

**NI 43-101 Technical Report**

**Resource Estimate**

**of the**

**Fox Property, Ridley Creek Zone**

**South Central Cariboo, British Columbia**

**Map Sheet NTS: 093A.008**

**120° 29' 50.19" West and 52 ° 03' 00.48" North**

**Cariboo Mining Division**

**For**

**Happy Creek Minerals Ltd.**

**#460-789 West Pender Street**

**Vancouver, B.C. V6C 1H2**

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**Report Date: April 15, 2016**

**Data cut-off date: December 22, 2015**

**Effective date of the resource estimate: March 15, 2016**

## Table of Contents

	Page
1.0 Summary .....	2
1.1 Main Recommendations.....	5
2.0 Introduction	
2.1 General.....	6
2.2 Terms of Reference.....	6
2.3 Units, Currency, Abbreviations .....	6
2.4 Effective Dates .....	6
2.5 Information Sources and References.....	7
3.0 Reliance on Experts .....	7
4.0 Property Description and Location	
4.1 Location .....	7
4.2 Mineral Tenure and Agreements.....	7
4.3 Permits and Environmental Liabilities .....	10
5.0 Access, Climate, Local Resources, Infrastructure, Physiography.....	10
6.0 History .....	12
7.0 Geological Setting and Mineralization	
7.1 Regional Geology .....	14
7.2 Property Geology .....	15
7.2.1 Lithology .....	15
7.2.2 Deception Mountain Stock .....	17
7.2.3 Veins, Dykes and Pegmatites .....	17
7.2.4 Structure.....	17
7.3 Mineralization .....	18
8.0 Deposit Types .....	20
9.0 Exploration .....	21
9.1 Happy Creek Exploration Effort Since 2005 .....	21
9.2 Geophysical Surveys .....	26
9.3 Geochemical Surveys .....	26
9.4 Geological Surveys .....	27
9.5 Trenching .....	27
10.0 Drilling .....	28
11.0 Sample Preparation, Analyses and Security .....	33
11.1 Analyses .....	33
11.2 Quality Assurance and Quality Control Program .....	34
12.0 Data Verification.....	35
13.0 Mineral Processing and Metallurgical Testing.....	36

	Page
14.0 Mineral Resource Estimates .....	38
14.1 Data.....	38
14.2 Geological Interpretation.....	39
14.3 Wireframe Volume .....	40
14.4 Exploratory Data Analysis .....	42
14.4.1 Assays .....	42
14.5 Capping .....	43
14.5.1 Raw Assay Capping .....	44
14.5.2 Search Restriction Threshold Grade and Range .....	44
14.5.3 Total Metal Affected by the Treatment of Outliers .....	45
14.6 Composites	
14.6.1 Sampling Length Statistics and Composites for Veins .....	46
14.7 Bulk Density .....	46
14.8 Spatial Analysis .....	45
14.8.1 Variography .....	47
14.8.2 Search Ellipsoid Dimension and Orientation .....	49
14.9 Resource Block Model .....	52
14.10 Interpolation Plan.....	52
14.11 Mineral Resource Classification.....	53
14.12 Mineral Resource Tabulation .....	55
14.13 Marginal Cut-off Grade for Resource Estimate .....	55
14.14 Global Mineral Inventory.....	57
14.15 Mineral Resource.....	58
14.16 Block Model Validation.....	60
14.16.1 Block Model Validation.....	61
14.16.2 Global Comparisons .....	61
14.16.3 Local Comparisons – Grade Profile .....	61
14.16.4 Naïve Cross-Validation Test .....	64
15.0 Mineral Reserve Estimates .....	65
16.0 Mining Methods .....	65
17.0 Recovery Methods.....	63
18.0 Project Infrastructure .....	65
19.0 Market Studies and Contracts .....	65
20.0 Environmental Studies, Permitting and Social or Community Impact .....	65
21.0 Capital and Operating Costs .....	65
22.0 Economic Analysis .....	65
23.0 Adjacent Properties .....	65
24.0 Other Relevant Data and Information .....	65
25.0 Interpretation and Conclusions .....	66
26.0 Recommendations.....	69
27.0 References .....	70
28.0 Date and Signature Page .....	71
29.0 Certification of Qualified Person .....	72

## Tables

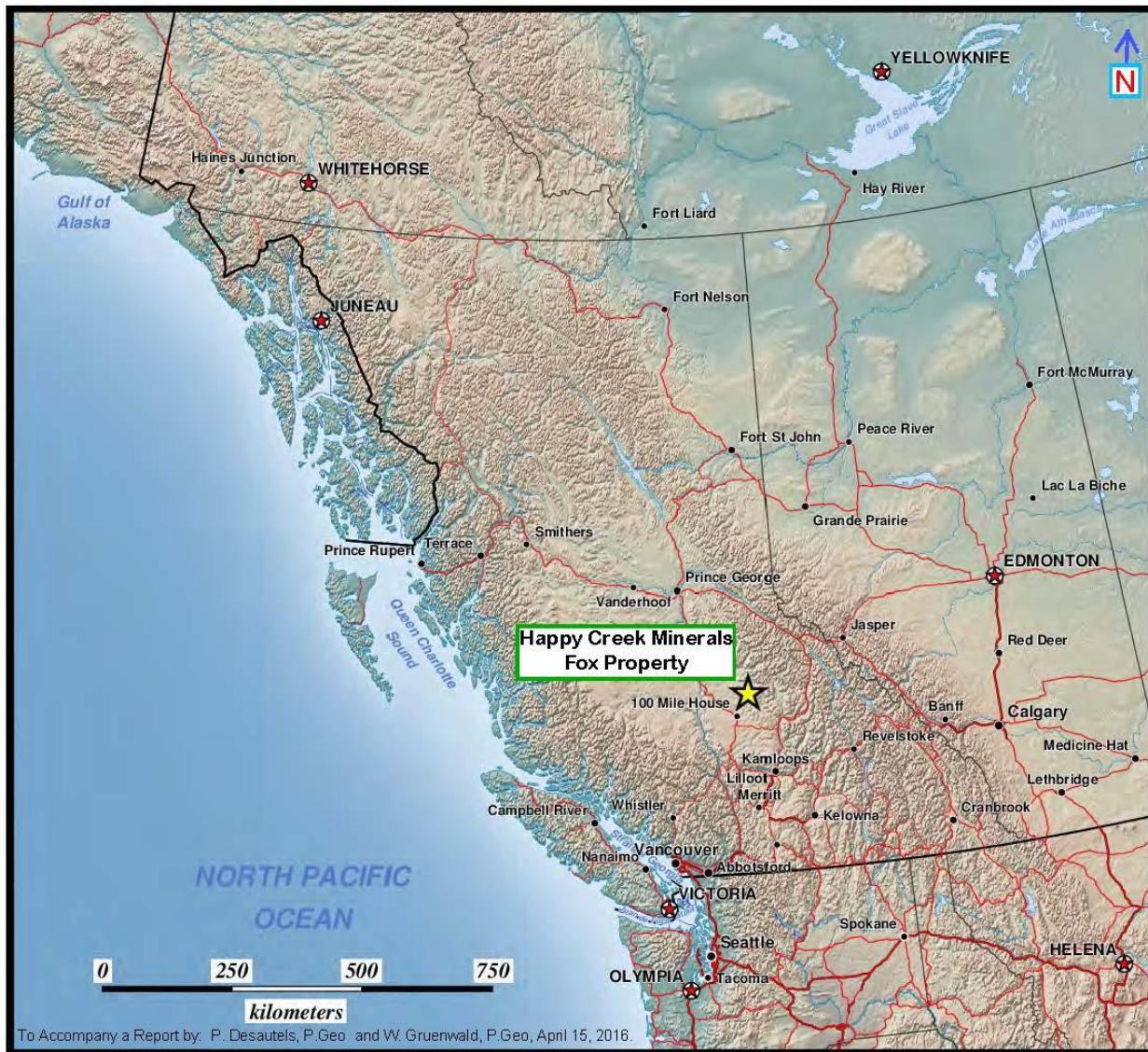
	Page
Table 1.1 Resource Estimate at a 0.1%WO <sub>3</sub> Cut-off.....	5
Table 4.1 Mineral Tenures.....	8
Table 9.1 Fox Property Exploration History .....	25
Table 9.2 Trench and Chip sampling Nightcrawler, Ridley Creek and 708 Zones .....	25
Table 10.1 Nightcrawler Drill Results .....	28
Table 10.2 Ridley Creek Drill Results .....	29
Table 10.3 BN and BK Zone Drill Results .....	32
Table 12.1 Sample Results (W. Gruenwald, P. Geo).....	35
Table 14.1 Summary of Number of Holes Used in the Resource Estimate .....	39
Table 14.2 Descriptive Raw Assay Statistics (WO <sub>3</sub> %, uncapped) .....	42
Table 14.3 High Grade Treatments .....	45
Table 14.4 Metal Removed by Capping Strategy (Ind + Inf category) .....	45
Table 14.5 Descriptive Statistics for Composites (WO <sub>3</sub> % Capped).....	46
Table 14.6 Bulk Density by Domains .....	47
Table 14.7 Search Ellipsoid Dimensions .....	50
Table 14.8 Block Model Definition (Block Edge) .....	52
Table 14.9 Composite Selection for Layer Interpolation.....	53
Table 14.10 Classification Parameters .....	54
Table 14.11 Preliminary Breakeven Cut-off Grade Range Assumptions .....	57
Table 14.12 Global Mineral Inventory.....	57
Table 14.13 Resource Estimate at a 0.1% WO <sub>3</sub> Cut-off.....	58
Table 14.14 Cut-off Sensitivity with Base Case Highlighted within the resource constraining shell.....	59
Table 14.15 Subset of Indicated and Inferred Resources Reported Within Selected Revenue Factor Pit Shells .....	59
Table 14.16 Global Comparisons (Indicated and Inferred) .....	61
Table 25.1 Resource Estimate at a 0.1% WO <sub>3</sub> Cut-off.....	68

## Figures

Figure 1.1 BC Location Map.....	1
Figure 4.1 Mineral Tenure Locations.....	9
Figure 5.1 Regional Location and Access Map.....	11
Figure 6.1 Mineralized Zones .....	13
Figure 7.1 Regional Geology .....	14
Figure 7.2 Local Geology .....	15
Figure 9.1 Exploration Areas and Mineralized Zones .....	22
Figure 10.1 Drill Hole Location Plan – RC Zone.....	30
Figure 10.2 RC Zone E-W Section .....	31
Figure 13.1 Metallurgy Proposed Flow Sheet.....	37
Figure 14.1 Position of the 3D Wireframes .....	41
Figure 14.2 Weighted WO <sub>3</sub> Probability .....	43
Figure 14.3 Search Restriction Threshold Value.....	45
Figure 14.4 Variogram .....	49
Figure 14.5 Orientation Sub-domain Location and Search Ellipsoids (Pass 2).....	51
Figure 14.6 Block Model Classification on Vertical Cross-Section 5775550N .....	55
Figure 14.7 Generalized Plan View (Ind + In., WO <sub>3</sub> % Grade>0.01%) .....	60
Figure 14.8 X Axis Swath Plots (Indicated and Inferred Classification).....	63
Figure 14.9 Y Axis Swath Plots (Indicated and Inferred Classification).....	63
Figure 14.10 Naïve Cross-Validation Test Results.....	64

## Appendices

Appendix A Recommended Work .....	74
Appendix B Drill Holes used in the January 2016 resource estimate .....	75



**Figure 1.1 – BC Location Map**

## **1.0 Summary**

The authors of this report were commissioned by Happy Creek Minerals Ltd. (Happy Creek) to complete a Technical Report and resource estimate of the Ridley Creek Zone ("RC Zone") of the Fox Property. This report has been prepared in accordance with National Instrument 43-101 (NI 43-101) Standards of Disclosure for mineral projects and Form 43-101F1.

The Fox property (the "Property") is located in southern British Columbia approximately 70 kilometres northeast of the town of 100 Mile House, and approximately 30 kilometres east of the former Boss Mountain molybdenum mine (Fig 1.1). The Property is situated at 120° 29' 50.19" West longitude and 52° 03' 00.48" North latitude and covers BC TRIM map sheet number 093A.008, and part of 092P.097.

The southern and central portion of the Property are easily accessible by paved and gravel logging roads from 100 Mile House the largest community in the region. Driving distance from 100 Mile House is 100 kilometres and takes around 1.5 hours to drive to the Fox camp. The Property consists of 31 converted legacy and new cell claims totaling ~ 13,589 hectares (135.89 km<sup>2</sup>). All tenures are 100% owned by Happy Creek Minerals Ltd. and are subject to a 2.5% Net Smelter Royalty (NSR), with the Happy Creek having the right to purchase 1% of the NSR.

The property is situated within the Quesnel Highlands of the Interior Plateau just west of the Cariboo Mountains. The area is mountainous with the present landforms a result of extensive glaciation. Elevations range from 1,120 metres at valley bottom to 2,340 metres at the summit of Deception Mountain. Climate is typical of the south-central interior of British Columbia with mild summers and cold winters. Annual precipitation totals over 100 centimetres per year with much of it as snow. This ensures a sufficient supply of water for exploration and any mining development.

The ample precipitation supports a variety of vegetation with the lower slopes forested with spruce, sub-alpine fir, pine and aspen interspersed with alder thickets. Open areas of low lying bush occur in the alpine terrain on Deception Mountain.

In the southern part of the property clear-cut logging has taken place and this has provided good quality road access. Future logging will continue to enhance access. A hydro transmission line approximately 17 kilometres west of the property powered the former Boss Mt. molybdenum mine and currently supplies power to the Hendrix Lake town site. Asphalt roads, power and telephone lines extend to Eagle Creek, and natural gas services the village of Forest Grove. Both are small communities situated approximately 40 and 60 km west of the Property, respectively. Given the regional resource base local communities would likely be supportive of mineral development. The region could provide the support services and an ample work force for property development.

The earliest regional mineral exploration history dates back to prospectors moving northward through British Columbia in the search for gold in the 1800s. More recent exploration efforts were spurred on by the search for porphyry copper deposits in the 1970s. In 1999 the original mineralized zone on the Property called the Discovery Zone was found by prospecting. Happy Creek initially explored the property in 2005 while it was at an early, grass-roots stage. Since then Happy Creek has conducted exploration virtually every year resulting in the discovery of several tungsten mineralized zones and as well as sizeable geochemical anomalies. To date, three main mineralized zones have been identified on the Fox property namely, the Nightcrawler-Discovery Zone, the Deception Mountain Area (which contain the 708, BN, RC, and BK zones), and the North Zone Area.

Various prospecting, trenching, geochemical, and geophysical surveys along with mineralogical and metallurgical studies have been completed. From 2007 to 2015 six diamond drilling campaigns were completed totaling 10,421 metres in 82 holes. Exploration expenditures total nearly \$4,000,000. Positive exploration results led Happy Creek to conclude that one of the discoveries, the RC Zone, could have the potential to host a sizeable tungsten deposit and thus initiated the resource estimate that is the subject of this report.

The property is underlain by Snowshoe Formation, a Permian age and older assemblage, comprised of gneiss, schist, marble and calc-silicate. These are cut by the mid Cretaceous Deception stock, a two-mica quartz monzonite to granite. A hornfelsed and metasomatic zone (aureole) extends outward from the stock for up to several kilometres. Scheelite, the dominant tungsten mineral, along with several percent sulphide minerals occur as exoskarn and endoskarn developed in calc-silicate and in quartz veins in concentrations ranging from trace to locally 20%. Molybdenite is locally present but is general separate from scheelite.

Seven areas of outcropping tungsten-bearing skarn and several substantial soil and stream sediment geochemical anomalies occur over a north-south area of 10 km by 3 km. Mineralized zones of interest around the south side of the Deception Stock are the South Grid and Nightcrawler-Discovery. Zones found further north around the Deception Stock are from south to north: 708, BN, Ridley Creek (RC), BK and North Zones.

In 2011 the first drilling program to test the high tungsten grades from trenching at the RC Zone revealed that mineralization continues beneath an overlying biotite schist. Drilling has identified the RC Zone to consist of a gently dipping, tabular shaped, calc silicate (metasomatic replacement of marble or limestone) from 5 to over 40 metres in thickness outcropping along the eastern flank of Deception Mountain. This geological unit is mapped at surface from the BN through the RC to the BK Zone, a distance of approximately two kilometres. This was considered the discovery point of potentially economic mineralization for the property.

This first time mineral resource for the Fox Project, RC Zone, was estimated using data from approximately 3,253 m of diamond drill holes and 64 m of trench data completed by Happy Creek from 2010 through 2013.

Based on the review of the QA/QC, data validation, and statistical analysis, the following conclusions were made:

- Geoquest Consulting Ltd has reviewed the methods and procedures to collect and compile geological, geotechnical, and assaying information for the Fox project and found them to be suitable for the style of mineralization found on the property and meet accepted industry standards.
- The mineralization on the Fox Project, RC Zone, was sampled over the years with core drilling and limited trenching. Both data types were used in the resource estimate.
- Samples from the drill program were analysed at Agat Labs located in Burnaby B.C. The laboratory is ISO/IEC 17025 and ISO 9001 accredited.
- A limited QA/QC program was introduced by Happy Creek during the drill program. The program included the insertion of blanks and standards. Submission rates meet the industry accepted practice for each of the QA/QC type of samples (blanks and standards). The sampling procedures, analytical methods and QC procedures undertaken by Happy Creek indicate good sample data reliability.
- For drill core of the mineralized zones, Happy Creek performed three peroxide fusion analyses in addition to the Agat XRF classical tungsten assays per sample with an elevated tungsten grade (as screen by the ICP method). The total digestion and analyses are considered to provide good quality and precise results. In the database, the final  $\text{WO}_3$  assay represent the average value of the triplicate peroxide fusion analysis and the Agat XRF classical tungsten assays (converted to tungsten trioxide). For the low grade sample analyzed solely with ICP the final  $\text{WO}_3$  assay represent the tungsten ICP value converted to tungsten trioxide. A select

suite of samples in 2007 were sent for neutron activation analysis (Act Labs) to validate the peroxide fusion results from Agat Laboratories. No significant difference were encountered.

- Data verification was performed by Geoquest Consulting Ltd through site visits, collection of independent character samples, and a database audit. Prior to the mineral resource estimation, AGP performed a second round of validation on a limited number of high-grade assays exceeding 0.25% WO<sub>3</sub> against the original assay certificate provided by Happy Creek. The database was found to be error free for the samples that were checked.
- Core handling, core storage, and chain of custody are consistent with industry standards.
- The preliminary, first-pass metallurgical testing used a combination of flotation to separate sulphides, followed by Falcon concentrator and Tables (gravity) that produced an initial cleaner concentrate grading 59.54% WO<sub>3</sub> in 23.2% of the mass, and an additional middling product with 14.77% WO<sub>3</sub> in 47.6% of the mass which can be recycled back upstream for re-processing (Figure 13.1). Together these two products contain 70.8% of the tungsten. For the first stage of metallurgical testing, this method is thought to have potential to produce a concentrate having acceptable commercial grades. The tungsten concentrate has no deleterious metals associated with it that would prevent its ability to be sold.
- In 2015, another sample of approximately 400 kg was collected from the face of the RC Zone and submitted to SGS laboratories of Vancouver, B.C. The test work is on-going and includes heavy liquid separation, QEMSCAN, mineralogy, testing of scheelite liberation versus grind size, flotation and magnetic separation. Final results of this work are pending.
- Base on the above conclusions AGP estimated a mineral resource on the Fox property, RC Zone.

The resource estimate takes into account all data available prior to 22 December 2015. The resource encompasses the Fox Project, RC Zone only. No other zones on the Fox Project were evaluated. Mineral resources were classified using logic consistent with the CIM definitions referred to in National Instrument 43-101.

The resource estimate consists of Indicated and Inferred resources reported as tungsten trioxide WO<sub>3</sub>. No mining plans have yet been prepared for the deposit; however, the estimate was completed based on the concept of a small-scale open pit operation, assuming a certain degree of selectivity in order to separate the granite from the mineralized calc-silicate.

In order to meet the CIM definitions of reasonable prospects of economic extraction, a Lerchs-Grossman optimized shell was generated to constrain the potential open pit material. Parameters used to generate this shell included:

- 45° slopes for the pit shell
- CDN\$5/t mining, CDN\$20/t milling, CDN\$5/t G&A operating costs
- 80% WO<sub>3</sub> recovery
- CDN\$208.15/MTU WO<sub>3</sub> price
- Economics applied to Indicated and Inferred materials.

The operating costs assume conventional milling at a rate of approximately 2,000 tonnes per day. At this early stage of study, the tungsten trioxide (WO<sub>3</sub>) recovery used was derived by benchmarking other scheelite operations. The resulting optimized resource constraining shell has a strip ratio of 4.1 to 1.

Effective March 15, 2016, the resource for the Fox Project, RC Zone, was reported at 0.1% WO<sub>3</sub> for the material within the resource-constraining shell. At the 0.1% WO<sub>3</sub> cut-off selected, the total Indicated resource is estimated

at 505,000 tonnes grading at 0.468% WO<sub>3</sub> containing 237,000 metric ton units of tungsten trioxide. Inferred resources amounted to 280,000 tonnes grading at 0.456% WO<sub>3</sub>, containing 127,000 metric ton units of tungsten trioxide (Table 1.1). No underground resources have been reported.

The authors are not aware of any information not already discussed in this report, which would affect their interpretation or conclusions regarding the subject property.

**Table 1.1 Resource Estimate at a 0.1% WO<sub>3</sub> Cut-off**

Classification	WO <sub>3</sub> Cut-off (%)	Tonnage (t)	WO <sub>3</sub> (%)	WO <sub>3</sub> (MTU)
Indicated	> 0.1	505,000	0.468	237,000
Inferred	>0.1	280,000	0.456	127,000

**Note:** Cut-off determined by using a WO<sub>3</sub> price of CDN\$208.15/MTU WO<sub>3</sub>

Rounding of tonnes as required by reporting guidelines may result in apparent differences between tonnes, grade, and contained metal.

The RC Zone remains open in extent and additional drilling is warranted to in-fill, expand and collect geotechnical and metallurgical core samples. In addition, collection of other geotechnical, environmental, engineering, mineral processing and marketing data are warranted in order to refine the deposit model, pit slope and design for potential production scenarios. Further trenching and drill testing of the other six known zones is warranted to determine a potentially larger scale resource base for the project.

### **1.1 Main Recommendations**

Happy Creek has successfully advanced the property with the discovery of several new high-grade tungsten mineralized zones. These zones are hosted by calc silicate rocks within the metasomatic aureole of the Deception Stock. Many of the known mineralized zones have not yet been fully delineated and geochemical evidence suggests the potential for the discovery of other mineralized zones. The primary commodity is tungsten with potentially economic amounts of indium and zinc present in the RC Zone. The completion of a resource estimate on the RC Zone demonstrates the Fox property hosts a tungsten deposit that is near surface, comparatively good grade and is open to further expansion.

The recommendations are in two parts.

- Phase I (\$2.5 M) should be directed at the further testing and evaluating the RC and other zones. This would lead to a Preliminary Economic Assessment.
- Phase II (\$5.0 M), contingent upon favourable results, would see construction of an access road up Deception Mountain, additional drilling and engineering and the collection and processing of a 10,000 tonne bulk sample from the RC Zone in order to prepare a Feasibility study. Details are outlined in Item (Section) 26.0 of this report.

## 2.0 Introduction

### 2.1 General

In early 2016 Warner Gruenwald, P.Geo. of Geoquest Consulting Ltd., and Pierre Desautels, P. Geo of AGP Mining Consultants were retained by Happy Creek Minerals Ltd. to prepare a first time Independent Mineral Resource Estimate along with the required Technical Report for the Fox Property, RC Zone. Mr. Gruenwald has spent time on the property in 2010 overseeing the RC Zone trenching program, and again in 2015 to review the drilling program and protocols and to perform field checks of drilling at the RC Zone. Mr. Gruenwald is an independent Qualified Person as defined in NI 43-01. Mr. Desautels, P. Geo prepared the resource estimate and is an experienced geologist, resource estimator and is an independent Qualified Person, as defined in NI 43-101.

This report was prepared by the authors to support the disclosure of the resource estimate outlined in Happy Creek's news release dated March 15, 2016. The technical report was prepared according to the guidelines set under "Form 43-101F1 Technical Report" of National Instrument 43-101 Standards and Disclosure for Mineral Projects. The certificates of qualification for the Qualified Persons responsible for this technical report are found in Section 29.0.

Happy Creek Minerals is a Canadian exploration company with a focus on tungsten (Fox Property), porphyry copper ± gold (Rateria, Hawk), polymetallic (Hen Art-DI, Silver Boss), and vein/shear precious metals (Silver Dollar) deposits in British Columbia. Happy Creek trades on the Toronto Venture Exchange under the symbol HPY.

### 2.2 Terms of Reference

This technical report was prepared by:

Pierre Desautels, P. Geo, *AGP Mining Consultants*, Responsible for Sections 14, 25

- No Site visit

Warner Gruenwald, P. Geo. *Geoquest Consulting Ltd.* - Responsible for all Sections except 14

- On-site supervision of surface trenching between July- September 2010.
- Site visit on September 14, 2015.

Information contained in this report including Conclusions and Recommendations are based on a thorough review of documentation, reports and maps provided by personnel of Happy Creek. The sources of information are listed in Section 27.0

### 2.3 Units, Currency, Abbreviations

All measurements in this report are presented in the metric system. Currency amounts for expenditures and proposed work are stated in Canadian Dollars. Abbreviations are not used extensively in this report. Widths or distances are stated in centimetres (cm), metres (m) or kilometres (km) and weight measures are in grams (g), kilograms (kg), tonnes (t). Tungsten grades are typically stated in percent (%) of WO<sub>3</sub> (tungsten trioxide) rather than elemental tungsten (W). Tungsten is most typically priced in metric ton units (MTU) which is 10 kg. A metric ton unit of tungsten trioxide (WO<sub>3</sub>) contains 7.93kgs of elemental tungsten.

### 2.4 Effective Dates

The report has a number of dates:

- The Mineral Resources have an effective date of March 15th, 2016.
- Drill data and information on the project is current to December 22nd, 2015.

There were no material changes to the scientific and technical information on the project between the effective date and the signature date of the report.

## **2.5 Information Sources and References**

Much of the report text related to the history and geological settings of the deposit was sourced from the following documents:

- Fox Property Assessment Reports #33695 (2012), #34642 (2013) and #35342 (2014).
- Text related to the 2013 and 2014 drill program was sourced from Fox Property assessment report #34642 and #35342 respectively.

There are no previous NI43-101 Technical Reports for the Fox Project, Ridley Creek Zone.

## **3.0 Reliance on Experts**

All information, estimations, opinions and conclusions presented in this Technical report are based on a thorough review of the literature and on data, reports and other information supplied by Happy Creek Minerals Ltd. and on the authors (Pierre Desautels, P. Geo, Warner Gruenwald, P. Geo) expertise.

Some of the historical documentation reviewed contains information and results that cannot be verified, are incomplete, or locations that are not clearly known. However, information collected since 2005, which includes all information for the RC Zone (subject of this report), was acquired by or under the supervision of B.C. registered professional geoscientists or engineers. It is both authors opinion that information contained within this report is of satisfactory reliability and completeness to make reasonable conclusions and recommendations.

The authors have not verified the legal status, or legal title to any permit, or to the legality of any underlying agreements for the subject property regarding mineral rights, surface rights, permitting, and environmental issues in sections of this technical report. The authors have relied on information provided and approved on March 15, 2016 by Mr. David E Blann, Chief Executive Officer for Happy Creek Minerals Ltd.

