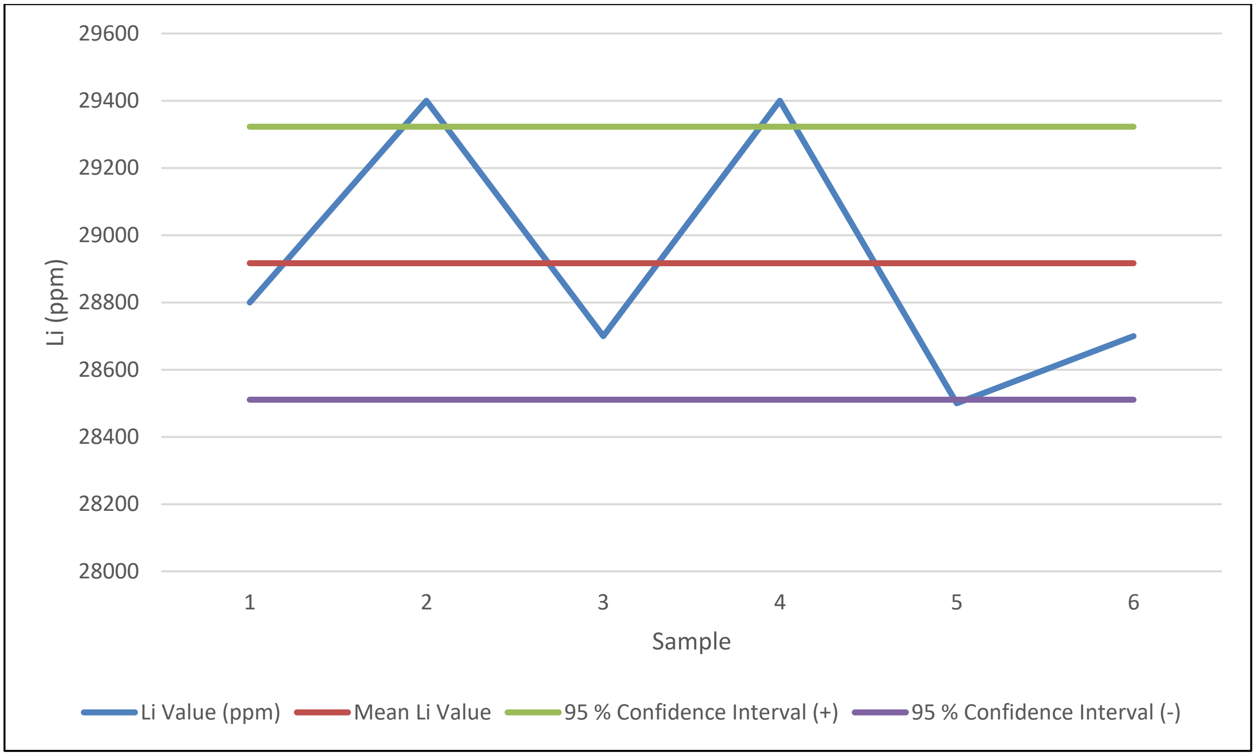
The 2010 Champlain 2010 QAQAC program included the insertion of 18 blanks and 18 certified reference materials for 225 core samples submitted to SGS for analysis. Blank material consisted of quartz extracted from the Black Bull/White Rock silica and kaolin deposit located near Yarmouth, NS, and analytical results are presented in Figure 11.1 Results for the blank sample material returned an average Li value of 63 ppm and range between 20 ppm to 400 ppm. The 400 ppm Li value represents a single sample spike in the dataset. The source of the spike is unclear, but the preceding sample in the preparation sample stream contained 17,100 ppm of Li. This suggests that the elevated blank value may be related to a slight degree of cross contamination during the preparation stage. Alternatively, the material submitted for analysis may have contained anomalous values of Li. The presence of a single outlier value does not suggest systematic cross contamination. This assertion is supported by consistent and acceptable values being returned for all other blank samples.

Figure 11.1: Blank sample results – 2010 program Li ppm (N=18)



Records of the certified reference materials used for the 2010 QAQC program were not available from Champlain but staff informed the QP that they were sourced from a commercial supplier. The QP reviewed the results of the 2010 standard program and interprets that three standards were applied throughout the program based on the mean Li values. “Standard 1” supports a mean Li value of 28,917 ppm and was applied from drill hole BZ-10-01 to BZ-10-04 (Figure 11.2). “Standard 2” supports a mean Li value of 31,860 ppm and was applied from drill hole BZ-10-05 to BZ-10-11 (Figure 11.3). “Standard 3” supports a mean Li value of 3,997 ppm and was applied from drill hole BZ-10-12 to BZ-10-28 (Figure 11.4). The QP compared the certified reference materials available from several commercial reference material suppliers but did not find obvious candidates for these grade values. The certified reference materials used in the 2010 QAQC program appear to have been acquired from another source or may no longer be available.

Figure 11.2: “Standard 1” sample results – 2010 program Li ppm (N=6)



Sample populations are low, but review of the performance of each certified reference material versus the respective mean value provides an indication of the variance associated with each dataset. Li values for all three standards are distributed above and below the respective means and mean values and are not biased by extreme or outlier values. “Standard 1” returned 3 of 6 samples outside a 95 % confidence interval with respect to the mean. “Standard 2” returned 1 of 5 samples outside a 95 % confidence interval with respect to the mean. “Standard 3” returned 4 of 7 samples outside a 95 % confidence interval with respect to the mean. Failures within a 95 % confidence interval of the mean are marginal in every case and values for all three standards plot within 2 standard deviations of the respective mean value. These results show that the variance in the certified reference material results is not excessive. However, the

Figure 11.3: "Standard 2" sample results – 2010 program Li ppm (N=5)

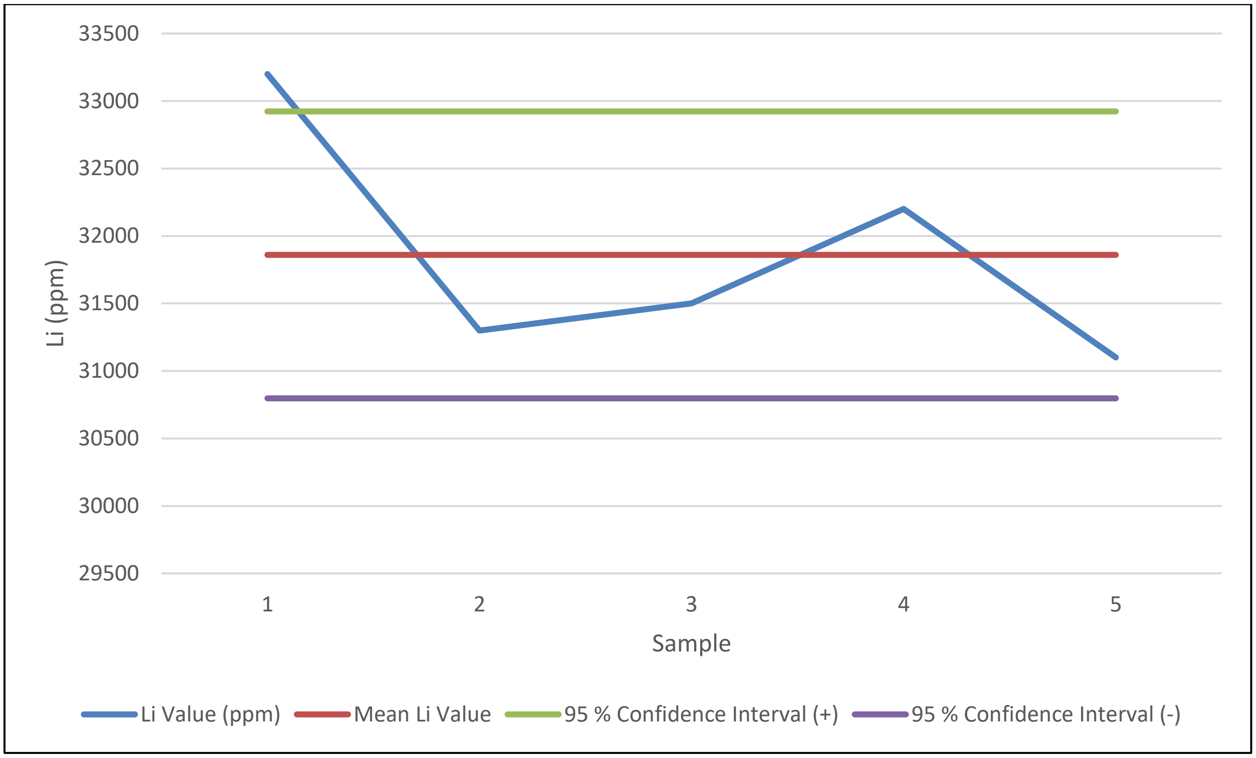
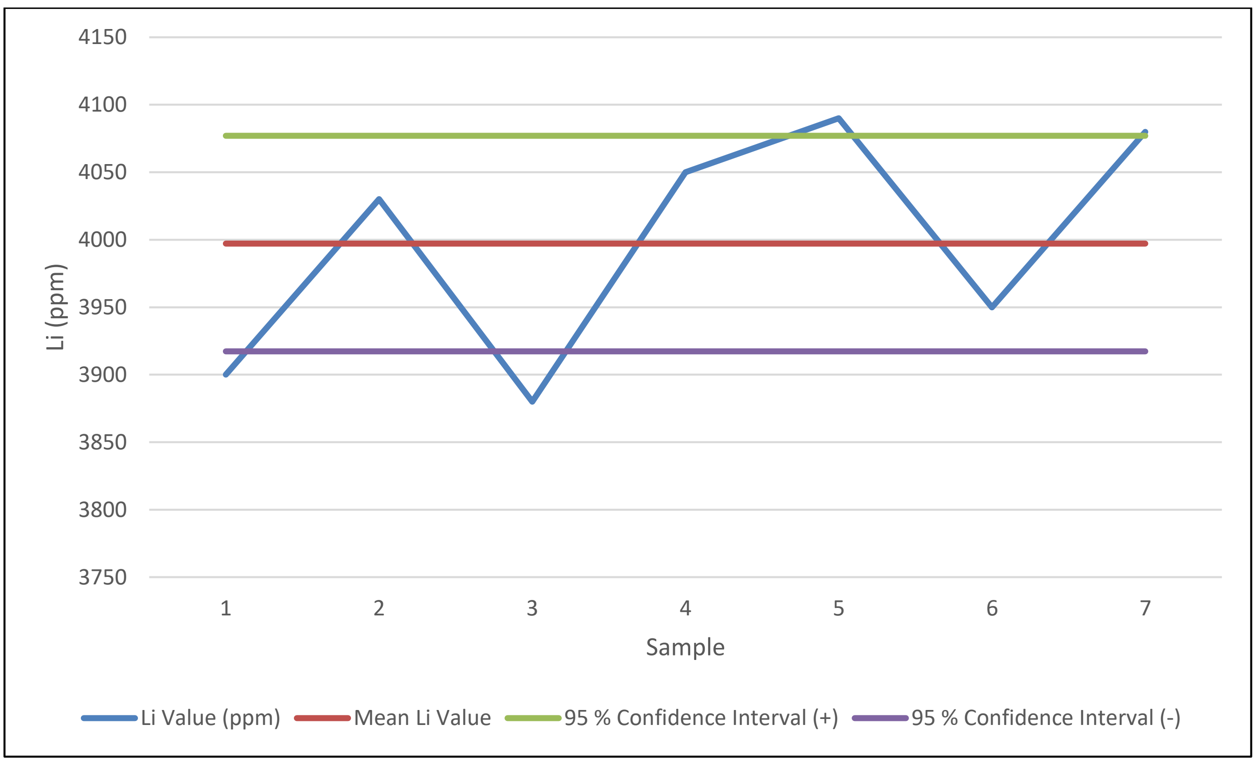


Figure 11.4: "Standard 3" sample results – 2010 program Li ppm (N=7)



QP considers the results of the 2010 standard program to be incomplete based on the absence of the certified values to support proper assessment. Furthermore, the QP cannot assess if an obvious bias is present in the returned values for the 2010 standard program.

11.9 Opinion on Sample Preparation, Analysis and Security Methods

The QP has concluded that sample preparation and analytical procedures for the 1993 program are consistent with industry standards of the day. Chain of custody and sample security can not be verified but are assumed to have been implemented throughout the program by NSDNRR and Gwalia during their respective management of drill core and samples. Validated data from the drilling program are considered acceptable for use in a MRE program and have been verified through subsequent drill programs in the area.

Due to the absence of specific QAQC procedures being implemented during the 2002, 2003, 2019, and 2020 drilling and sampling programs, the QP is of the opinion that they were not designed according to CIM Mineral Exploration Best Practices Guidelines. In addition, the 2010 QAQC results for certified reference materials are incomplete. To address these items, the QP implemented a comprehensive quarter core check sample program to assess the quality of grade determinations for the 2010, 2019 and 2020 programs. The check sample program results correlate well with original samples results and, combined with previous check sample results completed in 2010 for the 2002 and 2003 drilling programs, the QP is satisfied that this meets the data verification requirements under NI 43-101. It is recommended that any future core drilling or bedrock sampling program carried out by Champlain includes systematic insertion of blank samples and certified reference material samples, analysis of pulp split and quarter core duplicate samples and submission of check sample splits to a third party laboratory.

Specific gravity determinations, either in the field or by laboratory measurements, were not part of Champlain's sampling and analytical procedures for any of their drilling programs. On this basis specific gravity determinations were acquired for the ¼ core check samples completed in 2021 to support assessment of bulk density for the MRE. The QP recommends that Champlain completes specific gravity determinations as part of any future core drilling, core sampling and analytical programs.

The QP is of the opinion that, with exception of the items discussed above, all other aspects of the 2002, 2003, 2010, 2019, and 2020 sample preparation, security, and analytical protocols were acceptably completed to industry standards of the respective periods.

12.0 DATA VERIFICATION

12.1 Overview

Data verification procedures carried out by the QP for the Project consisted of two main components:

(1) Review of public record and internal source documents cited by previous operators and Champlain with respect to key geological interpretations, previously identified geochemical or geophysical anomalies, and historical and current diamond drilling results that support the current MRE for the Project. The diamond drilling database was also checked in detail, as described below in Report Section 14.3.2, and determined to be acceptable for MRE use; and

(2) Completion of a site visit to the Brazil Lake Property on December 7th, 2021 by Report author Matthew Harrington, which included visual inspection of the Brazil Lake Deposit and independent witness (IW) check sampling of quarter core samples from the 2010, 2019, and 2020 Champlain drilling programs. Details of site visit activities carried out by author Harrington are presented in Report Sections 2.3 and 12.2. No issues were identified during the site visit or in associated sampling results that negatively impact the findings and conclusions of this Technical Report.

Mercator staff were responsible for compilation and verification of Project data in addition to interpretation of data sets for the completion of the MRE and future exploration targeting using mining industry standards and CIM Mineral Exploration Best Practice Guidelines. Mercator staff completed data verification procedures throughout the entire process including review of QAQC procedures and results. This included standard database validation procedures that are available in the GEOVIA Surpac™ 2021 (Surpac), and Seequent Leapfrog™ Geo 2021 (Leapfrog modelling software platforms used to develop the MRE described in this Technical Report. Details of these procedures are presented below in section 14.3.2.

12.2 Site Visit (Personal Inspection) and Check Sampling Program

QP Matthew Harrington completed a site visit to the Brazil Lake Property on December 7th, 2021, assisted by David Murray, P. Geo. (also a Mercator employee at that time), and Mr. Don Black, a consultant to Champlain at that time and formerly a Champlain employee responsible for various exploration programs carried out on the Project, including the core drilling programs carried out between 2002 and 2020. Author Harrington completed an inspection of the Brazil Lake North Dike pegmatite bedrock in an open shallow excavation approximately 50 m North of Holly Road, which transects the project area in an east-west direction and is the main access to the Deposit. The North Dike area was targeted by the 2002, 2003, and 2010 Champlain drilling program for which the casing has been pulled, however, evidence of core drill and drill pads were observed at drill hole locations specified in the drilling database. Drillhole collar locations for the 2019 – 2020 programs, which targeted the area between the North and South Dike, were well marked with large wooden posts in place of drill casing. Mr. Harrington noted no obvious site obstacles that would prevent completion of further core drilling and/or bulk sampling for the Project at the North Dike and South Dike areas.

As part of the personal inspection, author Harrington also examined and sampled a total of three Champlain drill holes from the 2019 – 2020 drilling programs (BL19-04, BL19-05, and BL20-05). Unmineralized intervals were reviewed at Champlain's outdoor storage location within a private gravel pit on Champlain exploration license 05866. Pegmatite bearing intervals were collected by Mr. Murray from core intercepts currently stored at the private residence of Champlain President, Mr. John Wightman, in Bridgetown NS on December 6th 2021 and brought to Mercator offices in Dartmouth NS for review and ¼-core check sampling. On Jan 11, 2022, two Mercator employees travelled to the NSDNRRR provincial core library and collected ¼ core check samples from the available archive of 2010 Champlain drill holes. Further details of Mr. Harrington's personal inspection are discussed in Section 2.3 of this Technical Report.

Using a Garmin handheld GPSMAP 65s GPS device author Harrington confirmed the locations of 6 drillhole collars from the 2019 – 2020 programs to be accurately surveyed to within the margin of error inherent to the device. Mr. Harington confirmed the presence of pegmatite veining and spodumene mineralization in the drill core of holes BL19-04, BL19-05, and BL20-05 at the depths specified in Champlain drill logs and verified lithological descriptions recorded by Champlain against the corresponding core intervals. A total of seven ¼-core and eight pulp duplicate check samples were collected from the 2019 – 2020 drill holes. Mr. Harrington supervised all aspects of core sample marking, cutting, and bagging, with respect to the 7 check samples from 2019 – 2020 drill core.

On January 11, 2022, Mercator employees Mary Besaw and Ryan Taylor travelled to the NSDNRR provincial core library in Stellarton, NS. There, the two staff members, under instruction from author Harrington, collected 19 ¼ core samples from 14 of Champlain's 2010 drill holes (BZ-10-01, BZ-10-02, BZ-10-03, BZ-10-04, BZ-10-05, BZ-10-06, BZ-10-07, BZ-10-17, BZ-10-18, BZ-10-19, BZ-10-20, BZ-10-22, BZ-10-26, and BZ-10-27). The 19 check samples were returned to Mercator offices in Dartmouth NS on the same day of collection by Mercator staff. All ¼ core check samples and duplicate pulps were held securely by author Harrington until delivered via courier to the ALS Lab (ALS) office in Moncton, NB for preparation and subsequent analysis. ALS is an independent commercial analytical firm that is accredited by the Canadian Association for Laboratory Accreditation (CALA) and holds ISO 9001 and ISO/IEC 17025 registrations.

The analytical procedure for check samples was selected to best match the original sample preparation and analysis used by Champlain. Samples were crushed until 70 % was less than 2 mm, then a 250 g subsample was riffle split and pulverised to at least 85 % passing 75 µm. Lithium and multi-element values were determined by a sodium peroxide fusion followed by ICP-MS (ALS code ME-MS89L) analysis. Samples exceeding the Li overlimit value of 10,000 ppm were re-analyzed using sodium peroxided fusion followed by ICP-AES (ALS code ME-ICP82b) analysis. Specific gravity determinations were completed for the 26 ¼ core check samples using pycnometer methods (ALS code OA-GRA0b). Mercator inserted one certified reference material standard and one blank in the sample stream and acceptable results for these were returned.

Lithium assay results from the 2020 check sampling program are presented below in Table 12.1 and Figure 12.1 and show that good correlation exists between the check analysis values and the corresponding original assay results. Sample pairs show absolute Li content differences ranging between 36 ppm and 3580 ppm and support a correlation coefficient of 98 %.

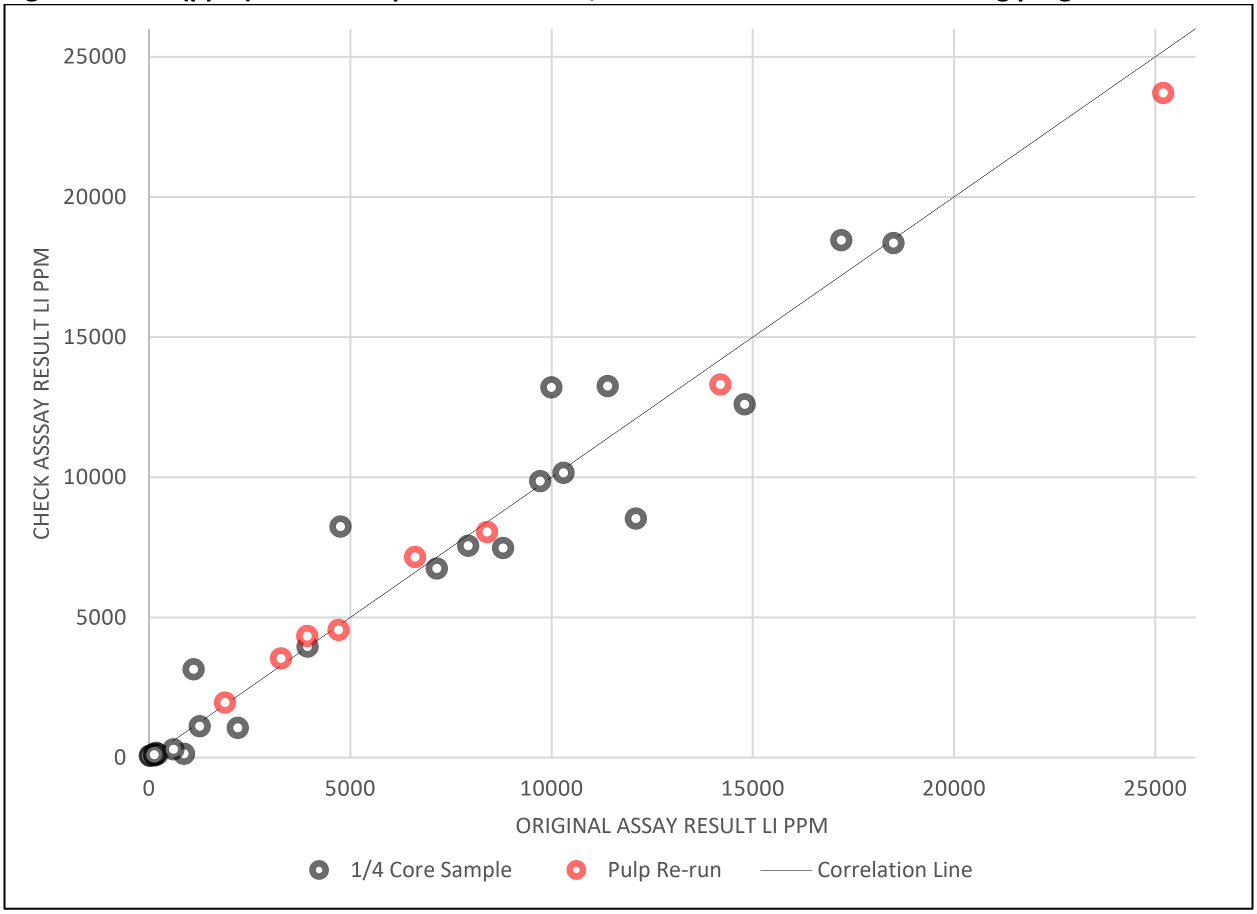
Mercator staff complete two previous site inspections to the Brazil Lake Property. A trip on March 5th, 2010 was conducted by author Cullen accompanied by Mr. Black and Mr. R. Bourgeois, former CEO of Petro Horizon Energy Corporation (Petro Horizon). The trip included inspection of the South Dike and North Dike bedrock trench exposures and a general reconnaissance of immediate areas. Numerous hand samples from both dikes were collected at this time and locations of various historical drill sites were visited. Another site visit was carried out on March 25th, 2010 by author Cullen and former Mercator employee James Barr accompanied by Mr. Black and Mr. S. Chase of Champlain. This trip included a visit to the South Dike trenched area but its main purpose was to carry out review and check sampling of 2002 – 2003 Champlain drill core that had been archived in the local area. These two site visits by author Cullen supported an earlier Technical Report on the Brazil Lake Deposit titled “Technical Report on the Brazil Lake Lithium-Bearing Pegmatite Property, Nova Scotia, Canada, effective April 23rd, 2010” that was prepared by Mr. Cullen and Mr. Barr for Petro Horizon.

