



**National Instrument 43-101 Technical Report**

**Koper Lake Project Chromite Deposit  
McFauld's Lake Area, Ontario, Canada  
Porcupine Mining Division  
NTS 43D16**

**Updated Mineral Resource Estimation  
Technical Report**

**UTM: Zone 16, 548460m E, 5842511m N, NAD83**

*Prepared For*

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and  
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## Table of Contents

1. Summary.....	8
1.1. Cautionary Note .....	9
2. Introduction.....	10
3. Reliance on Other Experts .....	11
4. Property Description and Location.....	12
4.1. Property History and Underlying Agreements.....	12
4.2. Parties to the Agreements .....	16
4.3. Title.....	16
5. Accessibility, Climate, Local Resources, Infrastructure and Physiography .....	17
5.1. Accessibility .....	17
5.2. Climate .....	17
5.3. Local resources.....	17
5.4. Infrastructure .....	18
5.5. Physiography .....	18
6. History.....	19
6.1. General .....	19
6.2. Discovery history .....	20
7. Geological Setting and Mineralisation .....	21
7.1. Regional geology .....	21
7.1.1. Precambrian Basement Complex.....	21
7.1.2. Paleozoic Platform Rocks .....	22
7.1.3. Quaternary Cover.....	22
7.2. Local Geology .....	22
7.2.1. Volcanics .....	23
7.2.2. Mafic-Ultramafic Intrusives .....	23
7.2.3. Felsic Intrusives.....	24
7.2.4. Faulting.....	24
7.2.4.1. Frank’s Fault.....	27
7.3. Mineralisation .....	31
7.3.1. Chromite Mineralisation.....	31
8. Deposit Types .....	33
9. Exploration.....	34
10. Drilling.....	37
10.1. 2008 and 2010-11 Drilling .....	37
10.2. 2013 Drilling .....	37
10.3. 2014 Drilling .....	38
11. Sample Preparation, Analyses and Security .....	44
11.1. QA/QC Procedure.....	44
11.2. Security.....	44

12. Data Verification .....	46
13. Mineral Processing and Metallurgical Testing .....	47
14. Mineral Resource and Mineral Reserve Estimates.....	48
14.1. Mineral Resource Estimation .....	48
14.1.1. Resource Estimation Methodology .....	48
14.1.1.1. Software Used and Data Validation .....	48
14.1.1.2. Geological Domains .....	49
14.1.1.3. Drill Hole Database .....	50
14.1.1.4. Sample Selection .....	51
14.1.1.5. Compositing.....	51
14.1.1.6. Exploratory Data Analysis.....	51
14.1.1.7. Unfolding .....	52
14.1.1.8. Grade Variography.....	54
14.1.1.9. Block Size Determination.....	55
14.1.1.10. Nearest Neighbour Block Model .....	55
14.1.1.11. Ordinary Kriging Block Model.....	56
14.1.1.12. Block Model Validation.....	57
14.1.1.13. Model Verification .....	57
14.2. Mineral Resource Reporting .....	58
14.2.1. Resource Classification – Koper Lake Project chromite deposit .....	58
14.2.1.1. Determination of Cut-off Grade .....	59
14.2.1.2. Koper Lake chromite deposit.....	61
14.2.2. Risks and Opportunities.....	64
14.2.2.1. Risks .....	64
14.2.2.2. Opportunities.....	64
15. Mineral Reserve Estimates .....	66
16. Mining Methods .....	67
17. Recovery Methods.....	68
18. Project Infrastructure .....	69
19. Market Studies and Contracts.....	70
20. Environmental Studies, Permitting and Social or Community Impact.....	71
21. Capital and Operating Costs .....	72
22. Economic Analysis .....	73
23. Adjacent Properties.....	74
23.1. Noront Eagle’s Nest and Blackbird deposits, Eagle 2 Occurrence .....	74
23.2. Big Daddy Chromite Deposit .....	75
23.3. Black Creek Chromite Deposit.....	75
23.4. Black Thor and Black Label Chromite Deposits.....	76
24. Other Relevant Data and Information.....	78
25. Interpretation and Conclusions .....	79
26. Recommendations.....	80
27. References .....	81
Certificate of Qualifications .....	84
Appendix 1 – Exploratory Data Analysis .....	85

Histograms.....	85
Scatter Plots.....	86
Appendix 2 – OK Search Parameters Used .....	87
Appendix 3 – Block Model Plans and Sections .....	88
NN Models Sample Plan views – Koper Lake Project chromite deposit.....	88
-250 Elev. ....	88
-500 Elev. ....	88
-750 Elev. ....	89
-1000 Elev. ....	89
OK Models: Sample Plan views - – Koper Lake Project chromite deposit .....	90
-250 Elev. ....	90
-500 Elev. ....	90
-750 Elev. ....	91
-1000 Elev. ....	91
NN Model – N-S Sample Sections.....	92
– Koper Lake Project chromite deposit .....	92
Section 547450E      Section 547550E.....	92
Section 547650E      Section 547750E.....	93
Section 547850E      Section 547950E.....	94
OK Models - N-S Sample Sections .....	95
– Koper Lake Project chromite deposit .....	95
Section 547450E      Section 547550E.....	95
Section 547650E      Section 547750E.....	96
Section 547850E      Section 547950E.....	97
Appendix 4 - Model Validation .....	98
Swath Plots - Cr <sub>2</sub> O <sub>3</sub> .....	98
UCSA      98	
UCSB      98	
UCSC      99	
Appendix 5 – Resource Classification Definitions.....	100

## List of Figures

Figure 4.1 Map showing the location of the Koper Lake Project. ....	12
Figure 4.2 Claim map of the McFaulds's Lake Area (©Intierra Pty Ltd. 2013). ....	13
Figure 4.3 KWG-Bold Option Agreement Property Map (purple) as of August 18, 2013. ....	14
Figure 7.1 - Geological map of the Superior Province showing tectonic domains (from Percival, 2007). ....	21
Figure 7.2 - Local Geology of the Koper Lake Area.....	23
Figure 7.3 – Plan showing the Black Horse discovery holes (FN-10-025 and 026) and the nine holes drilled in 2013. ....	25

Figure 7.4 – Plan showing the six holes drilled in 2014. ....	26
Figure 7.5 – Example of an intersection of talc-quartz breccias characteristic of “Frank’s Fault”. .....	28
Figure 7.6 – Intersections of rock types, including talc-quartz breccias, characteristic of “Frank’s Fault” on the Koper Lake property. ....	29
Figure 7.7 – Surface projection of “Frank’s Fault” from the Black Horse deposit to the Big Daddy deposit. Intersections of lithologies interpreted to be “Frank’s Fault” are shown in green. ....	30
Figure 7.8 – 3D model of “Frank’s Fault” the main chromite deposits. View is from the North- west. ....	31
Figure 9.1 - Map showing the Total Field Magnetic survey flown by Fugro in 2003. ....	34
Figure 9.2 - Map showing Channel 3 – Z off – AEM survey flown by AeroQuest in 2007. ....	35
Figure 9.3 - Map showing the Total Field Magnetic survey flown by AeroQuest in 2007. ....	35
Figure 9.4 - Map showing the Residual Bouguer Gravity survey completed in 2013 by Geosig. ....	36
Figure 10.1 - Plan of Koper Lake Project Diamond Drilling. ....	39
Figure 10.2 - Detailed Plan of Koper Lake Project Diamond Drilling showing location of example section 547466 E. Green bars are chromite intersections. ....	40
Figure 10.3 - Sample cross section (547450E) for the Koper Lake Project. The orange line is a slice through the mineral envelope used to select samples. The blue line is the Frank’s Fault Deformation Zone. ....	41
Figure 14.1 - A photograph of a portion of hole FN-10-26 showing the interval from 783m to 804m. ....	49
Figure 14.2 - Histogram of sample length .....	52
Figure 14.3 - Histogram of Cr <sub>2</sub> O <sub>3</sub> for Koper Lake Project. ....	53
Figure 14.4 - Isometric view of the Koper Lake Project geological domain used, in orange which is cut off up dip by “Franks Fault” Purple). ....	54
Figure 14.5 - Chart showing price of common types of Chromite ore (www.mining- bulletin.com). ....	63
Figure 14.6 - Cr <sub>2</sub> O <sub>3</sub> Tonnage-Grade curves for the Koper Lake Project chromite deposit. ....	65
Figure 23.1 - Location of Koper Lake Project and adjacent discoveries. ....	74

## List of Tables

Table 4.1 - Claim status of the Koper Lake Project property (as of July 10, 2013). ....	14
Table 10.1 - Drill Hole Collar Locations. ....	42
Table 10.2 - Drill Holes used for resource estimation. ....	43
Table 14.1 - Summary Univariate Statistics .....	52

Table 14.2 Variogram Model Parameters.....	56
Table 14.3 - Sample file, Nearest Neighbour and OK model summary statistics. ....	56
Table 14.4 Summary of Classification of In-Situ Resources, at different cut-offs, for the Koper Lake Project chromite deposit.....	62
Table 14.5 - Global chrome prices for same products as shown in Figure 14.5 for Nov. 4, 2015 (www.mining-bulletin.com).....	63
Table 23.1 - Summary of Classification of In-Situ Resources for other chromite deposits in the area. ....	76
Table 26.1 - Proposed Budget for Infill and Exploration drilling on the Koper Lake Project.....	80

## 1. Summary

The Koper Lake Project property is located in North-western Ontario, approximately 280 kilometres north of the town of Nakina. It consists of about 1,024 hectares covered by 4 unpatented mining claims. KWG Resources Inc. has an option to earn up to 80% in any chromium production and 20% in other minerals, and Bold Ventures Inc. in turn have an option to earn a 100% interest in the property from Fancamp Exploration Limited.

The area is underlain by Archean volcanics and ultramafic rocks intruded by a granodiorite complex. The Koper Lake Project property is underlain by a multi-phase layered ultramafic intrusion consisting of peridotite, olivine cumulates including dunite, chromitite, pyroxenite and gabbro that have been transected by a major deformation zone. This deformation zone, introduced here as “Frank’s Fault”, is a major regional structure that is interpreted to have a lateral displacement component of approximately 6 km and implies that the Black Horse deposit may be the faulted extension of the nearby Big Daddy deposit. The chromitite within the Black Horse deposit consists of fine grained disseminated to massive accumulations of chromite grains typically in a peridotite to olivine intercumulate matrix.

Exploration to date has consisted of geophysics followed by diamond drilling designed to look for nickel–copper mineralisation and to trace the chromitite. The chromitite has been traced approximately 0.6 kilometres along strike and 1 kilometre down dip. The current objective is to define a chromite deposit that can be economically extracted using underground mining techniques.

Using the drill hole data available as of May 11, 2014 and reflecting the latest geological interpretation an updated Ordinary Kriged block model was created for the Koper Lake Project chromite deposit. The volume modelled is 0.6 kilometre long and has a down dip extent of approximately 1.0 kilometre with the top of the mineral zone as high as 350 metres below surface and has been traced down to a depth of approximately 1400 metres below surface. All of the resources present have a low confidence in the estimate such that they can only be classified as Inferred Resources. The following table provides the identified Inferred Resources using a cut-off of 20% Cr<sub>2</sub>O<sub>3</sub>.

<u>Classification</u>	<u>Tonnes (millions)</u>	<u>%Cr<sub>2</sub>O<sub>3</sub></u>
<b>Inferred Resources</b>	85.9	34.5

Notes:

1. CIM Definition Standards were followed for classification of Mineral Resources.
2. The Mineral Resource estimate uses drill hole data available as of May 11, 2014.

3. The cut-off of 20% Cr<sub>2</sub>O<sub>3</sub> is the same cut-off used for the Kemi deposit as reported by Alapieti et al. (1989) and for the nearby Big Daddy chromite deposit (Aubut, 2014a).
4. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.
5. Resources reported are for blocks above cut-off and as such if and when mining studies are done all may not be recoverable.

Using this 20% cut-off, there are 85.9 million tonnes at a grade of 34.5% Cr<sub>2</sub>O<sub>3</sub> of Inferred Resources which should be easily upgradable through gravity concentration. Currently chromite ore concentrates of 40-42% Cr<sub>2</sub>O<sub>3</sub> sell for approximately US\$150 per tonne. No mineability and dilution studies have been applied to these resources and therefore they may not all be economically recoverable.

The drill hole spacing is 100 to 300 metres with several off-azimuth holes. To date only 9 holes have tested the mineral zone on the property and of these intersections most are very steep and cut the zone at a very oblique angle. As a result there is poor confidence in the lateral continuity of the Mineralisation to a degree that all of the defined resources can only be classified as Inferred Resources at this time.

It is recommended that further drilling be done to extend the limits of the known chromitite and to infill areas to better define the continuity. The estimated cost of this program is \$14.2 million.

### **1.1.Cautious Note**

The chromitite found to date has only been tested with relatively sparse drilling. As such the mineralised zone is poorly sampled and can only be classified as Inferred Resources. Further infill and drilling along strike and to depth is required.

This estimate is effective as of December 15, 2015 and is reflective of all data available as of that date.

## **2. Introduction**

The Koper Lake Project property is currently under option agreement between KWG Resources Inc. (KWG) and Bold Ventures Inc. (Bold) with Bold as the current project operator.

The purpose of this report is to document a revised resource estimation based on a new interpretation of the geology, specifically the introduction and description of “Frank’s Fault”, a major deformation zone. This structure has regional as well as local implications on the known chromite deposits in the area, including the Black Horse deposit, the subject of this report.

Sibley Basin Group Geological Consulting Services Ltd. (SBG) was retained by Mr. Maurice Lavigne, Vice President of Exploration and Development for KWG Resources Inc., to prepare this report for KWG detailing work done to date on the Koper Lake Project property.

Bold compiled and supplied the historical and 2013 drill hole data set, and KWG compiled and supplied the 2014 drill hole data set, with final drill hole validation by SBG. Alan Aubut, P.Geo., on behalf of SBG, completed a site visit on April 3, 2014. Digital files with which to generate a drill hole database file, including all assays, were provided by Bold and KWG.

Alan Aubut, P.Geo., on behalf of SBG, visited the Koper Lake project that are the subject of this report on April 03, 2014. During this visit no active drilling was being conducted. But confirmation was done of some of the staking as well as a fly over of the previously active drilling areas where snow covered drill roads and drill pads were quite evident. As all of the sampling programs have been monitored by reliable and trusted external personnel no additional check samples were deemed necessary.

It must be noted that this report supersedes two previous reports prepared by SBG that documented earlier resource estimates (Aubut, 2013; 2014b). The most significant change is the incorporation of a new interpretation for a major deformation zone that limits the up-dip extent of the known mineral. While the result is not that dissimilar to that previously presented it does show that the known mineralisation has potential down dip and along strike potential that can only be verified by further drilling.

### **3. Reliance on Other Experts**

SBG did not rely on any experts that are not considered Qualified Persons under National Instrument 43-101.

## 4. Property Description and Location

The property is situated approximately at UTM 548460m E, 5842511m N, Zone 16, NAD83, in the Porcupine Mining Division in area BMA 527861 (G-4306) and is located approximately 80 kilometres east of the community of Webequie (see Figure 4.1). The property consists of 4 unpatented mining claims totalling 64 units covering approximately 1,024 ha (see Figures 4.2 and 4.3). The claim locations are “as staked” and are based on GPS-derived locations of claim posts. The current status of all the claims is presented in Table 4.1. Currently all exploration work is sanctioned under Ontario Ministry of Northern Development and Mines (MNDM) Exploration Permit 13-10145 expiring April 19, 2016. No other permits have been applied for or are in force.

### 4.1. Property History and Underlying Agreements

- Claims 3012254, 3012255, 3012257 and 3012258 (Koper Lake Project) were staked by J. De Weduwen and recorded in the name of Richard Nemis, on April 22, 2003.

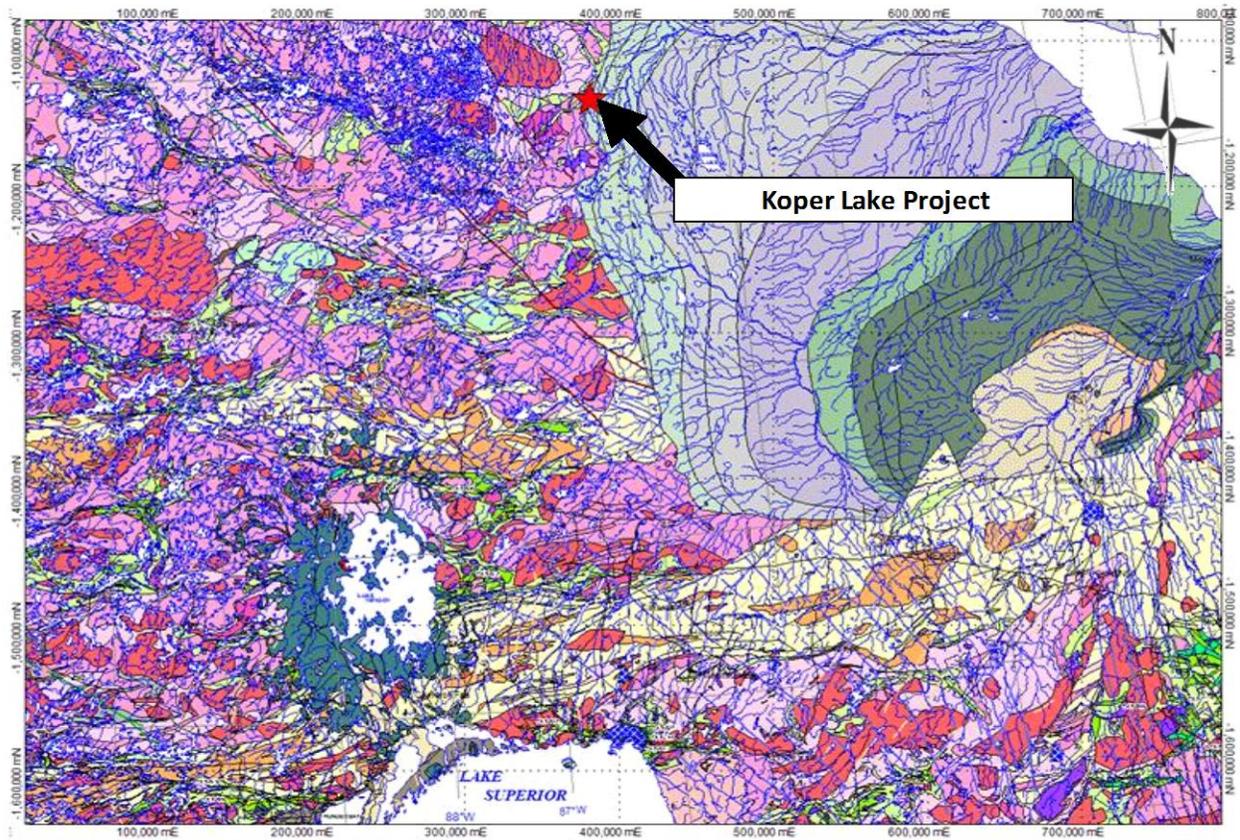


Figure 4.1 Map showing the location of the Koper Lake Project.

- On June 28, 2003 Richard Nemis agreed to sell a 100% interest in the Koper Lake Project to Fancamp Exploration Ltd. (Fancamp) for \$7,200 with the vendor retaining a 2% net

smelter royalty (NSR). Fancamp has the right to purchase half of the NSR, or 1%, prior to commencement of production from the claims, by paying \$1,000,000 to the vendor.

- On January 30, 2005 Probe Mines Limited agreed to option the property from Fancamp. They drilled one hole (FC1) in 2006 to a final depth of 171 metres. No mineralisation of note was intersected and the option was subsequently terminated.

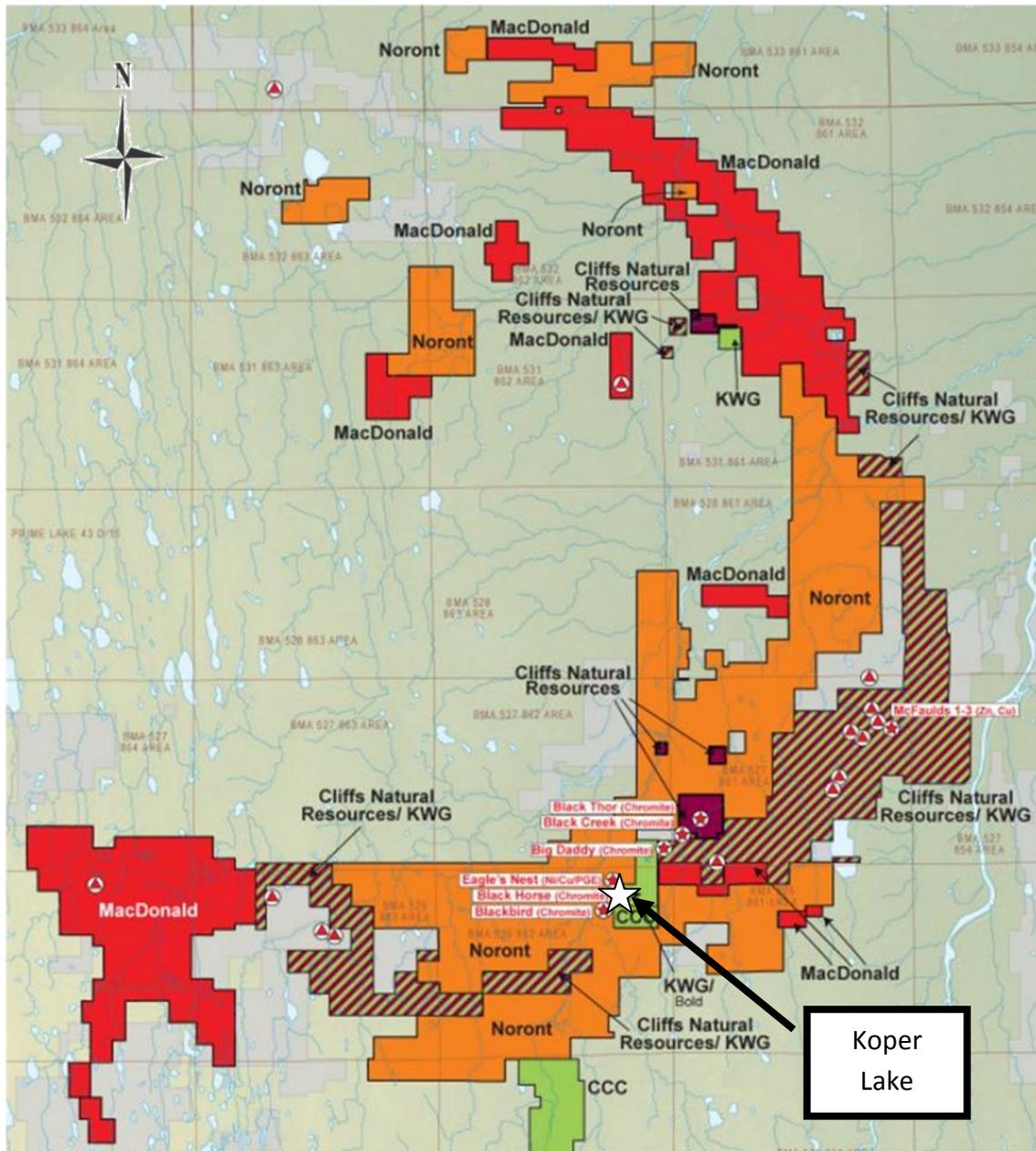


Figure 4.2 Claim map of the McFaulds's Lake Area (©Intierra Pty Ltd. 2013).

- On May 7, 2012 Bold Ventures Inc. (Bold) entered into an earn-in option agreement with Fancamp. Bold had the option to earn-in up to 60% in the Koper Lake Project. The

Agreement called for Bold to make option payments totalling \$1,500,000 and to incur exploration expenditures on the property of at least \$8,000,000 over a 3 year period. Upon fulfilling these optional terms, Bold will earn a 50% interest in the property and a joint venture will be formed. A further 10% interest may be earned by Bold at any time by delivery of a positive feasibility study and by making a payment of \$700,000 in cash and/or stock at the option of Bold.

Claim Number	Area	Recording Date	Claim Due Date	Status	Percent Option	Work Required	Total Applied	Total Reserve	Claim Bank	Claim Units	Area
<a href="#">3012257</a>	BMA 526 862	2003-Apr-22	2020-Apr-22	A	100%	\$6,400	\$96,000	\$4,110	\$0	16	256
<a href="#">3012258</a>	BMA 526 862	2003-Apr-22	2020-Apr-22	A	100%	\$6,400	\$96,000	\$1,845,266	\$0	16	256
<a href="#">3012254</a>	BMA 527 862	2003-Apr-22	2020-Apr-22	A	100%	\$6,400	\$96,000	\$153,463	\$0	16	256
<a href="#">3012255</a>	BMA 527 862	2003-Apr-22	2020-Apr-22	A	100%	\$6,400	\$96,000	\$191,737	\$0	16	256
									Total	64	1024

Table 4.1 - Claim status of the Koper Lake Project property (as of July 10, 2013).

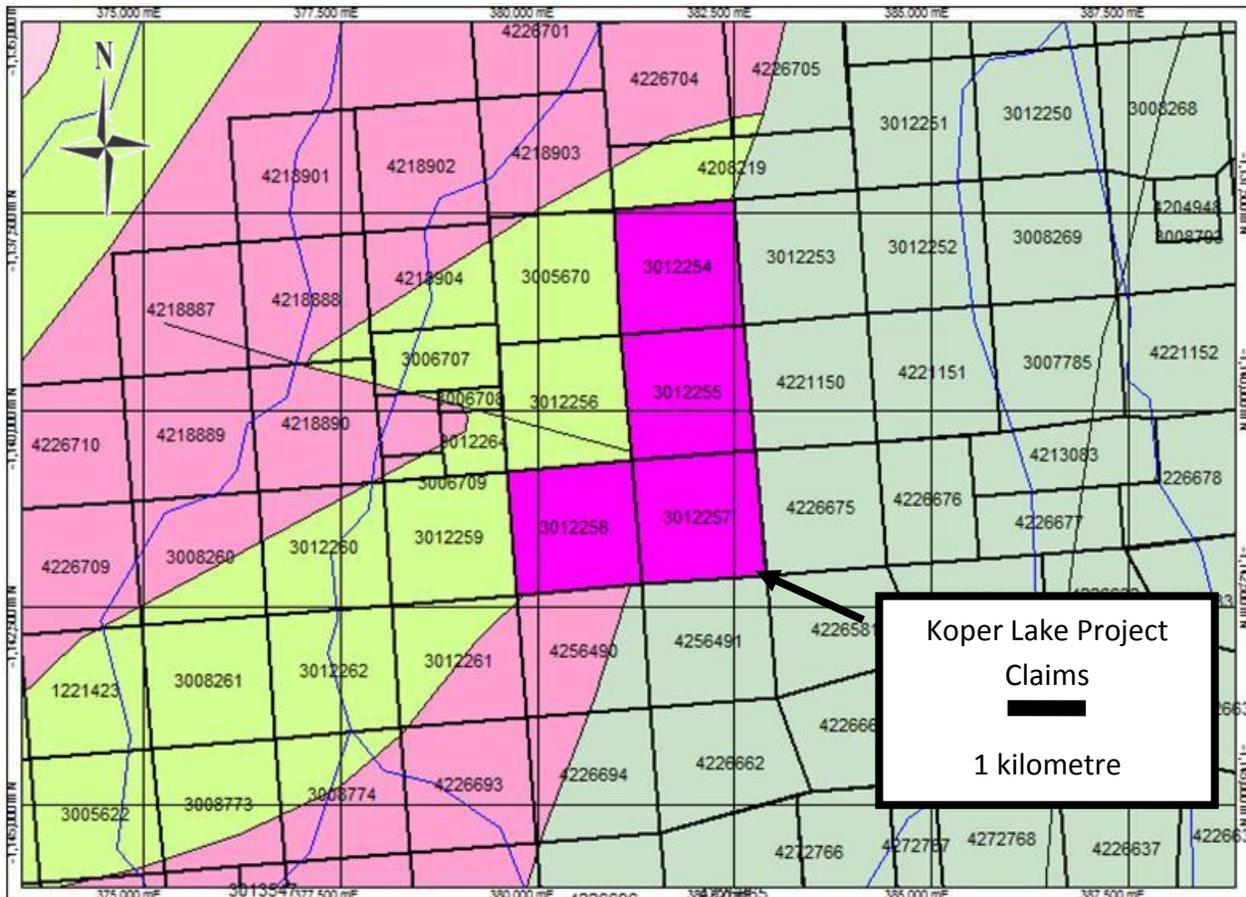


Figure 4.3 KWG-Bold Option Agreement Property Map (purple) as of August 18, 2013.

