# NI 43-101 TECHNICAL REPORT

CASE LAKE PROPERTY

Cochrane, Northeastern Ontario, Canada



# POWER METALS CORP.

Suite 545 – 999 Canada Place Vancouver, British Columbia, V6C 3E1 Canada

Date: July 14, 2017

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#### 1.0 SUMMARY

J-J Minerals of Sudbury, Ontario, Canada was contracted by Power Metals Corp. ("Power Metals") of Vancouver, British Columbia, Canada to write a NI 43-101 Technical Report summarizing the current and historic geological data on the Case Lake Property, Cochrane, northeastern Ontario and recommend a future exploration program. The purpose of this Report is to compile and disclose the exploration data on the Property, so that Power Metals can make informed decisions on future exploration work.

Case Lake Property is located in Steele and Case townships, near Cochrane, NE Ontario close to the Ontario-Quebec border. It is located within Larder Lake Mining Division and NTS sheet: 32E04SW. It is located 80 km east of Cochrane, 100 km north of Kirkland Lake and 120 km NE of Timmins. The Property consists of a total of 32 mining claims for a total of 5968 ha and is 9.5 km x 9 km. Power Metals has option agreements for 10 mining claims (1168 ha) and has 100% ownership of the remaining 22 mining claims (4800 ha).

The Case Lake pegmatite swarm occurs along a subprovincial boundary between the metasedimentary Opatica Subprovince to the north and greenstone Abitibi Subprovince to the south. The Opatica Subprovince consists of the granitic Case Batholith, and the Abitibi Subprovince consists of the Scapa metasedimentary rocks (metagraywacke and garnet schist) and the Steele volcanic rocks (amphibolite) in the Case Lake area. The Case Batholith is an extensive 50 by 85 km ovoid granitic complex. The Case Batholith is a weakly foliated biotite granodiorite to quartz monzonite which is characterized by biotite-rich orbicules that range in diameter from 1 to 7 cm.

The Case Lake pegmatite swarm consists of five dykes:

- 1. North Dyke -12 m thick and > 100 m strike length
- 2. Main Dyke (also known as Central Dyke) 35 m thick and > 350 m strike length
- 3. South Dyke -10 m thick and > 250 m strike length
- 4. East Dyke -19 m wide and > 1200 m strike length
- 5. Northeast Dyke -10 m wide and > 75 m length

The North, Main and South dykes are hosted by the Case granodiorite batholith and they strike at 60 to 70° and dip 40 to 60°. The East and Northeast Dykes are hosted by fine-grained biotite-garnet metasedimentary rocks. Both the North and Main Dykes have spodumene-rich zones (muscovite-K-feldspar-quartz-green spodumene-albite) and albitic aplite border zones. Spodumene is absent in the beryl-type South Dyke and the potassic pegmatite East Dyke. The Northeast Dyke contains very coarse-grained spodumene.



In 1959, S.B. Lumbers and assistants mapped Steele, Bonis and Scapa townships to produce a bedrock geology map (M2018) and a geological report (R008) in 1962 (Lumbers, 1962 a, b). Lumbers identified the Case pegmatite dykes in lot 5, concession V, Steele township.

In 1973, L. Darby and R. Strickland drilled one hole 101 ft (=30.8 m) deep which was collared on the Case Batholith and intersected 25.3 m of spodumene-bearing pegmatite in the Main Dyke.

In 1991, J.G. Burns conducted geological mapping on the North, Main and South Dykes and completed assays on 15 grab samples from trenches on the dykes. The best assay was from Main Dyke inner intermediate zone with 2.58% Li<sub>2</sub>O, 318 ppm Ta and 225 ppm Cs.

In September 1999, Joseph Horne of Cardinal Exploration Services completed 4500 m<sup>2</sup> mechanical stripping and selected power washing on the North, Main and South Dykes. In October 1999, J. Horne conducted 2 days of regional prospecting to the northeast and the northwest of the known Case pegmatite dykes. This regional prospecting lead to the discovery of the Northeast dyke 10 m wide by 75 m along strike with very coarse-grained spodumene. In November 1999, J. Horne collected two plugger hole sample series normal to the strike across the North Dyke. The best lithium assay was sample 3441 with 2.29 %Li<sub>2</sub>O and 160 ppm Ta.

In 2001, Platinova A/S completed detailed geological mapping of North, Main and South Dykes. Main and North Dykes are zoned with aplitic albite border zones and spodumene-bearing intermediate zones and a quartz core. The surface outcrops for South and East Dykes lacked spodumene-bearing pegmatite zones. Platinova also completed sampling of 6 channels totaling 113.1 m on North, Main and South Dykes. Assay highlights from Platinova's channel sampling include Main Dyke SC-3, sample 23549, 2.73 % Li<sub>2</sub>O, 186 ppm Cs, 1,330 ppm Rb, >100 ppm Be and 489 ppm Ta. August to September 2001, Platinova A/S completed 7 drill holes totaling 508.76 m on the Case property. These holes were drilled on 5 sections across Main and North Case Pegmatite Dykes. Assay highlights from DDH-2 include: from 39.0 to 40.0 m, interval 1.0 m with 1.52 % Li<sub>2</sub>O, 62 ppm Ta, > 100 ppm Be from the inner intermediate zone.

In September 2010, Fieldex Exploration Inc. resampled Platinova's 7 drill holes on the North and Main Dykes. The assay highlights include: DDH-1 from 23.80 to 33.00 m with 1.98 % Li<sub>2</sub>O over 9.20 m.

On May 30 and 31, 2014, E. Shynkorenko and P. Hermeston conducted prospecting, grab sampling and mapping on the Northeast Dyke. Sample NED-01-14 on the north exposure of the Northeast Dyke contains > 10,000 ppm Li and 57.4 ppm Ta.



Platinova's 7 drill holes which intersected Main and North Dykes were relogged and resampled by Caracle Creek International Consulting Inc. ("Caracle Creek") in January 2017. As expected, the spodumene-rich pegmatite zones had high grade lithium assays. Some of the assay highlights on the Main Dyke spodumene zone include:

- DDH-1 from 22.70 to 33.00 m with 1.98 % Li<sub>2</sub>O and 130.88 ppm Ta over 10.30 m
- DDH-5 from 46.57 to 56.00 m with 1.37 % Li<sub>2</sub>O over 9.43 m
- DDH-5 from 45.00 to 45.95 m with 3.24 % Li<sub>2</sub>O over 0.95 m

The Qualified Person visited the Case Property on May 31, 2017. The QP's visit included a meeting with Wahgoshig First Nation, meeting with Metis Northern Lights Council in Cochrane, review of the Property access, and a review of spodumene mineralization on the Main and North Dykes (section 12.2). The QP observed coarse-grained spodumene crystals on the Main and North Dykes. As a result of the site visit, the QP recommends that the trail to the Case Lake pegmatites be cleared to improve access for the proposed exploration program and that a DGPS survey be conducted on the historic drill holes and channels to improve the 3D model for drill targeting.

The Qualified Person concludes that Power Metals 2017 resampling program successfully identified and verified lithium mineralization in Platinova's historic drill core on the Case pegmatite dykes. The 2D compilation of the historic geological data on the Property and the site visit provided further evidence of lithium mineralization on surface and aided in identification of exploration targets. The 3D data compilation aided in understanding the pegmatite dykes at depth and targeting of future drill holes. There is potential to find additional lithium and tantalum mineralization on the Property.

The Qualified Person recommends that Power Metals' summer 2017 exploration program on the Case Lake Property consist of 6000 m of drilling of approximately 41 holes of which (Figure 18-1):

- 4000 m of resource drilling at 30 m spacing and depths of 100-150 m on the Main and North Dykes surface exposure (approximately 26 holes) to aid in future resource estimate.
- 2000 m of expansion drilling at depths of 100-150 m to extend the Main and North Dykes along strike to the east and west (approximately 15 holes) to extend the dykes along strike.

Platinova A/S completed 7 drill holes on the North and Main Dykes in 2001 and Power Metals should infill and verify these historic drill holes. There is 100 m of surface exposed strike length for the Main Dyke that has not yet been drill tested. Both dykes are open along strike and down dip. Power Metals should also test the possibility that the Main Dyke is actually two parallel pegmatite dykes not just one dyke. Since the



pegmatite dykes within the Case Lake pegmatite swarm are parallel to each other, there is potential to find additional buried dykes at depth. Power Metals has an Exploration Plan and Permit on Case Lake Property approved by MNDM for the proposed exploration work. The total budget for the proposed drill program is \$1.1 million CAD + 13% HST.

In addition to the exploration targets of extension of the North and Main Dykes along strike, there are other exploration targets to be investigated on the Case Lake Property at a later date:

- The fault offset dyke target is a 1 km long target which is assumed to be the down faulted continuation of the North and Main spodumene dykes. The East Dyke is the down faulted continuation of the South Dyke.
- The Far East Dyke is an underexplored pegmatite outcrop which is along the same strike as the North and Main Dykes.
- The metasedimentary host rock Li anomaly target is also along strike of the North and Main Dykes
- Northeast spodumene pegmatite dyke with historical assay of > 2.15 % Li<sub>2</sub>O.

#### 2.0 Introduction

#### 2.1 Introduction

J-J Minerals of Sudbury, Ontario, Canada was contracted by Power Metals Corp. ("Power Metals") of Vancouver, British Columbia, Canada to write a NI 43-101 Technical Report summarizing the current and historic geological data on the Case Lake Property, Cochrane, northeastern Ontario and recommend a future exploration program. The purpose of this Report is to compile and disclose the exploration data on the Property, so that Power Metals can make informed decisions on future exploration work.

Sources of information for this report include Ministry of Northern Development and Mines ("MNDM") assessment files listed in Appendix 3, references listed in section 0, and drill core logs and assays from Power Metals' 2017 resampling program. Tenure information was derived from MNDM CLAIMaps website (<a href="http://www.mndm.gov.on.ca/en/mines-and-minerals/applications/claimaps">https://www.mndm.gov.on.ca/en/mines-and-minerals/applications/claimaps</a>). The History section (6.0), Exploration section (9.0) and Sample Preparation, Analyses and Security section (11.0) of this Report is derived from an internal Field Report by Selway (2017).

The author visited the Case pegmatites in 2001 and 2002 while working for the Ontario Geological Survey and co-authored two Open File Reports on the Property (Breaks et al, 2003 and 2006). The Qualified Person also visited the Case Property on May 31, 2017. The QP's visit included a meeting with Wahgoshig First



Nation, meeting with Metis Northern Lights Council in Cochrane, review of the Property access, and a review of spodumene mineralization on the Main and North Dykes (section 12.2). As a result of the site visit, the QP recommends that the trail to the Case Lake pegmatites be cleared to improve access for the proposed exploration program and that a DGPS survey be conducted on the historic drill holes and channels to improve the 3D model for drill targeting.

# 2.2 Terminology

**Fusion** - This digestion process will melt the entire sample to produce "total digestion". This method is especially used for digestion of silicates and other resistive minerals.

**ICP-MS:** Inductively Coupled Plasma - Mass Spectrometer: An instrument capable of determining the concentrations of 70+ elements simultaneously by measuring the mass of ions generated by an argon gas plasma heated to 10,000°K and passing through a magnetic quadrupole to the detector. Capable of ultra low detection limits (ppb to ppt) with very wide linear ranges (up to 7 orders of magnitude) (Acme Analytical Laboratories Ltd: www.acmelab.com).

**MNDM**: Ministry of Northern Development and Mines which is the provincial ministry responsible for managing mining claims (Mining Lands Section) and Ontario Geological Survey.

QA/QC: Quality Assurance/ Quality Control

#### 2.3 Units

The Metric System is the primary system of measure and length used in this Report and is generally expressed in kilometres (km), metres (m) and centimetres (cm); volume is expressed as cubic metres (m³), mass expressed as metric tonnes (t), area as hectares (ha), and gold and silver concentrations as grams per tonne (g/t). Conversions from the Metric System to the Imperial System are provided below and quoted where practical. Many of the geologic publications and more recent documents now use the Metric System but older documents almost exclusively refer to the Imperial System. Metals and minerals acronyms in this report conform to mineral industry accepted usage and the reader is directed to www.maden.hacettepe.edu.tr/dmmrt/index.html for a glossary.

Other abbreviations include ppb = parts per billion; ppm = parts per million; oz/t = troy ounce per short ton; Moz = million ounces; Mt = million tonne; t = tonne (1000 kilograms); SG = specific gravity; lb/t = pound/ton; and, st = short ton (2000 pounds).



Dollars are expressed in Canadian currency (CAD\$) unless otherwise noted. Where quoted, Universal Transverse Mercator (UTM) coordinates are provided in the datum of Canada, NAD 83, Zone 17.

#### 2.4 Qualified Person

The Qualified Person and author for this Report is Dr. Julie Selway, Ph.D., P.Geo., Principal Geologist for J-J Minerals and a geologist in good standing with the Association of Professional Geoscientists of Ontario (APGO # 0738). Dr. Selway completed a Ph.D. in rare-element pegmatites in 1999, worked as a pegmatite geoscientist for Ontario Geological Survey for 3 years (2001-2003) and has completed 4 NI 43-101 Reports on the Georgia Lake spodumene pegmatites, Ontario, Canada for Rock Tech Lithium Inc. Dr. Selway has also over 7 years of work experience completing QA/QC reviews of drill core assays for the purpose of resource estimates. Dr. Selway has co-authored over 20 NI 43-101 Technical Reports.

The Certificate of Qualifications for the Qualified Person is given in Appendix 1.

#### 3.0 Reliance on Other Experts

The author of this Report relied on Power Metals' legal counsel and MNDM CLAIMaps website (<a href="http://www.mndm.gov.on.ca/en/mines-and-minerals/applications/claimaps">http://www.mndm.gov.on.ca/en/mines-and-minerals/applications/claimaps</a>) for tenure information and title opinion.

## 4.0 Property Description and Location

#### 4.1 Location

Case Lake Property is located in Steele and Case townships, near Cochrane, NE Ontario close to the Ontario-Quebec border (Figure 4-1). It is located within Larder Lake Mining Division and NTS sheet: 32E04SW. The Property is located 80 km east of Cochrane, 100 km north of Kirkland Lake and 120 km NE of Timmins. The Main Dyke is located at UTM Z17, E 578236 m, N 5431667 m, NAD 83.





Figure 4-1 Regional location map for Case Lake Property, NE Ontario.

# 4.2 Description and Ownership

The Case Lake Property consists of a total of 32 mining claims for a total of 5968 ha and is 9.5 km x 9 km. Power Metals has option agreements for 10 mining claims (1168 ha) (section 4.3) and has 100% ownership of the remaining 22 mining claims (4800 ha) (Table 4-1). Power Metals holds the mining rights of the mining claims and the crown holds the surface rights. Power Metals as legal access to the Property.

Table 4-1 Case Lake Property mining claims.

Township	Claim	Recording	Claim Due	Work	Number	Area	claim holder
/ Area	Number	Date	Date	Required	of claim	(ha)	
					units		
Case	4284339	2017-Mar-03	2019-Mar-03	\$6,400	16	256	Power Metals Corp.
Case	4284340	2017-Mar-03	2019-Mar-03	\$1,600	4	64	Power Metals Corp.
Case	4284341	2017-Mar-03	2019-Mar-03	\$1,600	4	64	Power Metals Corp.
Case	4284342	2017-Mar-03	2019-Mar-03	\$1,600	4	64	Power Metals Corp.
Case	4286407	2017-Feb-23	2019-Feb-23	\$6,000	15	240	Power Metals Corp.
Case	4286408	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.



Township / Area	Claim Number	Recording Date	Claim Due Date	Work Required	Number of claim units	Area (ha)	claim holder
Case	4286409	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Case	4286410	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Case	4286411	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Case	4286412	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Case	4286413	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Case	4286414	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Steele	4286402	2017-Feb-23	2019-Feb-23	\$2,800	7	112	Power Metals Corp.
Steele	4286403	2017-Feb-23	2019-Feb-23	\$4,800	12	192	Power Metals Corp.
Steele	4286404	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Steele	4286405	2017-Feb-23	2019-Feb-23	\$6,000	15	240	Power Metals Corp.
Steele	4286406	2017-Feb-23	2019-Feb-23	\$6,000	15	240	Power Metals Corp.
Steele	4286415	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Steele	4286416	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Steele	4286417	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Steele	4286418	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Steele	4286419	2017-Feb-23	2019-Feb-23	\$6,400	16	256	Power Metals Corp.
Steele	1213780	1996-Jul-29	2022-Aug-19	\$1,200	3	48	Walitta Gertrude O'Reilly (50%),
							Bernard Gergory Sigouin (25%), Margaret Wendy Sigouin (12.5%), Edward Shynkorenko (12.5%)
Steele	1214666	1998-Apr-29	2022-May-20	\$800	2	32	Walitta Gertrude O'Reilly (50%), Edward Shynkorenko (50%)
Steele	1214668	2009-Aug-26	2017-Aug-26	\$1,600	4	64	Edward Shynkorenko (50%), Peter M. Hermeston (50%)
Steele	4249052	2010-Aug-26	2017-Aug-26	\$400	1	16	Peter M. Hermeston (100%)
Steele	4251385	2009-Sep-04	2017-Sep-04	\$672	2	32	Edward Shynkorenko (50%), Peter M. Hermeston (50%)
Steele	4271906	2016-Apr-19	2018-Apr-19	\$6,400	16	256	Orebot Inc (100%)
Steele	4271907	2016-Apr-19	2018-Apr-19	\$6,000	15	240	Orebot Inc (100%)
Steele	4271908	2016-Apr-19	2018-Apr-19	\$6,000	15	240	Orebot Inc (100%)
Steele	4271909	2016-Apr-19	2018-Apr-19	\$1,200	3	48	Orebot Inc (100%)
Steele	4271910	2016-Apr-19	2018-Apr-19	\$4,800	12	192	Orebot Inc (100%)
				\$149,072	373	5968	



#### 4.3 Option Agreements

On March 31, 2016, Edward Shynkorenko, Walitta O'Reilly, Peter Hermeston, Margaret Signouin and Bernard Sigouin optioned their Case Lake Claims to Empire Exploration Pty Ltd ("Empire"), New South Wales, Australia. The Claims in the option agreement include: 1213780, 1214666, 1214668, 4251385 and 4249052.