In 2010, Mercator staff collected 11 ½ core samples from historical Champlain drilling carried out on the two main dikes at Brazil Lake in 2002 and 2003. Sample preparation was completed at the commercially operated Minerals Engineering Centre (MEC) at Dalhousie University in Halifax, NS and included multi-stage jaw crushing to produce a -10 mesh sample from which a 200-250 gram subsample was riffle split and then pulverized with a ring and puck pulverizer to a nominal grain size of 0.15 microns. One blind quality control blank sample was also included in the sample set submitted to MEC to monitor preparation stage cross-contamination. Equipment was cleaned with jets of air and silica sand between samples. All sample pulps prepared by MEC were labeled and placed in dry paper envelopes for delivery to Mercator. Prepared pulps were packaged by Mercator after insertion of a quality control standard and then sent to SGS Minerals in Don Mills, ON, where additional pulverizing was performed to ensure a -200 mesh grain size. All samples were analyzed using ICP-OES methods (SGS codes ICP90A and ICP90Q) following sodium peroxide fusion, which provided near-total digestion of the analytical splits. SGS Minerals Services is a subsidiary of SGS Canada Inc., was certified to the ISO/IEC 17025:2005 standard for chemical and physical analysis at the time and also an Accredited Laboratory as defined by the Standards Council of Canada. MEC is a Halifax-based commercial laboratory associated with Dalhousie University that has an extensive mineral exploration, mining and environmental services client base. It utilizes industry-standard methods of internal quality control and assurance. The QP is of the opinion that sample preparation and analytical procedures utilized for this program were adequate for intended purposes and that acceptable results were returned for the standard and blank samples submitted.

Table 12.1:Mercator 2020 Check Samples (2010, 2019, and 2020 drilling programs)

Hole ID	From (m)	To (m)	Original Sample Number	Original Li (ppm)	Check Sample Number	Sample Type	Check Li (ppm)
BL19-04	125	126.82	534902	2210	3151	1/4 core	1050
BL19-04	132.27	134	534907	1110	3152	1/4 core	3140
BL19-04	138.93	140	534912	9720	3153	1/4 core	9860
BL19-05	139	139.72	534918	4760	3155	1/4 core	8240
BL19-05	135	136.3	534925	14800	3154	1/4 core	12600
BL20-02	144.1	145	539516	> 10000	3157	1/4 core	13200
BL20-02	146	147.4	539518	3940	3158	1/4 core	3960
BZ-10-01	95.17	96.17	60756	40	3159	1/4 core	60
BZ-10-01	113.13	114.13	60767	10300	3160	1/4 core	10150
BZ-10-02	92.95	94.28	60777	120	3161	1/4 core	120
BZ-10-02	95.5	96.7	60780	11400	3162	1/4 core	13250
BZ-10-03	121.64	122.34	60792	160	3163	1/4 core	71
BZ-10-04	127.92	128.92	60859	18500	3164	1/4 core	18350
BZ-10-05	141.1	142.18	60864	7150	3165	1/4 core	6740
BZ-10-06	111.37	112.37	60874	1260	3166	1/4 core	1110
BZ-10-07	104.59	105.8	60883	170	3167	1/4 core	161
BZ-10-17	42.5	43.51	60984	12100	3168	1/4 core	8520
BZ-10-18	54.1	55.01	60989	8800	3169	1/4 core	7470
BZ-10-19	46.12	47.18	60991	20	3170	1/4 core	65
BZ-10-20	24.17	25	60387	130	3172	1/4 core	88
BZ-10-20	6.5	7.5	61000	7930	3171	1/4 core	7550
BZ-10-22	13.52	14.63	60724	220	3175	1/4 core	132
BZ-10-22	15.63	16.73	60726	130	3176	1/4 core	94
BZ-10-22	11.45	12.42	60950	870	3174	1/4 core	125
BZ-10-26	7.09	7.75	184900	610	3181	1/4 core	290
BZ-10-27	32.18	33.2	9	17200	3182	1/4 core	18450
BL19-04	128.62	129.76	534904	3930	534904	pulp	4330
BL19-04	135.68	137.06	534910	3280	534910	pulp	3530
BL19-05	136.3	137.76	534916	6610	534916	pulp	7150
BL19-05	142	142.77	534920	25200	534920	pulp	23700
BL20-04	2.45	2.85	539527	4710	539527	pulp	4550
BL20-04	2.85	4.25	539528	8400	539528	pulp	8040
BL20-06	113	114.1	539539	14200	539539	pulp	13300
BL20-06	114.1	115.35	539540	1890	539540	pulp	1960

Figure 12.1: Li (ppm) Check Sample Results 2010, 2019 and 2020 Brazil Lake drilling programs

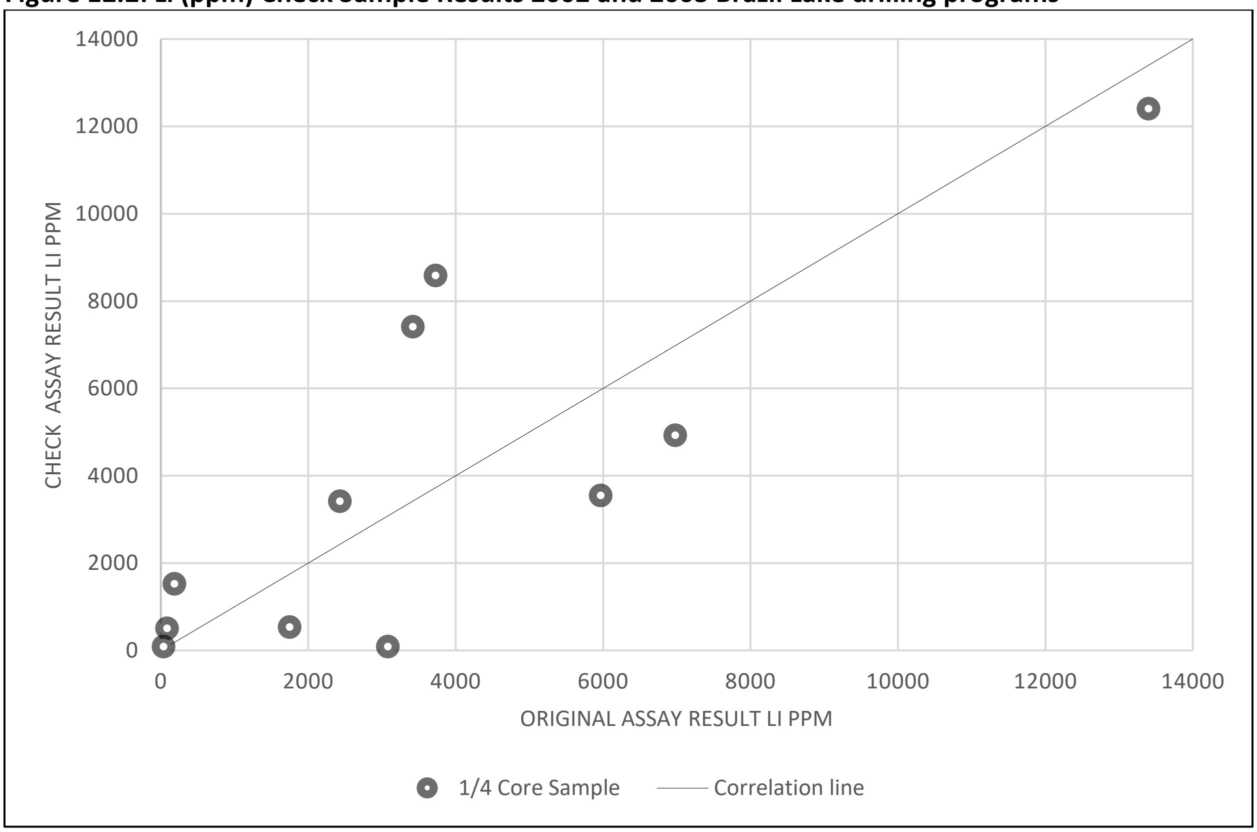


Lithium assay results from the 2002 – 2003 check sampling program are presented below in Table 12.2 and Figure 12.2 and show that substantially variable correlation is present between the check analysis values and the corresponding original assay values. Sample pairs show absolute Li content differences ranging between 43 ppm and 4850 ppm and support a correlation coefficient of 80 %. Some sample pairs of this vintage differ dramatically, such as original sample 25842. The 2020 check sample program values show better correlation with original values than the 2010 check sample program, however, both programs provide acceptable results. The 2010 program compared Li values between two ½ HQ core sample pairs whereas the 2020 program compared Li values between ½ NQ core and ¼ NQ core sample pairs. Various factors can contribute to observed sample pair differences in check sample programs including sample size and textural heterogeneities plus differences in sample preparation and analysis. Based on core observations plus knowledge of spodumene distribution based on surface trench exposures and mapping of the Project dikes, the most prominent contributing factor is believed to be heterogeneity of spodumene crystal distribution between sample pairs. This is an anticipated result when small sample sizes such as those provided by drill core are used to evaluate materials containing coarse grained to megacrystic mineral components that are unevenly distributed. As such, it represents a "nugget effect" that may have been more prominent in the 2010 and earlier check sample programs. Another possible

Table 12.2:Mercator 2010 Check Samples (2002 and 2003 drilling programs)

Hole Id	From (m)	To (m)	Original Sample Number	Original Li (ppm)	Check Sample Number	Sample Type	Check Li (ppm)
BZ-02-19	29	30.5	25840	2430	35436	1/2 core	3410
BZ-02-19	30.5	32.53	25841	85	35437	1/2 core	500
BZ-02-19	32.53	33.14	25842	3080	35438	1/2 core	80
BZ-02-19	33.14	34.57	25843	13400	35439	1/2 core	12400
BZ-02-19	34.57	35.9	25844	3420	35440	1/2 core	7410
BZ-03-24	21.9	24.7	30013	6981	35442	1/2 core	4920
BZ-03-24	24.7	26.2	30014	1751	35443	1/2 core	530
BZ-03-24	26.2	28	30015	37	35444	1/2 core	80
BZ-03-24	28	29.8	30016	3730	35446	1/2 core	8580
BZ-03-24	29.8	30.54	30017	186	35447	1/2 core	1520
BZ-03-24	30.54	33	30018	5968	35449	1/2 core	3540

Figure 12.2: Li (ppm) Check Sample Results 2002 and 2003 Brazil Lake drilling programs



contributing component to variance between sample pairs assigns to minor differences in sample preparation procedures.

Results presented in Figures 12.1 and 12.2 and Tables 2.1 and 12.2 are interpreted as generally confirming the range and character of Li values reported by Champlain and also as indicating that significant grade variation due to the coarse grained nature of spodumene occurrence in small sample sizes can be expected. This is an expected condition when dealing with megacrystic pegmatite bodies. As expected, duplicate pulp split sample results from the 2019 and 2020 programs show highest correlation due to homogeneity resulting from sample preparation procedures.

12.3 Review of Supporting Documents, Databases, and Assessment Reports

The QP obtained copies of relevant historical assessment work reports, available through the Nova Scotia provincial government online database, the previous NI 43-101 Property Technical Report prepared by Mercator, and internal Champlain documentation as part of the data validation procedures. Key aspects of historical reporting are referenced in the current Report and original source documentation supporting historical reporting was consulted where appropriate. Results of the reference documentation checking program showed that in all instances considered, digital and hard copy records accurately reflect content of referenced source documents.

The QP supervised the creation and validation of a complete drill hole database for the Project to support the current MRE program. Mercator staff created the database by referencing original source documentation and assay certificates for the successive drilling and drill core sampling campaigns by all operators. Validation of the Mercator database included systematic checking by Mercator staff of database entries against source documents, with correction of deficiencies where necessary. Checking of database content consisted of collar coordination checks for drill holes against source records, checks of core sample record entries and checking of assay result entries against source laboratory reports and certificates. The database validation program resulted in a 100 % check in Li assay records, drill hole lithological (lithocode) entries, and collar orientation and coordination records. In addition to these manually coordinated checks, routine digital assessment of drill hole datasets for issues such as end of hole errors, overlapping intervals, inconsistent drill hole identifiers, improper lithological assignment, unreasonable assay value assignment, missing interval data, and survey record errors were carried out as data was imported into Leapfrog and Surpac modeling software. No substantive or systematic issues were identified from the combined checking activities.

12.4 Opinion on Data Verification

The QP is of the opinion that results from the data validation program components discussed above, including results of site visits by two of the Report authors, indicate that industry standard levels of technical documentation and detail are evident in the 2002, 2003, 2010, 2019 and 2020 drilling programs for the Project. Technical documentation of the work conducted before 2002 is lacking some of the robustness that would equal a modern industry standard but the QP is of the opinion that it is sufficient for current purposes. The QP is of the overall opinion that the validated drilling digital database is acceptable for MRE use.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

The mineral processing and metallurgical testing results, including recoveries to concentrate and concentrate/grade assumptions, presented in this Technical Report are based on a preliminary metallurgical testing program completed for Champlain between 2002 and 2003. The Minerals Engineering Center (MEC) of Dalhousie University in Halifax, NS, and the Material Research Laboratory Ltd. (MRL) conducted the program in association with Champlain staff. Information supporting this program appears in full in publicly available assessment reports submitted to the Nova Scotia government by Champlain but a single, independent report covering all aspects of the work was not completed. The QP is providing below a summary of the previous work completed but the Report does not introduce any new laboratory testing results that have not previously been in the public domain.

13.2 Overview of the 2002 – 2003 program

During the 2002-2003 field season, Champlain initiated a program of field and laboratory studies directed toward assessment of mineral processing and extraction techniques for valued Brazil Lake pegmatite components. Representative bulk sample materials to support this work were created from drill core intersections by Champlain staff and then submitted for study at the Minerals Engineering Centre (MEC) of Dalhousie University in Halifax, NS and the Material Research Laboratory Ltd. (MRL) of North Carolina State University in Asheville, North Carolina, USA. Laboratory studies at both facilities led to comparison of mineral recoveries and costing of wet and dry mineral beneficiation processes. Efforts were focused on creating high grade/high purity concentrates of lithium-bearing spodumene, mica, feldspar and silica, all of which were considered to be of importance to economic assessment of Deposit pegmatites.

Initial laboratory analysis was conducted by MEC on a bulk sample created from the entire pegmatite intersection of drill hole BZ-02-13, with further work subsequently conducted at MRL. Test work completed at MEC consisted of crushing, sizing, gravity separation, electrostatic separation, magnetic separation, flotation, and heavy liquid separation. Head analysis of the bulk sample is presented below in Table 13.1. A second bulk sample was created from 36 core samples from drill holes BZ-02-17, 18, 19 and 22 plus BZ-03-23 and 24. Core from each hole constituted a separate component of a six component sample set that was sent to MRL for additional processing. Test work completed at MRL consisted of crushing, sizing, bench-scale flotation and magnetic separation studies. Head analysis for the 6 composite samples are presented below in Table 13.2 through Table 13.4

Table 13.1: Head analysis of 2002 MEC bulk sample*

Analysis	%	Analysis	ppm
SiO_2	73.19	Be	81
Al_2O_3	16.08	Co	< 1
Fe_2O_3 (Total Fe)	0.48	Cr	23
CaO	0.92	Cs	30
MgO	0.12	Cu	5
Na_2O	3.26	Pb	11
K_2O	2.55	Rb	760
MnO	0.061	V	140
TiO_2	0.032	Zn	108
P_2O_5	0.17	F	410
Li_2O	0.97		
S (Total)	0.008		
CO_2	0.12		
L.O.I.	1.31		
Total	99.26		

**Data from 2003 Champlain assessment report referenced here-in as Black et al. (2003)*

Table 13.2: Head analysis of 2003 MRL composite samples 1 and 2*

Composite 1 (02-17)				Composite 2 (02-18)			
Analysis	**%**	**Analysis**	**ppm**	**Analysis**	**%**	**Analysis**	**ppm**
SiO_2	74.53	Rb	829	SiO_2	75.59	Rb	344
Al_2O_3	14.47	Sr	13	Al_2O_3	14.61	Sr	42
Fe_2O_3 (Total Fe)	0.31	Y	< 2	Fe_2O_3 (Total Fe)	0.21	Y	< 2
CaO	0.08	Zr	16	CaO	0.18	Zr	25
MgO	0.06	Nb	58	MgO	0.05	Nb	75
Na_2O	4.25	Ba	36	Na_2O	5.39	Ba	< 20
K_2O	2.47	Ta	32	K_2O	1.3	Ta	108
MnO	0.06	Li	764	MnO	0.06	Li	2150
TiO_2	0.02	Ba	30	TiO_2	0.01	Ba	30
P_2O_5	0.06	Be	45	P_2O_5	0.12	Be	108
Cr_rO_3	0.04			Cr_rO_3	0.02		
L.O.I.	0.65			L.O.I.	0.8		
Total	97.11			Total	98.4		

**Data from 2002 Champlain assessment report referenced here-in as Black et al. (2003)*

Table 13.3: Head analysis of 2003 MRL composite samples 3 and 4*

Composite 3 (02-19)				Composite 4 (02-22)			
Analysis	**%**	**Analysis**	**ppm**	**Analysis**	**%**	**Analysis**	**ppm**
SiO_2	71.31	Rb	1170	SiO_2	72.97	Rb	731
Al_2O_3	15.53	Sr	72	Al_2O_3	15.68	Sr	50
Fe_2O_3 (Total Fe)	0.13	Y	< 2	Fe_2O_3 (Total Fe)	0.36	Y	< 2
CaO	0.2	Zr	13	CaO	0.27	Zr	39
MgO	0.03	Nb	51	MgO	0.06	Nb	392
Na_2O	3.86	Ba	27	Na_2O	4.06	Ba	21
K_2O	3.38	Ta	70	K_2O	2.94	Ta	175
MnO	0.04	Li	5280	MnO	0.05	Li	3450
TiO_2	0.01	Ba	30	TiO_2	0.03	Ba	316
P_2O_5	0.19	Be	60	P_2O_5	0.18	Be	149
Cr_rO_3	0.01			Cr_rO_3	0.01		
L.O.I.	0.4			L.O.I.	0.6		
Total	95.22			Total	97.37		

**Data from 2003 Champlain assessment report referenced here-in as Black et al. (2003)*

Table 13.4: Head analysis of 2003 MRL composite samples 5 and 6*

Composite 5 (02-23)				Composite 6 (02-24)			
Analysis	**%**	**Analysis**	**ppm**	**Analysis**	**%**	**Analysis**	**ppm**
SiO_2	70.36	Rb	1190	SiO_2	80.37	Rb	769
Al_2O_3	16.31	Sr	77	Al_2O_3	11.65	Sr	30
Fe_2O_3 (Total Fe)	0.19	Y	< 2	Fe_2O_3 (Total Fe)	0.31	Y	< 2
CaO	0.2	Zr	28	CaO	0.29	Zr	44
MgO	0.06	Nb	37	MgO	0.1	Nb	47
Na_2O	4.19	Ba	28	Na_2O	3.29	Ba	< 20
K_2O	3.72	Ta	19.9	K_2O	2.37	Ta	30.7
MnO	0.02	Li	3060	MnO	0.04	Li	2780
TiO_2	0.01	Ba	70	TiO_2	0.05	Ba	113
P_2O_5	0.19	Be	106	P_2O_5	0.22	Be	23
Cr_rO_3	< 0.01			Cr_rO_3	< 0.01		
L.O.I.	0.8			L.O.I.	0.45		
Total	96.21			Total	99.25		

* *Data from 2003 Champlain assessment report referenced here-in as Black et al. (2003)*

13.3 Mica Processing

Laboratory processing of mica was focused on creation of a high purity, finely ground concentrate having very low iron levels and high brightness. Results showed that a 92% muscovite concentrate with minor amounts of Na-feldspar (5.4%), spodumene (2.4%) and quartz (0.5%) was created that contained less than 0.5% Fe_2O_3. Market interest at the time was directed toward delaminated mica offering bulk density values below 10lb/ft^3 (0.16 g/cm^3), and that delamination processing at MEC had returned bulk densities between 52 and 48 lb/ft^3 (0.83 g/cm^3 to 0.76 g/cm^3). Further processing by the MRL showed that Fe_2O_3 concentration in the mica ranged from 0.44 % to 0.90 % and averaged 0.60 %. It was concluded that the associated mica concentrate would be suitable for dry ground markets but possibly not for wet ground markets due to the difficulty encountered during laboratory delamination of the mica. It was also noted that the concentrate contained up to 3,900 ppm rubidium (Rb), with this considered to be anomalously high.

13.4 Spodumene Processing

Laboratory processing of spodumene was aimed at developing a high purity spodumene concentrate. Spodumene concentrates were produced by several methods but the most attractive recovery rates of 90-97 %, at grades of 7.23 % to 7.79 % Li_2O, were attained through heavy media separation processing. Iron content within the concentrates was higher than desired, with lowest reported values in the range of 0.11-0.18 % Fe_2O_3 following fine grinding and magnetic separation at the MRL lab in North Carolina. It was concluded that further testing should be performed to determine mineralogical siting of Fe_2O_3 and whether more of this phase could be liberated from the concentrate.

13.5 Silica Processing

Laboratory processing of both pegmatite quartz and surrounding wallrock quartzite was carried out to produce a high purity SiO_2 product. A high purity quartz concentrate was produce having less than 30 ppm aluminum with other impurity levels being below 1.5 ppm. During study of the second bulk sample sent to MRL, a silica concentrate averaging 99% SiO_2 was produced using flotation methods and without requirement for magnetic separation processing. Successful concentration of SiO_2 to comparable levels using both flotation and magnetic separation techniques was demonstrated.

13.6 Feldspar Processing

Laboratory processing of feldspar was performed exclusively at MRL. Results of this work showed that a low Fe_2O_3 content (0.01-0.04%) K-feldspar concentrate could be produced by flotation methods without use of magnetic separation processing and that resulting concentrate had low and acceptable levels of both Ca and Li. Concentrate attributes were considered to be suitable for conventional feldspar markets at the time of program reporting in 2002-2003.

13.7 Chlorination of Spodumene

Champlain initiated investigations and research into viability of direct lithium extraction and recovery of spodumene concentrate through means of chlorination processing. The method is based on the premise that at high temperatures (ie. >1050°C) spodumene reverts to the high temperature β-spodumene form that will selectively react with chlorine gas to form lithium chloride (LiCl) having low levels of associated aluminum and silica. LiCl is used as a feedstock for lithium metal production and also in the lithium battery industry. Champlain's 2002-2003 era research was focused on determining whether chlorination processing offers an economic advantage over traditional flotation methods where multiple processing stages are required to generate lithium carbonate ($LiCO_3$) prior to generation of LiCl. Champlain considered its initial laboratory results for spodumene chlorination processing to be favorable but identified a need for additional research.

13.8 2022 Champlain Metallurgical Program

On March 31st, 2022, Champlain engaged Sixth Wave Innovations Inc. of Halifax, Nova Scotia, Canada to design, develop and test a preliminary processing flowsheet for Li extraction from Project pegmatite materials. It is also Champlain's intention to have Sixth Wave assess opportunities to concentrate Ta, Rb, Sn, Be, and high purity silica from Project materials under the initial work program. Work on these programs was still in the early planning stages at the effective date of this Technical Report.

13.9 Comment on Mineral Processing and Metallurgical Testing

Preliminary studies on mineral processing and metallurgical testing completed by Champlain during the 2002-2003 period demonstrate that spodumene from Project pegmatite materials can be recovered to concentrate through various means, including magnetic separation, flotation, and heavy media separation. Results show that high recovery percentages of up to 97 % at concentrate grades of up to 7.79 % Li_2O have been obtained and that further research on concentration methods leading to reduction of Fe_2O_3 levels in final associated concentrates is required. The studies by Champlain have also clearly shown that other products, including mica, silica, and feldspar concentrates can be produced from Project pegmatite materials and that these may have future economic potential.