- On January 7, 2013, Bold announced it had reached a revised agreement with Fancamp that now gives Bold the option to earn up to a 100% working interest in the property. The Agreement amends the terms of the Earn-In Option Agreement announced in May 7, 2012 to provide that once Bold has earned its 60% interest in the Koper Lake Project, it will then have two options for a period of 90 days following the date it earns its 60%

interest. First, it can earn a further 20% interest in the Property by paying Fancamp \$15,000,000 payable in equal installments over three years with half of the amount payable in cash and the balance payable, at Bold's option, through the issuance of common shares of Bold at the market price at the time the shares are issued with Fancamp retaining a carried interest (the "Carried Interest") in the Koper Lake Project. If the first option is exercised, Bold would then have the additional option to acquire from Fancamp the Carried Interest in exchange for a Gross Metal Royalty ("GMR") payable to Fancamp resulting in Bold holding a 100% interest in the Koper Lake Project. Fancamp would then be entitled to be paid 2% of the total revenue from the sale of all metals and mineral products from the Property from the commencement of Commercial Production. Once all of the capital costs to bring the Koper Lake Project to the production stage have been repaid entirely, the GMR may be scaled up to a maximum of 4% of the total revenue from the sale of all metals and mineral products from the Property depending upon the price of product sold from the Property.

- On February 4, 2013, Bold announced that it had signed an agreement with KWG Resources Inc. (KWG) to option its interests in the Koper Lake Project to KWG. Under the terms of the Agreement, Bold will act as Operator of the initial exploration programs which are to be funded by KWG. KWG can acquire an 80% interest in chromite produced from the Koper Lake Project by funding 100% of the costs to a feasibility study leaving Bold and its co-venturer with a 20% carried interest, pro rata. For nickel and other non-chromite minerals identified during the exploration programs, the parties have agreed to form a joint venture in which KWG would have a 20% participating interest and Bold and its co-venturer would have an 80% participating interest, pro rata. KWG will have a right of first refusal to purchase all ores or concentrates produced by such joint venture whenever its interest in the joint venture exceeds 50%.

Bold also signed an agreement with 2282726 Ontario Limited ("Bold's Co-Venturer"), a subsidiary of Dundee Corporation, who can earn a 33-1/3% interest in Bold's Ring of Fire (ROF) activities around the area of Bold's Ring of Fire claims in Ontario (the "Bold ROF Project") by funding \$2.5 million of exploration work, over \$2.0 million of which has been expended to date. Once Bold's Co-Venturer earns its 33-1/3% interest, a joint venture will be formed between Bold's Co-Venturer and Bold giving Bold's Co-Venturer the right to participate for up to 33-1/3% in Bold's ROF Project by funding its portion of the project's budgets. The Koper Lake Project is within the Bold ROF Project.

- On March 13, 2015, Bold agreed to deliver to Fancamp 35 million common shares of KWG on or before March 19, 2015, and KWG made a cash payment of \$5,000. In return

Bold has extended the time by which KWG must complete the exploration expenditures required by the Option Agreement to September 30, 2015.

#### **4.2. Parties to the Agreements**

Fancamp Exploration Ltd. is a junior exploration company listed on the TSX Venture exchange under the trading symbol of “FNC”.

Bold Ventures Inc. is a junior exploration company listed on the TSX Venture exchange under the trading symbol of “BOL”.

2282726 Ontario Limited is a subsidiary of Dundee Corporation, a publicly traded asset management company listed on the Toronto Stock Exchange under the symbol "DC.A".

KWG Resources Inc. is a junior exploration company listed on the Canadian Stock Exchange under the trading symbol of “KWG”.

#### **4.3. Title**

The claim holders have all title granted under the Ontario Mining Act, including “*the right to proceed as is in [the Mining Act] provided to perform the prescribed assessment work or to obtain a lease from the Crown ... [and the right] to enter upon, use and occupy such part or parts thereof as are necessary for the purpose of prospecting and the efficient exploration, development and operation of the mines, minerals and mining rights therein*”(Ontario Mining Act, R.S.O 1990, Chapter M.14).

## **5. Accessibility, Climate, Local Resources, Infrastructure and Physiography**

### **5.1. Accessibility**

Access to the property is by charter air service, available from Nakina, 280 kilometres to the south, or Pickle Lake, 295 kilometres to the west-southwest. Access for surface exploration activities such as diamond drilling is by helicopter in the spring, summer and fall. During the winter access is possible using tracked vehicles, including snowmobiles.

During the summer the majority of rivers and creeks in the area are navigable by canoe and/or small motor boats.

The closest all weather road is at Nakina, however there is a winter road system that services the native communities of Marten Falls, Webequie, Eabametoong Neskantaga, Fort Albany, and Attawapiskat. It is possible that this system can be extended to provide access to the McFauld's Lake area.

### **5.2. Climate**

The climate of the James Bay Lowlands area is dominantly a typical continental climate with extreme temperature fluctuations from the winter to summer seasons. But during the summer months this can be moderated by the maritime effects of James and Hudson Bays. Environment Canada records ([http://climate.weatheroffice.gc.ca/climateData/canada\\_e.html](http://climate.weatheroffice.gc.ca/climateData/canada_e.html)) show that summer temperatures range between 10°C and 35°C, with a mean temperature of 13°C in July. Winter temperatures usually range between -10°C and -55°C with an average January temperature of -23°C. Lakes typically freeze-up in mid-October and break-up is usually in mid-April. The region usually receives approximately 610 mm of precipitation per year, with about 1/3 originating as snow during the winter months. On a yearly basis the area averages about 160 days of precipitation per year.

### **5.3. Local resources**

Other than stands of timber there are no local resources available on or near the property.

All equipment and supplies have to be air-lifted and directed through the nearby First Nation communities such as Webequie and Marten Falls. The nearest native community is Webequie. It has a well maintained all season runway, a hospital, a public school, mail and telephone service, as well as a community store and a hotel. Webequie is also accessible during the winter months by a winter road.

#### **5.4. Infrastructure**

Currently there is no infrastructure in the immediate project area. The closest all weather road is at Nakina, and there is a winter road system that services the nearby First Nation communities of Marten Falls, Webequie, Eabametoong Neskantaga (Lansdowne House), Fort Albany, and Attawapiskat. It is possible that this system can be extended to provide access to the McFauld's Lake area. All of the local First Nation communities are serviced by air and have all weather air strips. Power to these First Nation communities is provided by diesel generators while Nakina is connected to the Ontario hydro-electric power grid. Nakina is also the closest terminal on the Canadian National Railway (CNR) system.

#### **5.5. Physiography**

The project area is located along the western margin of the James Bay Lowlands of Northern Ontario within the Tundra Transition Zone consisting primarily of string bog and muskeg whereby the water table is very near the surface. Average elevation is approximately 170 metres above mean sea level. The property area is predominantly flat muskeg with poor drainage due to the lack of relief. Glacial features are abundant in the area and consist of till deposits, eskers, and drumlins, all of which are typically overlain by marine clays from the Hudson Bay transgression. Currently, the region is still undergoing postglacial uplift at a rate of about 0.4 centimetres per year (Riley, 2003). The project area is located between the drainage basins of the Attawapiskat and Muketei Rivers. The Muketei River is a tributary of the larger Attawapiskat River that flows eastward into James Bay.

The bog areas consist primarily of sphagnum moss and sedge in various states of decomposition. The southern portion of the property is partially covered by forested areas. Trees are primarily black and white spruce (*Picea glauca* and *mariana*), tamarack (*Larix laricina*), and jack pine (*Pinus banksiana*) with minor amounts of trembling aspen (*Populus tremuloides*), balsam poplar (*Populus balsamifera*) and white birch (*Betula papyrifera*). In the northern portion of the property, trees are restricted to narrow bands along rivers and creeks and on well drained raised beaches. Willows (*Salix*) and alders (*Alnus*) are present along creeks and in poorly drained areas.

## **6. History**

### **6.1.General**

The first geological investigation of the James Bay Lowlands and the McFauld's Lake area was by Robert Bell of the Geological Survey of Canada (GSC). He and his crew traversed and mapped the shores of the Attawapiskat River from James Bay and past the McFauld's Lake area (Bell, 1887). Subsequently, in 1906 and between 1940 and 1965, the GSC and the Ontario Department of Mines (ODM) initiated further regional geological programs aimed at determining the petroleum potential of the Hudson Bay and James Bay sedimentary basins, and determining the potential for hydrocarbons in the Moose River Basin area.

Prior to the 1990's, the James Bay lowlands were sparsely explored. The few companies doing exploration in the area included Consolidated African Selection Trust (Armstrong et al., 2008) and Monopros Ltd., the Canadian exploration division of Anglo-American DeBeers. Most of the active exploration at that time was restricted to the region near Nakina where access is facilitated by road and train.

Modern day exploration in the McFauld's Lake area only began in the early 1990's as a result of diamond exploration. In 1989 Monopros Ltd. began exploration near the Attawapiskat kimberlites, which resulted in the discovery of the Victor pipe. The Spider/KWG joint venture resulted in the discovery of the Good Friday and MacFayden kimberlites in the Attawapiskat cluster, as well as the 5 Kyle kimberlites (Thomas, 2004). This activity led the way for other diamond exploration companies, i.e., Canabrava Diamond Corporation, Condor Diamond Corp., Dumont Nickel Inc., Dia Bras Exploration Inc., Greenstone Exploration Company Ltd., and Navigator Exploration Corp.

In the early 2000's copper mineralisation was discovered by DeBeers Canada Inc. in the McFauld's Lake area. This discovery prompted the first staking rush and was subsequently drill defined by Spider/KWG and named the McFauld's No. 1 volcanogenic massive sulphides (VMS) deposit. Further copper mineralisation was found at the McFauld's No. 3 VMS deposit (Gowans and Murahwi, 2009).

The discovery of the Eagle One nickel massive sulphide deposit by Noront Resources in 2007 resulted in a second staking rush. Over the next two years the Black Bird, Black Creek, Big Daddy, Black Thor and Black Label chromite deposits were found as well as the Thunderbird vanadium deposit.

Richard Nemis arranged to have claims staked in the McFaulds Lake area, including the ones that make up the Koper Lake Project and then optioned the claims to Fancamp. In 2011 Fancamp intersected massive chromite in holes FN-10-25 and FN-10-26. Fancamp then

optioned the claims to Bold Resources in 2012. Bold signed an option agreement with KWG in early 2013.

## **6.2. Discovery history**

In April of 2003 John der Weduwen staked claims 3012254, 3012255, 3012257 and 3012258 and then transferred 100% to Richard Nemis who then optioned the claims to Fancamp Exploration Ltd. (Fancamp). Fancamp completed the following work over the property between 2003 and 2012:

- In 2003 Fancamp participated in a regional Geotem magnetic and EM survey flown by Fugro Airborne Surveys. A total of 102 line kilometers were flown over the property as part of this survey (Hogg, 2003).
- In 2004 several ground magnetic and horizontal loop EM surveys were completed in the area with portions of two of the grids extending onto the Fancamp property. Grid 1 consisting of lines at 200 metre intervals and totalling 11 kilometres on the property; and Grid J consisting of lines at 100 metre intervals with 6.2 kilometres on the property (Hogg, 2005).
- In 2006 Fancamp optioned the property to Probe Mines limited who then drilled one hole, FC-01, to a final depth of 171 metres. No mineralisation of note was encountered and the option was dropped.
- In 2007 a larger, more regional helicopter-borne AeroTEM magnetic and EM survey was flown by Aeroquest. A total of 186 line kilometres were flown over the property (Hogg, 2008).
- During 2008 Fancamp drilled 12 diamond drill holes totalling 3,555 metres. In addition, Noront Resources drilled one hole that extended onto the Fancamp property (NOT-08-40) that ended in massive chromite. Of these holes 5, including the Noront hole, were surveyed using downhole IP (JVX, 2009).
- During 2010-11 Fancamp drilled an additional 28 holes totalling 8,314 metres including holes FN-10-25 and 26 that intersected significant chromite intervals at depth.
- In early 2013 Geosig completed 48.9 line kilometres of ground magnetic and gravity surveys over portions of the property (Geosig, 2013). Bold Ventures, as operator, drilled 9 holes totalling 6,379 metres testing various targets including the chromite zone discovered in 2011.

## 7. Geological Setting and Mineralisation

### 7.1. Regional geology

The James Bay Lowlands regional geology can be subdivided into the following domains: Precambrian Basement Complex, Paleozoic platform rocks, and Quaternary cover.

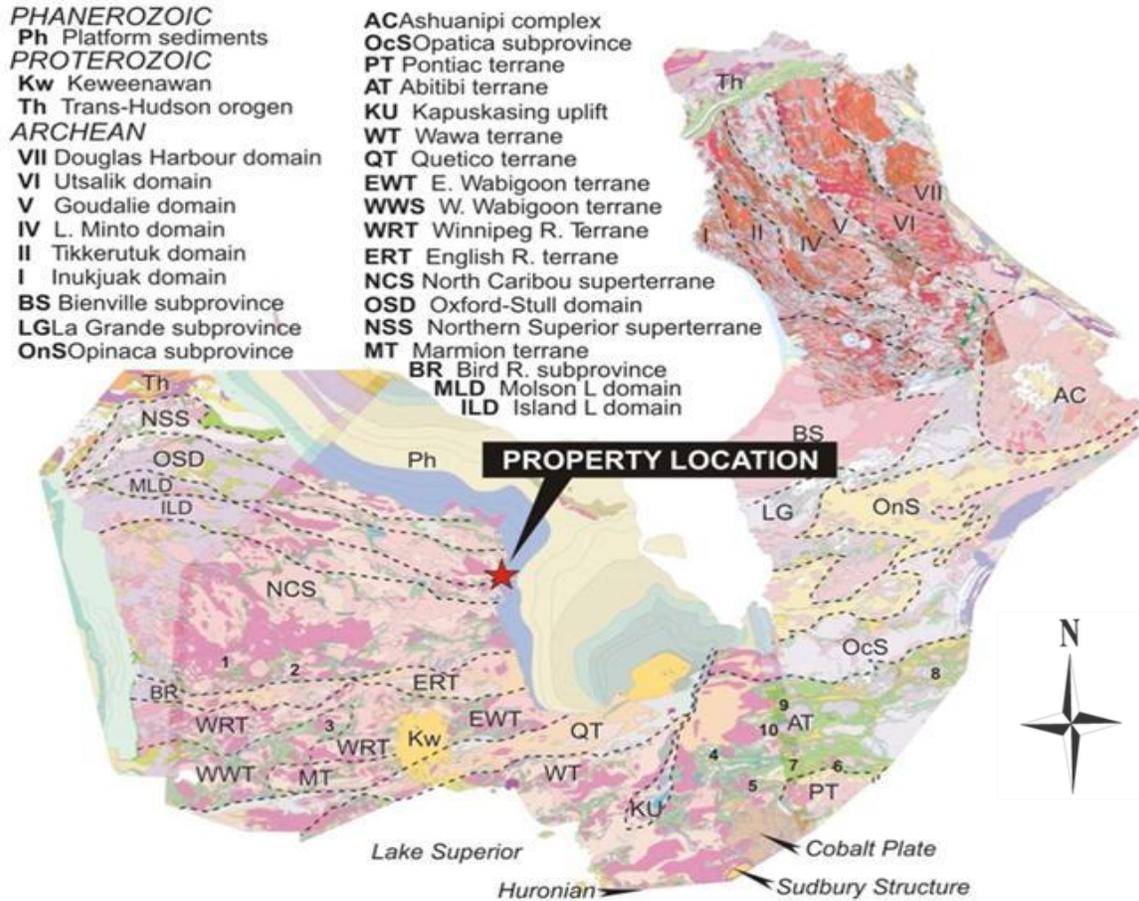


Figure 7.1 - Geological map of the Superior Province showing tectonic domains (from Percival, 2007).

#### 7.1.1. Precambrian Basement Complex

The Koper Lake Project property is located within the eastern portion of the Molson Lake Domain (MLD) of the Western Superior Province of the Canadian Shield (see Figure 7.1). Age dating has shown that there are two distinct assemblages: the Hayes River assemblage with an age of about 2.8 Ga, and the Oxford Lake assemblage with dates of about 2.7 Ga. Numerous mafic intrusions have been documented in the domain, such as the Big Trout Lake intrusion (Percival, 2007).

The domain is also intruded by numerous plutons of tonalitic, granodioritic, and granitic compositions.

In the McFauld's Lake area of the James Bay lowlands there is very poor outcrop exposure. As a result an aeromagnetic compilation and geological interpretation map was completed by Stott in 2007. Important geological features observed by Stott (2007) are:

- West- and northwest-trending faults show evidence of right-lateral transcurrent displacement.
- Northeast-trending faults show left-lateral displacement.
- In the northern half of the Hudson Bay lowlands area Archean rocks are overprinted by the Trans-Hudson Orogen (ca. 2.0 – 1.8 Ga).
- Greenstone belts of the Uchi domain and Oxford-Stull domain merge under the James Bay Lowlands.
- The Sachigo subprovince contains a core terrain, i.e., the North Caribou Terrain and "linear granite-greenstone" domains on the south and north flanks, that record outward growth throughout the Neoproterozoic.
- Major dextral transcurrent faults mark the boundary between the Island Lake and Molson Lake domains.
- Proterozoic (1.822 and 1.100 Ga) carbonatitic complexes intruded and reactivated these faults.
- The area has undergone a doming event. Uplifted lithologies include a regional scale granodioritic gneissic complex to the NW of the property.

### **7.1.2. Paleozoic Platform Rocks**

The Paleozoic Platform rocks of the James Bay Lowlands consist primarily of upper Ordovician age (450 Ma to 438 Ma) sedimentary rocks. The sedimentary pile thickens significantly to greater than 100 metres to the east and north of the property but is only intermittently present in the immediate property area. It is comprised mainly of poorly consolidated basal sandstone and mudstone overlain by muddy dolomites and limestones.

### **7.1.3. Quaternary Cover**

The area is mantled by a thin, but persistent, layer of glacial and periglacial till and clay deposits.

## **7.2. Local Geology**

Because of the limited bedrock exposure not much can be directly inferred about the geology of the Koper Lake Project property. The overburden varies in thickness from about 3m to 10m. It consists of a mixture of glacial outwash with abundant gravel to cobble sized pieces of

unconsolidated tan coloured fossiliferous limestone, granitic rocks, as well as minor ultramafic rocks.

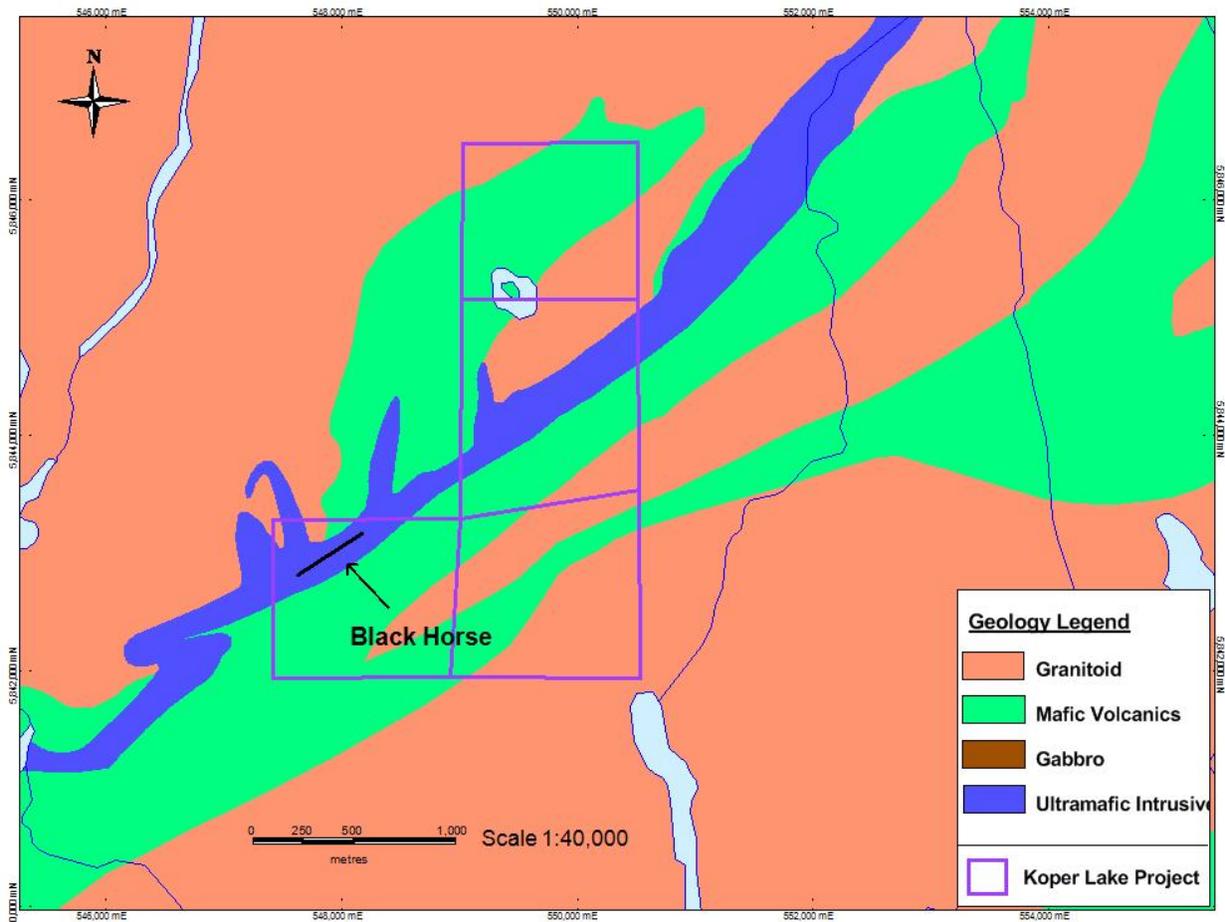


Figure 7.2 - Local Geology of the Koper Lake Area.

Most of the property geology can be indirectly inferred from the recent diamond drilling campaign and geophysical surveys. From these sources, it is interpreted that the property is underlain by: volcanics, mafic-ultramafic intrusives and late felsic intrusives (see Figure 7.2).

### 7.2.1. Volcanics

Volcanic lithologies present are typical of most greenstone belts of the Superior Province. They consist of foliated mafic to felsic volcanic flows and pyroclastic units, with intercalated schist, gabbro, iron-formation, and greywacke.

### 7.2.2. Mafic-Ultramafic Intrusives

The volcanics are intruded by a mafic-ultramafic complex consisting primarily of dunite, peridotite, chromitite, pyroxenite, gabbro, leucogabbro, and gabbro-norite. These lithologies are variably altered, primarily in the form of serpentinization of olivine with talc, tremolite, chlorite, kammererite, stichtite, and magnetite also being present.

The geological package is vertical or dips very steeply towards the SE. In part it is fully overturned and dips steeply to the NW.

The Koper Lake Project property hosts the southwestern extension of the ultramafic suite that is best defined on the property hosting the Black Thor chromite deposit to the northeast. There we have a lower cycle consisting dominantly of peridotite with minor accumulations of olivine adcumulate and chromite. The next cycle stratigraphically higher in the sequence shows more differentiation with appreciable enrichment of chromite. The third cycle has a basal zone of significant chromite enrichment. Overlaying the chromite-rich portions of the complex is a pyroxenite unit that drilling indicates has eroded away portions of the upper chromite horizon. The pyroxenite horizon is overlain by olivine adcumulates, peridotite and gabbro. The ultramafic complex host to the chromite mineralisation is up to 500 metres thick and has been traced for over 15 kilometres along strike.

### **7.2.3. Felsic Intrusives**

Felsic intrusives, intersected in drilling on the north side of the Koper Lake property, are comprised mostly of granite and quartz-diorite. The granite is grey-white, coarse-grained, hypidiomorphic and granular, consisting of quartz, feldspar, and biotite crystals. The granite is typically gradational into a quartz-diorite. The contact with the ultramafic and volcanic rocks is sharp and irregular at times with significant alteration of the ultramafics and volcanics.

### **7.2.4. Faulting**

Drilling has intersected faults identified by slickensides, mylonitization, and intense brecciation of the host lithologies. Magnetic and gravity surveys indicate that there are major fault displacements to the northeast and southwest.

On the adjacent Noront property the “Triple J” gold zone, has previously been described by Gowans et. al. (2010b) and Golder (2010). It is described as a *“sheared zone consist[ing] of biotite-chlorite-actinolite schist which contains or is flanked by brecciated quartz-rich fragments. The thickness of the zone ranges from several centimetres to tens of metres with ... a consistent strike of 065° and a dip of 50°.”*

In 2013, nine holes (see Figure 7.3) were drilled in between the Black Horse chromite discovery holes FN-10-025 and FN-10-026 and the Noront claim boundary, which is the eastern termination of their Blackbird chromite deposit. Of these 9 holes, 4 fill-in holes (FN-13-030, 031, 032, and 033) were intended to test the known chromite horizon below the 250 metre level as all indications were that the mineralisation did not extend above that elevation and possibly plunged approximately 13 degrees to the northeast. At this time there was no explanation, other than a lack of drilling, as to why the chromite horizon did not extend further up dip and to surface. And why there is a 3 kilometer gap between the Blackbird and Black Horse deposits

in the south-west and the Big Daddy, Black Creek, Black Thor and Black Label deposits to the north-east.

Of the remaining five holes, two, FN-10-034 and 036, were drilled to test a gravity anomaly. Another two holes, FN-10-035 and 037, were drilled to test for a possible northeasterly up-plunge extension of the chromitite intersected by hole FN-10-025. Both holes failed to intersect the chromitite horizon.