## **4.0 Property Description and Location**

### **4.1 Location**

The Fox property is located in the South Cariboo Regional District of BC ~70 km northeast of 100 Mile House, and ~29 km southeast of the former Boss Mountain Molybdenum Mine (Figures 1, 5.1). The Property is located on BC map no. 093A.008, and in part on 092P.097. The approximate property centre is UTM 670000 E and 5770000 N, or 120° 29' 50.19" W longitude and 52° 03' 00.48" N latitude.

### **4.2 Mineral Tenure and Agreements**

The Property, comprised of 31 converted legacy and new cell claims totaling ~13,589 hectares (135.89 km<sup>2</sup>), is 100% owned by Happy Creek Minerals Ltd of Vancouver, BC (FMC 203169). Details of the mineral tenures are provided in Table 4.1 and Figure 4.1.

The Property was 100% acquired by Happy Creek Minerals Ltd. In 2006, and is subject to a 2.5% Net Smelter Royalty (NSR). Happy Creek can purchase 1% of the NSR at any time for \$2m, leaving a 1.5% NSR. No other payments or agreements in place.

**Table 4.1 Mineral Tenures**

Tenure	Claim Name	Map	Issue Date	Expiry Date	Area (ha)
514261		093A	2005/jun/10	2024/dec/31	1233
514263		093A	2005/jun/10	2024/dec/31	775
514269		093A	2005/jun/10	2024/dec/31	1232
514270		093A	2005/jun/10	2024/dec/31	119
514271		093A	2005/jun/10	2023/dec/31	119
514311		093A	2005/jun/11	2024/dec/31	40
523002	FOXNORTH-1	093A	2005/nov/30	2024/dec/31	496
523003	FOXNORTH-2	093A	2005/nov/30	2024/dec/31	496
523004	FOXNORTH-3	093A	2005/nov/30	2024/dec/31	496
523005	FOXNORTH-4	093A	2005/nov/30	2024/dec/31	496
523011	FOX SOUTH-1	093A	2005/nov/30	2024/dec/31	497
523013	FOX SOUTH-2	093A	2005/nov/30	2024/dec/31	497
523014	FOX SOUTH-3	092P	2005/nov/30	2024/dec/31	498
534863	FOX TAIL	093A	2006/jun/04	2024/dec/31	497
535411	FOXOCUBE	093A	2006/jun/12	2024/dec/31	497
546263	FOXNW	093A	2006/dec/01	2024/dec/31	496
546271	FOX W	093A	2006/dec/01	2024/dec/31	199
552575	FOXBILL 3	093A	2007/feb/23	2023/dec/31	496
554327	FOX NORTH 1	093A	2007/mar/15	2023/dec/31	496
554336	FOX NORTH 10	093A	2007/mar/15	2023/dec/31	497
554337	FOX NORTH 11	093A	2007/mar/15	2024/dec/31	496
559264	FOX NO NAME 1	093A	2007/may/26	2025/dec/31	239
559265	FOX NONAME 1	093A	2007/may/26	2023/dec/31	179
559266	FOX NONAME 2	093A	2007/may/26	2023/dec/31	338
579867	FOXTUNG	093A	2008/mar/30	2025/dec/31	438
579868	FOXTUNG 2	092P	2008/mar/30	2024/dec/31	497
579884	FOXTUNG 3	092P	2008/mar/30	2024/dec/31	199
579888	FOXTUNG 4	092P	2008/mar/30	2023/dec/31	80
841892	FOX EAST	093A	2010/dec/28	2023/dec/31	496
982004	FOX NORTH-5	093A	2012/apr/25	2018/dec/31	298
1032034	FOX CONNECTOR	093A	2014/nov/04	2020/dec/31	159

**Total hectares (ha): 13,589**

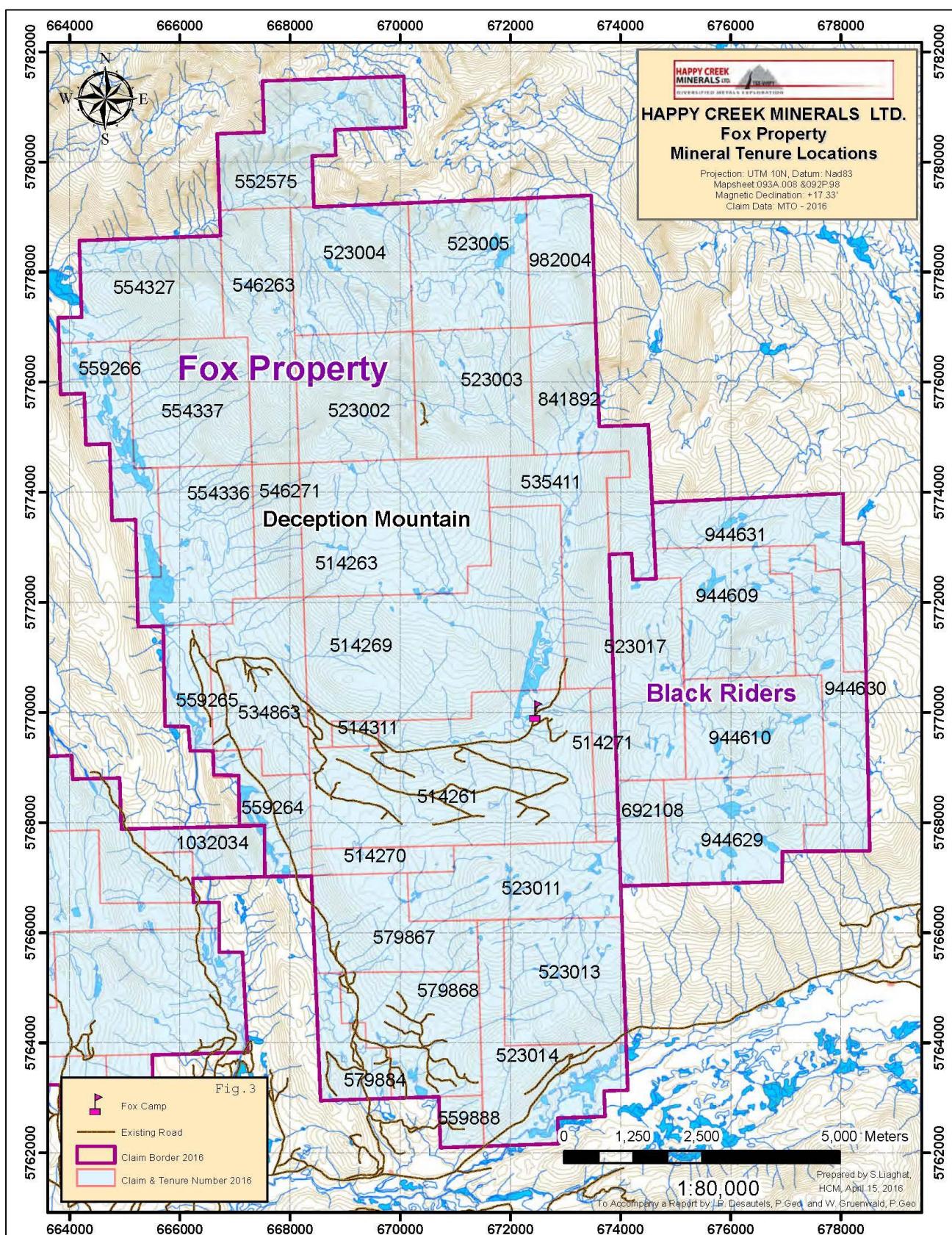


Figure 4.1 - Mineral Tenure Locations

### **4.3 Permits and Environmental Liabilities**

All exploration permits applied for have been approved. Happy Creek currently holds MX-4-453 Permit for mine number 1620134, a 5 year permit for access trail construction (18 km) and drilling 118 holes or about 13,750 metres, trenching 1,350m issued March 22, 2016.

The only sensitive aspect is the Ungulate Wildlife Habitat Area order 5-117 that covers the BN, RC and BK zones. In this area there is an Exemption (File 36460-20 – February 19, 2016) to conduct exploration work for two years. The exemption requires that work would likely be done from July 1 to Dec 31 of each year. It is expected that future mining would be campaigns between those months (while the snow conditions are workable). It is important to understand there are no mountain caribou known in the proposed work areas, only potential habitat. There are no salmon spawning grounds or other environmental issues. Much of the area has been clear cut logged and West Fraser has approved logging plans that include roads and clear-cuts from Deception Creek north, up Deception Mountain to the edge of the Wildlife Habitat Area, about 5,000 foot (1,500 metre) elevation or within four kilometres of the BN zone.

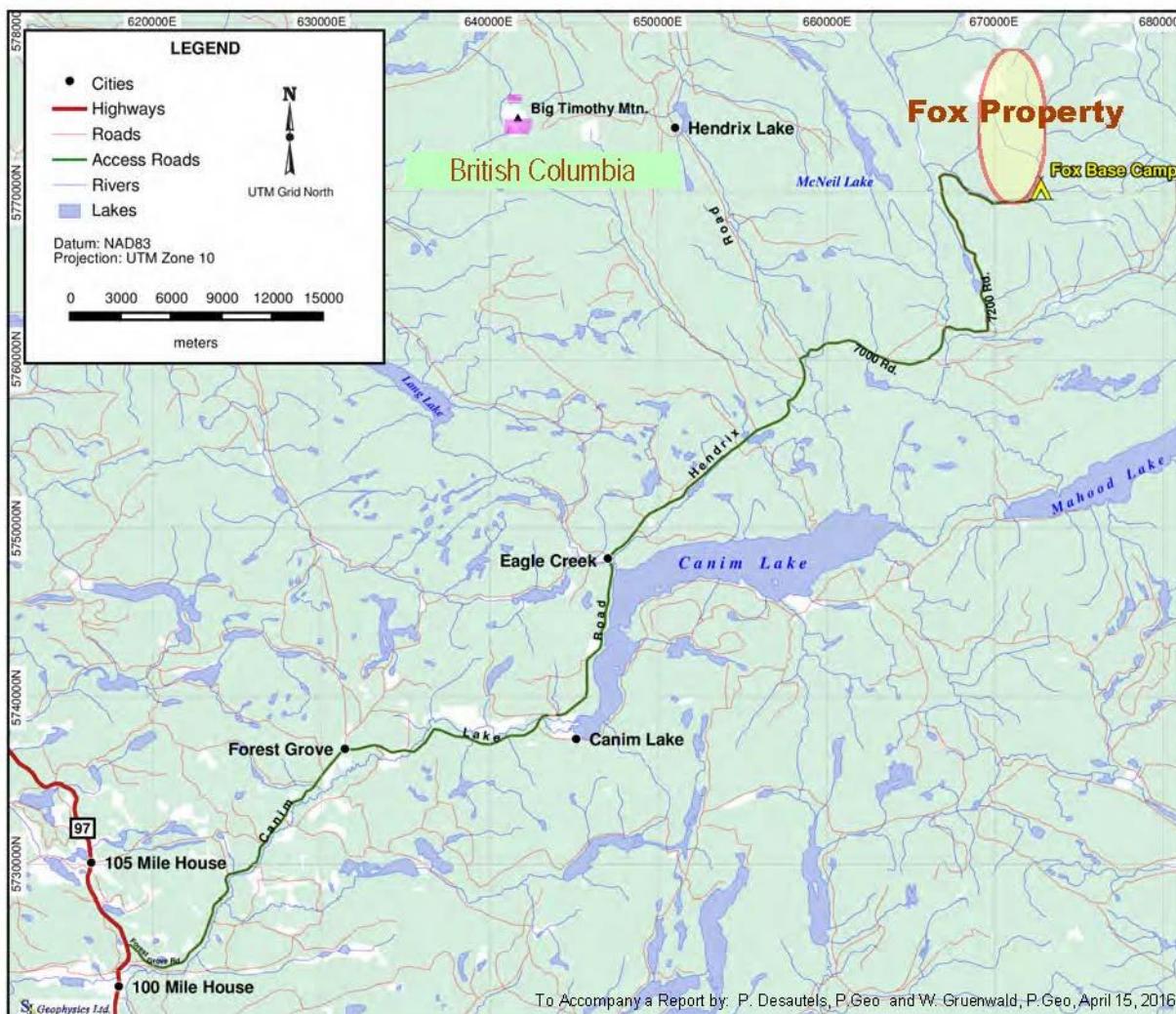
## **5.0 Access, Climate, Local Resources, Infrastructure, Physiography**

The Fox property is located approximately 70 kilometres northeast of 100 Mile House, British Columbia. Travel from 100 Mile House is north on Highway 97 for three kilometres and then via the paved Canim-Hendrix Lake road for 46 kilometres to the community of Eagle Creek near the north end of Canim Lake (Figure 5.1). Travel is then along the all-weather gravel Canim-Hendrix (6000) road northerly for about 17 kilometres to the junction with Spanish-Deception (7000) road. From here travel is easterly for 14 kilometres to No-Name-Deception (7200) road. The 7200 road is driven northerly for 14.5 kilometres to the Fox camp near the approximate center of the property. Local logging roads and cut blocks provide good access through the southern portion of the property. Driving distance from 100 Mile House is 102 kilometres and takes around 1.5 hours to drive to the Fox camp.

The Property is situated within the Quesnel Highlands of the Interior Plateau just west of the Cariboo Mountains. The area is mountainous with slopes ranging from gentle to steep with local cliffs. All of the present landforms are a result of extensive glaciation. Elevations range from 1,120 metres in Deception Creek to 2,340 metres at the summit of Deception Mountain. Climate is typical of the south-central interior of British Columbia. Summer temperatures average daytime highs in the 20°C range with occasional temperatures reaching the low 30's. October through April sees average sub-zero temperatures with lows reaching -30° C from November through March. Annual precipitation totals over 100 cm with much of it falling during the winter months. Total snowpack at the Fox Camp can reach 2.0 to 3.0 metres by early spring.

The Fox property lies within the Interior Wet Belt biogeoclimatic zone. Given the ample precipitation, the area supports a variety of vegetation. Lower slopes are well forested with spruce, sub-alpine fir, pine and aspen interspersed with alder thickets. Open areas of low lying bush occur in alpine terrain on Deception Mountain. Several parts of the southern parts of the property have been clear-cut logged. Recent clear-cuts were observed east of the Fox camp and south of the Nightcrawler Zone by author Gruenwald on the September 2015 site visit.

Logging activity has provided good quality road access to the southern part of the property. From 1990 to 1993 the 7200 logging road was constructed for clear-cut logging. Prior to this, access was limited to horseback or helicopter. A hydro transmission line located approximately 17 kilometres west of the property, powered the former Boss Mt. mine and currently supplies power to the Hendrix Lake town site. Asphalt roads, power and telephone lines extend to Eagle Creek, and natural gas services the village of Forest Grove. Both are small communities situated approximately 40 and 60 km west of the Fox property, respectively. Given the resource base of the region communities would likely be supportive of mineral development. The region could provide the support services and an ample work force for property development.



**Figure 5.1 Regional Location and Access Map**

## 6.0 History

The earliest regional mineral exploration history dates back to the prospectors moving northward in the search for gold in the 1800s. More recent exploration efforts were spurred on by the search for porphyry copper deposits in the 1970s.

In 1981, Mattagami Resources conducted a regional silt geochemical survey and followed up on the best results with a fly-camp at high elevations on Deception Mountain in June 1982. At that time, snow covered approximately 75% of the area and severely limited exploration. The work identified a previously unknown granite intrusion and Snowshoe Formation schist and calc silicate. Several soil samples returned geochemically elevated tungsten, however results were not considered positive and no further work was performed (Helson 1982).

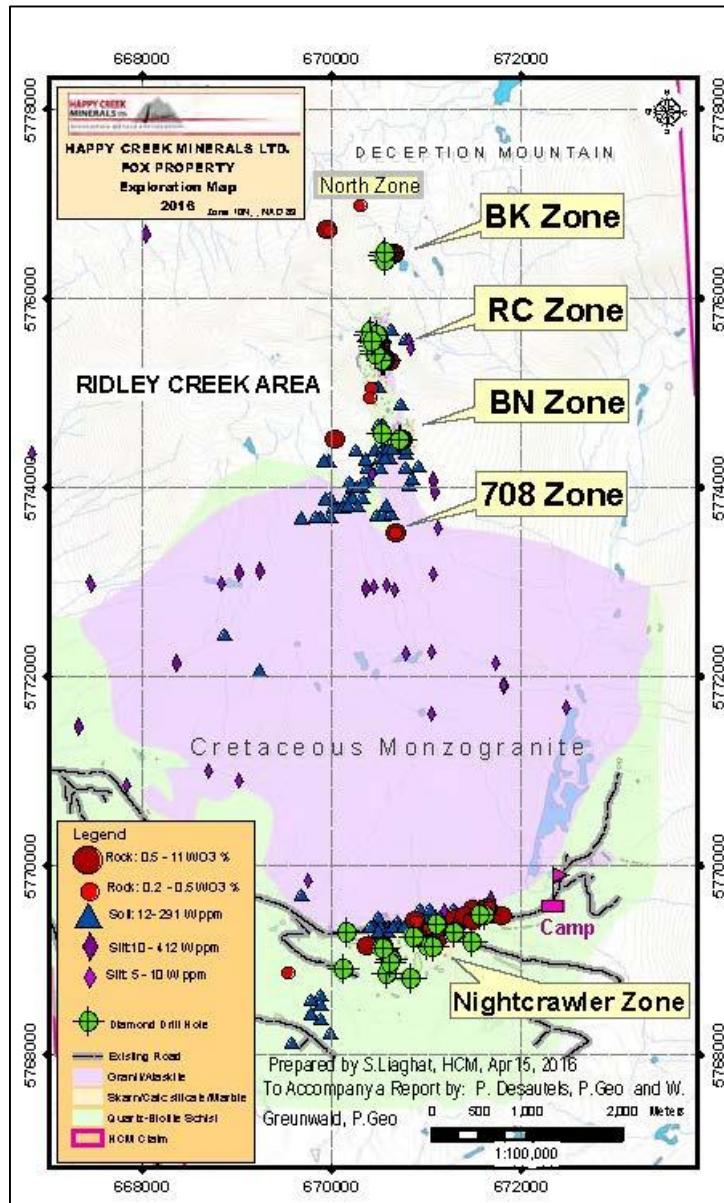
In 1997, D. and C. Ridley prospected along the new 7200 (720) logging road as part of BC Prospectors Assistance Program (Ref. No. 97-98 P66). This work located the southern contact of the Deception stock and identified garnet-rich skarn alteration associated with the stock. No mineralization was found associated with this skarn near the 7218 kilometre post on the 7200 road.

Between June 21 and June 26, 1999, D. Blann, D. Black and D. Ridley carried out additional geological mapping and prospecting along the 7200 road. On June 21, 1999, a granite-aplite boulder containing quartz with small patches of molybdenite was found beside the road. D. Ridley later prospected above this area and discovered a large boulder of calc silicate containing significant molybdenum, tungsten and anomalous zinc, which led to the staking of the original Fox mineral claims. This work was part of the Prospectors Assistance Program (Ref. No. \99-\00 P-62), and was recorded for assessment work credits (Ridley 2000a).

During 2000, additional grid-based prospecting, geological mapping, soil sampling, and geophysical surveys, as well as additional claim staking was performed. Several zones of mineralization were found (Ridley 2000b). In July 2000, the Deception 1-9 mineral claims covered the northern edge of the Deception stock, on Deception Mountain. Prospecting identified garnet and pyroxene skarn alteration most prevalent in the eastern half of the claims and several occurrences of pyrrhotite, scheelite, sphalerite and chalcopyrite were found. Reconnaissance silt sampling returned up to 412 ppm tungsten in silt samples (Ridley 2000c).

In July 2001 the Fox 1-6 claims were optioned to Starcore Resources Ltd., who expanded the claim position and conducted soil sampling south of the Discovery Zone, resulting in several samples containing anomalous concentrations of tungsten in soil (Ridley 2002). K. Dawson, PhD, P. Geo. Examined the property and obtained 4.99% molybdenum from a grab rock sample of a 10 cm mineralized zone at the Discovery molybdenum skarn (Dawson 2002). No further work was performed, and the property was returned to Ridley.

In June 2005, Happy Creek Minerals Ltd a private company, conducted prospecting, geological mapping, and grid soil sampling. In June 2005 Happy Creek converted the property to the new Mineral Title Online (MTO) cell claims, and filed assessment work (Blann and Ridley 2005) and in August, 2006, Happy Creek Minerals acquired a 100% interest in the Fox property. Since May 2005 Happy Creek Minerals Ltd. continuously explored the Fox project. Seven mineralized zones have been discovered to date. These are shown on Figure 6.1. Descriptions of Happy Creek's exploration effort are described in section 9 and 10 of this report.



**Figure 6.1 – Mineralized Zones**

## 7.0 Geological Setting and Mineralization

### 7.1 Regional Geology

The Fox property area is underlain by metasedimentary rocks of the Late Proterozoic-Early Paleozoic Snowshoe Group, part of the Kootenay Terrane of displaced and deformed North American shelf sedimentary rocks. These rocks lie east of the continental scale Eureka Thrust which marks the collision boundary between the Quesnel Terrane allochthon to the west, and older continental shelf sediments to the east (Figure 7.1). The basal black phyllite unit of the Nicola Group occurs immediately west of the Fox property, and was likely the focus of regional strain during tectonic activity.

Intrusions of garnet biotite-muscovite granite composition cut the Snowshoe rocks. These are of Cretaceous age or younger and are of similar age to the Boss Mt. stock approximately 30 km to the northwest. Regional mapping north of the property suggests that rocks are comprised of quartz rich grit/metapelite gneiss to the west, and are more carbonate-rich to the east proximal to a major northwest trending anticline axis (Helson 1982; Filipone 1990). The Redfern Ultramafic Complex, of Permian-Mississippian age, is comprised of amphibolite, gabbro, dunite and serpentinite and occurs on the eastern side of the property. These rocks cover an area of approximately 4.5 by 1.5 kilometres in dimension,

The youngest rocks in the region are post glacial age cinder cones and blocky olivine basalt flows that are located southeast of the property in the Spanish Creek valley (Flourmill volcanoes). Very recent glacio-fluvial related deposits cover most valley bottoms and low lying areas, and are between 1-20 metres in thickness.

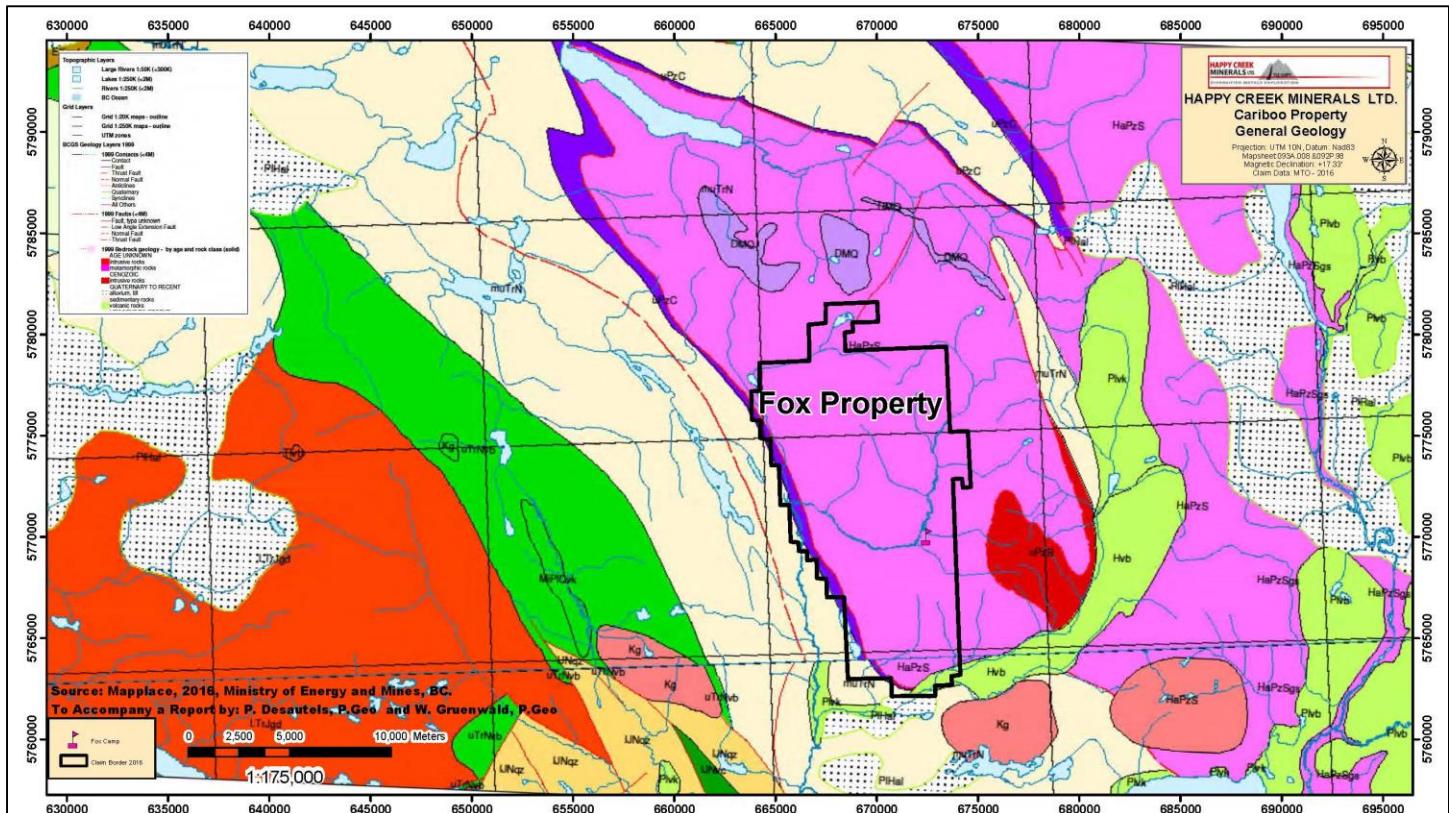


Figure 7.1 – Regional Geology

## 7.2 Property Geology

The main 7200 logging road and clear cut access roads have exposed bedrock along their right-of-ways, otherwise rock exposure is limited at lower elevations. In late summer, outcrops become accessible in Deception Creek. Outcrop is more prevalent at higher elevations on Deception Mountain, and the top 100 metres is largely all outcrop. The Fox property is dominantly underlain by Cambrian or older Snowshoe Formation metasediment and calc silicate rocks. These rocks are comprised of dominantly banded to foliated quartz- biotite-mica gneiss, schist, calc silicate and marble (Figure 7.2). As the property has not been mapped by Government or previous workers, the geology is based on several people's work from different areas of the property for limited duration and at different times. The geology has collectively been assembled and is the subject of a MSc. Thesis under the direction of professor Lee Groat, PhD., of the University of British Columbia in 2015. A summary of the property geology is provided below.

### 7.2.1 Lithology

Five differentiable units were defined to delineate the structure and sequencing of the metamorphic units. These are outlined below beginning from the structurally lowest to highest metamorphic unit. These units are cut and intruded by Cretaceous age Deception monzogranite batholith along with its derivative dikes and sills.