The QP has concluded that (1) acceptable and appropriate care was taken with respect to collection, handling and preparation of bulk sample materials that contributed to the Champlain metallurgical programs described above, and (2) that they adequately represent the various types and styles of mineralization present in the Deposit as a whole. Due to the preliminary nature of the studies carried out by Champlain to date the QP has elected to use a more conservative recovery to concentrate factor of 85% to a 6 % Li_2O spodumene concentrate for pit optimization and cut-off grade aspects of the MRE documented in Section 14 of this Technical Report.

13.10 Geological Interpretation Used in Resource Estimation

The Brazil Lake Deposit is currently defined by two lithium-bearing granitic pegmatite dikes, the North Dike and South Dike, hosted by an early Paleozoic sequence of meta-sedimentary and meta-volcanic rocks. Dominant mineral phases are sodium and potassium feldspar, quartz and minor amounts of mica plus accessory minerals. Sampling results for the Brazil Lake pegmatites show anomalous values of Li, Rb, Sn and Be to be present locally. These correspond, respectively, with dominant host minerals spodumene, potassium feldspar, cassiterite and beryl. Li, in the form of the silicate mineral spodumene, is the only metal clearly demonstrated to date to occur at concentrations of economic significance and is the focus of the current MRE. Mineralized pegmatite bodies show substantial drill section to drill section continuity and have been modeled as laterally continuous vein deposits.

13.11 Methodology of Resource Estimation

13.11.1Overview of Estimation Procedure

The Brazil Lake Deposit MRE is comprised of two lithium-bearing pegmatites, the North Dike and South Dike. The MRE is based on validated results of 71 diamond drill holes (6,666 m), including 4 drill holes (423 m) completed in 1998 by NSDNRR, 29 drill holes (1,363 m) completed between 2002 and 2003 by Champlain, 27 drill holes (2,641 m) completed in 2010 by Champlain, and 11 drill holes (1,635 m) completed by Champlain between 2019 and 2020. Solid modelling was performed using GEOVIA Surpac™ 2021 (Surpac) and Seequent Leapfrog™ Geo 2021 (Leapfrog) modeling software. Block model volume, grade, and density modeling was performed using Surpac with Li_2O % values for the block model estimated using inverse distance cubed (ID^3) interpolation methodology from 1 m down hole assay composites. Block density values were applied on a lithological model basis and reflect averaging of laboratory specific gravity (SG) determinations for samples of each lithology. Due to the competent and non-porous nature of the pegmatite samples, SG values have been assumed to approximate bulk density values. The resource block model was set up with a block size of 2 m (x) by 2 m (y) by 4 m (z) and partial percent volume assignment was applied. Spodumene is the predominant lithium mineral in the deposit.

Li_2O % grade assignment was peripherally constrained by pegmatite solid models based on geological interpretations for the deposit. Solid models are based on intercepts defining pegmatite lithology and controls on a minimum Li_2O % grade or width was not applied. Pegmatite intercepts were developed into implicit vein solid models constrained to 50 m along strike and 50 m along dip or half the distance to a constraining drill hole. The North Dike consists by two pegmatite solid models that define tabular bodies trending along an azimuth of 050º and dipping approximately 60º to the southeast. The main North Dike solid model extends along strike for 700 m, along dip for 225 m, and averages 10 m to 15 m in true thickness in the central part of the dike and a 0.5 m to 2 m at the north and south limits. The secondary North Dike solid model is located structurally below the central area of the main solid and defines a discrete pegmatite body extending 75 along strike, 85 m along dip, and averaging 3 m in true thickness.

The South Dike is delineated by one pegmatite solid model that defines a tabular body trending along an azimuth of 050º and dipping approximately 85º to the southeast. The South Dike solid model extends along strike for 350 m, along dip for 120 m, and averages 8 m to 10 m in true thickness in the central part of the dike and 0.5 m to 2 m at the north and south limits. Both the main North Dike and South Dike resource solid models are constrained by a digital terrain model (DTM) of topography or the interpreted top of bedrock.

Interpolation ellipsoid ranges developed through assessment of variography using Surpac's ZXY LRL axes of rotation convention conform to a bearing of 218°, a plunge of -26º, and a dip 60º for the main North Dike and conform to a bearing of 230º, a plunge of -26º, and a dip of 85º for the South Dike. The major axis of continuity aligns with an interpreted plunge of spodumene mineralization towards the southwest. The semi-major axis of continuity aligns perpendicular to the plunge of the major axis direction towards the northeast, and the minor axis of continuity aligns in the predominant downhole direction. Li_2O % grade interpolation was constrained to block volumes using 4 interpolation passes. Interpolation passes were implemented sequentially from pass 1 to pass 4, progress from being restrictive to more expansive in respect to ellipsoid ranges, composites available, and the number of composites required to assign block grades. Grade domain solid limits were set as hard boundaries for grade estimation.

Pit constrained mineral resources were defined within optimized pit shells developed using Hexagon Mine Plan 3D version 16, MineSight® Economic Planner version 4.00-13. Pit optimization parameters includes mining at CAN$ 5 per tonne, combined processing and general and administration (G&A) cost at CAN$ 80 per tonne processed. A metal price of CAN$ 8.86/lb for Li_2O based on a 6 % Li_2O spodumene concentrate price of CAN$ 1,270 per tonne and a Li_2O recovery of 85 % was used. Pit constrained mineral resources are reported at a cut-off grade of 0.48 % Li_2O within the optimized pit shell. The cut-off grade reflects the marginal cut-off grade used in pit optimization to define reasonable prospects for eventual economic extraction by open pit mining methods. The optimized pit shell includes average pit slope angles of 45º and a 14.7:1 strip ratio (waste to mineralized material). Underground constrained mineral resources are reported at a cut-off grade of 0.98 % Li_2O %. The cut-off grade reflects total operating costs, mining, processing and G&A, of CAD$ 150 per tonne processed to define reasonable prospects for eventual economic extraction by conventional underground methods such as longhole stoping and includes a mining recovery of 85 % and a Li_2O recovery of 85 %.

Measured, Indicated, and Inferred mineral resources are based on interpolation pass, number of contributing drill holes, and average interpolation distance for blocks that meet the specified cut-off grade and demonstrate reasonable spatial continuity with other mineral resource blocks. Measured category blocks are defined as all blocks with an interpolated grade above the cut-off Li_2O % grade from the first or second interpolation passes that show an average interpolation distance of 18 m or less from 3 or more contributing drill holes. Indicated category blocks are defined as all blocks with an interpolated above cut-off Li_2O % grade from the first, second or third interpolation pass and an average interpolation distance of 35 m or less from 3 or more contributing drill holes. All other blocks with an interpolated Li_2O % grade are assigned to the Inferred category. Orphan blocks and discontinuous zones of mineral resource categorization were refined through application of categorization solid models.

13.11.2Data Validation

The MRE is based on validated results of 71 diamond drill holes (6,666 m), including 4 drill holes (423 m) completed in 1998 by NSDNRR, 29 drill holes (1,363 m) completed between 2002 and 2003 by Champlain, 27 drill holes (2,641 m) completed in 2010 by Champlain, and 11 drill holes (1,635 m) completed by Champlain between 2019 and 2020. Differences in the total number of drill holes and associated meterage in the drill hole database and actual program outcomes reflects the omission of drill holes that were not validated or not located in the resource area. Analytical data for the two trenches competed during the 2002 - 2003 period by Champlain were omitted based on availability and validation status.

Drill hole coordinates reflect UTM NAD83 Zone 20 coordination. Champlain staff provided Mercator with Project data, including drill hole logs and associated collar coordinates organized in Microsoft Word, Microsoft Excel, and PDF format. Mercator also accessed publicly available data through various sources as detailed in Report Section 12.3. Mercator reviewed and compiled relevant data to develop a Microsoft Access drill hole database to support the current MRE program. A total of 523 core samples and 26 specific gravity determinations, completed during the QP's quarter core check sample program, have also been compiled for the deposit.

Validation checks on overlapping intervals, inconsistent drill hole identifiers, improper lithological assignment, unreasonable assay value assignment, and missing interval data were performed using Surpac software. Mercator staff carried out a 100 % validation check of database analytical entries against original laboratory records and no substantive issues were identified. Several minor entry-based errors were identified and these were addressed to create agreement between laboratory reporting and corresponding database entries.

13.11.3Data Domains and Solid Modelling

13.11.3.1Surface of Bedrock

Digital terrain models (DTM) for the Project area were acquired from the NSDNRRR. The primary DTM is a Lidar 1.5 m high resolution surface developed in 2019 which clearly defines surface features associated with the Champlain trenching completed in 2002 – 2003 and the private quarry operation to the southwest of the deposit. (Figure 14.1). This DTM is applied as the topographic constraint for current mineral resource modelling. A secondary DTM having 20 m resolution that pre-dates Champlain's trenching and local quarry operations was also acquired and used to validate drill collar elevations for holes drilled prior to excavation of the trenches and quarry (Figure 14.2).

Figure 13.1: Isometric view to the northwest of the Deposit area topographic surface DTM (100 m grid spacing)

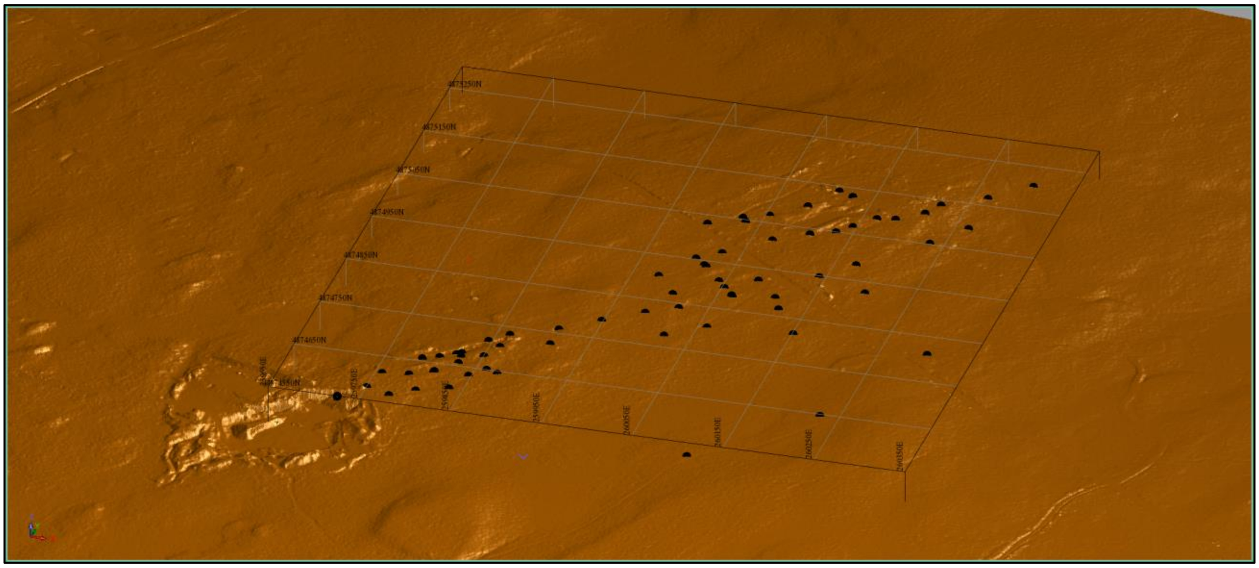
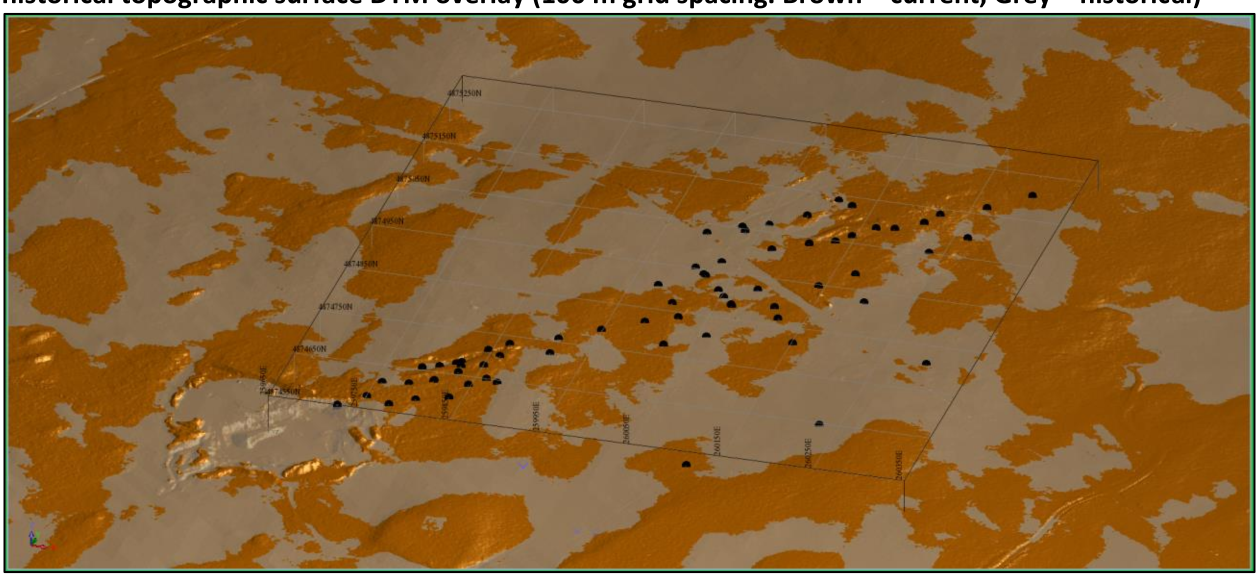


Figure 13.2: Isometric view to the northwest of the Deposit area topographic surface DTM and historical topographic surface DTM overlay (100 m grid spacing. Brown = current, Grey = historical)



13.11.3.2 Domain Modeling

The Brazil Lake Deposit is comprised of two lithium-bearing pegmatite dikes. Dominant pegmatite mineral phases are sodium and potassium feldspar, quartz and minor amounts of mica plus accessory minerals. Lithium mineralization is associated with the silicate mineral spodumene and can texturally vary from megacrystic (cm to m-scale) to coarse grained (< 1cm). The nature of spodumene mineralization can result in a local "nugget effect" spatial distribution style. As a result, the discrete vein geometry of the pegmatites reflected in geological domain solid modelling was focused on lithological parameters instead of minimum grade and width controls.

Drill hole intervals litho-coded as pegmatite were selected as pegmatite intercepts. Minor adjustments were made locally to hanging wall and footwall contacts to bring into agreement the extents of sampling and logged pegmatite lithology. Deposit interpretations provided by Champlain and supported by the QP provided definition of the two main, parallel pegmatites that are separated along strike by a gap approximately 100 m in length. A third discrete pegmatite body having an average thickness of less than 1 m occurs between the North and South dikes but was omitted from solid modelling for MRE purposes based on absence of spodumene in any of the drill hole intercepts that define the body. Pegmatite intercepts were developed using Leapfrog software into implicit vein solid models constrained to 50 m along strike and 50 m along dip or half the distance to an adjacent, constraining drill hole. Solid models were also constrained by either the topographic DTM or interpreted top of bedrock surfaces where appropriate. Surface resolution (size of triangles used to create the surface) for the solid models was selected as "adaptive" in Leapfrog and ranges between 4 m and 5 m. Solid model snapping to the footwall and hanging wall contact points was carried out by default.

The North Dike is comprised of two related pegmatite solid models that define tabular bodies trending along an azimuth of 050^{o} and dipping approximately 60^{o} to the southeast. The main North Dike solid model extends along strike for 700 m, along dip for up to 225 m, and averages 10 m to 15 m in true thickness in the central part of the dike and 0.5 m to 2 m at the north and south limits (Figure 14.3). The secondary North Dike solid model is located structurally below the central footwall area of the main solid and defines a discrete pegmatite extending 75 along strike, 85 m in the dip direction, and averaging 3 m in true thickness (Figure 14.4). The South Dike is comprised of one pegmatite solid model that defines a tabular body trending along an azimuth of 050^{o} and dipping approximately 85^{o} to the southeast. The South Dike solid model extends along strike for 350 m, 120 m in the dip direction, and averages 8 m to 10 m in true thickness in the central part of the dike and a 0.5 m to 2 m at the north and south limits (Figure 14.5). The spatial relationships between the two main dikes and their associated solid models are apparent in Figure 14.6.

Figure 13.3: Isometric view to the northwest of the main North Dike solid model (25 m grid spacing)

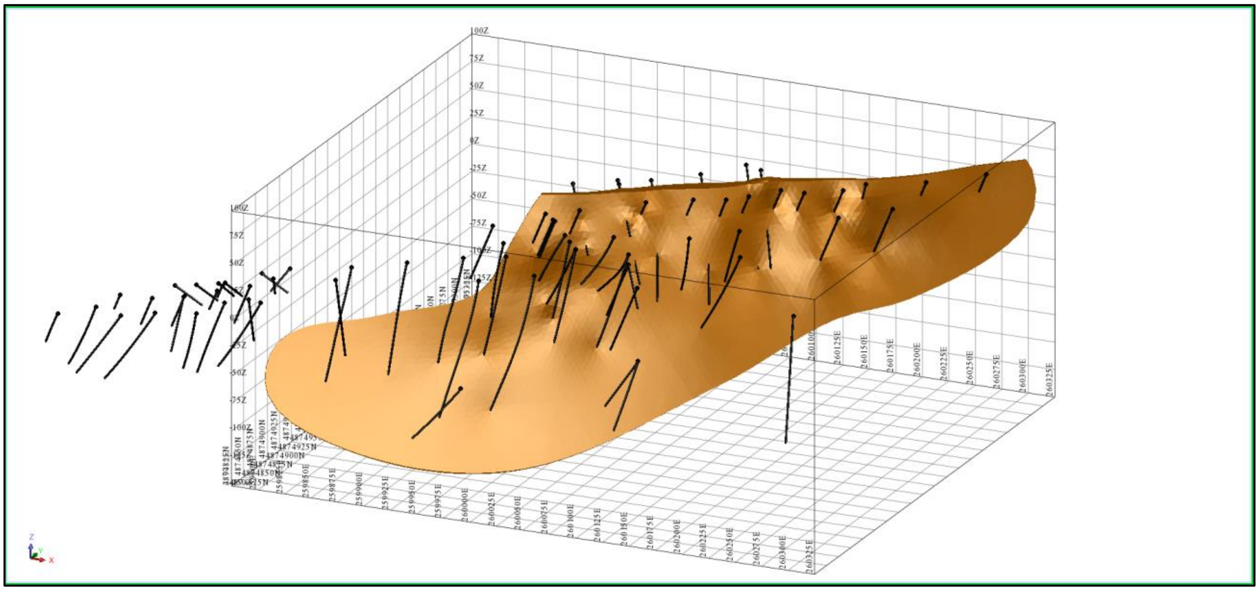


Figure 13.4: Isometric view to the southeast of the main North Dike and secondary North Dike solid models (25 m grid spacing; Brown = main North solid model, Blue = secondary North solid model)

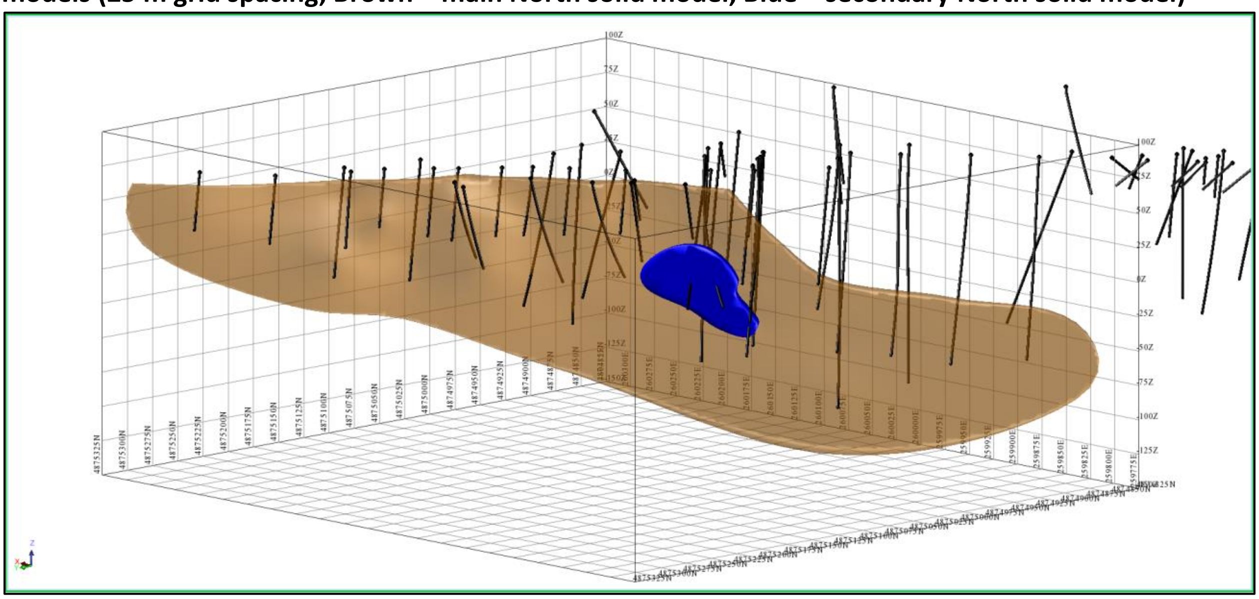


Figure 13.5: Isometric view to the northwest of the South Dike solid model (25 m grid spacing)

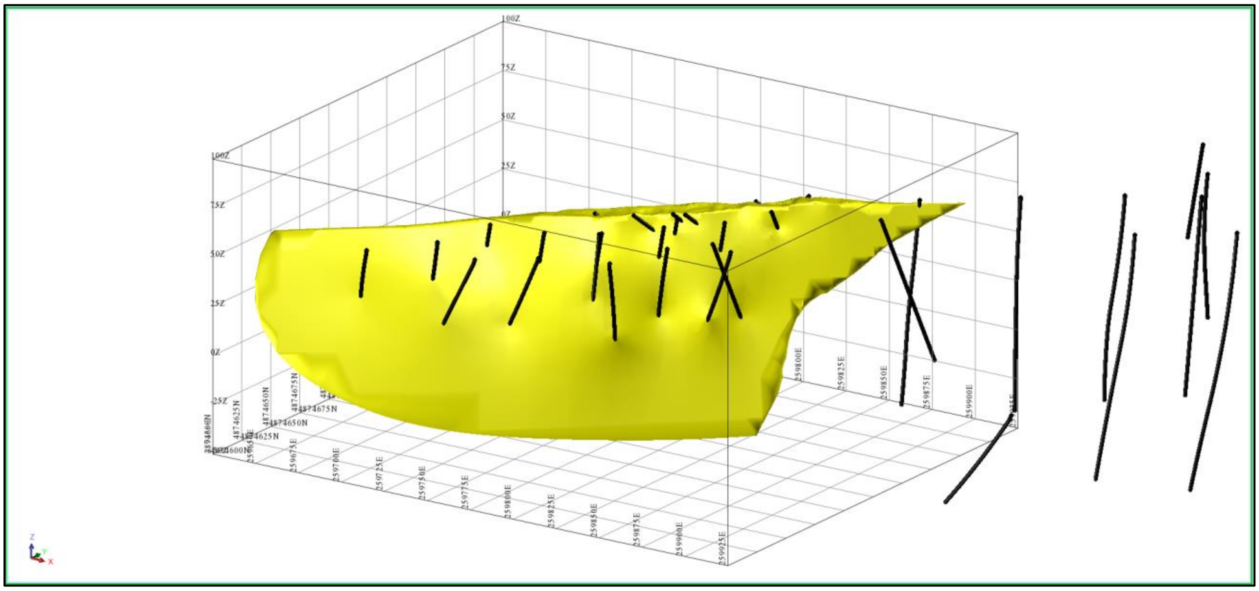
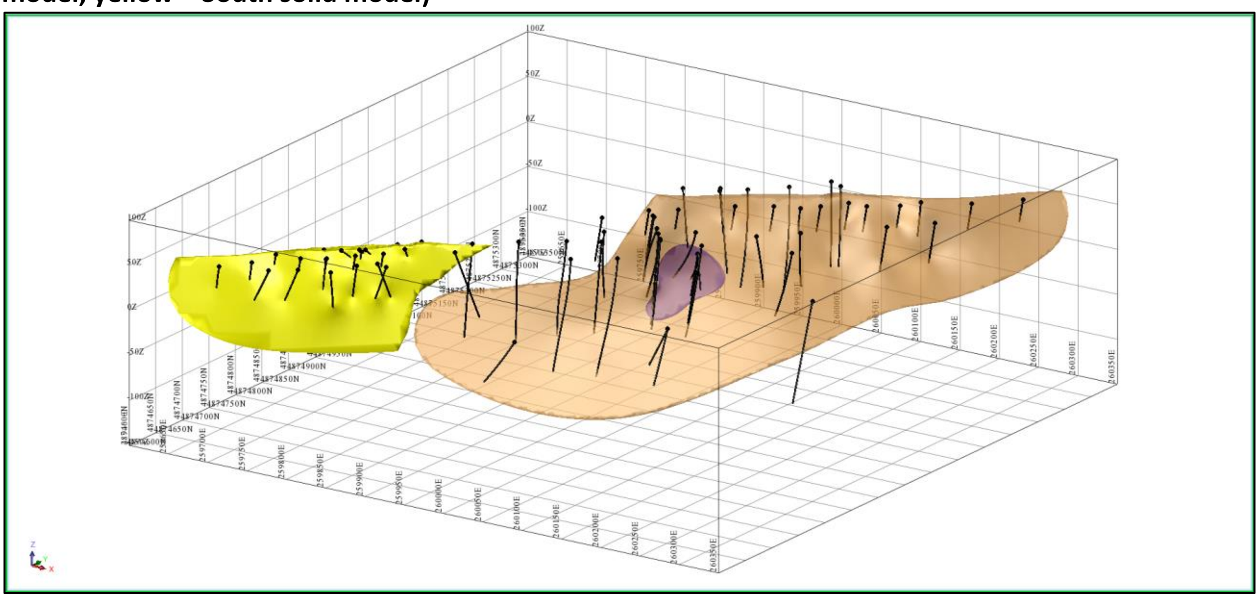


Figure 13.6: Isometric view to the northwest of the main North Dike, secondary North Dike, and South Dike solid models (25 m grid spacing; Brown = main North solid model, Blue = secondary North solid model, yellow = South solid model)



13.11.4Assay Sample Assessment and Downhole Composites

The predominant Li mineral for the Brazil Lake Deposit is spodumene ($LiAl(SiO_3)_2$). Analytical results for Li and other elements of interest, including Be, Nb, Rb, Sn, and Ta, were typically reported in ppm and oxide forms were calcualted using the conversion factors presented in Table 14.2.