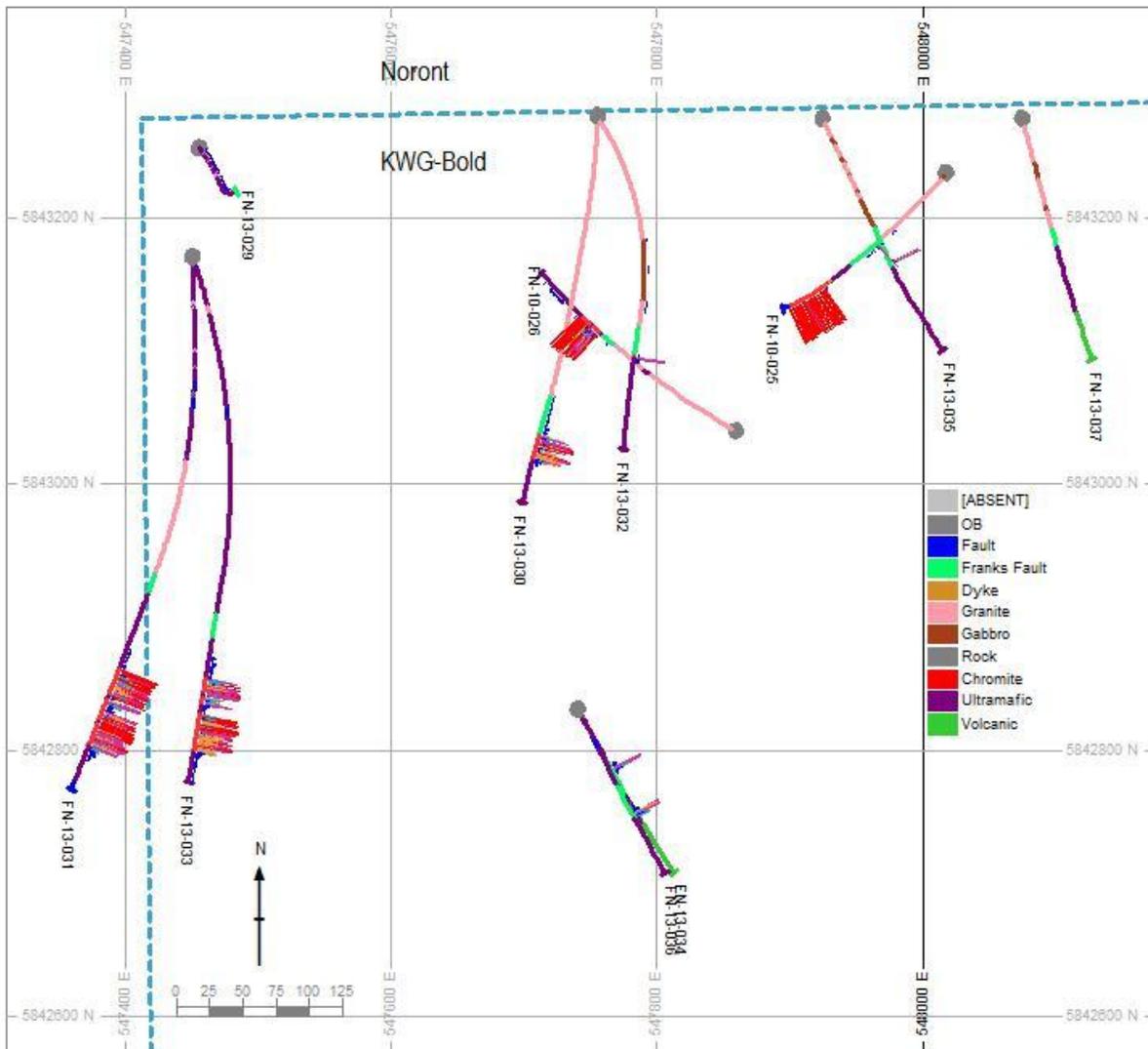


Figure 7.3 – Plan showing the Black Horse discovery holes (FN-10-025 and 026) and the nine holes drilled in 2013.

The last hole of the program, FN-13-029 is a deep vertical hole drilled near the northwest corner of the claim block for the purpose of conducting a downhole electromagnetic survey in the unsuccessful search for conductive massive nickel-copper sulphides.

Of note is that the holes FN-13-030, 031, 032 and 033 all intersected significant chromite and confirmed the continuity between the deep intersections in holes FN-10-025 and 026, and the chromitite intersected on the adjacent Noront property. All 9 holes intersected a distinctive, strongly foliated, talc breccia unit containing abundant quartz veining and fault gouge contained within a broader zone of strong shearing with associated talc alteration. This zone varies from about 25 to 70 metres true width with an average of about 35 metres.

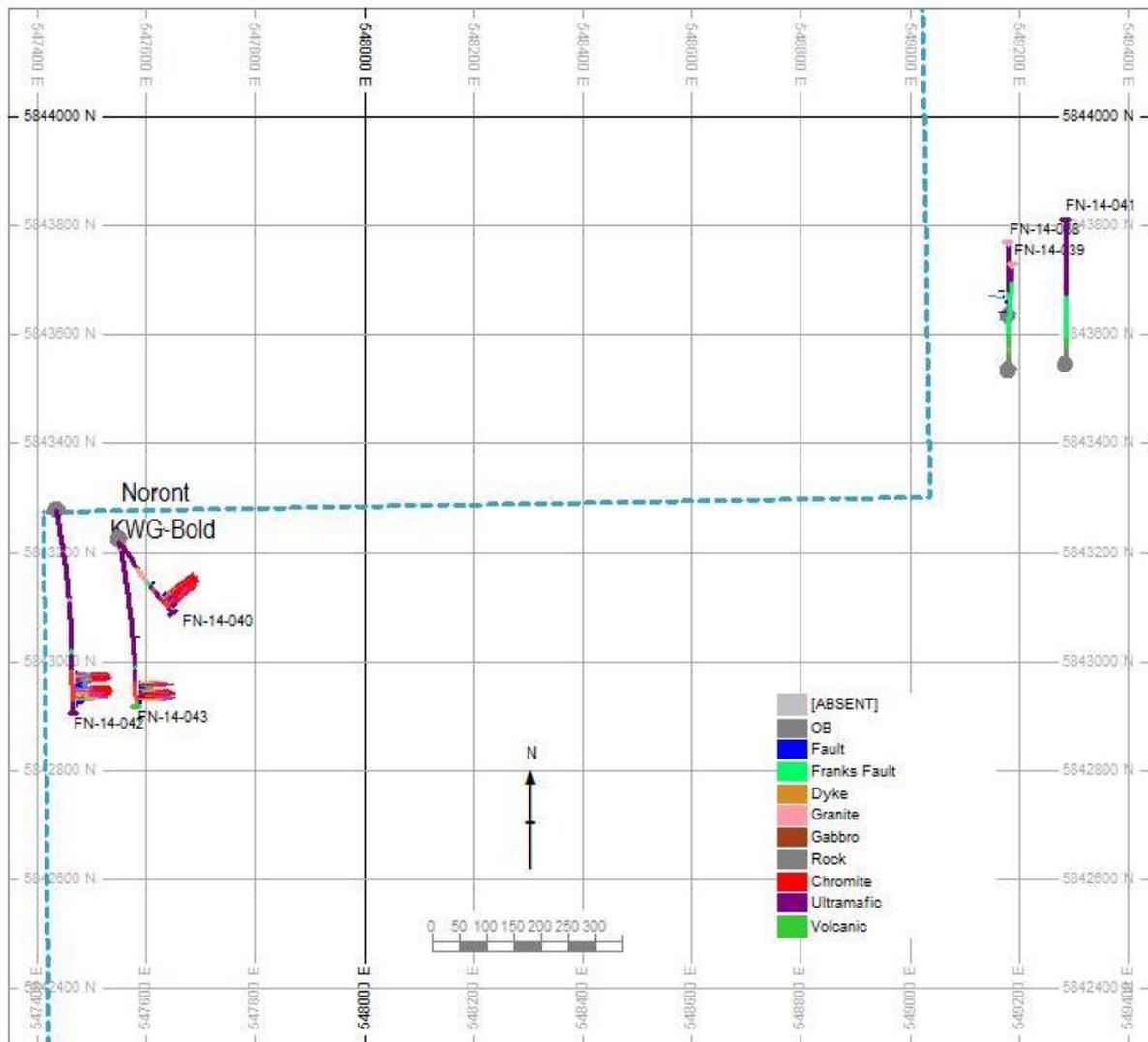


Figure 7.4 – Plan showing the six holes drilled in 2014.

This deformation zone strikes approximately 60°, and dips to the north-west at about 60°. The line<sup>1</sup> of intersection of this deformation zone and the chromite horizon strikes about 53° and plunges to the north-east at about 13°. The main chromitite is found only below this line of

<sup>1</sup> The intersection of a broad deformation zone and a thick mineral horizon actually defines a plane. But this intersection will be referenced as being a line that has a strike and a plunge as it is easier to visualize as well as describe.

intersection. The deformation zone is interpreted to consist of an earlier ductile shear zone with characteristic talc-quartz breccias and associated shearing and a later brittle reactivation producing zones of fault gouge and has truncated the chromitite horizon. This deformation zone has now been named “Frank’s Fault”.

#### **7.2.4.1. Frank’s Fault**

Above the intersection of Frank’s Fault with the main chromite horizon, the deformation zone contains low grade chromite mineralisation as foliated ultramafic with disseminated and semi massive chromite. This cataclastic flow of the chromite into the shear zone is physically above the intersection of Frank’s Fault and the chromitite horizon.

A common feature of Frank’s Fault is abundant quartz as veins, breccias and silicification. The quartz in the talc-quartz breccias consist of centimeter scale tabular fragments interpreted to be the remnants of earlier quartz veins prior to later ductile deformation. Figure 7.5 is an example of the talc-quartz breccia. Remnants of larger veins are also common as lozenge shaped fragments. In several holes, up to 50 metres of massive white quartz was also intersected within Frank’s Fault. Within the deformation zone ultramafic rocks, especially when proximal to quartz veining, is commonly altered to talc.

The surface projection of Frank’s Fault is on strike with Noront’s Triple J gold occurrence, described previously.

The 2014 drilling campaign (see Figure 7.4) had the primary objective of extending the Black Horse chromitite to depth relative to the 2013 drilling.

As a secondary target, 1.6km to the northeast, 3 holes were drilled to test a north-south magnetic high coincident with electromagnetic anomalies and an east-west gravity high. A previous hole had been drilled east-west and had intersected minor amounts of chromite. The first hole (FN-14-038) was drilled south to north. It encountered several intersections of disseminated to semi massive chromite mineralisation from the top of the hole at 40.62 metres to down to a depth of 107 metres within variably sheared and talc altered ultramafics. This chromite mineralisation is very similar to the cataclastic flow material that occurs in Frank’s Fault above the Black Horse chromitite. The drill was moved back 100 metres and a second hole, FN-14-039, was drilled also south to north. The hole collared in foliated mafic volcanics which from 116 to 170.9 metres are strongly sheared and silicified. This is followed by quartz-magnesite-talc breccias to a depth of 265.5 metres containing occasional intersections of disseminated to semi-massive chromite lenses.

The deformation zone encountered by holes FN-14-038 and 039 is lithologically the same as Frank’s Fault and is on strike with the trend established by drilling to the south-west. These holes therefore extend Frank’s Fault 1.2 kilometers to the north-east and bring its total length,

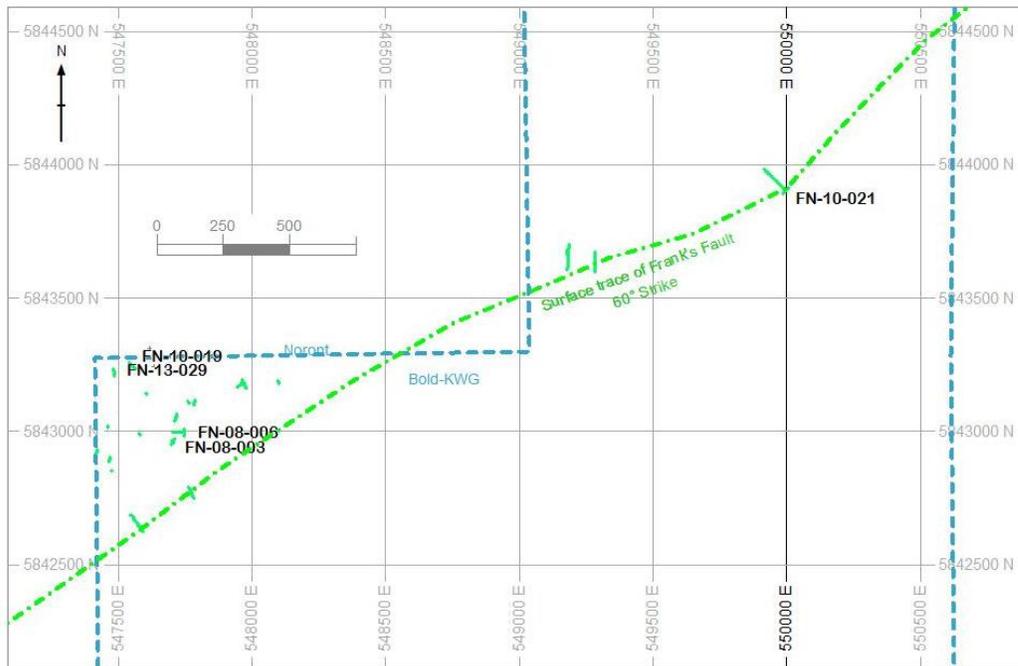
including the portion known to exist on the adjacent Noront property, to at least 6 kilometers. The minimum strike length and the significant thicknesses observed imply that Frank's Fault is a major deformation zone of regional significance. And this deformation zone has resulted in a major dislocation of the main chromitite horizon.



**Figure 7.5 – Example of an intersection of talc-quartz breccias characteristic of “Frank’s Fault”.**

A review was completed of all previous drilling on the Koper Lake claims looking for the lithologies characteristic of Frank's Fault: broad zones of ductile deformation, fault gouge, evidence of hydrothermal activity such as veins, broad zones of alteration, anomalous gold and copper associated with the hydrothermal activity, and chromitite fragments and lenses. In total the review found 23 intersections on the Koper Lake property including hole FN-10-021 near the eastern boundary of the property (see Figure 7.6).

The next property along the projected northeast strike of the fault, is one hosting the Big Daddy chromite deposit. A review of drill core logs from the Big Daddy deposit identified 17 intersections that match the lithological characteristics of Frank’s Fault. These are at the south-west end of the Big Daddy deposit encompassing the southernmost 200 metres of the Big Daddy chromitite, and at surface lies to the southeast of main Big Daddy deposit, roughly sub-parallel to the strike of the Big Daddy (see Figure 7.7).



**Figure 7.6 – Intersections of rock types, including talc-quartz breccias, characteristic of “Frank’s Fault” on the Koper Lake property.**

This end of the Big Daddy deposit is significantly different from the rest of the deposit as here the deposit strikes at 45 degrees, as opposed to 60 degrees for rest of the deposit. The  $\text{Cr}_2\text{O}_3$  grades range between 34 to 38%  $\text{Cr}_2\text{O}_3$ , while for the main part of the deposit they are 40 to 44%. For the main part of the deposit the volatile components ( $\text{H}_2\text{O}-\text{CO}_2-\text{S}$ : LOI) make up usually less than 0.5%, but at south end they are 2 to 5%. In addition, the south end of the Big Daddy deposit has numerous intersections with high gold and copper assays. All of these features, including the prevalence of talc alteration, are characteristic of the Frank’s Fault deformation zone. The change of orientation of the southern 200 metres of the Big Daddy is likely due to rotation within the broad zone of ductile deformation and indicative of a right lateral component of fault displacement.

The south end of the Big Daddy chromite deposit has been truncated by the Frank’s Fault deformation zone and as the fault zone dips towards and underneath the Big Daddy deposit it should therefore intersect the deposit at depths ranging from 400 to 600 metres. So far drilling

on the Big Daddy has not been deep enough to validate this assertion, but drilling on the Black Creek deposit has.

The Black Creek deposit was drilled by Probe Mines in 2009 and 2010 with a total of 27 holes. The Black Creek chromitite is separated from the Big Daddy chromitite as a result of displacement along a late brittle north-south fault with approximately 325 metres of apparent left-lateral displacement. This geometric relationship may be the result of a vertical upwards displacement of the inclined chromitite which would then imply that the Black Creek deposit and its enclosing host rocks were pushed upwards, including Frank's Fault. The 15 holes that intersected the Black Creek deposit define a very continuous bedded chromitite horizon with a northeast strike and dipping southeast at 65° to 80°. However, two deep holes, BC10-24 (524m) and BC10-25 (443m), designed to undercut the known mineralisation, failed to intersect the chromitite horizon. This sudden termination can only be a result of faulting and is interpreted to be the north-eastern extension of Frank's Fault that too has been displaced by the late brittle transform fault. The displaced Frank's Fault undercuts the northern chromitite horizon that is the host to the Big Daddy, Black Creek and Black Thor chromite deposits and that they are the fault offset extension of the Black Bird and Black Horse chromite deposits to the south-west.

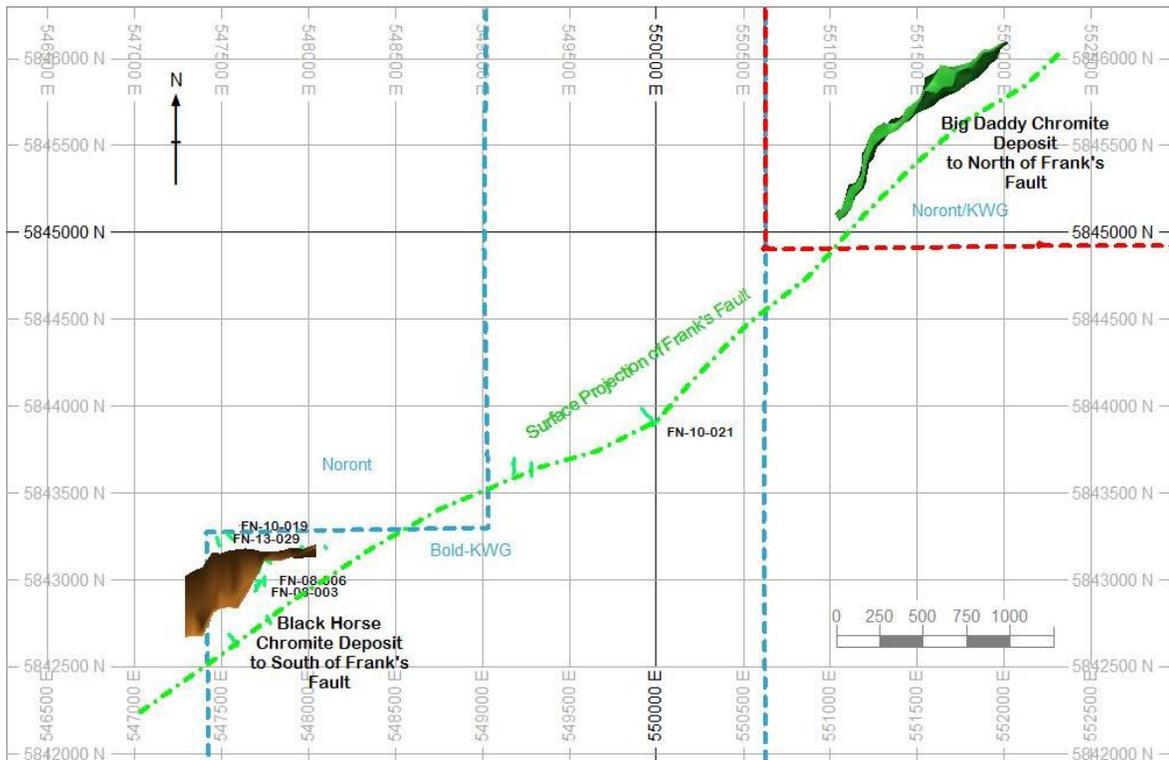


Figure 7.7 – Surface projection of “Frank’s Fault” from the Black Horse deposit to the Big Daddy deposit. Intersections of lithologies interpreted to be “Frank’s Fault” are shown in green.

A 3-D model has been created that illustrates the relationship between Frank’s Fault and the known chromite deposits (see Figure 7.8). Using this model and using the chromite horizon as a marker it is possible to estimate the horizontal component of displacement along the fault, assuming that the Big Daddy is the fault offset counterpart of the Black Horse. Based on the available drilling the interpretation of the form of the intersections with Frank’s Fault are sympathetic images of one another and the fact that the two host the highest chromite grades of all of the known chromite deposits such a conclusion is quite reasonable. This distance is estimated to be approximately 6 kilometres.

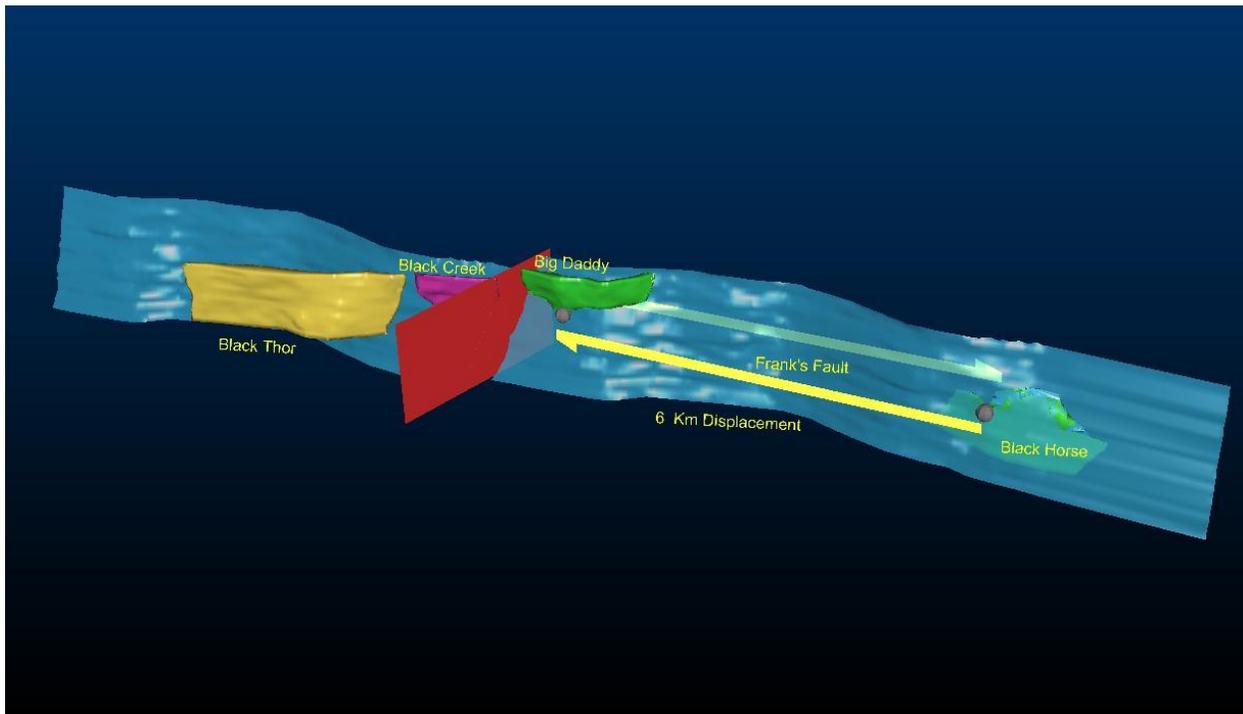


Figure 7.8 – 3D model of “Frank’s Fault” the main chromite deposits. View is from the North-west

### 7.3 Mineralisation

To date the only mineralisation of significance found on the property is chromite although some anomalous gold assays have been returned from portions of the Frank’s Fault Deformation Zone. The chromite mineralisation is potentially economic.

#### 7.3.1 Chromite Mineralisation

The chromite mineralisation on the Koper Lake Project is the eastern extension of the Black Bird chromite deposits and all are on strike with the Big Daddy, Black Creek and Black Thor deposits beginning 3 kilometres to the northeast. The chromite mineralisation does not come to surface on the property as drilling indicates that it has been cut off by the Frank’s Fault Deformation

Zone. The chromite mineralisation is stratiform and is hosted by ultramafics. Various types of chromite mineralisation have been observed including disseminated chromite (1 to 20% chromite), semi-massive chromite and massive chromite (chromitite). The main chromitite layer, the eastern extension of the Black Bird chromite horizon on the adjacent Noront property (Murahwi et. al., 2012) is up to about 40 metres thick although significant chromite mineralisation is present over a true thickness of up to about 100 metres. The chromite mineralisation has been traced on the Koper Lake Project property about 0.6 kilometres along strike and is open along strike to the east and to depth. The chromite is present as small grains typically 100 to 200 microns and hosted by peridotite and, in the higher grade portions, by dunite.

## **8. Deposit Types**

Various economic mineral deposit types are known to exist in the James Bay lowlands of Northern Ontario. These include: magmatic Ni-Cu-PGE, magmatic chromite mineralisation, volcanogenic massive Cu-Zn sulphide mineralisation and diamonds hosted by kimberlite.

The ultramafic/mafic rocks found on the Koper Lake Project property have been explored primarily for nickel-copper sulphide mineralisation although magmatic chromite mineralisation has been found instead and work has continued on the exploration of chromite by KWG. The chromite mineralisation occurs as stratiform bands within a large layered intrusion and shows major similarities with the Kemi intrusion of Finland.

At Kemi, chromite is hosted by a layered intrusion composed of peridotite and pyroxenite cumulates with chromite layers. The intrusion is interpreted to be funnel-shaped with the cumulate sequence thickest at the centre. There is a continuous chromite layer that has been traced 15 kilometres along strike and varies in thickness from a few millimetres to as much as 90 metres in the central portion of the intrusion. Using a cut-off of 20% there were 40 million tonnes of open pit reserves grading 26.6% Cr<sub>2</sub>O<sub>3</sub> with a Cr/Fe ratio of 1.53 (Alapieti, et al., 1989).

The Kemi deposit has many similarities to the style of mineralisation on the Koper Lake property. It can therefore be used as an analogue when trying to establish a reasonable baseline with which to demonstrate that the Koper Lake deposit is potentially economic.

## 9. Exploration

In 2003 Fancamp participated in a regional GeoTEM magnetic (see Figure 9.1) and EM survey flown by Fugro Airborne Surveys. A total of 102 line kilometres were flown over the property as part of this survey (Hogg, 2003).

In 2004 several ground magnetic and horizontal loop EM surveys were completed in the area with portions of two of the grids extending onto the Fancamp property. Grid 1 consisting of lines at 200 metre intervals and totalling 11 kilometres on the property; and Grid J consisting of lines at 100 metre intervals with 6.2 kilometres on the property (Hogg, 2005).

In 2006 Fancamp optioned the property to Probe Mines limited who then drilled one hole, FC-01, to a final depth of 171 metres. No mineralisation of note was encountered and the option was dropped.

In 2007 a larger, more regional helicopter-borne AeroTEM EM and magnetic surveys were flown by AeroQuest (see Figures 9.2 and 9.3). A total of 186 line kilometres were flown over the property (Hogg, 2008).

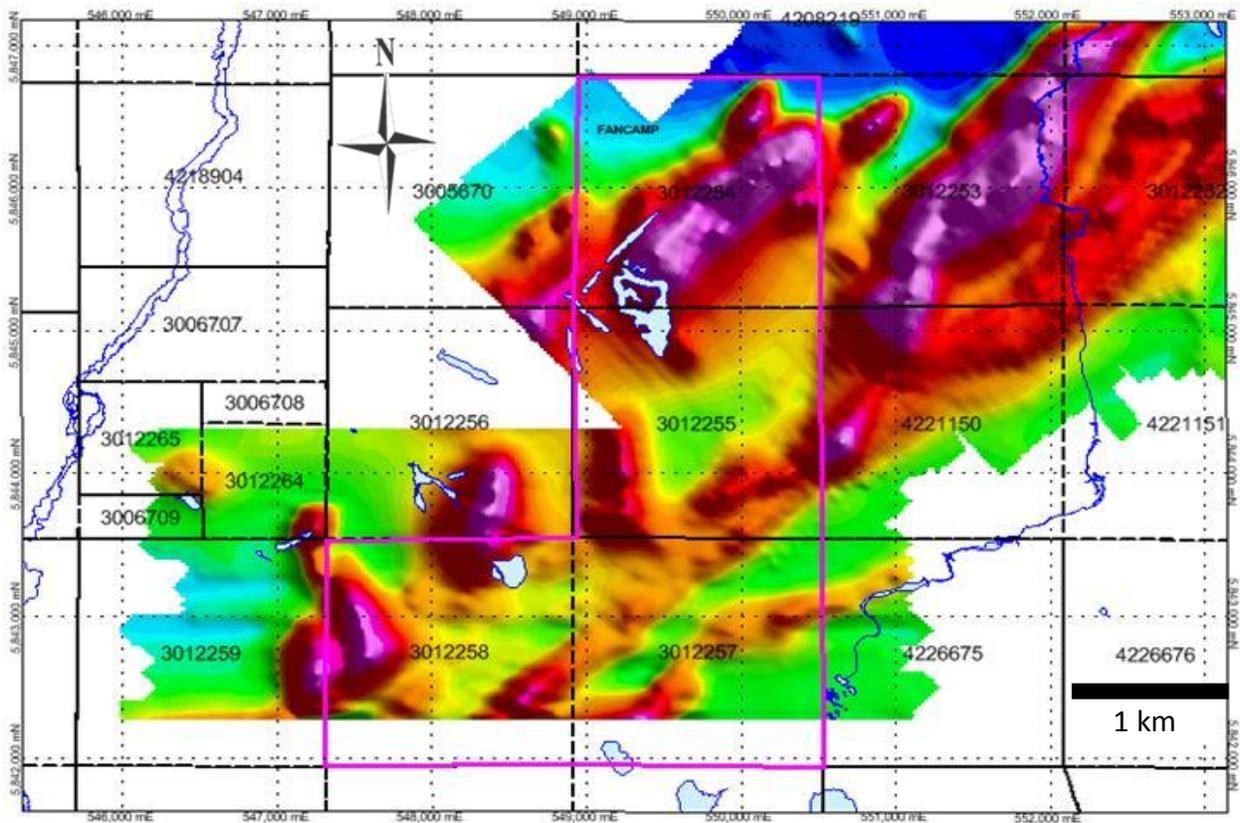


Figure 9.1 - Map showing the Total Field Magnetic survey flown by Fugro in 2003.