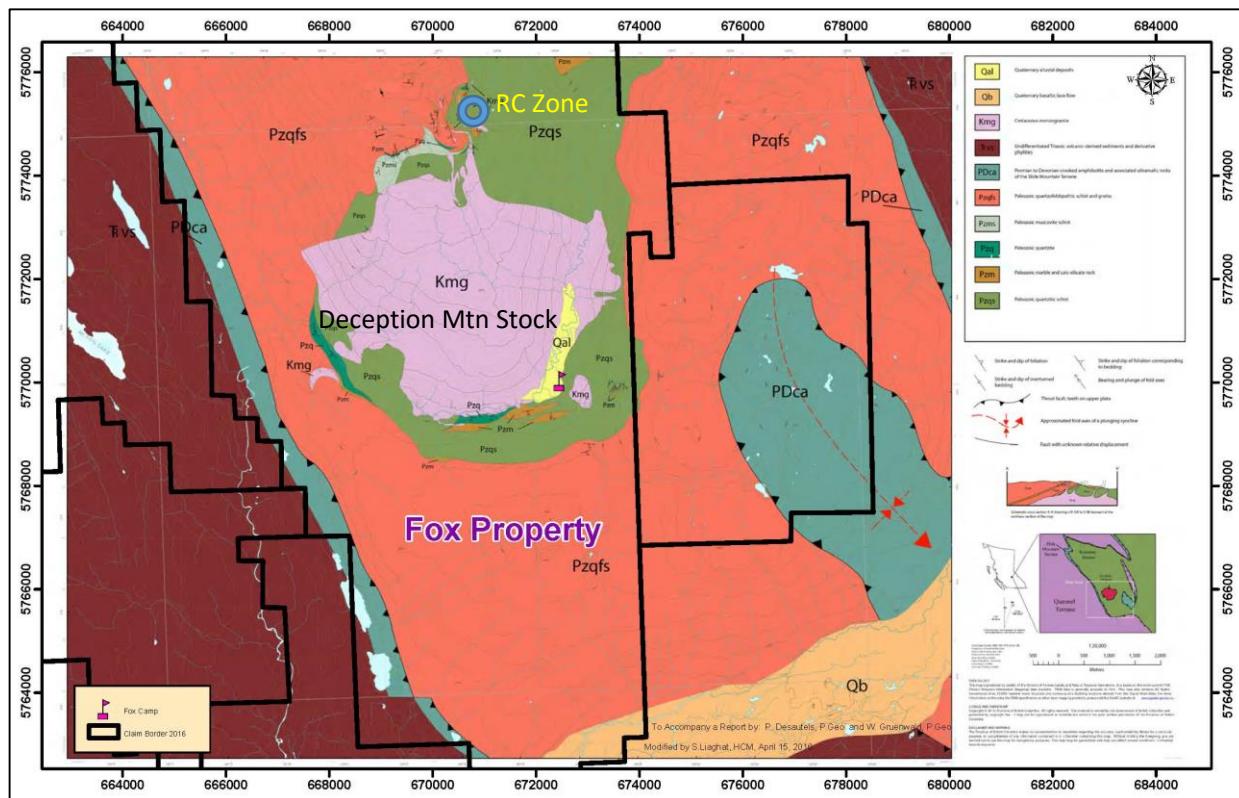


Figure 7.2 – Local Geology

#### a) Quartz-Biotite schist (Pzqs)

This unit refers to a lithology most prominent in the lower structural unit. It weathers a dark-grey colour, and is dominantly composed of medium to coarse-grained plagioclase, muscovite, biotite, and quartz (from least to greatest abundance).

**b) Micaceous quartzite (Pzq)**

The micaceous quartzite unit lies above the quartz-biotite schist, and is recognizable by its planar joint patterns and grey weathered surface in outcrop. This lithology is composed of medium-grained biotite, muscovite, and quartz.

**c) Marble with associated skarns and skarnoids (Pzm)**

The marbles in the area occur typically together with calc-silicate rocks and minor skarnoids developed at the contacts with silicic rocks. The marbles are fairly homogeneous in their mineralogical composition which includes medium-grained calcite with minor fine-grained calcic silicate minerals such as diopside and andradite garnet. Diopside is dispersed throughout the matrix, whereas garnet is concentrated into laminae which define the foliation of the rock. The calc-silicate rocks are usually thicker than the marble and occur mostly at the upper contact with the siliceous rocks, and rarely below it. The transition from marble to calc-silicate is in most cases sharp, but gradational contacts were also observed. The calc-silicate rocks are compositionally heterogeneous and show layering and lamination of fine- to medium-grained diopside, garnet and wollastonite that grow around quartz layers. The space between these layers is filled with calcite and minor diopside. These calc-silicate rocks are clearly the product of metamorphic re-equilibration of calcareous siliciclastic sediments during the regional metamorphism. A skarnoid is usually coarser-grained than the calc-silicate rocks and consists of medium to coarse-grained andradite garnet and diopside with minor plagioclase, wollastonite and calcite. The minerals show a patchy zonal distribution of the individual mineral groups which overprint the compositional layering in the marble or calc-silicate rock. Monomineralic aggregates of up to 20 cm in diameter of garnet with minor calcite and wollastonite are common. A regional skarnoid can form by an increase rate of chemical exchange between silicic-aluminous metasediments and the carbonate rock, potentially aided by increased fluid flow. It can also be produced by the infiltration of reactive external fluids related either to metamorphism or magmatism. Mineralogically, the skarnoid is very similar to an igneous skarn which develops proximal to an igneous intrusion, but it lacks the pronounced complex retrograde reaction textures associated with its formation.

*At least three separate major units of marble and calc-silicate rocks occur in the mapped area on Deception Mountain:*

- i) **Upper Marble Unit** within the plagioclase schist/ augen gneiss is approximately 40-50 cm in thickness and the associated calc-silicate rocks can exceed one metre. It can be traced for several hundred meters on the eastern cliff just above the RC – BN Zones at an elevation of 2100 m.
- ii) **Middle Unit** at the base of the plagioclase schist underlying the BN Zone is composed predominantly of calc-silicate rocks with minor marble. It is well exposed at an elevation of approximately 1960 m near the BN Zone. It can be traced northwards along the bottom of the cliffs for a few hundred meters and southwards for 350 – 400 metres. This unit shows great variation in thickness between the southern outcrops (>5 m) and the northern extension (1-2 m) where it eventually wedges out.
- iii) **Lower Marble Unit** and associated calc-silicate rocks underlie most of the RC Zone at an elevation of 1840 metres. It varies in thickness between 3-5 metres in the south and more than 10 metres just below the RC Zone. Minor occurrences of calc silicate rocks that are not part of the above, are found at several locations. One location between the main upper and middle marble and calc-silicate units on a very steep cliff above the RC Zone consists of only calc-silicate with significant hydrothermal alteration at the lower contact with schists.

#### d) Garnet-Muscovite schist (Pzms)

The unit stratigraphically following the marble/calc-silicate units is a garnet-muscovite schist, which weathers pale-grey and contains medium to coarse-grained garnet, plagioclase, muscovite, and quartz.

#### e) Plagioclase schist/ugen gneiss (Pzqfs)

The unit is distinct because of its coarse grain size (up to 3 cm large) and abundance metamorphic index minerals. This unit first appears above the garnet-muscovite schist where it contains garnet, biotite, quartz, and plagioclase. Well-developed, 3 cm long staurolite occurs in an augen gneiss. Kyanite was also observed in various parts of the unit.

### 7.2.2 Deception Mountain Stock (Kmg)

This large granitic intrusion (stock) is cropping out in the southern-most part of the mapped area and underlies the southern and south-western slopes of Deception Mountain (Fig 7.2). The stock is compositionally a monzogranite characterized by an average modal abundance of 30% quartz, 35% plagioclase, and 35% orthoclase. Specifically, the monzogranite is termed “alaskite” due to the lack of mafic minerals. Observed variations with respect to texture and composition include the presence of garnet and biotite in some samples, grain size variation but most notably, potassic alteration viewed in drill core and “float” samples. The Deception stock is U-Pb zircon dated at 106.4 +/-0.2 Ma, or Middle-Cretaceous in age. This compares closely with the Boss Mountain molybdenum mine stock at (105+/- 2 Ma) to the west.

### 7.2.3 Veins, Dykes and Pegmatites

Three major vein and dyke types occur: (1) *hydrothermal quartz veins*, (2) *pegmatitic dykes*, and (3) *granitic sills and dykes*. Hydrothermal quartz veins are found as joint infillings and other structural breaks that strike from N-NW to S-SE and N-NE to S-SW as conjugate sets that dip sub-vertically. Joint orientation varies with respect to regional folds but generally parallels the axes of folds. Veins are compositionally heterogeneous and show a vertical and lateral transition from coarse-grained, milky-white to translucent quartz towards pegmatitic feldspar and muscovite-dominant compositions. The pegmatitic dykes are characterized by very coarse-grained muscovite, quartz, and albite. They can be distinguished from the hydrothermal veins by an abundance of massive quartz, and the lack of well-developed albite crystals. The pegmatitic dykes cut the hydrothermal veins, therefore indicating a later origin. However, it could not be determined whether the pegmatites are associated with the later stages of the monzogranite stock, or if they are related to an even later unrelated event. Dykes are generally steeply plunging (>60°) and show no preferred strike orientation. Granitic sills and dykes range from a few decimeters to five metres in thickness and they are compositionally and texturally very similar to the main granitic stock in the Deception Mountain area. They were emplaced sub-parallel to the host gneiss and schist with a mean strike of 171° and a slightly steeper dip to the west (20 – 50°). Locally, granitic dykes show limited reaction with the marbles or calc-silicate rocks, however, some thin (<5cm) hydrothermal veins composed mostly of quartz and minor feldspar occur with the presence of minor garnet when in contact with calc-silicate rocks.

### 7.2.4 Structure

Foliation in schist and calc silicate bands has variable orientations. The area can be subdivided into three domains or sectors based on the structural data: (1) South sector (including Discovery and Nightcrawler Zones), (2) West sector, and (3) Northeast sector, which includes the RC and BN Zones.

In the south sector, the predominant strike direction of the metamorphic foliation is roughly east-west ( $067^\circ$ -  $115^\circ$ ) dipping to the south at about  $30^\circ$ . Minor isoclinal folds plunging  $55^\circ$  to the south were also observed in finely-banded carbonate-bearing schists. In the west sector, the foliation strikes on average  $171^\circ$  with a dip of  $30^\circ$  west. Orientations in this area remain consistent within a quartz-rich schist, with no visible mesoscopic folds. The northeastern part of the study area is structurally very similar to the western sector with a mean strike of  $187^\circ$  and dip of  $23^\circ$  to the west. Lineation measurements indicate a very similar direction of  $345^\circ$  (and  $170^\circ$ ) at very shallow plunging angles ( $<11^\circ$ ). The upper calc-silicate unit is relatively flat-lying, and conforms well to the general structural trend. However, both the marble and the calc-silicate units show pervasive/penetrative internal deformation of the planar features such as garnet layers and diopside-garnet-quartz laminae. These structural features are best visible in outcrops perpendicular to the main strike and reveal complex, three-dimensional geometries including isoclinal and disharmonic folds indicating at least two deformational events. On the east side of Deception Mountain, the calc-silicate units are intensely deformed forming mesoscopic up-right to overturned folds which appear to belong to a larger box fold structure.

Within the limbs of these first-order folds, second-order asymmetric and disharmonic folds developed to compensate for the shortening. Z-folds of garnet layers within the marble indicate that this is the upper limb of an antiform which continues further at depth. The fold axes of these fold structures are trending N-S (i.e. striking between  $342^\circ$  and  $024^\circ$ , and  $175^\circ$ ) and plunging at about  $20^\circ$  to the south in the BN Zone, and in the RC Zone with the same angle to the north. This points to the presence of a culmination of the overall structure centered between the RC and BN Zones. The first-order fold structures are additionally transected by sub-horizontal kink-folds indicating top-to-the-east brittle shearing. As a result, the thickness of the marbles and calc-silicate units in the RC and BN Zones has been tectonically increased by repeated folding and potentially also stacking. In addition, folding and faulting appear to have contributed to the increased level of porosity (pressure solution), permeability (faulting), and potentially the development of structural traps (fold hinges, large-scale culmination of fold structure) for fluids emanating from the intrusion.

### 7.3 Mineralization

The Fox property contains seven main areas of tungsten mineralization (Figure 7.3). Tungsten mineralization is hosted mainly in calc silicate rocks of the Snowshoe Formation. The Nightcrawler-Discovery and the South Grid are located on and around the southern side of the Deception stock. The Nightcrawler-Discovery Zone consists of outcrop, boulders and drill core with scheelite-bearing calc silicate that at surface is approximately two kilometres east-west and has been traced by drilling for 500 metres away from the intrusion. Multiple layers of mineralized calc silicate occur. Drilling has identified several areas containing elevated tungsten values with grades of  $1.0\%$   $\text{WO}_3$  across 5.0 metres being reported.

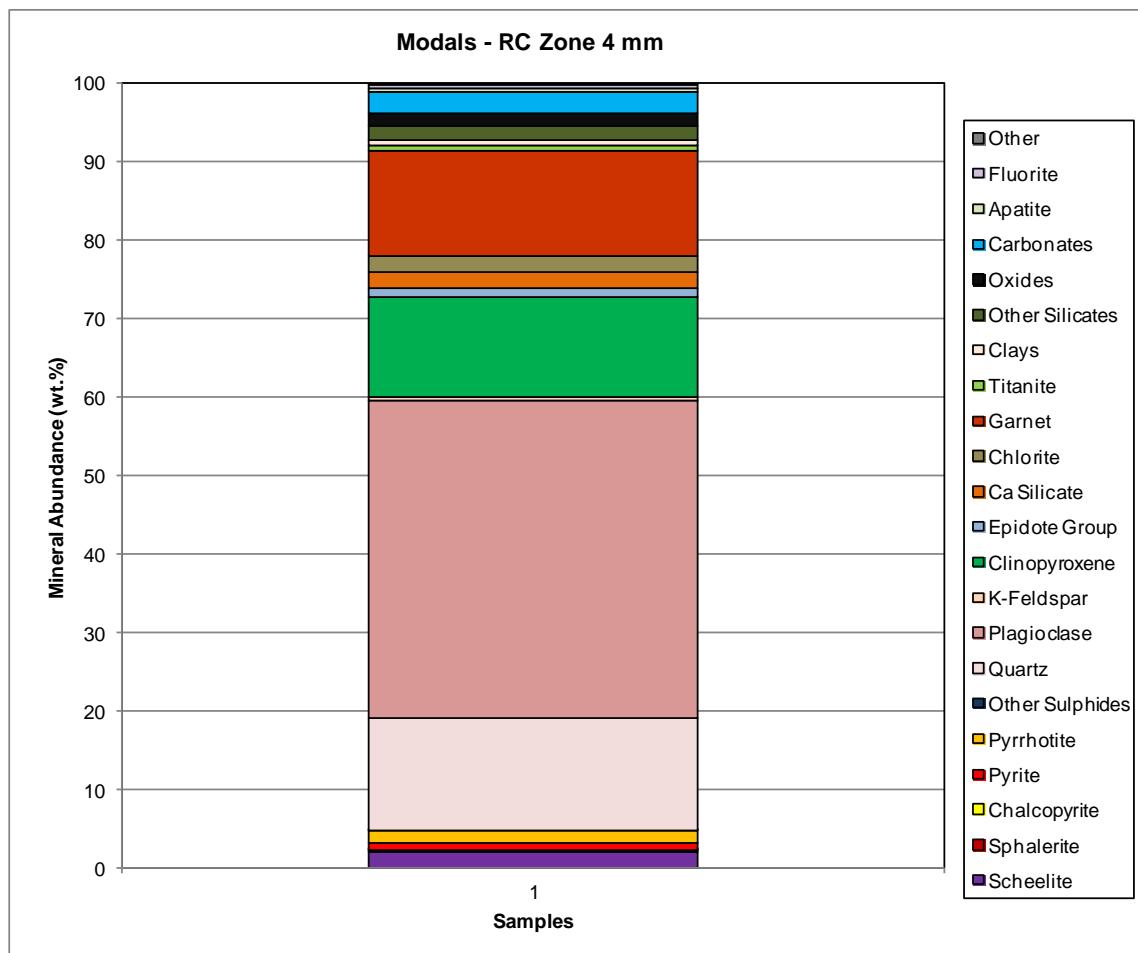
The South Grid is approximately 150 metres higher in elevation and a kilometre south of the Nightcrawler Discovery Zone. It consists of positive tungsten-in-soil in an area that is approximately 1.25 km by 500 metres in dimension. At surface, this area contains boulders and local outcrops containing scheelite in calc silicate. Samples of boulders collected in 2007 to the west of the main South Grid soil anomaly returned tungsten values ranging up to  $0.23\%$   $\text{WO}_3$ .

The **708, BN, Ridley Creek, BK and North Zones** (Figure 7.3) occur from south to north, respectively, extending over two kilometres on the north side of the Deception stock and on the eastern and northern flank of Deception Mountain. Other zones containing tungsten in outcrop, stream sediment or soils occur, however limited information

is available. Molybdenum occurs on the Fox property mainly within or in proximity to the Deception stock. Although it forms local concentrations it is secondary to tungsten in mineralized zones around the Deception stock. Concentrations of the calc silicate minerals, sulphide, and scheelite are variable throughout the mineralized zones.

QEMSCAN analysis of a composited 500 kg sample from the Ridley Creek (RC) Zone trench was conducted. QEMSCAN (Quantitative Evaluation of Minerals by SCANning) electron microscopy, is an integrated automated mineralogy and petrography solution providing quantitative analysis of minerals and rocks. The integrated system comprises a Scanning Electron Microscope (SEM) with a large specimen chamber, up to four light-element Energy-dispersive X-ray spectroscopy (EDS) detectors, and proprietary software controlling automated data acquisition.

The analysis shown in the chart below returned 40.5% plagioclase, 14.4% quartz, 13.5% garnet, 12.6% clinopyroxene for approximately 81% of the rock mass. Chlorite, calc silicate and calcium carbonate are each approximately 2% of the rock mass. Sulphide consists of pyrrhotite 1.55%, pyrite 0.76%, sphalerite 0.29% and chalcopyrite 0.03%. Scheelite is 2.1% of the rock mass ( $\text{WO}_3$ ). Scheelite (calcium tungstate) is approximately 80.5% tungsten trioxide ( $\text{WO}_3$ ), the mineral for which is payable to a producer. An 800 kg bulk sample subjected to metallurgical analysis is detailed in Section 13.0 of this report.



## 8.0 Deposit Types

Skarn deposits are complex, with the following description adapted from Meinert, L and Dawson, K.:

*Tungsten skarns are found on most continents in association with calc-alkaline plutons in major orogenic belts. As a group, tungsten skarns are associated with coarse-grained, equigranular batholiths (with pegmatite and aplite dikes) surrounded by large, high-temperature, metamorphic aureoles. These features are collectively indicative of a deep environment. Plutons are typically fresh with only minor myrmekite and plagioclase-pyroxene endoskarn zones near contacts. The high-temperature metamorphic aureoles common in the tungsten skarn environment contain abundant calc-silicate hornfels, reaction skarns, and skarnoid formed from mixed carbonate-pelite sequences. Such metamorphic calc-silicate minerals reflect the composition and texture of the protolith and can be distinguished from ore-grade metasomatic skarn in the field and in the laboratory.*

*Tungsten skarn can be divided into reduced and oxidized types, based on host rock composition (carbonaceous versus hematitic), skarn mineralogy (ferrous versus ferric iron), and relative depth (metamorphic temperature and involvement of oxygenated groundwater). Early skarn assemblages in reduced tungsten skarns are dominated by hedenbergitic pyroxene and lesser grandite garnet with associated disseminated fine-grained, molybdenum-rich scheelite (powellite). Later garnets are subcalcic with significant amounts (up to 80 mole %) of spessartine and almandine. This subcalcic garnet is associated with leaching of early disseminated scheelite and redeposition as coarse-grained, often vein-controlled, low-molybdenum scheelite. It is also associated with the introduction of sulphides, such as pyrrhotite, molybdenite, chalcopyrite, sphalerite, and arsenopyrite, and hydrous minerals such as biotite, hornblende, and epidote.*

*In oxidized tungsten skarns, andraditic garnet is more abundant than pyroxene, scheelite is molybdenum-poor, and ferric iron phases are more common than ferrous phases. For example, at the Springer deposit in Nevada, garnet is abundant and has andraditic rims, pyroxene is diopsidic (Hd0-40), epidote is the dominant hydrous mineral, pyrite is more common than pyrrhotite, and subcalcic garnet is rare to absent. In general, oxidized tungsten skarns tend to be smaller than reduced tungsten skarns, although the highest grades in both systems typically are associated with hydrous minerals and retrograde alteration.*

Source: <http://earthsci.org/mineral/mindep/depfile/skarn.htm>

On the Fox property, the geological setting is one consisting of tungsten-bearing calc silicate/skarn spatially associated with the Deception felsic, two mica monzogranite stock and associated differentiates of increasing felsic composition including alaskite, aplite pegmatite and quartz veins. Known intrusion related skarn deposits having similar characteristics occur in the Yukon and southern BC. And can be of significant economic significance.

## **9.0 Exploration**

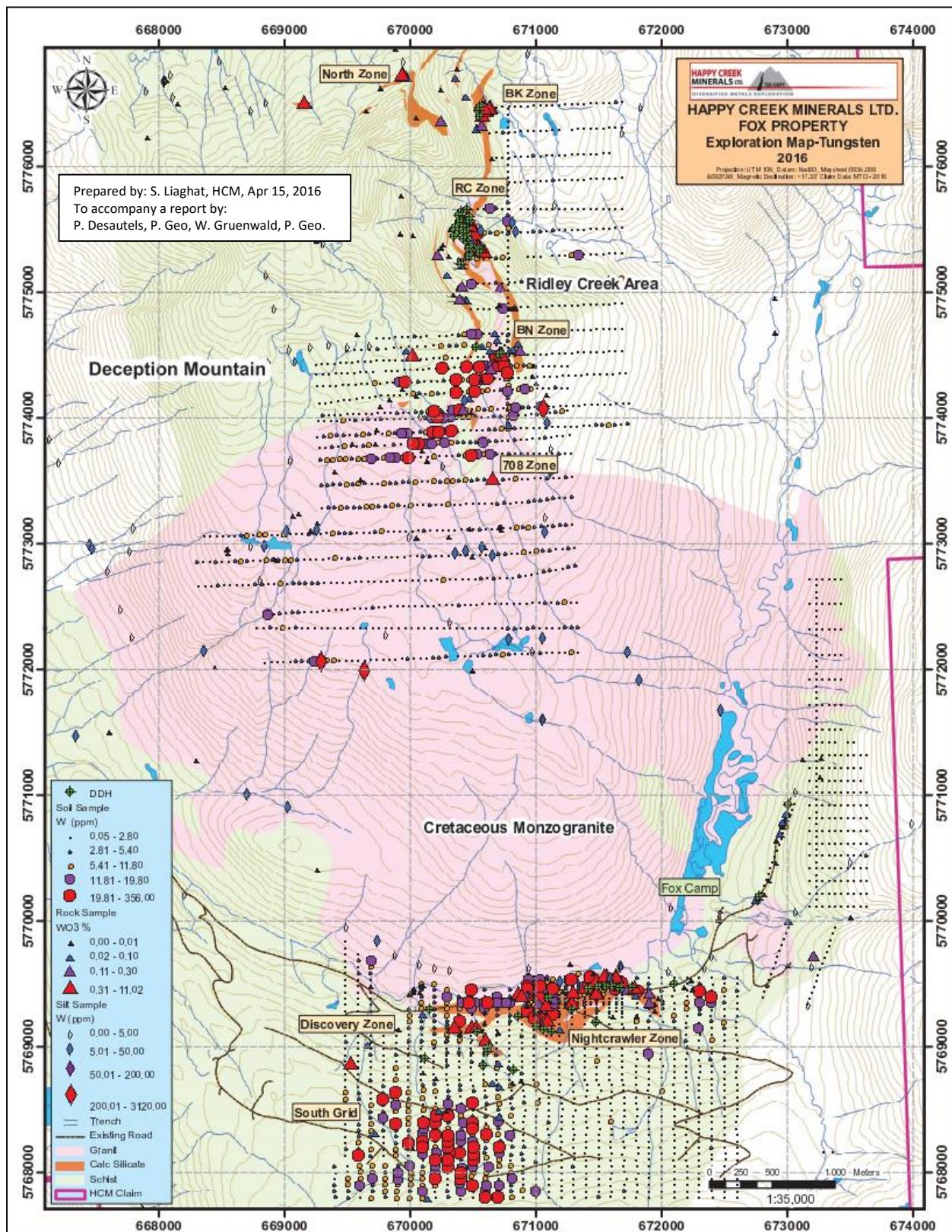
Since 1997 exploration on the property was performed by individuals and companies consisting of prospecting, geochemical, geophysical, geological surveys and diamond drilling.

### **9.1 Happy Creek Exploration Effort Since 2005**

In June 2005, Happy Creek Minerals Ltd., a private company, conducted prospecting, geological mapping, and grid soil sampling further east of the Discovery Zone. The Nightcrawler tungsten prospect was discovered at this time. During this time Happy Creek converted the property to the new Mineral Title Online (MTO) cell claims, and filed assessment work (Blann and Ridley 2005). Between August and November, 2005, exploration consisted of additional prospecting, rock and stream sediment and moss mat sampling, fill-in grid and soil geochemistry (Fox grid), and three reconnaissance soil lines to the northeast of the Fox grid. Prospecting at low water in Deception Creek in September located sub crop boulders containing up to 4.25%  $\text{WO}_3$  at the Creek prospect portion of the Nightcrawler Zone (Blann, 2006).

In August, 2006, Happy Creek Minerals acquired a 100% interest in the Fox property and conducted detailed prospecting, geological mapping, silt, soil and rock samples to the south, east and north of the Nightcrawler Zone. A helicopter was deployed for a fly-camp and set-outs on Deception Mountain. Following up on the positive tungsten in stream sediments taken in 2000, rock samples from the Ridley creek headwater area returned a grab sample containing 0.26% tungsten and anomalous zinc from a 2.5 metres-wide outcrop, and 450 metres south, 0.17% tungsten and 2.07% zinc in a subcrop grab sample (Blann, 2007).

Between May and December 9, 2007, Happy Creek Minerals Ltd. constructed a 10-person exploration camp, performed prospecting, and collected rock and silt geochemical samples, On Deception Mountain, 41.85 kilometres of flagged soil geochemical grid was established from which 785 soil geochemical samples were collected. Happy Creek also performed trenching, and 3,823 metres of NQ diamond drilling in 13 widely spaced holes at the Nightcrawler Zone. Trenching located near surface tungsten-bearing calc silicate zones and drilling revealed multiple, stacked, scheelite-bearing calc-silicate skarn horizons occurring over a distance of 1.5 km east-west, and up to 500 metres south of the Deception Stock contact. These mineralized skarn zones dip moderately southward and remain open in extent. Results include 5.0 metres of 0.33%  $\text{WO}_3$ , 2.0 metres of 0.74%  $\text{WO}_3$ , 0.5 metres of 1.8%  $\text{WO}_3$  and 0.45 metres of 1.13%  $\text{WO}_3$ . At the original Discovery Zone, drilling intersected a molybdenite bearing skarn containing 4.2 metres of 0.25% Mo and underlying intrusive rocks also containing geochemically anomalous molybdenum. New showings were located on Deception Mountain containing up to 7.11 %  $\text{WO}_3$  over 25 cm in true thickness and 4.65 %  $\text{WO}_3$  at the Blann (BN) and Black (BK) Zones, located about one kilometre south and north of the RC Zone, respectively (Blann, 2008).



**Figure 9.1 Exploration Areas and Mineralized Zones**

In 2008 Happy Creek Minerals conducted bedrock mapping over part of the Deception Mountain area and a 2.5 by 2.5 km area was grid and soil sampled covering the northern contact area of the Deception stock. The geochemical survey outlined tungsten-in-soil anomalies spanning an area of one kilometre by 350 metres extending southwest of the BN Zone (Lane, B. McDonald, K., 2009).