Table 13.5: Element to Oxide Conversion Factors

Converting from	Converting to	Multiply by
Li ppm	Li_2O %	2.153 x 10^{-4}
Ta ppm	Ta_2O_5 %	1.221 x 10-^{4}
Nb ppm	Nb_2O_5 %	1.431 x 10^{-4}
Be ppm	BeO %	2.775 x 10^{-4}
Rb ppm	Rb_2O %	1.094 x 10^{-4}
Sn ppm	SnO_2 %	1.270 x 10^{-4}

The drill core analytical data set used in the MRE contains 523 sample records, including 484 sample records occurring within the peripheral solid models. Relevant sample lengths range between 0.2 m and 3.35 m and have an average length of 1.1 m. Over 50 % of samples measure 1.0 m or less in the length and over 90 % of samples measure 1.5 m or less in length. The mean sample length of 1 m was selected as the prefered downhole complosite length based on its general agreement with discrete and narrow pegmatite intervals.

A total of 7 pegmatite intervals defining the solid models were unsampled. Unsampled intervals were assessed on the basis of the character of mineralization present, specifically the abundance of logged spodumene, and proximity to other drill hole results. Unsampled drill holes with documented spodumene and close proximity to other drill holes with similar results were accepted as “no data present” and Li grade values were not diluted to zero. In this scenario the pegmatite interval informs the hanging wall and footwall contacts of the solid model but is omitted from downhole compositing. Li values for unsampled drill holes without visible spodumene present were diluted to zero and were accepted for downhole compositing. Of the 7 unsampled intervals, 4 were omitted from compositing and 3 were diluted to zero Li values. There are 7 core samples that returned the upper detection limit value of 10,000 ppm for Li in the 2020 program. Drill hole database values for these samples were set at 1.0% Li for the purpose of calculating significant intercepts and preparing the MRE. The QP notes that an over limits re-analysis protocol should have been applied by Champlain in the case of these samples and at the effective date of this Report pulp splits for these samples were being analyzed at Actlabs. The corresponding 1 % Li values included in the drilling database can be considered minimum values .

Downhole assay composites over 1 m intervals were developed for Li_2O % using the Surpac 'best fit" option set to a 1 m target value. Assay composites generated outside of a 25 % tolerance interval of the nominal length were either manually re-generated or merged with adjacent composites to meet the selection conditions. Compositing was constrained based on drillhole intersections with the respective solid models. Descriptive statistics were calculated for Li_2O % from the 1 m composite datasets within each deposit area and also for the global composite population and results are presented in Table 14.3 through Table 14.6. At total of 546 composites were generated.

Table 13.6: Main North Dike Domain Li_2O % and Other Elements Statistics for 1.0 m Composites

Parameter	Li_2O %	Be ppm	Nb ppm	Rb ppm	Sn ppm	Ta ppm
Mean Grade	1.04	151	68	783	214	51
Minimum Grade	0.00	0	0	0	0	0
Maximum Grade	4.98	1772	254	3457	18404	473
Variance	0.98	50308	2090	439027	1026768	2488
Standard Deviation	0.99	224.29	45.72	662.59	1013.30	49.89
Coefficient of variation	0.95	1.48	0.68	0.85	4.74	0.98
Number of samples	377	377	377	377	377	377

Table 13.7: Secondary North Dike Domain Li_2O % and Other Elements Statistics for 1.0 m Composites

Parameter	Li_2O %	Be ppm	Nb ppm	Rb ppm	Sn ppm	Ta ppm
Mean Grade	1.52	615	27	702	74	15
Minimum Grade	0.06	3	0	29	0	0
Maximum Grade	4.87	3870	106	2742	191	65
Variance	2.08	1255064	821	600961	3766	286
Standard Deviation	1.44	1120.30	28.65	775.22	61.37	16.92
Coefficient of variation	0.95	1.82	1.08	1.11	0.83	1.14
Number of samples	13	13	13	13	13	13

Table 13.8: South Dike Domain Li_2O % and Other Elements Statistics for 1.0 m Composites

Parameter	Li_2O %	Be ppm	Nb ppm	Rb ppm	Sn ppm	Ta ppm
Mean Grade	0.91	169	84	677	106	57
Minimum Grade	0.00	0	0	0	0	0
Maximum Grade	4.78	2230	1723	3408	592	577
Variance	1.28	66460	20147	501023	9265	3825
Standard Deviation	1.13	257.80	141.94	707.83	96.26	61.85
Coefficient of variation	1.25	1.52	1.69	1.05	0.91	1.09
Number of samples	156	156	156	156	156	156

Table 13.9: Brazil Lake Deposit Li_2O % and Other Elements Statistics for 1.0 m Composites

Parameter	Li_2O %	Be ppm	Nb ppm	Rb ppm	Sn ppm	Ta ppm
Mean Grade	1.01	167	71	751	179	52
Minimum Grade	0.00	0	0	0	0	0
Maximum Grade	4.98	3870	1723	3457	18404	577
Variance	1.10	88562	7323	462920	714322	2858
Standard Deviation	1.05	297.59	85.58	680.38	845.18	53.46
Coefficient of variation	1.04	1.78	1.20	0.91	4.71	1.03
Number of samples	546	546	546	546	546	546

No high-grade capping factors were applied to Li values of the 1 m assay downhole composite data set or to the contributing drill core sample analytical results. Through analysis of metal grade distribution by means of frequency histogram, cumulative frequency plots, probability plots, rank/percentile, and decile analysis, it was concluded that maximum Li grade values that occur in the dataset are consistent with the mineralization styles present and do not represent high grade outliers. Similar assessments were completed for Be, Nb, Rb, Sn, and Ta and it was concluded that outlier values present required high-grade capping. Results of high-grade capping to exclude outlier value influences are presented in Table 14.7. Be was capped at 1000 ppm, Nb was capped at 275 ppm, Rb was capped at 2900 ppm, Sn was capped at 1250 ppm and Ta was capped at 250 ppm.

Table 13.10: Brazil Lake Deposit Li_2O % and Other Elements Statistics for 1.0 m Capped Composites

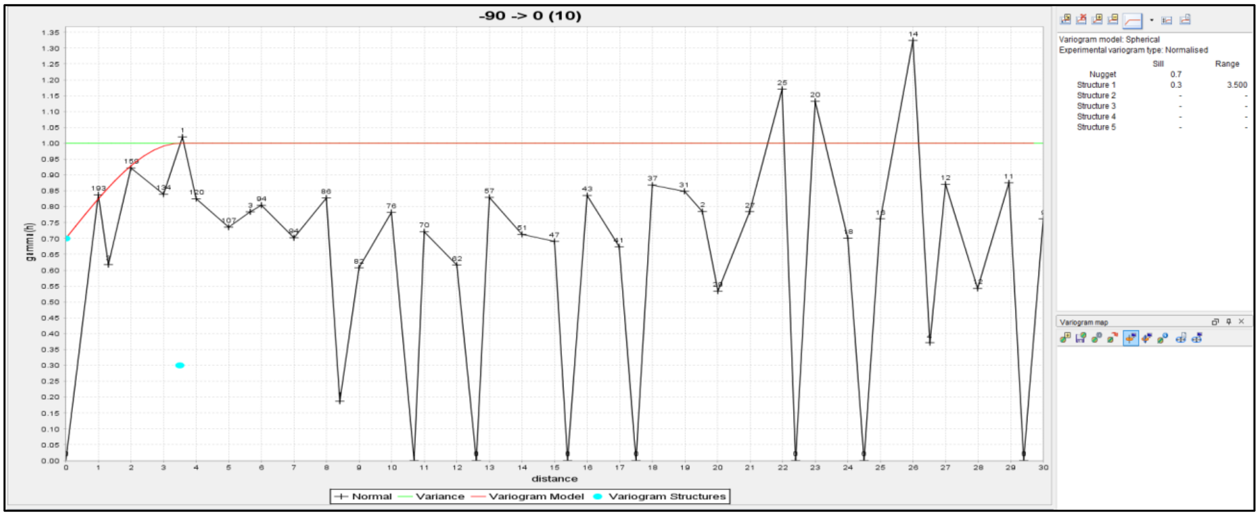
Parameter	Li_2O %	Be ppm	Nb ppm	Rb ppm	Sn ppm	Ta ppm
Mean Grade	1.01	152	68	746	132	51
Minimum Grade	0.00	0	0	0	0	0
Maximum Grade	4.98	1000	275	2900	1250	250
Variance	1.10	38576	2188	441534	41288	2142
Standard Deviation	1.05	196.41	46.78	664.48	203.20	46.28
Coefficient of variation	1.04	1.29	0.68	0.89	1.54	0.91
Number of samples	546	546	546	546	546	546

13.11.5Variography and Interpolation Ellipsoids

Manually derived models of geology and grade distribution provided definition of trends that parallel the main pegmatite orientation axes. To assess spatial aspects of grade distribution within the Brazil Lake Deposit, downhole and directional variograms were developed for Li percentage based on the 1.0 m downhole composite dataset constrained by the peripheral pegmatite solid models. Directional variogram assessment was completed on the North Dike dataset based on the large number of contained composite samples (377) compared to the South Dike (156).

Downhole variograms provided definition of a normalized nugget of 0.7 (Figure 14.17) for spherical model results with a normalized sill value of 0.30 and a range of 3.5 m. The downhole variogram provided guidance and definition of nugget values and minor axis ranges for the directional variogram assessment.

Figure 13.7: Downhole lithium variogram for the total Deposit



The best directional experimental variogram results for the deposit were developed within a plane striking 055⁰ and dipping southeast at -60⁰. This corresponds to the plane of the North Dike pegmatite. A spread angle of 20⁰ and a spread limit of 40⁰ were applied. The plane orientation assesses grade continuity along strike and in the down-dip direction of the dike itself. Application of spherical models provided definition of an anisotropy ellipsoid major axis along an azimuth of 219° with a plunge of -26° and a dip of 60° using Surpac's ZXY LRL axes of rotation convention. A spherical structure was modelled for the primary axis trend supporting a normalized sill of 0.30 and a range of 70m. Maximum ranges of continuity of 50 m for the secondary axis trend and 6 m for the third axis trend were defined. Figure 14.8 presents results of the primary variogram assessment, Figure 14.9 presents results of the secondary variogram assessment, and Figure 14.10 presents variogram results along all axes.

Figure 13.8: Lithium variogram model for the major axis of continuity for the North Dike

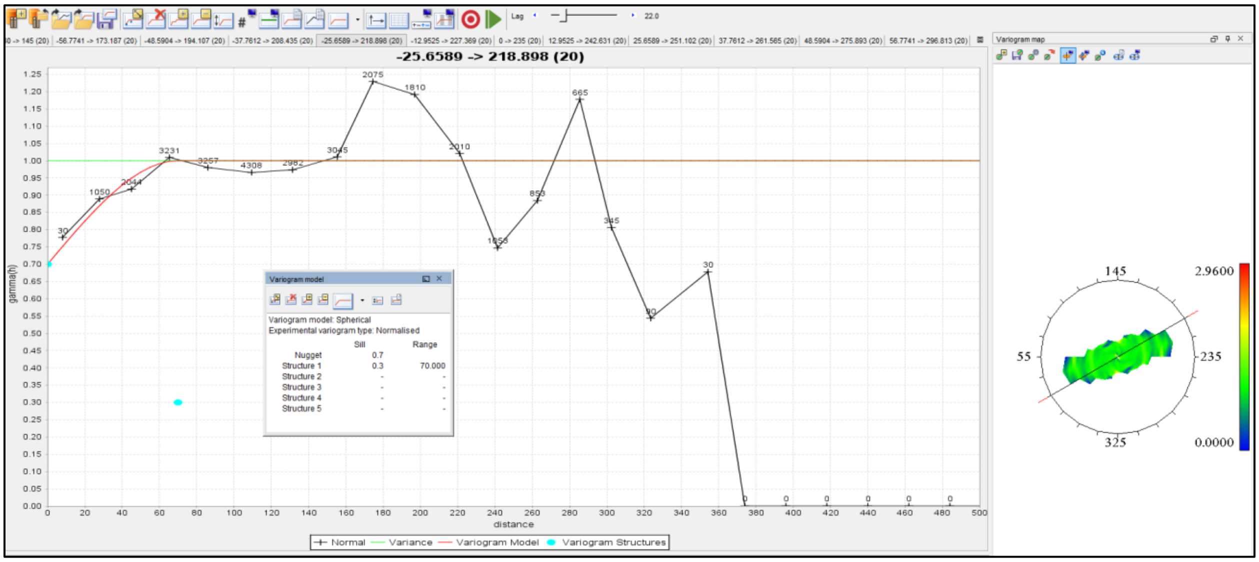


Figure 13.9: Lithium variogram model for the semi-major axis of continuity for the North Dike

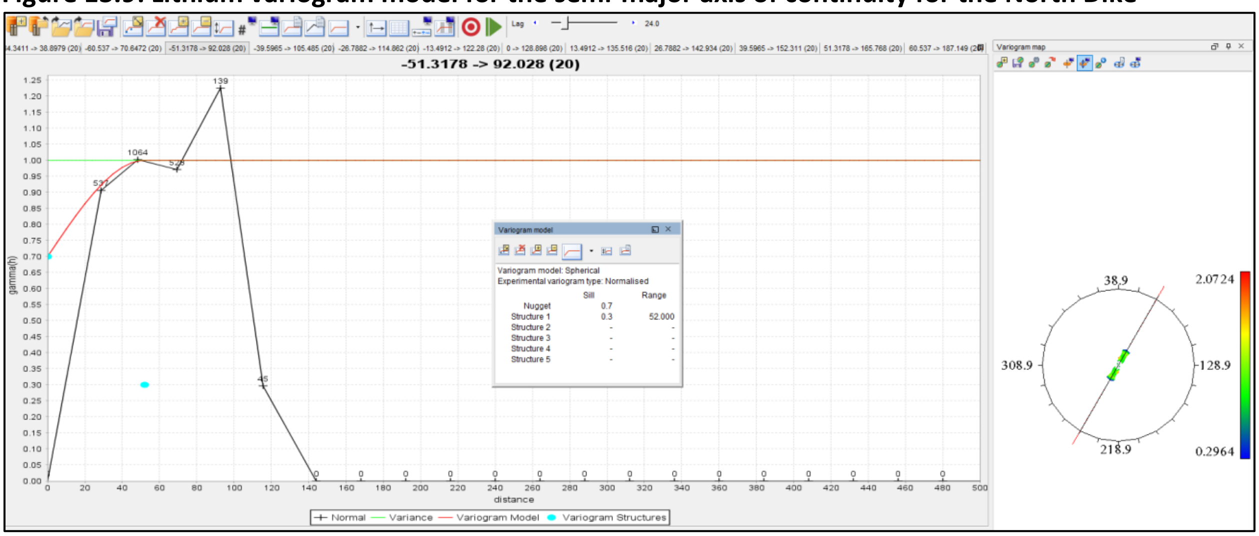
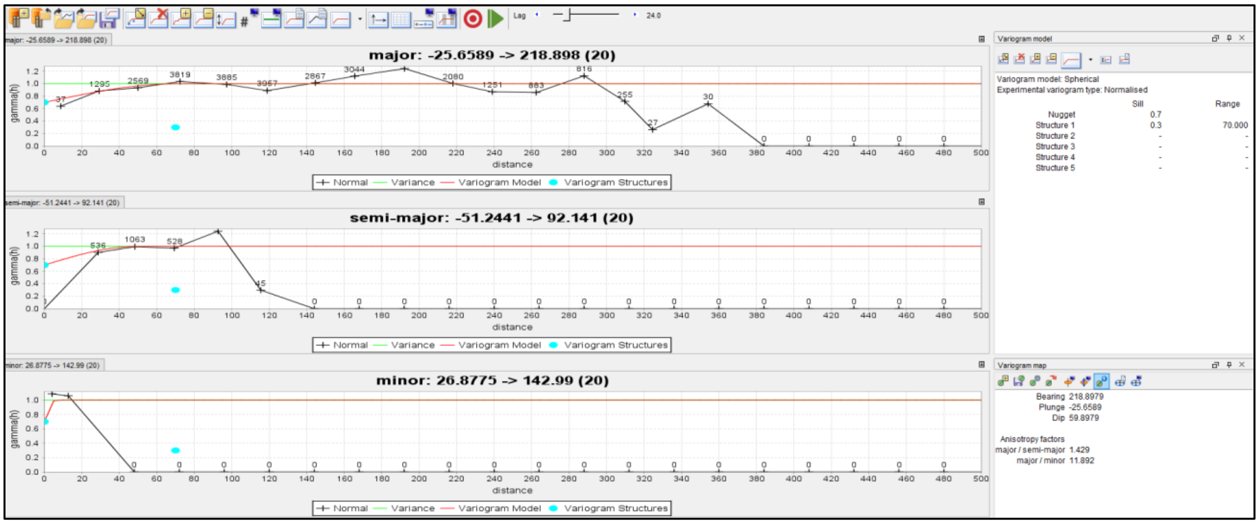


Figure 13.10: Lithium variogram model North Dike



Variogram results from the North Dike were assessed to be the most robust based on experimental variogram structure and agreement with deposit interpretations of geology and grade distribution. On this basis, results for the North Dike were also applied to the South Dike. This includes application of interpolation ellipsoid ranges and nugget and sill values. Variogram assessment demonstrated primary continuity along a 25^{o} plunge to the southwest and secondary continuity perpendicular to the primary direction plunging to the northeast. To account for variations in local deposit geometry and orientation these principals of continuity were applied to orientation ellipsoids optimized spatially to each domain (Table 14.8).

Table 13.11: Interpolation ellipse major axis orientations for each Deposit domain

Domain	Bearing	Plunge	Dip
North Dike Main	218.90	-25.65	59.90
North Dike Secondary	212.00	-38.22	52.00
South Dike	230.00	-25.65	85.00

Maximum ranges of 70 m and 50 m were derived for the major and semi-major axes, respectively, from the variogram assessment and a maximum range of 25 m was applied to the minor axis to facilitate inclusion of contributing composites during each interpolation pass.

Independent variogram assessments were not completed for any other elements of interest and results of the Li variogram assessment were applied to their respective grade distribution assessments.

13.11.6Setup of Three-Dimensional Block Model

The block model extents are presented below in Table 14.9 and were defined using UTM NAD83 (Zone 20) coordination and elevation relative to sea level. No rotation was applied to the block model. Standard block size for the model is 2 m by 2 m by 4 m (X, Y, Z) with no units of sub-blocking allowed.

Table 13.12: Summary of Deposit Block Model Parameters

Type	Y (Northing m)	X (Easting m)	Z (Elevation m)
Minimum Coordinates	4,875,500	260,500	102
Maximum Coordinates	4,874,500	259,500	-150
User Block Size	2	2	4
Minimum Block Size	2	2	4
Rotation	0	0	0

13.11.7Mineral Resource Estimation

Brazil Lake Deposit block model volumes were estimated from the project solid models and DTM using block model partial percentage calculation approach. Partial percentage block assignment was first completed for the DTM of topography and subsequently completed for each of the pegmatite lithology solid models. Blocks were assigned a deposit lithology code of air, country rock, and pegmatite based on their spatial relationship with the DTM of topography and pegmatite solid models. All eligible blocks intersecting the pegmatite domain solids were accepted for Li_2O % block grade interpolation and coded with the respective solid model identifier to correspond with the appropriate 1 m assay composite dataset and associated interpolation parameters. Block grades for Be (ppm), Rb (ppm), Nb (ppm), Sn (ppm), and Ta (ppm) were also interpolated.

Ordinary kriging (OK), inverse distance squared (ID^2), and inverse distance cubed (ID^3) grade interpolations methods were used to assign block Li_2O % grades within the Brazil Lake Deposit block model from the 1 m assay composite datasets. ID^2 interpolation was used exclusively to assign block grades for Be (ppm), Rb (ppm), Nb (ppm), Sn (ppm), and Ta (ppm). Interpolation ellipsoid orientation and range values used in the estimation reflect a combination of trends determined from the variography assessment and interpretations of geology and grade distribution for the deposit. Interpolation ellipsoid orientations were based of variogram assessment as detailed in Report Section 14.3.5.

A 4 pass interpolation approach was applied, implemented sequentially from pass 1 to pass 4, that progressed from being most restrictive (pass 1) to most inclusive (pass 4), with regard to ellipsoid ranges, available composites, and number composites required to assign block grades. Interpolation pass ranges reflect 60 %, 80 %, and 100 %, of the ranges defined from variogram assessment for the first pass, second pass, and third pass respectively. A discretionary fourth pass, supporting ranges of 125 % of the variogram assessment applied to both the major and semi-major axis, was applied in some areas to ensure interpolation of block grades to all accepted block volumes within the pegmatite solid models. Block discretization was set at 3 (Y) x 3 (X) x 3 (Z). Interpolation parameters for the Deposit are summarized in Table 14.10.