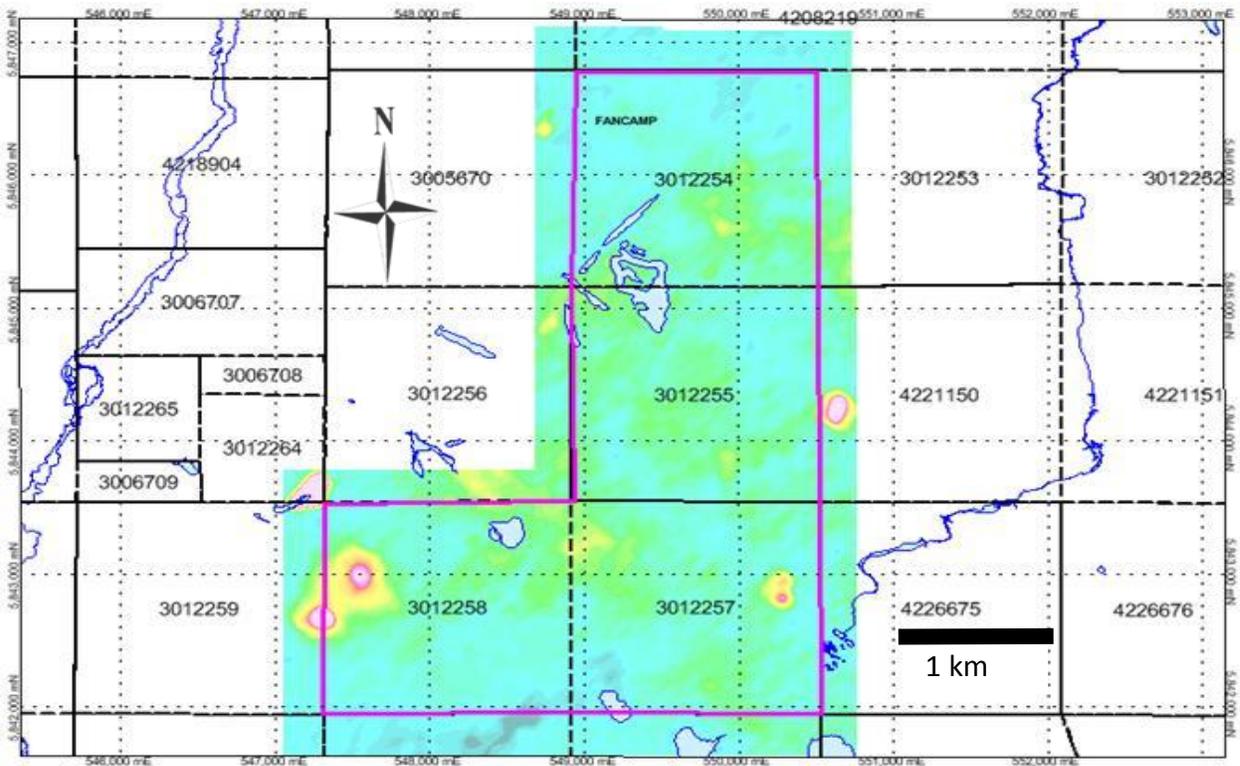


Figure 9.2 - Map showing Channel 3 – Z off – AEM survey flown by AeroQuest in 2007.

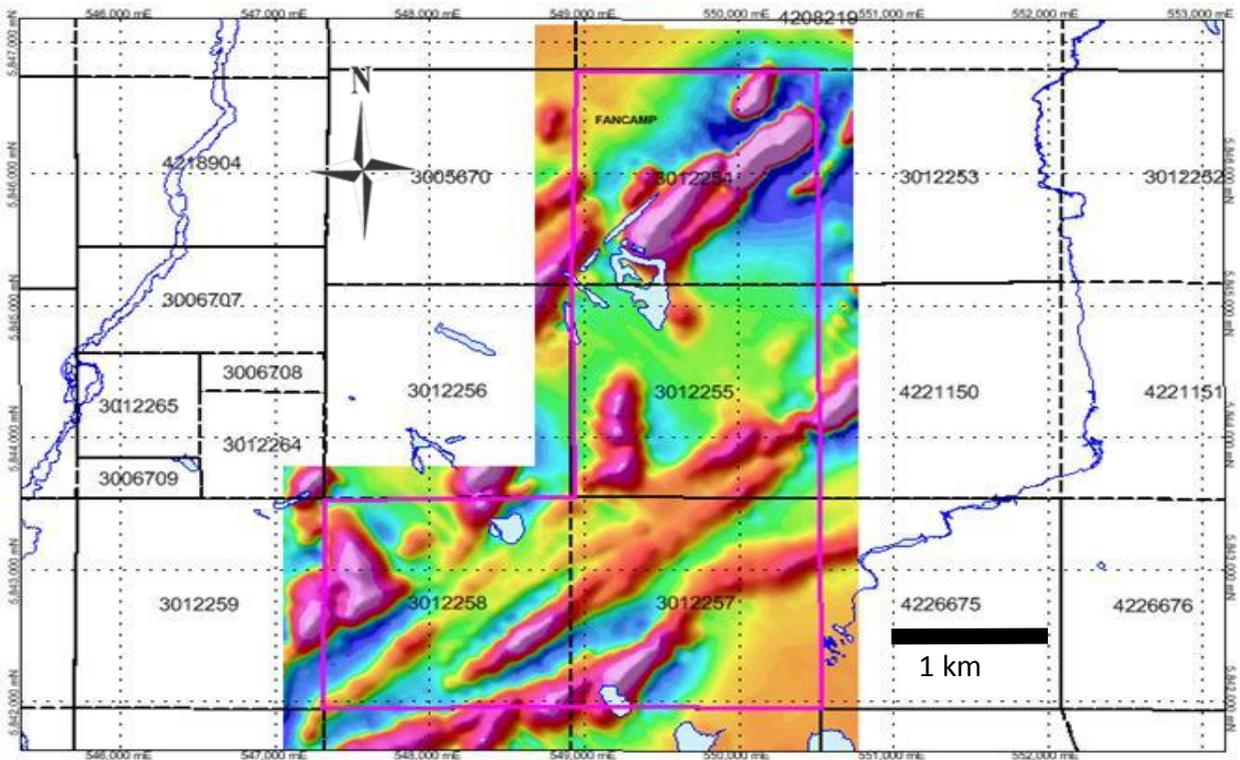


Figure 9.3 - Map showing the Total Field Magnetic survey flown by AeroQuest in 2007.

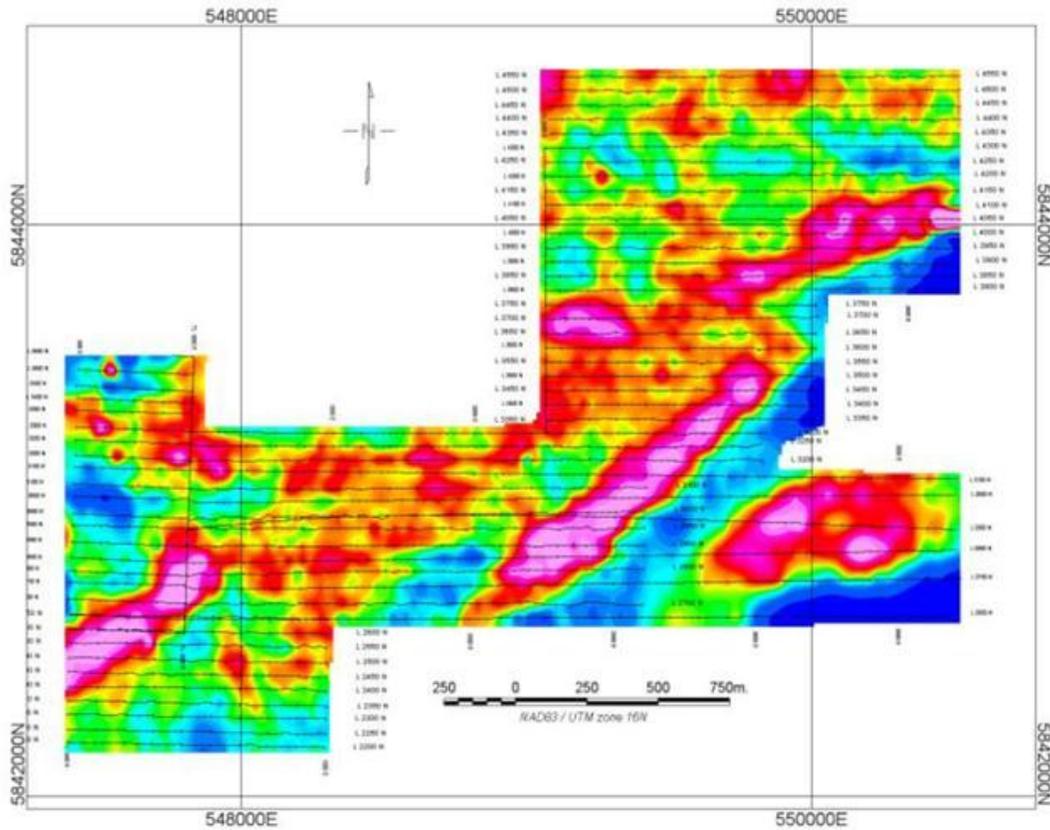


Figure 9.4 - Map showing the Residual Bouguer Gravity survey completed in 2013 by Geosig.

During 2008 Fancamp drilled 12 diamond drill holes totalling 3,555 metres. In addition, Noront Resources drilled one hole that extended onto the Fancamp property (NOT-08-40) that ended in massive chromite. Of these holes, 5 including the Noront hole, were surveyed using downhole IP (JVX, 2009).

During 2010-11 Fancamp drilled an additional 28 holes totalling 8,314 metres including holes FN-10-25 and 26 that intersected significant chromite intervals at depth.

In early 2013 Geosig completed 48.9 line kilometres of ground magnetic and gravity surveys over portions of the property (Geosig, 2013). Figure 9.4 shows the results of the gravity survey. Bold Ventures, as operator, drilled 9 holes totalling 6,379 metres testing various targets including the chromite zone discovered in 2011.

In early 2014 an additional 6 holes totalling 4,090 metres were drilled. Three holes tested a gravity high in the west-central portion of claim 3012255. And the other three continued with testing the limits of the chromite zone discovered in 2011.

## **10. Drilling**

To date 56 BQ and NQ-sized holes totalling 22,377.2 metres have been drilled on the property, including the last 223 metres of hole NOT-08-40 that was drilled by Noront but crossed the property boundary. Of these holes only 9 have tested the Koper Lake Project chromite zone. Down-hole orientation surveys were completed on all holes. Unfortunately the 2008 downhole surveys were done using magnetic methods which result in incorrect azimuth values when in magnetic rocks such as ultramafic. See Figures 10.1, 10.2 and 10.3 plus Table 10.1 for details on the holes that have been drilled on the property.

### **10.1 2008 and 2010-11 Drilling**

Fancamp conducted drilling campaigns in 2008 and 2010-11. These campaigns mostly tested geophysical anomalies that were believed to represent near surface nickel-copper sulphide mineralisation. A few holes also tested deep nickel-copper targets based on geological modelling. Three of these holes, NOT-08-40, FN-10-25 and FN-10-26, intersected massive chromite mineralisation. As chromite was not Fancamp's primary target, they only analyzed 1 metre long samples every 6 metres for hole FN-10-25 and 0.5 metre long samples every 4.5 metres for hole FN-10-26. All of the samples collected were cut in half with a core saw. The samples were sent to the Activation Laboratories (ActLabs) facility in Thunder Bay for analysis. The core from these holes is stored in racks at Koper Lake. Core from hole NOT-08-40 was sampled and analysed using a less accurate method than the current method. As part of the 2013 program the stored pulps were reassayed. As all downhole orientation surveys in 2008 were done using magnetic instrumentation their azimuth determinations are considered suspect where the holes were within magnetic rocks such as ultramafics. Downhole orientation surveys in 2010-11 were conducted using instruments that surveyed the holes independently of the magnetic field producing more reliable results.

### **10.2 2013 Drilling**

In March 2013, a drilling campaign funded by KWG and operated by Bold was initiated. Bold's objective is the search for nickel-copper sulphides, while KWG's objective is to further drill the chromite horizon discovered during the 2010-11 campaign. This was done using three drills, with Bold and KWG having separate core processing facilities staffed by employees of each company. The hole collars were established by GPS, the azimuth and plunge by Reflex APS, a collar orientation instrument, and the hole trajectory surveyed by Reflex Gyro. Excessive downhole deviation of the initial holes was corrected by changing to stabilized core barrels and long reaming shells for subsequent holes.

The chromite bearing core was logged and sampled in sufficient detail to enable the estimate of “waste-ore” separation of coarsely crushed feed using heavy media and/or gravity beneficiation. In addition, the core was subjected to analysis by a handheld XRF. The core was marked, tagged and cut longitudinally in half with a diamond saw. The bagged samples were flown to Nakina Airport, loaded into a trailer and delivered to Actlabs, Thunder Bay by KWG staff. 6 holes targeting chromite were completed. One of these holes, FN-13-031 deviated onto the neighbouring claim owned by Noront Resources. The core from that portion of this hole that is on Noront property was delivered to Noront. Two additional holes were initiated but not completed due to the termination of the drilling program due to a forest fire.

During this campaign, core from the 2010-11 drilling campaign was extracted from storage. As both holes FN-10-25 and FN-10-26 intersected the chromite horizon at an angle of approximately 20 degrees, this produced long intercepts of massive chromite with volumes sufficient for a furnace melt test. Hole FN-10-25 has a continuous massive chromite intercept of 210 metres, and hole FN-10-26 has a continuous massive chromite intercept of 57 metres and 4 additional shorter massive chromite intercepts. Only 9 to 16% of this core had been sampled and assayed. The two longer intercepts were chosen for the furnace melt test, while the core with the remaining massive chromite intercepts was re-logged, and the unsampled intervals submitted for assay. The entire core was photographed and analysed by handheld XRF, including previously assayed intervals. The core was delivered to Xstrata Process Support in Falconbridge, Ontario for the furnace melt test.

### **10.3 2014 Drilling**

Between January and March 2014, another drilling campaign funded by KWG and operated by Bold was initiated. This drill program focused on evaluating a gravity target to the north and east, on strike with the known chromite mineralisation (3 holes) and to further drill the chromite horizon discovered during the 2010 campaign (3 holes). This was done using two drills. The hole collars were established by GPS, the azimuth and plunge by Reflex APS, a collar orientation instrument, and the hole trajectory surveyed by Reflex Gyro.





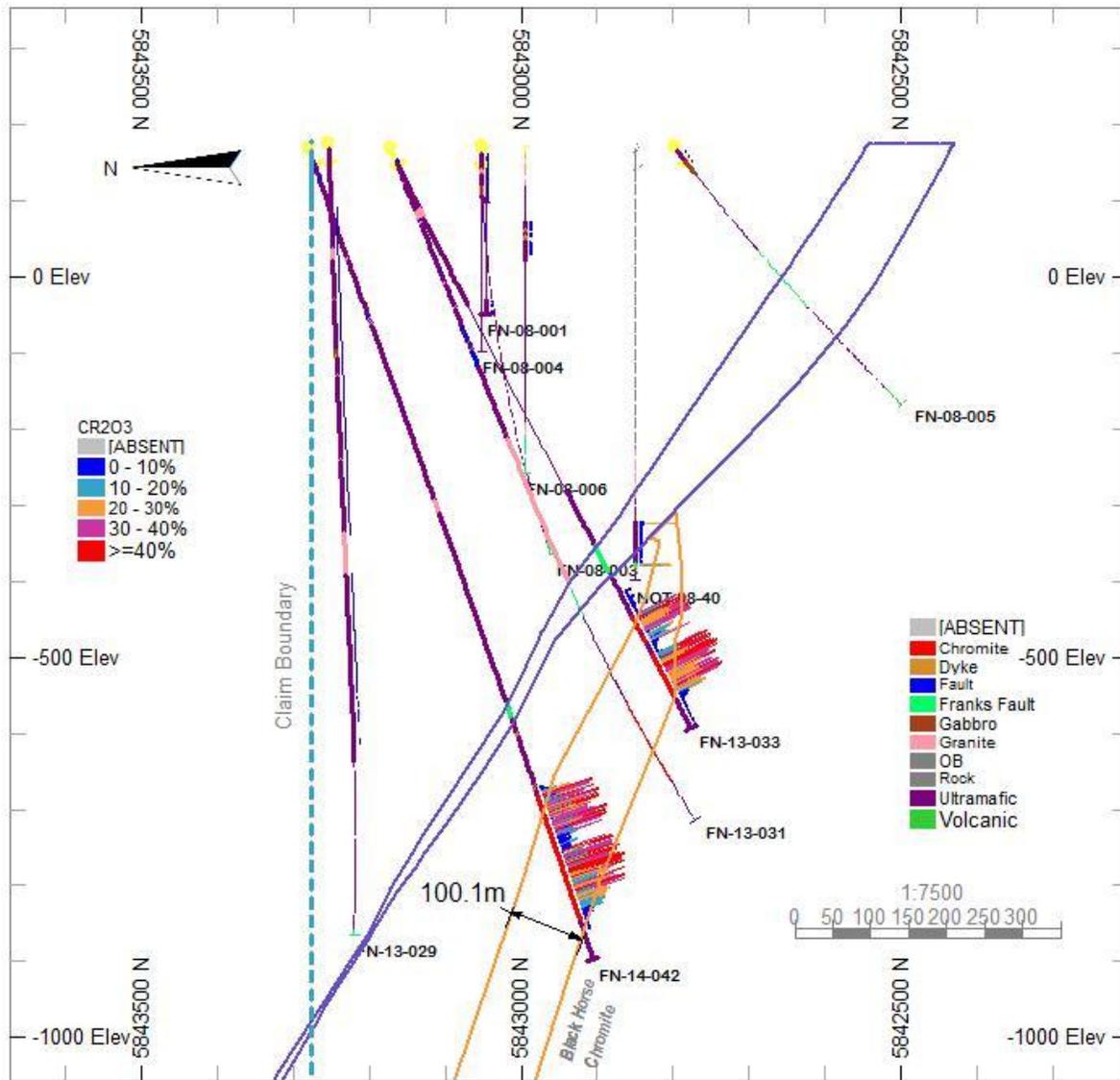


Figure 10.3 - Sample cross section (547450E) for the Koper Lake Project. The orange line is a slice through the mineral envelope used to select samples. The blue line is the Frank's Fault Deformation Zone.

NI43-101 Technical Report – Koper Lake Project

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<b>BHID</b>	<b>UTM-X</b>	<b>UTM-Y</b>	<b>Elevation</b>	<b>Length</b>	<b>Azimuth</b>	<b>Dip</b>
FN-08-001	547660	5843046	172	303.35	270	-50
FN-08-002	547660	5843046	172	181.2	270	-70
FN-08-003	547444	5843052	171	486.2	90	-70
FN-08-004	547444	5843052	172	356.6	90	-50
FN-08-005	547449	5842798	172	506.1	135	-45
FN-08-006	547325	5842995	172	603.5	90	-45
FN-08-007	549325	5843733	172	381	270	-50
FN-08-008	547687	5843150	172	165	270	-45
FN-08-009	547687	5843150	172	134	270	-50
FN-08-010	547592	5843046	170	122	90	-45
FN-08-011	550140	5846010	172	150	315	-50
FN-08-012	550140	5846010	172	165.85	315	-70
FN-10-001	547636	5842932	172	108	90	-50
FN-10-002	547636	5842932	171	213	90	-70
FN-10-003	547647	5842978	171	120	90	-50
FN-10-004	547640	5843012	171	63	90	-50
FN-10-005	547672	5843019	171	105	270	-70
FN-10-006	547620	5842885	171	100	90	-45
FN-10-007	547593	5843074	171	93.1	90	-50
FN-10-008	547586	5843105	171	60	90	-50
FN-10-009	547710	5842956	171	90	270	-70
FN-10-010	547680	5843026	171	90	270	-60
FN-10-011	550473	5845870	170	300	315	-45
FN-10-012	550473	5845870	170	255	135	-50
FN-10-013	550235	5845830	176	303	315	-50
FN-10-014	550080	5843100	177	360.2	150	-50
FN-10-015	549215	5843040	177	249	135	-50
FN-10-016	550230	5842860	177	183	135	-50
FN-10-017	547494	5843190	172	170	90	-50
FN-10-018	547513	5843150	172	147	360	-85
FN-10-019	547513	5843150	172	1009	360	-85
FN-10-020	550000	5843000	174	303	150	-50
FN-10-021	549850	5844050	174	324	135	-50
FN-10-022	550090	5842950	170	264	150	-70
FN-10-023	550090	5842950	170	192	150	-50
FN-10-024	550493	5844236	270	264	140	-50
FN-10-025	548018	5843234	172	1082.3	220	-80
FN-10-026	547860	5843040	174	1086	297	-80
FN-10-027	547950	5843140	173	237	320	-48.5
FN-10-028	547950	5843140	173	396	320	-75
FN-13-029	547456	5843253	175	1041.8	135	-87.63
FN-13-030	547756	5843277	173	774	180	-70
FN-13-031	547451	5843171	169	978	180	-70
FN-13-032	547756	5843277	173	861	152	-73
FN-13-033	547451	5843171	169	861	160	-64
FN-13-034	547741	5842831	175	363	151.31	-70
FN-13-035	547925	5843275	175	738	154.2	-77
FN-13-036	547741	5842831	175	201	151.31	-45
FN-13-037	548075	5843275	175	525	165	-70
FN-14-038	549180	5843635	169	223	0	-55
FN-14-039	549179.8	5843534.4	169	312	0	-55
FN-14-040	547550	5843225	169	1233	148	-82
FN-14-041	549285	5843545	169	363	0	-45
FN-14-042	547436.3	5843279.2	169	1131	172	-71
FN-14-043	547550	5843225	169	828	170	-67.5
NOT-08-40	547660	5843046	172	742	90	-55

**Table 10.1 - Drill Hole Collar Locations.**

NI43-101 Technical Report – Koper Lake Project

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<b>BHID</b>	<b>UTM-X</b>	<b>UTM-Y</b>	<b>Elevation</b>	<b>Length</b>	<b>Azimuth</b>	<b>Dip</b>
FN-10-025	548018	5843234	172	1082.3	220	-80
FN-10-026	547860	5843040	174	1086	297	-80
FN-13-030	547756	5843277	173	774	180	-70
FN-13-031	547451	5843171	169	978	180	-70
FN-13-033	547451	5843171	169	861	160	-64
FN-14-040	547550	5843225	169	1233	148	-82
FN-14-042	547436.3	5843279.2	169	1131	172	-71
FN-14-043	547550	5843225	169	828	170	-67.5
NOT-08-40	547660	5843046	172	742	90	-55

**Table 10.2 - Drill Holes used for resource estimation.**

## **11. Sample Preparation, Analyses and Security**

All samples were submitted in batches to Activation Laboratories (ActLabs) in Thunder Bay except for one batch that was submitted instead to Accurassay Laboratories (Accurassay), also in Thunder Bay, for sample preparation and analysis. Both labs are fully certified; ActLabs is accredited with the Standards Council of Canada, Health Canada, as well as the National Environmental Accreditation Conference, and Accurassay is an accredited laboratory with the Standards Council of Canada. Both ActLabs and Accurassay are independent of KWG.

### **11.1. QA/QC Procedure**

As standard procedure each batch of samples typically included certified reference materials, a blank sample, a pulp duplicate, one coarse reject duplicate and one field (1/4 core) duplicate.

The assay reports were then reviewed by Tracy Armstrong, an independent consultant and Qualified Person under NI43-101, who specialises in completing data quality control checks.

Three certified reference materials provided by CDN Resource Laboratories of Langley B.C. have been used for this program: BD1 which is certified for Pd, Pt and Cr<sub>2</sub>O<sub>3</sub>; BD2, certified for V and Cr<sub>2</sub>O<sub>3</sub>; and BD3, certified for Pd, Pt and Cr<sub>2</sub>O<sub>3</sub>. In all cases there were no failures in that the assay labs always reported results compatible with the known standard analyses (Armstrong, 2013, 2014).

The sample blanks used are a locally sourced granodiorite with no mineralisation. These are used to monitor contamination. All blank results higher than the above indicated tolerance limits were considered to have no impact due to the blank result being too low to impact the deposit value (Armstrong, 2013, 2014).

There were too few duplicates submitted to get a good handle on precision for the data although there does appear to be an increase in precision with a decrease in grain size for Cr<sub>2</sub>O<sub>3</sub> (Armstrong, 2013, 2014).

### **11.2. Security**

All core was measured, marked and tagged in duplicate for sampling by the project geologist in the core logging tent. The core boxes were then transferred to the core cutting tent where the samples were cut in half longitudinally along a prescribed line with a circular diamond saw by a technician who then bagged each sample with one tag, sealed the marked bag shut, with the other tag stapled to the core box at the beginning of the sample interval with the remaining half of the core. The bagged samples were then transferred to a tent where the project geologist assembled the samples into batches according to a prescribed QA/QC protocol. This protocol requires the insertion of blank samples, duplicates and standards within each batch. Each batch was then placed into rice bags along with inscriptions, including a list of the samples

and lab instructions, and then sealed with nylon ties. The sample batches were then transferred to Koper Lake where they were then transferred by plane to the Nakina airport. The samples remained in storage in a secure hanger at the Nakina airport until the project geologist loaded them onto a trailer and delivered the samples directly to Actlabs in Thunder Bay.

## **12. Data Verification**

Initial assay results had been verified internally by KWG staff.

SBG assembled an Access database using the assay certificates as the source for the assay data used and the logs for all other components (header data, lithology data and hole survey data). All were reviewed and verified that there were no missing intervals or errors in the depths. Any errors found (typically depth transposition errors within the logs) were corrected. Another check was ensuring that intervals coded as having chromite mineralisation had corresponding assay values. Two holes (FN-10-25 and FN-10-26) had been incompletely sampled. For the unsampled intervals they were assigned an absent value code.

Exploratory Data Analysis was completed on the data and involved reviewing the statistical and numerical characteristics of the samples watching for irregularities. Tools used were scatter plots, histograms and correlation analysis.