During 2010, Happy Creek conducted detailed prospecting, hand trenching, rock and silt sampling on Deception Mountain. The author (Gruenwald) supervised some of the work on the RC Zone. Hand trench chip sample highlights included: 7.0 metres of 0.80%  $\text{WO}_3$ , 2.0 metres of 5.00%  $\text{WO}_3$  at the RC Zone, 7.3 metres grading 1.25%  $\text{WO}_3$  at the BK Zone and 1.0 metre of 4.66%  $\text{WO}_3$  at the BN Zone. These zones occur over a two kilometre distance. Positive zinc, indium, bismuth and locally gold and silver values were also identified to occur with tungsten. In addition, diamond drilling of three NQ2 holes totaling 663.1 metres was performed at the Nightcrawler-Discovery Zone. Drill hole F10-01 tested 75 metres further east of a previous hole returned 0.16%  $\text{WO}_3$  over 9.2 metres and 1.37%  $\text{WO}_3$  over 0.9 metres. The zone remains open in extent to the east (Duba, D., MSc., Blann, D. P. Eng., 2011).

In 2011, Happy Creek Minerals collected additional silt and rock samples from the Deception Mountain area. Eleven grab samples of altered monzogranite and quartz vein swarm from the Deception Stock contained from trace to 2.04% molybdenum and 1.6 g/t rhenium. Ten shallow BQ diameter diamond drill holes totaling 415.5 metres were completed at the recently discovered RC Zone. Seven of these holes intersected encouraging tungsten along with zinc, indium, and trace to weakly anomalous silver and gold values. Multiple intervals of tungsten bearing skarn were intersected in drill hole F11-07 including 9.6%  $\text{WO}_3$  over 0.4 metres and 1.02%  $\text{WO}_3$  over 4.7 metres, and in hole F11-08, 8.15%  $\text{WO}_3$  over 0.65 metres and 1.22%  $\text{WO}_3$  over 7.35 metres. Hole F11-02 also returned 0.5 meters of 8.45%  $\text{WO}_3$ . A 3D induced polarization geophysical survey totaling 2.375 km identified a strong chargeability anomaly associated with the RC Zone. The 2011 drilling at the RC Zone is considered the discovery point for potentially economic grade and thickness tungsten mineralization for the Fox property (Blann, D. P. Eng., Liaghat, S., 2012).

In 2012, Happy Creek conducted diamond drilling of 29 holes totaling 2,649.69 metres in the RC, BN and BK area with most drilling done in the RC Zone. In addition, geological mapping and prospecting, and a Lidar topographic survey covering 87.79 km<sup>2</sup> was performed. A 800 kg bulk surface rock sample for mineralogy and metallurgy studies was collected from the BK, BN and RC Zone. Drilling continued to expand and outline a continuous mineralized zone to the west and south at the RC Zone. Two of four holes at the BK Zone returned positive results. At the BN Zone drill hole F12-27 returned three separate intervals including: 4.1 metres of 1.78%  $\text{WO}_3$ , 14.8 metres of 4.0 %  $\text{WO}_3$  and 24.0 metres of 0.79%  $\text{WO}_3$  and is thought to be among the best tungsten drill result known (Blann, Liaghat, 2013).

In 2013, Happy Creek drilled 21 diamond drill holes in the RC Zone totaling 1371.4 metres. Drilling was successful in that it expanded and confirmed continuity of the RC Zone. The western most hole, F13-19 returned 26.3 meters averaging 1.19%  $\text{WO}_3$ , including 3.66 metres of 4.625%  $\text{WO}_3$  and 9.78 metres of 1.4%  $\text{WO}_3$ . The RC Zone remains open in extent in several directions. Tescan Integrated Mineral Analyzer (TIMA) was performed on a few samples. Met Solve Laboratories of Langley B.C. performed an initial metallurgical test for the 800 kg bulk rock sample. This work presented a method to process the material using flotation to recover a zinc sulphide concentrate and a tungsten gravity concentrate (Blann, Liaghat, 2014). Further details of this metallurgical testing is described in Section 13.0 of this report.

During 2014, Happy Creek Minerals conducted geological mapping of the western side of Deception Mountain. This work identified similar geology and tungsten-bearing calc silicate and intrusive such as that occurring near the

eastern contact (i.e. RC and other zones). The favorable tungsten-bearing calc silicate units were speculated to be continuous from the east to the west side, through Deception Mountain, a distance of 1.5 km (Blann, Liaghat, 2015).

During 2015 Happy Creek Minerals completed six NQ diameter diamond drill holes totaling 1500 metres around the Creek Zone at the east end of the Nightcrawler Zone. Drill hole F15-02 returned 5.0 metres of 1.0% WO<sub>3</sub>, the best result to date from the Nightcrawler Zone. In addition, a property-wide airborne magnetic and radiometric survey, soil sampling at the South Grid, and prospecting and geological mapping at the BK and North Zone were completed. A MSc. Geology Thesis was initiated through UBC (Blann, Liaghat, 2016). Happy Creek's exploration work is summarized in Table 9.1.

**Table 9.1 – Fox Property Exploration History Since 2005**

AR	Work Year	Work filed \$CDN	Samples			P*	G*	GP*	Trench (m)	Drilling		Testing	Details and Results
			Silt	Soil	Rock					DDHs	(m)		
27886	2005	32,831		280	50	y	y						
28514	2005	53,327	38	243	56	y	y						
28982	2006	87,818		165	110	y	y						Ridley Creek Zone first sampling
30008	2007	1,263,780	133	785	53	y	y		711.6	13	3,823		Nightcrawler Zone – NQ drilling, Deception Mountain soil sampling. New zones (BN, BK) found south and north of Ridley Creek Zone
30824	2008	102,224	14	683	113	y	y						Deception Mountain soil sampling expands W anomaly southwest of BN Zone.
32054	2010	202,627	8		125	y	y		56.35	3	663		Nightcrawler Zone drilling. Hand trenching at BN, RC and BK Zones.
32762	2011	393,113	14		13			IP 2.375km		8	415		RC Zone: BQ drilling considered the “Discovery point” of potentially economic tungsten grade and thickness for the property.
33695	2012	1,003,679	18		11		y	LiDAR 84 km <sup>2</sup>		29	2,649		RC Zone: NQ drilling outlining a tungsten deposit with encouraging grade and thickness. BN Zone 4 holes, BK Zone 5 holes:
34642	2013	418,777			12				816 kg sample from BK, RC, BN Zones for met test	21	1,371	Met Solve Labs testing	RC Zone drilling. Metallurgy test work shows flotation and gravity are viable processes.
35342	2014	58,000	5		34	y	y						North –Northwest end of Deception Mountain mapping of calc silicate units with discovery of several tungsten showings.
	2015	389,700		203	13	y	y	320 line km airborne magnetic and K-Th	500Kg total 16 big trench samples from RC zone	8	1,500	SGS Labs: Met and Min-pro testing	Nightcrawler- NQ drilling with step out hole 450m to east traced favorable W bearing calc-silicate unit. South Grid soil sampling returns 1.25 km X 500 m W anomaly. New showings found along strike of BK zone. Detailed airborne mag-radiometric survey. MSc. Thesis initiated with UBC. Additional Met tests. AGP Mining Consultants conduct RC Zone resource estimate.
<b>Totals:</b>		<b>\$4,005,876</b>	<b>230</b>	<b>2359</b>	<b>590</b>					<b>82</b>	<b>10,421</b>		

P\*: Prospecting

G\*: Geology

GP\*: Geophysics

Zone Drilling Summary	Nightcrawler	24	5,986
	BK	5	298
	BN	5	859
	RC	48	3,278

## **9.2 Geophysical Surveys**

In 2015, Happy Creek completed 320 line kilometres of Helicopter – 3G magnetics and gamma spectrometer survey covering a 10 km by 3 km area extending from the South Grid to the North Zone. Since the survey results were not received until the end of the field season the ground-checking of the various features or detailed data analysis has not been performed to allow any opinion to be drawn at this time.

## **9.3 Geochemical Surveys**

Provincial Government Regional Geochemical Surveys (RGS) in the area identified a number of streams containing strongly anomalous tungsten in stream sediments

Since the discovery of molybdenum and tungsten on the Fox claims, Happy Creek has collected 230 stream, 2,079 soil and 540 rock samples. Figure 9.1 displays the areas of sampling conducted on the property.

### **a) Stream Sampling**

Stream sediment, moss mat and several pan concentrate surveys were conducted around the Nightcrawler and the south, west and east side of Deception Mountain. Evaluation of moss mat and pan concentrate results as compared with basic stream sediment samples was performed early in the exploration of the property. All three types of samples were collected from the same stream drainage site. Although the tungsten concentration is often higher in pan concentrates, a stream could be identified as anomalous just using stream sediments. Stream sediment containing >11 ppm W are deemed to be anomalous against the background of <5 ppm W, using an aqua regia digest which is partial for tungsten.

This work identified anomalous tungsten in streams mainly on the south and east side of Deception Mountain. It was follow-up prospecting that ultimately identified the BN and RC Zones.

### **b) Soil Sampling**

At the Nightcrawler-Discovery and South Grid Zones, soil samples were collected mainly at 50 metre separations on north-south oriented grid lines 100 metres apart. Locally, around the Discovery-Nightcrawler Zones, the grid line spacing was reduced to 50 metres. On Deception Mountain, grids were initially conducted 200 metre spaced lines and later reduced to 100 metres between the BN and 708 Zones. Samples were collected using a tree planting shovel or soil auger. Soil samples consisted of material collected from the “B” or “Bf” horizon and if not present, from the “C” horizon.

Positive tungsten-in-soil occurs and generally identifies near-surface tungsten mineralization. Effectiveness of soil sampling in areas having thick glacial till of  $\geq 3$  metres is limited. Positive and strongly positive tungsten values are >11 and >19 ppm W, respectively against a background of <5 ppm using the same analytical method as silts.

Four main areas with positive and strongly positive values of tungsten in soil are the South Grid, Nightcrawler Zone, BN and RC. Dimensions containing these geochemical anomalies are: South Grid, 1.25 km by 500 metres, Nightcrawler, 1.5 km by 200 metres and BN, 1.1 km by 250 metres. The RC and BK Zones have single point anomalies of strongly positive tungsten in soil, however the grid lines in these areas are 200 metres apart. The North and Northwest Zones have not been covered by soil geochemical surveys.

Prospecting, surface sampling and drill testing of the geochemical anomalies have successfully revealed high tungsten concentrations in outcropping bedrock at the BN, RC and BK Zones. At the northeast edge of the BN geochemical anomaly, high tungsten grades occur in outcrop and in blind zones at depth. This geochemical anomaly remains untested for over 1.0 km. The South Grid geochemical anomaly remains untested by trenching and drilling.

#### **9.4 Geological Surveys**

As the Fox property is a relatively new discovery, it has never been mapped by the government or other company. Between 2005 and 2015, Happy Creek performed geological mapping and prospecting during reconnaissance traverses covering much of the property. Basic geology of the property was obtained. More detailed geological mapping was performed at the Nightcrawler, BN, RC and BK Zones and although the work was sufficient to form geological understanding to allow drilling, detailed property geology overall remains incomplete. Recently Happy Creek has engaged U.B.C. to conduct a MSc. Thesis in geology on the property and that work is partially completed.

#### **9.5 Trenching**

Machine trenching totaling 711 metres was performed in the Nightcrawler Zone in 2007. Hand trenching totaling 56.0 metres was performed at the BN, Ridley Creek and BK Zone in 2010. The trenches were dug to bedrock, chained and marked, mapped, GPS surveyed, and chip sampled using moil and hammer. Sample intervals were generally 1.0 metre to 2.0 metres in length. The rock samples collected were handled, shipped, prepared and analyzed as for drill coreA summary of trenching and chip sampling results are provided in Table 9.2 for the Nightcrawler (NC) and Ridley Creek (RC). Samples 708658-708660 are from the 708 Zone.

**Table 9.2 – Trench and Chip Sampling Nightcrawler, Ridley Creek and 708 Zones**

Trench	Width (m)	WO <sub>3</sub> %	Comments	Trench	Width (m)	WO <sub>3</sub> %	Comments
NC-6A	2.7	0.13		BK-3	4.6	0.85	Open both ends
NC-6D	3.0	0.21		BK-4	4.0	0.12	Open both ends
RT-1	6.6	0.30	Open one end	BK-5	3.0	2.11	Open one end
RT-2	7.0	0.80	Open one end	BN-1	1.0	4.66	Open one end
RT-3	4.9	1.07	Open one end	BN-2	0.6	3.86	Open one end
RT-4	1.3	2.54	Open one end	BN-3	0.5	1.36	Open one end
RT-6	2.0	5.00	Open both ends	BN-4	0.8	1.63	Open one end
RT-6	2.0	4.36	RT-6 Repeat	BN-5	0.8	2.95	Open one end
RT-7	4.0	1.22	Open one end	708658	0.3	5.83	Open both ends
RT-1	1.0	0.57	Open one end	708659	0.3	2.51	Open both ends
RT-1	7.3	1.25	Full width	708660	2.0	1.52	Open both ends
RT-1	4.6	0.85	Open both ends				

Happy Creek conducted diamond drilling programs on the Ridley Creek (RC) Zone in 2011, 2012 and 2013. Results of these programs are discussed in section 10.0.

## 10.0 Drilling

Diamond drilling was conducted by Happy Creek in 2007, 2010, 2011-2013 and 2015 with a total 10,421 metres in 82 holes completed in four zones. Drilling utilized various rigs providing mainly NQ diameter drill core except in 2011, where drilling produced 415 metres of BQ drill core. All hole locations are surveyed using GPS, NAD83 UTM coordinate system with recorded accuracy of +/- 3 metres. In 2011, 8 holes at the RC Zone were surveyed using a differentially corrected GPS system. Comparison with original GPS locations showed most of the error in the elevation, and the east-west differences of <1.5 metres. In 2011 Dudley Thompson Mapping Corporation conducted an 84 km LiDAR (Light Detection and Ranging) survey. This airborne, remote sensing method provided highly accurate topographic mapping allowing for drill hole collars to be “pushed” down or up to correct most of the collar elevation coordinate errors.

In 2007, drilling of 13 widely spaced holes was completed at the *Nightcrawler Zone (NC)*. Two additional holes in the Nightcrawler and one reconnaissance hole further west were drilled in 2010, and 8 holes totaling 1500 metres were completed in 2015. Significant tungsten results are presented in Table 10.1 below.

**Table 10.1 – Nightcrawler Drill Results**

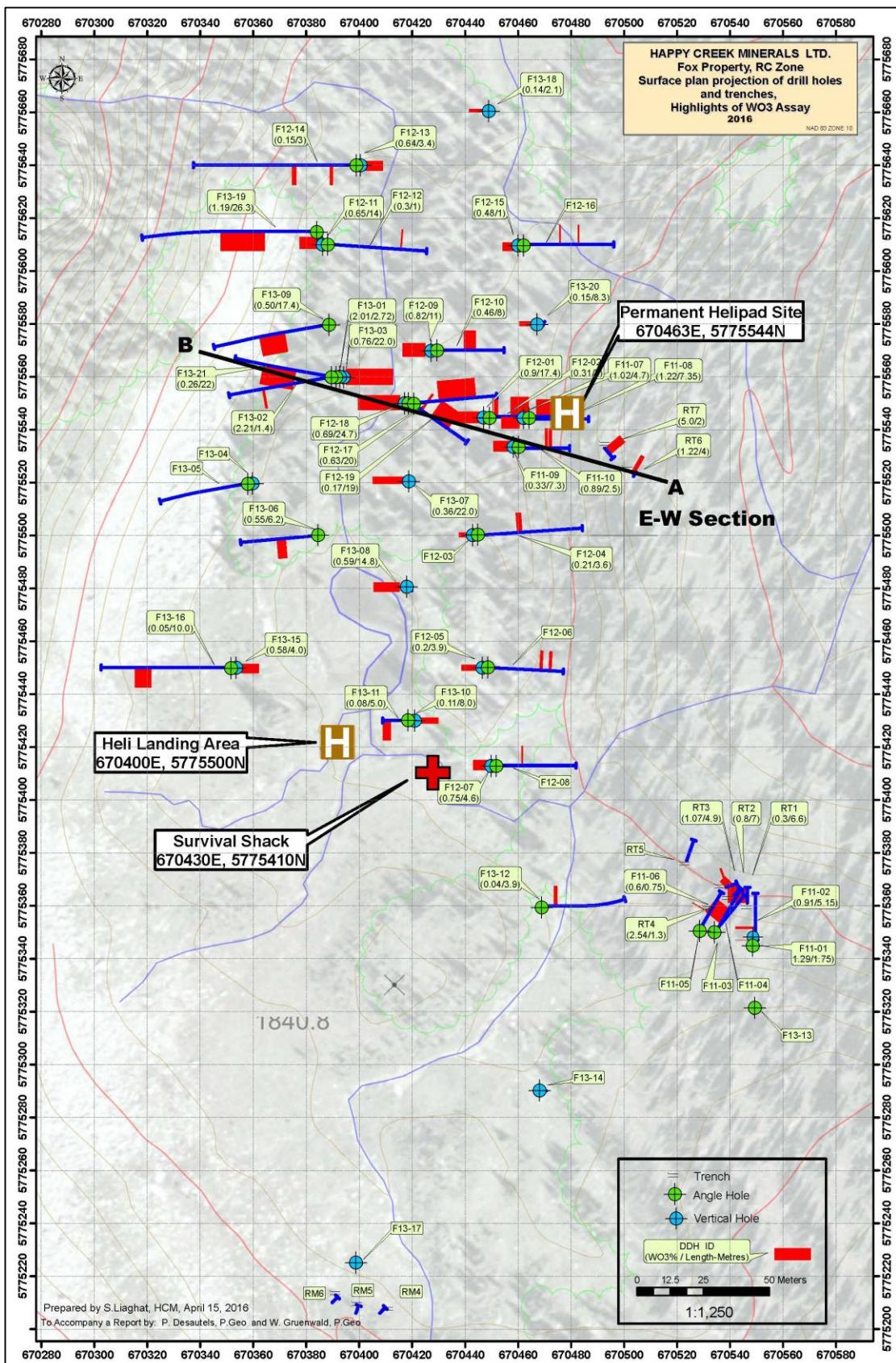
Zone	Drill Hole	From (m)	Interval (m)	WO <sub>3</sub> (%)
NC	F07-03	160.50	5.00	0.33
NC	F07-05	28.80	2.00	0.74
NC	F10-01	8.30	0.90	1.37
NC	F10-01	168.00	9.20	0.16
NC	F15-02	138.00	5.00	1.00
NC	F15-05	96.20	1.80	0.26
NC	F15-08	78.00	6.50	0.21

The Nightcrawler Zone is defined by multiple layers of tungsten-bearing calc silicate and positive tungsten in soil that is approximately 2.0 km in an east-west orientation at surface and around the southern contact of the Deception stock (Figure 9.1). Drilling has intersected positive tungsten in calc silicate layers that are up to 500 metres further south and down-dip of the surface mineralized zones. In 2015, the best grade result (5.0 metres of 1.0% WO<sub>3</sub>) was obtained near the Creek prospect, and reconnaissance hole F15-05 returned 1.8m of 0.26% WO<sub>3</sub> that is 450 metres further east. The Nightcrawler Zone remains undefined and open in extent.

On Deception Mountain, between 2011 and 2013, forty-eight holes totaling 3,278 metres were drilled at the *Ridley Creek (RC) Zone*. The drilling on the RC Zone is shown on Figure 10.1. A cross section that illustrates the geology and geometry of the mineralized zones is presented on Figure 10.2. Significant tungsten drilling results from the RC Zone are presented in Table 10.2.

**Table 10.2 – Ridley Creek Drill Results**

Zone	Drill Hole	From (m)	Interval (m)	WO <sub>3</sub> (%)
RC	F11 -08	8.30	12.40	0.74
RC	F12-01	14.00	19.40	0.82
RC	F12-09	15.00	11.00	0.80
RC	F12-11	27.00	14.00	0.68
RC	F12-17	20.00	20.00	0.63
RC	F12-18	18.00	24.70	0.68
RC	F13-03	20.00	22.00	0.76
RC	F13-07	12.00	22.00	0.36
RC	F13-08	12.00	14.80	0.59
RC	F13-09	31.70	17.40	0.50
RC	F13-19	31.80	26.10	1.19
RC	F13-21	24.00	22.00	0.26



**Figure 10.1– Drill Hole Location Plan – RC Zone**

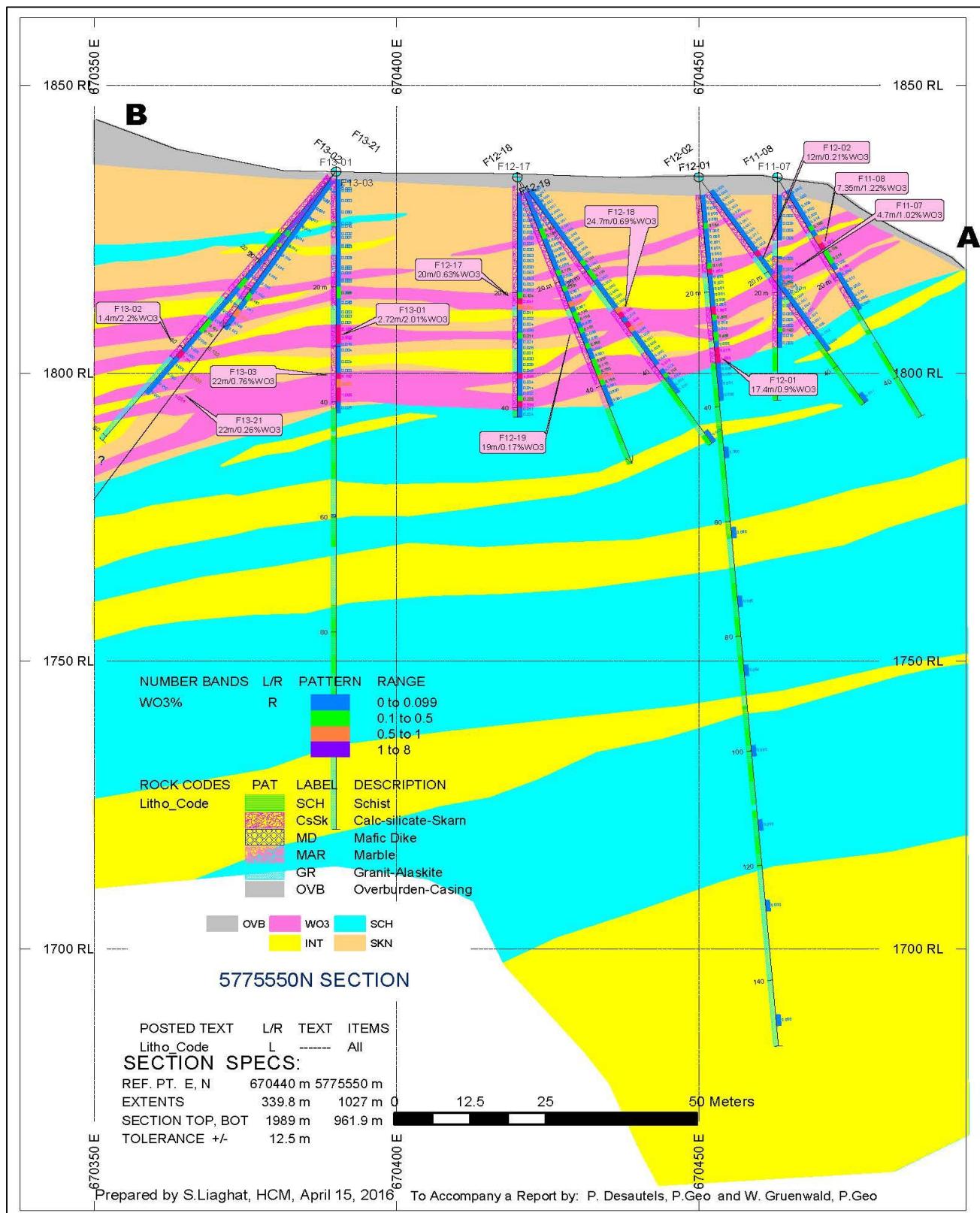


Figure 10.2 – RC Zone E-W Section

The RC Zone is approximately 350 metres by 175 metres in dimension, and remains open in extent to the north, south and northwest. The tungsten intersection in hole F13-19 (26.1 m grading 1.19% WO<sub>3</sub>) remains open to the northwest, beneath Deception Mountain. The RC Zone, the subject of the resource estimate, is more fully described in Section 14.

In 2012, five holes totaling 298 metres at the BK Zone and 5 holes totaling 859 metres at the BN Zone were also completed. Significant tungsten drilling results for the BN and BK Zones are presented in Table 10.3 below. It should be noted that due to the shallow dip of the mineralization, the intercepts true width are generally between 80% to 100% of the core lengths.

**Table 10.3 – BN and BK Zone Drill Results**

Zone	Drill Hole	From (m)	Interval (m)	WO <sub>3</sub> (%)
BN	F12-26	3.05	2.95	1.93
BN	F12-27	1.90	4.10	1.78
BN	F12-27	83.20	14.80	4.04
BN	F12-27	136.00	24.00	0.79
BN	F12-28	83.10	2.90	1.20
BK	F12-20	28.00	5.00	0.60

Drilling at the BN Zone tested outcropping mineralization with holes F12-25 to F12-29. Happy Creek believes that the drill hole F12-27 intercept is among the highest documented tungsten grade and thickness drill intercepts known. The mineralization intersected in F12-27 remains open in extent to the southwest. Reconnaissance hole F12-29, located approximately 150 metres northwest of the BN Zone, intersected 2.1 metres of 0.413% WO<sub>3</sub> and 0.3% zinc starting from 56.0 metres down hole. This is thought to potentially be a continuation of the surface zone in F12-27. More drilling is required to outline a deposit in this zone.

Five holes completed at the BK Zone intersected the favorable calc silicate unit seen in surface trenches. The best result from F12-20 returned 9.0 metres of 0.42% WO<sub>3</sub>, including 5.0 metres of 0.60% WO<sub>3</sub> that is approximately 50 metres from the BK trenches. In 2015 new outcrop sampling yielded 1.42% WO<sub>3</sub> over 1.0 metre. This mineralization is approximately 60 metres south along strike of the BK trenches and remains open in width. More detailed drilling is required to outline a deposit in this zone.

## **11.0 Sample Preparation, Analyses and Security**

Stream and soil samples were identified by their grid locations or sample code on kraft paper envelopes or fibre cloth bags. These were strung together and hung to partially dry and later bundled and placed into rice bags holding approximately 50 samples. The rice bags were tied closed, labeled, and prepared for shipping. Rock samples were cleaned of organic debris as much as possible, and placed into new plastic bags along with a sample tag, tied closed, and labeled with the sample number. These were placed into a large rice bag, tied, labelled, and prepared for shipping.

For drilling performed on Deception Mountain, core was initially logged utilizing a UV light (short wave length) and basic geology notes were taken at the drill prior to flying the core to camp. At the Fox core facility drill core depths were converted to metric and RQD was calculated (total length of core  $\geq$ 10cm in drilled interval stated in %). The core was then photographed. Select mineralized intervals would be photographed under UV light.

This was followed by detailed core logging and the marking of sample intervals by the geologist. Drill core descriptions include lithology, bedding angles, alteration minerals and intensity, sulphide mineral content, veining and fractures. Sample intervals were generally not greater than 2 metres and not less than 1 metre. Locally a few samples were greater than two metres but less than three metres in length. Lithology, alteration and mineralization also dictated sample breaks. Specific gravity measurements using weight of core in/out of water were performed as were magnetic susceptibility readings. The generally solid, unbroken and firm rock quality encountered while drilling and in the drill core resulted in over 95% recovery and an RQD of greater than 85 percent. Minor localized zones of generally less than a metre having RQDs of 65-85% and isolated cases of greater fracturing occur.