On Aug. 18, 2016, Empire Exploration Pty Ltd. (Vendor) sold its option agreement on the Case Lake Property Claims to Camden Ventures Inc. ("Camden"), Toronto, Ontario (Purchaser). The Claims include: 1213780, 1214666, 1214668, 4251385 and 4249052. Orebot, in the same agreement, transferred Other Claims to the Camden. The Other Claims include: 4271906, 4271907, 4271908, 4271909 and 4271910. The terms of the agreement were:

- On Aug. 31, 2016, Camden will pay Empire \$75,000 CAD as part of the purchase price
- On Oct. 15, 2016, Camden will pay Empire \$75,000 CAD as part of the purchase price
- On the completion date (Dec. 31, 2016), Camden will pay Empire \$75,000 CAD

The total purchase price is \$225,000 CAD.

On Sept. 22, 2016, Camden Ventures Inc. (Vendor) signed an option agreement with Aldrin Resource Corp., Vancouver, British Columbia ("Aldrin") (Purchaser). The Claims in the option agreement include: 1213780, 1214666, 1214668, 4251385, 4249052, 4271906, 4271907, 4271908, 4271909 and 4271910.

The terms of the option agreement are that Aldrin shall:

- pay \$175,000 on the signing of the agreement
- issue 15,000,000 common shares of Aldrin within 5 days of regulatory approval of this agreement, to the Camden
- paying \$75,000 on or before October 15, 2016
- paying \$75,000 on or before December 31, 2016
- paying \$300,000 in cash or shares, at the election of the Purchaser on or before June 8, 2018
- make such payments and incur such expenditures in Ontario



• Camden shall retain an NSR on each Property.

Aldrin can earn 100% of Case Lake by making a total of \$325,000 cash payments and spending \$200,000 on exploration and development over 36 months (Aldrin Resource Corp., press release dated Sept. 22, 2017). Under the option agreement, Empire has agreed to a 2% Net Smelter Royalty ("NSR") and 3% NPR (NPR is only for aggregates such as silica).

Aldrin Resources Corp changed its name to Power Metals Corp effective December 2, 2016.

The QP has reviewed the option agreement documents and summarized them to the best of the QP's abilities. The QP is a senior geologist and relies on Power Metals' legal counsel for their opinion and interpretation of the option agreements.

To the best of the QP's knowledge there is no back-in-rights, payments or other agreements and encumbrances to which the Property is subject to. There is a 2% NSR on the claims. There are no environmental liabilities on the Property.

#### 4.4 Requirements to Retain the Property and Exploration Plan and Permit

In Ontario, to retain a mining claim, companies must submit an assessment file to MNDM's Geoscience Assessment Office showing that they have spent \$400/per claim unit on exploration on each claim. One claim unit is equal to 16 hectares. The initial mining claim is issued for a term of 2 years and then renewed every year afterwards.

The Property has an Exploration Plan from MNDM (PL-16-10621) starting on Aug. 10, 2016 and is valid for 2 years. The Exploration Plan covers the 10 claims included in the Camden – Aldrin option agreement. The Plan includes:

- Any geophysical surveys that require the use of a generator to be carried out.
- Mechanized drilling where the weight of the drill is less than 150 kg
- Line cutting, where the width of the line is less than 1.5 m.
- Mechanized surface stripping where the total area is less than 100 m<sup>2</sup>
- Pitting and trenching



# https://www.ontario.ca/laws/regulation/120308#BK29.

Power Metals has an Exploration Permit PR-17-11098 on the Case Lake Property dated June 30, 2017. The Exploration Permit is effective for 3 years. The Exploration Permit covers all of Power Metals Case Lake Property both optioned claims and 100% owned claims. The Exploration Permit includes:

- Line cutting, where the width of the line is more than 1.5 metres.
- Mechanized drilling, where the weight of the drill is greater than 150 kg.
- Mechanized surface stripping (overburden removal), where the total combined surface area stripped is greater than 100 square metres and up to advanced exploration thresholds, within a 200metre radius.
- Pitting and trenching (rock), where the total volume of rock is greater than 3 cubic metres and up to advanced exploration thresholds, within a 200-metre radius.

https://www.mndm.gov.on.ca/en/mines-and-minerals/mining-act/mining-act-modernization/exploration-permits

To the best of the QP's knowledge, there is no significant factors and risks that may affect access, title or the right or ability to preform work on the Property.



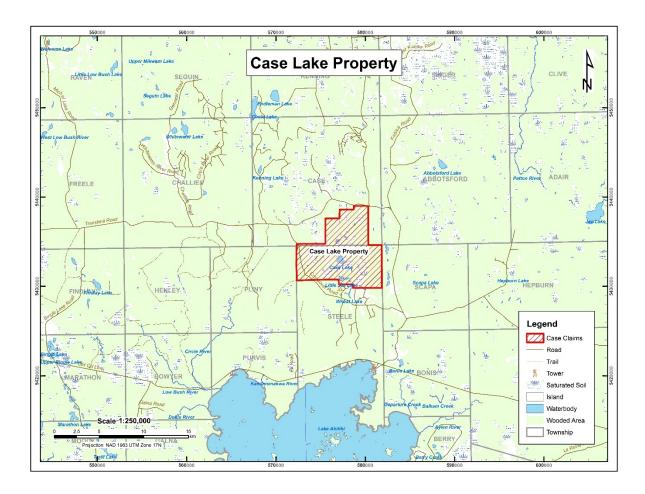


Figure 4-2 Regional location map for Case Lake Property.



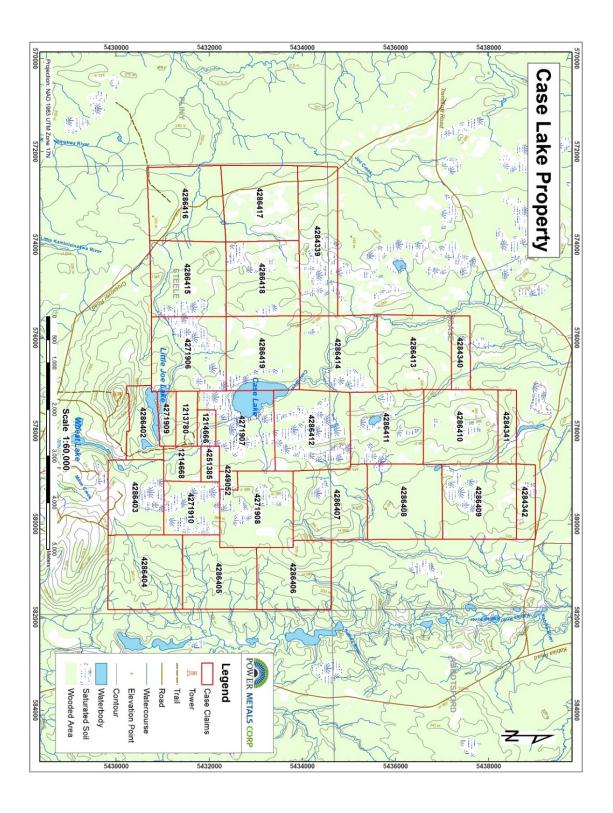


Figure 4-3 Property scale claim map for Case Lake Property.



# 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

#### 5.1 Access

The Case Property has excellent access and infrastructure (Figure 5-4). It is accessible year-round by road via the Translimit Road which connects Ontario and Quebec. The Translimit Road passes through the northeast corner of the Property and the Crossover Road passes through the easternmost claims on the Property and provides access to the southern claims (Figure 4-3).

The Property can be accessed by driving east of Cochrane on Highway 652 for 32 km. Turning onto the dirt road towards Iroquois Falls, drive a short distance and then turn left towards the Quebec border on the Translimit Road (Figure 5-1).



Figure 5-1 After turning off Highway 652, there is another intersection for the Quebec border and Iroquois Falls. Follow the sign for the Quebec border.

Drive along the Translimit Road for 33 km past the junction with Bingle Road, over a one lane bridge on Lowbush River and over a one lane bridge on Circle River. At the fork in the Translimit Road, turn right onto Crossover Road (Figure 5-2). Drive along the Crossover Road for 11 km until the intersection of the Crossover Road with the road north to the OPP tower at UTM Z17, E 577310 m, N 542872 m, NAD 83. Drive north towards the Ontario Provincial Police ("OPP") tower. The junction of road to the OPP tower and the bush trail to Case Lake is located at UTM E 577795 m, N 5429740 m. Drive along the bush trail



which passes over the South Dyke and ends at the Main Dyke. The total distance from Cochrane to the Main Dyke is about 80 km.



Figure 5-2 Intersection of Translimit Road and Crossover Road

The closest commercial airport to the Property is in Timmins (Figure 5-4). The airport in Cochrane links passengers and freight with the James Bay coastline. The airport is used by charter flights, air cargo, medevac services and MNR fire crews (Cochrane Municipal Airport website: <a href="http://town.cochrane.cycn.ca/siteengine/activepage.asp">http://town.cochrane.cycn.ca/siteengine/activepage.asp</a>).

The closest that the Canadian National Railway is to the Case Lake Property is at Gogama 167 km south of Cochrane. The Ontario Northland Railway used to connect Toronto to Matheson to Cochrane, but the service was discontinued on Sept. 28, 2012 (Cochrane railway station website: https://en.wikipedia.org/wiki/Cochrane\_railway\_station). The Ontario Northland Railway still operates trains between Cochrane and Moosonee as an "essential service".

#### 5.2 Physiography, Vegetation and Climate

Steele Ridge (Steele metavolcanics) is a prominent ridge south of the Property (Lumbers, 1962a) (Figure 4-3). The Steele Ridge is a drainage divide as water to the north of the ridge flows to the north and water to the south of the ridge flows south to Lake Abitibi. Most of the water in the Steele township drains north into Case Lake and then continues northwards to Burntbush River. There is an Ontario Provincial Police (OPP) fire lookout tower at the highest elevation on Steele Ridge at 439 m ASL (above sea level) just 180 m south of the Property boundary. The elevation of Case Lake is 340 m ASL.



Three granodiorite outcrop domes occur on the Property: on claims 4286413 and 4286410 in Case township and on claim 4286406 in Steele township (Figure 4-3). There are swampy areas around Case Lake. The Case Property is situated in a traditional boreal setting. Forest cover includes black spruce, tamarack and open bog in the wetter low-lying areas changing to jack pine, balsam fir and white birch mixture over the more elevated areas (MNDM assessment report 2.47355, 2010).

Southern parts of Steele township were historically cut for pulp and thus are covered by popular, birch and alder (Lumbers, 1962a). The rest of the area has mature growth of spruce, balsam and jack pine. In the muskegs, black spruce, tamarack and alder are common.

According to Environment Canada, the hottest month of the year in Cochrane is July with an average temperature of 24.0 °C and the coldest month is January with an average temperature of -12.1 °C (https://en.wikipedia.org/wiki/Cochrane,\_Ontario). The average rainfall in September is 109.0 cm and the average snowfall in January is 71.6 cm.

Drilling can be completed year-round except for the spring snow melt in April when it is too muddy in the bush. Geological mapping can be completed May to October.

## 5.3 Infrastructure and Local Resources

The town of Cochrane can provide accommodations, grocery stores, hardware stores and hospital for labourers. The population of town of Cochrane is 5,340 people according to the 2011 Census (Statistics Canada, www.statcan.gc.ca). Cochrane is on Ontario Highway 11 and it has a railway station operated by Ontario Northland Railway with trips 5 days per week on the Polar Bear Express to Moonsonee for tourists to look at Polar Bears in the wild (Figure 5-3). The Cochrane Polar Bear Habitat (CPBH) is the only captive bear facility in the world dedicated solely to polar bears (http://www.northeasternontario.com/partner/polar-bear-habitat/). Situated on five acres of northern Ontario terrain, visitors can walk along three large outdoor bear enclosures.





Figure 5-3 Cochrane's polar bear

Kirkland Lake and Timmins are established mining camps which can provide the skilled labour and field supplies required to run an exploration program (Figure 5-4).

Ontario Power Generation's Northeast Plant Group (NEPG) is headquartered in Timmins and has 13 hydroelectric generating stations (<a href="http://www.opg.com/communities-and-partners/host-communities/Pages/northeast.aspx">http://www.opg.com/communities-and-partners/host-communities/Pages/northeast.aspx</a>). Power lines run along Highway 652 to the homes east of Cochrane and to homes on the Quebec side of the border.

Sources of water on the Property includes Little Joe Lake, Case Lake, Case River and numerous swamps. Case River flows north from Wheat Lake to Case Lake and continues northward past the northern Property boundary.

The Property's surface rights are owned by the crown and they are sufficient for future mining operations. The Case Lake Property does not a have a resource estimate and thus a discussion of potential tailings storage areas, potential waste disposal areas, heap leach pad areas and potential processing plant sites is not relevant to the Property at this time.



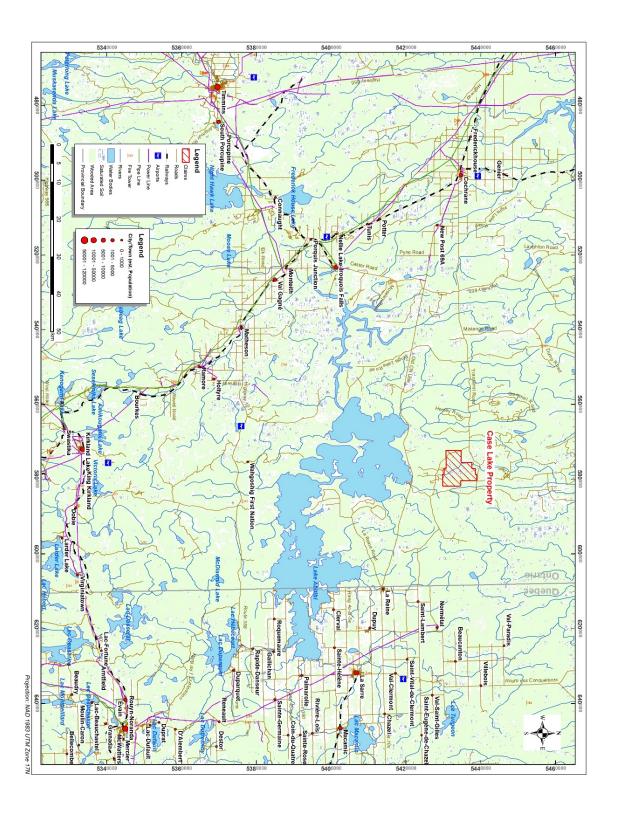


Figure 5-4 Regional infrastructure map



## 6.0 HISTORY

This section is derived from an internal Field Report by Selway (2017).

#### 6.1 1959-1962, Ontario Department of Mines

In 1959, S.B. Lumbers and assistants mapped Steele, Bonis and Scapa townships to produce a bedrock geology map (M2018) and a geological report (R008) in 1962 (Lumbers, 1962 a, b). Lumbers identified the Case pegmatite dykes in lot 5, concession V, Steele township. Lumbers noted that the spodumene-bearing dykes are zoned with aplite border zone and quartz core. Lumbers measured the pegmatite dyke as 825 ft (=251.5 m) east-west along strike and a maximum width of 100 ft (=30.5 m). The spodumene crystals are up to 3 ft (=0.9 m) long and 6 inches (=15.2 cm) across in the quartz-rich patches. The spodumene content of the dyke was estimated to be 10-15 % and a grab sample assayed 0.65 %Li<sub>2</sub>O. Columbite-tantalite, muscovite and tourmaline occur with the spodumene. Molybdenite is rare. Lumbers' map is still the most detailed bedrock map for the Steele township.

# 6.2 1963, Canada Department of Mines and Technical Surveys

In 1963, Canadian Johns-Manville Company carried out prospecting, minor trenching and geological mapping at 1':40'. They submitted samples from Steele Township to the Canada Department of Mines and Technical Surveys in Ottawa. A mineralogical study of 3 samples identified tantalite, microlite, beryl, spodumene and pollucite and a bulk sample contained 5.79 % Cs<sub>2</sub>O and 0.5 % Ta (Nickel, 1963).

#### 6.3 1968, J. Tesluk

Property owner J. Tesluk of Timmins trenched and stripped parts of the Case pegmatites in 1968 (Tesluk, 1969).

#### 6.4 1973, L. Darby and R. Strickland

R. Strickland was the optionee and drill owner who drilled one drill hole on historic claim L299570, lot 5, concession V in Steele township (MNDM assessment report: 32E04SW0008). L. Darby was the geologist who logged the drill hole and the claim holder. The hole was drilled 101 ft (=30.8 m) deep, azimuth 195°, dip 55° on Sept. 28 to Oct. 2, 1973. The hole was collared in Case Batholith with biotite orbicules and then intersected 83 ft (=25.3 m) of spodumene-bearing pegmatite in the Main Dyke. The hole ended in quartz



aplite border zone. Dominate minerals in the pegmatite intersection are plagioclase, quartz, muscovite and spodumene.

According to MNDM assessment reports 32E04SW0003 and KL0644, pegmatite outcrop was stripped and trenched and geologically mapped between 1971 and 1975 by consultant G.R. Guillet of Gartner Lee Associates Ltd.

# 6.5 1973, L. Darby/Gartner Lee Associates property report

On Nov. 27, 1973 Gartner Lee Associates Limited, consulting engineering geologists, completed a report addressed to L.H. Darby, Timmins based on a site visit on Oct. 10 and 11, 1973 (Gartner Lee, 1973). They observed pegmatite dykes in 8 trenches and blast pits and a small amount of drill core. The average composition of the main pegmatite is: 15% spodumene, 30% feldspar, 45% quartz and 10% muscovite. Pure chips of very coarse-grained pale green lath-shaped spodumene from the Main Dyke contained 7.5 % Li<sub>2</sub>O and 0.86 %Fe<sub>2</sub>O<sub>3</sub>. The aplite contained trace fine-grained orange garnet. Dr. S.B. Lumbers, Curator of Geology of the Royal Ontario Museum examined the biotite orbicules in the Case Batholith under a microscope and revealed a concentric arrangement of biotite, K-feldspar and quartz.