Cr<sub>2</sub>O<sub>3</sub> does not have any spurious values with a maximum value of 48.9%. The histogram for Cr<sub>2</sub>O<sub>3</sub> (Figure 15) is a negatively skewed distribution with relatively equal representation of all fractions from approximately 12% Cr<sub>2</sub>O<sub>3</sub> to about 34% Cr<sub>2</sub>O<sub>3</sub> and with a peak at around 45%.

The review of the data by the author showed no issues. The data is considered valid, representative and suitable to be used for resource estimation.

### **13. Mineral Processing and Metallurgical Testing**

A DC pilot smelting test has been completed on core from holes FN-10-25 and FN-10-26 by Xtrata Process Support (Barnes, 2013). The purpose of this test work was to gauge its response to smelting.

A total of 11 sub-samples were created with each being a composite of whole and half core from continuous sections of two holes. These were then combined to create 4 batch blends. To each batch was added anthracite to act as a reductant as well as limestone and silica flux. The proportions used were 100 units of chromitite, 24 units of anthracite, 20 units of limestone and 9 units of silica. The material was introduced into an already heated and stabilised DC arc furnace to ensure maximum efficiencies. A total of 1184 kg of chromite core was used to produce 1500 kg of blended feed.

The report by Barnes (2013) has no other details on either the equipment used or the methodology applied.

The results (Barnes, 2013) showed that the high grade of the ore results in a very high alloy grade. The Cr recovery, at 95.5%, is excellent by chromite smelting standards.

Based on the results Barnes (2013) concluded:

- The Koper Lake Project chromite ore smelts easily and produces both high grade alloy and low Cr values in the discard slag.
- A chrome recovery of 95.5% was achieved for the test period.
- An alloy grade of > 60% Cr can be obtained even with the high C contents associated with operating the furnace at elevated temperatures.
- In spite of the relatively small amount of material available, this brief campaign successfully provided a glimpse of the likely response of the Koper Lake Project chromite to typical high carbon ferrochrome smelting in a DC arc furnace.
- It can be inferred from the results that the Koper Lake Project chromite material demonstrates high reducibility making it amenable to possible alternative extraction processes involving solid state pre-reduction.

## 14. Mineral Resource and Mineral Reserve Estimates

### 14.1. Mineral Resource Estimation

#### 14.1.1. Resource Estimation Methodology

##### 14.1.1.1. Software Used and Data Validation

The software used in the modelling process, including data preparation is CAE Studio, Release 3.24.25.0.

Core-drilling data was imported from a Microsoft Access database that includes collar information, assays, lithology information and down hole survey information. The data has been validated by the author. Once validated this information was imported into CAE Studio as four tables: a collar file, an assay file, a lithology file, and a survey file. Using the CAE Studio HOLES3D a desurveyed drill hole file, *bhru\_holes.dm*, in UTM coordinate space, was created. The drill hole file was last updated on May 11, 2014.

The CAE Studio desurveying routine, HOLES3D, does a rigorous set of validation checks including checking for duplicate borehole numbers, missing survey data and overlapping sample intervals. If present, it generates a summary report with a list of all errors encountered. These files were checked to determine if any errors occurred. Once it had been confirmed that no errors were present the drill hole file was then used for subsequent steps.

As there are no density data available, and due to the similarity of the mineralisation with the nearby Big Daddy chromite deposit a polynomial regression for that data set was used to populate a Specific Gravity (SG) field, based on Cr<sub>2</sub>O<sub>3</sub> values (Aubut, 2014a). The formula used is:

$$SG = 0.0003x^2 + 0.0192x + 2.6629 \quad \text{Eq. 14.1}$$

If no Cr<sub>2</sub>O<sub>3</sub> assay was available SG was set to a default value of 2.6629. Specific Gravity is dependent on temperature and pressure but is a close analogue to Density, or mass per unit volume.

The Big Daddy data set consists of 2216 specific gravity measurements taken using the water immersion method (the weight of a sample when suspended in air is divided by the weight of the same sample when fully immersed in water).

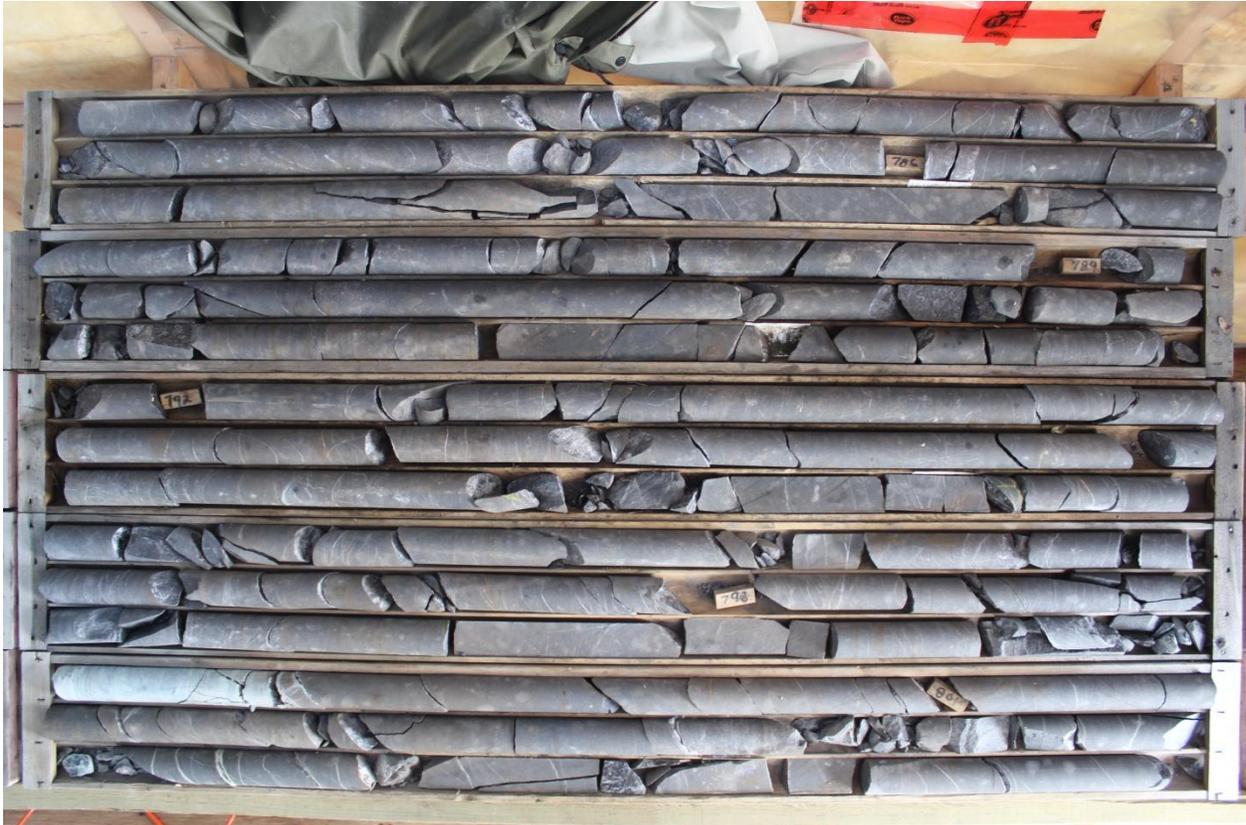


Figure 14.1 - A photograph of a portion of hole FN-10-26 showing the interval from 783m to 804m.

#### ***14.1.1.2. Geological Domains***

Experienced geologists had coded each rock unit based on core logging description. All of the holes are inclined and nine intersected at least some portion of the mineral zone of interest. Construction of the resource block model was controlled by building a wire frame that was then used to isolate related samples. No cut-off was used to limit the extent of the mineral envelope. The envelope for the mineral domain (see Figure 14.4) extends from an elevation of approximately 175 metres below sea level down to a maximum depth of 1250 metres below sea level, just below the deepest drilling to date. The mineralisation is open to depth along the entire strike length and is open along strike to the east. While it is not a geological envelope the mineral envelope does honour the local geology as much as possible.

A total of 9 holes (see Table 10.2) have been used for this resource estimate out of a total of 56 holes drilled on the property. Holes were excluded primarily because they did not intersect the mineral zone. Several excluded holes did intersect chromite mineralisation; however these intercepts are interpreted as chromite entrained into the “Frank’s Fault” Deformation Zone and

as such are not considered to be part of the Black Horse chromite deposit. All 9 of the holes intersected significant chromite mineralisation.

#### ***14.1.1.3. Drill Hole Database***

The data set used for the resource estimate includes two holes drilled in 2011, FN-10-25 and FN-10-26, but which were only partially sampled. In both cases the operator at that time (Fancamp) decided that as the holes had intersected long homogenous massive intersections of chromitite that only representative samples would be collected and submitted for analysis. This decision was based on the relative uniformity of the chromite mineralisation as illustrated in Figure 14.1.

Resource estimation best practice is to use actual data and if, as in this case, there are intervals that are not sampled then additional sampling and analysis of those samples should be done and then merged with the pre-existing data set. As KWG wished to use as much material as possible for metallurgical testing they wanted to retain the unsampled intervals as it greatly increased the amount of available metallurgical sample material.

When faced with having to handle missing samples there are two methods typically available: replace all missing values with 0 (zero) values; or use a code indicating “absent value”. The former introduces a bias as often the missing interval likely has a grade higher than zero and that definitely is the case here in that the missing samples are massive chromitite and so by using this method the grade would be seriously under estimated. The other option, using an “absent data” code, results in estimation taking place as if there is nothing present for these intervals. Again this can result in a bias as while not sampled the fact there is core proves that there is something present. But, as it would introduce the least amount of bias for holes FN-10-25 and FN-10-26, the missing intervals were replaced with “absent values”.

Using the polynomial regression previously described, the assay table was processed to calculate SG values. Where no Cr<sub>2</sub>O<sub>3</sub> values are present SG was set to a default value of 2.663 and Cr<sub>2</sub>O<sub>3</sub> was set to 0. Using the appropriate collar, survey, assay and lithology files the CAE Studio process HOLES3D was used to create a de-surveyed 3D drill holes file: “BHRU\_holes.dm”.

A visual review was made of the drill hole file. A summary of all of the all the holes drilled on the property including those used for this resource estimate are presented in Figures 10.1 and 10.2 as a surface plans showing hole locations and in Figure 10.3, a sample section (547466E East).

The drill hole file, “BHRU\_holes.dm” contains information for 56 drill holes totalling 23,099.45 metres and with 1760 samples with Cr<sub>2</sub>O<sub>3</sub> assays. This file was used for collecting samples for estimation of the Koper Lake Project chromite zone.

#### ***14.1.1.4. Sample Selection***

Working in cross section a set of mineral zone lines, or strings, was defined for the domain. These strings were drawn to enclose the Koper Lake Project chromite zone by snapping to the drill holes. Some of the chromite intersections are remobilised xenoliths caught up in the Franks Fault and were excluded from the mineral domain. The strings from each set were then used to construct a mineral envelope wire frame for the domain (see Figure 14.4). The envelope extends from 175 metres below mean sea level down to 1250 metres below mean sea level, just above the deepest drilling to date. The borehole samples located within the mineral envelopes were captured using a custom script.

#### ***14.1.1.5. Compositing***

The captured samples have an average sample length of 1.17 metres (see Figure 14.2). It is expected that mining at Koper Lake Project likely will be by underground mining methods. The block size used for resource estimation is usually a function of SMU, or Smallest Mining Unit as there is no point using a block size smaller than the smallest unit that can be physically mined selectively (usually a blast round). But if samples are large and/or spaced far apart a small block size would be inappropriate.

For this deposit, due to the geometry and relatively low sample density a block size of 25 metres by 5 metres by 25 metres was chosen as an acceptable compromise.

Composited samples are weighted by Specific Gravity as it is a close approximation of density (mass per unit volume). The samples were composited to standard 1 metre intervals using the CAE Studio process COMPDH. The COMPDH process starts the composites at the beginning of the selected data interval and leaves any remainder at the end of the interval. This results in most holes having one sample with a length less than the established composite length, within the domain. For grade estimation purposes, drill composites are treated like point data (i.e. their length is not used), thus the need to composite to a standard sample length to eliminate any sample bias. And to avoid bias from a very short sample being treated the same as a standard sample any that were less than 40% of the composite length were rejected.

#### ***14.1.1.6. Exploratory Data Analysis***

A review of the composited drill hole samples within the mineral envelopes was done, primarily using GSLib routines (Deutsch and Journel, 1998) to create histograms for all primary elements and X/Y scatter plots of element pairs (see Appendix 1). Features watched for are outliers and

irregularities in the element statistics. Univariate summary statistics for Cr<sub>2</sub>O<sub>3</sub> are presented in Table 14.1.

FIELD	NSAMPLES	MINIMUM	MAXIMUM	MEAN	VARIANCE	STANDDEV	SKEWNESS	KURTOSIS
CR2O3 (%)	826	0.01	48.96	27.58	192.50	13.87	-0.37	-1.10

Table 14.1 - Summary Univariate Statistics

Cr<sub>2</sub>O<sub>3</sub> does not have any spurious values with a maximum value of 48.96%. The histogram for Cr<sub>2</sub>O<sub>3</sub> (Figure 14.3) is a negatively skewed distribution with relatively equal representation of all fractions from approximately 12% Cr<sub>2</sub>O<sub>3</sub> to about 34% Cr<sub>2</sub>O<sub>3</sub> and with a peak at around 43%.

Exploratory Data Analysis found no issues with the drill hole database that would invalidate their use for resource estimation purposes.

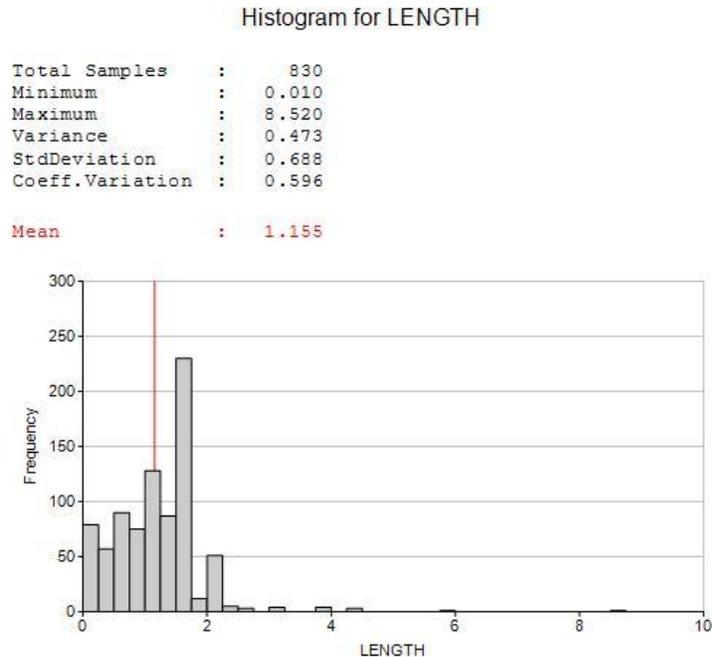


Figure 14.2 - Histogram of sample length

#### 14.1.1.7 Unfolding

Mineral deposits typically vary in thickness along strike due to the non-uniform nature of the original deposition environment. Primary and secondary structural modifications also produce variations in strike and dip as well as thickness. The Cartesian coordinate system makes modelling of the natural geological chemical distribution within a mineral deposit difficult. To ensure that all interpolation takes place within a given geological domain, the domain is unfolded to a planar slab to make variogram calculation and grade interpolation easier. After interpolation has been carried out, the samples are re-arranged to their original positions. This

unfolding process first requires the generation of unfold strings that are used by CAE Studio as a guide. These strings also include between section and within section tag strings to further constrain the unfolding process.

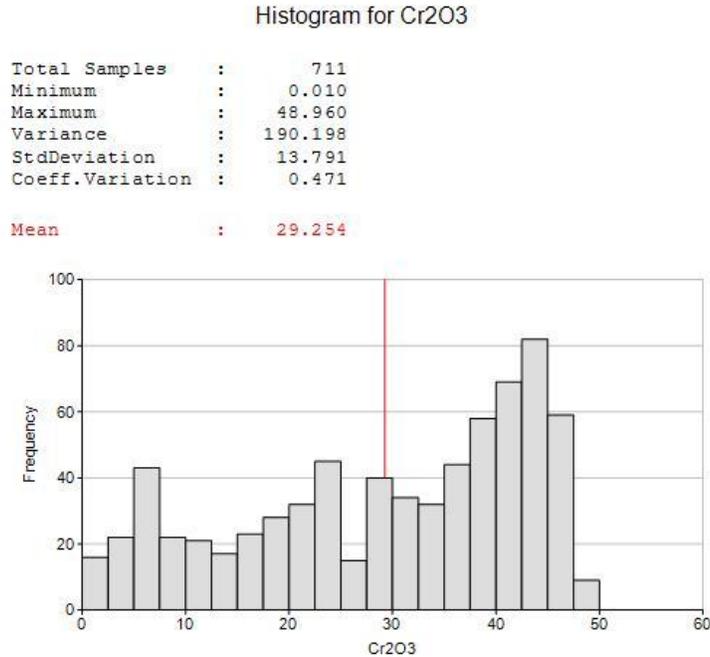


Figure 14.3 - Histogram of Cr<sub>2</sub>O<sub>3</sub> for Koper Lake Project.

The unfolding routine used is based on a “proportional” concept under which hanging wall and footwall surfaces of the domain are made flat and parallel to one another. The true along strike and down dip distances are retained but the across dip distances are first normalised to the distance across as a proportion of the total distance. Then this normalised value is multiplied by the average thickness of the mineral domain.

After being composited to uniform sample lengths, the samples were unfolded using a custom script. Using another custom script the unfold string file was processed further. This routine checks and validates the strings. The composited sample files and the validated unfold string file are then used as input to the CAE Studio UNFOLD routine. The output files contain the samples in unfolded co-ordinate space. All subsequent processing was done on these files and utilized the new coordinate system consisting of UCSA, UCSB and UCSC (Across the Dip, Down the Dip and Along the Strike).

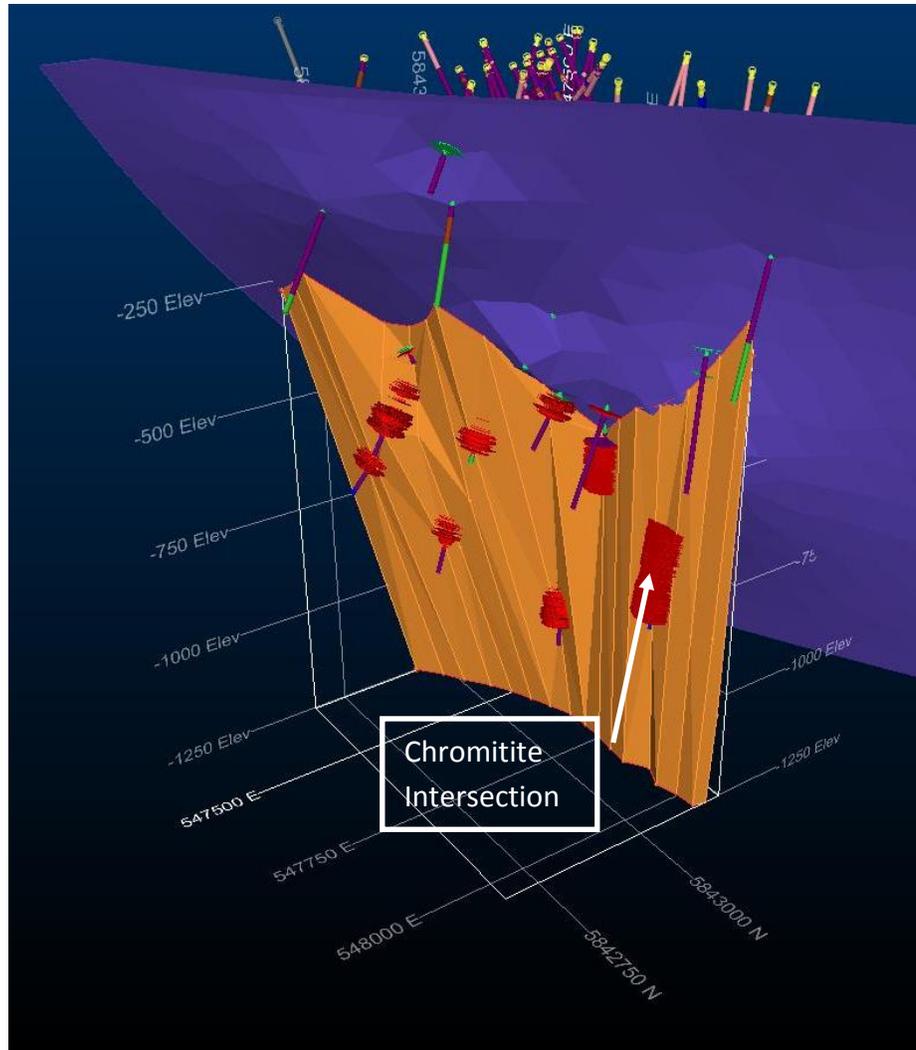


Figure 14.4 - Isometric view of the Koper Lake Project geological domain used, in orange which is cut off up dip by “Franks Fault” Purple).

#### ***14.1.1.8 Grade Variography***

The data set consists of sparsely distributed drill holes that are very oblique to the mineral zone (they cut the zone at very steep angles). As a result, other than for the shorter ranges for the down the dip direction, the samples are too widely distributed or poorly sampled a particular direction (across the dip and along the strike in particular) that it was impossible to generate any kind of useful variograms.

As the style of mineralisation is very similar to that at the nearby Big Daddy chromite deposit it was decided to utilise the variograms from there. The variograms were then rescaled to reflect the local sample variance. As there is not enough data to confirm that the same anisotropy exists the down dip direction was set to be equal to the along strike thus assuming that the variograms are isotropic within the plane of the mineralisation.

The ranges used for the Koper Lake Project are shown in Table 14.2. Due to the lack of any certainty with the values used all resources defined must be classified as Inferred.

#### ***14.1.1.9 Block Size Determination***

The block size used for resource estimation is usually a function of SMU, or Smallest Mining Unit and is determined by taking into consideration the type of equipment that may be used during mining as it has a direct impact on the degree of selectivity that can take place. There is no point using a block size smaller than the smallest unit that can be physically mined selectively (usually a blast round). Another factor that needs to be considered is the degree of sampling detail. If samples are large and/or spaced far apart a small block size would be inappropriate.

For this deposit, due to the geometry and relatively low sample density it is pointless using too small of a block size, especially since, due to the great deal of uncertainty, no mining evaluation can be done.

As a result a block size of 25 metres by 5 metres by 25 metres was chosen as an acceptable compromise.

A custom script was used to create the empty prototype model and then fill it with blocks using the mineral envelope wire frame. And then this empty model was regularised creating FILLVOL and VOIDVOL fields containing the volume for each block inside or outside the mineral domain wire frame.

#### ***14.1.1.10 Nearest Neighbour Block Model***

A Nearest Neighbour (NN) estimated model was created for the domain in order to determine the declustered mean for our data. This mean can then be used to validate the kriged global estimates as all methods of estimation should produce essentially the same global mean if done correctly.

Summary statistics comparing the nearest neighbour model to the sample file are presented in Table 14.3.

A visual inspection on a section-by-section and plan-by-plan basis comparing the input sample file with the resultant nearest neighbour file showed good correlation with the drill holes and proper spreading of the grade.

The output Nearest Neighbour file name is *nn\_fncb\_2015.dm*.

Variogram Models – McFauld's Lake	Cr2O3
Nugget	22.09
1st spherical structure range A	8
1st spherical structure range B	22
1st spherical structure range C	22
1st spherical structure sill	46.24
2nd spherical structure range A	14
2nd spherical structure range B	40
2nd spherical structure range C	40
2nd spherical structure sill	44.05
3rd spherical structure range A	28
3rd spherical structure range B	120
3rd spherical structure range C	120
3rd spherical structure sill	77.80
Total sill	190.20

**Table 14.2 Variogram Model Parameters.**

FILENAME	FIELD	NRECORDS	NSAMPLES	MINIMUM	MAXIMUM	MEAN	%Diff	VARIANCE	SKEWNESS	WGTFIELD
DDH Data	Cr2O3	1054	822	0.01	48.96	27.72		191.0430	-0.39	LENGTH
NN Model	Cr2O3	14855	14855	0.01	48.96	32.04		185.9490	-0.75	TONNES
OK Model	Cr2O3	14855	14855	3.93	47.99	31.41	-1.96	84.9280	-0.08	TONNES

**Table 14.3 - Sample file, Nearest Neighbour and OK model summary statistics.**

#### 14.1.1.11 Ordinary Kriging Block Model

The purpose of block modelling is to provide a globally unbiased estimate based on discrete sample data. Geostatistical methods rely on mathematically modelling the autocorrelation of a regionalized variable, using variography. Then using these mathematical models weights are derived. These weights are applied to the samples used to derive the estimates while at the same time minimizing the estimation variance. A common method of estimation is Ordinary Kriging. It uses the variogram models to initially derive the weights to be used for each estimate but then, to reduce bias, has all weights sum to 1. In addition, Ordinary Kriging does not require that the mean of the data be known.

The parameter files needed for Ordinary Kriging were constructed. A nested search strategy was used (see Appendix 2). This was then followed by the using of a custom script to actually carry out the Ordinary Kriging process. Each cell in the block model was discretised using a matrix of 3 x 3 x 3 points in the ABC (unfolded) coordinate system. The Kriging functions were interpolated at each discretisation point using the same search volume as the nearest neighbour interpolation, based on the grade variogram results. In case of local low sample density, a nested search was implemented. Virtually all of the blocks were estimated in the

third search, correlative with Inferred Resources. These likely suffer from poor local estimation and potentially large conditional bias.

#### ***14.1.1.12 Block Model Validation***

Verification of grade estimation is carried out in two ways: visually, and statistically.

In the case of a visual check, interpolated estimates are loaded into sections and plans along with the original borehole data. Using contrasting colour schemes grades were tested. Any major discrepancy between the original information and the estimated block was analyzed for possible processing error. Sample plans and sections illustrating this visual check are provided in Appendix 3.

Major discrepancies were also looked for between the statistics of the sample composites, nearest neighbour model (declusterised statistics) and the ordinary kriged model. Specific statistics checked include reproduction of the global mean, as established by nearest neighbour modeling, and ensuring that all blocks were estimated (see Table 14.3). No significant global or local bias was identified.

#### ***14.1.1.13 Model Verification***

Validation procedures were carried out on the estimated block models including visually checking the sample file against estimated blocks. The sample grades were found to reasonably match the estimated block grades in the model.

A global statistical comparison of the global means of all estimations method was done. The difference between all the global means was found not to exceed approximately 5%, to be expected if the process was done correctly.

Other statistical checks that were done include the use of Swath plots (see Appendix 4). Swath plots compare the moving average of the mean for both models and the sample file using panels, or “swaths” through the mineral envelope. As this is best done if the data are within a rectilinear volume the unfolded coordinates were used to define the swaths. The result is a curve for each data set. The curves for the models should inter-weave with the sample curve and the two model curves should be sympathetic with one another with no major deviations from one another. No issues were noted.

## **14.2. Mineral Resource Reporting**

### **14.2.1. Resource Classification – Koper Lake Project chromite deposit**

Classification of resources is all about confidence in the estimate. As the variograms are not well defined, especially for the along strike direction, for the Koper Lake deposit we therefore have a low confidence in the Kriging equations.