Drill core was longitudinally split in half using a diamond saw, or hand splitter with one half put in a new plastic sample bag and the other returned to the core box for future reference. All core boxes are stored in locked, large metal shipping containers on site. The author was able to view one of these container and the stored core.

All samples from the exploration programs were transported by Company representatives to 100 Mile House. From here shipments went by Greyhound Bus or Bandstra Transport who delivered the samples to either Acme Analytical Laboratories in Vancouver or Agat Laboratories in Burnaby, BC for sample preparation and analysis.

### **11.1 Analyses**

Once received by the laboratory, samples are inventoried, weighed and dried at 60°C. Silt, moss mat and soil samples are screened to obtain a -80 mesh fraction. Rock samples are first coarse crushed to pass through a 2mm (-10 mesh) screen. A portion (100 to 250 gm) is then pulverized using a ring pulverizer to -200 mesh. From this a 1.0-gram sample is digested in aqua regia. Element determination was by Induction Coupled Plasma (ICP – Acme 1999 to 2001), ICP - Mass Spectrometry (ICP-MS – Acme 2005 to 2008) and ICP-MS (Agat Labs 2009 to present).

Since aqua regia digestion is only partial for tungsten, those samples containing anomalous tungsten, or over limit by ICP-MS, were assayed using peroxide fusion digestion in triplicate. Some samples in 2007 were sent for neutron activation analysis (Act Labs) to check the peroxide fusion results however there was no significant difference.

Drill core for the RC Zone, the subject of this report, and from recent drill programs were analyzed at Agat Labs which is ISO/IEC 17025 and ISO 9001 accredited. Upon receipt samples are first logged into Agat's Laboratory Information Management System (LIMS) which monitors the progress of a sample's analysis throughout the laboratory process.

Samples are then weighed and dried (60°C) after which they are crushed so 90% of the material is a <2 mm (-10 mesh) particle size. A minimum 100-gram split is pulverized until 85% of the material passes is <75 µm (200 mesh). A sample of ~ 1.0 gram is digested with a 3:1 hot mixture of aqua regia (Nitric and Hydrochloric Acid) for one hour and then diluted to 50 ml with deionized water. An aliquot is analyzed for 51 elements utilizing a combination of ICP – Optical Emission Spectroscopy (ICP-OES) and ICP-MS (AGAT's method MIN-200-12018).

Samples within and adjacent a scheelite mineralized zone as indicated by UV light, were also analyzed using a 0.2-gram pulverized sample digested by peroxide fusion at 675°C for 20 minutes. This method utilizes sodium peroxide, a strong oxidizing reagent, to fully digest particle matrices especially those with high sulfide content and is considered a total digestion for tungsten. For each sample, the peroxide fusion analyses are performed in triplicate. A diluted aliquot is measured by ICP-OES (Agat MIN -200-12001). Samples that averaged over 0.60% W by the triplicate peroxide fusion were again re-assayed by Agat's Classic tungsten assay (XRF). Tungsten (W) is converted into  $\text{WO}_3$  using a factor of 1.261. The XRF assays generally compared favorably with the triplicate peroxide fusion assays however in some cases, the XRF results vary about ±15 to 20% from the average peroxide fusion results. Coarse grained scheelite minerals in the sample (nugget effect) are thought to account for the variance.

## **11.2 Quality Assurance and Quality Control Program**

Agat Labs implements quality assurance quality control protocols (QA/QC) consisting of randomly inserting blank, quality control solutions for instrument calibration verification, certified reference material (standards/CRM) and replicates, once in every group of 20 to 30 samples. In addition to Agat's QA/QC, Happy Creek Minerals undertook an independent QA/QC program involving systematic use of standards, blanks and duplicates. At intervals of generally 10 samples and in part 20 samples or less, a certified reference standard, blank (barren crushed limestone) or ¼ core duplicate was inserted into the sample stream by Happy Creek geologist. In addition, for every 60<sup>th</sup> sample, the laboratory created a duplicate pulp for a comparative analysis.

In December 2015, for quality control of the standard samples, 24 pulp samples that have been already analyzed for tungsten by aqua regia, were sent to the AGAT lab for triplicate peroxide fusion analyses. Five standard (CDN W-4) and four blank samples were prepared and sent to the lab for additional quality control of the standard samples. The lab results and evaluation of these two analytical methods show good correlation.

Review of the inserted reference standards from the 2013 and 2015 Fox drilling programs displayed a variance within -5 to +5% to the certified value which is considered acceptable. In addition, the inserted blanks (barren crushed limestone) did not display any anomalous or unexpected values.

The sampling procedures, analytical methods and QC procedures undertaken by Happy Creek indicate good sample data reliability. Since aqua regia digestion is partial for tungsten resulting in lower values on average; this method was restricted to soil and silt samples. This method however provided sufficient accuracy for identifying elevated tungsten for exploration purposes. For drill core, the aqua regia digest and ICP analyses provided multi-element geochemical data for zinc, gold, silver, indium and other trace elements that are often found with tungsten mineralization. In a number of cases where zinc values exceed 5,000 ppm zinc, a formal zinc assay was performed. For drill core of the mineralized zones, performing three to four tungsten assays per sample using a total digestion analyses are considered to provide good quality and precise results. In the database, the final  $\text{WO}_3$  assay represent the average value of the triplicate peroxide fusion analysis and the Agat XRF classical tungsten assays (converted to

tungsten trioxide). For the low grade sample analyzed solely with ICP the final  $\text{WO}_3$  assay represent the tungsten ICP value converted to tungsten trioxide.

In the author's (Gruenwald) opinion that sample handling, core logging, sampling and security protocols are at accepted industry or better standards and conform to generally accepted best practices. Sample quality is good and samples appear representative. This author concludes that Happy Creek's exploration and sampling practices and resulting data are suitable for the estimation of a NI 43-101 mineral resource estimate.

## 12.0 Data Verification

One of the authors, W. Gruenwald, P. Geo, was on the Fox property in 2010 during surface sampling programs on the RC Zone, the subject of this report. On September 14, 2015 the author was able to see diamond drilling in progress and to review the exploration sampling procedures, documentation, QA/QC and sample chain of custody. Since drill hole F15-02 was ongoing at the time the author had an opportunity to observe coring and core handling core at the drill. The drill collar location was also recorded by a handheld GPS unit. As part of the verification process the author was flown to the RC Zone to examine and GPS locate several trenches and drill holes. Two rock samples were collected from the RC Zone and one at the Creek Zone near the 2015 drilling. A duplicate core sample was also collected from drill hole F15-02 which was in progress. These samples were submitted to Acme Labs (Bureau Veritas-Vancouver) for analysis.

The author GPS located 10 drill collars, nine in the RC Zone and hole F15-02 at the Nightcrawler Zone. The difference in UTM easting and northing between the author's and Happy Creek's drill collar co-ordinates were from 0 to -7 metres and 0 to -3 metres respectively. This is satisfactory verification of the drill hole GPS data and therefore the author has no reason to doubt the accuracy of other drill hole locations.

The author's two rock samples from the RC Zone yielded low tungsten values. This is in line with the historic data. Table 12.1 displays the author's samples and the tungsten assays. Where known Happy Creek's assays are presented.

**Table 12.1 – Sample Results (W. Gruenwald, P. Geo)**

Sample No.	Description	Tungsten % (WG)	Happy Creek W Assay %
WRC-01	1.2 m chip sample from Trench RT-5	<0.01	No tungsten in this trench
WRC-02	Grab sample near hole F11-06	<0.01	Near collar core sample <0.005% W
WC-02	Chip sample (0.5m) Creek showing	2.51	0.77% (from closest rock sample in area)
WS-01	Duplicate core cut from hole F15-02 (139.02 to 139.85m)	0.88	TriPLICATE assays = 0.90; 0.922; 0.895%

Tungsten assays from the author's sampling compare favourably with results obtained by Happy Creek. The higher tungsten assay in the author's sample WC-02 is likely due to localized scheelite concentrations (nugget effect). The duplicate core assay compared exceptionally well with the Happy Creek data.

During the author's (Gruenwald) review assessment reports and assay files were examined for the comparison between analytical data and laboratory assay certificates. There were no instances of discrepancies noted. It is this author's opinion that the data acquired from drilling campaigns on the RC Zone is valid and satisfactory for the purposes of the Resource Estimate.

In addition to the above verifications, AGP spot checked the assay data prior to interpolating the resource estimate. AGP did not independently validate the database; however, spot checks on a limited number of high-grade assays exceeding 0.25% WO<sub>3</sub> against the original assay certificate provided by Happy Creek. The validation covered 58 assays out of 1,329 representing 4.4% of the entire assay database in proximity to the mineral resource. The database was found to be error free for the samples that were checked. Lastly, the conversion equation used to calculate the WO<sub>3</sub> % content from the W% assays provided by the laboratory was checked and found to be correct.

AGP also found a small discrepancy between the drillhole elevation and the Lidar surface. For this resource estimate the Lidar elevation was considered more accurate and the drill hole collar elevation were adjusted to coincide with the topography.

It is the author's opinion that there appear to be no material sampling or analytical errors to materially change or affect the current stage of property evaluation and the database is of sufficient quality to be use in the resource estimation.

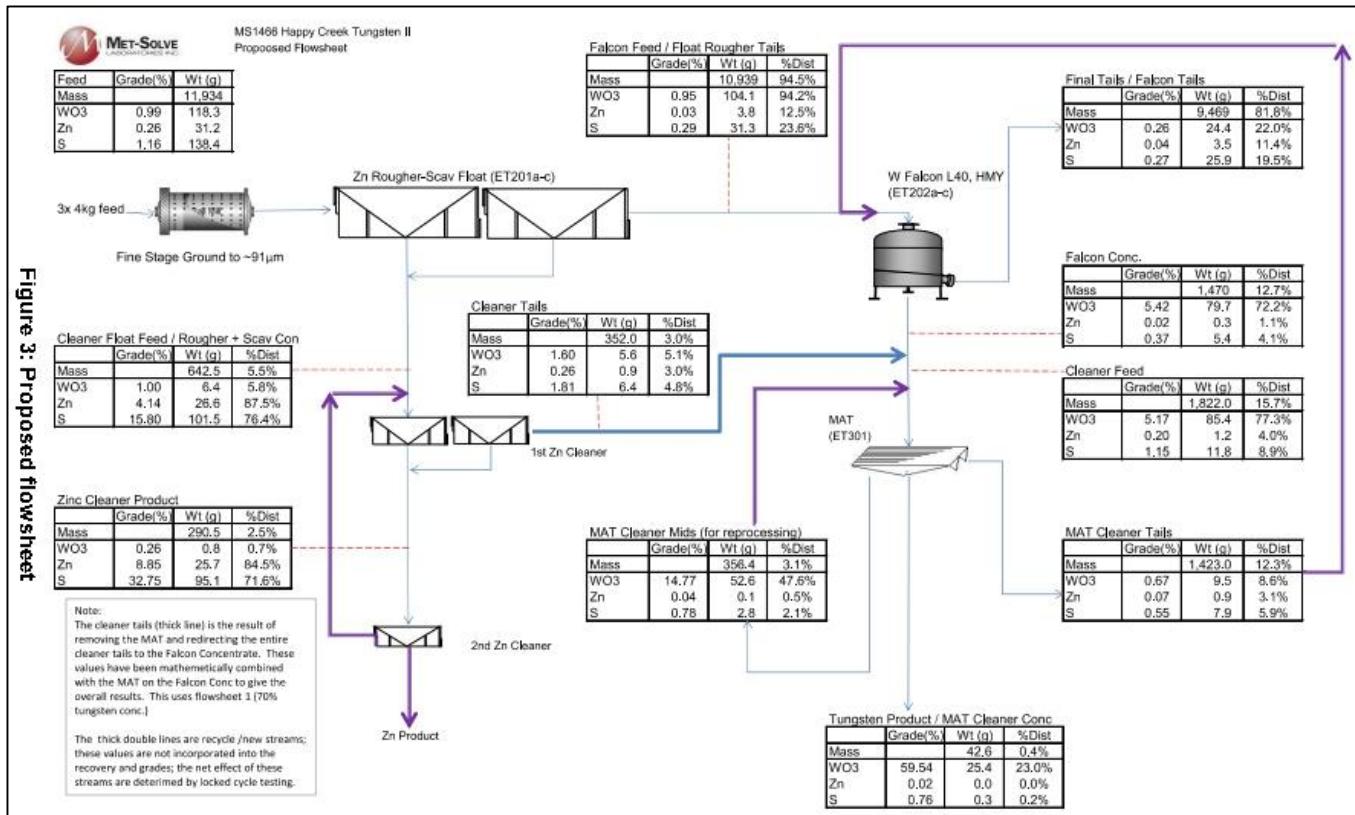
### **13.0 Mineral Processing and Metallurgical Testing**

In 2012, Happy Creek conducted preliminary metallurgical and mineralogical testing of a surface sample collected from drill and blasting of outcrops at the BN, RC and BK Zones. The 816 kg composite sample was trucked directly to Met Solve Laboratories of Langley, British Columbia.

A dried and coarse crushed subsample was taken from each sack of the shipment for an assay. A composite for the test programs was created from all the sample sacks. The weight and head assays from each individual sack, as well as the mass composition of each sample zone was used to create the Fox composite. The bond work index (BWI) for the material was determined to be 12.7 kWhr/tonne. The results from the Phase I study indicated flotation to recover zinc, followed by gravity concentration to recover tungsten was a workable solution. A target grind size was also identified.

A Phase II test included a larger sample for processing and cleaner stages were added to produce high-grade tungsten and zinc products. The results of this test program were used to design a locked cycle test flow sheet. Gold, silver and indium deportment were monitored in the program.

At the current stage of the project, the preliminary, first-pass metallurgical testing used a combination of flotation to separate sulphides, followed by Falcon concentrator and Tables (gravity) that produced an initial cleaner concentrate grading 59.54% WO<sub>3</sub> in 23.2% of the mass, and an additional middling product with 14.77% WO<sub>3</sub> in 47.6% of the mass which can be recycled back upstream for re-processing (Figure 13.1). Together these two products contain 70.8% of the tungsten.



**Figure 13.1 – Metallurgy Proposed Flow Sheet**

For the first stage of metallurgical testing, this method is thought to have potential to produce a concentrate having acceptable commercial grades. The tungsten concentrate has no deleterious metals associated with it that would prevent its ability to be sold. A by-product of zinc containing gold, silver and indium is also potentially achievable. Additional work with a larger sample size is required to improve the process design of the locked cycles to optimize product grade and recovery.

In 2015, another sample of approximately 400 kg was collected from the face of the RC Zone and submitted to SGS laboratories of Vancouver, B.C. The test work is on-going and includes heavy liquid separation, QEMSCAN, mineralogy, testing of scheelite liberation versus grind size, flotation and magnetic separation. Final results of this work are pending.

## **14.0 Mineral Resource Estimates**

AGP completed a first time mineral resource estimate for the RC Zone of the Fox Tungsten Project (Fox Project) held by Happy Creek Minerals Ltd. (Happy Creek). The project is located approximately 25 km east of the former Boss Mountain molybdenum mine, and approximately 70 km northeast of 100 Mile House in the South Cariboo region of British Columbia, Canada. Geovia's GEMS Version 6.7.2™ software was used for the resource estimate, in conjunction with SAGE 2001™ for the variography. The reasonable prospects constraining Lerchs Grossman (LG) pit shell was generated using the MSOPit routine with MineSight version 10.5. The metal of interest at the Fox Project is tungsten, with minor quantities of molybdenite that was not estimated.

### **14.1 Data**

On November 26, 2015, Happy Creek Minerals provided AGP with a project database consisting of:

- laboratory assay certificates in digital format for samples of soils, rocks, trenches, and drill holes
- drill data comprising the following:
  - drill hole collar surveys, lithology, assays, and RQD
  - silts, soils, and rocks point database
  - maps and section interpretations in PDF format
- LiDAR topography 2012, in 24 sheets covering the entire area.

AGP imported the collar data, down-the-hole survey data, lithology, and assays in the GEMS database. Imported data was checked for overlapping, missing and negative length intervals. A minor number of database records needed adjustment.

On December 22, Happy Creek supplied AGP with a revised Excel spreadsheet detailing the  $\text{WO}_3$  (tungsten trioxide) percentage calculation of the final assay along with the QA/QC data. AGP checked the values previously imported in the GEMS database against the data provided in the spreadsheet and found five entries that required correction.

Since the data was fully validated by Warner Gruenwald of Geoquest Consulting P. Geo. QP on this report, AGP did not independently validate the database; however, as indicated in section 12, spot checks on a limited number of high-grade assays exceeding 0.25%  $\text{WO}_3$  (58 out of 1,329 assays) were compared against the laboratory Excel spreadsheet files provided by the client with no error detected. Lastly, the conversion equation used to calculate the  $\text{WO}_3\%$  content from the W% assays provided by the laboratory was checked and found to be correct.

No further additions were made to the database after December 22, 2015, which constitutes the official data cut-off date for this resource estimate. For the Fox Project, RC zone, a total of 49 core holes and 13 trenches exist in the database; of these, 48 core holes and 10 trenches contributed to the grade estimation.

Table 14.1 shows a summary of the number of holes and assays used in the resource estimate. A complete list of the holes can be found in Appendix B of this report.

**Table 14.1: Summary of Number of Holes Used in the Resource Estimate**

Type	Number of Holes	Total Length (m)	Number of Assays	Total assayed (m)
<b><i>In proximity to the resource estimate</i></b>				
Core hole	48	3,253	1,277	1,818
Trench	10	64	52	58
Subtotal	58	3,317	1,329	1,876
<b><i>Exploration and abandoned holes (not used for resource estimation)</i></b>				
Core hole	1	30	16	28
Trench	3	21	14	20
Subtotal	4	51	30	48
<b><i>Total in Database</i></b>				
<b>Grand Total</b>	<b>62</b>	<b>3,368</b>	<b>1,359</b>	<b>1,924</b>

The 2012 LiDAR topography polylines provided by Happy Creek were imported into the database, and a large 3D surface was created using the index contour and the spot height points. A smaller, more precise 3D surface covering the block model was generated using the index and intermediate contour lines along with the spot elevation data.

According to Happy Creek, the drill hole collar elevations were field-surveyed using a hand-held GPS unit. When compared to the LiDAR topography, the collar elevations ranged from 5.66 m below to 4.56 m above the LiDAR topography, with an average difference of 0.14 m above the LiDAR surface. For this resource estimate, the LiDAR topography was assumed to be correct, and all drill hole collar elevations were changed vertically to coincide with the topography.

Happy Creek sampled rock cuts at four locations. The sampling sites are entered in the database as trench data, and are labelled RM-(1 to 6) and RT-(1 to 7). Two sampling sites affected the resource estimate. In the southeast end of the property, the average grade posted for the RT-1, -2, -3 and -4 trenches is higher than the average grade from the core holes F11-01, -04, and -06 drilled in proximity. In the center portion of the deposit, the average grade of the RT-6 and -7 appear somewhat similar to the average grade present in the nearby F11-10 hole.

Despite these differences, AGP included the trench data in this resource estimate because:

- the drill holes are not true twins of the trench data
- the grade of the deposit shows a fair variability over short distances
- the ratio of trench data to nearby drill holes is low, and the differences are not statistically significant.

## 14.2 Geological Interpretation

At the RC Zone, the mineralization is located almost exclusively in the calc-silicate unit (CSSK). This lithological unit overlies a schist unit (SCH). The project is intruded by granite sills (GRA), which can cut across both the CSSK and SCH units. The high-grade mineralization is located near the bottom contact of the CSSK unit. The granite bears some tungsten mineralization; however, AGP believes that this is due to alternating GRA with minor CSSK lithology logged as GRA. The 3D wireframes developed to control the grade interpolation of the resource model were based primarily on lithologies. During the construction of the wireframes, the goals were to:

- ensure that no grade was interpolated in the SCH unit
- ensure that the granite sills were accounted for in the final volume report as either dilution or waste, with the correct grade assigned to the volume
- ensure that the tungsten mineralization honoured the raw assay distribution, and was kept close to the CSSK/SCH boundary without smearing vertically in the lower grade/waste areas of the CSSK unit.

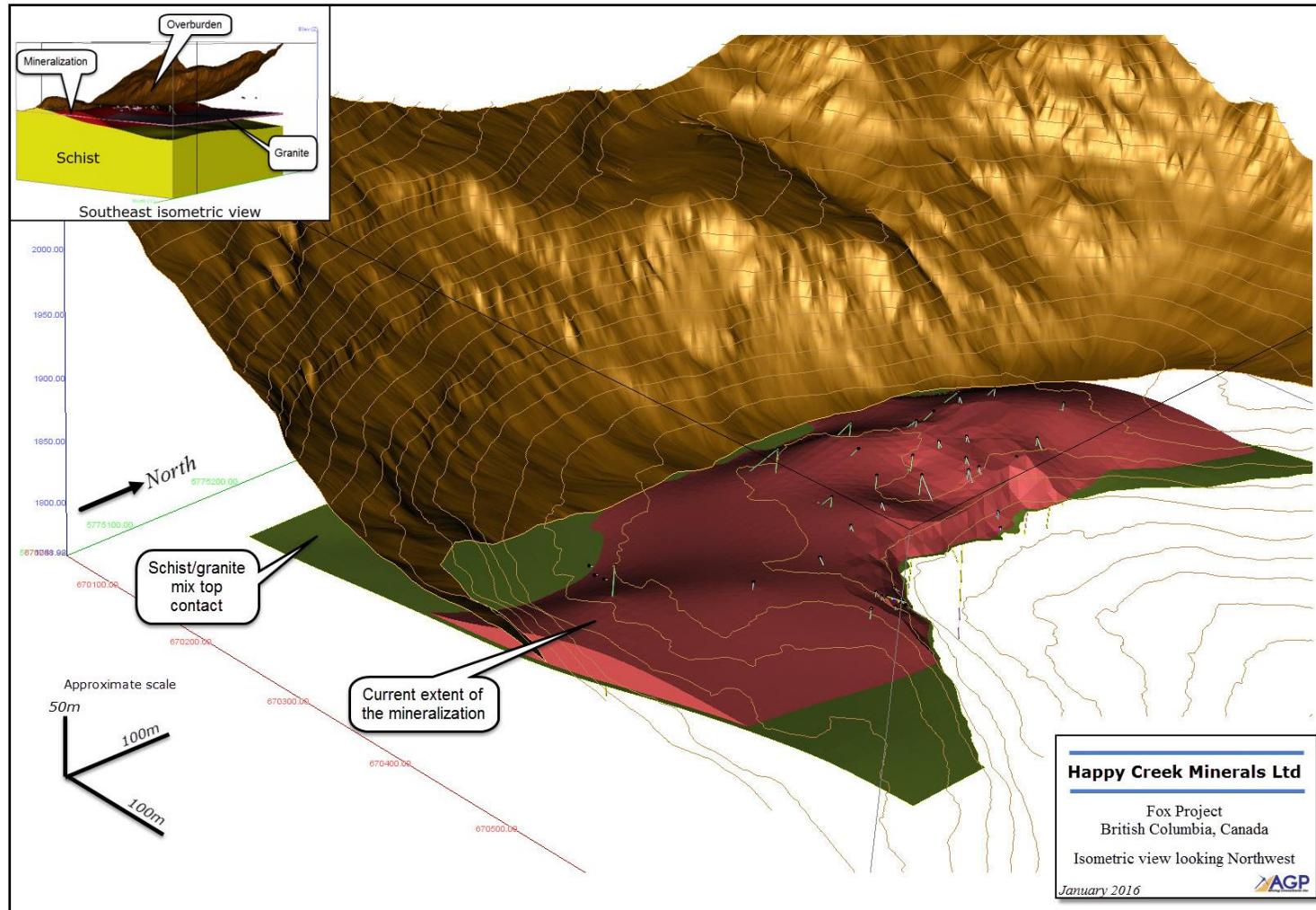
In order to achieve these goals, the geological wireframes were constructed in steps as follow:

1. The CSSK bottom surface was created using the lithological CSSK/SCH contacts from the drill holes. The surface creation utilized a combination of Laplace gridded surface with the interpreted data points saved to the database. The original and interpolated data were then used to create the final surface, which honoured the location of the CSSK/SCH contact in the drill holes.
2. The two primary granite sills were modelled in GEMS using top and bottom surfaces describing the contact between the GRA/CSSK unit. The surface creation used the same methodology as the CSSK bottom surface described above. Once completed, the top and bottom contacts were then “stitched” together to create the 3D granite wireframes. Three others minor granite intersections in the drill holes were modelled using conventional polylines and tie lines.
3. The overburden surface was constructed by creating a 10 m x 10 m Laplace transform grid of the overburden thickness. The overburden thickness was subtracted from a matching 10 m x 10 m grid of the topographical elevation to create the final overburden surface. In the drill holes, the overburden thickness ranges from a minimum of 0.05 m to a maximum of 3.44 m, averaging 2.01 m. The Laplace interpolated overburden thickness ranges from 0.01 m to a maximum of 2.93 m, averaging 1.25 m. As with all other digitally interpolated overburden surfaces, areas protruding above the topography were lowered below the topography by 0.5 m.

In order to limit the grade interpolation to a reasonable distance beyond the last drill holes, a mineralized wireframe was constructed. This wireframe limits the grade interpolation to an area extending vertically from the CSSK/SCH contact up to the start of the sampling in the drill hole database. Laterally, the mineralized zone tapered to the west, with the maximum reach beyond the most westerly drill hole set between 75 m and 100 m. On the east side of the deposit, the mineralized zone outcrops to surface. All blocks in the resource model outside this mineralized zone were not interpolated.

### **14.3 Wireframe Volume**

The total wireframe volume of the mineralized zone amounted to 2,154,000 m<sup>3</sup>, including the granite sills contained within its boundaries. Figure 14.1 illustrates the position of the mineralized wireframes in relation to the overburden and the schist unit.



**Figure 14.1: Position of the 3D Wireframes**

## 14.4 Exploratory Data Analysis

Exploratory data analysis is the application of various statistical tools to characterize the statistical behaviour or grade distributions of the data set. In this case, the objective is to understand the population distribution of the grade elements in the various domains using such tools as histograms, descriptive statistics, and probability plots.

### 14.4.1 Assays

The raw assay statistics were evaluated, grouping all assays intersecting the various lithologies. Table 14.2 provides descriptive statistics for raw, uncapped WO<sub>3</sub>% assays in the calc-silicate (CSSK), granite (GRA), schist (SCH) and marble (MAR) units.