Gartner Lee Associates recommend deep drilling to 200 and 500 ft (=61.0 and 152.4 m) on the Main Dyke to determine its vertical extent and surface trenching to expose more pegmatite dykes. Both exploration activities should increase the potential tonnage on the property.

## 6.6 1974 to 1976, L. Darby/ Dex Ltd

Dex Ltd. carried out additional power stripping, blast-hole drilling and geological mapping of the South Dyke and trenching (assessment report KL0668). Dex Ltd. was a private company that L. Darby was the president of.

## 6.7 1980, L. Darby/Dex Ltd.

According to MNDM assessment report 32E04SW0003, Dex Ltd. stripped an area of pegmatite to the east and south and drilled one hole 216 ft (=65. 8 ft) in length in 1980. There is no drill log in assessments and the hole length was determined from claim abstracts. Dex Ltd. allowed the claims to lapse in 1987.



## 6.8 1991, J.G. Burns

- J.G. Burns conducted a work program in 1991 that consisted of (MNDM assessment report 32E04SW0003):
  - Line cutting with line spacing of 100 m over the property and 25 m spacing over the pegmatite outcrops with 20 m station intervals for all lines
  - 1:2500 scale and 1:500 scale geological maps of the North, Main and South pegmatite dykes
  - Magnetometer survey and VLF survey
  - Assays of 15 grab samples of spodumene-bearing pegmatite from trenches, 10 pairs of muscovite and feldspar samples from trenches, and 16 samples of granite and metasediment host rock.
- J.G. Burns noted that the largest pegmatite dyke is 420 m long by 30 m wide and the three pegmatite dykes strike at about 60° NE (Table 6-1). In the coarse-grained intermediate zones, the spodumene concentrations range up to 15-20%. Spodumene crystals are normally stubby and have an average length of 3-7 cm. In the very coarse-grained core margin zone, the spodumene concentrations are lower, but the crystals maybe as long as 50 cm with a 5-7 cm diameter. In the quartz core, the spodumene crystals are up to 90 cm in length.

Table 6-1 Case pegmatite dyke dimensions according to MNDM assessment report 32E04SW0003

Dyke	Max Length in Outcrop (m)	Max Thickness in Outcrop (m)	Distance Between Dykes (m)
North	100	15	20
Main	420	30	100
South	140	10	

- J.G. Burns' magnetometer survey showed that the magnetic signature across the Case Property is low and featureless and there is no correlation with mapped pegmatite contacts. A linear magnetic feature with a relief of 400 to 500 nT, a strike of east southeast strike may represent a diabase dyke however the strike does not match that of dyke sets in the region. The VLF survey was abandoned after the completion of two lines.
- J.G. Burns collected 15 grab samples from the pits which had been blasted by previous claim holders and assayed for Li, Ta, Cs and Y (Figure 6-2). Ten samples were collected from Main Dyke, 2 samples from North Dyke and 3 samples from the South Dyke (Table 6-2). The best assay was from Main Dyke inner



intermediate zone sample T-4B with 2.58% Li<sub>2</sub>O, 318 ppm Ta and 225 ppm Cs. One sample of a pure single spodumene crystal was assayed for Li with 3.55 %Li which equals 7.64 % Li<sub>2</sub>O. The assay results indicate that the North and Main Dykes are richer in lithium than the South Dyke.

Table 6-2 Grab samples assays from in trenches (MNDM assessment report 32E04SW0003)

Sample		,			,	
Number	Dyke Name	Pegmatite Zone	Li (%)	Li <sub>2</sub> O (%)	Ta (ppm)	Cs (ppm)
T-1A	Main Dyke	inner intermediate zone	0.28	0.60	172	106.5
T-1B	Main Dyke	quartz core	0.89	1.92	120	250
T-1C	Main Dyke	inner intermediate zone	1.11	2.39	434	102
T-2	Main Dyke	inner intermediate zone	0.65	1.40	244	249
T-3	Main Dyke	inner intermediate zone	0.73	1.57	36	72
T-4A	Main Dyke	inner intermediate zone	0.6	1.29	24	73.5
T-4B	Main Dyke	inner intermediate zone	1.2	2.58	318	225
T-4C	Main Dyke	inner intermediate zone	0.64	1.38	126	179.5
T-5	Main Dyke	quartz core	0.68	1.46	46	652
T-6	North Dyke	inner intermediate zone	0.43	0.93	638	264
T-7	Main Dyke	inner intermediate zone	0.68	1.46	52	133.5
T-8	North Dyke	quartz core	0.12	0.26	174	364
T-9	South Dyke	wall zone	0.11	0.24	40	223
T-10	South Dyke	wall zone	0.05	0.11	26	89.5
T-11	South Dyke	wall zone	0.01	0.02	36	94

#### 6.9 1996-1998, G. O'Reilly

A composite sample was taken from the Main Dyke in July 1996 by G. O'Reilly (MNDM assessment report 32E04SW2001). The sample consisted of muscovite, spodumene, K-feldspar and greisen like material.

On Oct. 2, 1997, Dr. F.W. Breaks of the Ontario Geological Survey visited the property. Breaks sampled K-feldspar and primary muscovite from the trenches on the North, Main and South Dykes as in Burns (1991). Breaks interpreted the K-feldspar and muscovite assays as an increasing evolution trend from South Dyke to Main Dyke to North Dyke for Cs in K-feldspar and Ta in muscovite. Electron microprobe work identified Ta-rich minerals tapiolite and microlite. The results of Breaks site visit lead to the following recommendation: prospect the poorly exposed ground to the north of the North Dyke for additional pegmatites.

In April to May, 1998, G. O'Reilly prospected ground north of the North Dyke, but only found granodiorite in outcrop. Stripping the area to the north of the North Dyke also didn't uncover any more pegmatite. Six



areas of outcrop were sampled within the North Dyke. The east trench sample # 13 (T-6 of Burns, 1991) contained 1790 ppm Cs while the west trench sample #11 (T-8 of Burns, 1991) contained 880 ppm Ta.

#### 6.10 1999, JD Horne & Associates Ltd

In September 1999, Joseph Horne of Cardinal Exploration Services completed 4500 m<sup>2</sup> mechanical stripping and selected power washing on the North, Main and South Dykes (MNDM assessment report 32E04SW2002). The stripping resulted in revisions of the size of each dyke (Table 6-3).

Table 6-3 Case pegmatite dyke dimensions according to MNDM assessment report 32E04SW0002

Dyke	Max Length in Outcrop (m)	Max Thickness in Outcrop (m)	Distance Between Dykes (m)	
North	100	12	20	
Main	350	35	100	
South	250	10		

A field grid was cut which comprised of an east-west baseline (1.375 km) and 14 north-south cross lines (10.126 km) on 100 m centers. Picketed stations were established on 25 m centers along the baseline and all of the cross lines. The Property was previously surveyed in 1970's and 8 of the 9 original survey pins were located in the field and used as field control.

- J. Horne identified an unusual-looking northwest-southeast trending mafic intrusive in a rescue trench north of the North Dyke (area C). It likely corresponds to the magnetitic high previously noted by Burns (1991) (MNDM assessment report 32E04SW0003).
- J. Horne also identified two old drill collars on the Main Dyke: one is Darby's 1973 drill collar and the other must be Dex Ltd's 1980 drill collar.
- J. Horne spent 10 days prospecting and mapping the entire field grid around the Case pegmatites and collected 17 grab samples including pegmatite, metasediments, and quartz veins.

In October 1999, J. Horne conducted 2 days of regional prospecting to the northeast and the northwest of the known Case pegmatite dykes (Figure 6-1). A total of 15 grab samples were collected of granodiorite, metasediments and pegmatite rocks. This regional prospecting lead to the discovery of the Northeast dyke



10 m wide by 75 m along strike with very coarse-grained spodumene. Assay of in situ sample 20365 resulted in > 500 ppm Li and > 100 ppm Ta at 579046 E and 5432147 N.

In November 1999, J. Horne collected two plugger hole sample series normal to the strike across the North Dyke (Figure 6-2). Section 1 had 12 samples collected 11.7 m across the North Dyke at 0.5 m centers starting at the south contact (samples 3439-3450 inclusive). The best lithium assay was sample 3441 with 2.29 %Li<sub>2</sub>O and 160 ppm Ta. Sample 3442 has 2.16 % Li<sub>2</sub>O and 425 ppm Ta. This indicates that the spodumene-rich zone in the North Dyke is also rich in Ta. The purpose of Section 2 was to identify any geochemical alteration halo around the pegmatite. Section 2 had 7 vertical holes drilled (samples 20377-30383 inclusive). The first hole was drilled in the North Dyke at its north contact and the remaining 6 samples were collected from the granodiorite host rock north of the contact at distances of 0.5, 1.5, 5, 10, 20, 35 m from the contact. The North Dyke exhibits a lithium lithogeochemical halo between 10 and 20 m.

A total of 8.864 km of high density, total field magnetic and gradient data was completed on the grid. The pegmatite -granodiorite contrast was not significant enough to adequately define the dykes contacts. The northwest trending mafic intrusive (located north of the North Dyke) was prominent and could be traced further along strike.

#### 6.11 2001, Platinova A/S – North, Main and South Dykes

Platinova A/S optioned the Case property in mid-2001 and conducted geological mapping, channel sampling and drilling (MNDM assessment report: 32E04SW2003).

Platinova completed geological mapping at 1:200 scale on a 10 m grid. Based on surface exposures and drilling, Platinova estimated the dyke dimensions (Table 6-4). Platinova's detailed geological mapping divided the Case pegmatite dykes into pegmatites zones (Table 6-5). Main and North Dykes are zoned with aplitic albite border zones and spodumene-bearing intermediate zones and a quartz core. The surface outcrops for South and East Dykes lack spodumene-bearing pegmatite zones.

Table 6-4 Case pegmatite dyke dimensions according to Platinova, 2001

Pegmatite Dyke	Length (m)	Max Thickness (m)	North Contact Dip (deg)	South Contact Dip (deg)
North Dyke	120	8	50 to 75N	40 to 65 N
Main Dyke	300	33	45 to 60 N	45 to 75 N
South Dyke	240	14	85N?	85 N?



Table 6-5 Case pegmatite zonation according to Platinova, 2001. Zones 1 to 8 occur in Main and North Dykes. Zone 8 occurs in South and East Dykes.

Pegmatite	Name of Pegmatite Zone	Mineralogy of Pegmatite Zone
Zone		
1,7	albitic aplitic border zone	muscovite-garnet-quartz-albite
2,6	outer intermediate zone	muscovite-albite-spodumene-quartz-K-feldspar
3,5	inner intermediate zone	muscovite-spodumene-quartz-K-feldspar
4	quartz core	very coarse quartz-rich with coarse K-feldspar and spodumene
8	muscovite-quartz-K-feldspar zone	muscovite-quartz-K-feldspar, no spodumene, possible beryl
9	aplite dykes	muscovite-quartz-albite aplite
10	spodumene lenses	fine-grained spodumene-rich lenses

Platinova did some grab sampling of the trench rubble of the Main and North Dyke to test for tantalum mineralization (Figure 6-2). An assay highlight is surface chip sample 27043 from the inner intermediate zone of the North Dyke with > 4000 ppm Ta.

Platinova also completed sampling of 6 channels totaling 113.1 m on North, Main and South Dykes. Two channels were cut on North Dyke, 3 on Main Dyke and 1 on the South Dyke (Figure 9-2). Channels on the North and Main Dykes were 30 m apart and samples were 1 m long. Assay highlights from Platinova's channel sampling include:

- North Dyke, SC-1, sample 23503, 2.38 % Li<sub>2</sub>O
- Main Dyke SC-3, sample 23549, 2.73 % Li<sub>2</sub>O, 186 ppm Cs, 1,330 ppm Rb, >100 ppm Be and 489 ppm Ta.

August to September 2001, Platinova A/S completed 7 drill holes totaling 508.76 m on the Case property to investigate the Ta/Nb contents of the pegmatite dykes (Table 6-6) (Figure 6-2). These holes were drilled on 5 sections across Main and North Case Pegmatite Dykes on claim 1213780.



Table 6-6 Drill collar locations for Platinova's 2001 drill program.

Drill					
hole	Easting	Northing			Total Length
number	(m)	(m)	Azimuth	Dip	(m)
DDH-1	578217	5431685	151	-45	45.1
DDH-2	578198	5431718	148	-47	79.57
DDH-3	578221	5431734	148	-45	70.27
DDH-4	578171	5431702	148	-46	73.27
DDH-5	578145	5431686	148	-46	76.57
DDH-6	578089	5431664	148	-45	79.27
DDH-7	578160	5431720	148	-65	84.71
				total	508.76

All of the drill core samples were analyzed for Ta and Nb, but only DDH-2 was analyzed for Li, Rb. Cs and Be. Assay highlights include:

- sample 27194, from 39.0 to 40.0 m, interval 1.0 m with 1.52 % Li<sub>2</sub>O, 62 ppm Ta, > 100 ppm Be from the inner intermediate zone
- sample 27200, from 45.0 to 46.0 m, interval 1.0 m with 1.36 % Li<sub>2</sub>O, 53 ppm Ta, > 100 ppm Be from the inner intermediate zone

#### 6.12 2001, Navigator Exploration Corp – East Dyke

Navigator Exploration Corp. conducted exploration to assess the tantalum potential of the East Dyke (MNDM assessment report 32E04SW2004). In June 2001, seven grab samples were collected and analyzed for Nb and Ta, and the pegmatite was prospected. In August 2001, a channel was cut 16.6 m long from wall to wall across the western part of East Dyke and analyzed for Nb and Ta and multi-elements as 1 m samples. Feldspar and mica pairs from 4 channel samples were analyzed for multi-elements.

Navigator concluded that the tantalum levels in the grab and channels samples were low and the trace element content of the feldspar and mica pairs were also unencouraging. The East Dyke is less evolved than the other Case pegmatite Dykes and thus likely has no potential for economic amounts of tantalum.

The East Dyke does not contain spodumene and thus has no potential for economic amounts of lithium.



# 6.13 2001, E. Ludwig – Northeast Dyke

E. Ludwig held the Steele township property which was located directly east of the Case Pegmatite North and Main Dykes held by Platinova A/S at the same time (MNDM assessment report 32E04SW2006). A total of 5 grab samples were collected in June 2001. Prospecting identified numerous old trenches with about 5% spodumene and traces of columbite and molybdenite located in the area of the Northeast Dyke. The spodumene crystals were up to 6 cm long and 1 cm wide. No assays were completed on the samples.

#### 6.14 2010, Fieldex Exploration Inc.

In March 2010, Fieldex Exploration Inc ("Fieldex") announced that it had entered an option agreement with Mantis Minerals Corp to acquire up to 60% of the Case pegmatite Property (Fieldex press release dated March 10, 2010).

In September 2010, Fieldex Exploration Inc. resampled Platinova's 7 drill holes on the North and Main Dykes (Fieldex press release dated Sept. 13, 2010). The assay highlights include:

- DDH-1 from 23.80 to 33.00 m with 1.98 % Li<sub>2</sub>O over 9.20 m
- DDH-4 from 43.32 to 47.72 m with 1.49 % Li<sub>2</sub>O over 4.40 m
- DDH-5 from 43.00 to 57.07 m with 1.35 % Li<sub>2</sub>O over 14.07 m

#### 6.15 2010, P. Hermeston – East Dyke

Navigator Exploration allowed their claims on the East Dyke to lapse and the area was staked by P. Hermeston late summer of 2009 (MNDM assessment report 2.45523). In April and May, 2010, P. Hermeston with the assistance of E. Shynkorenko established a field grid system and conducted a Beep Mat survey over the known outcrops and adjacent areas of East Dyke. Navigator concluded that the East Dyke was not economic for tantalum, so P. Hermeston explored it for rubidium and muscovite.

Study Area A was over East Dyke outcrops and immediate adjacent areas. A base line was cut with two tie lines (a total of 2.65 km), and 100 m interval grid system with station locations every 50 m located by handheld GPS. Study Area B covers a dyklet with a 50 m interval grid was used with stations at every 25 m.

The Beep Mat survey identified several locations of higher quality conductivity: 7 areas in Study Area A and 3 areas in Study Area B. Higher magnetic values maybe the result of mafic intrusives.



#### 6.16 2010, P. Hermeston – Northeast Dyke

On August 24, 2010 P. Hermeston staked claim 4249052 northeast of Case pegmatites (MNDM assessment report 2.47355). On August 25, 2010, P. Hermeston and E. Shynkorenko conducted prospecting on the Northeast Dyke, collected 4 grab samples and 2 soil samples.

The Northeast Dyke is hosted by fine-grained biotite-garnet metasediments. The Northeast Dyke is exposed in two areas and appear to dip shallowly and trend northeast-southwest direction. The southern exposed area is averaging 10 m wide and an estimated 75 m in length. The northern exposed area averages 20 m in width and 48 m in length. Descriptions and assays of the 4 grab samples is given in Table 6-7.

Table 6-7 Hermeston's 2010 grab sampling of Northeast Dyke, NAD 83.

Easting (m)	Northing (m)	Description	Li	Та
			(ppm)	(ppm)
578,789	5,432,297	vein of K-feldspar, quartz, mica		
			19	0.005
579,135	5,432,590	vein of K-feldspar, quartz, mica		
			3	0.005
579,051	5,432,289	vein of K-feldspar, quartz, mica;		
		1 m wide with NE-SW trend;	93	0.005
E70 076	E 422 266	' '		
379,076	3,432,300		. 25	0.010
		, , ,	, 33	0.010
			n	
	578,789 579,135	578,789 5,432,297 579,135 5,432,590 579,051 5,432,289	578,789 5,432,297 vein of K-feldspar, quartz, mica  579,135 5,432,590 vein of K-feldspar, quartz, mica  579,051 5,432,289 vein of K-feldspar, quartz, mica; 1 m wide with NE-SW trend; southern exposed portion  579,076 5,432,366 peg dyke of K-feldspar, quartz, mica, green spodumene crystal; 0.5 to 1.0 m wide with NE-SW	578,789 5,432,297 vein of K-feldspar, quartz, mica 19 579,135 5,432,590 vein of K-feldspar, quartz, mica 3 579,051 5,432,289 vein of K-feldspar, quartz, mica; 1 m wide with NE-SW trend; 3 southern exposed portion 579,076 5,432,366 peg dyke of K-feldspar, quartz, mica, green spodumene crystal; 35

#### **6.17 2010-2011**, **P. Hermeston** – **South Dyke**

Prospecting, mapping and sampling was conducted on the South Dyke by P. Hermeston with the assistance of E. Shynkorenko on Oct. 26, 2010 and July 21, 2011 (MNDM assessment report 2.49595). Claim 1214668 was staked by P. Hermeston on Aug. 25, 2009 which includes the eastern part of the South Dyke and most of the East Dyke.