The next factor that needs to be addressed is the quantity and spatial location of the data actually used in the estimation process. To assist in this a nested approach was used whereby the first search utilised a very rigorous set of criteria, any blocks not estimated would then be evaluated by the second search that used somewhat less rigorous criteria and blocks remaining that were not estimated would utilise the third search that used very loose criteria just to ensure that all remaining were estimated. As a result resource classification can be assigned based on which search a block was estimated with. Thus, if estimated during the first search as it has the most rigorous criteria and therefore the highest confidence in the estimate, then these blocks could be classified as Measured Resources. And if estimated during the second search which uses less rigorous criteria for selecting samples then they could be classified as Indicated Resources as it has moderate confidence in the estimate. Those blocks estimated during the third search use the least rigorous criteria and therefore have low confidence in the estimate and would be classified as Inferred Resources.

An octant search (the search ellipsoid is divided into 8 equal segments based on the primary axis planes) was utilised. It is used to reduce spatial bias by ensuring samples are selected all around the point being estimated. The minimum number of octants was set to 5 for the first two searches. But blocks on the edge of the mineral domain would automatically fail to be estimated during the first and second searches even though all other parameters, including minimum number of samples were met. To overcome this issue wireframe surfaces normally would be manually constructed to isolate areas of high over all confidence from areas of moderate confidence from areas of low confidence (measured, indicated and inferred). As all the blocks within the Koper Lake model have a low degree of confidence in the estimate all were coded as being Inferred.

In all cases the block modelling was constrained by the definition of a mineral envelope which does not extend any further than approximately 240 metres down dip past the deepest hole or 90 metres along strike of any holes that define the lateral extent of the mineral zone (see Figure 14.4). For the Koper Lake deposit the mineral envelope extends about 1250 metres below surface.

See Appendix 5 for resource classification definitions.

#### **14.2.1.1. Determination of Cut-off Grade**

A series of cut-offs were used to generate tonnage and grade curves, which demonstrate the sensitivity to grade. But a decision needs to be made on selecting one cut-off for reporting purposes to demonstrate reasonable prospects for economic extraction. An accepted method is to use a cut-off that is currently, or has been used, for a similar deposit in a similar location.

A problem exists though when trying to do this with chromite deposits is that mining and processing focuses on a single style of mineralisation, massive chromitite. The Ring of Fire chromite deposits, including the Black Horse deposit, have disseminated chromite, semi-massive chromite and massive chromite with the semi-massive and massive only requiring crushing followed by gravity separation to generate a saleable concentrate.

Chromite deposits are not very plentiful, currently with none in North America, but the Kemi chromite deposit in northern Finland (Alapieta et. Al., 1989) is geologically very similar. Outokumpu, the mine operator, when they did the initial feasibility study used a cut-off of 20% Cr<sub>2</sub>O<sub>3</sub> (Alapieta et. Al., 1989) to separate out the massive chromitite and identified reserves of 40 million tonnes grading 26.6% Cr<sub>2</sub>O<sub>3</sub> and with a Cr/Fe ratio of 1.53.

Using this same cut-off for the Black Horse chromite deposit results in an average grade of 34.5% Cr<sub>2</sub>O<sub>3</sub>, which is approximately 30% higher than the grade reported for Kemi when mining was by open pit. As of 2006 all mining at Kemi is done by underground methods which should provide more selectivity. They now report 50 million tons of reserves at a grade of 29% Cr<sub>2</sub>O<sub>3</sub>, an improvement of only 9%, but do not say what cut-off has been used (Salmi, 2014).

Metallurgical studies done to date on the nearby Black Thor and Big Daddy chromite deposits (Aubut, 2015) have shown that a minimum cut-off grade of 20% is needed to produce an optimum concentrate with a grade of approximately 42% Cr<sub>2</sub>O<sub>3</sub> and with chrome-iron ratios of approximately 2.0. Metallurgical work done on the adjacent Black Bird chromite deposit resulted in concentrates between 42 and 44% and Cr:Fe ratio of 2.3 with 80 to 96% recovery when the sample grade was above 20% Cr<sub>2</sub>O<sub>3</sub> and very poor recoveries when the sample grade was less (Murahwi, et. al., 2012b).

Based on the available information, unlike base metal or precious metal deposits, one cannot use a cut-off based on economic principles for chromite mineralisation. Instead the cut-off must be based on metallurgical parameters regardless of what mining process is chosen. It is well documented that a 20% Cr<sub>2</sub>O<sub>3</sub> is the point that optimal recovery can take place of the bands of massive chromitite that can then be processed using crushing and gravity separation.

The next issue that needs to be addressed, but for chromite deposits cannot be considered with the cut-off, is potential economics. While using a head grade of 20% will result in optimal recovery of the chromite if the inherent value is not adequate to support reasonable mining,

processing and shipping costs then there cannot be a reasonable expectation of economic extraction.

Unfortunately for the Koper Lake project specifically and the Ring of Fire deposits in general, there is little data available. An unpublished Preliminary Economic Assessment done on the Big Daddy chromite deposit (M. Lavigne, pers. com.) assumed a processing cost of \$5 per tonne. As processing will only involve crushing followed by gravity separation and without the complexities and additional costs associated with fine grinding and more specialised separation techniques this is believed to be reasonable.

A feasibility study done for the nearby Eagles Nest nickel copper deposit (Burgess, et. al., 2012) used a shipping cost of approximately \$9 per tonne based on a 3000 tonnes per day underground mining operation.

As the planned underground infrastructure would only be approximately 1 km away underground mining of the Koper Lake deposit could easily be done from there by driving a relatively short access drift and using existing infrastructure, a scenario that is reasonable as Noront has an interest in the Black Horse deposit through their current share holdings of KWG. It is therefore reasonable to assume that similar mining costs of approximately \$35 per tonne would apply although in reality, due to the nature of the chromite mineralisation, it is reasonable to expect they should be lower.

This results in an estimated total cost , including mining, processing and shipping, based on available information, of approximately \$49 per tonne.

The next item that needs to be evaluated is what value can be reasonably expected for a saleable product. Unfortunately there are no relevant studies available to draw on other than prices from other sources or based on independent research. For the former the resource estimate report on the adjacent Black Bird chromite deposit (Murahwi et. al., 2012b) was reviewed but no price support is given. For the resource estimate originally published on the Big Daddy chromite deposit (Gowans, et. al., 2010) they cite prices US\$180 to US\$340 per tonne for metallurgical grade chromite (approximately 40% Cr<sub>2</sub>O<sub>3</sub> and with a Cr:Fe ratio of at least 2). And for the Black Creek resource estimate (Murahwi, et. al., 2012a) a table is presented for the time period of 2005 to 2010 that shows a range of US\$180 to US\$450 per tonne but none are identified as being applicable to that particular deposit. So from these sources that deal with chromite deposits of similar style and grade as the Black Horse chromite deposit we have a range of US\$180 to US\$450 that chromite concentrate from the Black Horse deposit could be sold at, well above the estimated cost of mining, processing and shipping.

An independent, and more current, review of chromite pricing was then completed. Using the cut-off of 20% Cr<sub>2</sub>O<sub>3</sub> the average resource grade for the Black Horse deposit, and used for most

of the other chromite deposits in the immediate area, results in an average grade of 34.5% Cr<sub>2</sub>O<sub>3</sub>. If this run of mine material were then mixed and blended without any further processing to ensure a constant grade, this results in material very similar to ores currently available for sale on the open market, such as lumpy (direct shipping) chrome ores from Oman with 32 to 34% Cr<sub>2</sub>O<sub>3</sub> as illustrated in figure 14.5. These same ores, during 2013, averaged approximately US\$150 per tonne for the year. The current prices for the same product are shown in Table 14.5, with lumpy chrome ore from Oman being between US\$130 and US\$135 per tonne.

Based on the preliminary metallurgical work done on the Black Thor deposit (Aubut, 2015) and the Black Bird chromite deposit (Murahwi, 2012b) it is expected that after crushing and gravity separation it is reasonable to expect the Black Horse chromite deposit should produce a concentrate with a grade of approximately 42% Cr<sub>2</sub>O<sub>3</sub>. This is comparable to the products from South Africa and Turkey as shown in Figure 14.5 and with recent price ranges of US\$140 to 145 for the South African ores and US\$185-190 for the Turkish. This establishes that it is reasonable to expect that concentrates from the Black Horse chromite deposit should be able to command prices anywhere between US\$140 and US\$190 based on current price levels.

In summary, based on the information reviewed, metallurgy requires the use of a cut-off of 20% Cr<sub>2</sub>O<sub>3</sub> as that ensures optimal recovery of the massive chromitite. In addition, based on available mining studies it is not unreasonable to expect all in costs of mining, processing and shipping, to be approximately \$49 per tonne. Chromite ore and concentrates currently available on the open market of similar quality as found within the Black Horse chromite deposit, and the other Ring of Fire chromite deposits in general, command prices that are approximately 3 times higher than expected combined mining, processing and shipping costs.

In conclusion it is the QP's professional opinion that there is a very reasonable expectation of potential economic extraction as defined in the CIM Definition Standards for Mineral Resources and Mineral Reserves (see Appendix 5).

#### ***14.2.1.2. Koper Lake chromite deposit***

Using a 20% cut-off, the same cut-off that has been applied for reporting purposes for the nearby Big Daddy chromite deposit (Aubut, 2014a) and the Black Thor chromite deposit (Aubut, 2015), there are a total of 85.9 million tonnes at a grade of 34.5% Cr<sub>2</sub>O<sub>3</sub> of Inferred Resources which should be easily upgradable through gravity and/or heavy media concentration. This average grade is 31% higher than the average grade for the Kemi chromite deposit. As it is way too early in the exploration phase to do any mining studies the resources reported here are only blocks above cut-off that have had no mineability criteria, including an assumed mining

method applied to them although the geometry dictates that it will be through the application of some form of underground mining method. The only constraints used are the application of a series of grade cut-offs and the resource classification based on confidence in the estimate assigned to the blocks. This resource estimate is effective November 27, 2015.

<u>Classification</u>	<u>Tonnes (millions)</u>	<u>%Cr<sub>2</sub>O<sub>3</sub></u>	<u>Cut-off</u>
Inferred Resources	93.4	33.2	15% Cr <sub>2</sub> O <sub>3</sub>
Inferred Resources	85.9	34.5	20% Cr <sub>2</sub> O <sub>3</sub>
Inferred Resources	74.4	36.4	25% Cr <sub>2</sub> O <sub>3</sub>
Inferred Resources	54.1	39.7	30% Cr <sub>2</sub> O <sub>3</sub>

Table 14.4 Summary of Classification of In-Situ Resources, at different cut-offs, for the Koper Lake Project chromite deposit

Notes:

1. CIM Definition Standards were followed for classification of Mineral Resources.
2. The Mineral Resource estimate uses drill hole data available as of May 11, 2014.
3. The cut-off of 20% Cr<sub>2</sub>O<sub>3</sub> is the same cut-off used for the Kemi deposit as reported by Alapieti et al. (1989), for the nearby Big Daddy chromite deposit (Aubut, 2014a) and for the nearby Black Thor chromite deposit (Aubut, 2015).
4. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.
5. Resources reported are for blocks above cut-off and as such if and when mining studies are done all may not be recoverable.

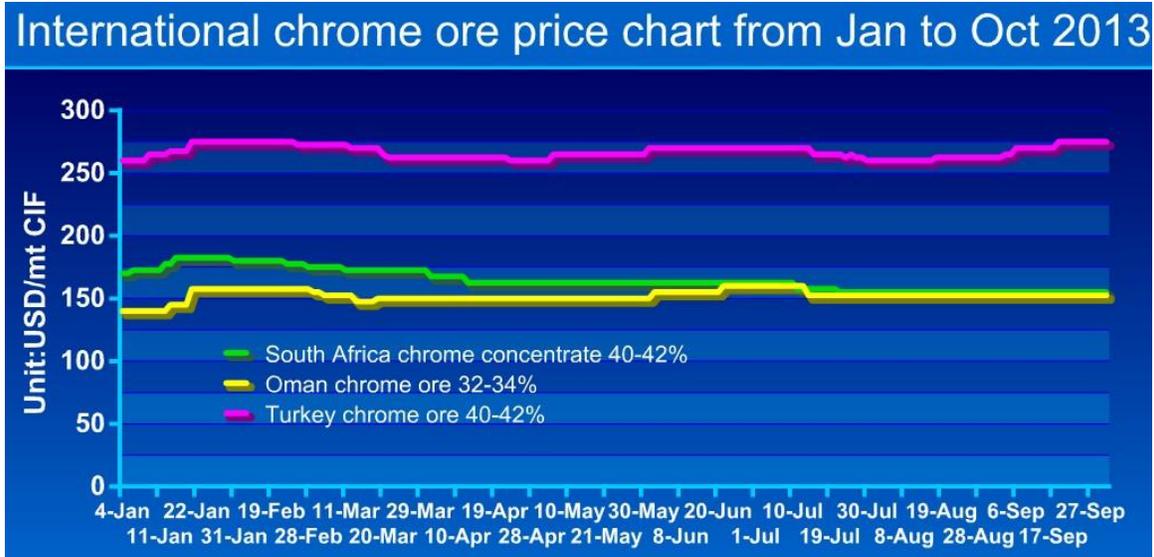


Figure 14.5 - Chart showing price of common types of Chromite ore (www.mining-bulletin.com).

### Global chrome ore market prices by origins on 4 November 2015

Time:Wed, 04 Nov 2015 08:50:26 +0800

Origin	Products	Grades (Cr <sub>2</sub> O <sub>3</sub> %)	Prices (USD/mt CIF)
Oman	Chrome ore	32-34% Lumpy	130-135
South Africa	Chrome ore	40-42% Concentrate	140-145 (Bulk)
Turkey	Chrome ore	40-42% Lumpy	185-190

Table 14.5 - Global chrome prices for same products as shown in Figure 14.5 for Nov. 4, 2015 (www.mining-bulletin.com).

There is poor confidence in the lateral continuity of the mineralisation and so these resources cannot be used for a pre-feasibility or feasibility mining study. Table 14.4 presents tonnes and grade for each Resource Classification using various cut-offs for the Koper Lake Project chromite deposit.

Figure 14.6 presents the Cr<sub>2</sub>O<sub>3</sub> tonnes-grade curves for the Koper Lake Project chromite deposit and helps illustrate the effect of different cut-offs on available resources. None of the resources identified, due to the very sparse drilling has enough confidence to be classified as anything other than inferred. As such none can be converted to reserves.

## **14.2.2. Risks and Opportunities**

### ***14.2.2.1. Risks***

All of the drilling done to date that has tested the chromite mineralisation is rather sparse and is inadequate to properly characterize the mineral continuity within the plane of the mineralisation.

While higher-grade areas exist at depth and along strike they are poorly defined as a result of the sparse drilling.

Any mineral deposit located in a remote area, such as the Koper Lake project, absent of any infrastructure is exposed to above average risk of never getting to production if the project is unable to finance, or alternatively government is unwilling to construct, the required infrastructure. Similarly many other issues need to be addressed including native land claims, social-economic demands and environmental requirements. Due to these and many other uncertainties Mineral Resources are not Mineral Reserves as they do not have demonstrated economic viability.

### ***14.2.2.2. Opportunities***

It must be noted that while only 9 holes were used for this resource update all of them intersected the mineral zone and massive chromitite. As a result infill drilling plus drilling to follow the mineral zone along strike to the east and down dip could identify and expand the presence of the chromite-bearing horizon, in particular higher-grade material.

The mineral zone is open to depth and along strike to the east. Thus there is excellent opportunity to expand resources significantly with additional drilling.

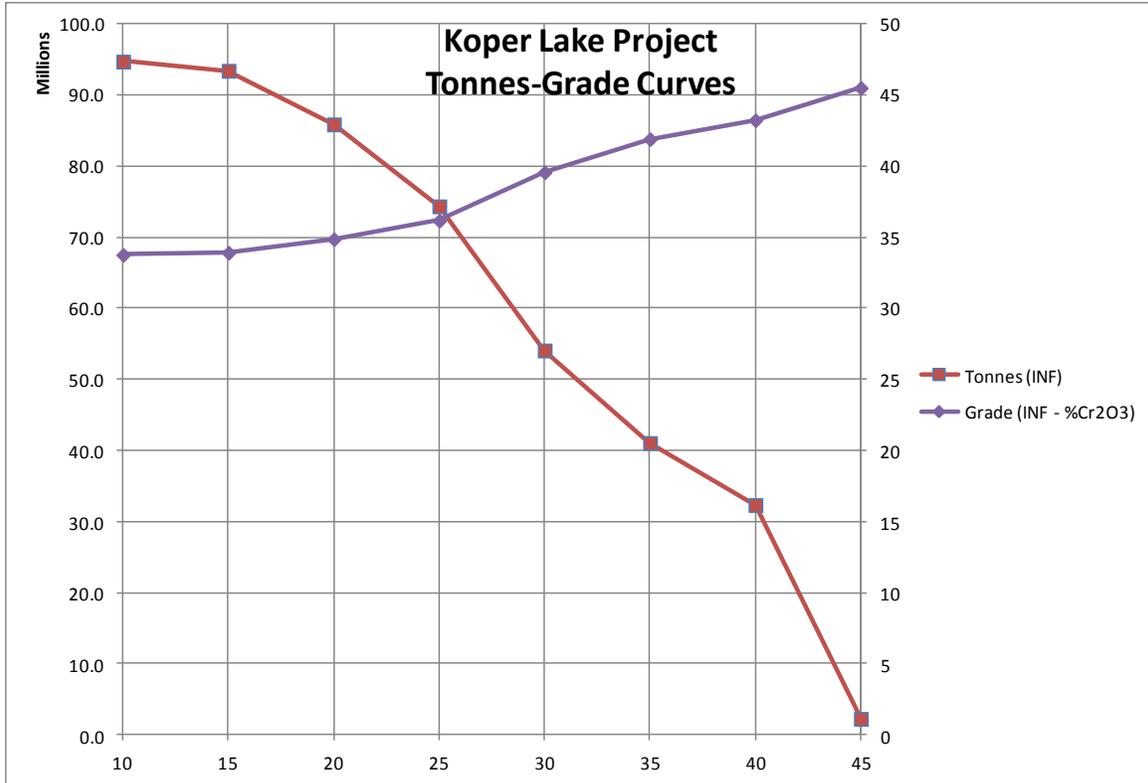


Figure 14.6 - Cr<sub>2</sub>O<sub>3</sub> Tonnage-Grade curves for the Koper Lake Project chromite deposit.

## **15. Mineral Reserve Estimates**

There has not yet been any mineral reserve estimation done.

## **16. Mining Methods**

As no mining study has yet to be done on the property no mining method has been selected.

## **17. Recovery Methods**

As there have yet to be any bench testing done recovery methods have yet to be established at this time but should be very similar to those reported for other chromite deposits in the area.

## **18. Project Infrastructure**

Other than the existence of an exploration camp on the nearby Noront property servicing the exploration programs being conducted by Bold and KWG there is no project infrastructure in place as yet.

## **19. Market Studies and Contracts**

To date no pre-feasibility or feasibility study has been completed, thus there is no current market study completed or sales contracts signed.

## **20. Environmental Studies, Permitting and Social or Community Impact**

As the project is at its infancy there as yet have been no environmental studies done. There have been no social or community impact studies done to date.

## **21. Capital and Operating Costs**

To date no pre-feasibility or feasibility study has been completed, thus there are no current estimates of capital and operating costs.

## **22. Economic Analysis**

There has not yet been any economic analysis done.

## 23. Adjacent Properties

There are four properties of note that are in the vicinity of the Koper Lake Project property. These are the Noront Resources property that contains the Eagle 1 Ni-Cu-PGE deposit and Eagle 2 Ni-Cu-PGE occurrence and the Blackbird chromite deposit, the Noront/KWG property that is host to the Big Daddy chromite deposit, the Probe Mines property hosting the Black Creek chromite deposit and the Noront Resources property to the northeast that hosts the Black Thor and Black Label chromite deposits (see Figure 23.1 for locations). A summary of identified resources for each of the four chromite deposits is presented in Table 23.1.

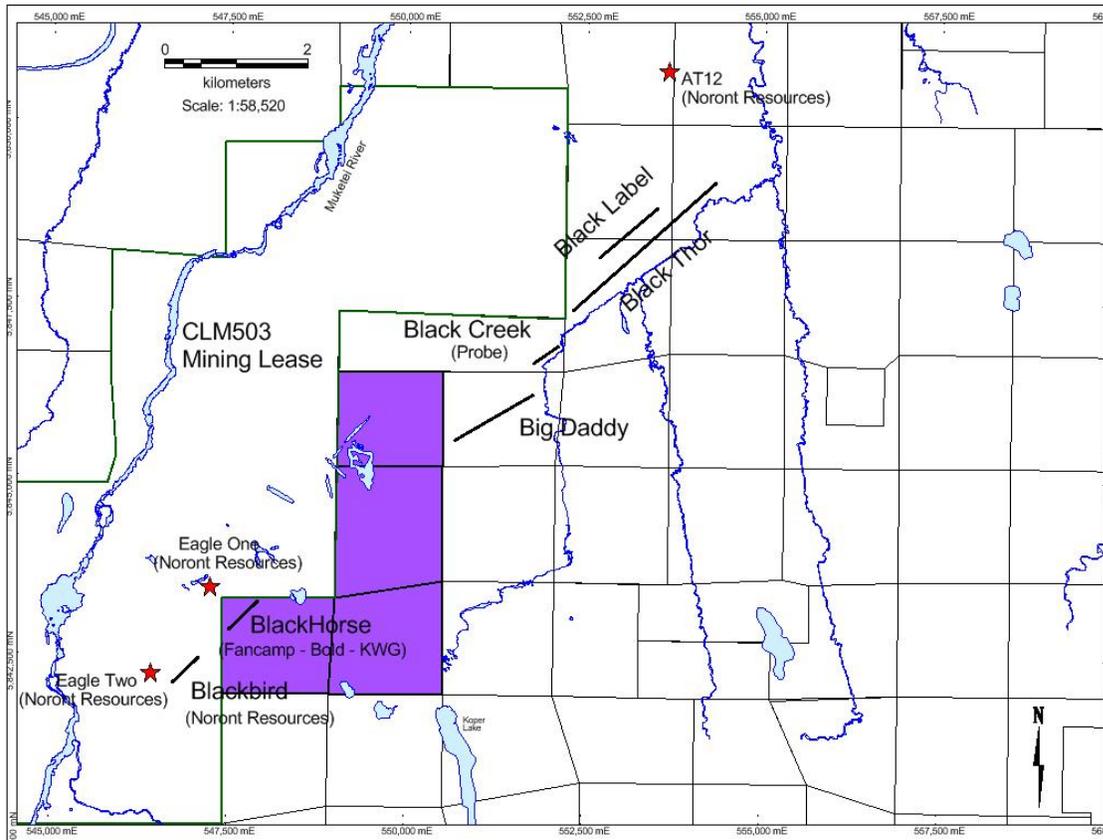


Figure 23.1 - Location of Koper Lake Project and adjacent discoveries.

### 23.1. Noront Eagle’s Nest and Blackbird deposits, Eagle 2 Occurrence

The Eagle’s Nest deposit is a high grade nickel, copper sulphide deposit with associated platinum and palladium. The deposit is a sub-vertically dipping body of massive magmatic sulphide (pyrrhotite, pentlandite, chalcopyrite) in a pipe-like form approximately 200 metres long, up to several tens of metres thick, and at least 1,600 metres deep. A mineral reserve estimate released in 2012, using a cut-off of 0.5% Ni, identified 11.1 million tonnes of Proven and Probable reserves grading 1.68% Ni, 0.87% Cu, 0.89 grams per tonne Pt, 3.09 grams per tonne Pd and 0.18 grams per tonne Au (Burgess, et. al., 2012).

The Noront Eagle's Nest deposit is located approximately 400 metres north-west of the Koper Lake Project property.

The author has not been able to verify this information.

The Eagle Two mineral occurrence is a nickel, copper and PGE sulphide occurrence, discovered in February 2008, that is located 2 kilometres southwest of Eagle's Nest and is situated within and adjacent to the ultramafic rocks of the Blackbird 1 chromite deposit. The occurrence is potentially hosted by a shear zone that strikes parallel to the contact between the ultramafic rocks and the felsic intrusive host rocks. The mineralisation occurs in a series of veins of pyrrhotite – magnetite – chalcopyrite – pentlandite bearing massive sulphide with variable amounts of talc. Textures in the veins range from massive to brecciated. No resource estimate has been completed for this occurrence.

Noront has located two chromite deposits, similar in mineralisation to the Black Thor deposit. They are located approximately 3 kilometres along strike from the Koper Lake Project deposit. The Blackbird chromite deposits (Blackbird 1 and 2) are hosted by a peridotite unit within a layered mafic to ultramafic body. Chromite mineralisation occurs as disseminated chromite, semi-massive chromite with intercalated olivine crystals, banded chromite interfingering with peridotite and as massive chromite commonly interlayered with dunite and harzbergite. Resource estimates have been completed by Micon (Gowans et al, 2010b and Murahwi et al, 2012b).

The author has not been able to verify this information.

### **23.2. Big Daddy Chromite Deposit**

The Big Daddy chromite deposit (Aubut, 2014a) lies between the Koper Lake Project property to the south west and the Black Creek and Black Thor/Black Label deposits to the north east. It is a faulted extension of the same stratigraphy consisting of a well fractionated ultramafic body hosting a zone of disseminated to massive chromite up to 65 metres thick within dunite and overlain by pyroxenite.

### **23.3. Black Creek Chromite Deposit**

The Black Creek chromite deposit (Murahwi et al, 2012a) lies between the Big Daddy deposit to the south west and the Black Thor/Black Label deposits to the north east. It is a faulted extension of the same stratigraphy consisting of a well fractionated ultramafic body hosting a zone of disseminated to massive chromite up to 65 metres thick within dunite and overlain by pyroxenite.

The author has not been able to verify this information.

### 23.4. Black Thor and Black Label Chromite Deposits

The Black Thor Chromite Zone has been traced for a length of 2.6 kilometres. It is the most extensive chromite bearing body on the property. It strikes SW – NE and has an overturned sub-vertical dip towards the NW ranging between 70 and 85 degrees. The zone typically contains two chromitite layers (upper and lower) that can range in thickness from 10’s of metres to over 100 m. The layers are separated by a band of disseminated chromite in peridotite/dunite ( Aubut, 2015).

Host lithologies consist of serpentinized peridotite, serpentinized dunite, dunite, and peridotite. Chromite is present as intermittent chromite beds, finely to heavily disseminated chromite in dunite/peridotite, and semi-massive to massive chromitite. Because of its lateral continuity and uniformity the chromite mineralisation was likely deposited in a quiescent magmatic environment. The Black Thor Chromite Zone is typical of most large layered igneous intrusions such as the Kemi deposit in Finland (Alapieti et al, 1989).

<b><u>Deposit</u></b>	<b><u>Classification</u></b>	<b><u>Tonnes (millions)</u></b>	<b><u>%Cr2O3</u></b>	<b><u>Cut-Off (%Cr2O3)</u></b>
<b>Blackbird<sup>1</sup></b>	<b>Meas. &amp; Ind.</b>	20.5	35.8	30%
	<b>Inferred</b>	23.5	33.1	30%
<b>Big Daddy<sup>2</sup></b>	<b>Meas. &amp; Ind.</b>	29.1	31.7	20%
	<b>Inferred</b>	3.4	28.1	20%
<b>Black Creek<sup>3</sup></b>	<b>Meas. &amp; Ind.</b>	8.6	37.4	20%
	<b>Inferred</b>	1.6	37.8	20%
<b>Black Thor<sup>4</sup></b>	<b>Meas. &amp; Ind.</b>			
	<b>Inferred</b>	137.7	31.5	20%

**Table 23.1 - Summary of Classification of In-Situ Resources for other chromite deposits in the area.**

<sup>1</sup>Murahwi et al., 2012b.

<sup>2</sup>Aubut, 2014a.

<sup>3</sup>Murahwi et al., 2012a.

<sup>4</sup>Aubut., 2015.