Table 13.13: Summary of Brazil Lake Project interpolation parameters

Interpolation Pass	Range			Contributing Composites		
	Major (m)	Semi-Major (m)	Minor (m)	Minimum	Maximum	Maximum Per Drill Hole
1	42	30	12	7	12	3
2	56	40	16	4	9	3
3	70	50	20	3	6	3
4	87.50	87.50	25	1	3	3

Grade domain boundaries were set as hard boundaries for grade estimation purposes and grade interpolation was restricted to the 1 m assay composites associated with the drill hole intercepts assigned to each deposit area solid.

ID^3 grade interpolation was accepted as the preferred interpolation methodology for Li_2O % based on block model validation results detailed below in Report Section 14.3.9

13.11.8Density

Density information used in the MRE is based on data collected for the 2021 ¼ core check sample program. Results from 26 separate density determinations by ALS (pycnometer method - ALS OA-GRA08b code) were used to calculate an average pegmatite specific gravity (SG) of 2.69. Based on the core and outcrop observations that the pegmatite deposits and their surrounding wall rock sequences are comprised of compact, massive, essentially non-porous rock materials, the average SG value was assumed to closely approximate an average bulk density value for the material. The 2.69 SG value was applied as a bulk density (g/cm^3) factor for the pegmatites. A bulk density factor of 2.70 g/cm^3 was also applied to the host meta-sedimentary and meta-volcanic lithologies.

13.11.9Model Validation

Block volume estimates for each mineral resource solid were compared with corresponding solid model volume reports generated in Surpac and results show good correlation, indicating consistency in volume capture and block volume reporting. Results of block modeling were reviewed in three dimensions and compared with deposit interpretations for geology and grade distribution. This review showed good correlation of block model grade trends relative to the separately modeled dike geometries combined with lithocode-based (spodumene presence) assessments of grade trends.

Swath plots in the easting, northing, and elevation directions comparing average assay composite grades and volume weighted block grades were prepared for the global deposit (Figures 14.11 to 14.13). These plots present results of interpolation models for Li_2O % that were run using OK, ID^2, and ID^3 methods.

Figure 13.11: Brazil Lake Deposit South-North swath plot of block and 1.0 m composite Li_2O % grades

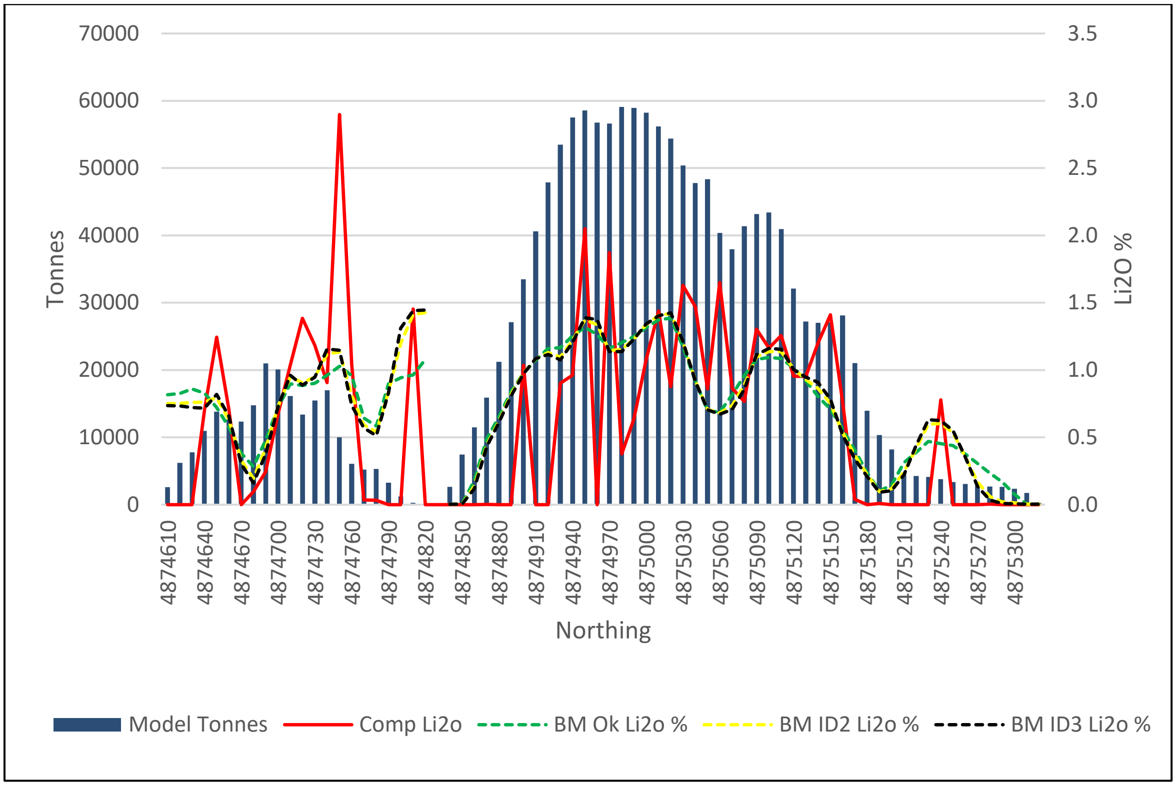


Figure 13.12: Brazil Lake Deposit West-East swath plot of block and 1.0 m composite Li_2O % grades

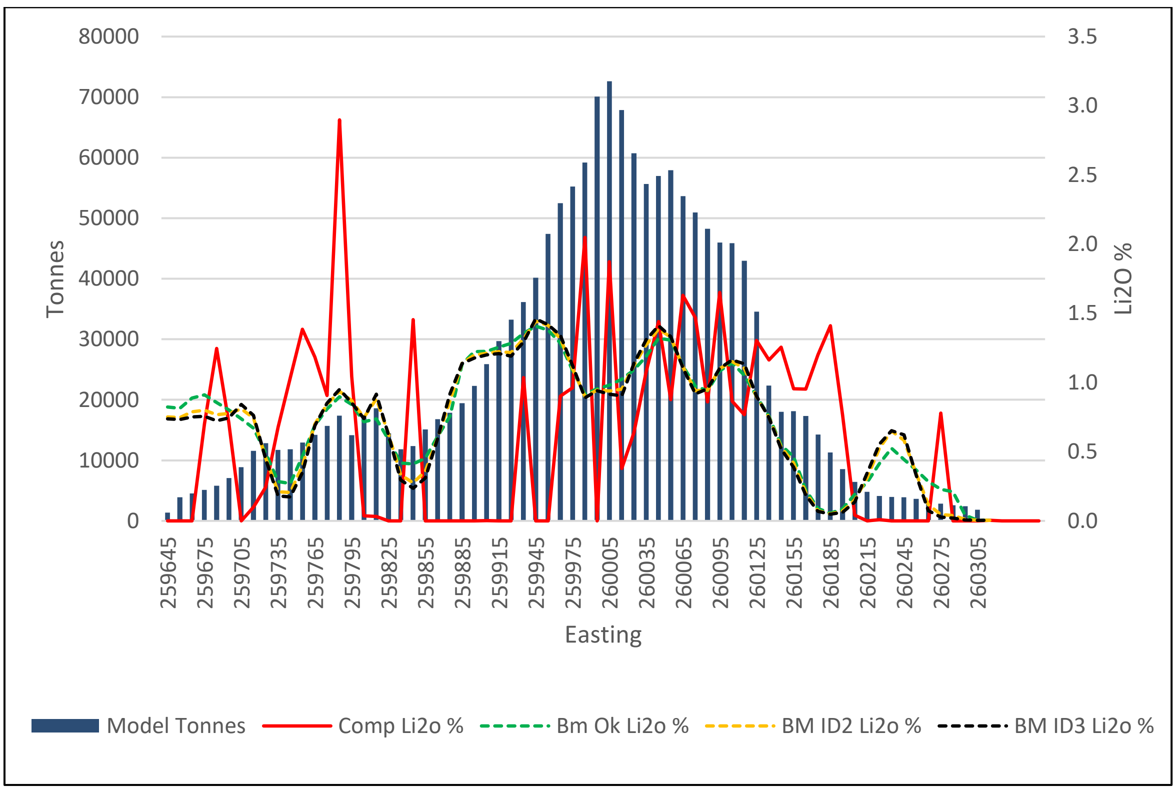
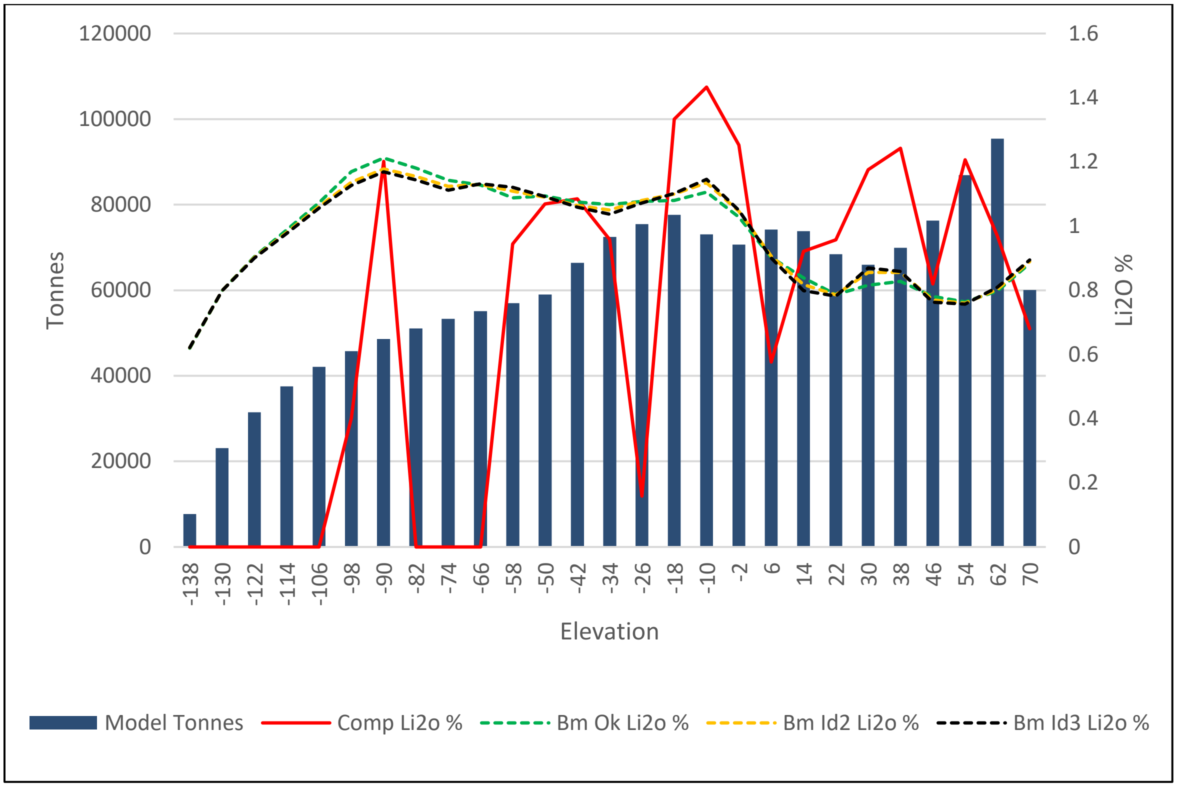


Figure 13.13: Brazil Lake Deposit Elevation swath plot of block and 1.0 m composite Li_2O % grades



The OK method shows a high degree of smoothing of the contributing 1 m assay composites. The ID^2 and ID^3 methods better respect the grade variance observed in 1 m assay composites, with the ID^3 method demonstrating the best overall agreement between block grades and the contributing 1 m assay composite population. Areas of higher variance between composite grades and block grades are typically related to areas of low composite density and/or low tonnage areas.

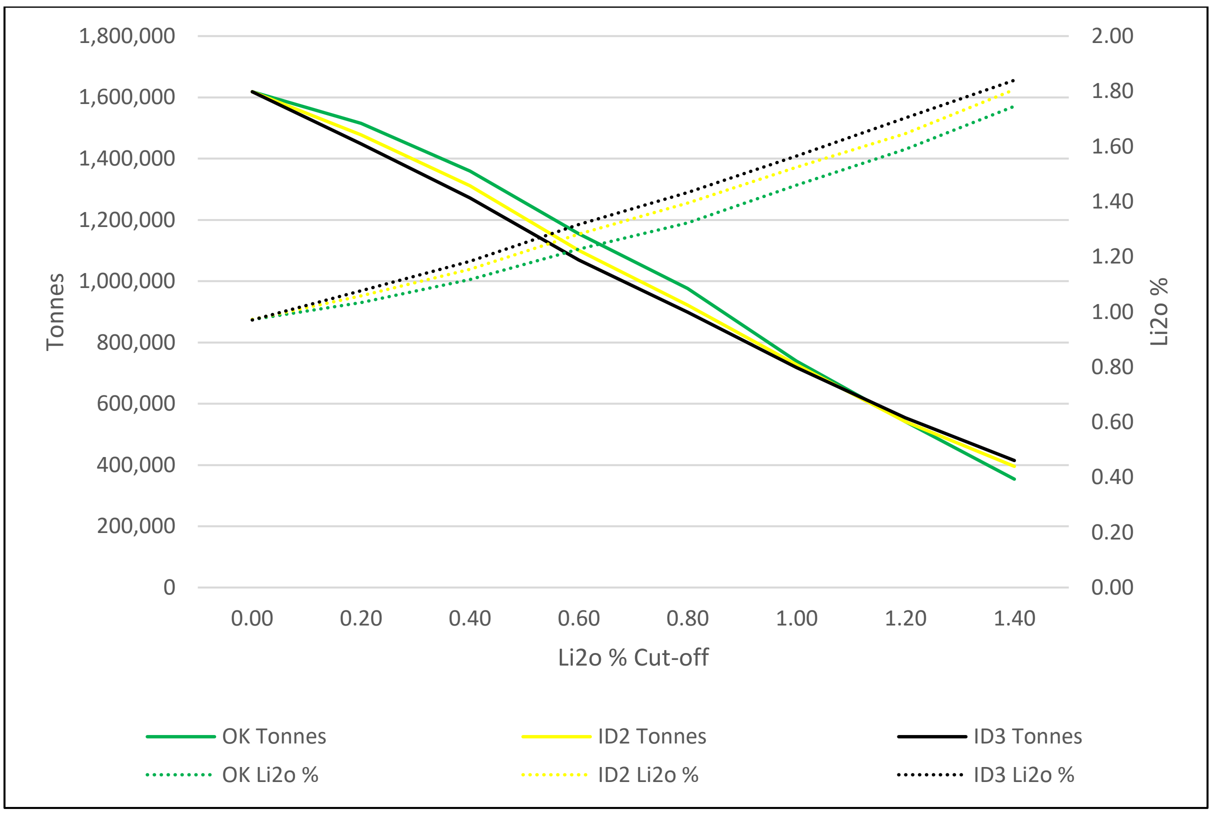
Descriptive statistics were calculated for the drill hole composite values used in block model grade interpolations and these were compared to values calculated for individual blocks (Table 14.11). Descriptive statistics were calculated on the raw values in each population and no volume weighting was applied. The mean weighted average drill hole composite grades for the Brazil Lake Deposit compare well with the respective block values for each interpolation methodology evaluated. The OK model results in the highest mean grade and the ID^3 model results in the highest maximum grade. The OK model shows the highest degree of smoothing in block grades compared to the contributing 1 m assay composite population.

Table 13.14: Brazil Lake Project – Li_2O % statistics for block values and supporting 1 m composites

Parameter	Composite Li_2O %	ID^3 Li_2O %	ID^2 Li_2O %	OK Li_2O %
Mean Grade	1.01	0.88	0.89	0.90
Minimum Grade	0.00	0.00	0.00	0.00
Maximum Grade	4.98	3.96	3.64	3.05
Variance	1.10	0.42	0.39	0.33
Standard Deviation	1.05	0.65	0.62	0.57
Coefficient of variation	1.04	0.74	0.70	0.64
Number of samples	546	67943	67943	67943

Deposit tonnage and average grade distributions were compared for the three interpolation methodologies and results are presented below in Figure 14.14. The OK methodology results in the largest tonnages and lowest average Li_2O % grades at deposit cut-offs equal to and below 1.0 % Li_2O. Conversely, the ID^3 methodology results in the lowest tonnages and highest average Li_2O % grades at deposit cut-offs equal to and below 1.0 % Li_2O %. The ID^3 methodology also defines the largest tonnages and average Li_2O % grades at deposit cut-offs above 1.0 % Li_2O % whereas the OK methodology defines the lowest tonnages and average Li_2O % grades at deposit cut-offs above to 1.0 % Li_2O. As expected, the ID^2 methodology results in tonnage and average Li_2O % grade distributions that plot between the OK and ID^3 models.

Figure 13.14: Brazil Lake Deposit tonnage/Li_2O % cut-off grade relationship



Block grade distribution was reviewed in section and in three dimensions for each of the three interpolation methodologies and, while all models were shown to have acceptable correlation with the grade distribution of the underlying drill hole data, results of the ID^3 model show best agreement with the underlying drill hole data. More specifically, the ID^3 model was shown to best respect local areas with high grade variances and demonstrate the least amount of smoothing in deposit Li_2O % grades. Block Li_2O % grade distribution in comparison with drill hole values is presented in Figure 14.15 through Figure 14.17. After consideration of results from the various interpolation methods with respect to defined model grades and tonnages and their relationships to supporting assay composites, the ID^3 methodology was selected by the QP as the preferred interpolation methodology. The associated resultant block model was applied for definition of mineral resources.

Figure 13.15: Oblique view to northwest of the Brazil Lake Deposit ID^3 block grade distribution and MRE pit shell (Li_2O % Block Values: Purple 0.01 - 0.2 %; Blue 0.20 – 0.40 %; Green 0.40 – 0.60 %; Yellow 0.60 – 0.80 %; Orange 0.80 – 1.0 %; Red 1.0 – 1.2 %; Pink > 1.2 %. 50 m Grid Spacing)

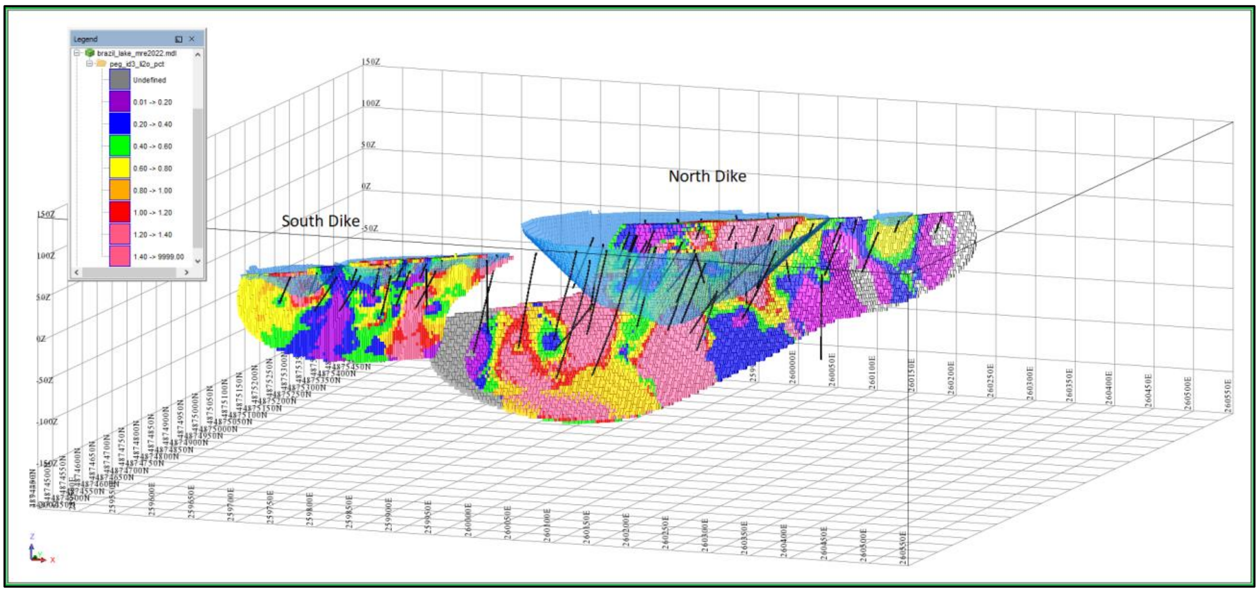


Figure 13.16: Representative cross-section looking Northeast of the Brazil Lake Deposit North Dike ID^3 block grade distribution MRE pit shell (Li_2O % Block Values: Purple 0.01 - 0.2 %; Blue 0.20 – 0.40 %; Green 0.40 – 0.60 %; Yellow 0.60 – 0.80 %; Orange 0.80 – 1.0 %; Red 1.0 – 1.2 %; Pink > 1.2 %. 50 m Grid Spacing)

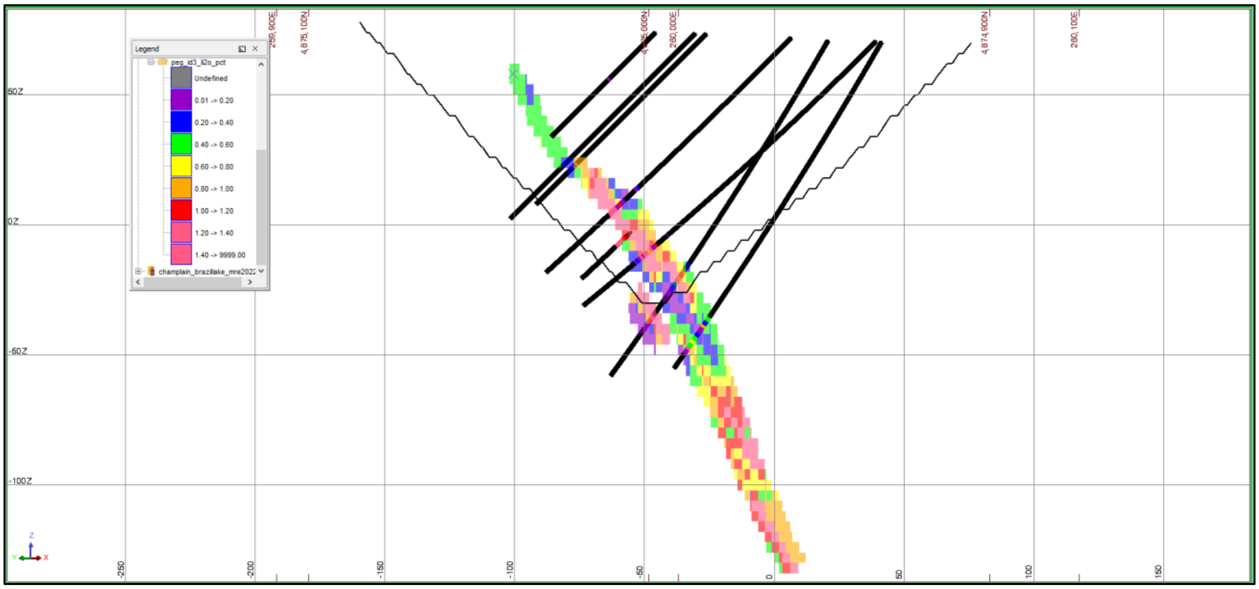
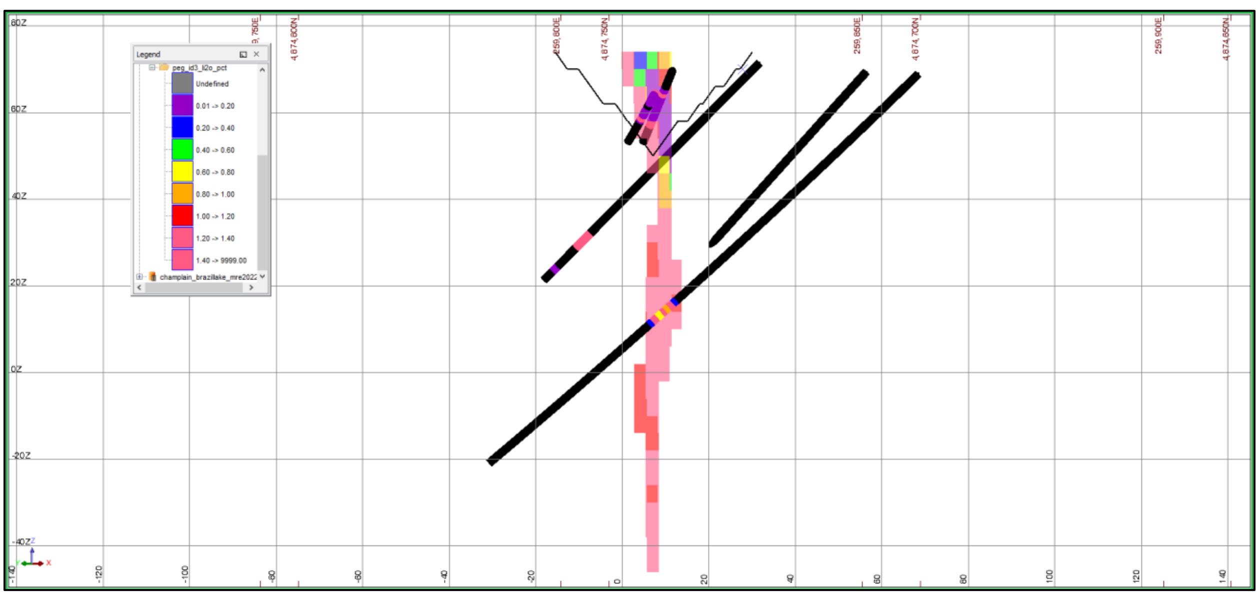


Figure 13.17: Representative cross-section looking Northeast of the Brazil Lake Deposit South Dike ID^3 block grade distribution MRE pit shell (Li_2O % Block Values: Purple 0.01 - 0.2 %; Blue 0.20 – 0.40 %; Green 0.40 – 0.60 %; Yellow 0.60 – 0.80 %; Orange 0.80 – 1.0 %; Red 1.0 – 1.2 %; Pink > 1.2 %. 50 m Grid Spacing)



13.11.10 Metal Pricing

Public record data for pricing of spodumene concentrate grading 6% Li_2O (SC6) was reviewed for Report purposes and augmented by public record Li pricing forecasting assessments. Sources of such information included 2018 through 2021 NI 43-101 disclosures for other pegmatite-based projects considered to have elements of mineralogical comparability to Brazil Lake. This reflects information that pertains to various projects in Canada, the US and Australia. The compiled SC6 prices range from about US$1,000/t of concentrate in recent time to a low of US$400 in earlier years. The spot price for SC6 (cif China) was in the US$2500-2700/t range at the effective date of this Technical Report and reflects the steady rise in pricing that has occurred over the last year. To be consistent with recent pricing levels used in economic analysis of advanced pegmatite projects focused on production of SC6 concentrate, a price of US$1000/t (Cdn$ 1,270/t) for SC6 concentrate was selected for use in the current mineral resource estimation program. Proprietary market forecast information was not available from Champlain at the effective date of this Report and Mercator did not independently obtain such non-public information.