On Oct. 26, 2010, two rock samples were collected from the eastern part of the South Dyke (Figure 6-2). One of the samples was a muscovite sample taken from the midsection of the exposed dyke to evaluate the lithium and gallium content in the mica. The other sample was a pegmatite sample with a few small (2 cm)



greenish-blue beryl crystals from a ~1975 trench. On July 21, 2011, two more rock samples were collected: one from a water filled trench and the other from the mid-section of the exposed dyke.

The grab sample assays are given in Table 6-8. The muscovite sample had higher Rb and Ga contents than the pegmatite samples, but still not significant. Overall, the Li and Ta contents of the pegmatite samples are insignificant, as the South Dyke does not contain spodumene.

Table 6-8 Hermeston's 2010-2011 grab sampling of South Dyke, NAD 83

Sample				Li	Та	Ga	Rb	Cs
Number	Easting (m)	Northing (m)	Description	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
STSD-01	578,377	5,431,547	muscovite	172.5	0.06	10.15	329	15.85
STSD-02	578,393	5,431,564	pegmatite with a few greenish-blue beryl	191	0.01	2.08	96.3	22.1
STSD-03	578,386	5,431,561	pegmatite	101	0.005	1.45	57.2	6.73
STSD-04	578,381	5,431,551	pegmatite	3.7	0.005	0.62	30.7	1.81

#### 6.18 2012, P. Hermeston – Little Joe Lake

On May 12, 2012, P. Hermeston prospected the area south of the South Dyke and north of Little Joe Lake in search of parallel pegmatite dykes (MNDM assessment report 2.52017). One rock grab sample (mainly feldspar and minor quartz and mica) and 3 soil-humus samples were collected (Figure 6-1). The majority of the dry-land area north of Little Joe Lake is covered with a thick overburden consisting of deep humus bog overlaying coarse sand. The rare-element content of the samples was insignificant, but two soil samples had elevated Cu-Ni contents (Table 6-9). P. Hermeston recommended that the area be prospected for Cu-Ni occurrences similar to those south of Little Joe Lake.

Table 6-9 Hermeston's 2012 samples for Little Joe Lake area, NAD 83

Sample Number	Easting (m)	Northing (m)	Sample Type	Li (ppm)	Ta (ppm)	Cu (ppm)	Ni (ppm)
ST-01-12	578,000	5,431,060	soil-humus	N.A.	N.A.	N.A.	N.A.
ST-02-12	578,168	5,431,303	soil-humus	1.4	0.005	71.4	32.1



ST-03-12	578,168	5,431,303	rock (float)	3.8	0.005	0.6	0.4
ST-04-12	578,305	5,431,181	soil-humus	1.4	0.01	36.5	19.9

# 6.19 2014, E. Shynkorenko/P. Hermeston – Northeast Dyke

On May 30 and 31, 2014, E. Shynkorenko and P. Hermeston conducted prospecting, grab sampling and mapping on the Northeast Dyke in claim 4249052 (MNDM assessment report 2.55141). This work was a follow up of prospecting that they conducted in 2010. Two samples were collected to define the silica, feldspar and rare-element potential for the property (Figure 6-1). They noted that deep moss covered areas lacking tree cover inferred that extensions of the dykes might trend NE-SW. Two pegmatite samples were collected and the description and assays are given in Table 6-7. The elevated Li assay for sample NED-01-14 suggests the presence of lithium mica.

Table 6-10 Shynkorenko's 2014 grab sampling of Northeast Dyke, NAD 83

Sample	Easting (m)	Northing (m)	Li (ppm)	Та	Location	Description
				(ppm)		
NED-	579,098	5,432,355	> 10,000	57.4	outcrop - north	pegmatite -
01-14					exposure	quartz, feldspar
NED-	579,138	5,462,283	58	< 0.5	float - south	mainly quartz
02-14					exposure	and feldspar,
						some hornblende

#### 6.20 Summary of exploration history

A summary of the historic exploration work on the Case Lake Property is given in Table 6-11. Historical grab sample locations are plotted in Figure 6-1 and Figure 6-2.

Table 6-11 Summary of historic exploration work on the Case Lake Property

Assessment Report Number	Year of Report	Year of Work	Company	Type of Work	Description of Work
KL2653	1969	1969	J. Tesluk	trenching, stripping	trenching and stripping of Case pegmatites



Assessment Report Number	Year of Report	Year of Work	Company	Type of Work	Description of Work
32E04SW0008	1973	1973	R. Strickland/L. Darby	drilling	one drill hole 101 ft, collared in Case Batholith, intersected 83 ft of spodumene-bearing pegmatite
Gartner Lee Associates report	1973	1973	L. Darby	geological	property visit, assays of pure mineral chips
KL0644	1974	1974	L. Darby	geological	trenching, stripping, geological mapping, 1 drill hole 101 ft
KL0668	1976	1976	L. Darby/ Dex Ltd	geological	stripping, blast-hole drilling, geological mapping of South Dyke, trenching
32E04SW0003	1991 1991		J.G. Burns	geology and geophysics	line cutting, grab samples of North, Main and South Dykes, magnetometer survey, VLF survey, geology map of North, Main and South Dykes
32E04SW2001	1998	1996-1998	G. O'Reilly	prospecting, grab sampling	prospecting for new pegmatites, stripping, grab sampling
32E04SW2002	1999	1999	J. Horne	mapping, stripping, plugger holes, geophysics	4500 m <sup>2</sup> of stripping, discovery of NE Dyke, 2 plugger holes on North Dyke, total magnetic and gradient surveys
32E04SW2003	2002	2001	Platinova A/S	drilling, channel sampling, detailed geological mapping	7 drill holes totaling 508.76 m, 6 channel samples, detailed geological map of North, Main and South Dykes
32E04SW2004	2002	2001	Navigator Exploration Corp	grab and channel sampling	7 grab samples, 16.6 m long channel on East Dyke
32E04SW2006	2003	2001	E. Ludwig	prospecting and grab samples	5 grab samples with 5% spodumene, near NE Dyke
2.45523	2010	2010	P. Hermeston	line cutting, geophysics	Beep Mat survey over the East Dyke
2.47355	2011	2010	P. Hermeston	sampling, mapping	prospecting, 4 grab samples from NE Dyke
2.49595	2011	2010/2011	P. Hermeston	grab sampling	4 grab samples from South Dyke
2.52017	2012	2012	P.Hermeston	grab sampling	1 grab sample, 3 soil-humus samples from Little Joe Lake
2.55141	2014	2014	E. Shynkorenko	grab sampling	2 grab samples from NE Dyke



Assessment Report Number	Year of	Year of Work	Company	Type of Work	Description of Work
	Report				



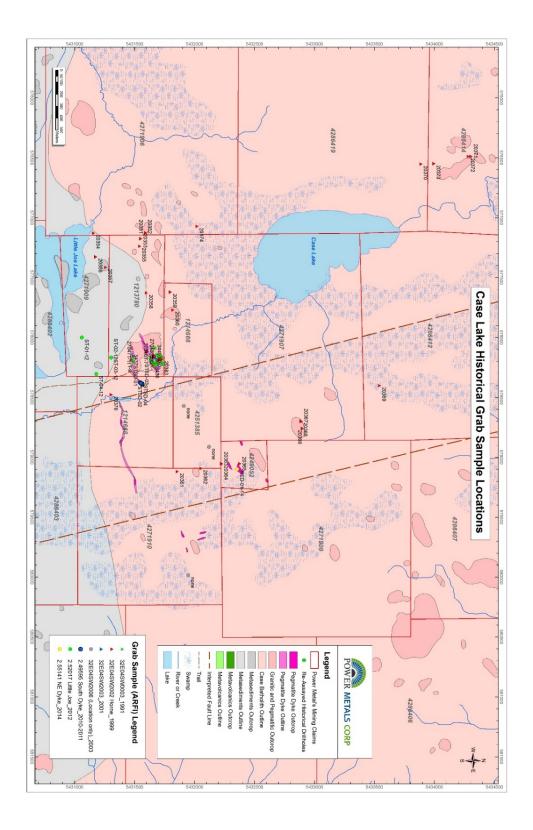


Figure 6-1 Compilation of regional historical grab samples at Case Lake.



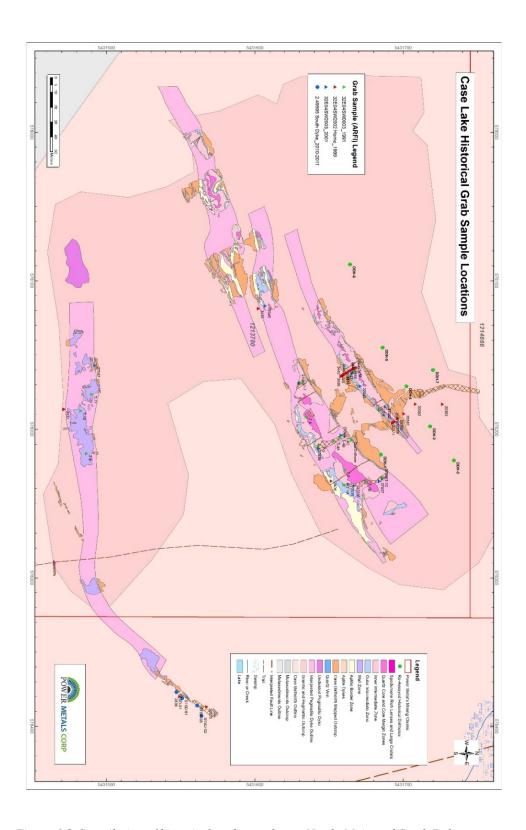


Figure 6-2 Compilation of historical grab samples on North, Main and South Dykes.



# 7.0 GEOLOGICAL SETTING AND MINERALIZATION

# 7.1 Regional Geology

The Case Lake pegmatite swarm occurs along a subprovincial boundary between the metasedimentary Opatica Subprovince to the north and greenstone Abitibi Subprovince to the south (Figure 7-1) (Breaks et al., 2006). The Opatica Subprovince consists of the granitic Case Batholith, and the Abitibi Subprovince consists of the Scapa metasedimentary rocks (metagraywacke and garnet schist) and the Steele volcanic rocks (amphibolite) in the Case Lake area (Lumbers, 1962, M2018) (Figure 7-2).

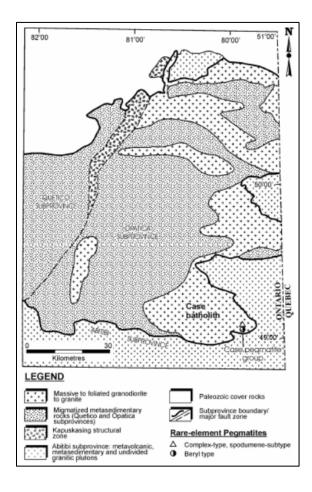


Figure 7-1 Regional geology map (from Breaks et., 2006, OFR 6195).



#### 7.2 Local Geology

The Case Lake pegmatite swarm is hosted by the Case Batholith which is an extensive 50 by 85 km ovoid granitic complex that is part of the Optica Subprovince (Jackson and Fyon, 1991) (Figure 7-1 and Figure 7-2). The Case Batholith is a weakly foliated biotite granodiorite to quartz monzonite which is characterized by biotite-rich orbicules that range in diameter from 1 to 7 cm (Breaks et al., 2006, OFR6195) (Figure 7-3). The Case Batholith is mainly quartz monzonite, but near its contacts, *i.e.*, on the Case Lake Property, it grades into granodiorite (Lumbers, 1962a). The main components in the granodioite are quartz (20%), feldspar (70%) and biotite (10%) (MNDM assessment report: 32E04SW2002).

The Scapa Metasediments are mostly metamorphosed greywacke and garnet schist and dip moderately-steeply southward at 60 to 70° (MNDM assessment report: 32E04SW2002). The metasediments are bedded with individual beds ranging from 1-2 cm in thickness. The metasediments are fine-grained and schistose. The major minerals are quartz, feldspar and biotite with minor garnet and staurolite. Staurolite is easily identified on weathered surface as 2 cm diameter knobs.

The Steele volcanics form a narrow lenticular belt composed of amphibolite with some interbedded metasediment and metamorphosed rocks (Lumbers, 1962a). Some of the amphibolites are schistose and contain garnet, but most are poorly foliated and exhibit relict volcanic structures (i.e., amygdaloidal, pillowed, massive, diabasic and porphyritic textures). The amphibolites are metamorphosed mafic volcanic rocks.



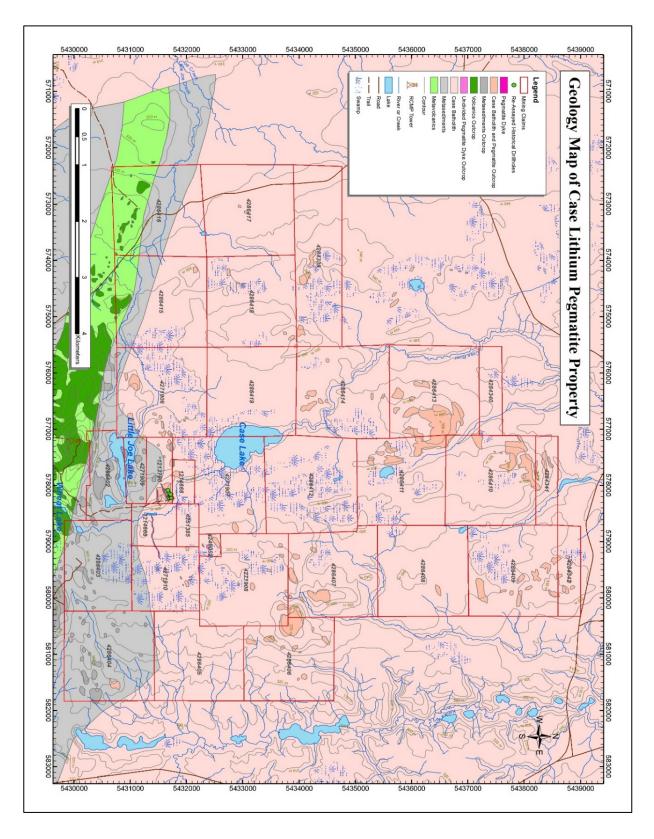


Figure 7-2 Local geology of Case Lake Property.





Figure 7-3 Orbicular Case Batholith host rocks adjacent to Case North pegmatite dyke (Breaks et al., 2006, OFR 6195).

# 7.3 Property Geology

Case Lake pegmatite swarm consists of five dykes exposed on surface (Breaks et al., 2006, OFR6195; MNDM assessment reports: 32E04SW2002, 2000; 32E04SW2003, 2001; 32E04SW2004, 2001; 2.47355, 2011) (Figure 7-4):

- 6. North Dyke -12 m thick and > 100 m strike length
- 7. Main Dyke (also known as Central Dyke) -35 m thick and >350 m strike length
- 8. South Dyke -10 m thick and > 250 m strike length
- 9. East Dyke -19 m wide and > 1200 m strike length
- 10. Northeast Dyke -10 m wide and > 75 m length





Figure 7-4 View of Main Dyke looking north at North Dyke (Breaks et al., 2006, OFR 6195).

All of the known Case pegmatite dykes are open along strike, as the current strike length only represents surface exposure and doesn't represent the total length of the pegmatite dykes. Thus, there is potential to increase the strike length of each mineralized dyke.

The North, Main and South dykes are hosted by the Case granodiorite batholith and they strike at 60 to 70° and dip 40 to 60°. The East and Northeast Dykes are hosted by fine-grained biotite-garnet metasedimentary rocks. While Figure 7-5 shows the East Dyke being hosted by the Case Batholith, mapping by Navigator Exploration Corp. in 2001 (MNDM assessment report 32E04SW2004) indicates that the East Dyke is in contact with metasedimentary rocks, but more geological mapping is required to fine-tune the Case Batholith and metasedimentary boundary around the East Dyke. The East Dyke is steeply dipping and has a E-W strike. Geological mapping by Hermeston (MNDM assessment report 2.47355, 2010) indicates that the Northeast Dyke is hosted by metasediments, but additional geological mapping is required to confirm the host rock. The Northeast Dyke has a shallow dip and trend in a northeast-southwest direction. The Northeast Dyke consists of northern and southern exposures and numerous dykelets.



Both the North and Main Dykes have spodumene-rich zones (muscovite-K-feldspar-quartz-green spodumene-albite) and albitic aplite border zones (Breaks et al., 2006, OFR6195). Spodumene is absent in the beryl-type South Dyke and the potassic pegmatite East Dyke (MNDM assessment report: 32E04SW2004, 2001). The East Dyke consists mostly of grey, very coarse-grained K-feldspar, quartz and minor muscovite, quartz pods and aplite bands.

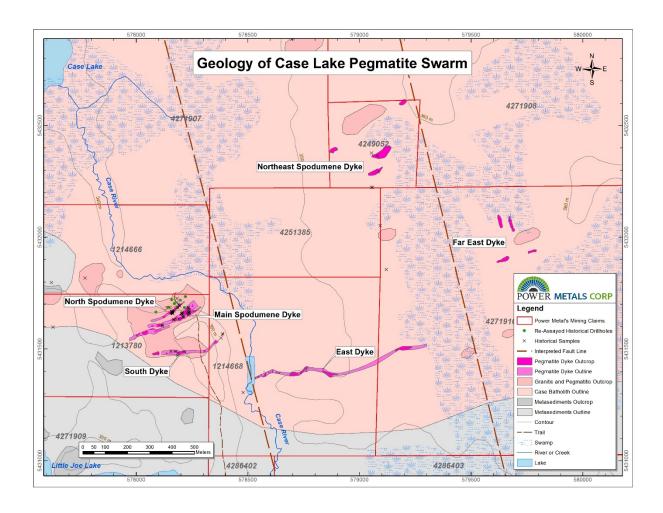


Figure 7-5 Geology map of Case Lake pegmatite swarm.