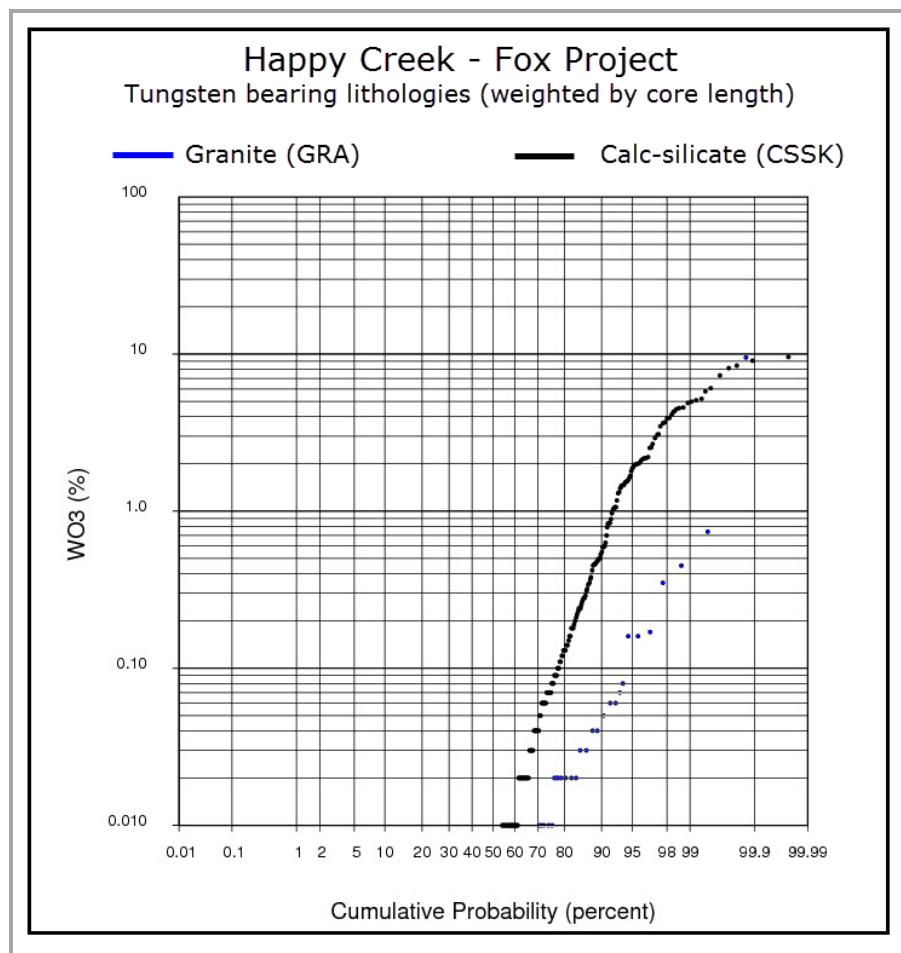
**Table 14.2: Descriptive Raw Assay Statistics (WO<sub>3</sub>%, uncapped)**

	All Data WO <sub>3</sub> %	CSSK WO <sub>3</sub> %	GRA WO <sub>3</sub> %	SCH WO <sub>3</sub> %	MAR WO <sub>3</sub> %
Valid cases	1,359	906	212	161	56
Mean	0.172	0.243	0.059	0.002	0.015
Variance	0.676	0.899	0.429	0.000	0.005
Std. Deviation	0.822	0.948	0.655	0.006	0.072
Coefficient of Variation (CV)	4.769	3.896	11.136	3.106	4.656
Relative CV (%)	12.937	12.943	76.486	24.475	62.215
Minimum	0.000	0.000	0.000	0.000	0.000
Maximum	9.596	9.596	9.510	0.050	0.536
1 <sup>st</sup> percentile	0.000	0.000	0.000	0.000	-
5 <sup>th</sup> percentile	0.000	0.000	0.000	0.000	0.000
10 <sup>th</sup> percentile	0.000	0.000	0.000	0.000	0.000
25 <sup>th</sup> percentile	0.000	0.000	0.000	0.000	0.000
Median	0.001	0.003	0.000	0.000	0.001
75 <sup>th</sup> percentile	0.010	0.024	0.006	0.001	0.006
90 <sup>th</sup> percentile	0.158	0.349	0.028	0.006	0.019
95 <sup>th</sup> percentile	0.620	1.540	0.063	0.006	0.060
99 <sup>th</sup> percentile	4.550	5.078	0.708	0.044	-

Statistically, the CSSK lithology hosts the bulk of the mineralization. As stated earlier, the granite displays some low-grade values. The overall average grade in the granite is high, but this is mostly dependent on a few outlier values above the 99<sup>th</sup> percentile. There is no significant mineralization in the SCH or MAR lithologies.

Frequency distribution raw assays within the CSSK and GRA domains (Figure 14.2) shows a lognormal distribution, with 95% of the WO<sub>3</sub>% values below 2% in the CSSK domain. The probability plot also clearly shows that the granite is a separate domain.

**Figure 14.1: Weighted WO<sub>3</sub> Probability**



## 14.5 Capping

A combination of decile analysis and a review of probability plots was used to determine the potential risk of grade distortion from higher grade assays. A decile is any of the nine values that divide the sorted data into ten equal parts, such that each part represents one tenth of the sample or population. In a mining project, high-grade outliers can contribute excessively to the total metal content of the deposit.

Typically, in a decile analysis, capping is warranted if:

- the last decile has more than 40% metal
- the last decile contains more than 2.3 times the metal quantity contained in the penultimate decile
- the last centile contains more than 10% metal
- the last centile contains more than 1.75 times the metal quantity contained in the penultimate centile.

The decile analysis results indicated that grade capping was warranted.

In *Applied Mineral Inventory Estimation* (Cambridge University Press, 2002), Alistair Sinclair states that, in a geological context, outliers represent a separate grade population characterized by its own continuity; generally,

the physical continuity of high grade is much less than that of the more prevalent low grades. Thus, serious overestimation of both tonnage and average grade above a cut-off can occur if the same interpolation methodology for a model, normally dominated by the lower, more continuous grades, is applied to very high-grade values. The problem becomes acute when high grades are isolated in a field of lower values.

After conducting a careful examination of the data set, AGP elected to use a twofold approach:

- apply a high hard cap on the raw assay prior to compositing
- impose a sample search restriction on the “mild” outliers population.

The grade capping strategy used has the benefit of limiting grade distortion from extreme outliers while restricting the range of influence of the “mild” high-grade outliers, applying the principle that true outliers generally have restricted physical continuity and do not extend much beyond a short distance from where they are located. In essence, the high-grade values are acknowledged in the model, but their spatial influences are limited.

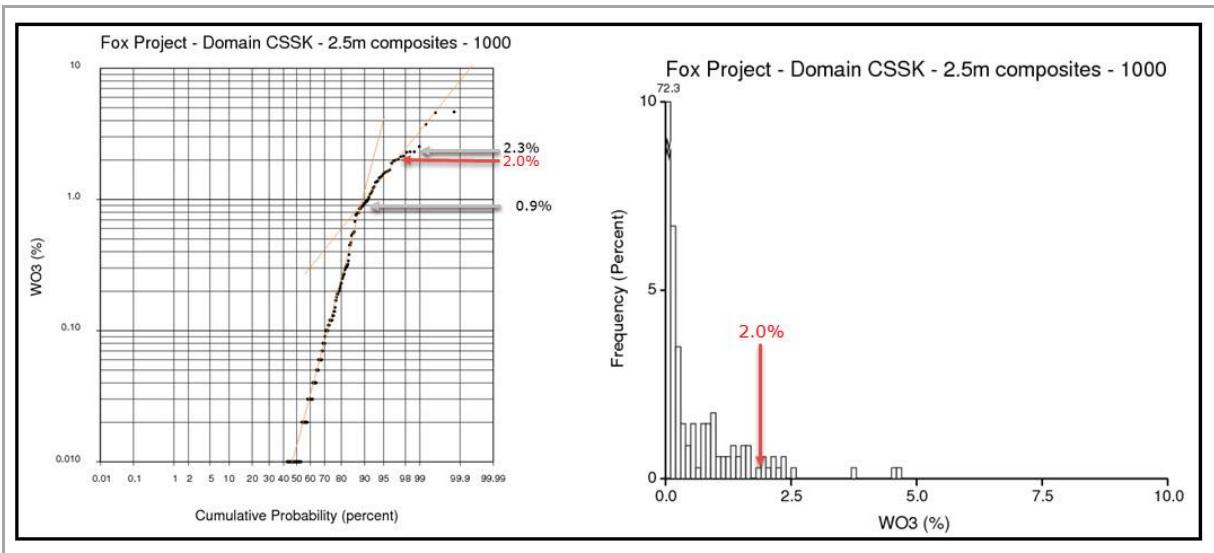
#### **14.5.1 Raw Assay Capping**

Table 14.3 shows a summary of the treatment of high-grade outliers during the interpolation. The selected cap value of 6.5% and 0.6 % WO<sub>3</sub> for the CSSK and GRA domains were above the 99<sup>th</sup> percentile of the raw assay distribution, and should affect between 1% and 3% of the metal content. The raw assay capping scenario reduced the CV from 3.9 down to 3.8 for the CSSK domain, and from 11.1 down to 4 for the GRA domain. The CV of the capped raw assays remains high for linear interpolation methods. Once that data was composited at 2.5 m (as described in below) the CV was further reduced by 0.8 down to 3.0 for the CSSK domain, and by 1.0 down to 3.0 for the GRA domain.

#### **14.5.2 Search Restriction Threshold Grade and Range**

The search threshold was set in the CSSK domain by sequentially trimming the top of the composite distribution (>0.001%) in 0.5% increments (starting at the cap value) until the trim level reduced the CV to 2.0. This trim level was then used to set the threshold grade for the search restriction. The value of 2% WO<sub>3</sub> suggested by this methodology was then validated against probability plots and histograms, as shown in Figure 14.3.

**Figure 14.2 Search Restriction Threshold Value**



The selected search restriction ranges of 40 m, 30 m, and 15 m corresponded to the ranges displayed by the variogram at about 93% of the sill value.

**Table 14.3 High Grade Treatments**

Domain	Raw Assay Capping				Composite Search Restriction			
	Raw Assay Cap Value	Number of Assays Affected	Total Number of Assays	Percent of Assays Affected (%)	Composite Grade Threshold	Number of Composites Affected	Total Number of Composites	Percent of Composites Affected (%)
CSSK (1000)	6.5	5	959	0.5	2.0	10	523	1.9
GRA (2000)	0.6	2	169	1.2	N/A	N/A	N/A	N/A

#### 14.5.3 Total Metal Affected by the Treatment of Outliers

Total metal affected by the treatment of outliers was evaluated in the final model. At the selected 0.1%  $\text{WO}_3$  cut-off, the capping strategy removed 16.5% of the metal in the Indicated and Inferred categories, as shown in Table 14.3. Overall, at the 0 cut-off, 14.9% of the metal was removed from the model.

**Table 14.4 Metal Removed by Capping Strategy (Indicated + Inferred category)**

Grade Bins ( $\text{WO}_3\%$ )	Cumulative $\text{WO}_3$ MTU Removed Overall (MTU)	Cumulative Percent of Metal Removed Overall (%)
>0.30	93,713	21.0
>0.20	99,015	19.4
>0.15	96,114	17.7
>0.10	95,312	16.5
>0.00	92,699	14.9

## 14.6 Composites

### 14.6.1 Sampling Length Statistics and Composites for Veins

Happy Creek preferentially samples the drill core in either 1 m or 2 m intervals. There are 21 samples above 2.0 m out of 959 (2%). Out of those, 11 were above 2.25 m. Sampling intervals averaged 1.37 m in the CSSK lithology, and 1.32 m in the GRA lithology, with a median of 1 m, and an upper third quartile of 2 m. AGP elected to use a composite length of 2.5 m. The composite size selected is above the third quartile, and allows grade variations to be represented while reducing the variance.

Assays were length-weighted averaged, and any grade capping was applied to the raw assay data prior to compositing. True gaps in sampling and samples below detectable limits were composited at zero grade. There was no stope void, drift, or other underground excavation that needed to be considered while compositing the raw assays.

The 2.5 m composite intervals were created moving downward from the collar of the holes toward the hole bottoms. Composites lengths are automatically adjusted by the software to leave no remnants. The adjustment resulted in composite lengths ranging between 1.30 m and 3.50 m, with 84% of the composites ranging between 2.25 m and 2.75 m. Table 14.5 shows the descriptive statistics for composites.

**Table 14.5 Descriptive Statistics for Composites (WO<sub>3</sub> % Capped)**

	All (CSSK+GRA) WO <sub>3</sub> %	CSSK WO <sub>3</sub> %	GRA WO <sub>3</sub> %	Composite Interval Length (CSSK+GRA) meter
Valid cases	636	523	113	636
Mean	0.140	0.166	0.021	2.48
Variance	0.218	0.260	0.004	0.07
Std. Deviation	0.466	0.510	0.065	0.26
Coefficient of Variation (CV)	3.320	3.066	3.067	0.11
Relative CV	13.165	13.408	28.856	0.42
Minimum	0.000	0.000	0.000	1.30
Maximum	4.651	4.651	0.457	3.50
1 <sup>st</sup> percentile	0.000	0.000	0.000	1.60
5 <sup>th</sup> percentile	0.000	0.000	0.000	2.04
10 <sup>th</sup> percentile	0.000	0.000	0.000	2.20
25 <sup>th</sup> percentile	0.000	0.000	0.000	2.38
Median	0.003	0.004	0.001	2.49
75 <sup>th</sup> percentile	0.028	0.036	0.010	2.59
90 <sup>th</sup> percentile	0.282	0.455	0.038	2.74
95 <sup>th</sup> percentile	0.953	1.154	0.142	2.87
99 <sup>th</sup> percentile	2.304	2.313	0.448	3.30

## 14.7 Bulk Density

Happy Creek provided 482 bulk density samples collected in, or in proximity to, the mineralized zones. Samples were weighted using a conventional portable scale modified to allow the samples to be weighed dry on the platen and then re-weighed in a cradle suspended in a bucket of water. Core samples were reportedly solid, and did not require coating with paraffin or shellac.

The 482 samples collected averaged 2.83 g/cm<sup>3</sup>. The mineralized zones contain significant sulphide minerals in various lithologies, and it was therefore deemed prudent to investigate the average bulk density for each of the lithological units. The bulk densities for the CSSK, GRA, MAR, and SCH averaged 2.87, 2.68, 2.73, and 2.82 g/cm<sup>3</sup>, respectively. A simple regression linking the WO<sub>3</sub> grade with the bulk density did not produce meaningful results. Plotting the bulk density by grade bins indicated that a weak link may be present, but the correlation is not obvious.

Since there is a small mixing of lithologies within the domains, AGP elected to assign the bulk density for each domain using a bulk density weighted by the count of each of the lithologies within the domains (compositional count weighted average).

For the overburden (OVB), the bulk density was estimated to be equivalent to “broken” CSSK, reduced by 10% to account for soils. The term “broken” in this context is equivalent to 62% of the measured bulk density of the unbroken material. The formula used is therefore

$$2.865 \text{ g/cm}^3 * ((62-10)/100) = 1.4898 \text{ (rounded to 1.500)}$$

From the data provided, AGP assigned the average bulk density by zones as indicated in Table 14.6.

**Table 14.6 Bulk Density by Domains**

Domain	Bulk Density (g/cm <sup>3</sup> )
OVB	1.50
CSSK	2.865
GRA	2.695
MAR	2.731
SCH	2.793

## 14.8 Spatial Analysis

Geostatisticians use a variety of tools to describe the pattern of spatial continuity, or strength of the spatial similarity of a variable with separation distance and direction. If we compare samples that are close together, it is common to observe that their values are quite similar. As the distance between samples increases, there is likely to be less similarity in the values.

### 14.8.1 Variography

The experimental variogram mathematically describes this process. It is commonly represented as a graph that shows the variance in measurements with distance between all pairs of sampled locations.

In all semi-variograms, the distance where the model first flattens out is known as the range. Sample locations separated by distances closer than the range are believed to be spatially auto-correlated. The sill is the value on the Y-axis where the model attains the range, while the nugget is the value at the location where the model intercepts the Y-axis. The nugget typically represents variation at a micro scale that can be attributed to measurement errors, sources of variation at distances smaller than the sampling interval, or both. Therefore, the shape of the semi-variogram describes the pattern of spatial continuity. A very rapid

decrease near the origin indicates short-scale variability. A more gradual decrease moving away from the origin suggests longer-scale continuity.

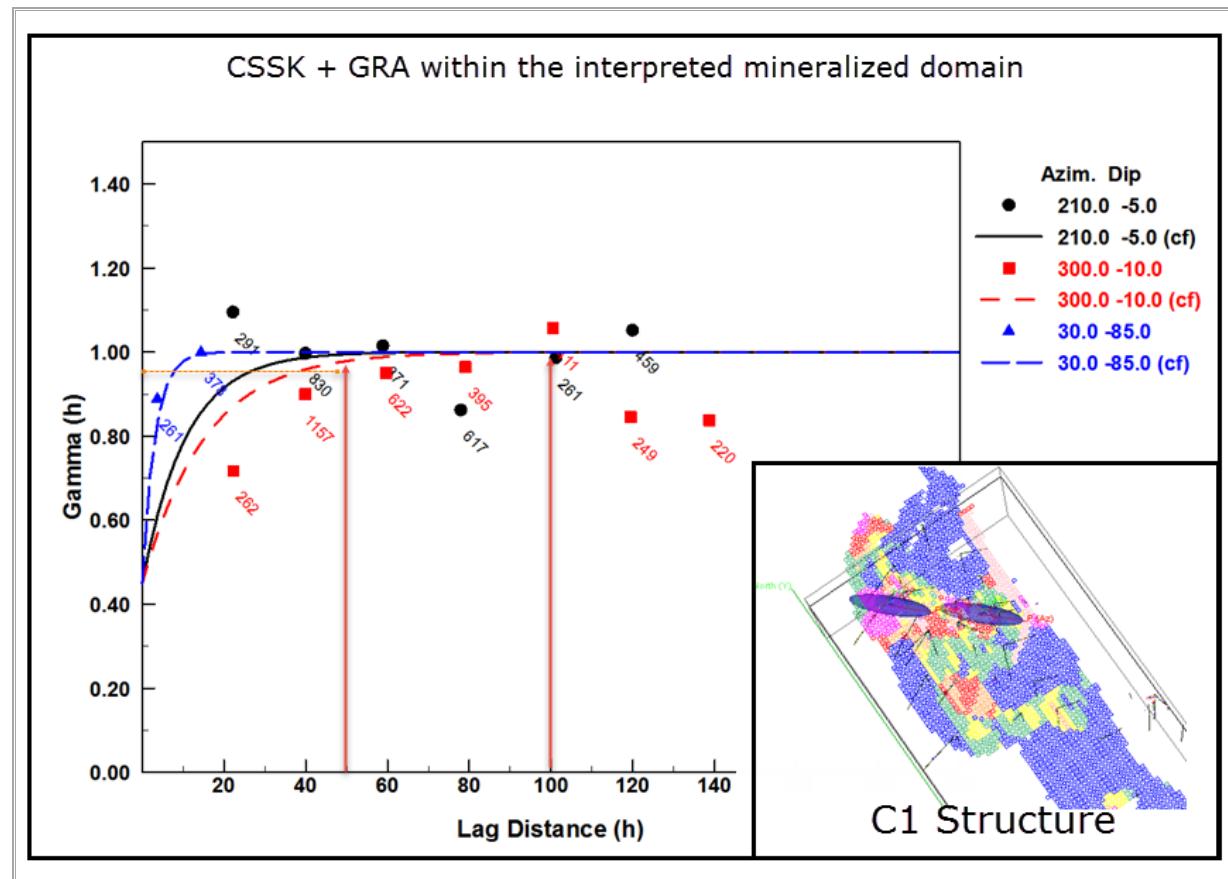
Various semi-variogram types exist; using SAGE 2001™ software, experimental correlograms for WO<sub>3</sub> in the combined CSSK, and GRA lithology within the interpreted mineralized wireframe were computed in 73 directions from the composites for the RC Zone. The azimuth, dip angle, and lag distances were optimized to coincide with orientation of the deposit and the preferred drill angles. Nugget component was derived from the down-hole variogram.

A reasonable variogram was obtained using the three dimensional data. The resulting anisotropy models generated by SAGE 2001™ were visually inspected in GEMS 6.7.2™. The anisotropy ellipsoid model corresponded well with the expected orientation of the deposit.

The effective range at 97% of the sill along the apparent plunge of the mineralization is about 52 m. The nugget effect is moderate, at 45% of the sill value. At 100% of the sill, the maximum range is short of 100 m. The definition of the variogram near the origin was poor, but is expected to improve with the addition of drill holes. Figure 14.4 illustrates the final variogram, along with a 3D isometric downward view of the ellipsoid generated by SAGE software.

The direction and plunge represented by the variogram coincide with the known interpreted plunge of the mineralization at the RC Zone. The variography is considered sufficient to correctly represent the trend of the mineralization. As a result, AGP elected to interpolate the grade model using ordinary kriging.

**Figure 14.3 Variogram**



#### 14.8.2 Search Ellipsoid Dimension and Orientation

While it is common to use the variogram model as a guide to set the search ellipsoids' ranges and attitudes, the geologist modelling the deposit must consider the strike and dip of the mineralized horizon and the drill hole spacing and distribution. For this model, AGP used the overall geometry as confirmed by the variography, along with the CSSK bottom contact, as guiding principles to set the search ellipsoid orientation.

The first pass maximum range was sized to reach at least the next drill section. A 1.8 x multiplier (from Pass 1) was used to set the range of the second pass. The maximum range for the second interpolation pass did not exceed the range displayed by the variogram at 97% of the sill. Lastly, a 1.8 x multiplier (from Pass 2) was used to set the range for the third interpolation pass, which reached the maximum range displayed by the variogram.

Due to the undulating nature of the CSSK bottom contact, four sub-domains were delineated. The sub-domains allowed for rotation of the search ellipsoid, in order to optimize the sample search with the orientation of the zones without resorting to unfolding methodology. For the GRA domains, the search ellipsoid was oriented to best represent the orientation of the sill. The orientation sub-domains were coded 10, 20, 30, 40, and 50.

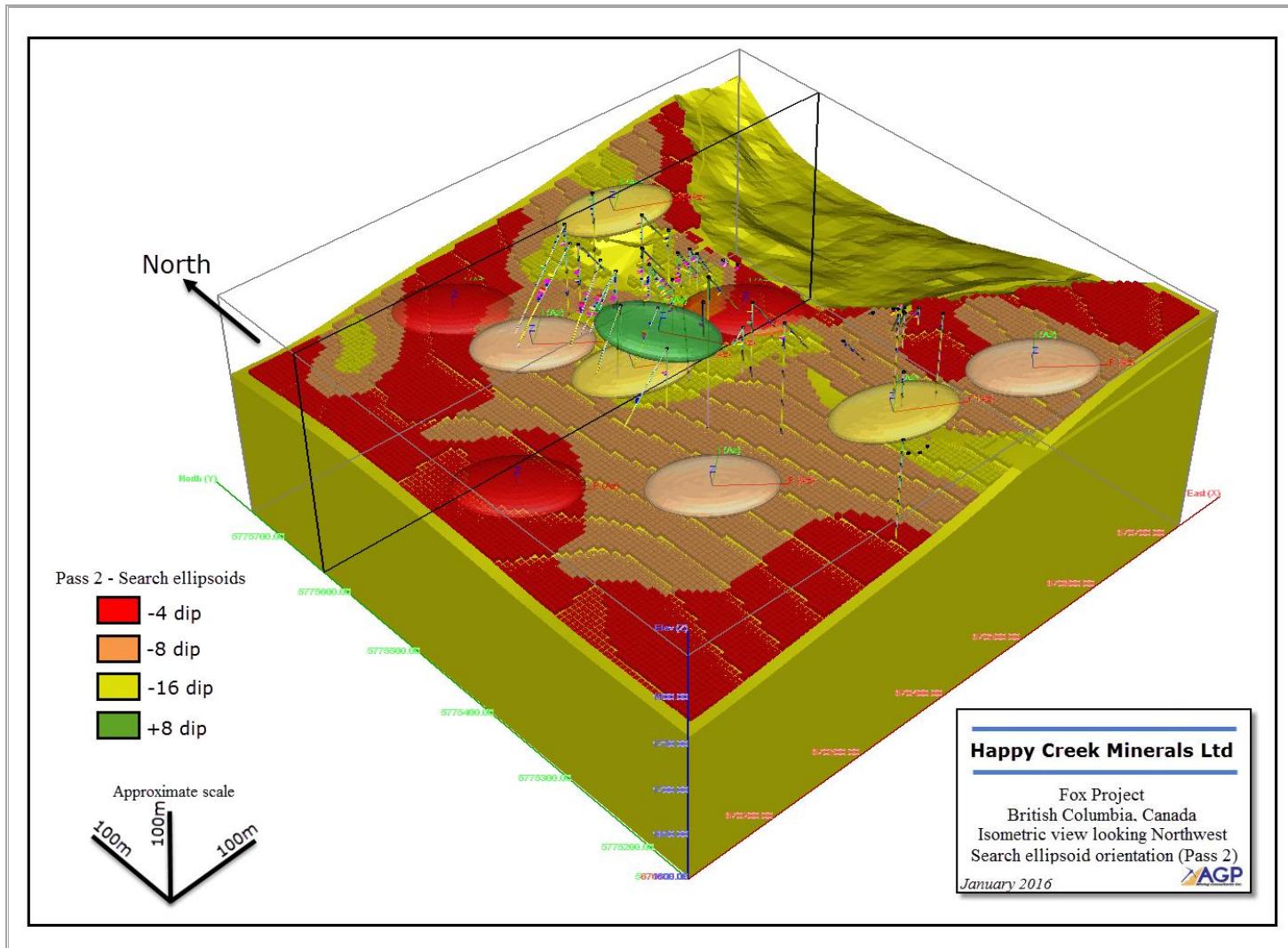
Table 14.7 lists the final values used in the resource model for the range of the major, semi-major, and minor axes. Figure 14.5 illustrates the location of the sub-domains, along with the range of the search ellipsoid for Pass 2. Rotation angles are based on the Gemcom ZXZ or ZYZ methodology, which uses a conventional right-hand rule.

**Table 14.7: Search Ellipsoid Dimensions**

CSKK Domain (Code 1000)	Rotation Z, X, Z (degrees)	Pass 1 Range Major, Semi-major, minor (m)	Pass 2 Range Major, Semi-major, minor (m)	Pass 3 Range Major, Semi-major, minor (m)
Sub-domain 10 – CSSK	-50, -4, 0	32, 21, 7	57, 38, 13	102, 68, 23
Sub-domain 20 – CSSK	-50, -8, 0	32, 21, 7	57, 38, 13	102, 68, 23
Sub-domain 30 – CSSK	-50, -16, 0	32, 21, 7	57, 38, 13	102, 68, 23
Sub-domain 40 – CSSK	-50, +8, 0	32, 21, 7	57, 38, 13	102, 68, 23
GRA Domain (Code 2000)	Rotation as Indicated (degrees)	Pass 1 Range Major, Semi-major, minor (m)	Pass 2 Range Major, Semi-major, minor (m)	Pass 3 Range Major, Semi-major, minor (m)
Granite 1 Sub-domain 10	ZYZ (-2, -2, 0)	36, 24, 13	68, 46, 24	123, 82, 44
Granite 2 Sub-domain 20	ZYZ (88, -20, 23)	36, 24, 13	68, 46, 24	123, 82, 44
Granite 3 Sub-domain 30	ZXZ (88, -6, 3)	36, 24, 13	68, 46, 24	123, 82, 44
Granite 4 Sub-domain 40	ZYZ (-2, -2, 0)	36, 24, 13	68, 46, 24	123, 82, 44
Granite 5 Sub-domain 50	ZYZ (-2, -2, 0)	36, 24, 13	68, 46, 24	123, 82, 44

Lastly, the interpolation of the CSSK was carried out in layers, in order to prevent the high grade smearing vertically into the lower grade material. The layer sub-domain were created in 10 m slices, starting at the CSSK and SCH boundary. The fifth slice was extended through to surface. The layer sub-domain codes were simply 1, 2, 3, 4, and 5. These were added to the orientation sub-domains (10, 20, 30, 40) and main domain codes (1000 or 2000) to create the final codes that were used to drive the interpolation.

**Figure 14.4: Orientation Sub-domain Location and Search Ellipsoids (Pass 2)**



## **14.9 Resource Block Model**

The block model was constructed using GEMS 6.7.2™. An equidistant block size of 5 m horizontally by 5 m across by 5 m vertically was selected, based on mining selectivity considerations and the density of the dataset.

The block model was defined on the project coordinate system with a 0-degree rotation. Table 14.8 lists the upper southeast corner of the model, and is defined on the block edge.

The rock type model was coded by combining the domain code with the sub-domain code, controlling the search ellipsoid orientation, and the layer code controlling the sample selection.