13.11.11 Future Markets

The current MRE focused on the production of a spodumene concentrate of 6.0 % Li_2O to define reasonable prospects for eventual economic extraction. This is based on the current tonnage estimates for the Brazil Lake Deposit and lower estimated operating costs that apply to production of a spodumene concentrate as compared to high purity lithium products. A spodumene concentrate typically factors as a feedstock to firms that specialize in production of high purity forms of the metal that are required in the chemical, pharmaceutical, technical, and, with additional processing, battery lithium markets. Project risks associated with spodumene concentrate production as compared to production of high purity lithium products are reduced based on product marketability and lower associated operating costs.

The importance of high purity lithium application in the emerging battery metals market has increasingly driven industry efforts to define and develop opportunities for production of high-quality lithium products such as lithium carbonate (min 99.5 % Li_2CO_3 battery grade) and lithium hydroxide monohydrate (min 56.5 % $LiOH{\bullet}H_2O$ battery grade). On March 31st, 2022, Champlain engaged Sixth Wave Innovations to begin extraction testing and development of a preliminary flowsheet for lithium extraction, in addition to assessing deposit opportunities for commercially viable recovery of Ta, Rb, Sn, Be, and high purity silica products from lithium bearing pegmatite.

The degree to which lithium market share for a new producer can be obtained will factor prominently in any future economic analysis applied to the Brazil Lake Deposit. Completion of a detailed market study addressing this point will be necessary to define the specific scope of market opportunities that may actually be available. Definition of deposit tonnages and general costs will have to be comparable to Chinese and other global producers. Canadian Federal and Provincial Governments have recently recognized an importance to develop domestic critical resources which may help in the advancement of Canadian based lithium projects.

The QP is of the opinion that the current deposit size best positions the Brazil Lake Deposit for production of a 6.0 % Li_2O spodumene concentrate for potential future sale in the world market. As noted below in section 14.3.13 this approach underwrites the current assessment that the deposit has “reasonable prospects for eventual economic extraction” as referenced in the CIM Standards (2014). However, detailed future assessments of Project metallurgy, Project costs, and lithium market forecasting, along with deposit expansion through future exploration programs, may show that alternatives to the SC6 concentrate sale model exist, such as direct production and sale of high purity lithium products.

13.11.12 Mineral Resource Cut-off Grade and Pit Optimization

The “reasonable prospects for eventual economic extraction” requirement set out in the CIM Standards (2014) was addressed for the Brazil Lake Deposit by means of developing an optimized pit shell to constrain mineral resources amenable to open pit mining methods and also developing a reasonable cut-off grade to define mineral resources amenable to conventional underground mining methods such as long hole stoping.

The pit shell was based on the mineral deposit block model and developed by AGP Mining Consultants Inc. (AGP) through application of operating and recovery parameters deemed appropriate for the style of mineralization present. Hexagon Mine Plan 3D version 16, MineSight® Economic Planner version 4.00-13 was used to carry out the program. The QP and AGP had determined after initial review of the deposit model that good potential was present for future development using open pit mining methods as the primary approach to production.

To define mineralization within the block model that has reasonable prospects for eventual economic extraction by open pit mining, the QP applied mining and processing cost estimates, average lithium pricing and recovery estimates that were reviewed and accepted by AGP. The reader is cautioned that the results from the pit optimization are used solely for the purpose of addressing reasonable prospects for eventual economic extraction by an open pit and do not represent an attempt to estimate mineral reserves. The results are used as a guide to assist in the preparation of a mineral resource statement and to select an appropriate mineral resource reporting cut-off grade. Open pit conceptual pit optimization parameters are summarized in Table 14.12. Results of pit optimization are presented in Figure 14.18 and Figure 14.19.

Table 13.15: Conceptual Pit Optimization Parameters

Parameter	Units	Value
Mining Cost	Cdn$ /t	5
Processing Rate	Tonnes /day	500
Processing Recovery	%	85
Mining Recovery	%	100
Processing Plus General and Administrative (G&A)	Cdn$/t processed	80
Transportation	Cdn$/lb	$0.69
Metal Price	Cdn$/tonne (for 6 % Li_2O conc)	1,270
Metal Price	Cdn$/lb Li_2O	8.86
Exchange Rate	Cdn$ to US$	1.27:1.00
Pit Slope Angle	Degrees	45

Figure 13.18: Oblique view looking northwest of the Brazil Lake Deposit and the optimized pit shell (Li_2O % Block Values: Green 0.48 – 0.73 %; Yellow 0.73 – 0.98 %; Red 0.98 – 1.23 %; Pink > 1.23 %, 50 m grid spacing)

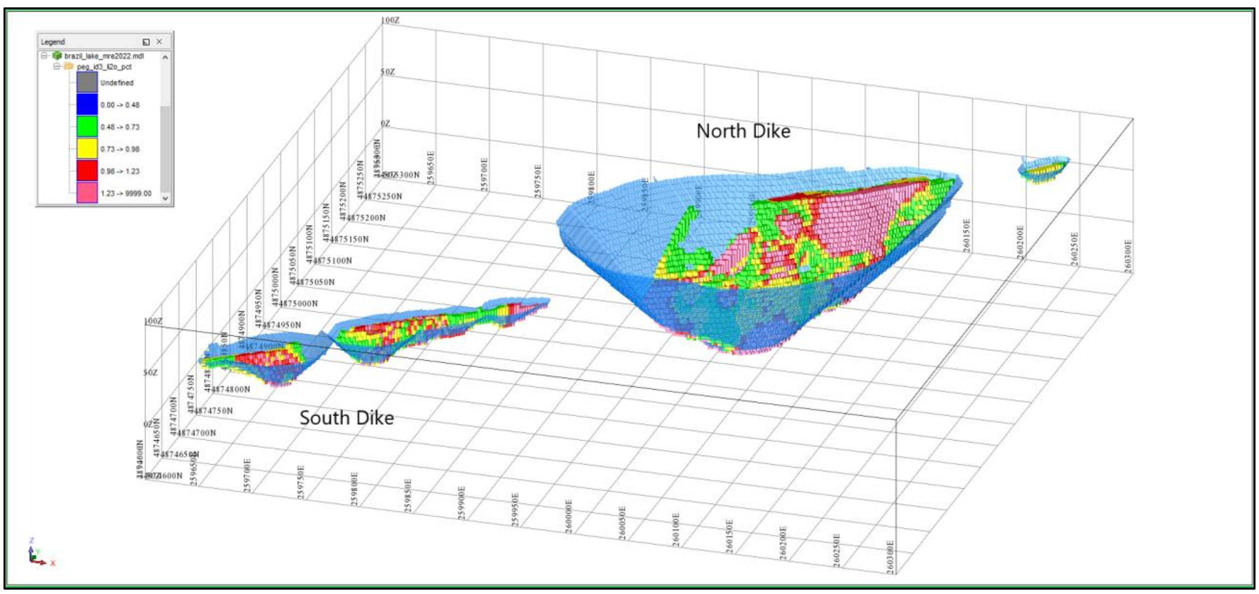
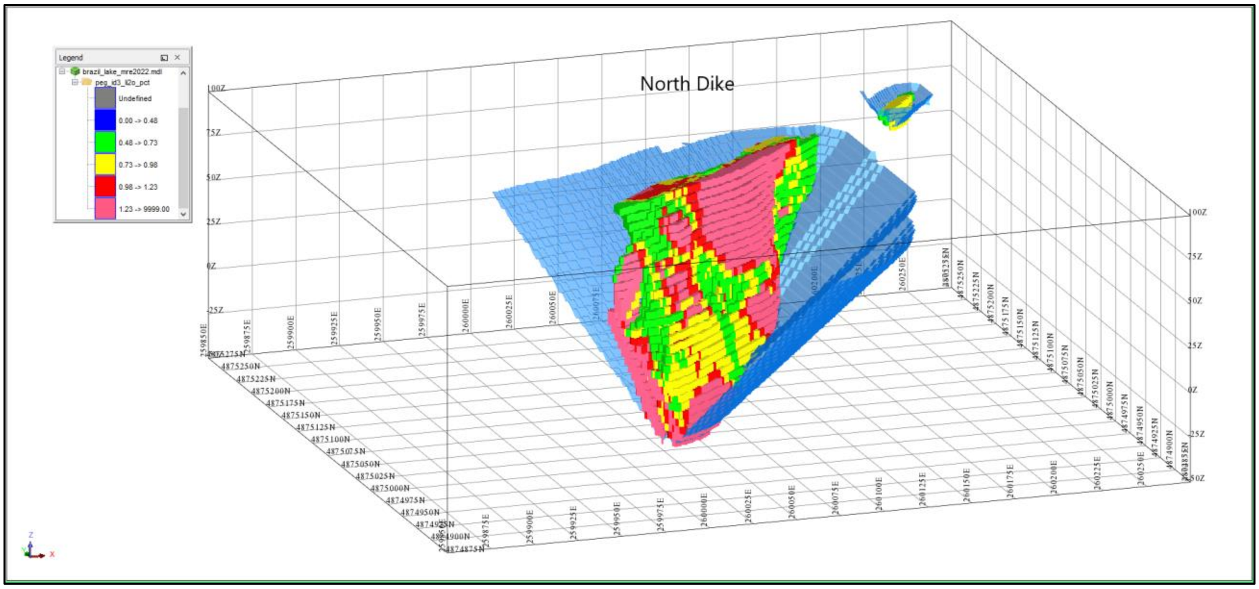


Figure 13.19: Oblique Sectional view looking northeast of the Brazil Lake Deposit and the optimized pit shell (Li_2O % Block Values: Green 0.48 – 0.73 %; Yellow 0.73 – 0.98 %; Red 0.98 – 1.23 %; Pink > 1.23 %, 25 m grid spacing)



Pit constrained mineral resources are reported at a cut-off grade of 0.48 % Li_2O within the optimized pit shell. The cut-off grade reflects the marginal cut-off grade, which represents processing and downstream costs but excludes mining costs, used in pit optimization to define reasonable prospects for eventual economic extraction by open pit mining methods. Underground constrained mineral resources are reported at a cut-off grade of 0.98 % Li_2O %. The cut-off grade reflects total operating costs of CAD$ 150 per tonne processed to define reasonable prospects for eventual economic extraction by conventional underground methods such as long hole stoping and includes a mining recovery of 85 % and a Li_2O recovery of 85 %.

No value for the deposit's Be, Rb, Nb, Sn, Ta, silica, and mica content was assigned for optimization purposes but potential for by-product production of specific products has been identified and requires further study through completion of additional metallurgical testing and market/pricing assessments.

13.11.13 Reasonable Prospects for Eventual Economic Extraction

The QP is of the opinion that the combined open pit and underground operating scenario, associated general cost assumptions, metal pricing and market assessment information presented in the above Report sections combine to meet the requirement of "reasonable prospects for eventual economic extraction" referenced in the CIM Standards (2014) as it applies to the current Brazil Lake Deposit MRE.

13.11.14 Resource Category Parameters Used in Current Mineral Resource Estimate

Definitions of mineral resources and associated mineral resource categories used in this Technical Report are those set out in the CIM Standards (2014) and referenced in NI 43-101. Measured, Indicated, and Inferred categories have been assigned to the Brazil Lake Deposit.

Several factors were considered in defining resource categories, including drill hole spacing, geological interpretations, number of informing assay composites and average distance of assay composites to block centroids. Specific definition parameters for each resource category applied in the current estimate are set out below.

<u>Measured Resource:</u> Measured mineral resources are defined as all blocks with interpolated Li_2O grades from the first or second interpolation passes, support from 3 or more contributing drill holes with an average distance from the block centroid to contributing assay composites of 18 m or less, and that meet the specified pit-constrained or underground cut-off grade.

<u>Indicated Resource:</u> Indicated mineral resources are defined as all blocks with interpolated Li_2O grades from the first, second, and third interpolation passes, support from 3 or more contributing drill holes with an average distance from the block centroid to contributing assay composites of 35 m or less, that were not previously assigned to the Measured category and meet the specified pit-constrained or underground cut-off grade.

<u>Inferred Resources:</u> Inferred mineral resources are defined as all blocks with interpolated Li2O grades from the first, second, third, and fourth interpolation passes that were not previously assigned to the Measured or Indicated category and meet the specified pit-constrained or underground cut-off grade.

Application of the selected mineral resource categorization parameters specified above defined distribution of Measured, Indicated and Inferred mineral resource estimate blocks within the block model. To minimize isolated and irregular Indicated and Inferred category assignment artifacts, the peripheral limits of blocks in close proximity to each other that share the same category designation and demonstrate reasonable continuity were wireframed and developed into discrete solid models. All blocks within these "category" solid models were re-classified to match that model's designation. This process resulted in more continuous zones of resource estimate categories and limited occurrences of orphaned blocks of one category as imbedded patches in other category domains.

13.11.15 Statement of Mineral Resource Estimate

Block grade, block density and block volume parameters for the Brazil Lake Deposit were estimated using methods described in preceding sections of this Technical Report. Subsequent application of resource category parameters set out above resulted in the Brazil Lake Deposit MRE presented in Table 14.13. Pit constrained mineral resources are reported at a cut-off grade of 0.48 % Li_2O within the optimized pit shell. The cut-off grade reflects the marginal cut-off grade, which represent the processing and downstream costs but excludes mining costs, used in pit optimization to define reasonable prospects for eventual economic extraction by open pit mining methods. Underground mineral resources are reported at a cut-off grade of 0.98 % Li_2O %. The cut-off grade reflects total operating costs of CAD$ 150 per tonne processed to define reasonable prospects for eventual economic extraction by conventional underground mining methods such as long hole stoping and includes a mining recovery of 85 % and a Li_2O recovery of 85 %. Results are reported in accordance with CIM Standards (2014). A cut-off grade sensitivity tabulation is presented in Table 14.13 for comparative purposes but does not constitute part of the mineral resource statement. Mineral resource grade and category distribution are presented in Figure 14.20 through Figure 14.29.

Table 13.16: Brazil Lake Project Mineral Resource Estimate – Effective Date: April 8th, 2022*

Type	Cut-off (Li2O %)	Category	Rounded Tonnes	Li_2O %
Pit constrained	0.48	Measured	100,000	1.26
		Indicated	350,000	1.19
		M & IN	450,000	1.21
		Inferred	62,000	1.56
Underground Constrained	0.98	Measured	2,000	1.20
		Indicated	101,000	1.71
		M & IN	103,000	1.70
		Inferred	319,000	1.47
Combined	0.48 / 0.98	Measured	102,000	1.26
		Indicated	451,000	1.31
		M & IN	553,000	1.30
		Inferred	381,000	1.48

Mineral Resource Notes:

1. Mineral resources were prepared in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (MRMR) (2014) and CIM MRMR Best Practice Guidelines (2019).
2. Open Pit mineral resources are defined within an optimized pit shell with average pit slope angles of 45^o and a 14.7:1 strip ratio (waste : mineralized material).
3. Pit optimization parameters include: metal pricing at CAN$ 8.86/lb for Li_2O based on a spodumene concentrate price of CAN$ 1,270/t for 6% Li_2O concentrate, mining cost at CAN$ 5/t, exchange rate of 1.27 CAN$/1.00 USD$, processing plus general and administration cost at CAN$ 80/t processed, and a Li_2O recovery of 85 %.
4. Open Pit mineral resources are reported at a cut-off grade of 0.48 Li_2O % within the optimized pit shell. The cut-off grade reflects the marginal cut-off grade used in pit optimization to define reasonable prospects for eventual economic extraction by open pit methods.
5. Underground constrained mineral resources are reported at a cut-off grade of 0.98 % Li_2O. The cut-off grade reflects total operating costs of CAN$ 150/t to define reasonable prospects for eventual economic extraction by conventional underground mining methods and includes a mining recovery of 85 % and a Li_2O % recovery of 85 %.
6. Li_2O % deposit grade was estimated using Inverse Distance Cubed methods based on 1 m downhole assay composites. No grade capping was applied. Model block size is 2 m (x) by 2 m (y) by 4 m (z).
7. An average pegmatite bulk density factor of 2.69 t/m^3 was applied.
8. Mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues.
9. Mineral resources are not mineral reserves and do not have demonstrated economic viability.
10. Mineral resource tonnages are rounded to the nearest 1,000.

Figure 13.20: Plan view of Brazil Lake Project Li_2O % blocks above that meet the MRE pit constrained and underground constrained cut-off grades (Li_2O % Grade: Green 0.48 – 0.73 %; Yellow 0.73 – 0.98 %; Red 0.98 – 1.23 %; Pink > 1.23 %, 25 m grid spacing, optimized pit shell in blue)

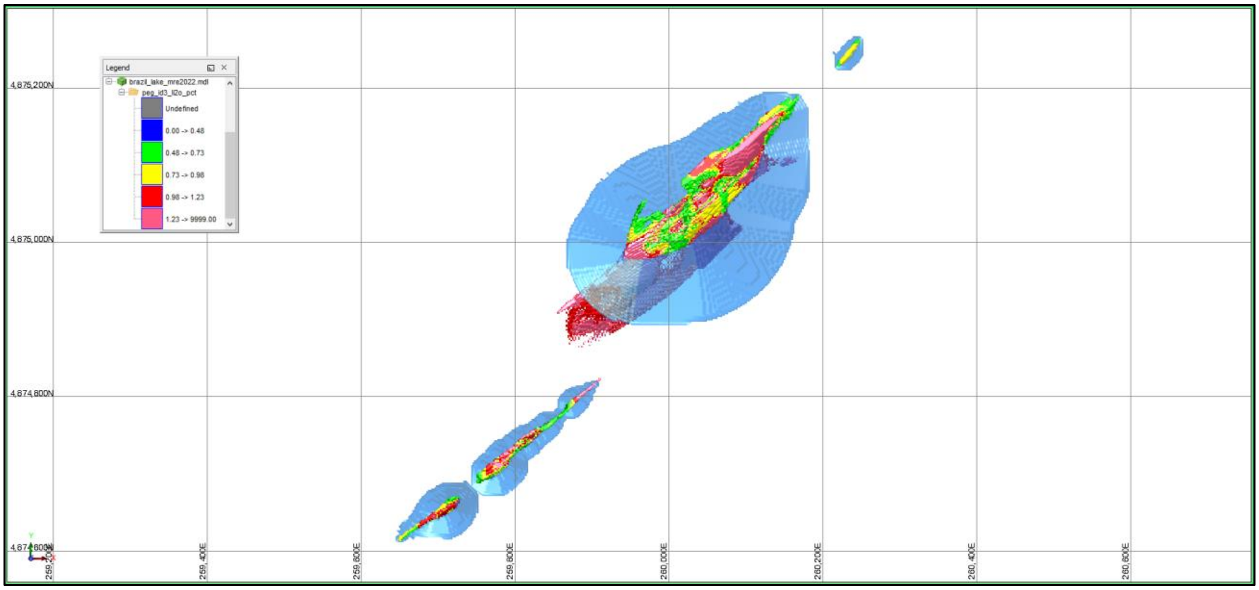


Figure 13.21: Oblique view to the northeast of the Brazil Lake Project Li_2O % blocks above that meet the MRE pit constrained and underground constrained cut-off grades (Li_2O % Grade: Green 0.48 – 0.73 %; Yellow 0.73 – 0.98 %; Red 0.98 – 1.23 %; Pink > 1.23 %, 25 m grid spacing, optimized pit shell in blue)

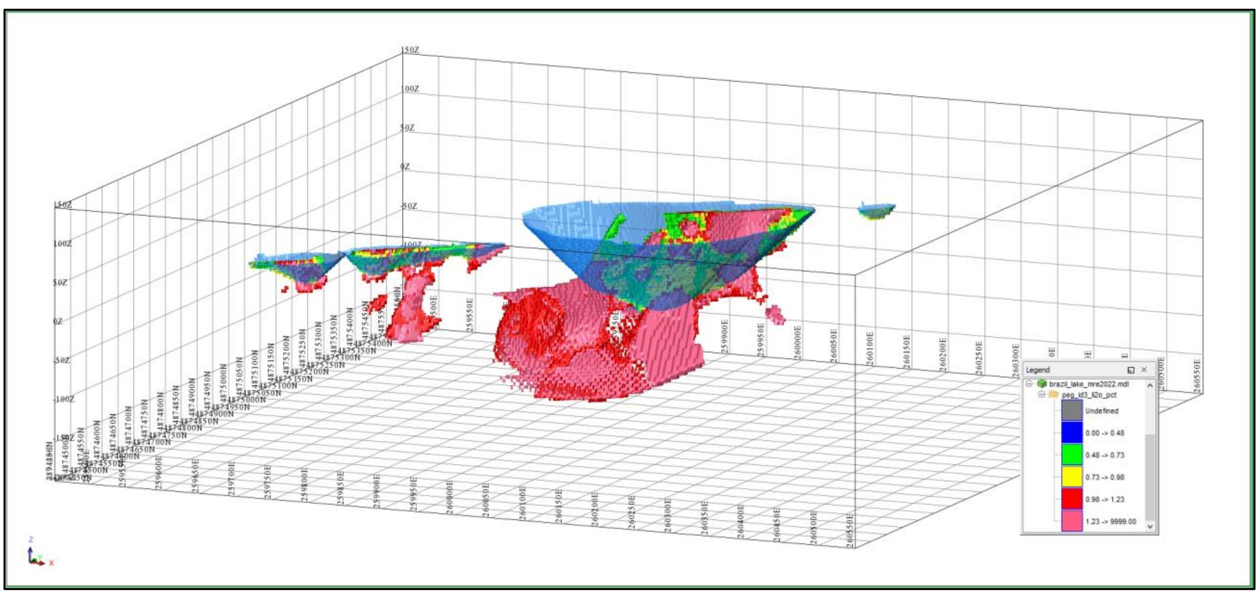


Figure 13.22: Oblique view to the southeast of Brazil Lake Project Li_2O % blocks above that meet the MRE pit constrained and underground constrained cut-off grades (Li_2O % Grade: Green 0.48 – 0.73 %; Yellow 0.73 – 0.98 %; Red 0.98 – 1.23 %; Pink > 1.23 %, 25 m grid spacing, optimized pit shell in blue)