# 7.4 Mineralization

The spodumene in the North Dyke is very coarse-grained with blades up to 5 by 70 cm. The spodumene in the Main Dyke is abundant, very coarse-grained and green and white in colour (Figure 7-6 and Figure 7-7) (Breaks et al., 2006, OFR6195).



Platinova's mapping in 2001 divided the Main and North Dykes into 4 pegmatite zones (MNDM assessment report: 32E04SW2003, 2001) (Figure 7-8). The albitic aplite border zone (1, 7) does not contain spodumene. In the Main Dyke, the outer intermediate zone (2, 6) has about 10% greenish-grey spodumene. The inner intermediate zones (3, 5) contains spodumene which is often 2-4 cm across and 20 cm to 3.9 m long in the upper part of the zone. The spodumene is mostly greenish-grey, but may be brownish or pink-coloured. The lower part of the zone contains 20% spodumene that is typically 10-49 cm long and 1-4 cm across. The quartz core zone (4) contains up to 15% greenish grey spodumene. The spodumene crystals are coarser than in the inner intermediate zone.

In the North Dyke, the outer intermediate zone (2, 6) contains 20% spodumene that is 2 to 10 cm long with a yellowish hue in the lower part of the zone (MNDM assessment report: 32E04SW2003, 2001). The outer intermediate zone contains up to 25% spodumene that is up to 8 cm long and often 3-4 cm long with a yellowish-green colour in the upper part of the zone. The inner intermediate zone (3, 5) contains 15% pale green spodumene that is often 15 cm long and may be up to 1.2 m long in the lower part of the zone. The inner intermediate zone contains 20% spodumene that is often 60 cm long and 3-5 cm across in the upper part of the zone. The quartz core (4) contains very little spodumene.

Horne's sampling in 1999 located the Northeast Dyke and noted that it hosted very coarse-grained spodumene and a grab sample contained > 500 ppm Li and > 100 ppm Ta (MNDM assessment report: 32E04SW2002, 2000). It is recommended that follow up geological mapping of this dyke be completed.



Figure 7-6 Spodumene megacrysts, quartz and white K-feldspar from Main Dyke (Breaks et al., 2006, OFR 6195). Rusty pock marks in the spodumene represent weathered sphalerite.



Tantalum mineralization is abundant in the Main Dyke and the North Dyke and is hosted within spodumene-rich pegmatite zone and albite-rich pegmatite zone (Figure 7-7). This expands the mineralization within the Case pegmatites to include both the spodumene-rich pegmatite zones with Li and Ta mineralization and the albite-rich pegmatite zones with Ta mineralization. Breaks et al. (2006) study of Case Lake pegmatite dykes showed that the Ta content increases from the South Dyke to the Main Dyke to the North Dyke with increasing fractionation (OFR 6195). Breaks et al. (2006) completed electron microprobe analyses of the Nb-Ta-oxide minerals and identified that most of the Nb-Ta-oxide minerals in the South Dyke are ferrocolumbite. Most of the Nb-Ta-oxide minerals in the Main and North Dykes are manganocolumbite and manganotantalite. Microlite occurs as an infilling between abundant spodumene blades in the North Dyke.



Figure 7-7 Black manganocolumbite-manganotantalite in spodumene-rich zone of the Main Dyke (Breaks et al., 2006, OFR 6195).



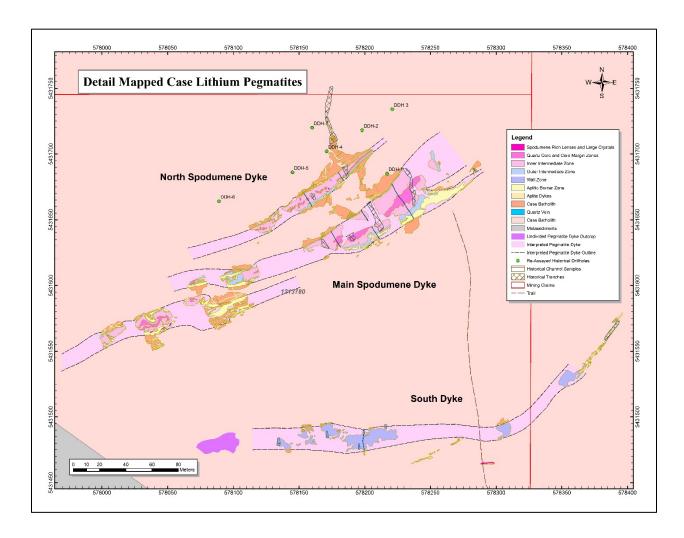


Figure 7-8 Detailed geology map of the North, Main and South Dykes (from Platinova, 2001, MNDM assessment report: 32E04SW2003).

# 8.0 DEPOSIT TYPES

#### 8.1 Rare-element pegmatites of Superior Province

Rare-element pegmatites may host several economic commodities, such as tantalum (Ta-oxide minerals), tin (cassiterite), lithium (ceramic-grade spodumene and petalite), rubidium (lepidolite and K-feldspar), and cesium (pollucite) collectively known as rare elements, and ceramic-grade feldspar and quartz (Selway *et al.*, 2005). Two families of rare-element pegmatites are common in the Superior Province, Canada: Li-Cs-Ta enriched ("LCT") and Nb-Y-F enriched ("NYF"). LCT pegmatites are associated with S-type, peraluminous (Al-rich), quartz-rich granites. S-type granites crystallize from a magma produced by partial melting of preexisting sedimentary source rock. They are characterized by the presence of biotite and



muscovite, and the absence of hornblende. NYF pegmatites are enriched in rare earth elements ("REE"), U, and Th in addition to Nb, Y, F, and are associated with A-type, subaluminous to metaluminous (Alpoor), quartz-poor granites or syenites (Černý, 1991a).

Rare-element pegmatites derived from a fertile granite intrusion are typically distributed over a 10 to 20 km² area within 10 km of the fertile granite (Breaks and Tindle, 1997). A fertile granite is the parental granite to rare-element pegmatite dykes. The granitic melt first crystallizes several different granitic units (e.g., biotite granite to two mica granite to muscovite granite), due to an evolving melt composition, within a single parental fertile granite pluton. The residual melt enriched in incompatible elements (e.g., Rb, Cs, Nb, Ta, Sn) and volatiles (e.g., H<sub>2</sub>O, Li, F, BO<sub>3</sub>, and PO<sub>4</sub>) from such a pluton can then migrate into the host rock and crystallize pegmatite dykes (Figure 8-1). Volatiles promote the crystallization of a few large crystals from a melt and increase the ability of the melt to travel greater distances. This results in pegmatite dykes with coarse-grained crystals occurring in country rocks considerable distances from their parent granite intrusions.

There are several geological features that are common in rare-element pegmatites of the Superior province of Ontario (Breaks and Tindle, 2001; Breaks et al., 2003) and Manitoba (Černý et al., 1981; Černý et al., 1998) (Selway *et al.*, 2005):

- 1. Subprovincial Boundaries: The pegmatites tend to occur along subprovincial boundaries.
- Metasedimentary-Dominant Subprovince: Most pegmatites in the Superior province occur along subprovince boundaries, except for those that occur within the metasedimentary Quetico subprovince.
- 3. Greenschist to Amphibolite Metamorphic Grade: Pegmatites are absent in the granulite terranes.
- 4. *Fertile Parent Granite:* Most pegmatites in the Superior province are genetically derived from a fertile parent granite.
- 5. Host Rocks: Highly fractionated spodumene- and petalite-subtype pegmatites are commonly hosted by mafic metavolcanic rocks (amphibolite) in contact with a fertile granite intrusion along subprovincial boundaries. Pegmatites within the Quetico subprovince are hosted by metasedimentary rocks or their fertile granitic parents.
- 6. *Metasomatized Host Rocks:* Biotite and tourmaline are common minerals, and holmquistite is a minor phase in metasomatic aureoles in mafic metavolcanic host rocks to spodumene- and petalite-subtype pegmatites. Tourmaline, muscovite, and biotite are common, and holmquistite is rare in metasomatic aureoles in metasedimentary rocks.



- 7. *Li Minerals:* Most of the complex-type pegmatites of the Superior province contain spodumene and/or petalite as the dominant Li mineral, except for a few pegmatites which have lepidolite as the dominant Li mineral.
- 8. *Cs Minerals*: Cesium-rich minerals only occur in the most extremely fractionated pegmatites.
- 9. *Ta-Sn Minerals:* Most pegmatites in the Superior province contain ferrocolumbite and manganocolumbite as the dominant Nb-Ta-bearing minerals. Some pegmatites contain manganotantalite or wodginite as the dominant Ta-oxide mineral. Tantalum-bearing cassiterite is relatively rare in pegmatites of the Superior province.
- 10. *Pegmatite Zone Hosting Ta Mineralization:* Fine-grained Ta-oxides (e.g., manganotantalite, wodginite, and microlite) commonly occur in the aplite, albitized K-feldspar, mica-rich, and spodumene core zones in pegmatites in the Superior province.

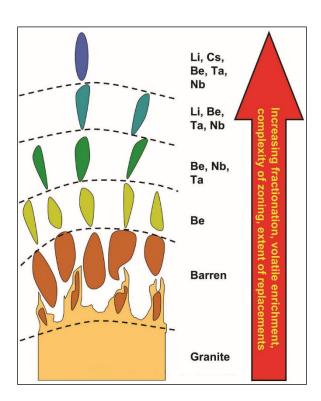


Figure 8-1 Chemical evolution of lithium-rich pegmatites with distance from the granitic source (London, 2008).



#### 8.2 Case Lake pegmatites

The Case Lake pegmatites occur on the subprovincial boundary between the Opatica metasedimentary Subprovince and the Abitibi greenstone Subprovince (Figure 7-1) (Breaks et al., 2006). The Case Lake pegmatites are hosted by their parental granite, the Case Batholith. North and Main Dykes are classified as spodumene-subtype pegmatites, as the dominate lithium mineral is spodumene. South Dyke is classified as beryl-type pegmatite, as lithium minerals have not been identified within this dyke and beryl is the most fractionated mineral present. The pegmatite dykes increase in fractionation from the South to Main to North Dykes.

#### 9.0 EXPLORATION

A total of 7 historic drill holes totaling 508.76 m from Platinova's 2001 drill program were relogged and resampled by Caracle Creek Jan. 19-23, 2017. These holes were drilled on 5 sections across Main and North Case Pegmatite Dykes on claim 1213780 (MNDM assessment report: 32E04SW2003) (Figure 7-8).

#### 9.1 Sampling Methodology

The drill core was resampled so that 1 m of the Case Batholith granodiorite host rock was sampled followed by 1 m long samples of the pegmatite dyke and 1 m of the Case Batholith. The sampling followed lithology boundaries so that only one lithology unit is within a sample. The core was cut in half to produce the samples. If whole core was in the box (3 samples), then ½ core sample was cut to put in the sample bag and the remaining half was left in the core box. If ½ was in the core box (86 samples), then ¼ core sample was cut to put in the sample bag and the remaining half was left in the core box. If ¼ core was in the core box (144 samples), then the entire ¼ core was put in the sample bag and nothing was left in the core box. The coarse grain size of the spodumene means that 1/8 core would not be representative. In four intervals in the pegmatite, core was missing from the box and could not be resampled. Missing core resulted in short intervals for some of the samples in the relogging program.

The drill core was originally sampled by Platinova in 2001, but it was resampled by Fieldex Exploration Inc in 2010 (Fieldex press release dated Sept. 13, 2010). Platinova's original sampling left ½ core in the box and Fieldex's resampling left ¼ core in the box. Fieldex had an option on the property from Mantis Mineral Corp. Fieldex disclosed the assay highlights of their sampling program (Fieldex press release dated



Sept. 13, 2010), but J-J Minerals does not have access to the original assay certificates, as they were not filed for assessment.

A total of 258 core samples including QC samples were submitted to Actlabs for analysis by Caracle Creek which includes 233 drill core samples, 13 blanks and 12 Li standards.

# 9.2 Power Metals 2017 Sampling Li and Ta Results

Platinova's 7 drill holes which intersected Main and North Dykes were relogged and resampled by Caracle Creek in January 2017. As expected, the spodumene-rich pegmatite zones had high grade lithium assays. Case pegmatite assays had 45 assays out of a total of 234 drill core assays with > 0.43 % Li<sub>2</sub>O cut off which represents 19% of the total assays. Some of the assay highlights on the Main Dyke spodumene zone include:

- DDH-1 from 22.70 to 33.00 m with 1.98 % Li<sub>2</sub>O over 10.30 m
- DDH-5 from 46.57 to 56.00 m with 1.37 % Li<sub>2</sub>O over 9.43 m
- DDH-5 from 45.00 to 45.95 m with 3.24 % Li<sub>2</sub>O over 0.95 m (Figure 9-1).

Additional lithium assay highlights are given in Table 9-1.



Figure 9-1 DDH-5 45-45.95 m with 3.24 %Li<sub>2</sub>O (Power Metals, 2017 sampling)

Table 9-1 Lithium assay highlights from Power Metals resampling in 2017.

Drill hole number	Rock type	Dyke	Composite from (m)	Composite to (m)	Weighted average (Li₂O%)	Length (m)	including
DDH-1	spod peg	Main Dyke	8.00	14.50	1.43	6.50	



Drill hole number	Rock type	Dyke	Composite from (m)	Composite to (m)	Weighted average (Li <sub>2</sub> O%)	Length (m)	including
DDH-1	spod peg	Main Dyke	10.27	11.45	2.34	1.18	including
DDH-1	spod peg	Main Dyke	22.70	33.00	1.98	10.30	
DDH-1	spod peg	Main Dyke	25.00	31.73	2.31	6.73	including
DDH-2	spod peg	Main Dyke	38.00	40.55	1.93	2.55	
DDH-2	spod peg	Main Dyke	44.00	47.30	1.20	3.30	
DDH-2	spod peg	Main Dyke	49.05	50.00	0.88	0.95	
DDH-2	qtz-mus peg	Main Dyke	55.90	57.00	0.73	1.10	
DDH-4	qtz-feld-mus peg	North Dyke	14.80	15.44	0.67	0.64	
DDH-4	qtz-feld-mus peg	North Dyke	18.00	19.00	0.55	1.00	
DDH-4	spod peg	Main Dyke	41.86	47.00	1.28	5.14	
DDH-4	spod peg	Main Dyke	43.32	45.00	2.56	1.68	
DDH-5	spod peg	Main Dyke	44.00	45.95	2.73	1.95	
DDH-5	spod peg	Main Dyke	46.57	56.00	1.37	9.43	
DDH-5	spod peg	Main Dyke	46.57	47.40	2.23	0.83	including
DDH-5	spod peg	Main Dyke	53.05	56.00	2.36	2.95	including
DDH-6	spod peg	Main Dyke	47.00	47.55	1.57	0.55	
DDH-6	spod peg	peg dyke	61.92	62.22	0.77	0.30	

DDH-3 and 7 had no significant Li<sub>2</sub>O% assays.

Power Metals Corp.'s reassay of Platinova's 2001 drill core also confirms tantalum mineralization on the Case Lake property (Table 1). Selected tantalum assay highlights include:

- DDH-1 intersected 1.43 % Li<sub>2</sub>O and 300.32 ppm Ta over 6.50 m in spodumene-rich pegmatite zone in the Main Dyke.
- DDH-1 also intersected 1.98 % Li<sub>2</sub>O and 130.88 ppm Ta over 10.30 m in the spodumene-rich pegmatite zone in the Main Dyke.
- DDH-4 intersected 1010 ppm Ta over 0.43 m within an albite-rich pegmatite zone in the North Dyke.
- DDH-5 intersected 330.29 ppm Ta over 6.48 m within an albite-rich pegmatite zone in the Main Dyke.

Tantalum mineralization is abundant in the Main Dyke and the North Dyke and is hosted within spodumene-rich pegmatite zone and albite-rich pegmatite zone (Figure 7-7). This expands the mineralization within the Case pegmatites to include both the spodumene-rich pegmatite zones with Li and Ta mineralization and the albite-rich pegmatite zones with Ta mineralization.



Table 9-2 Power Metals Ta (ppm) and Li2O (%) reassay highlights of Platinova's 2001 drill core.

Dyke	drill hole number	composite from (m)	composite to (m)	weighted average (Li <sub>2</sub> O%)	length (m)	including	composite from (m)	composite to (m)	weighted average (Ta ppm)	length (m)	including
Main Dyke	DDH-1	8	14.5	1.43	6.50		8	14.5	300.32	6.50	
Main Dyke	DDH-1						11.45	13.27	653	1.82	including
Main Dyke	DDH-1	10.27	11.45	2.34	1.18	including					
Main Dyke	DDH-1	22.7	33	1.98	10.30		22.7	33	130.88	10.30	
Main Dyke	DDH-1						22.7	28	216.05	5.30	including
Main Dyke	DDH-1	30	31	3.16	1.00	including					
North Dyke	DDH-2						15.87	17.24	207	1.37	
Main Dyke	DDH-2						59	60	334	1	
Main Dyke	DDH-3						31.27	32	403	0.73	
North Dyke	DDH-4						15.44	19.57	395.16	4.13	
North Dyke	DDH-4						17.57	18	1010	0.43	including
Main Dyke	DDH-4						46	49.73	290.17	3.73	
Main Dyke	DDH-4						48.71	49.57	583	0.86	including
North Dyke	DDH-5						15	16.1	251	1.10	
North Dyke	DDH-5						18	19	211	1.00	
Main Dyke	DDH-5	44	56	1.61	12.00						
Main Dyke	DDH-5						46.57	53.05	330.29	6.48	
Main Dyke	DDH-5	44	47.4	2.58	3.40	including	44	47.4	399	3.40	including
Main Dyke	DDH-5	54	55	2.98	1.00	including					
Main Dyke	DDH-5						48	52	448.99	4.00	including
pegmatite dyke	DDH-5						66	67	206	1	
Main Dyke	DDH-7						64	66.9	279.72	2.90	
Main Dyke	DDH-7						64	65	502	1	including

# 9.3 3D Data Compilation

Caracle Creek completed a compilation of all of the historic grab samples, channel samples, drilling and detailed mapping on the Case Lake Property (see section 6.0). Maps showing the 2D compilation of the detailed geological mapping, historical grab samples, channel samples and drill collars are given in Figure 6-1 and Figure 6-2.