**Table14.5 Block Model Definition (Block Edge)**

Resource Model Items	Parameters
Easting	670,120
Northing	5,775,170
Top relative elevation	2,030
Rotation angle (counterclockwise)	0
Block size (X, Y, Z in metres)	5 x 5 x 5
Number of blocks in the X direction	118
Number of blocks in the Y direction	114
Number of blocks in the Z direction	56

## **14.10 Interpolation Plan**

The resource model was created in GEMS 6.7.2™ with a multiple folder setup, using ordinary kriging for interpolating the WO3 grade. Both a nearest neighbour (NN) model and inverse distance to the power of two (ID2) were used for validation. The interpolation was carried out in a multi-pass approach, with an increasing search dimension coupled with decreasing sample restrictions.

- Pass 1 used an ellipsoid search with 7 samples minimum, and 15 maximum. A maximum of three samples per hole was imposed on the data selection, forcing a minimum of three holes to be used in the search.
- Pass 2 used an ellipsoid search with 4 samples minimum, and 15 maximum. A maximum of three samples per hole was imposed on the data selection, forcing a minimum of two holes to be used in the search.
- Pass 3 used an ellipsoid search with 2 samples minimum, and 15 maximum. A maximum of three samples per hole was imposed on the data selection, allowing a block to be interpolated by a single hole.

All orientation sub-domain boundaries were treated as soft boundaries, allowing samples from one sub domain to be used in the interpolation of the adjacent sub domain. This is the correct methodology, since the orientation sub domains were only used to control the orientation of the sample search ellipsoids, and do not correspond to any known lithological contacts or faults. This is not the case for the layer sub domains, where the composites from the lower layers were used to interpolate the grade of the layer above, according to the schedule presented in Table 14.9.

**Table 14.9 Composite Selection for Layer Interpolation**

Interpolation	Composites Used
Layer 1 (lower layer)	From Layer 1
Layer 2	From Layers 1 and 2
Layer 3	From Layers 2 and 3
Layer 4	From Layers 3 and 4
Layer 5	From Layers 4 and 5

This methodology helps to prevent the vertical smearing of the grade from the higher-grade bottom portion of the CSSK lithology upward to the lower-grade upper portion.

The model was interpolated only within the mineralized wireframe. Volume reporting used the lithological wireframes in order to correctly assign the tonnages of the CSSK and GRA to the correct grade bins. The methodology intrinsically assumes that the granite will be separated out during mining. For this deposit, AGP believes that this is the correct approach, since in the field the granite is visually distinct from the calc-silicate, and Happy Creek is planning to use UV light to further reduce dilution.

#### **14.11 Mineral Resource Classification**

Several factors are considered in the definition of a resource classification:

- Canadian Institute of Mining (CIM) requirements and guidelines
- experience with similar deposits
- spatial continuity
- confidence limit analysis
- geology.

No environmental, permitting, legal, title, taxation, socioeconomic, marketing, or other relevant issues are known to the author that may currently affect the estimate of mineral resources. Mineral reserves can only be estimated based on an economic evaluation used in a prefeasibility or feasibility study of a mineral project. Thus, no reserves have been estimated. Mineral resources, which are not mineral reserves, do not have demonstrated economic viability.

Typically, the confidence level for a grade in the block model is reduced with the increase in the search ellipsoid size, along with the diminishing restriction on the number of samples used for the grade interpolation. This is essentially controlled by the pass number of the interpolation plan, as described in the previous section. A common technique is to categorize a model based on the pass number and distance to the closest sample. For the RC Zone, in addition to using the pass number and distance to the closest composite, AGP downgraded the classification in areas with low kriging efficiency. Lastly, a core area model was used to avoid having “potential” mineralization in areas in proximity to the most densely drilled area. In this context, the core is an area where the QP believes that the continuity of the mineralization has been well demonstrated by current drilling. For the RC Zone, it was defined by creating a 25 m radius wireframe around each drill hole used in the resource estimate. The wireframes from the isolated holes were deleted, and the remaining wireframes were used to create a core area model.

Two confidence categories exist in the model. The usual CIM guideline classes of Indicated and Inferred are coded 2 and 3, respectively. A special Code 4 refer to as “Potential Mineralization,” represents mineralization that was considered too far away from the existing drilling to be classified as an Inferred resource. As per NI 43-101 guidelines, the tonnage and grade for Potential Mineralization is not included in this report, and is only used by Happy Creek to aid its exploration activity. Table 14.10 lists parameters used to code the classification model, and Figure 14.6 illustrates a representative section of the block classification of the Fox deposit.

**Table 14.10: Classification Parameters**

Pass Number	Retained As	Downgraded To
Passes 1 and 2	Indicated (Code 2) if distance to closest composite is <60 m	Inferred if distance to closest composite is $\geq 60$ m and $<120$ m and/or if the kriging efficiency $\leq 0.3$
Pass 3	Inferred (Code 3) if distance to closest composite $<120$	Potential Mineralization (Code 4) if distance to closest sample is $\geq 120$ m and/or if the kriging efficiency $\leq 0$

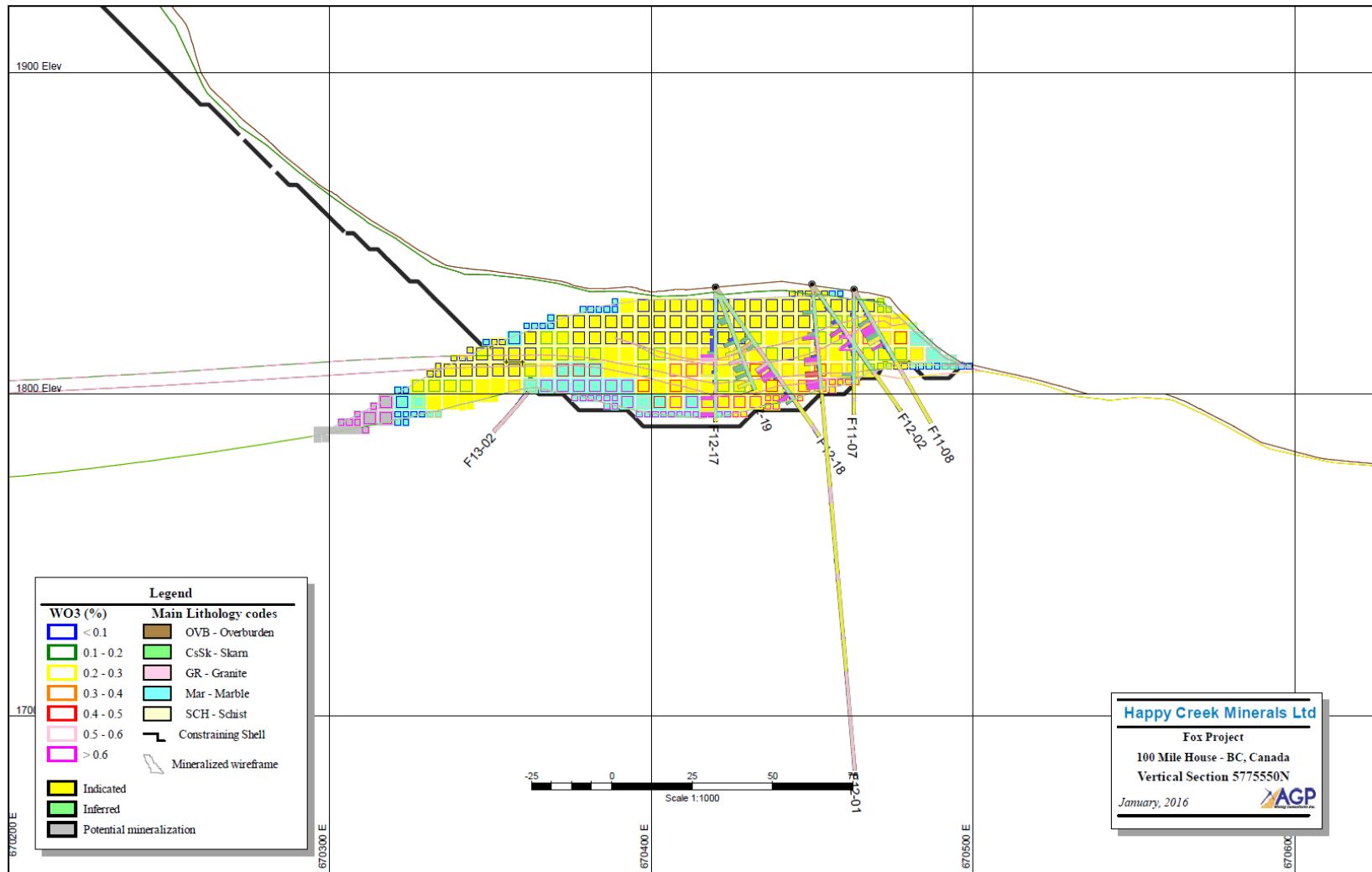
One additional modifier was used in addition to the above parameters:

Potential blocks (Code 4) were upgraded to Inferred for any blocks located in the core area.

Final adjustments are often required to the classification of individual block values to create areas suitable for mine planning. This is accomplished by using a GEMS™ Cypress-enabled script that adjusts, or “grooms” the confidence category of isolated blocks to create contiguous resource blocks with reasonably smooth class values. The classifications of isolated blocks were upgraded or downgraded depending on the classifications of the 26 surrounding blocks. AGP validated the final block classification visually. AGP also generated histograms of the distance to the closest composites versus the class model value to evaluate the class model for reasonableness.

Approximately 28% of the volume within the interpolated solid is classified as Indicated. Inferred resources accounted for 33% of the total volume. The remaining 39% of the volume was either Potential Mineralization or areas that could not be interpolated and therefore bore no grade. No resources were classified as Measured.

**Figure 14.6 Block Model Classification on Vertical Cross-Section 5775550N**



## **14.12 Mineral Resource Tabulation**

Effective 15 March 2016, AGP has estimated a first time mineral resource for the Fox Project, RC Zone, using data from approximately 3,253 m of diamond drill holes and 64 m of trench data completed by Happy Creek from 2010 through 2013. The estimate takes into account all data that were available prior to 22 December 2015. The resource encompasses only the RC Zone of the Fox Project. The estimate was completed based on the concept of a small-scale, open pit operation, assuming a certain degree of selectivity in order to separate the granite from the mineralized calc-silicate. This selectivity will be obtained via a comprehensive grade control program, using UV light and possibly pre-sorting technologies. No other zones on the Fox Project were evaluated.

The resource estimate consists of Indicated and Inferred resources reported as tungsten trioxide. Based on current exploration drilling data, the RC Zone is a tungsten-bearing calc-silicate and skarn. The mineralization is trending to the northwest, and is gently dipping to the southwest. Multiple stacked skarn or calc-silicate beds form the RC Zone. Grade tends to be higher at depth in proximity to the calc-silicate/schist contact. The mineralization grading in excess of 0.1% WO<sub>3</sub> extends approximately 450 m on strike, 200 m across the strike, and 30 m vertically at its widest point, and is open in the northwest direction.

No mining plans have yet been prepared for the deposit; however, from the geometry described, it seems likely that the deposit could be mined by open pit, possibly followed by an underground operation, likely using a room-and-pillar mining method, with or without backfill.

At the current stage of the project, the preliminary first-pass metallurgical testing, used a combination of flotation to separate sulphides, followed by Falcon concentrator and Tables (gravity) that produced an initial cleaner concentrate and an additional middling product which can be recycled back upstream for re-processing. Together these two products contain 70.8% of the tungsten. In 2015, another sample of approximately 400 kg was collected from the face of the RC Zone and submitted to SGS laboratories of Vancouver, B.C. The test work is on-going

## **14.13 Marginal Cut-off Grade for Resource Estimate**

The economic calculation to support this estimate is provided in Table 14.11 Operating costs and metal recovery assumptions must be considered preliminary at this stage, and no detailed economic analysis has been made to test these figures; however, it is understood that the deposit is close to surface, but dips toward the cliff on the west side of the deposit. This will become a limiting factor for an open pit expansion, assuming that future drilling expands the deposit to the northeast. For this resource, the open pit scenario was the only option considered for the reasonable prospect of economic extraction. A tungsten price of US\$166.52/MTU of WO<sub>3</sub> in concentrate was used for the calculation, which was based on an assumed long term price of US\$350/MTU of W in ATP (FOB Rotterdam), which was converted from a W to WO<sub>3</sub> basis and from an ATP basis to an 'in concentrate' basis using an assumed 40% value reduction. The US\$350/MTU of W in ATP used is significantly higher than the spot price of US\$227/MTU of W in APT on 18 February, 2016, but lower than the three year trailing average of US\$392/ MTU of T in ATP as of that same date. In order to assess the mineral resources, an in-situ resource cut-off grade of 0.1% WO<sub>3</sub> is recommended.

**Table 14.11: Preliminary Breakeven Cut-off Grade Range Assumptions**

Fox Project – RC Deposit	Unit	Price
Price in US\$	US\$/ mtu of WO <sub>3</sub> in conc.	166.52
Forex Rate	US\$/CDN\$	0.8
Price in CDN\$	CDN\$/mtu of WO <sub>3</sub> in conc.	208.15
Fox Project – RC Deposit	Unit	Open Pit
Mining	CDN\$/t	5.00
Milling	CDN\$/t	20.00
G&A	CDN\$/t	5.00
Ore Based Cost	CDN\$/t	25.00
Process Recovery	%	80
Conc. Grade	% WO <sub>3</sub>	65
Con Moisture Content	%	5
Trucking to Vancouver	CDN\$/WMT	66.00
Port Charges	CDN\$/WMT	20.00
Shipping to China/Japan/Korea	CDN\$/WMT	75.00
Downstream Costs (Trucking, Port, and Shipping), wet concentrate basis	CDN\$/WMT	161.00
Downstream costs, dry concentrate basis	CDN\$/DMT of con	169.47
Downstream costs, value of contained WO <sub>3</sub> basis	CDN\$/mtu of WO <sub>3</sub> in con	2.61
Marginal Cut-off	% WO <sub>3</sub>	0.10

#### 14.14 Global Mineral Inventory

The global mineral inventory is reported between the bottom of the OVB and the bottom of the CSSK lithological unit. A base case cut-off grade of 0.1% WO<sub>3</sub> is used to report the global mineral inventory, as discussed in Section 14.14 above

Table 14.12 summarizes the global mineral inventory with the base case cut-off of 0.1% highlighted.

**Table 14.12: Global Mineral Inventory**

Classification	WO <sub>3</sub> % Bin	Tonnage (tonne)	WO <sub>3</sub> (%)	WO <sub>3</sub> (MTU)
Indicated	>0.40	274,000	0.74	204,000
	>0.20	476,000	0.55	261,000
	>0.15	589,000	0.48	281,000
	>0.10	776,000	0.39	304,000
	>0.05	976,000	0.33	319,000
Inferred	>0.40	258,000	0.71	182,000
	>0.20	496,000	0.50	249,000
	>0.15	563,000	0.46	261,000
	>0.10	654,000	0.42	273,000
	>0.05	767,000	0.37	281,000

Since the Fox Project RC Zone is amenable to open pit extraction, the global mineral inventory was forwarded to AGP's Engineering team for evaluation of reasonable prospects of economic extraction.

#### 14.15 Mineral Resource

In order to meet the CIM definitions of reasonable prospects of economic extraction, a Lerchs-Grossman optimized shell was generated to constrain the potential open pit material. Parameters used to generate this shell included:

- 45° slopes for the pit shell
- CDN\$5/t mining, CDN\$20/t milling, CDN\$5/t G&A operating costs
- 80% WO<sub>3</sub> recovery
- CDN\$208.15/MTU WO<sub>3</sub> price
- economics applied to Indicated and Inferred materials.

The operating costs assume conventional milling at a rate of approximately 2,000 tonnes per day. At this early stage of study, the tungsten trioxide recovery used was derived by benchmarking other scheelite operations. A preliminary first pass metallurgical test recovered 70.8% of the tungsten from a composite made from three different zones in 2012. This preliminary, non-locked cycle test indicated amenability to gravity and floatation recovery using industry standards methods. A second round of metallurgical testing on material from the RC Zone was in progress at the time of writing this report.

Cut-off grades in the resource report tables were reported at 0.1% WO<sub>3</sub> for the material within the resource constraining shell. The resource shell cut-off is supported by the above process and G&A operating costs, recovery, and metal price. No underground resources have been reported.

Table 14.13 shows a summary of the results of the resource estimate at the Fox Project, RC Zone. At the 0.1% WO<sub>3</sub> cut-off selected, the total Indicated resource is estimated at 505,000 tonnes grading at 0.468% WO<sub>3</sub>, containing 237,000 metric ton unit of tungsten trioxide. Inferred resources amounted to 280,000 tonnes grading at 0.456% WO<sub>3</sub>, containing 127,000 metric ton units of tungsten trioxide. The resource constraining shell has a strip ratio of 4.1 to 1.

**Table 14.13 Resource Estimate at a 0.1% WO<sub>3</sub> Cut-off**

Classification	WO <sub>3</sub> Cut-off (%)	Tonnage (t)	WO <sub>3</sub> (%)	WO <sub>3</sub> (MTU)
Indicated	>0.1	505,000	0.468	237,000
Inferred	>0.1	280,000	0.456	127,000

**Notes:** Cut-off determined by using a WO<sub>3</sub> price of CDN\$208.15/MTU WO<sub>3</sub>.

Rounding of tonnes as required by reporting guidelines may result in apparent differences between tonnes, grade, and contained metal.

Table 14.14 shows the sensitivity of the model to changes in cut-off. In the following table, rounding of tonnes as required by reporting guidelines may result in apparent differences between tonnes, grade, and contained metal. Figure 14.6 illustrates a generalized plan view of the grade distribution in the Indicated and Inferred categories with grades above 0.01% WO<sub>3</sub>.

**Table 14.14: Cut-off Sensitivity with Base Case Highlighted within the resource constraining shell**

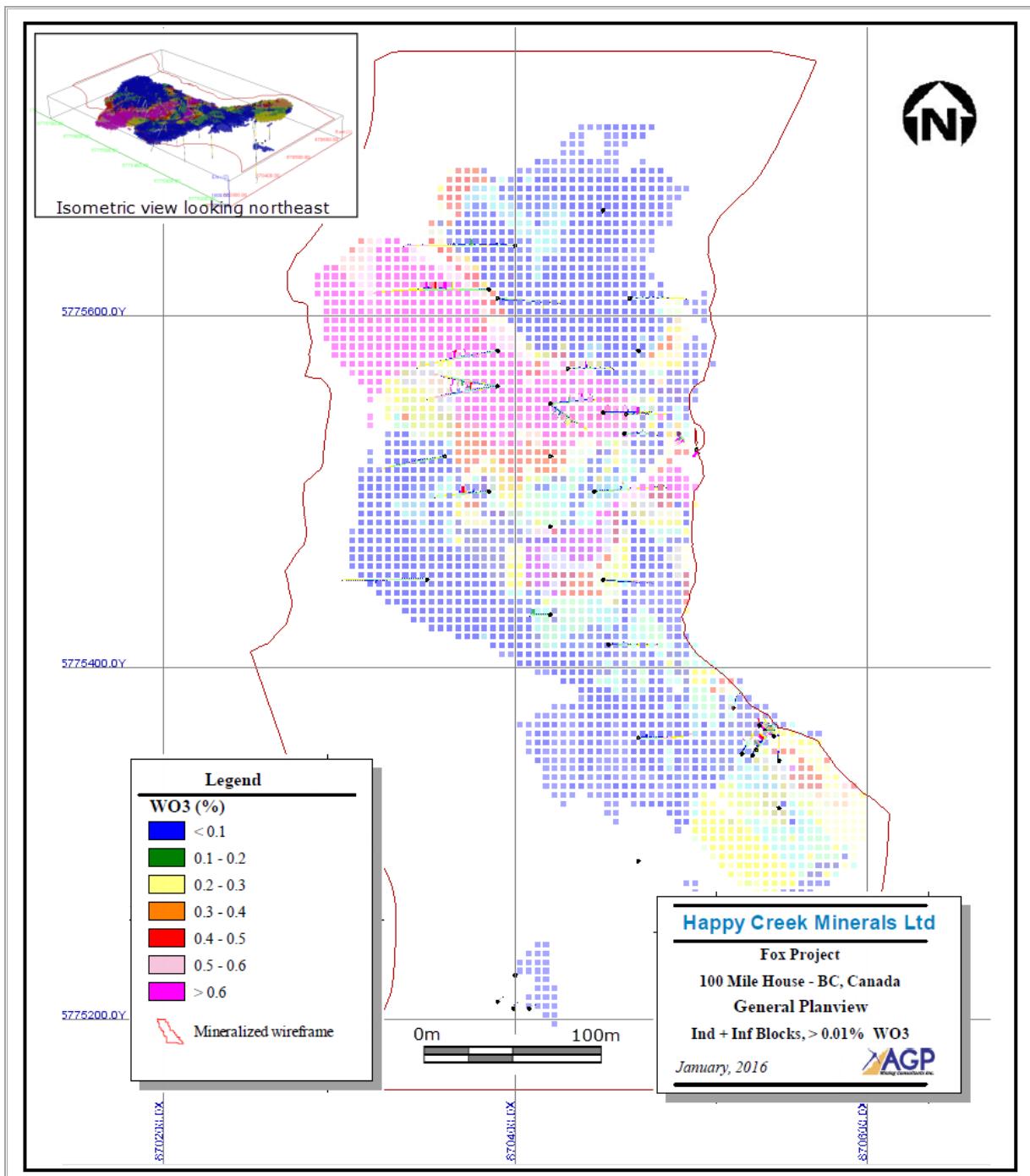
Classification	WO <sub>3</sub> Cut-off (%)	Tonnage (tonne)	WO <sub>3</sub> (%)	WO <sub>3</sub> (MTU)
Indicated	>0.60	142,000	0.911	130,000
	>0.40	240,000	0.740	178,000
	>0.30	303,000	0.660	200,000
	>0.20	381,000	0.575	219,000
	>0.15	433,000	0.526	228,000
	>0.10	505,000	0.468	237,000
	>0.05	595,000	0.409	243,000
Inferred	>0.60	63,000	0.873	55,000
	>0.40	129,000	0.674	87,000
	>0.30	195,000	0.561	109,000
	>0.20	249,000	0.494	123,000
	>0.15	261,000	0.480	125,000
	>0.10	280,000	0.456	127,000
	>0.05	295,000	0.435	129,000

Table 14.15 shows the resource model volumetric within selected Revenue Factor (RF) pit shells at 0.1% and 0.2% WO<sub>3</sub> cut-offs, with the base case highlighted. The RF 0.6, 0.8 and 1.0 pit shells were generated at 60%, 80% and 100% of the base case metal price of CDN\$208.15/MTU WO<sub>3</sub>. As such, the RF 0.6 and 0.8 shells are lower metal price shells nested within the RF 1.0 shell which is the resource constraining shell. Quantities reported within the RF 0.6 and 0.8 pit shells represent subsets of the mineral resource that carry lower strip ratios and therefore provide a sensitivity to changes in metal prices.

**Table 14.15**  
**Subset of Indicated and Inferred Resources Reported**  
**Within Selected Revenue Factor Pit Shells**

WO <sub>3</sub> Cut-Off (%)	Revenue Factor	Indicated		Inferred			
		Tonnes	WO <sub>3</sub> (%)	Tonnes	WO <sub>3</sub> (%)	Waste (t)	Strip Ratio
0.2	0.60	188,000	0.496	99,000	0.628	732,000	2.55
0.2	0.80	304,000	0.556	203,000	0.511	2,049,000	4.04
0.2	1.00	387,000	0.572	253,000	0.491	3,367,000	5.26
0.1	0.60	270,000	0.388	102,000	0.613	647,000	1.74
0.1	0.80	403,000	0.454	221,000	0.48	1,932,000	3.10
0.1	1.00	505,000	0.468	280,000	0.456	3,218,000	4.10

**Figure 14.7: Generalized Plan View (Ind. + Inf., WO<sub>3</sub>% Grade >0.01%)**



## 14.16 Block Model Validation

The RC Zone deposit grade models were validated by four methods:

- visual comparison of colour-coded block model grades with composite grades on sections and plans
- comparison of the global mean block grades for OK, ID<sup>2</sup>, NN models, composite, and raw assay grades
- comparison using grade profiles to investigate local bias in the estimate
- naïve cross-validation tests with composite grade versus block model grade.

### 14.16.1 Visual Comparison

The visual comparison of block model grades with composite grades shows a reasonable correlation between values for the majority of the model.

On the northeast portion of the model, F13-19 returned high-grade assays. Since there are a limited number of drill holes to work with in that area, the interpolated model projected the high grade to the full extent of the wireframe. The issue was partially mitigated by tapering the wireframe against the SCH lithology to limit the volume affected, and by manipulating the classification with the kriging efficiency to ensure that the questionable high-grade blocks were assigned to the Inferred category.

No other significant discrepancies were apparent from the sections and plans reviewed. Sections and plans are presented in Appendix B and C of this report.

### 14.16.2 Global Comparisons

Table 14.16 shows the grade statistics for the raw assays, composites, NN, ID<sup>2</sup>, and OK models. Statistics for the tungsten trioxide composite mean grades compare well to the raw assay grades, with a normal reduction in values due to smoothing related to volume variance. The block model mean grade, when compared against the composites, showed a normal reduction in values. More importantly, the grade of the NN, ID<sup>2</sup>, and OK models are all well within 2% of each other, indicating that the methodology used did not introduce a bias into the estimate.

**Table 14.16: Global Comparisons (Indicated and Inferred)**

Methodology	WO <sub>3</sub> (%) at >0.0 Cut-off (Cat. 1–3)	WO <sub>3</sub> (%) at >0.0 Cut-off (Cat. 1–4)
Raw assays uncapped at 0.0 Cut-off (clustered/declustered)	0.207 / 0.220	0.207 / 0.220
Composite capped at 0.0 Cut-off (clustered/declustered)	0.140 / 0.170	0.140 / 0.170
Nearest neighbor (NN)	0.161	0.102
Inverse distance squared using true distance (ID)	0.160	0.101
Ordinary krig	0.161	0.101

### 14.16.3 Local Comparisons – Grade Profile

Comparison of the grade profiles (swath plots) of the raw assay, composites, and estimated grades allows for a visual verification of an over- or underestimation of the block grades at the global and local scales. A qualitative assessment of the smoothing and variability of the estimates can also be observed from the

plots. The output consists of three swath plots, generated at 25 m intervals in the X direction, 25 m in the Y direction, and 10 m vertically.

The OK and ID2 estimates should be smoother than the NN estimate; the NN estimate should fluctuate around the OK and ID2 estimates on the plots, or display a slightly higher grade. The composite line is generally located between the assay and the interpolated grade. A model with good composite distribution should show very few crossovers between the composite and the interpolated grade line on the plots. In the fringes of the deposits, as composite data points become sparse, crossovers are often unavoidable. The swath size also controls this effect to a certain extent; if the swaths are too small, then fewer composites will be encountered, which usually results in very erratic lines on the plots.