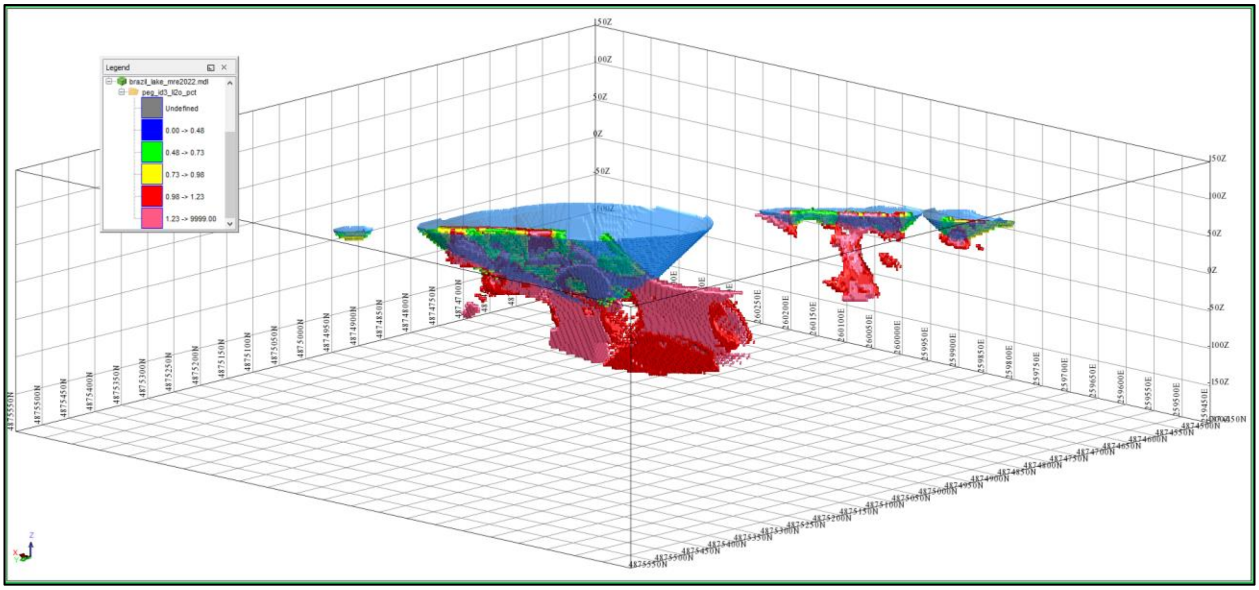


Figure 13.23: Representative cross-section looking northeast of Brazil Lake Project North Dike Li_2O % blocks above that meet the MRE pit constrained and underground constrained cut-off grades (Li_2O % Grade: Green 0.48 – 0.73 %; Yellow 0.73 – 0.98 %; Red 0.98 – 1.23 %; Pink > 1.23 %, 25 m grid spacing, optimized pit shell in blue)

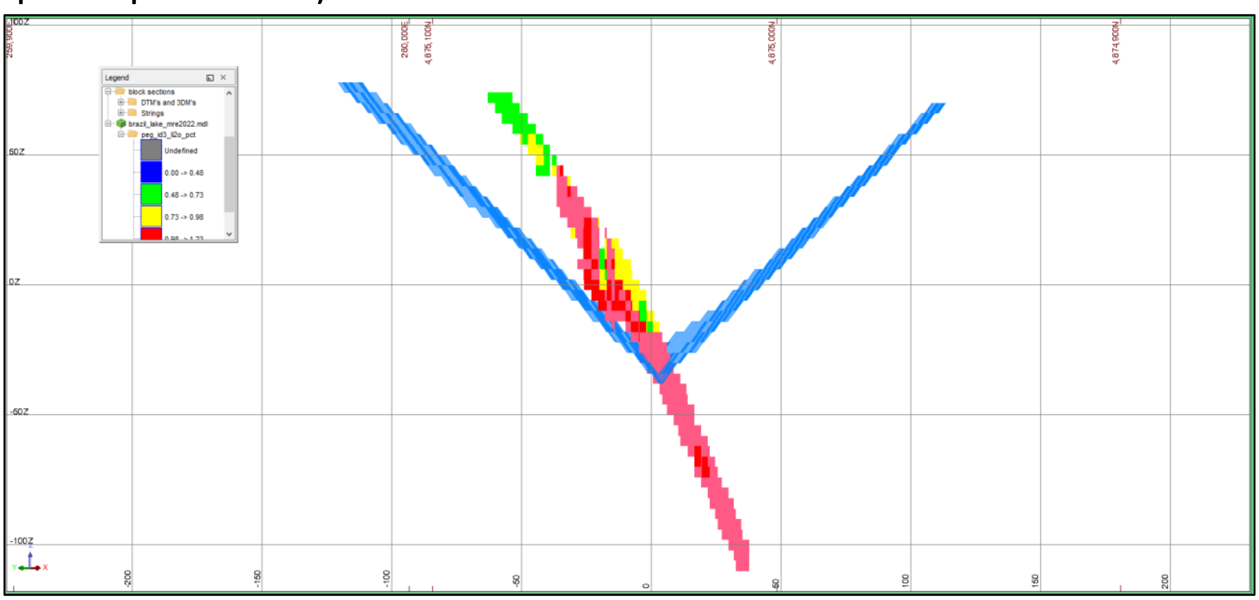


Figure 13.24: Representative cross-section looking northeast of Brazil Lake Project South Dike Li_2O % blocks above that meet the MRE pit constrained and underground constrained cut-off grades (Li_2O % Grade: Green 0.48 – 0.73 %; Yellow 0.73 – 0.98 %; Red 0.98 – 1.23 %; Pink > 1.23 %, 25 m grid spacing, optimized pit shell in blue)

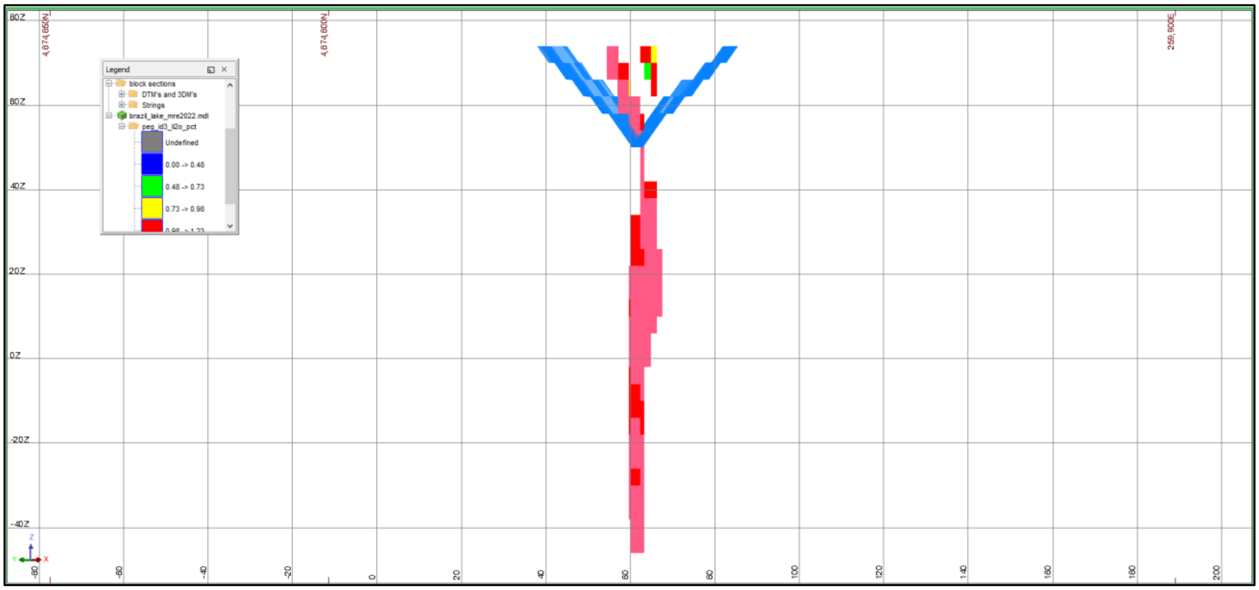


Figure 13.25: Plan view of Brazil Lake Project mineral resource categorization with optimized pit shell in light blue (Category: Blue - Inferred, Yellow – Indicated, Red – Measured)

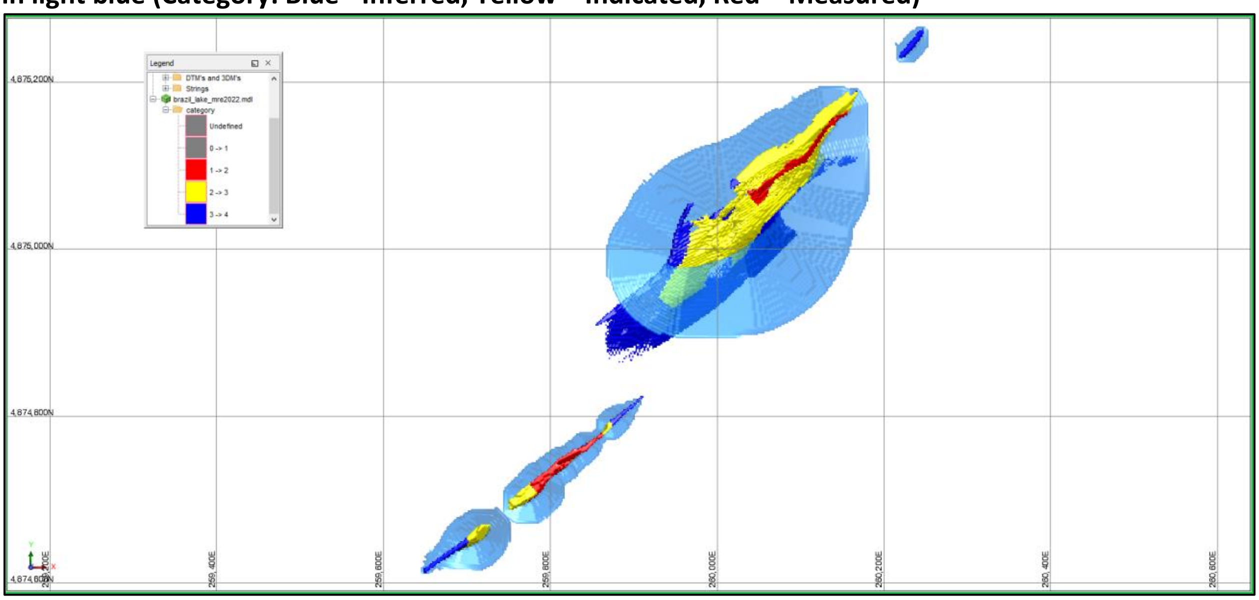


Figure 13.26: Oblique view to the northwest of Brazil Lake Project mineral resource categorization with optimized pit shell in light blue (Category: Blue - Inferred, Yellow – Indicated, Red – Measured)

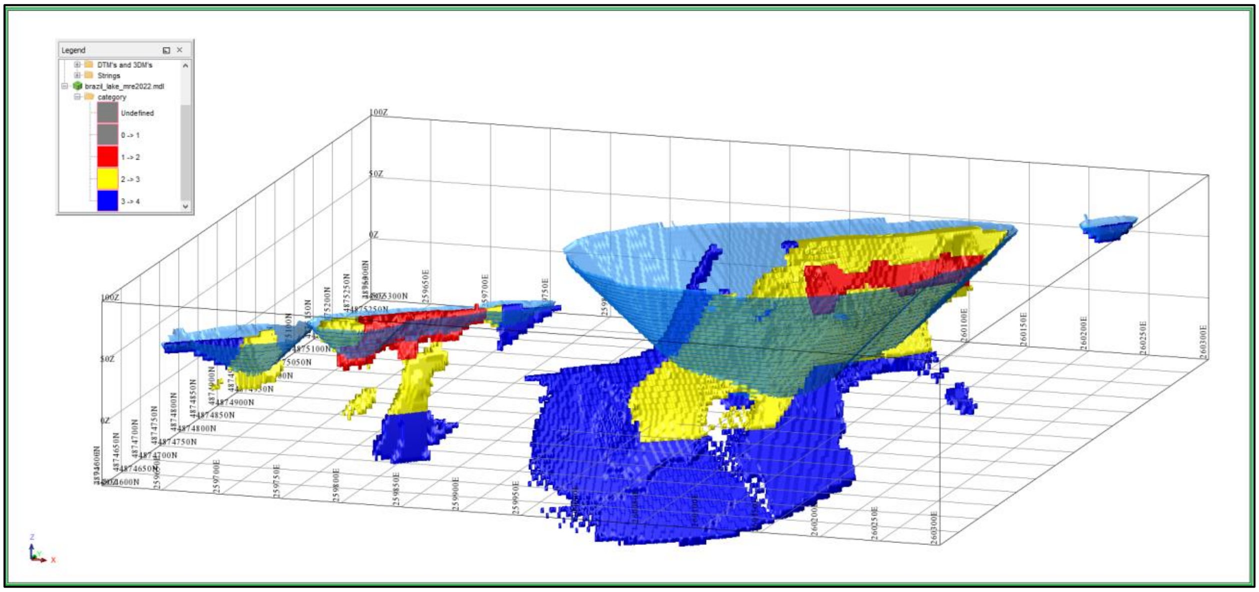


Figure 13.27: Oblique view to the southeast of Brazil Lake Project mineral resource categorization with optimized pit shell in light blue (Category: Blue - Inferred, Yellow – Indicated, Red – Measured)

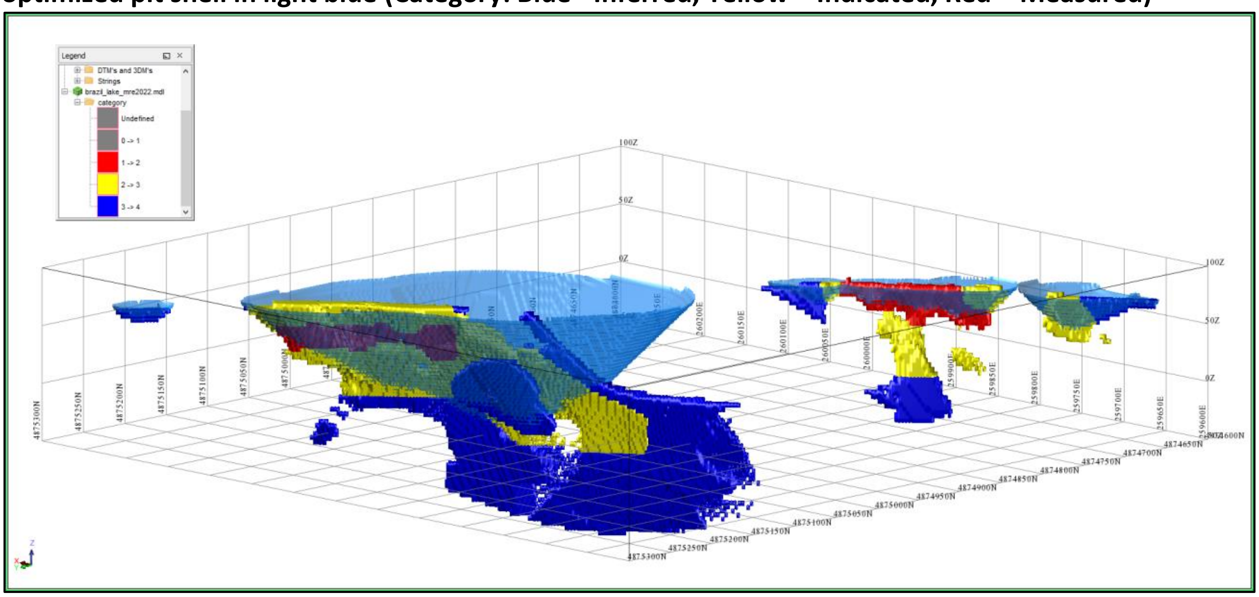


Figure 13.28: Representative cross-section looking northeast of Brazil Lake Project North Dike mineral resource categorization with optimized pit shell in light blue (Category: Blue - Inferred, Yellow – Indicated, Red – Measured)

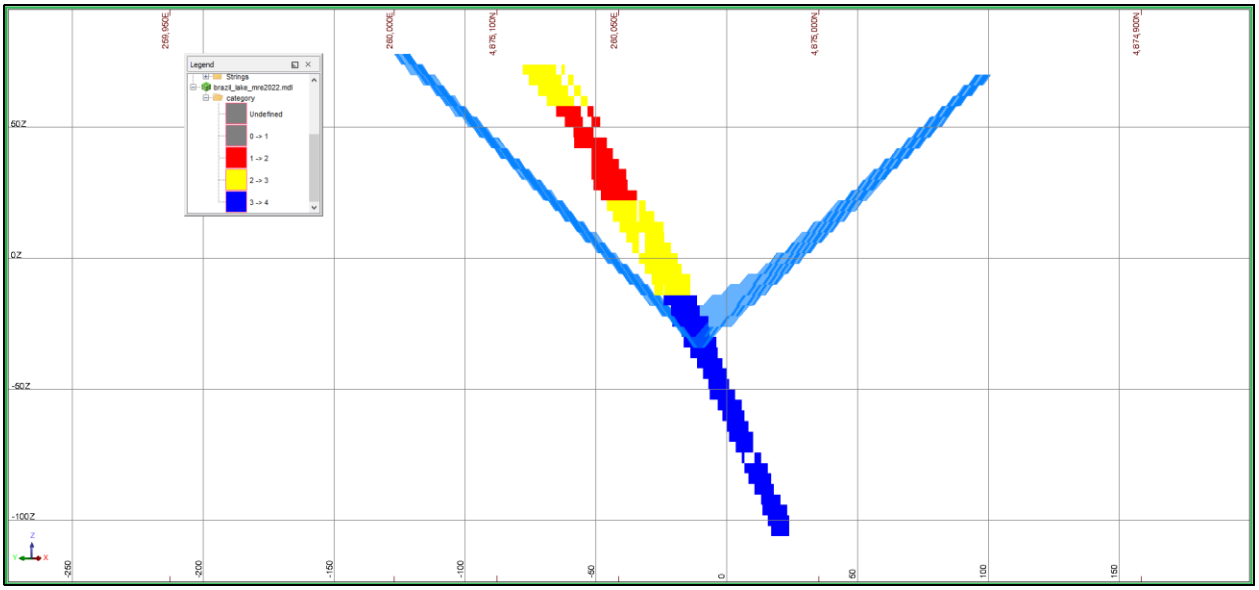
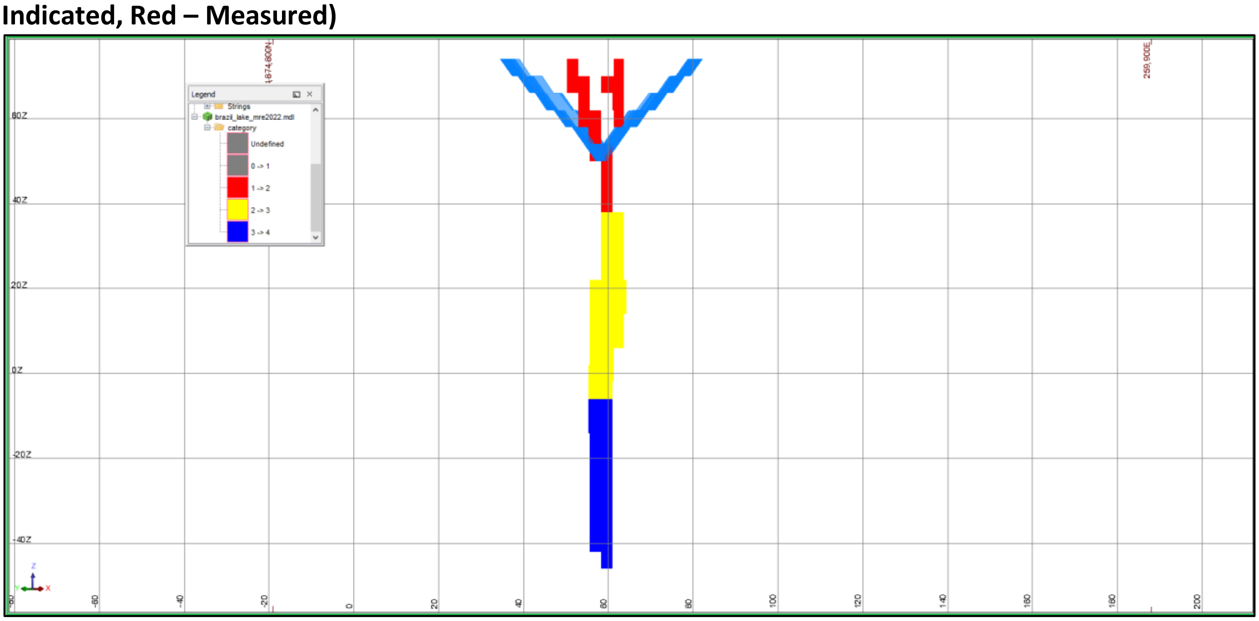


Figure 13.29: Representative cross-section looking northeast of Brazil Lake Project South Dike mineral resource categorization with optimized pit shell in light blue (Category: Blue - Inferred, Yellow – Indicated, Red – Measured)



13.11.16 Comparison with other Lithium Markets

Future markets for the Project and the associated lithium products are discussed in Report Section 14.3.11. Values of lithium carbonate percent (Li_2CO_3 %) and lithium hydroxide percent (LiOH %) for mineral resources are presented in Table 14.14 for the purpose of comparison with other lithium products and markets. Values of Li_2CO_3 % and LiOH % were derived from values of Li_2O % using a conversion factor of 2.473 * Li_2O % to obtain Li_2CO_3 % and 1.601 * Li_2O % to obtain LiOH %. Values of Li_2O %, Li_2CO_3 %, and LiOH % are separate and not cumulative. Table 14.14 is a derivative of the MRE presented in Table 14.13 and not a tabulation of mineral resources for the Project.

Table 13.17: Comparison of Li_2O %, Li_2CO_3 %, and LiOH % for Brazil Lake Deposit Mineral Resources

Type	Cut-off (Li2O %)	Category	Rounded Tonnes	Li_2O %	Li_2CO_3 %	LiOH %
Pit Constrained	0.48	Measured	100,000	1.26	3.11	2.02
		Indicated	350,000	1.19	2.95	1.91
		M & IN	450,000	1.21	2.99	1.94
		Inferred	62,000	1.56	3.85	2.49
Underground Constrained	0.98	Measured	2,000	1.20	2.96	1.91
		Indicated	101,000	1.71	4.24	2.74
		M & IN	103,000	1.70	4.21	2.73
		Inferred	319,000	1.47	3.63	2.35
Combined	0.48 / 0.98	Measured	102,000	1.26	3.11	2.01
		Indicated	451,000	1.31	3.24	2.10
		M & IN	553,000	1.30	3.22	2.08
		Inferred	381,000	1.48	3.67	2.37

*Notes:
This table shows calculated Li_2CO_3 % and LiOH % values relative to Li_2O % values for the April 8th, 2022 mineral resource estimate. Values of Li_2CO_3 % and LiOH % were derived from values of Li_2O % using a conversion factor of 2.473 * Li_2O % to obtain Li_2CO_3 % and 1.601 * Li_2O % to obtain LiOH %. Values of Li_2O %, Li_2CO_3 %, and LiOH % are separate and not cumulative. Detailed notes on mineral resources appearing above in association with Table 14.13 of Section 14.3.15 apply to Table 14.14 as well.