Within the Black Label deposit chromite is generally present as fine to heavily disseminated crystals in peridotite, chromitite bearing magmatic breccias, semi-massive bands and as massive chromitite. Silicate fragments, in the form of rip up clasts and as ovoid blebs have been observed in the zone and indicate the chromite was emplaced in a highly dynamic magmatic environment unlike the Black Thor Deposit (Aubut, 2015).

The Black Label Chromite Zone has been traced by drilling for over 2.2 kilometres along strike. It is locally cross-cut and interrupted by a pyroxenitic body. It lies stratigraphically below the Black Thor chromite zone. Chromite is generally present as fine to heavily disseminated crystals

in peridotite, chromitite bearing magmatic breccias, semi-massive bands and as massive chromitite. Silicate fragments, in the form of rip up clasts and as ovoid blebs have been observed in the zone and indicate the chromite was emplaced in a highly dynamic magmatic environment (Aubut, 2015).

## **24. Other Relevant Data and Information**

Details on drill results and other pertinent information can be found on the following web sites:

<http://www.kwgresources.com>, and <http://www.boldresources.com>.

## **25. Interpretation and Conclusions**

Drilling to date has identified a chromite horizon that is potentially economic. The zone does not come to surface but is open along strike and down dip.

Using industry-standard block modelling techniques a resource model was created covering the Koper Lake Project chromite deposit. Querying this model, using a 20% Cr<sub>2</sub>O<sub>3</sub> cut-off, there is a total in-situ Inferred resources 85.9 million tonnes at a grade of 34.5% Cr<sub>2</sub>O<sub>3</sub>. Due to the depth below surface of the mineral zone this material potentially could be mined by underground mining methods, but no mineability criteria have been applied. The confidence in this estimate is such that only a preliminary economic assessment should be attempted using this data.

Initial metallurgical testing consisting of ferro-chrome melting of available chromite material shows that a very high grade product can be produced enhancing the potential economics of the deposit.

## 26. Recommendations

To properly define the limits of the mineralisation on the property, additional drilling is required. The objective would be to have pierce points approximately on a 100 metre grid within the plane of the mineralisation and to trace the zone along strike and further down dip. It is estimated that about 37,500 metres of drilling should accomplish this objective and in doing so should be able to move most of the identified resources into at minimum the Indicated category. Due to the depth and the dip of the known mineralisation it is also recommended that wedging be used as much as possible to both maximize the cost benefits and to improve the core angles through the mineralisation.

Table 26.1 presents a budget for a 37,500 metre drilling program that will provide enough information to increase the confidence in the identified resource.

<i>Item</i>	<i>Description</i>	<i>Amount</i>
<b>Diamond Drilling</b>	5,500m – summer exploration drilling (\$600/m)	\$ 3,300,000
	32,000m – winter exploration drilling (\$300/m)	\$ 9,600,000
<b>Contingencies</b>	10%	\$ 1,300,000
<b>Total</b>		<u>\$ 14,200,000</u>

Table 26.1 - Proposed Budget for Infill and Exploration drilling on the Koper Lake Project

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## Certificate of Qualifications

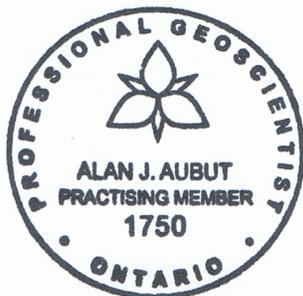
I, Alan James Aubut, Geologist, do hereby certify the following:

- I operate under the business name of Sibley Basin Group Geological Consulting Services Ltd., a company independent of KWG Resources Inc. The business address of Sibley Basin Group Geological Consulting Services Ltd. is:
  - Sibley Basin Group
  - PO Box 304
  - 300 First St. West
  - Nipigon, ON
  - P0T 2J0
- I am the author of this National Instrument 43-101 technical document titled “*National Instrument 43-101 Technical Report, Koper Lake Project Chromite Deposit, McFauld’s Lake Area, Ontario, Canada, Porcupine Mining Division, NTS 43D16, Updated Mineral Resource Estimation Technical Report*” (the report), and it is effective December 15, 2015.
- I am a graduate Geologist of Lakehead University, in Thunder Bay, Ontario with the degree of Honours Bachelor of Science, Geology (1977).
- I am a graduate Geologist of the University of Alberta, in Edmonton, Alberta with the degree of Master of Science, Geology (1979).
- I hold an Applied Geostatistics Citation through the Faculty of Extension of the University of Alberta, in Edmonton, Alberta.
- I have been a practicing Geologist since 1979.
- I have been practicing mineral resource estimation since 2000.
  - 2000 – 2010: Senior Geologist responsible for resource estimation for Inco/Vale.
  - 2010 – present: Consulting Geologist specializing in resource estimation.
    - This work experience has included doing multiple resource estimates on the Black Thor and Big Daddy chromite deposits.
- I am currently a member in good standing of the Association of Professional Geoscientists of Ontario.
- I am a member of the Society of Economic Geologists.
- I have read National Instrument 43-101, and confirm that I am a “qualified person” for the purposes of this instrument and that this report has been prepared in compliance with said instrument.
- I conducted a site visit on April 3, 2014.
- I take responsibility for all items within this report.
- I am independent, as defined by Section 1.5 of NI 43-101, of KWG Resources Inc., Fancamp Exploration Ltd. and all other parties related to the subject property and do not expect to become an insider, associate or employee of any of the parties.
- I have previously prepared a technical report detailing a preliminary resource estimate for the property.
- As of December 15, 2015, the report to the best of my knowledge, information and belief contains all scientific and technical information that is required to be disclosed in order to make the report not misleading.

KWG Resources Inc. and Bold Ventures Inc. supplied copies of all reports and data available. It was these data that were used for the current project. The resource estimate generated with this data is effective as of December 15, 2015.

*Alan Aubut*

Alan Aubut  
December 15, 2015



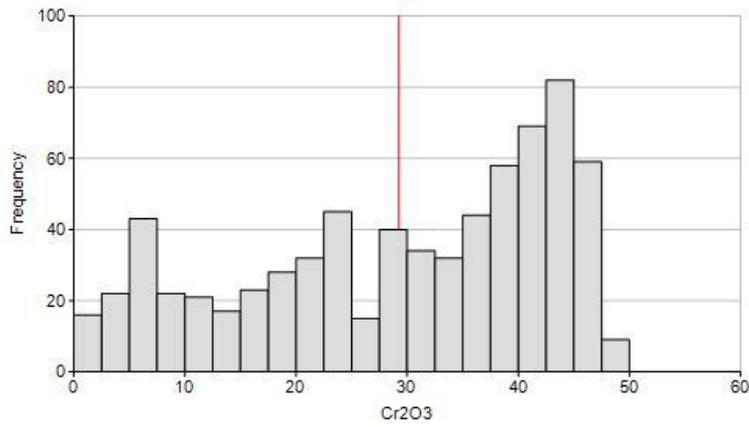
## Appendix 1 – Exploratory Data Analysis

### Histograms

Histogram for Cr2O3

Total Samples : 711  
 Minimum : 0.010  
 Maximum : 48.960  
 Variance : 190.198  
 StdDeviation : 13.791  
 Coeff.Variation : 0.471

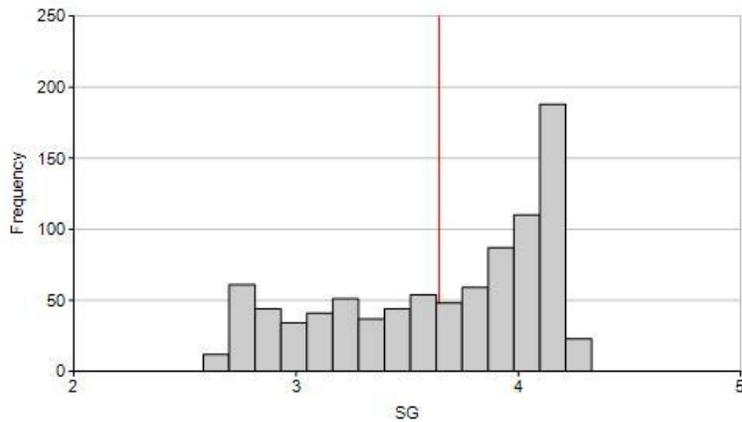
Mean : 29.254



Histogram for SG

Total Samples : 893  
 Minimum : 2.660  
 Maximum : 4.315  
 Variance : 0.233  
 StdDeviation : 0.482  
 Coeff.Variation : 0.132

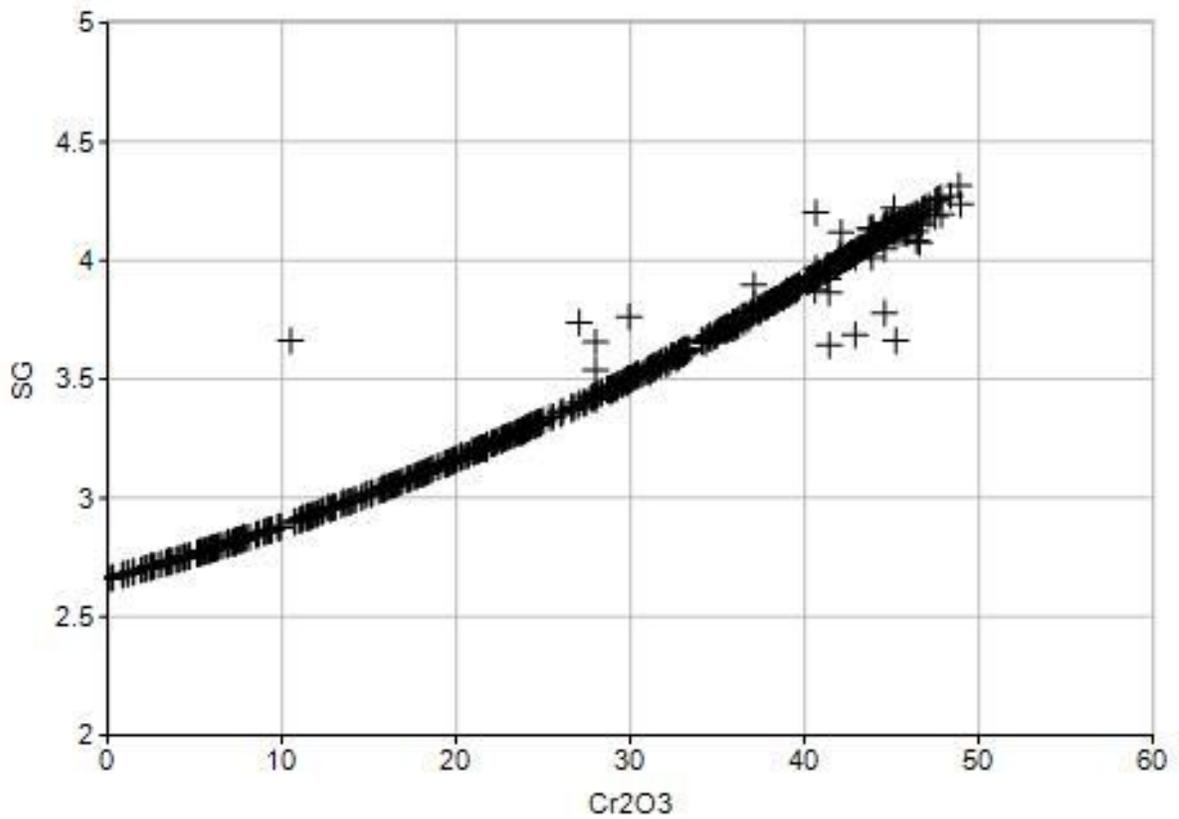
Mean : 3.643



## Scatter Plots

Cr2O3 vs SG

NAME	:	Cr2O3	SG
Total Samples	:	711	711
Mean	:	29.254	3.534
StdDeviation	:	13.791	0.477
Correlation Coeff:		0.990	



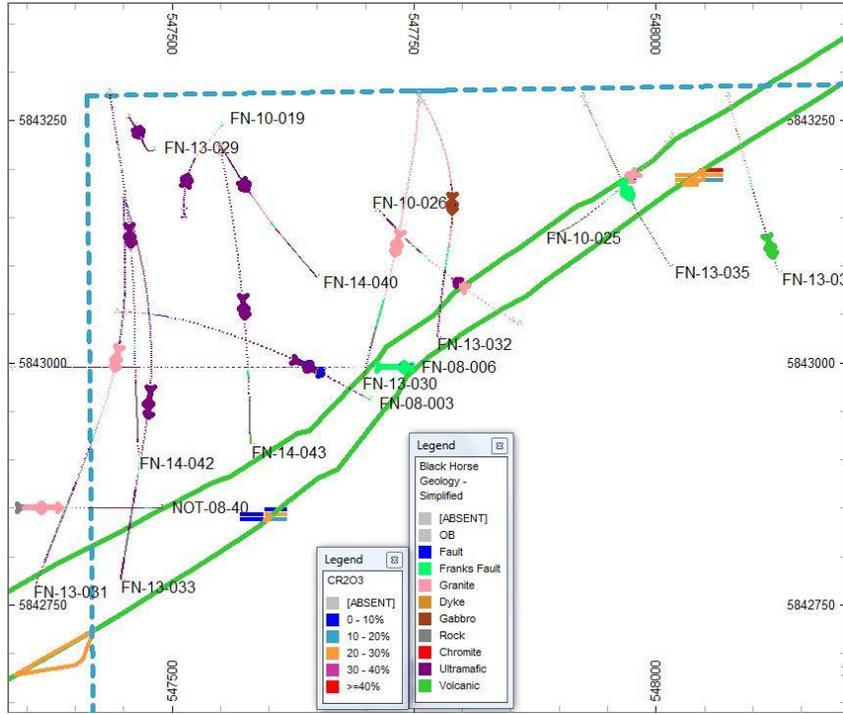
## Appendix 2 – OK Search Parameters Used

UCSA	UCSB	UCSC	OCTANT METHOD USED?	MINIMUM NUMBER OF OCTANTS	MINIMUM SAMPLES PER OCTANT	MAXIMUM SAMPLES PER OCTANT	MINIMUM NUMBER OF SAMPLES	MAXIMUM NUMBER OF SAMPLES	MAX. NUMBER OF SAMPLES PER HOLE
10	120	120	YES	5	1	4	20	32	6
15	160	160	YES	5	1	4	10	32	6
20	200	200	NO	n/a	n/a	n/a	5	32	0
- across the dip									
- down the dip									
- along the strike									

### Appendix 3 – Block Model Plans and Sections

#### NN Models Sample Plan views – Koper Lake Project chromite deposit

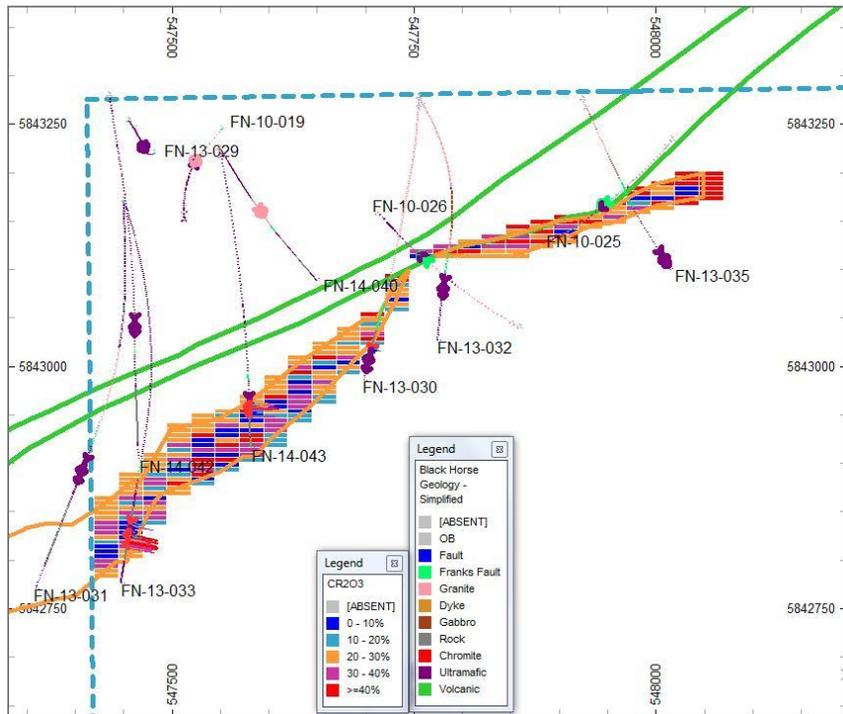
-250 Elev.



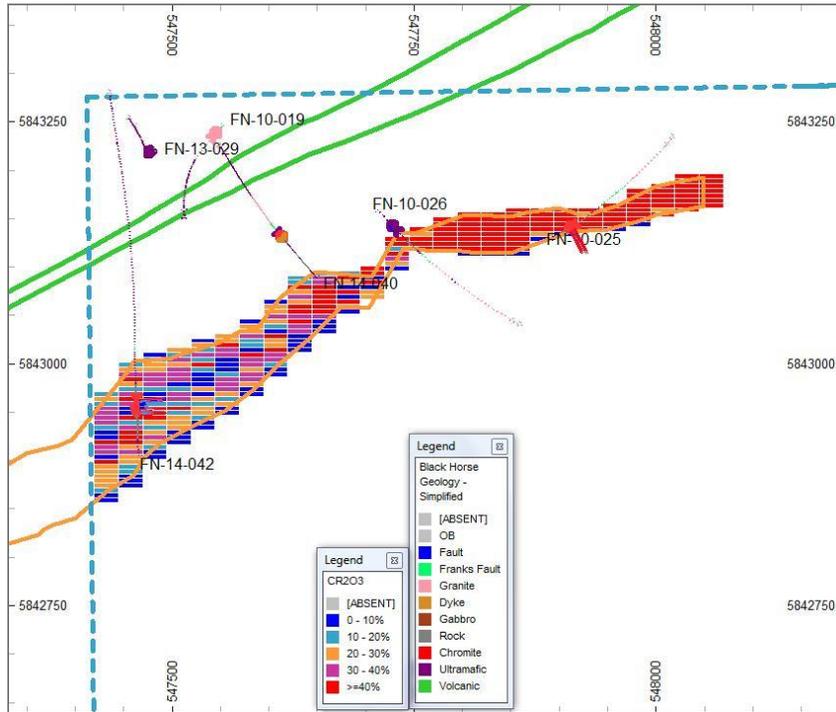
Green outline – Frank's  
Fault Deformation  
Zone

Blue dashed line – claim

-500 Elev.



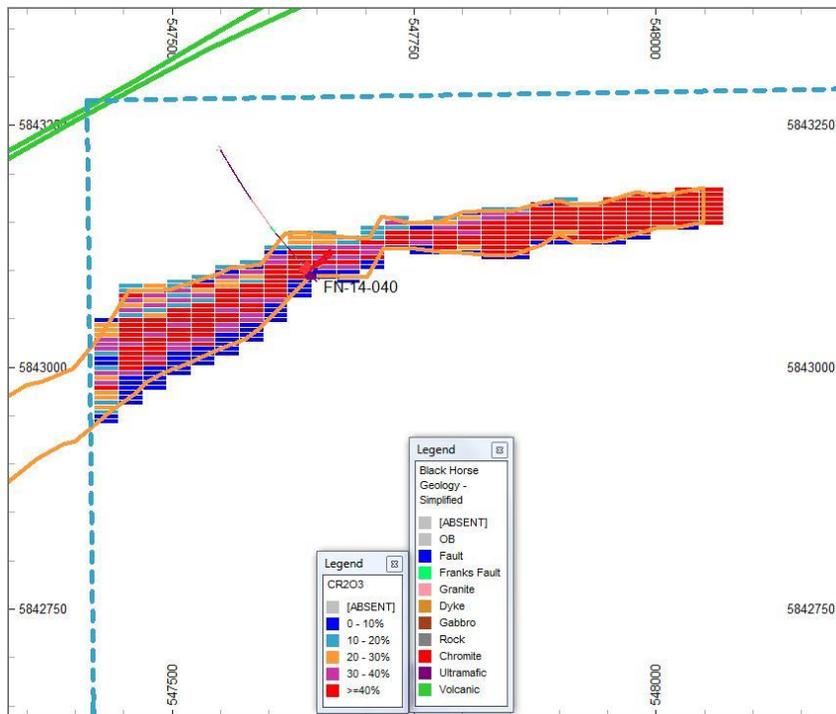
**-750 Elev.**



Green outline – Frank's  
Fault Deformation  
Zone

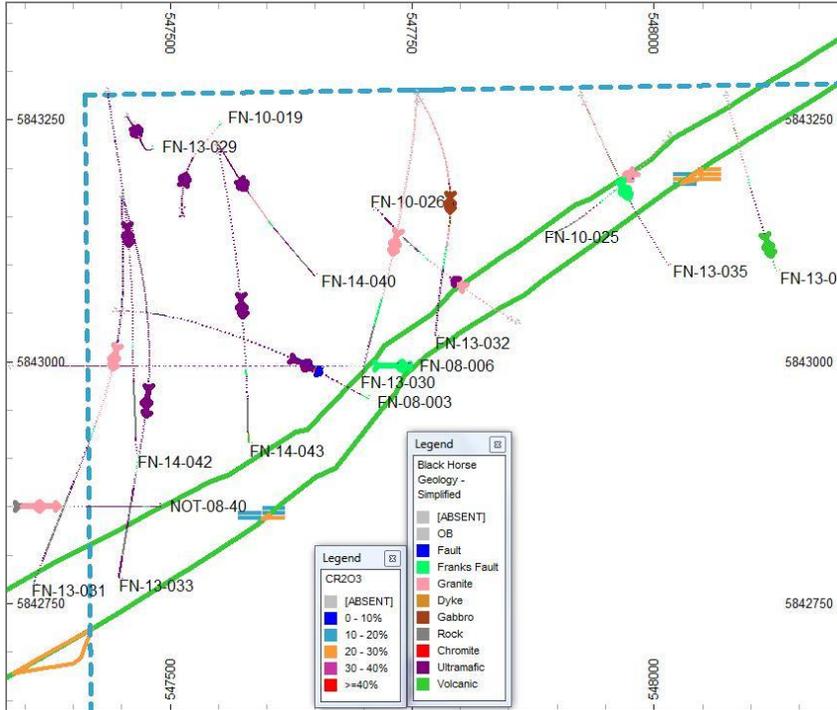
Blue dashed line – claim

**-1000 Elev.**



**OK Models: Sample Plan views - - Koper Lake Project chromite deposit**

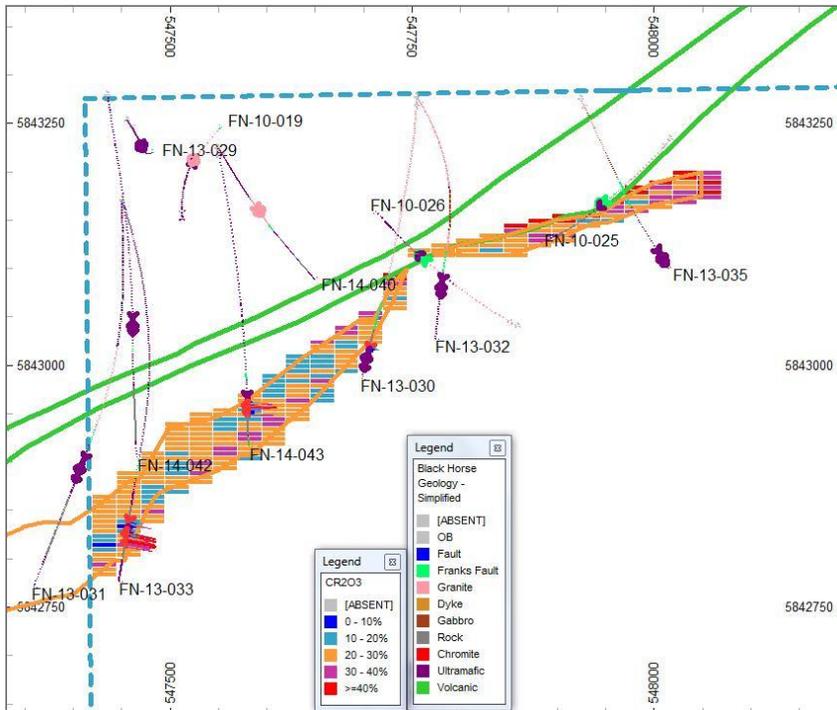
**-250 Elev.**



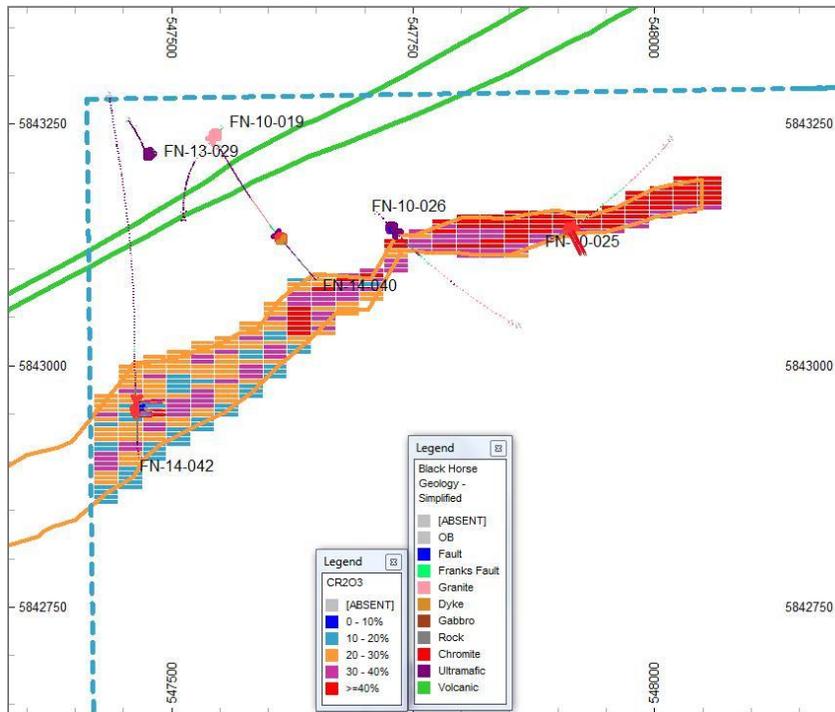
Green outline – Frank's  
Fault Deformation  
Zone