Caracle Creek also compiled a drill hole database for Platinova's 7 historic drill holes on North and Main Dykes from the collar, survey and lithology from Platinova's drill core logs (MNDM assessment report: 32E04SW2003) and the assay from Power Metals' 2017 sampling. Platinova's channel samples on North, Main and South Dykes were also included in the drill hole database. The drill hole and channel sample plan



map is given in Figure 9-2. The plan map shows that the North and Main Dykes have been drilled for about 200 m along strike and that there is an additional 100 m of the Main Dyke that is exposed on surface which has not yet been drill tested. Also the surface mapping appears to indicate that the Main Dyke is actually 2 parallel dykes, not just one dyke.

Cross sections for the historic drill holes are given in Appendix 4. The dykes dip to the north and flatten out at depth.

The drill hole database and detailed geological mapping was used to create a 3D model for North, Main and South Dykes (Figure 9-4 and Figure 9-5). The detailed geological map and channel samples were used for lithology of the surface and the drill core extended the lithology to depth. The dykes were modelled to a depth of 100 m. The fault plane was interpreted from regional geophysics maps and satellite imagery (Figure 9-3). The 3D model will be used for drill targeting for a future drill program.



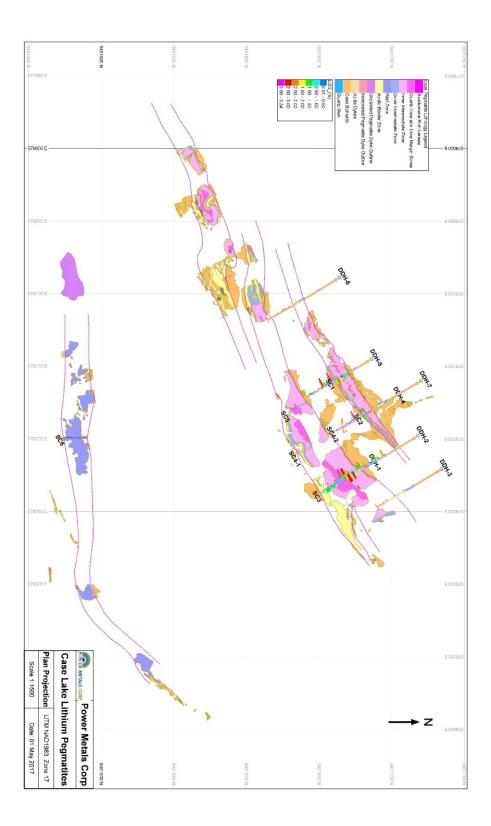


Figure 9-2 Drill plan and channel sample map for Case North, Main and South Dykes.



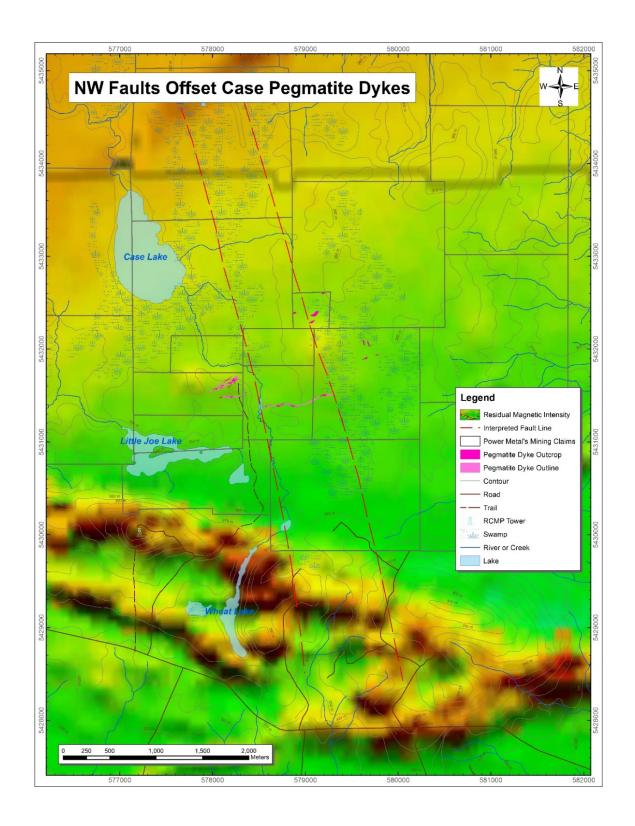


Figure 9-3 Residual Magnetic Intensity map with interpreted faults for Case Lake (from OGS Earth).



## 3D View Pegmatite Dykes, Looking Down Towards North

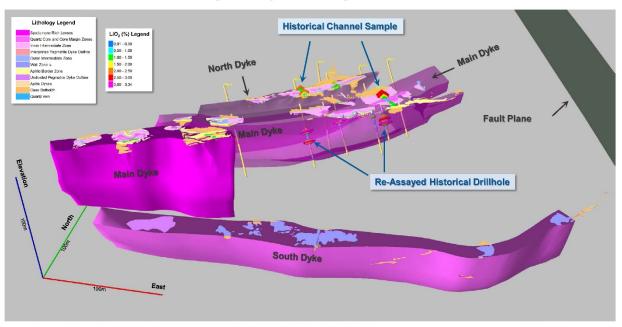


Figure 9-4 3D view of North, Main and South Dykes looking down towards the north.

#### 3D View Pegmatite Dykes, Looking Down Towards Southwest

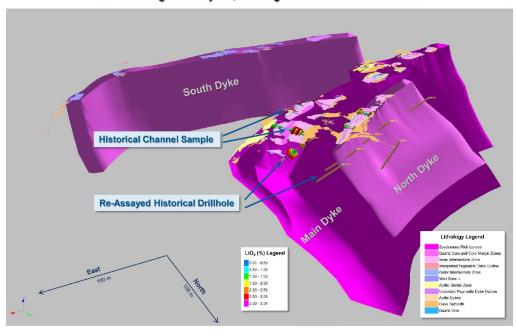


Figure 9-5 3D view of North, Main and South Dykes looking down towards the southwest.



#### 10.0 DRILLING

Power Metals has not completed a drill program on the Case Lake Property.

# 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

#### 11.1 Sample Security

Platinova's 2001 drill core is stored in a locked core shed on Peter Hermeston's property on Highway #11 approximately 2 miles north of the southern exit off Highway #11 into Kirkland Lake, Ontario. The core was transported by Canadian Exploration Services ("CXS") to their core logging facility at 14579 Government Road, Larder Lake. The core was stored in the locked core logging building while Caracle Creek geologists relogged the core. CXS returned the core to Peter Hermeston's locked core shed.

The core samples were placed in sample bags sealed with cable ties and then placed in rice bags sealed with flagging tape (Figure 11-1). The core samples were transported by Caracle Creek's senior geologist Gary McLearn from Larder Lake to Sudbury and then Caracle Creek's core technician, Cecil Johnson, delivered the core samples to Manitoulin Transport in Lively for shipping to Actlabs analytical lab in Ancaster, Ontario. Actlabs received the core samples on Jan. 27, 2017.





Figure 11-1 Sealed rice bags labelled with drill hole number and sample range.

# 11.2 Sample Preparation

A total of 258 core samples were submitted to Actlabs including 233 core samples, 13 quartz blanks and 12 Li standards. Every 20 samples contained one blank and one Li standard. Core duplicates were not cut due to insufficient material in the core boxes and 1/8 core samples would not be representative. The core duplicates will be a comparison of the historic and current assays. The blank was ½ inch mesh coarse silica purchased from Analytical Solutions Ltd., Toronto, Ontario. The blanks are silica-rich with typically about 97% SiO<sub>2</sub>.





Figure 11-2 Quartz blank

The Li standard was purchased from Brammer Standard Company Inc., Houston, Texas, United States. The Li standard was CGL 128 created by Mongolia Central Geological Laboratory. The Li standard has a certified value of 0.578 % Li<sub>2</sub>O and a 95% confidence level of 0.015 % Li<sub>2</sub>O. The starting material for the Li standard was a bulk of lithium ore from the wolfram – lithium deposit located at Arbayan area in Mongolia. The certificate of analysis for CGL 128 is given in Appendix 2.

Actlabs' Quality System is accredited to international quality standards through the International Organization for Standardization /International Electrotechnical Commission (ISO/IEC) 17025 (ISO/IEC 17025 includes ISO 9001 and ISO 9002 specifications) with CAN-P-1578 (Forensics), CAN-P-1579 (Mineral Analysis) and CAN-P-1585 (Environmental) for specific registered tests by the Standards Council of Canada ("SCC"). The accreditation program includes ongoing audits which verify the QA system and all applicable registered test methods. ISO 17025 is the main standard used by testing and calibration laboratories. Actlabs' analytical lab in Ancaster has ISO 17025 certification.



#### 11.3 Sample Analyses

The samples were prepared using RX1 analytical code. RX1 is dry, crush entire sample to 90% -10 mesh, riffle split (up to 5 kg) and pulverize with hardened steel (250 g sample to 95% -150 mesh) (includes cleaner sand).

The ore grade Li<sub>2</sub>O% was analyzed by FUS-Na<sub>2</sub>O<sub>2</sub> (8-peroxide ICP-Li) analytical code which is sodium peroxide fusion with analysis by ICP-OES with a detection limit of 0.01 % Li<sub>2</sub>O. Fusion is a "total" digestion of the silicate sample and is the superior method to use for pegmatite analyses.

The major element oxides and trace elements including Rb, Cs, Nb, Ta and Be was analyzed by FUS-ICP and FUS-MS (4Litho-Pegmatite Special) analytical codes. This is lithium metaborate tetraborate fusion with analysis by ICP and ICPMS.

The specific gravity was determined for every 10<sup>th</sup> sample by RX17-GP analytical code which is a measurement on the pulp by a gas pycnometer.

Actlabs inserted internal standards, blanks, pulp duplicates and preparation duplicates within each sample batch as part of their own internal monitoring of quality control. The internal Li standards were inserted one for every 10 samples and the internal blanks were inserted one for every 20 samples. Actlabs used the following lithium standards: NCS DC86303 with a certified value of 0.460 %Li<sub>2</sub>O, NCS DC86304 with a certified value of 2.29 %Li<sub>2</sub>O and NCS DC86314 with a certified value of 3.89 %Li<sub>2</sub>O. The pulp duplicates were inserted one for every approximately 10 samples. The preparation duplicates were inserted one for every 50 samples.

In the QP's opinion the sample preparation, security and analytical procedure was adequate and to industry standard for the due diligence resampling of Platinova's 2001 drill core.

#### 12.0 DATA VERIFICATION

#### 12.1 Quality Control

All of the external blanks passed as they had  $Li_2O$  % values below the detection limit which indicates that there was no contamination during sample preparation. All of the external lithium standards passed too, as



the assays for the Li standards were 0.02 to 0.05 % Li<sub>2</sub>O above the certified value of 0.578 % Li<sub>2</sub>O for CGL 128 which indicates excellent accuracy for the assays. No sample mix ups were identified.

The core duplicates were a comparison of the Fieldex's 2010 sampling and Power Metals' 2017 sampling results (Fieldex Exploration Inc, press release Sept. 13, 2010). Table 12-1 shows that there Fieldex and Power Metals assay results are very similar for the same intervals which validates the reproducibility of Fieldex's and Power Metals' assays. Power Metals assay results are comparable with that from Fieldex's, especially for:

- DDH-1 22.70 33.00 m with 1.98 %Li<sub>2</sub>O over 10.30 m for Power Metals
- DDH-1 23.80 33.00 m with 1.98 %Li<sub>2</sub>O over 9.20 m for Fieldex in 2010.

Table 12-1 Comparison of Fieldex's 2010 and Power Metals' 2017 assay results

Fieldex Exp	ploration,	2010 Sa	mpling		Power Meta					
Drill hole number	From (m)	To (m)	Interval (m)	Li <sub>2</sub> O (%)	Drill hole number	From (m)	To (m)	Interval (m)	Li <sub>2</sub> O (%)	Difference in Li <sub>2</sub> O%
DDH-1	6.10	14.90	8.80	1.02	DDH-1	6.03	14.50	8.47	1.16	0.14
DDH-1	23.80	33.00	9.20	1.98	DDH-1	22.70	33.00	10.30	1.98	0.00
DDH-4	43.32	47.72	4.40	1.49	DDH-4	43.32	47.00	3.68	1.57	0.08
DDH-5	43.00	57.07	14.07	1.35	DDH-5	46.57	57.00	10.43	1.27	0.08
DDH-6	47.00	47.58	0.58	1.41	DDH-6	47.00	47.55	0.55	1.57	0.16

The QP's (Dr. Selway) opinion is that the quality control review indicates that the standards, blanks and duplicates from the 2017 resampling program are of excellent quality. All of the standards and blanks passed. The quality control review also indicates that there were no sample mix ups. The assays completed by Power Metals were similar to those completed by Fieldex in 2010. There were no lithium contamination and the lab had good reproducibility for the duplicates.

In the QP's opinion, the reassays of Platinova's 2001 drill core is adequate for the purpose of due diligence sampling of historic core.

#### 12.2 Site Visit

At the end of May, Julie Selway, QP and Ron Bourgeois, Power Metals, travelled to Timmins and Cochrane to meet with the local Aboriginal groups and Property owner, and to visit the Property. The purpose of the meetings was to introduce Power Metals to them and establish a friendly working relationship.



On May 30, 2017 Julie Selway and Ron Bourgeois met with Chris Sackaney, Land and Resources Manager for Wahgoshig First Nation. The Wahgoshig First Nation reserve is located east of Matheson and south of Lake Abitibi, but their traditional land extends north of Lake Abitibi and includes the Case Lake Property. Wahgoshig Resources Inc. ("WRI") is Wahgoshig's exploration services company (Figure 12-1). The discussion included ways that WRI can help with Power Metals future exploration programs.



Figure 12-1 Wahgoshig Resources Inc.'s office

The meeting with Wahgoshig was followed by a meeting the same day with Urgel Courville, Chair of the Northern Lights Metis Council in Cochrane (Figure 12-2). Mr. Courville explained how the Metis council worked and offered helpful advice on Property logistics.





Figure 12-2 Northern Lights Metis Council office in Cochrane

Also on the same day, Dr. Selway and Mr. Bourgeois met with Edward Shynkorenko in Cochrane. Mr. Shynkorenko is the spokesperson for the group who are the property owners of the original 5 Case Lake claims. Mr. Shynkorenko explained the history of exploration on the property and had a lot of useful advice on logistics for a future exploration program on the Property. Mr. Shynkorenko reported that the trees are dominantly jack pine and spruce on the Property with abundant cranberries in the swamps in the fall. Due to lack of berries and popular trees on the Property, there are no bears. Mr. Shynkorenko also reported that after 4 h of fishing on Case Creek, he didn't catch any trout. During the site visit, partridges and moose tracks were seen and Mr. Shynkorenko also reported a beaver dam on Case River.

On May 31, 2017, Dr. Selway and Mr. Bourgeois drove from Cochrane to Case Lake Property for a site visit. The access to the Property as recorded during the site visit is described in detail in Access section 5.1. During the site visit, Dr. Selway noted a sign for Dunn Right Outfitters on Bingle Road as possible accommodations for a future drill program. Also, the trail to Case Lake pegmatites north of the road to the OPP tower was overgrown with little trees growing along the trail, big trees had fallen across the trail and there were some muddy spots that needed to be filled in (Figure 12-3). This trail needs to be cleared before active exploration can take place on the property.





Figure 12-3 Bush trail to Case Lake at the time of the site visit.

# 12.2.1 South Dyke

Dr. Selway examined three Case Lake pegmatite dykes during the site visit: South, Main and North Dykes. The trail to the property passes over the South Dyke at UTM Z17, E 578287 m, N 5431493 m, NAD 83. The South Dyke consists of quartz and blocky white K-feldspar (Figure 12-4).





Figure 12-4 South Dyke, looking east 12.2.2 Main Dyke

The Main Dyke is at the end of the bush trail. It was noted that the white outcrops of the Main and North Dykes have been coated with grey moss since the previous exploration activity. A historic drill hole collar was identified at UTM Z17, E 578223 m, N 5431650 m which is likely Darby's 1973 drill hole (Figure 12-5). It is recommended that all of the drill hole collars for the historic holes be DGPS surveyed to improve their location in the 3D model.





Figure 12-5 Darby's 1973 historic drill hole on Main Dyke, looking west

The two end points of channel SC-03 on the Main Dyke was recorded:

- South end of a long channel at the contact with the host rock at UTM Z17, E 578245 m, N 5431643 m
- North end of the same long channel at contact with host rock at UTM Z17, E 578225 m, N 5431677 m

Samples of spodumene pegmatite were collected from the easternmost pit on the Main Dyke at UTM Z17, E 578236, N 5431667. The spodumene is both pale green pencil-shaped and white knife-blade shaped crystals (Figure 12-6 and Figure 12-7). The quartz is grey and feldspar is white in the blast pit samples. The GPS location for the blast pit taken during the site visit closely matches that from Platinova's detailed map



(MNDM assessment file 32E04SW2003). The main mineralogy of the Main Dyke is grey quartz, pale green spodumene, white K-feldspar and green muscovite (Figure 12-8).



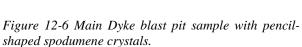




Figure 12-7 Main Dyke blast pit sample with knife-blade shaped spodumene crystals.





Figure 12-8 Photo of randomly oriented pale green spodumene crystals and grey quartz next to channel SC-03 on Main Dyke. Tape measure is within the channel cut and is 1.04 m long.

#### 12.2.3 North Dyke

The location of both ends of two channel cuts were recorded and two blast pits were observed (Figure 12-9).

#### Channel SC-02

- South end of channel at contact with host rock (exact end is in a puddle) at UTM Z17, E 578184 m, N 5431665 m
- North end of same channel UTM Z17, E 578179 m, N 5431689 m

#### Channel SC-01

• South end of channel "77" is first sample at UTM Z17, E 578162 m, N 5431658 m. Plugger holes along the length of the channel are mostly 50 cm apart (Figure 12-10).