13.12 Project Risks that Pertain to the Mineral Resource Estimate

All mineral projects are subject to risks arising from various sources. These include, but are not limited to, the following:

(1) Political instability of the host country or region;
(2) Site environmental conditions that affect deposit access;
(3) Issues associated with legal access to sufficient land areas to support development and mining;
(4) Lack of certainty with respect to mineral tenure and development regulatory regimes;
(5) Lack of social licence for project development;
(6) Unforeseen negative market pricing trends;

(7) Inadequacy of deposit modelling and grade estimation programs with respect to actual metal grades and tonnages contained within the deposit;
(8) Metallurgical recoveries that fall within economically acceptable ranges cannot be attained.

At this time, the QP's do not foresee any significant risks and uncertainties that could reasonably be expected to affect reliability or confidence placed in the drilling and other data that supports the current MRE and associated conclusions disclosed in this Technical Report. Identified future Project risks include metal pricing fluctuations that are beyond the control of a future mining project operator plus failure to development a cost-effective beneficiation flow sheet for production of spodumene concentrate of sufficient grade and purity to meet future market requirements.

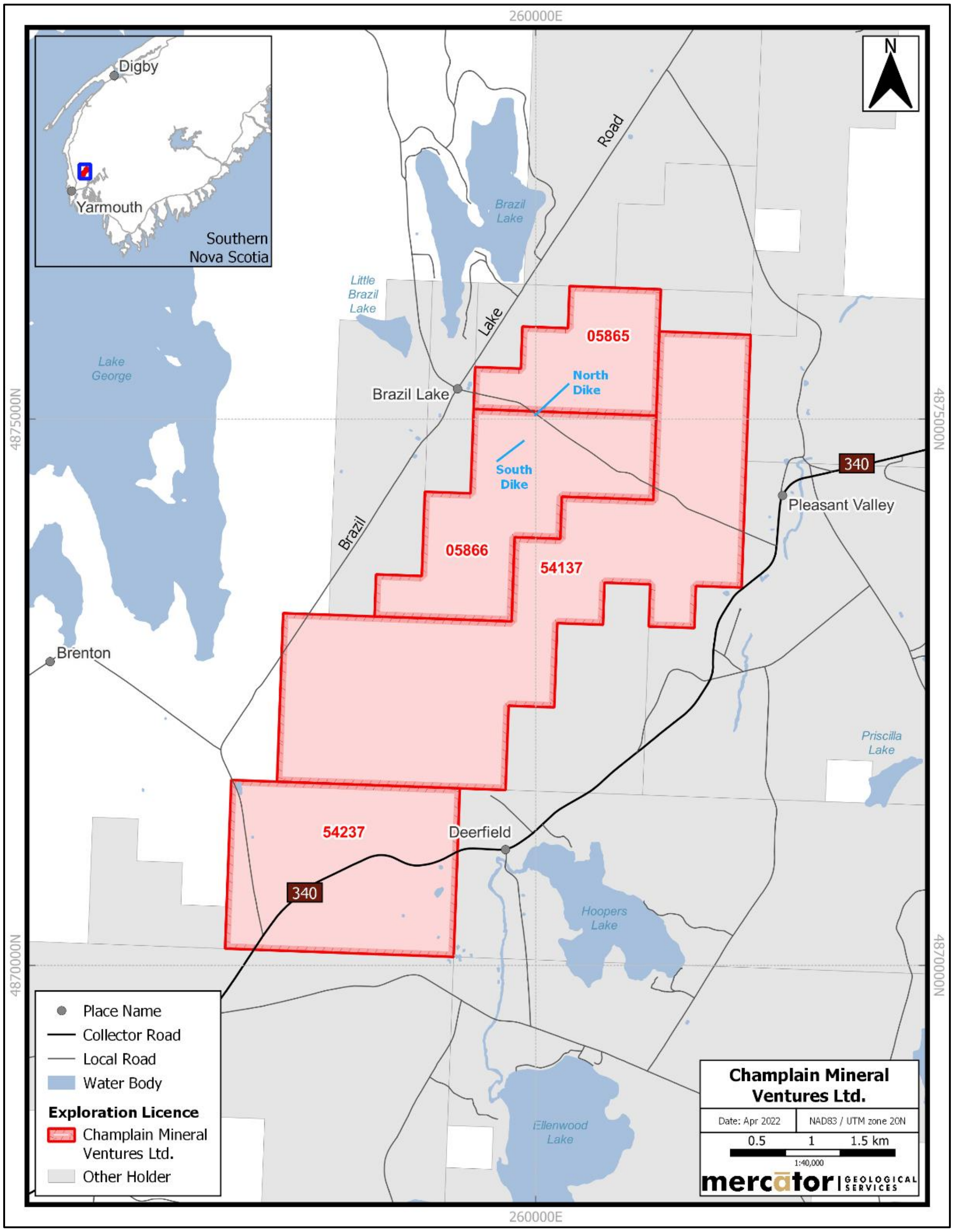
13.13 Comparison with Previous Mineral Resource Estimates

This current MRE is the maiden mineral resource, as defined under National Instrument 43-101 and set out in the Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves Definitions and Guidelines (the CIM Standards – May 2014), for the Project. No previous MRE's have been prepared for the Project.

23.0 ADJACENT PROPERTIES

Exploration licences held by other parties adjacent to the Brazil Lake property are presented in Figure 23.1. The QP believes that most of these licences have been the focus of exploration for Li-bearing pegmatites and that no additional Li-bearing pegmatite deposits have been disclosed to date on the licences that would be pertinent to the Project and the current MRE.

Figure 23.1: Adjacent Properties to the Brazil Lake Project



24.0 OTHER RELEVANT DATA AND INFORMATION

The authors are not aware of any other relevant data or information that is considered material to the subject matter of this Technical Report.

25.0 INTERPRETATION AND CONCLUSIONS

25.1 Introduction

This Technical Report describing a MRE for the Brazil Lake Project was prepared by authors Matthew Harrington, P. Geo., and Michael Cullen, P. Geo., of Mercator, and Lawrence Elgert, P. Eng., of AGP, on behalf of Champlain in accordance with the CIM Standards (2014) and to meet reporting requirements set out in NI 43-101. It is understood that the mineral titles associated with this property were in good standing as of the effective date of the MRE described in this Technical Report.

25.2 Mineral Resource Estimate

A tabulation of mineral resources for the Project is presented in Table 25.1. Pit constrained mineral resources were defined within optimized pit shells developed using Hexagon Mine Plan 3D version 16, MineSight® Economic Planner version 4.00-13. Pit optimization parameters include mining at CAN$ 5 per tonne and combined processing plus general and administration (G&A) charges at CAN$ 80 per tonne processed. A metal price of CAN$ 8.86/lb for Li_2O based on a 6.0 % Li_2O spodumene concentrate price of CAN$ 1,270 per tonne and a Li_2O recovery of 85 % was used.

Pit constrained mineral resources are reported at a cut-off grade of 0.48 % Li_2O within the optimized pit shell. The cut-off grade reflects the marginal cut-off grade, which represent the processing and downstream costs but excludes mining costs, used in pit optimization to define reasonable prospects for eventual economic extraction by open pit mining methods. Underground mineral resources are reported at a cut-off grade of 0.98 % Li_2O %. The cut-off grade reflects total operating costs of CAD$ 150 per tonne processed to define reasonable prospects for eventual economic extraction by underground methods and includes a mining recovery of 85 % and a Li_2O recovery of 85 %.

Table 25.1: Brazil Lake Project Mineral Resource Estimate – Effective Date: April 8th, 2022*

Type	Cut-off (Li2O %)	Category	Rounded Tonnes	Li_2O %
Pit Constrained	0.48	Measured	100,000	1.26
		Indicated	350,000	1.19
		M & IN	450,000	1.21
		Inferred	62,000	1.56
Underground Constrained	0.98	Measured	2,000	1.20
		Indicated	101,000	1.71
		M & IN	103,000	1.70
		Inferred	319,000	1.47
Combined	0.48 / 0.98	Measured	102,000	1.26
		Indicated	451,000	1.31
		M & IN	553,000	1.30
		Inferred	381,000	1.48

Mineral Resource Notes:

1. Mineral resources were prepared in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (MRMR) (2014) and CIM MRMR Best Practice Guidelines (2019).
2. Pit constrained mineral resources are defined within an optimized pit shell with average pit slope angles of 45º and a 14.7:1 strip ratio (waste : mineralized material).
3. Pit optimization parameters include: metal pricing at CAN$ 8.86/lb for Li_2O based on a spodumene concentrate price of CAN$ 1,270/t for 6% Li_2O concentrate, mining cost at CAN$ 5/t, exchange rate of 1.27 CAN$/1.00 USD$, processing plus general and administration cost at CAN$ 80/t processed, and a Li_2O recovery of 85 %.
4. Pit constrained mineral resources are reported at a cut-off grade of 0.48 Li_2O % within the optimized pit shell. The cut-off grade reflects the marginal cut-off grade used in pit optimization to define reasonable prospects for eventual economic extraction by open pit methods.
5. Underground constrained mineral resources are reported at a cut-off grade of 0.98 % Li_2O. The cut-off grade reflects total operating costs of CAN$ 150/t to define reasonable prospects for eventual economic extraction by conventional underground mining methods and includes a mining recovery of 85 % and a Li_2O % recovery of 85 %.
6. Li_2O % deposit grade was estimated using Inverse Distance Cubed methods based on 1 m downhole assay composites. No grade capping was applied. Model block size is 2 m (x) by 2 m (y) by 4 m (z).
7. An average pegmatite bulk density factor of 2.69 t/m^3 was applied.
8. Mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues.
9. Mineral resources are not mineral reserves and do not have demonstrated economic viability.
10. Mineral resource tonnages are rounded to the nearest 1,000.

25.3 Additional Conclusions

Additional conclusions pertaining to Deposit exploration holdings, geology, past exploration and the MRE are summarized below.

- Champlain maintains a 100% interest in the exploration rights and there are currently no option agreements in place. The Project is located on private lands.
- The deposit is comprised of two pegmatite dikes and the primary metal of economic interest at this time is lithium hosted within the silicate mineral spodumene.
- The QP is of the opinion that the North Dike and South Dike pegmatites are best categorized as being of the Rare Element Class, with possible association with the spodumene-albite subtype, and Lithium-Cesium-Tantalum (LCT) Family type of intrusions.
- The current geological interpretation and model for the Deposit are sufficient to support the MRE.
- The MRE focused on the production of a spodumene concentrate of 6.0 % Li_2O grade to define reasonable prospects for eventual economic extraction.
- Preliminary mineral processing and metallurgical testing documentation for the Project indicates that spodumene from the Deposit can be successfully recovered to concentrate through magnetic separation, flotation, and heavy media separation techniques and that further assessment and studies are required in this regard.
- Mica, feldspar, silica, Ta, Rb, Sn, and Be may be of economic importance to the Project but require further assessment and studies.
- Due to the absence of specific QAQC procedures being implemented during the 2002, 2003, 2019, and 2020 drilling and sampling programs, the QP is of the opinion that these programs as originally designed did not meet related CIM Mineral Exploration Best Practices Guidelines.
- The 2010 QAQC results for certified reference materials are consistent but incomplete and do not show any obvious indications of inaccuracy trends or bias.
- The QP is of the opinion that, with exception of the items discussed immediately above, all other aspects of the 2002, 2003, 2010, 2019, and 2020 drilling, sample preparation, security, and analytical protocols were acceptably completed to industry standards of the respective periods.
- The QP is satisfied that results from Champlain drilling programs are acceptable for use in MRE based on the data verification program completed.

25.4 Deposit Extension Potential

Diamond drilling on the North and South dikes at Brazil Lake has defined a pegmatite deposit that supports a NI 43-101 MRE of 934,000 tonnes grading 1.37% Li_2O. The deposit remains open in both strike and dip dimensions at present. Core logging results and analytical data for mineralized intersections within the area of the current MRE document presence of other mineral phases or metals of potential future economic interest, including Be, Rb, Nb, Sn, and Ta as summarized in Table 14.6. It is reasonable to infer that with sufficient additional technical investigations, some of these could contribute to a future NI 43-

101 MRE and, possibly, to a future economic analysis of the deposit. The anticipated effect would be to increase market value of the deposit.

Prospecting on the Brazil Lake claims owned by the company has resulted in discovery of spodumene-bearing pegmatite boulders and outcrops additional to those directly associated with the current MRE. These constitute good quality targets for future exploration. If proven by drilling to contain economic Li_2O mineralization these pegmatites would have potential to expand mineral resources and therefore extend the mine life of any associated future mining project economic evaluation.

Successful future testing of the direct deposit extension areas plus regional target areas by core drilling could result in definition of substantial additions to the current MRE. Future evaluation is warranted in both cases.

25.5 Project Risks

All mineral projects are subject to risks arising from various sources. These include, but are not limited to, the following:

(1) Political instability of the host country or region;
(2) Site environmental conditions that affect deposit access;
(3) Issues associated with legal access to sufficient land areas to support development and mining;
(4) Lack of certainty with respect to mineral tenure and development regulatory regimes;
(5) Lack of social licence for project development;
(6) Unforeseen negative market pricing trends;
(7) Inadequacy of deposit modelling and grade estimation programs with respect to actual metal grades and tonnages contained within the deposit;
(8) Metallurgical recoveries that fall within economically acceptable ranges cannot be attained.

At this time, the QP's do not foresee any significant risks and uncertainties that could reasonably be expected to affect reliability or confidence placed in the drilling and other data that supports the current MRE and associated conclusions disclosed in this Technical Report. Identified future Project risks include metal pricing fluctuations that are beyond the control of a future mining project operator plus failure to development a cost-effective beneficiation flow sheet for production of spodumene concentrate of sufficient grade and purity to meet future market requirements.

26.0 RECOMMENDATIONS

26.1 Summary

The following recommendations with respect to further evaluation of the Project are based on work completed to date by the Technical Report authors. The premise underlying current recommendations is that technical programs should proceed towards definition of additional mineral resources as well as discovery of new mineralized pegmatite bodies within the Project area. A firm commitment to continued mineral processing and metallurgical testing studies should also be reflected in on-going future evaluation programs. Specific work program recommendations along with associated expenditure estimates are presented below in Report Section 26.3. These are organized within a two-phase budget framework for which commitment to Phase I expenditures is contingent on satisfactory results being attained in Phase II.

26.2 Recommendations

- A drone magnetometry (UAV) survey should be carried out as part of a regional exploration program to identify prospective areas for new pegmatite discoveries. High resolution low-flying UAV magnetic surveying may be able to resolve low magnetic susceptibility anomalies associated with pegmatites and differentiate pegmatites from their host lithologies. This survey should include an orientation survey over the known Deposit.

- A regional prospectivity analysis, including all exploration completed to date and the recommended drone magnetometry survey, should be carried out to determine the most prospective targets for new pegmatites.

- Exploratory drilling should be carried out to test prospective pegmatite targets defined from the above recommendations. Initial testing of prospective pegmatite targets should consist of a minimum of two drill holes at a 100 m section spacing Commitment to a 1,000 m exploratory drill program should be sufficient to test highest priority targets.

- Deposit extension/definition drilling at a 50m section spacing should be carried out to define new Inferred mineral resources associated with the North Dike and South Dike as well as new pegmatite discoveries. Opportunities are present along strike to the south/southwest, down-dip, and down-plunge for both the North Dike and South Dike. Completion of a 2,500 m drilling program is required to adequately test these areas.

- Infill drilling at a 25m section spacing should be carried out to upgrade Inferred mineral resources to the Indicated and Measured mineral resource categories. Completion of a 2,500 m infill drill program is recommended to upgrade a substantial percentage of current mineral resources from the Inferred to Indicated and Measured resource categories.

- Expanded metallurgical testing work leading to development of an optimized processing flow sheet for production of spodumene concentrate should be completed on a priority basis to properly support any future economic analysis of the Project.

- Baseline environmental permitting plus landowner, Indigenous and community consultation programs studies should be initiated to expedite transition of the project, if justified, to the Preliminary Economic Assessment (PEA) stage of evaluation, potentially leading to a subsequent Pre-Feasibility Study or Feasibility Study.

26.3 Phase I and II Estimated Budgets

Implementation of the above recommendations should proceed as a two-phase program. Phase I includes the completion of infill drilling required to upgrade a substantial percentage of Inferred mineral resources of the Plymouth Deposit to the Indicated and Measured categories to support a subsequent PEA or PFS in Phase II. Phase I includes completion of additional metallurgical testing as a precursor to a substantial metallurgical program to be carried out to support the PFS included in Phase II. Completion of Phase II is contingent on results from the Phase I programs. Estimated expenditures for Phase I and II programs appear in Table 26.1.

Table 26.1: Budget for Recommended Phase I and Phase II Programs

Item	Phase	Program Component	Estimated Cost (CAD)
1	Phase 1	Drone magnetometry survey and regional exploration program	$25,000
2	Phase 1	Prospectivity analysis	$30,000
3	Phase 1	Exploratory core drilling program, including support costs (1,000 meters)	$250,000
4	Phase 1	Deposit infill and extension drilling, including support costs (minimum 5,000 meters)	$1,000,000
5	Phase 1	Preparation of an updated mineral resource estimate after completion of Item 1 and 2 drilling	$75,000
6	Phase 1	Metallurgical testing to better constrain processes and costs associated with spodumene concentrate production	$250,000
Phase 1	**Subtotal**		**$1,630,000**
		Contingency	*$163,000*
7	Phase 2	Preparation of a PEA study based on the updated MRE from Phase I and optimized metallurgical and mine planning studies; includes geotechnical, metallurgical, and exploratory drilling components plus initial environmental permitting, landowner, Indigenous and community consultation programs	$500,000
Phase 3	**Subtotal**		**$500,000**
		Contingency	*$50,000*
	Total		**$2,343,000**

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28.0 CERTIFICATES OF QUALIFIED PERSONS

CERTIFICATE OF QUALIFIED PERSON
Matthew D. Harrington, P. Geo.

I, Matthew D. Harrington, P. Geo., do hereby certify that:

1. I am currently employed as Senior Resource Geologist with:

   Mercator Geological Services Limited
   65 Queen Street, Dartmouth, NS B2Y 1GA

2. The Technical Report to which this certificate applies is titled "*NI 43-101 Technical Report on the Mineral Resource Estimate for the Brazil Lake Project (Lithium-Bearing Pegmatite Deposit), Nova Scotia, Canada*" with an effective date of April 8, 2022.
3. I hold a Bachelor of Science degree (Honours, Geology) in 2004 from Dalhousie University and I have worked as a geologist in Canada and internationally since my graduation. My relevant experience with respect to this Project includes extensive professional experience with respect to geology, mineral deposits and exploration activities in the Northern Appalachians and elsewhere.
4. I am a member in good standing of the Association of Professional Geoscientists of Nova Scotia (Registration Number 0254) and the Association of Professional Engineers and Geoscientists of Newfoundland and Labrador (Member Number 09541).
5. 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.
6. I have visited the Brazil Lake Project on December 7th, 2021. I have no previous involvement with the Brazil Lake Project that is the subject of this Technical Report.
7. I am responsible for Section 1 (except 1.4), 2 through 6, and 9 through 28 (except 14.3.10 and 14.3.12) of this Technical Report.
8. I am independent of Canadian Manganese Company Inc. as described in Section 1.5 of NI 43-101.
9. I have read NI 43-101 and this Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
10. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make this Technical Report not misleading.

Signed, stamped and dated this 25th day of April, 2022.

["Original signed and stamped by Matthew Harrington"]

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Matthew Harrington, P. Geo.

Certificate of Qualified Person
Michael Cullen, P. Geo.

I, Michael Cullen, P.Geo., do hereby certify that:

1. I am currently employed as a Chief Geologist with:
   Mercator Geological Services Limited
   65 Queen Street, Dartmouth, NS B2Y 1GA Canada
2. The Technical Report to which this certificate applies is titled "*NI 43-101 Technical Report on the Mineral Resource Estimate for the Brazil Lake Project (Lithium-Bearing Pegmatite Deposit), Nova Scotia, Canada*" with an effective date of April 8, 2022.
3. I hold a M.Sc. degree in Geology from Dalhousie University (1984) and a B.Sc. (Honours) degree in Geology (1981) from Mount Allison University. I have worked as a geologist in Canada, the USA and internationally since graduation. My relevant experience with respect to this project includes extensive professional experience with respect to mineral resource estimation programs and exploration activities in the Northern Appalachians and elsewhere. I have specific experience in Li-bearing pegmatite deposits in the Brazil Lake area and co-authored the 2010 Technical Report titled "Technical Report on the Brazil Lake Lithium-Bearing Pegmatite Property, Nova Scotia, Canada, effective date April, 23rd 2010" prepared by Mercator Geological Services and filed on SEDAR under Petro Horizon Energy Corp.
4. I am a member in good standing of the Association of Professional Geoscientists of Nova Scotia (Registration Number 064), the Association of Professional Engineers and Geoscientists of Newfoundland and Labrador (Member Number 05058) and the Association of Professional Engineers and Geoscientists of New Brunswick (Registration Number L4333).
5. I have read the definition of a "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, and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I have visited the property on March 5th, 2010 and March 25th, 2010
7. I am responsible for Sections 1.4, 7, 8, and 14.3.10 of the Technical Report.
8. I am independent of Champlain Mineral Ventures Ltd. as described in Section 1.5 of NI 43-101.
9. I have read NI 43-101 and this Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
10. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make this Technical Report not misleading.

Signed, stamped and dated this 25th day of April, 2022.

[Original signed and sealed "Michael Cullen"]

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Michael Cullen, M.Sc., P.Geo.,

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: "NI 43-101 Technical Report on the Mineral Resource Estimate for the Brazil Lake Project (Lithium-Bearing Pegmatite Deposit), Nova Scotia, Canada" dated April 25^{tht}, 2022, with an effective date of April 8, 2022 (the "Technical Report").
I, Lawrence Elgert, P.Eng., do hereby certify that:

- I am a Principal Mine Engineer with AGP Mining Consultants Inc., with a business address at #246-132K Commerce Park Dr., Barrie, ON L4N 0Z7, Canada.
- I am a graduate of the Montana College of Mineral Science and Technology with a B.S in Mining Engineering in 1989.
- I am a member in good standing of Engineers and Geoscientists BC (Registration Number: 29807).
- I have practiced my profession in the mining industry continuously since graduation. My relevant experience includes over 30 years where I have been directly involved in mine planning and design, ore control, geomechanics, production forecasting and management, slope stability monitoring and operations, mainly for open-pit precious and base metal and coal mines.
- I have read the definition of "qualified person" set out in National Instrument 43-101 *Standards of Disclosure for Mineral Projects* ("NI 43-101") and certify that by virtue 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 am independent of the issuer, Champlain Mineral Ventures Ltd. as defined in Section 1.5 of NI 43-101.
- I am responsible for Section 14.3.12 of the Technical Report and accept professional responsibility for that section of the Technical Report.
- I have no previous involvement with the Brazil Lake Project that is the subject of this Technical Report.
- I have not visited the Brazil Lake Project.
- As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.
- I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Dated this 25th day of April 2022, in Riondel, British Columbia, Canada.

["Original signed and stamped by Lawrence Elgert"]

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Lawrence Elgert, P. Eng., Permit to Practice Number 1003765