Blue dashed line – claim

**-500 Elev.**



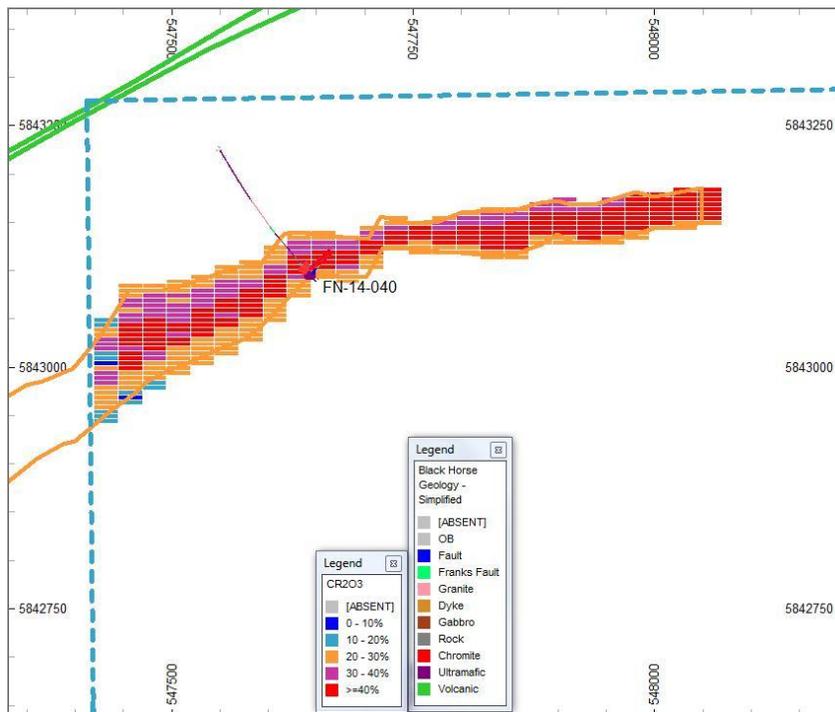
**-750 Elev.**



Green outline – Frank's  
Fault Deformation  
Zone

Blue dashed line – claim

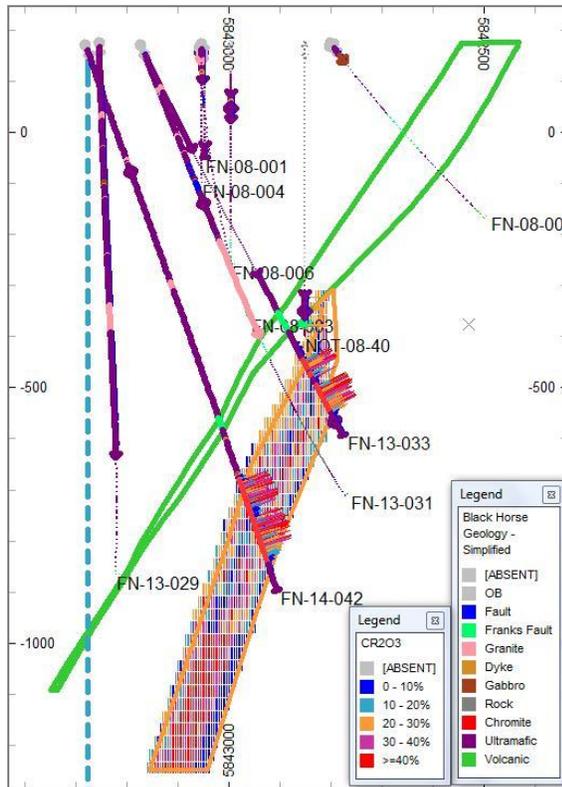
**-1000 Elev.**



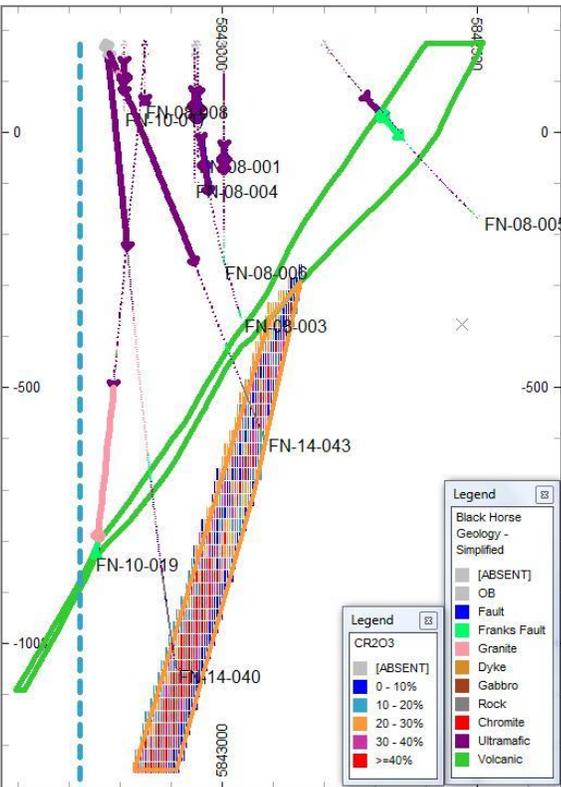
## NN Model – N-S Sample Sections

– Koper Lake Project chromite deposit

Section 547450E



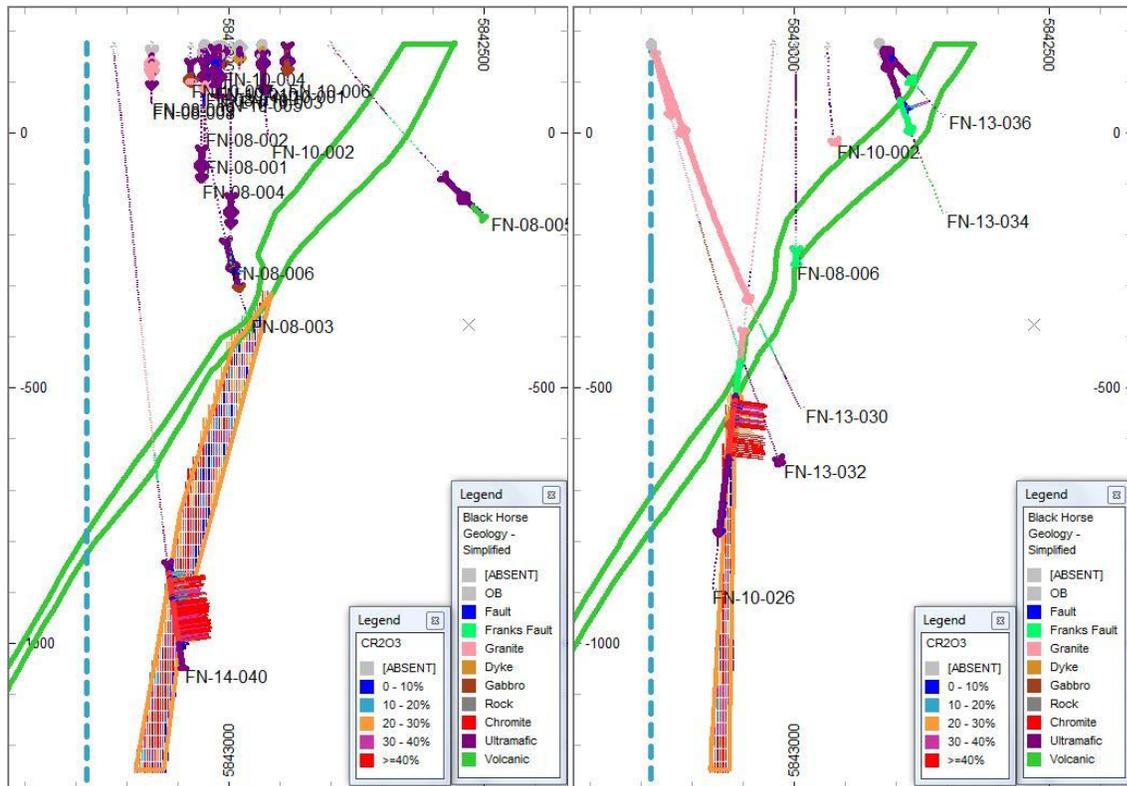
Section 547550E



Green outline – Frank’s Fault Deformation Zone

Section 547650E

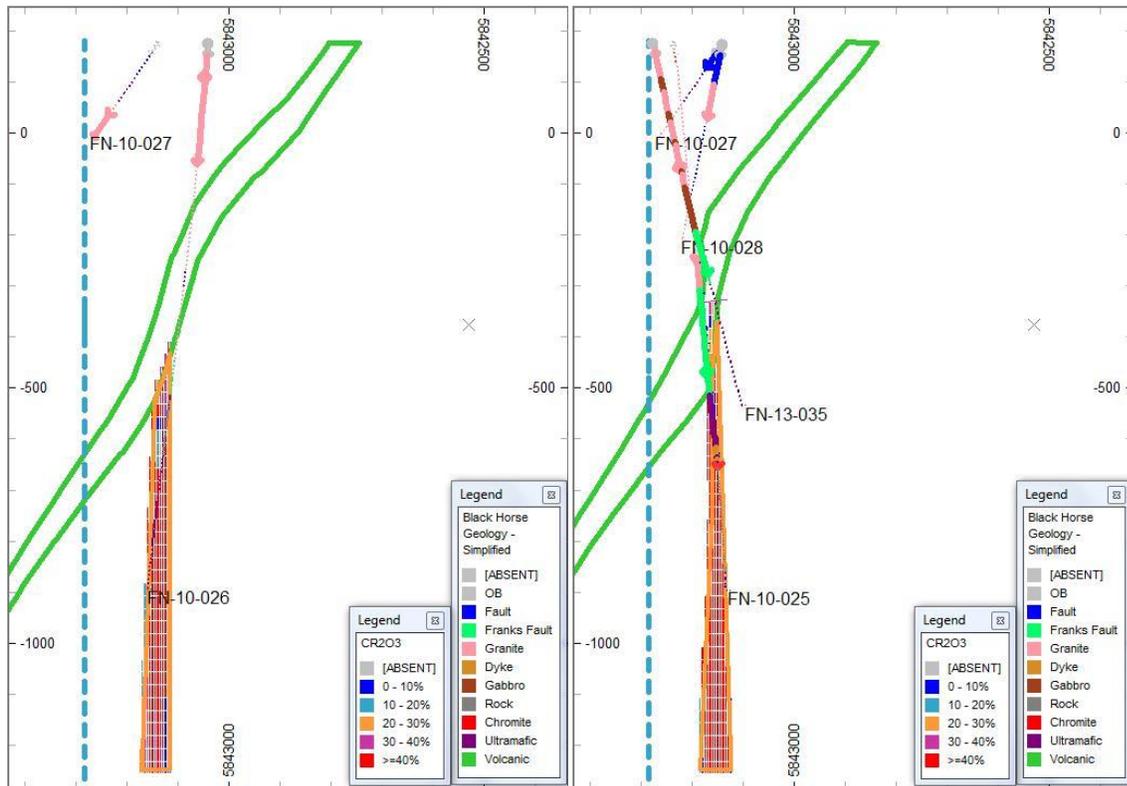
Section 547750E



Green outline – Frank's Fault Deformation Zone

Section 547850E

Section 547950E



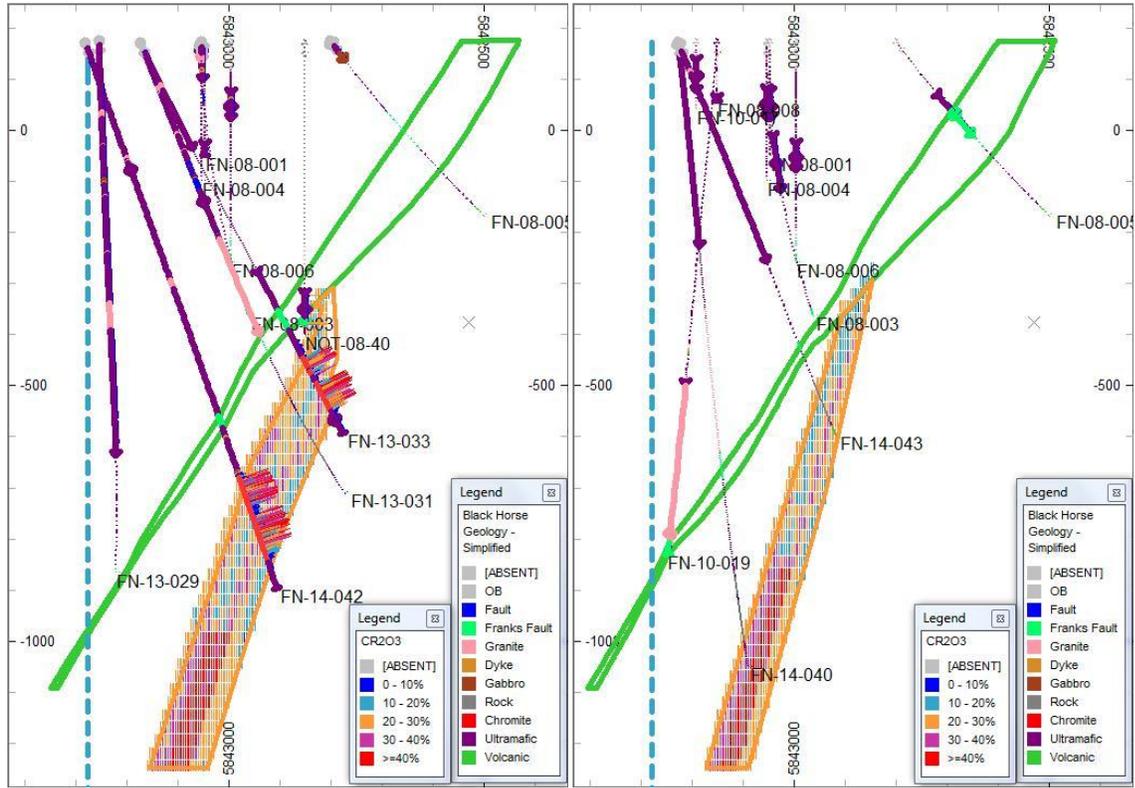
Green outline – Frank’s Fault Deformation Zone

**OK Models - N-S Sample Sections**

**- Koper Lake Project chromite deposit**

**Section 547450E**

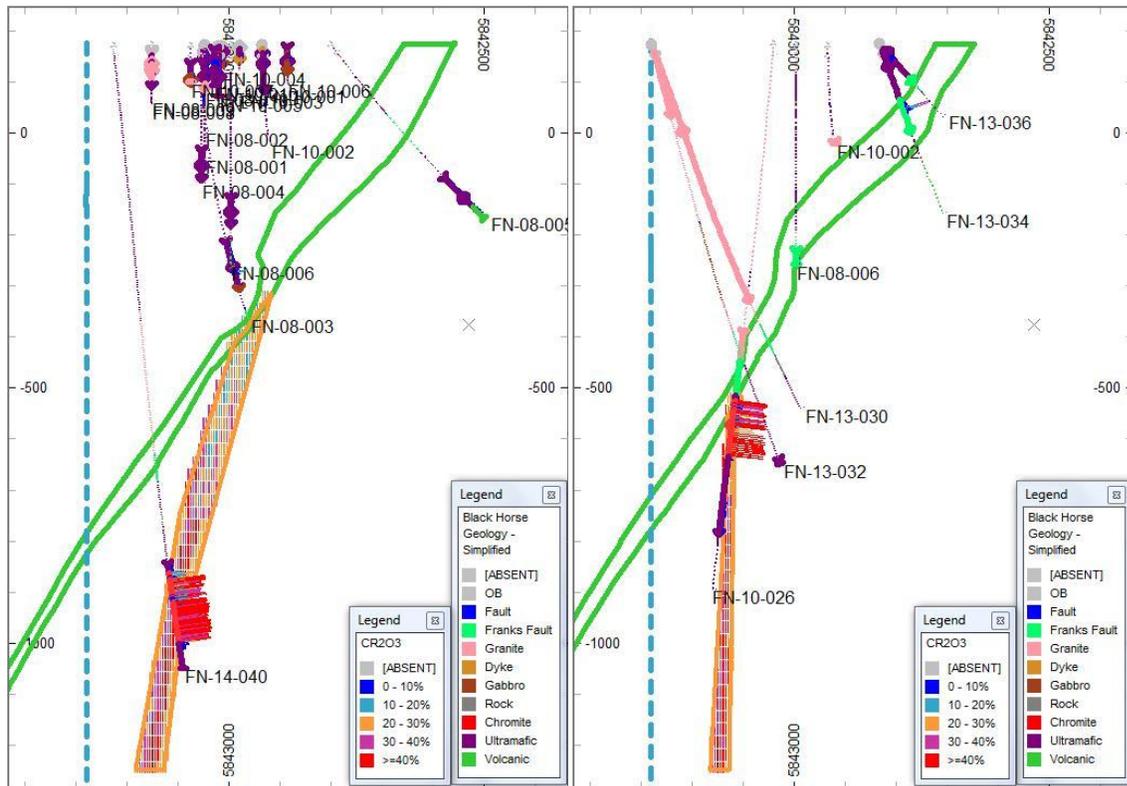
**Section 547550E**



Green outline – Frank's Fault Deformation Zone

Section 547650E

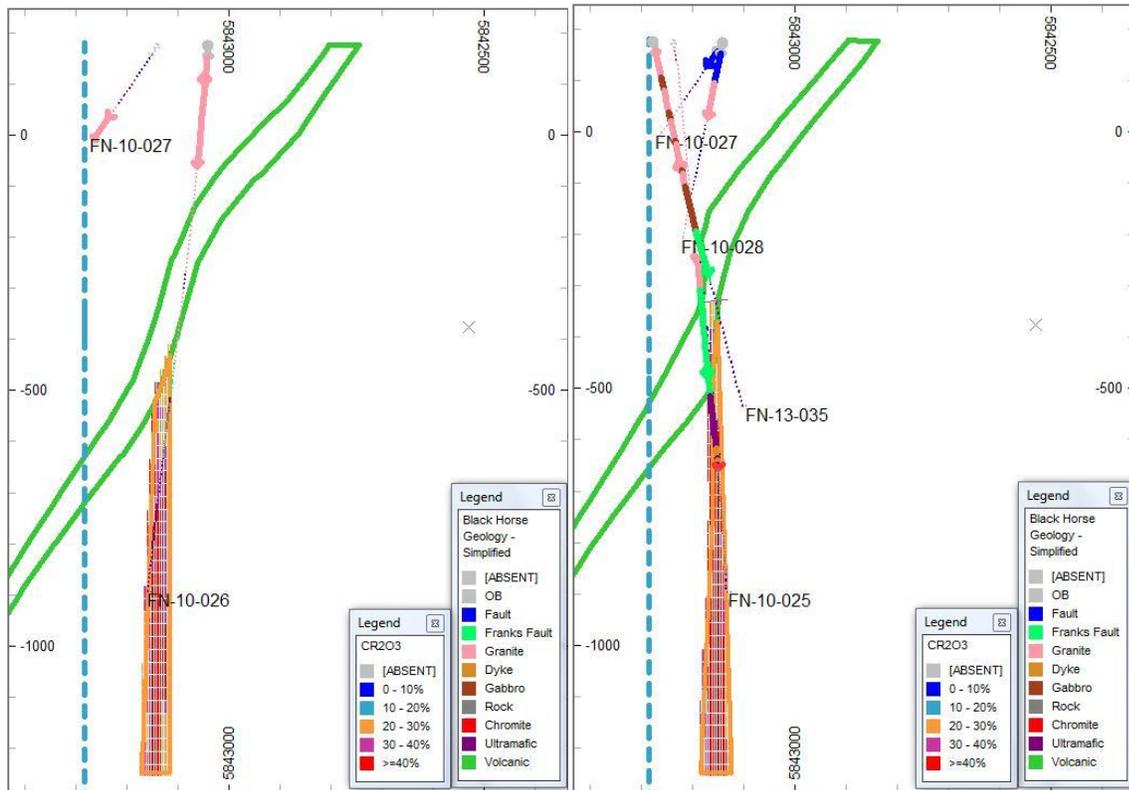
Section 547750E



Green outline – Frank's Fault Deformation Zone

**Section 547850E**

**Section 547950E**

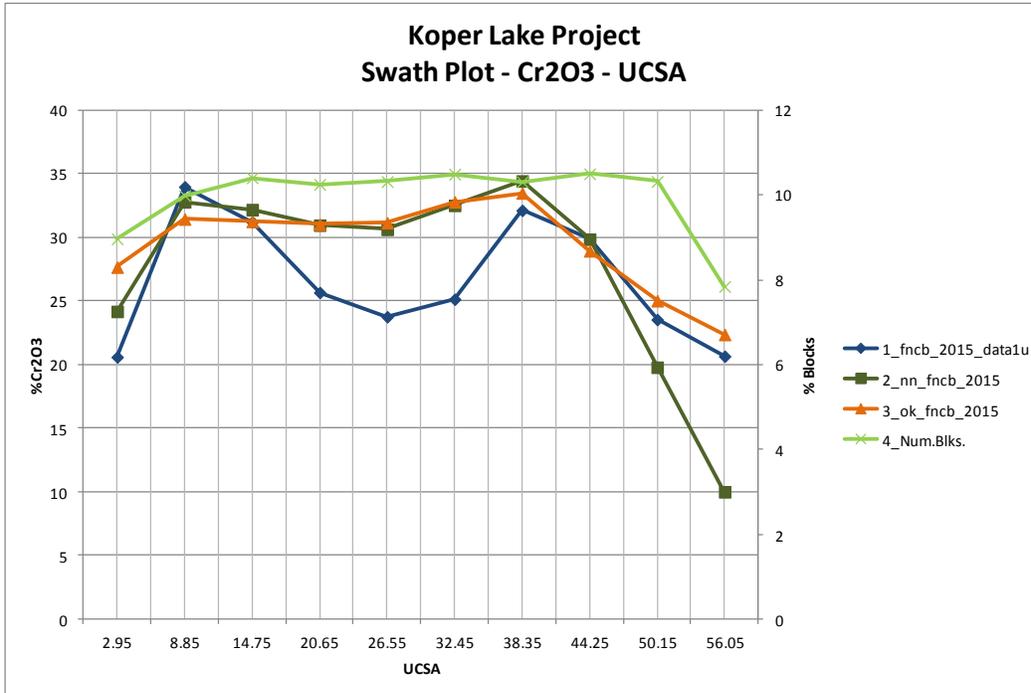


Green outline – Frank’s Fault Deformation Zone

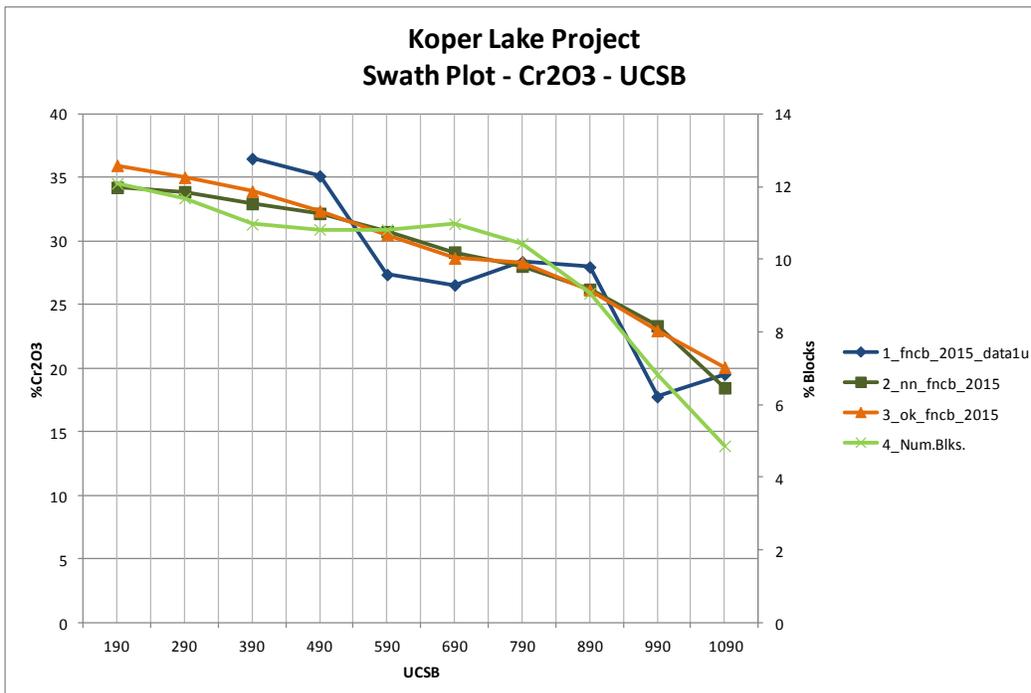
## Appendix 4 - Model Validation

### Swath Plots - Cr<sub>2</sub>O<sub>3</sub>

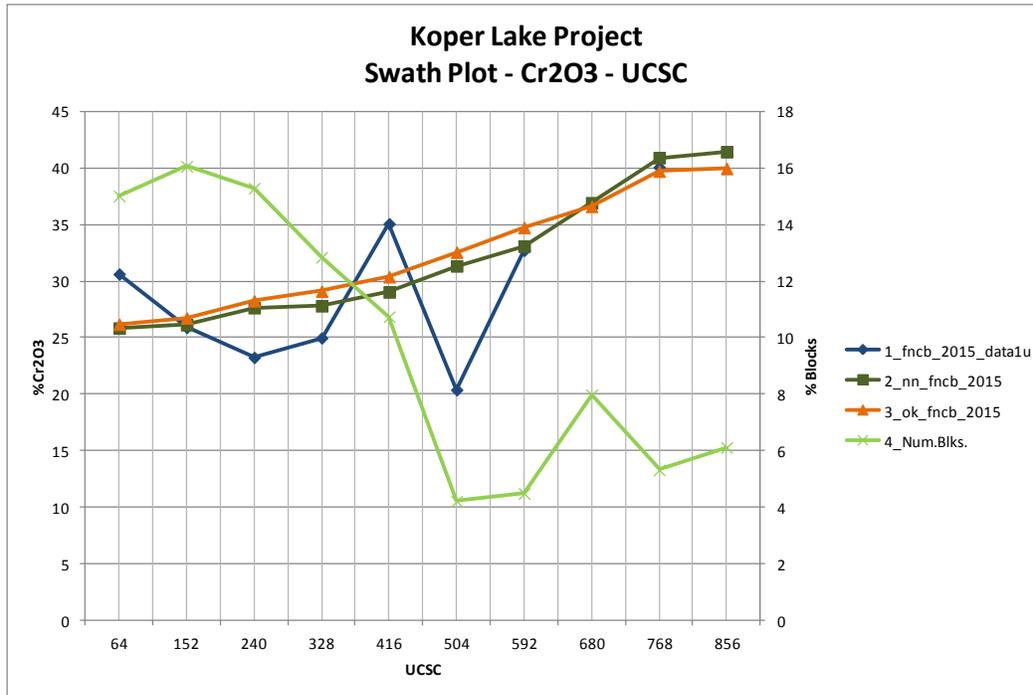
#### UCSA



#### UCSB



UCSC



## **Appendix 5 – Resource Classification Definitions**

The following is an extract from the CIM Definition Standards for Mineral Resources and Mineral Reserves, adopted May 10, 2014.

*“Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.*

**A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth’s crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.**

*Material of economic interest refers to diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals.*

*The term Mineral Resource covers mineralisation and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of Modifying Factors. The phrase ‘reasonable prospects for eventual economic extraction’ implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. The Qualified Person should consider and clearly state the basis for determining that the material has reasonable prospects for eventual economic extraction. Assumptions should include estimates of cutoff grade and geological continuity at the selected cut-off, metallurgical recovery, smelter payments, commodity price or product value, mining and processing method and mining, processing and general and administrative costs. The Qualified Person should state if the assessment is based on any direct evidence and testing.*

*Inferred Mineral Resource*

**An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.**

**An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.**

*An Inferred Mineral Resource is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources must not be included in the economic analysis, production schedules, or estimated mine life in publicly disclosed Pre-Feasibility or Feasibility Studies, or in the Life of Mine plans and cash flow models of developed mines. Inferred Mineral Resources can only be used in economic studies as provided under NI 43-101.*

*There may be circumstances, where appropriate sampling, testing, and other measurements are sufficient to demonstrate data integrity, geological and grade/quality continuity of a Measured or Indicated Mineral Resource, however, quality assurance and quality control, or other information may not meet all industry norms for the disclosure of an Indicated or Measured Mineral Resource. Under these circumstances, it may be reasonable for the Qualified Person to report an Inferred Mineral Resource if the Qualified Person has taken steps to verify the information meets the requirements of an Inferred Mineral Resource.*

*Indicated Mineral Resource*

**An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.**

**Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.**

**An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.**

*Mineralisation may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralisation. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Pre-Feasibility Study which can serve as the basis for major development decisions.*

*Measured Mineral Resource*

**A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.**

**Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.**

**A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.**

*Mineralisation or other natural material of economic interest may be classified as a Measured Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such that the tonnage and grade or quality of the Mineralisation can be estimated to within close limits and that variation from the estimate would not significantly affect potential economic viability of the deposit. This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral deposit.”*