North end of same channel at UTM Z17, E 578155 m, N 5431670 m



Figure 12-9 North Dyke looking west. Ron is standing next to a blast pit.





Figure 12-10 Channel SC-01 and a plugger hole on North Dyke

The mineralogy of the North Dyke is similar to that of the Main dyke with grey quartz, pale green spodumene, white K-feldspar and green muscovite (Figure 12-11 and Figure 12-12).





Figure~12-11~A~53~cm~long~spodumene~crystal~in~a~matrix~of~coarse-grained~spodumene~+~grey~quartz~from~North~Dyke





Figure 12-12 Two 30 cm long spodumene crystals in grey quartz from North Dyke.

The QP recommends that all of the historic channels and historic drill hole collars be surveyed by DGPS to improve their location in the 3D model and improve drill target locations. The QP also recommends that the trail to the Case Lake pegmatites be cleared before active exploration starts.

## 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Power Metals has not completed any mineral processing and metallurgical testing on the Case Lake Property.



## 14.0 MINERAL RESOURCE ESTIMATES

Power Metals has not completed any mineral resource estimates on the Case Lake Property. There are no historical resource estimates on the Property.

## 15.0 ADJACENT PROPERTIES

There are no other lithium pegmatites near Case Lake Property. There are two adjacent claims to the south of the Case Lake Property on mafic metavolcanics rocks held by an individual prospector. There are no assessment reports on the adjacent property and no information publicly disclosed about the adjacent property.

## 16.0 OTHER RELEVANT DATA AND INFORMATION

There is no additional information or explanation necessary to make the technical report more understandable and not misleading.

#### 17.0 Interpretation and Conclusions

Case Lake Property is located in Steele and Case townships, near Cochrane, NE Ontario close to the Ontario-Quebec border. It is located within Larder Lake Mining Division and NTS sheet: 32E04SW. It is located 80 km east of Cochrane, 100 km north of Kirkland Lake and 120 km NE of Timmins. The Property consists of a total of 32 mining claims for a total of 5968 ha and is 9.5 km x 9 km. Power Metals has option agreements for 10 mining claims (1168 ha) and has 100% ownership of the remaining 22 mining claims (4800 ha).

The Case Lake pegmatite swarm occurs along a subprovincial boundary between the metasedimentary Opatica Subprovince to the north and greenstone Abitibi Subprovince to the south. The Opatica Subprovince consists of the granitic Case Batholith, and the Abitibi Subprovince consists of the Scapa metasedimentary rocks (metagraywacke and garnet schist) and the Steele volcanic rocks (amphibolite) in the Case Lake area. The Case Batholith is an extensive 50 by 85 km ovoid granitic complex. The Case Batholith is a weakly foliated biotite granodiorite to quartz monzonite which is characterized by biotite-rich orbicules that range in diameter from 1 to 7 cm.



The Case Lake pegmatite swarm consists of five dykes:

- 1. North Dyke -12 m thick and > 100 m strike length
- 2. Main Dyke (also known as Central Dyke) 35 m thick and > 350 m strike length
- 3. South Dyke -10 m thick and > 250 m strike length
- 4. East Dyke -19 m wide and > 1200 m strike length
- 5. Northeast Dyke -10 m wide and > 75 m length

The North, Main and South dykes are hosted by the Case granodiorite batholith and they strike at 60 to 70° and dip 40 to 60°. The East and Northeast Dykes are hosted by fine-grained biotite-garnet metasedimentary rocks. Both the North and Main Dykes have spodumene-rich zones (muscovite-K-feldspar-quartz-green spodumene-albite) and albitic aplite border zones. Spodumene is absent in the beryl-type South Dyke and the potassic pegmatite East Dyke. The Northeast Dyke contains very coarse-grained spodumene.

In 1959, S.B. Lumbers and assistants mapped Steele, Bonis and Scapa townships to produce a bedrock geology map (M2018) and a geological report (R008) in 1962 (Lumbers, 1962 a, b). Lumbers identified the Case pegmatite dykes in lot 5, concession V, Steele township.

In 1973, L. Darby and R. Strickland drilled one hole 101 ft (=30.8 m) deep which was collared on the Case Batholith and intersected 25.3 m of spodumene-bearing pegmatite in the Main Dyke.

In 2001, Platinova A/S completed detailed geological mapping of North, Main and South Dykes. Main and North Dykes are zoned with aplitic albite border zones and spodumene-bearing intermediate zones and a quartz core. The surface outcrops for South and East Dykes lacked spodumene-bearing pegmatite zones. Platinova also completed sampling of 6 channels totaling 113.1 m on North, Main and South Dykes. Assay highlights from Platinova's channel sampling include Main Dyke SC-3, sample 23549, 2.73 % Li<sub>2</sub>O, 186 ppm Cs, 1,330 ppm Rb, >100 ppm Be and 489 ppm Ta. August to September 2001, Platinova A/S completed 7 drill holes totaling 508.76 m on the Case property. These holes were drilled on 5 sections across Main and North Case Pegmatite Dykes. Assay highlights from DDH-2 include: from 39.0 to 40.0 m, interval 1.0 m with 1.52 % Li<sub>2</sub>O, 62 ppm Ta, > 100 ppm Be from the inner intermediate zone.

Platinova's 7 drill holes which intersected Main and North Dykes were relogged and resampled by Caracle Creek in January 2017. As expected, the spodumene-rich pegmatite zones had high grade lithium assays. Some of the assay highlights on the Main Dyke spodumene zone include:

- DDH-1 from 22.70 to 33.00 m with 1.98 % Li<sub>2</sub>O and 130.88 ppm Ta over 10.30 m
- DDH-5 from 46.57 to 56.00 m with 1.37 % Li<sub>2</sub>O over 9.43 m
- DDH-5 from 45.00 to 45.95 m with 3.24 % Li<sub>2</sub>O over 0.95 m



The Qualified Person concludes that Power Metals 2017 resampling program successfully identified and verified lithium mineralization in Platinova's historic drill core on the Case pegmatite dykes. The 2D compilation of the historic geological data on the Property and the site visit provided further evidence of lithium mineralization on surface and aided in identification of exploration targets. The 3D data compilation aided in understanding the pegmatite dykes at depth and targeting of future drill holes. There is potential to find additional lithium and tantalum mineralization on the Property.

To the best of the Qualified Person's knowledge, there are no significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information or projected economic outcomes. There are no historic or current mineral resource or mineral reserve estimates on the Property.

The Qualified Person recommends that Power Metals' summer 2017 exploration program on the Case Lake Property consist of 6000 m of drilling of which:

- 4000 m of resource drilling at 30 m spacing and depths of 100-150 m on the Main and North Dykes surface exposure (approximately 26 holes) to aid in future resource estimate.
- 2000 m of expansion drilling at depths of 100-150 m to extend the Main and North Dykes along strike to the east and west (approximately 15 holes) to extend the dykes along strike.

## 18.0 RECOMMENDATIONS

The Qualified Person recommends that Power Metals' summer 2017 exploration program on the Case Lake Property consist of 6000 m of drilling of approximately 41 holes of which (Figure 18-1):

- 4000 m of resource drilling at 30 m spacing and depths of 100-150 m on the Main and North Dykes surface exposure (approximately 26 holes) to aid in future resource estimate.
- 2000 m of expansion drilling at depths of 100-150 m to extend the Main and North Dykes along strike to the east and west (approximately 15 holes) to extend the dykes along strike.

Platinova A/S completed 7 drill holes on the North and Main Dykes in 2001 and Power Metals should infill and verify these historic drill holes. There is 100 m of surface exposed strike length for the Main Dyke that has not yet been drill tested. Both dykes are open along strike and down dip. Power Metals should also test the possibility that the Main Dyke is actually two parallel pegmatite dykes not just one dyke. Since the



pegmatite dykes within the Case Lake pegmatite swarm are parallel to each other, there is potential to find additional buried dykes at depth. Power Metals has an Exploration Plan and Permit on Case Lake Property approved by MNDM for the proposed exploration work. The total budget for the proposed drill program is \$1.1 million CAD + 13% HST.

In addition to the exploration targets of extension of the North and Main Dykes along strike, there are other exploration targets to be investigated on the Case Lake Property at a later date:

- The fault offset dyke target is a 1 km long target which is assumed to be the down faulted continuation of the North and Main spodumene dykes. The East Dyke is the down faulted continuation of the South Dyke.
- The Far East Dyke is an underexplored pegmatite outcrop which is along the same strike as the North and Main Dykes.
- The metasedimentary host rock Li anomaly target is also along strike of the North and Main Dykes
- Northeast spodumene pegmatite dyke with historical assay of > 2.15 % Li<sub>2</sub>O.

The QP also recommends that all of the historic channels and historic drill hole collars be surveyed by DGPS to improve their location in the 3D model and improve drill target locations. The QP recommends that the trail to the Case Lake pegmatites be cleared before active exploration starts.



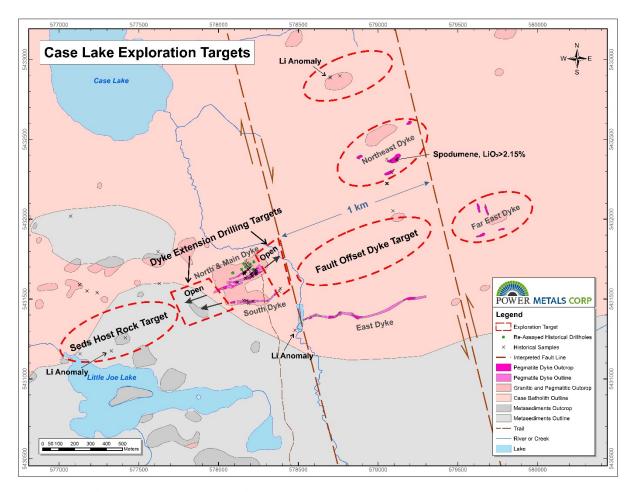


Figure 18-1 Exploration targets for Case Lake pegmatite swarm.

Table 18-1 Proposed budget for drill program.

Item	Unit	Time		\$/Unit	Total	Subtotal
Drilling						
per meter rate	meter		6000	\$92.00	\$552,000.00	
core cutting saw	month		1.5	\$1,000.00	\$1,500.00	
generator	month		1.5	\$1,000.00	\$1,500.00	
core shack	month		1.5	\$500.00	\$750.00	
saw blades	blade		35	\$350.00	\$12,250.00	\$568,000.00
Geology						
senior geologist	day		48	\$700.00	\$33,600.00	
core cutter/field assistant	day		48	\$400.00	\$19,200.00	
accommodations	day		96	\$150.00	\$14,400.00	
meals	day		96	\$50.00	\$4,800.00	
truck	month		1.5	\$1,500.00	\$2,250.00	
truck - mileage+fuel	km		7680	\$0.50	\$3,840.00	
DGPS	month		1.5	\$800.00	\$1,200.00	\$79,290.00



Item	Unit	Time		\$/Unit	Total	Subtotal
Samples						
200010	comple		3530	\$70.00	\$247,100.00	
assays sample tags, bags, cable	sample		3530	\$70.00	\$247,100.00	
ties			1		\$750.00	
Li standards	sample		175	\$4.20	\$735.00	
blanks (500g *25 bags)	package		1	\$100.00	\$100.00	\$248,685.00
Project Management						
3D model, data review	day		48	\$700.00	\$33,600.00	
logistics	day		12	\$600.00	\$7,200.00	
QA/QC assays	day		7	\$600.00	\$4,200.00	
43-101 report	day		7	\$600.00	\$4,200.00	
GIS maps	day		5	\$400.00	\$2,000.00	
power point presentation	day		3	\$600.00	\$1,800.00	
resource estimate					\$40,000.00	\$93,000.00
QP site visit						
senior geologist	day		4	\$600.00	\$2,400.00	
truck rental	day		4	\$150.00	\$600.00	
hotel	day		3	\$150.00	\$450.00	
meals	day		4	\$50.00	\$200.00	\$3,650.00
Drill supervisor site visit						
senior geologist	day		4	\$600.00	\$2,400.00	
truck rental	day		4	\$150.00	\$600.00	
hotel	day		3	\$150.00	\$450.00	
meals	day		4	\$50.00	\$200.00	\$3,650.00
			Overhead fee 10% on	first \$500,000		\$50,000.00
			Overhead fee 5% o			\$24,813.75
					total	\$1,071,088.75
					13% HST	\$139,241.54
					Total	\$1,210,330.29



## 19.0 REFERENCES

- Breaks, F.W., Selway, J.B. and Tindle, A.G. (2003): Fertile and peraluminous granites and related rareelement mineralization in pegmatites, Superior Province, Northwest and Northeast Ontario: Opoeration Treasure Hunt; Ontario Geological Survey, Open File Report 6099, 179 p.
- Breaks, F.W., Selway, J.B. and Tindle, A.G. (2006): Fertile and peraluminous granites and related rareelement mineralization in pegmatites, north-central and northeastern Superior Province, Ontario; Ontario Geological Survey, Open File Report 6195, 143 p.
- Černý, P., (1991): Rare element granitic pegmatites. Part I: Anatomy and internal evolution of pegmatite deposits. Geoscience Canada, 18, p. 49-67.
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- Nickel, E.H. (1963): A mineralogical investigation of pegmatite samples from Steele Township, Ontario, submitted by Canadian Johns-Manville Company Limited; Kirkland Lake Resident Geologist office, NTS: 32E/4, Canada Department of Mines and Technical Surveys, Mines Branch Report IR 63-34, 8p.
- Selway, J.B., Breaks, F.W., and Tindle, A.G. (2005): A review of rare-element (Li-Cs-Ta) pegmatite exploration techniques for the Superior Province, Canada and large worldwide Tantalum deposits, Exploration and Mining Geology, v. 14, p. 1-30.
- Selway, J. (2017): Field Report and Data Compilation, Case Lake Property, Cochrane, Northeastern Ontario, Canada, prepared for Power Metals Corp., dated April 30, 2017.



# 20.0 STATEMENT OF AUTHORSHIP

PRACTISING MEMBER

This Report, titled "NI 43-101 Technical Report, Case Lake Property, Cochrane, Northeastern Ontario, Canada", and dated July 14, 2017 was prepared and signed by the following author and Qualified Person:

Julie Selway
Principal Geologist, Ph. L.,
July 14 2017

July 14, 2017

Sudbury, Ontario

July 14, 2017

J-J MINERALS



# **Appendix 1 – Certificate of Qualifications**



## **Julie Selway**

40 Mission Hill Sudbury, Ontario, Canada, P3E 6M1 Telephone: 705-690-7996 Email: jselway@eastlink.ca

#### CERTIFICATE OF QUALIFIED PERSON

## I, Julie Selway, do hereby certify that:

- 1. I am employed as Principal Geologist for the geological consulting firm of J-J Minerals, Sudbury, Ontario.
- 2. I am responsible for the entire Technical Report, titled "NI 43-101 Technical Report, Case Lake Property, Cochrane, Northeastern Ontario, Canada" dated July 14, 2017 and prepared for Power Metals Corp.
- 3. I hold the following academic qualifications: B.Sc. (Hons) Geology (1991) Saint Mary's University; M.Sc. Geology (1993) Lakehead University; Ph.D. Mineralogy (1999) University of Manitoba.
- 4. I am a member of the Association of Professional Geoscientists of Ontario (Member #0738). I am a member in good standing of the Mineralogical Association of Canada, Geological Association of Canada and Mineralogical Society of America.
- 5. I completed a Ph.D. on LCT granitic pegmatites in 1999 at the University of Manitoba. I worked for the Ontario Geological Survey as a pegmatite geoscientist 2001-2003. I supervised Rock Tech Lithium Inc.'s exploration program 2011-2012 which resulted in a NI 43-101 compliant resource estimate in 2012. I am a Qualified Person for the purpose of the National Instrument 43-101.
- 6. I visited the Case Lake Property on May 31, 2017.
- 7. I am independent of the issuer of this Report applying all the tests in section 1.5 of National Instrument 43-101.
- 8. My prior involvement with the Property that forms the subject of this Technical Report includes visits to the Case pegmatites in 2001 and 2002 while working for the Ontario Geological Survey and I co-authored two Open File Reports on the Property (Breaks et al, 2003 and 2006). I also authored an internal report on Power Metal's January 2017 resampling program.
- 9. I have read the NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- 10. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public.
- 11. As of the date of this certificate, to the best of my knowledge, information and belief, the technical Report contains all scientific and technical information that is required to be disclosed to make the technical Report not misleading.

Dated this 14th Day of July, 2017.

Julie Selway, Ph.D., P.Geo
Principal Geologist, J-J Minerals

JULIE B. SELWAY
PRACTISING MEMBER

0738

July 14, 2017

J-J MINERALS



# Appendix 2 – Li standard CGL 1258 Certificate of Analysis



# MONGOLIA CENTRAL GEOLOGICAL LABORATORY



# **CERTIFICATE OF ANALYSIS**

# CERTIFIED REFERENCE MATERIAL LITHIUM ORE "MLih"

## **Certified values**

No.	Oxide/element	Units	$CV^I$	$U^2$	$N^3$
1	SiO <sub>2</sub>	% m/m	73.40	0.65	10
2	$Al_2O_3$	% m/m	13.66	0.24	11
3	Fe <sub>2</sub> O <sub>3 total</sub>	% m/m	0.663	0.018	13
4	MnO	% m/m	0.603	0.018	11
5	MgO	% m/m	0.033	0.005	11
6	CaO	% m/m	0.746	0.022	12
7	K <sub>2</sub> O	% m/m	6.28	0.07	11
8	Li <sub>2</sub> O	% m/m	0.578	0.015	11.
9	As	mg/kg	61.75	9.37	11
10	Ba	mg/kg	83.51	5.44	10
11	Bi	mg/kg	185	10	11
12	Cu	mg/kg	186	5	12
13	Pb	mg/kg	558	53	12
14	Sr	mg/kg	24.54	4.24	10
15	U	mg/kg	45.28	5.00	10
16	W	mg/kg	107	6	. 10
17	Zn	mg/kg	594	19	12
18	Zr	mg/kg	69.94	11.45	10

Certified values (CV) – based on a minimum of 10 mean results determined with a minimum of 2 independent methods

<sup>2</sup> Estimated expanded uncertainty (U) – with a coverage factor k = 2, corresponding to a level of confidence of approximately 95 %, as defined in the Guide to the Expression of Uncertainty in Measurement (GUM, ISO/IEC GUIDE 98-3:2008)

Number of datasets (N)

## Informational value

No.	Element	Units	$IV^4$	$N^3$
1	LOI	% m/m	2.14	5
2	Na <sub>2</sub> O	% m/m	0.603	9
3	$P_2O_5$	% m/m	0.029	9
4	TiO <sub>2</sub>	% m/m	0.053	9

No.	Element	Units	$IV^4$	$N^3$
5	Cd	mg/kg	3.64	6
6	Ce	mg/kg	46.93	7
7	Co	mg/kg	0.401	5
8	Cr	mg/kg	105	9
9	Cs	mg/kg	67.38	6
10	Dy	mg/kg	1.37	5
11	Er,	mg/kg	1.18	5
12	Eu	mg/kg	0.091	4
13	Ga	mg/kg	29.69	8
14	Gđ	mg/kg	1.22	4
15	Hf	mg/kg	5.64	6
16	Но	mg/kg	0.313	4
17	In	mg/kg	0.303	5
18	La	mg/kg	28.92	5
19	Lu	mg/kg	0.421	6
20	Mo	mg/kg	7.26	10
21	Nb	mg/kg	77.63	8
22	Nđ	mg/kg	8.64	4
23	Ni	mg/kg	1.76	5
24	Pr	mg/kg	3.41	5
25	Rb	mg/kg	2135	7
26	Stotal	% m/m	0.223	6
27	Sb	mg/kg	20.50	8
28	Sc	mg/kg	9.62	7
29	Sm	mg/kg	2.26	6
30	Sn	mg/kg	11.43	6
31	Ta	mg/kg	9.74	6
32	Tb	mg/kg	0.208	6
33	Te	mg/kg	1.12	4
34	Th	mg/kg	24.20	7
35	T1	mg/kg	14.65	4
36	Tm	mg/kg	0.240	5
37	Y. M.	mg/kg	12.33	9
38	Yb	mg/kg	2.19	6

<sup>&</sup>lt;sup>4</sup> Non-certified "informational value" (IV) – one of certification criteria is not fulfilled LOI – Loss on Ignition

## Intended use of the Certified Reference Material (CRM)

Based on defined metrological characteristics – metrological traceability of assigned property values and associated measurement uncertainties also physical characteristics – homogeneity and small particle size, this CRM is suitable for use in method development,

calibration, validation and quality assurance, quality control purposes when analyzing samples that are matrix – matched to this material.

## **Description of sample**

The starting material, a bulk of lithium ore was collected by the Central Geological Laboratory (CGL) from the wolfram – lithium deposit located at Arbayan area, in Erdenetsagaan soum, Sukhbaatar province of Mongolia in April, 2012.

Based on mineralogical, petrographical investigation at CGL laboratories, the mineral composition of the material has been determined to be:

Minerals	Percentage (% m/m)
Quartz	37
Feldspar	26
Plagioclase	13
Mica (zinnwaldite)	18
Topaz	3
Hubnerite	1
Sphalerite	1
Pyrite	0.1
Tennantite, galenite, hematite, covelline, fluorite, sphene	few

## Sample preparation

The preparation, homogeneity and stability tests were performed by the CGL laboratories from 2012 to 2014. After crushing and pulverization, the entire batch of selected bulk material passed a sieve with an opening of 75  $\mu$ m of an ultrasonic sieving machine.

The pulverized bulk material was homogenized by a high performance intensive mixer.

After testing the homogeneity, portion of 100 g reference material each were bottled by rotary splitting from this batch to polyethylene bottles and labeled.

## Homogeneity of the material

After homogenization and bottling, homogeneity test was performed under repeatability condition, using 10 samples randomly selected. Homogeneity test results confirmed that material is sufficiently homogeneous.

## Certification

An interlaboratory approach with 14 participating laboratories was selected to obtain a reliable base of data for assignment of the certified values. A nested design was chosen for maximum information output.

The traceability was established to the existing CRM – Lithium ore NCS DC 86303 produced at China National Center for Iron and Steel.

Production and evaluation procedures for compliance with the valid ISO-Guides were assessed and certified by Scientific and Technical Council of Central Geological Laboratory.

## Instruction for Storage and Use

The CRM should be stored at room temperature and tightly sealed to protect it from absorption of atmospheric moisture, direct sun reflection and laboratory chemicals. The material can be transported by any kind of transport means.

To overcome segregation effect due to storage or transportation, the material should be shaken appropriately before opening the bottle.

No material that had once been removed from the original sample bottle should be returned to it, as that might cause contamination of the remaining sample.

Certified values and informational values are reported on a dry weight basis (105°C, 2 hours).

The recommended minimum sample test portion is 100 mg. If a test method requires a test portion less than 100 mg, it is recommended that an excess of the CRM (>100 mg) is further pulverized in an agate mortar, before weighing out the needed mass.

Material safety data sheet for this CRM is attached to this certificate.

## Validity of the Certificate

This material is considered to be stable. Therefore, this certificate shall remain valid through 2024, unless users are otherwise notified.

The stability of the material will be monitored regularly for duration of an inventory.

## **Availability of Material**

This certified reference material will be classified as **CGL 128** in accordance with CGL CRM classification system. It is available from:

Central Geological Laboratory

CGL building Tel.: +/976/70182904, 70182914 Trade Union street Fax: +/976/70184212, 70182564

Songinokhairkhan District E-mail: <u>cengeolab@mbox.mn</u>

P.O.Box – 437 <u>info@cengeolab.com</u> 18080 Ulaanbaatar Web: www.cengeolab.com

Mongolia Web. Www.sengeotab

## **Customer Feedback**

Customers, using this CRM are kindly requested to register at the Central Geological Laboratory. This opens the opportunity to notify the user community on any new development with regard to this CRM. Customer feedback with respect to any information included in this certificate is highly appreciated.

# Test methods applied for this certification

$Al_2O_3$	ED/WDXRF (8), ICP-OES (3)	Na <sub>2</sub> O	ED/WDXRF (6), ICP-OES (3)
As	ED/WDXRF (4), ICP-MS (4), ICP-OES (3)	Nb	ED/WDXRF (3), ICP-MS (4), ICP-OES (1)
Ba	ED/WDXRF (4), ICP-MS (2), ICP-OES (4)	Nd	ICP-MS (4)
Bi	ED/WDXRF (4), ICP-MS (6), ICP-OES (1)	Ni	ICP-MS (2), ICP-OES (3)
CaO	ED/WDXRF (7), ICP-OES (5)	P <sub>2</sub> O <sub>5</sub>	ED/WDXRF (7), ICP-OES (2)
Cd	ICP-MS (6)	Pb	ED/WDXRF (3), ICP-MS (5), ICP-OES (4)
Ce	ED/WDXRF (1), ICP-MS (5), ICP-OES (1)	Pr	ICP-MS (5)
Со	ICP-MS (5)	Rb	ED/WDXRF (3), ICP-MS (4)
Cr	ED/WDXRF (3), ICP-MS (2), ICP-OES (4)	S <sub>total</sub>	ED/WDXRF (2), ICP-OES (2), GRAV(2)
Cs	ED/WDXRF (2), ICP-MS (4)	Sb	ICP-MS (5), ICP-OES (3)
Cu	ED/WDXRF (3), ICP-MS (4), ICP-OES (5)	Sc	ICP-MS (6), ICP-OES (1)
Dy	ICP-MS (5)	SiO <sub>2</sub>	ED/WDXRF (8), ICP-OES (2)
Er	ICP-MS (5)	Sm	ED/WDXRF (1), ICP-MS (5)
Eu	ICP-MS (4)	Sn	ICP-MS (5), ICP-OES (1)
Fe <sub>2</sub> O <sub>3</sub>	ED/WDXRF (8), ICP-OES (5)	Sr	ED/WDXRF (3), ICP-MS (3), ICP-OES (4)
Ga	ED/WDXRF (4), ICP-MS (4)	Ta	ED/WDXRF (2), ICP-MS (4)
Gd	ICP-MS (4)	Tb	ICP-MS (6)
Hf	ED/WDXRF (1), ICP-MS (5)	Те	ICP-MS (4)
Но	ICP-MS (4)	Th	ED/WDXRF (2), ICP-MS (5)
K <sub>2</sub> O	ED/WDXRF (7), ICP-OES (4)	TiO <sub>2</sub>	ED/WDXRF (7), ICP-OES (2)
In	ICP-MS (5)	TI	ICP-MS (4)
La	ICP-MS (5)	Tm	ICP-MS (5)
Li <sub>2</sub> O	ICP-OES (11)	U	ED/WDXRF (3), ICP-MS (6), ICP-OES (1)
LOI	GRAV (5)	w	ED/WDXRF (3), ICP-MS (5), ICP-OES (2)
Lu	ICP-MS (6)	Y	ED/WDXRF (1), ICP-MS (6), ICP-OES (2)

MgO	ED/WDXRF (6), ICP-OES (5)	Yb	ICP-MS (6)
MnO	ED/WDXRF (7), ICP-OES (4)	Zn	ED/WDXRF (3), ICP-MS (3), ICP-OES (6)
Mo	ED/WDXRF (3), ICP-MS (5), ICP-OES (2)	Zr	ED/WDXRF (3), ICP-MS (3), ICP-OES (4)

## **Abbreviations**

- ED/WDXRF energy and wavelength dispersive X-ray fluorescence spectrometry
- ICP- MS inductively coupled plasma mass spectrometry
- ICP-OES inductively coupled plasma optical emission spectrometry
- GRAV gravimetry

## **Participating Laboratories**

- 1. Activation Laboratories Ltd, Ontario, Canada
- 2. ALS Group LLC, Ulaanbaatar, Mongolia
- 3. ALS Loughrea, Loughrea, Ireland
- 4. ALS Minerals-Vancouver, Vancouver, Canada
- 5. Bureau Veritas Inspection and Testing Mongolia LLC, Ulaanbaatar, Mongolia
- 6. Central Geological Laboratory, Ulaanbaatar, Mongolia
- 7. CRB Analyse Service GmbH, Germany
- 8. Eurotest Control JSC, Sofia, Bulgaria
- 9. Federal Institute for Geosciences and Natural Resources, Hannover, Germany
- 10. Galbraith INC, Knoxville, USA
- 11. Genalysis Laboratory Service Pty Ltd, Maddington, Australia
- 12. Institute de Technologia Ceramica, Castellon, Spain
- 13. Research Institute of Mineralogy, Geochemistry and Crystal Chemistry of Rare-Earth Metals, Moscow, Russia
- 14. SGS Mongolia LLC, Ulaanbaatar, Mongolia

## Legal notice

Based on a decision of Scientific and Technical Council of Central Geological Laboratory on 30<sup>th</sup> December 2014, by a resolution No. 183 of director of CGL, this material had been approved as a Certified Reference Material with a code number CGL 128.

DIRECTOR

CENTRAL GEOLOGICAL LABORATORY

P.ARIUNBOLD



# Appendix 3 – Assessment files used in this report

Table 20-1 Assessment reports used in this report.

of Company	Type of Work
(	
J. Tesluk	trenching, stripping
R. Strickland/L. Darby	drilling
L. Darby	geological
L. Darby	geological
L. Darby/ Dex Ltd	geological
J.G. Burns	geology and geophysics
98 G. O'Reilly	prospecting, grab sampling
J. Horne	prospecting, line cutting, mapping, sampling, stripping, plugger holes, total magnetic and gradient surveys
Platinova A/S	drilling, channel sampling, detailed geological mapping
Navigator Exploration Corp	grab and channel sampling
E. Ludwig	prospecting and grab samples
P. Hermeston	line cutting, geophysics
P. Hermeston	prospecting, sampling, mapping
11 P. Hermeston	prospecting, grab sampling
P.Hermeston	prospecting, grab sampling
E. Shynkorenko	prospecting, grab sampling
C	P.Hermeston



## Appendix 4 – Cross sections for Platinova's historic drill holes

# with Power Metals' 2017 assays

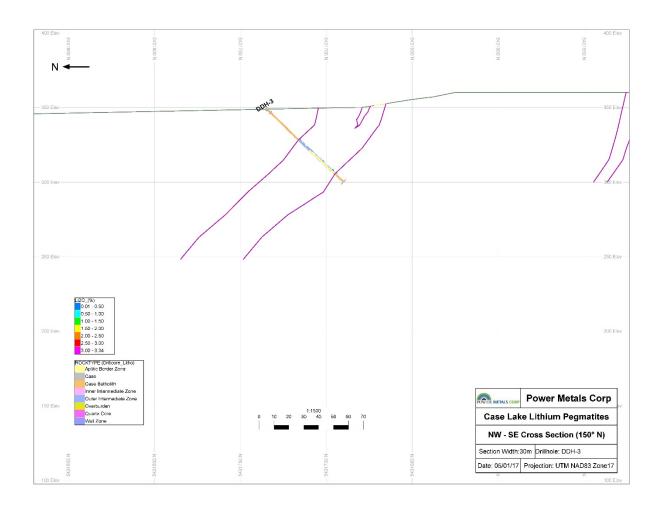


Figure 20-1 Cross section for DDH-3 on Main Dyke.



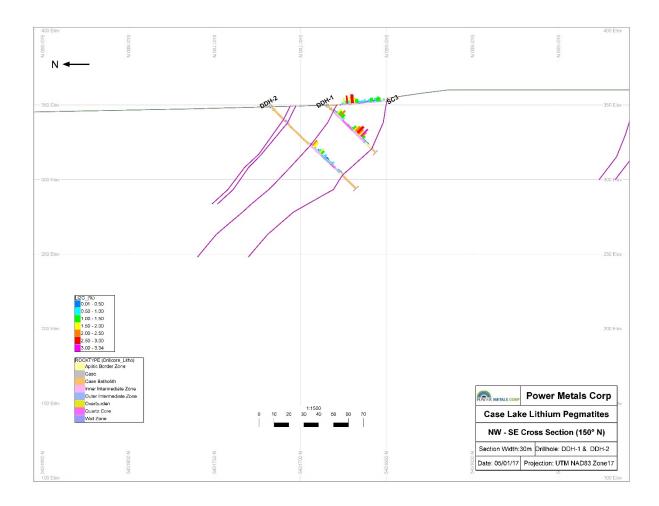


Figure 20-2 Cross section for DDH-1 and 2 and channel sample SC3 on North and Main Dykes.



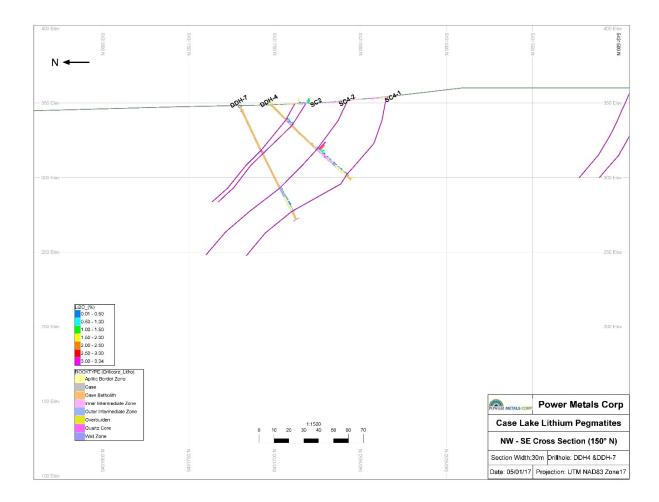


Figure 20-3 Cross section for DDH-4 and 7 and channel samples SC2, 4-1 and 4-2 on North and Main Dykes.



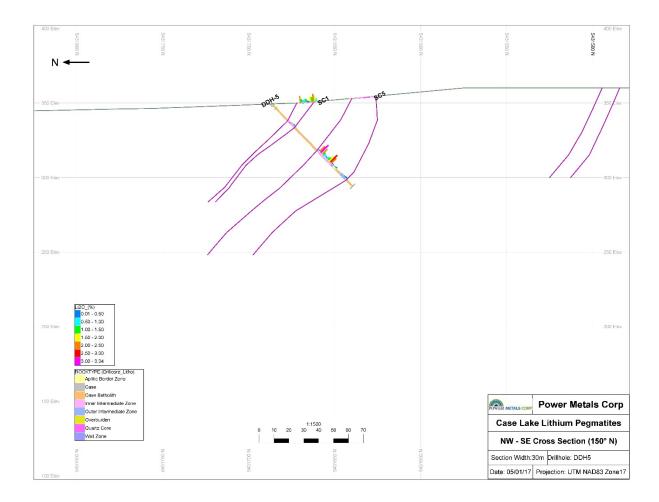


Figure 20-4 Cross section for DDH-5 and channel sample SC1 and 5 for North and Main Dykes.



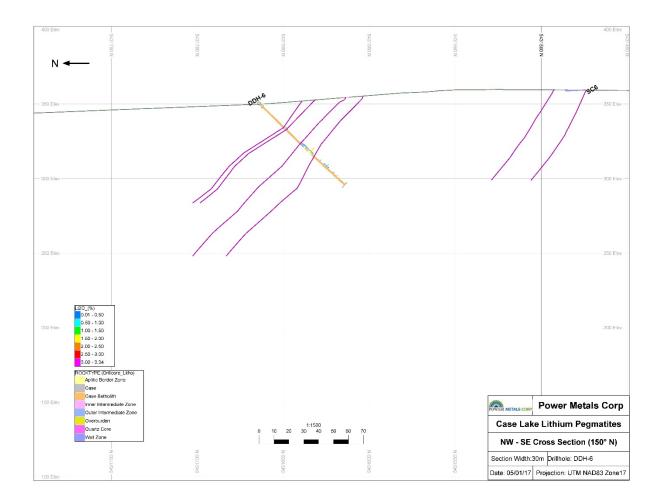


Figure 20-5 Cross section for DDH-6 on North and Main Dykes and SC6 on South Dyke.