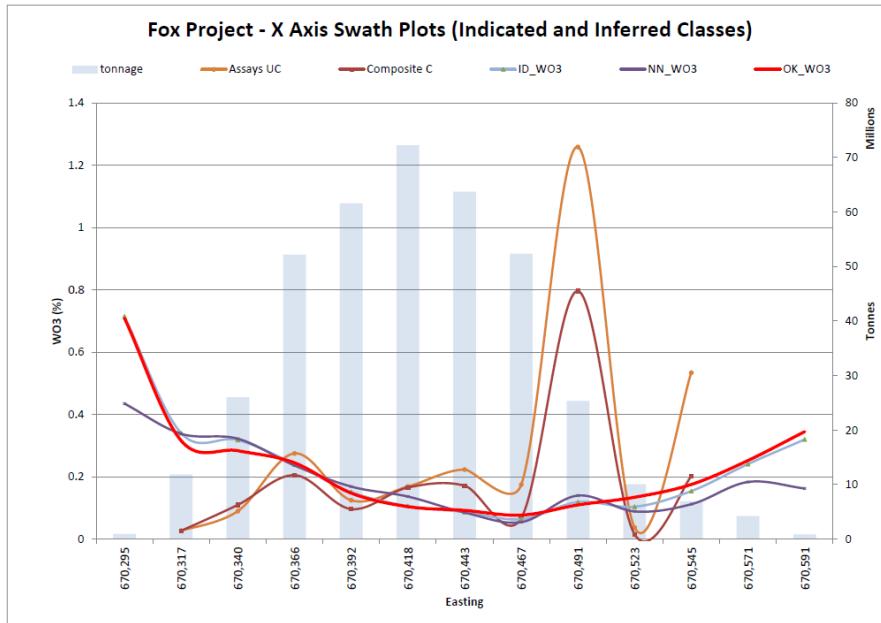
Due to the orientation of the RC deposit, the swath plot should show the best results in the X and Y axes for this model.

In general, the swath plots shows good agreement, with the three methodologies showing no major local bias, except in the area close to 670,525E and 5,775,580N, where a strong crossover is displayed. These areas were investigated separately. On the 5,775,580N section, the issue is related to the projection of the high grade from hole F13-09 to the edge of the wireframe, as described above. The smaller issue on the east section 670,525E is related to the high-grade trench data that are not well reproduced in the nearby drill holes.

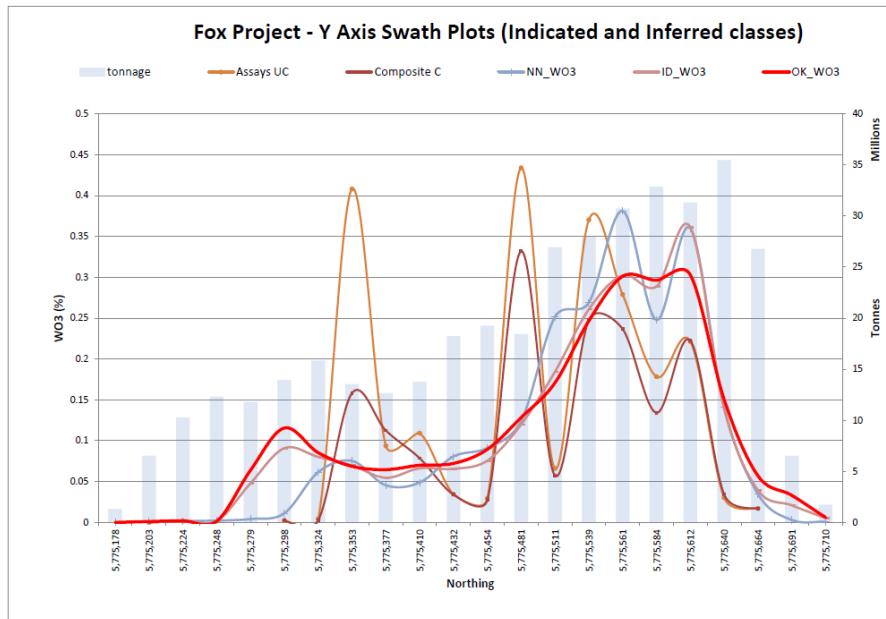
Re-plotting the grade profile using the Indicated classification only shows that while these two problem areas persist, they are primarily related to material in the Inferred category.

For the remaining areas, the peaks and valleys on the assay and composite lines are well represented in the resource model, with the interpolated model offering more smoothing. The effect of capping the assays is readily visible in the plots, and the search restriction on the mild outliers appears to have normalized the grade. Grade profiles for tungsten trioxide are presented in Figure 14.8 and Figure 14.9. The profile for the Z chart was omitted.

**Figure 14.8 X Axis Swath Plots (Indicated and Inferred Classification)**



**Figure 14.9 Y Axis Swath Plots (Indicated and Inferred Classification)**



#### 14.16.4 Naïve Cross-Validation Test

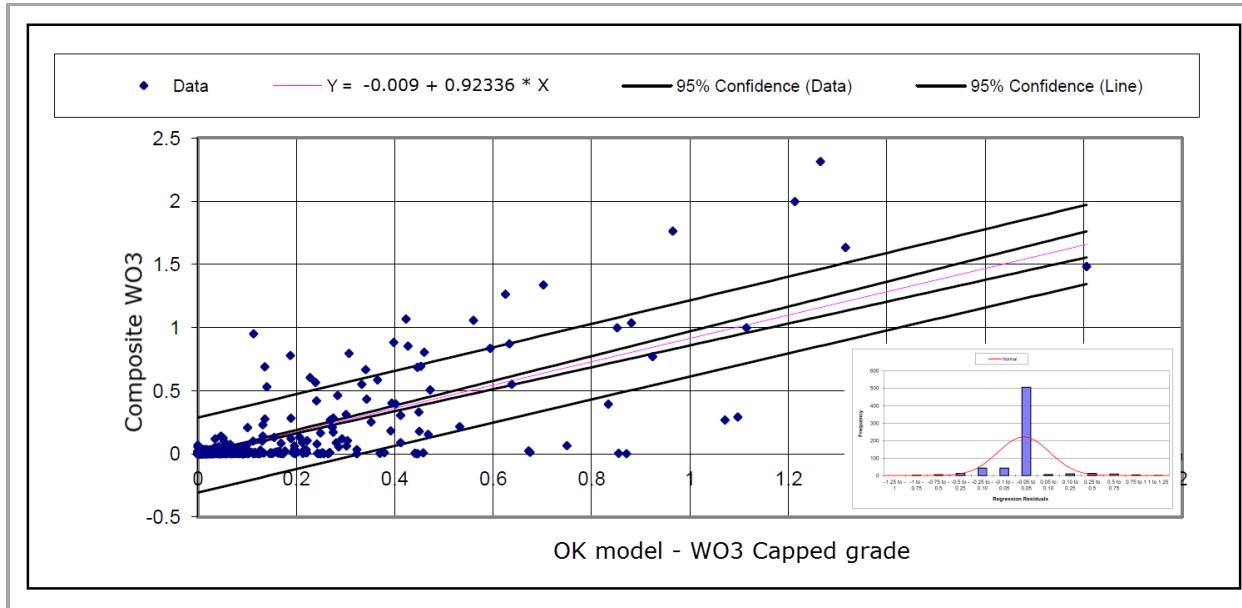
A comparison of the average grade of the composites within a block with the estimated grade of that block provides an assessment of the estimation process close to measured data. Pairing of these grades on a scatter plot gives a statistical valuation of the estimates. This methodology is distinct from “jackknifing,” which replaces a composite with a pseudo-block at the same location, and evaluates and compares the estimated grade of the pseudo-block against that of the composite grade.

It is anticipated that the estimated block grades should be similar (while not exactly the same value) to the composited grades within the block. This is especially true with deposits bearing a higher nugget component.

A high correlation coefficient ( $R^2$ ) indicates satisfactory interpolation process results, while a medium to low correlation coefficient indicates larger differences in the estimates, and, if not simply reflecting a low data density, would suggest a further review of the interpolation process. Results from the pairing of the composited and estimated grades within blocks pierced by a drill hole are presented in Figure 14.10. After removing 5 outliers out of 653 pairs, the  $R^2$  value is medium to high for this type of deposit, at 0.596. The slope of the regression is 0.92, indicating a good spread around the parity line.

The regression residuals are the differences, on a case-by-case basis, between the actual Y values and the values calculated by the best-fit equation. These can be evaluated for normality and randomness. The inset image in Figure 14.10 shows the residual distribution. The chart shows a normal distribution with a negligible bias.

**Figure 14.10 Naïve Cross-Validation Test Results**



## **15.0 to 22.0**

These items are not applicable to the current stage of the Property.

## **23.0 Adjacent Properties**

There are no adjoining properties to the Fox. The past-producing Boss Mountain molybdenum mine is located 25 km west of the Fox property. Boss Mountain is a molybdenum-tungsten mineral system associated with a mid-Cretaceous age stock of similar age to the Deception Mountain stock. Boss Mountain was Canada's first primary molybdenum producer, operating between 1968 and 1983 from underground and open pits. The only relevance to the Fox property is the presence of molybdenum and tungsten and association with a mid-Cretaceous intrusion.

## **24.0 Other Relevant Data and Information**

In addition to tungsten, the Fox property has identified zones of molybdenum in outcrop, drill core and soil that are of potential interest. Molybdenum appears associated with the Deception stock and a broad halo of positive molybdenum occurs in soil at the upper edge of the stock's contact with overlying metasediments. The presence of molybdenum in soil, rock and drill core and similar age of intrusive to the Boss Mountain molybdenum mine should not be overlooked for its bulk tonnage molybdenum potential.

Logging roads and clear cuts occupy much of the southern portion of the property. Access to Deception Mountain is currently by helicopter or by walking. Commercial logging plans call for extension of roads further north (uphill) of the Fox camp area onto the south flank of Deception Mountain (Figure 7.3). This would reduce the access distance to the northern mineral occurrences such as the RC Zone. Consideration for future road access to and development of the Deception Mountain prospects will depend on the economics of the deposits and meeting various government parameters to limit potential effects on Mountain Cariboo, fish, bear, wolves or other wildlife habitat or as accommodation of First Nations. To date, all exploration work conducted on the Fox property has been approved and permitted by provincial government agencies and local First Nations. There are no environmental issues on the Property and exploration permits are valid to March 22, 2021.

## 25.0 Interpretation and Conclusions

The Fox property is situated in southern British Columbia approximately 70 kilometres northeast of 100 Mile House. Infrastructure and local resources favour continued exploration and future development. The southern parts of the property are readily accessible due to logging activity. Future timber harvesting will continue to enhance access.

The Property is underlain by gneiss, schist, calc silicate and marble of the Late Proterozoic-Early Paleozoic Snowshoe Group. Granitic rocks of the mid-Cretaceous Deception stock intruding these rocks has created a hornfelsed and metasomatic zone (aureole) that extends outward from the stock for up to several kilometres. It is within this aureole that tungsten mineralized zones have formed. Tungsten mineralization occurs in at least three sub-horizontal to moderately dipping stratigraphic units of one to over 40 metres in thickness. Scheelite, the dominant tungsten mineral, along with several percent sulphide minerals occur as exoskarn and endoskarn developed in calc-silicate and in quartz veins.

Since 2005 Happy Creek has successfully advanced the property from early to advanced stage. To date seven tungsten occurrences have been found around the Deception Stock within an area approximately 10 km by 3 km in extent. Many of the mineralized zones have not yet been fully delineated. The high tungsten grades in some of these zones compare favourably with well-known global deposits and mines. Although the primary commodity is tungsten there are significant and potentially economic amounts of gold, silver, indium and zinc present in some occurrences such as the RC Zone. In addition, exploration has identified well defined molybdenum and tungsten-in-soil anomalies. These have been only partially tested by diamond drilling and may offer additional potential for the discovery of other mineralized zones.

The completion of a resource estimate on the RC Zone that is the subject of this report demonstrates the potential for the Fox property to host significant high-grade tungsten deposits.

Based on the review of the QA/QC, data validation, and statistical analysis, the following conclusions were made:

- Geoquest Consulting Ltd conducted a site visit (Sept 14, 2015) of the drilling in progress which allow the observation of the core handling, documentation, sampling and QA/QC protocol. In addition, the author verified some drill site locations of the 2015 drilling and several drill sites in the RC Zone. It was concluded that field procedures for the handling of drill core, documentation, logging, sampling and security meet or exceed generally accepted industry best practices. The author believes that Happy Creek's exploration data is suitable for the style of mineralization found on the property and reliable for the purposes of conducting the resource estimate.
- The mineralization on the Fox Project, RC Zone, was sampled over the years with core drilling and limited trenching. Both data types were used in the resource estimate.
- Samples from the drill program were analysed at Agat Labs located in Burnaby B.C. The laboratory is ISO/IEC 17025 and ISO 9001 accredited.
- A limited QA/QC program was introduced by Happy Creek during the drill program. The program included the insertion of blanks and standards. Submission rates meet the industry accepted practice for each of the QA/QC type of samples (blanks and standards). The sampling procedures, analytical methods and QC procedures undertaken by Happy Creek indicate good sample data reliability.

- For drill core of the mineralized zones, Happy Creek performed three peroxide fusion analyses in addition to the Agat XRF classical tungsten assays per sample with an elevated tungsten grade (as screened by the ICP method). The total digestion and analyses are considered to provide good quality and precise results. In the database, the final  $\text{WO}_3$  assay represent the average value of the triplicate peroxide fusion analysis and the Agat XRF classical tungsten assays (converted to tungsten trioxide). For the low grade sample analyzed solely with ICP the final  $\text{WO}_3$  assay represent the tungsten ICP value converted to tungsten trioxide. A select suite of samples in 2007 were sent for neutron activation analysis (Act Labs) to validate the peroxide fusion results from Agat Laboratories. No significant difference was encountered.
- Densities were determined from 482 representative rock samples using industry standard methods.
- Data verification was performed by Geoquest Consulting Ltd through site visits, collection of independent character samples, and a database audit. Prior to the mineral resource estimation, AGP performed a second round of validation on a limited number of high-grade assays exceeding 0.25%  $\text{WO}_3$  against the original assay certificate provided by Happy Creek. The database was found to be error free for the samples that were checked.
- Core handling, core storage, and chain of custody are consistent with industry standards.
- The preliminary, first-pass metallurgical testing used a combination of flotation to separate sulphides, followed by Falcon concentrator and Tables (gravity) that produced an initial cleaner concentrate grading 59.54%  $\text{WO}_3$  in 23.2% of the mass, and an additional middling product with 14.77%  $\text{WO}_3$  in 47.6% of the mass which can be recycled back upstream for re-processing (Figure 13.1). Together these two products contain 70.8% of the tungsten. For the first stage of metallurgical testing, this method is thought to have potential to produce a concentrate having acceptable commercial grades. The tungsten concentrate has no deleterious metals associated with it that would prevent its ability to be sold.
- In 2015, another sample of approximately 400 kg was collected from the face of the RC Zone and submitted to SGS laboratories of Vancouver, B.C. The test work is on-going and includes heavy liquid separation, QEMSCAN, mineralogy, testing of scheelite liberation versus grind size, flotation and magnetic separation. Final results of this work are pending.
- Base on the above conclusions AGP estimated a mineral resource on the Fox property, RC Zone.

The resource estimate takes into account all data available prior to 22 December 2015. The resource encompasses the Fox Project, RC Zone only. No other zones on the Fox Project were evaluated. Mineral resources were classified using logic consistent with the CIM definitions referred to in National Instrument 43-101.

The model was interpolated with 48 core holes and 10 trenches completed by Happy Creek from 2010 through to 2013, totalling 3,317 metres and containing 1,876 assays. The drill spacing equate to 50% of the drill holes will have another within 18 meters

The resource estimate consists of Indicated and Inferred resources reported as tungsten trioxide ( $\text{WO}_3$ ). No mining plans have yet been prepared for the deposit; however, the estimate was completed based on the concept of a small-scale open pit operation, assuming a certain degree of selectivity in order to separate the granite from the mineralized calc-silicate.

In order to meet the CIM definitions of reasonable prospects of economic extraction, a Lerchs-Grossman optimized shell was generated to constrain the potential open pit material. Parameters used to generate this shell included:

- 45° slopes for the pit shell
- CDN\$5/t mining, CDN\$20/t milling, CDN\$5/t G&A operating costs
- 80% WO<sub>3</sub> recovery
- CDN\$208.15/MTU WO<sub>3</sub> price
- Economics applied to Indicated and Inferred materials.

The operating costs assume conventional milling at a rate of approximately 2,000 tonnes per day. At this early stage of study, the tungsten trioxide recovery used was derived by benchmarking other scheelite operations. The resulting optimized resource constraining shell has a strip ratio of 4.1 to 1.

Effective March 15, 2016, the resource for the Fox Project, RC Zone, was reported at 0.1% WO<sub>3</sub> for the material within the resource-constraining shell. At the 0.1% WO<sub>3</sub> cut-off selected, the total Indicated resource is estimated at 505,000 tonnes grading at 0.468% WO<sub>3</sub> containing 237,000 metric ton units of tungsten trioxide. Inferred resources amounted to 280,000 tonnes grading at 0.456% WO<sub>3</sub>, containing 127,000 metric ton units of tungsten trioxide (Table 25.1). No underground resources have been reported.

The authors are not aware of any information not already discussed in this report, which would affect their interpretation or conclusions regarding the subject property

**Table 25.1 – Resource Estimate at a 0.1% WO<sub>3</sub> Cut-off**

Classification	WO <sub>3</sub> Cut-off (%)	Tonnage (t)	WO <sub>3</sub> (%)	WO <sub>3</sub> (MTU)
Indicated	>0.1	505,000	0.468	237,000
Inferred	>0.1	280,000	0.456	127,000

**Note:** Cut-off determined by using a WO<sub>3</sub> price of CDN\$208.15/MTU WO<sub>3</sub>

The Ridley Creek (RC), BK, BN and Nightcrawler Zones have returned potentially economic grade and thickness of scheelite tungsten mineralization and remain open to further expansion. The RC Zone is conceptually amenable to surface-cut mining methods, and may continue beneath Deception Mountain with potential for application of underground mining methods. The South Grid and North Zones have not been drill tested. There is a reasonable likelihood that further drilling can increase the tungsten resources of the project. There is also potential for bulk tonnage molybdenum deposit(s) to occur, in particular to the southwest of the BN Zone.

## **26.0 Recommendations**

The Fox property contains new discoveries of tungsten skarn mineralization. Further work is recommended in two phases as outlined below. Details of the two phases are presented in Table A in Appendix A.

### **Phase I: (Minimum \$2,500,000)**

Collect additional drilling, engineering, environmental, permitting, financial and economic data for the RC and other zones on the property. As most of the targets are near-surface, approximately 100 drill holes totaling 10,000 metres is recommended. The purpose is to provide an initial inferred resource for the project and prepare a Preliminary Economic Assessment.

### **Phase II: (Minimum \$5,000,000)**

Contingent on the success of Phase I the second phase calls for the construction of an access road up Deception Mountain and perform any additional drilling, engineering, environmental, or permitting required to take the project to a mine Lease. The purpose is to prepare sufficient Measured and Indicated resources, and complete metallurgical, processing, and mine planning to prepare a Feasibility study and have the project at the construction stage.

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## **28.0 Date and Signature Page**

*Effective Date of report:* March 15, 2016

*Completion Date of report:* April 15, 2016

**"Pierre Desautels" (Signed and sealed)"** Date Signed : April 15, 2016

Pierre Desautels, P. Geo  
AGP Consultants

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*Effective Date of report:* March 15, 2016

*Completion Date of report:* April 15, 2016

**"Warner Gruenwald (Signed and sealed)"** Date Signed: April 15, 2016

Warner Gruenwald, P. Geo  
Geoquest Consulting Ltd.

## **29.0 Certification of Qualified Person**

I, Pierre Desautels, P. Geo. Do hereby certify that:

I, Joseph Rosaire Pierre Desautels of Barrie, ON as one of the QP of this technical report titled “NI 43-101 Technical Report Resource Estimate of the Fox Property Ridley Creek Zone” dated April 15<sup>th</sup>, 2016 with an effective date of March 15<sup>th</sup>, 2016, (the “Technical Report”), do hereby certify the following statements:

- I am a Principal Resource Geologist with AGP Mining Consultants Inc. with a business address at 80 Richmond St. West, Suite 1502, Toronto, Ontario.
- I am a graduate of Ottawa University (B.Sc. Hons., 1978).
- I am a member in good standing of the Association of Professional Geoscientists of BC (APEGBC – License # 35860) and the Association of Professional Geoscientists of Ontario (Registration #1362).
- I have practiced my profession in the mining industry continuously since graduation.
- I have read the definition of “qualified person” set out in National Instrument 43-101 (NI 43-101 or the Instrument) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purpose of NI 43-101.
- My relevant experience with respect to resource modelling includes 36 years’ experience in the mining sector covering database, mine geology, grade control, and resource modelling. This includes past experience with tungsten deposits (Grey River and Risby).
- I did not visit the property.
- I am a co-author responsible for sections 14 and a portion of section 25 pertaining to the resource estimate of this report
- I have no prior involvement with the property that is the subject of this Technical Report.
- As of the effective date of the Technical Report, to my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- I am independent of the issuer as defined by Section 1.5 of the Instrument.
- I have read NI 43-101 and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Signed and dated this 15<sup>th</sup> day of April 2016, at Barrie, Ontario.

*“Pierre Desautels” (Signed and sealed)*

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Pierre Desautels, P.Geo.

## Certification of Qualified Person

I, Warner Gruenwald, P. Geo. Do hereby certify that:

I, Warner Gruenwald of Vernon, BC as one of the QPs of this technical report titled "NI 43-101 Technical Report Resource Estimate of the Fox Property, Ridley Creek Zone" dated April 15th, 2016 with an effective date of March 15th, 2016, (the "Technical Report"), do hereby certify the following statements:

- I am employed as Consulting Geologist by Geoquest Consulting Ltd. with an office at 9962 Cathedral Drive, PO Box 3079, Vernon, BC, Canada, V1B 3M1.
- I was commissioned by Happy Creek Minerals Ltd. Suite #460 789 West Pender Street Vancouver, British Columbia, Canada V6C 1H2 to prepare a Technical Report on the Fox Property, South Central Cariboo Region, British Columbia.
- I graduated with a B.Sc. in Geology from the University of British Columbia (1972) and have worked as an exploration geologist for 43 years.
- I am a member in good standing with the Association of Professional Geoscientists of BC (APEGBC – License # 23202).
- I have worked extensively in the exploration for precious, base and specialty metal deposits and am qualified to evaluate and report on such deposits.
- I have read the definition of "qualified person" set out in the National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with professional associations (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- This Technical Report is based upon my most recent property examination of September 14, 2015.
- I am solely responsible for the preparation of this report titled NI 43-101 Technical Report Resource Estimate on the Fox Property, South Central Cariboo Region, British Columbia dated April 15, 2016.
- I am independent of Happy Creek Minerals Ltd. (the Issuer) and the Fox property owners.
- I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form. The author takes responsibility for the items with the exception of Item (Section) 14.0 in this report.
- As of the date of the certificate, to the best of my knowledge, information and belief, the technical report contains all the scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated at Vernon, Canada, this 15<sup>th</sup> day of April, 2016

"Warner Gruenwald" (Signed and sealed)

Signature of qualified person

Warner Gruenwald

Printed name of qualified person

Fox Property, British Columbia  
Happy Creek Minerals Ltd.



## Appendix A – Recommended Work

### Fox Project Budget

#### **Phase 1**

<b>Trenching, Geology, Assays and Support:</b>	<b>Metres</b>	<b>\$Cost/m</b>	<b>\$Cost</b>		
South Grid- ground access	500	75	37,500		
BN Zone- Heli Support	250	100	25,000		
RC Zone- Heli Support	150	125	18,750		
BK Zone- Heli-support	250	125	<u>31,250</u> <b>\$112,500</b>		
<b>Geology Mapping, Support:</b>	<b>Days</b>	<b>\$Cost/Day</b>			
MSc. Phase 2	20	500	10,000		
Geology mapping	25	750	18,750		
Prospecting, sampling	15	500	<u>7,500</u> <b>\$36,250</b>		
<b>Drilling, Geology, and Support:</b>	<b># Holes</b>	<b>Length</b>	<b>Total m</b>	<b>\$Cost/m</b>	<b>Total Cost</b>
South Grid- ground access	15	125	1,875	180	337,500
BN Zone- Heli support	20	125	2,500	250	625,000
RC Zone- Heli Support- Geotech/met HQ diam	10	65	650	300	195,000
RC Zone- Heli Support- zone expansion	15	65	975	300	292,500
BK Zone- Heli-support	20	100	<u>2,000</u> 8,000	300	<u>600,000</u> <b>\$2,050,000</b>
<b>Access Trail Construction:</b>		<b>Length(m)</b>	<b>\$Cost/M</b>		
BN-RC-BK zone: heli support D3 and mini excavator		2,500	60		<b>\$150,000</b>
Metallurgical, Resource estimate, PEA, Environmental, Engineering					<u>250,000</u>
				<b>Phase 1 Total:</b>	<b><u>\$2,598,750</u></b>

#### **Phase 2:**

	<b>Length (km)</b>	<b>\$Cost/km</b>	
8% grade main access road to RC Zone	12	250,000	<b>\$3,000,000</b>
Bulk Sample – 10,000 tonnes			<b>300,000</b>
Mine/mill design and engineering, environmental, permitting: Feasibility Study			<u>2,500,000</u>
			<b>Phase 2 Total:</b> <b><u>\$5,800,000</u></b>

## Appendix B: Holes used in the resource estimate

### Holes used in the resource estimate

HOLE ID	LOCATION X	LOCATION Y	LOCATION Z	LENGTH	AREA	Assay Count	Assay Length	Comments
F11-01	670550	5775347	1831.09	35.36	RC	14	11.8	
F11-02	670550	5775347	1831.09	17.68	RC	11	11.25	
F11-03	670535	5775350	1831.44	38.71	RC	10	9.75	
F11-04	670535	5775350	1831.44	37.49	RC	12	13.55	
F11-05	670529	5775351	1831.34	96.62	RC	12	12.2	
F11-06	670529	5775351	1831.34	32.61	RC	11	10.35	
F11-07	670463	5775544	1832.51	38.71	RC	23	23.8	
F11-08	670463	5775544	1832.51	47.85	RC	20	23.95	
F11-09	670462	5775533	1833.66	38.71	RC	26	27.95	
F11-10	670462	5775533	1833.66	35.66	RC	18	19.2	
F12-01	670450	5775545	1834.11	151.49	RC	41	51.9	
F12-02	670450	5775545	1834.11	47.9	RC	33	35.8	
F12-03	670445	5775500	1833.66	169.77	RC	25	49.57	
F12-04	670445	5775500	1833.66	69.2	RC	21	41.1	
F12-05	670450	5775450	1831.12	84.43	RC	32	44.3	
F12-06	670450	5775450	1831.12	47.9	RC	34	43.7	
F12-07	670453	5775413	1827.48	124.05	RC	27	40.3	
F12-08	670453	5775413	1827.48	50.9	RC	25	31.4	
F12-09	670430	5775570	1834.96	63.09	RC	36	48.79	
F12-10	670430	5775570	1834.96	43.6	RC	34	40	
F12-11	670390	5775610	1837.74	72.24	RC	50	56.1	
F12-12	670390	5775610	1837.74	62.5	RC	52	56.4	
F12-13	670400	5775640	1839.09	99.67	RC	48	55.4	
F12-14	670400	5775640	1839.09	108.81	RC	62	68.3	
F12-15	670465	5775610	1834.3	83.21	RC	31	37.6	

HOLE ID	LOCATION X	LOCATION Y	LOCATION Z	LENGTH	AREA	Assay Count	Assay Length	Comments
F12-16	670465	5775610	1834.3	54.86	RC	38	39	
F12-17	670420	5775550	1833.2	41.76	RC	40	40.26	
F12-18	670420	5775550	1833.2	56.39	RC	44	45.39	
F12-19	670420	5775550	1833.2	60.35	RC	41	43.65	
F13-02	670390	5775560	1834.77	60.96	RC	27	49	
F13-03	670390	5775560	1834.77	114.3	RC	23	40.7	
F13-04	670360	5775520	1834.23	50.9	RC	17	34.94	
F13-05	670360	5775520	1834.23	62.48	RC	25	49.7	
F13-06	670385	5775500	1830	51.82	RC	17	34.11	
F13-07	670420	5775520	1832.33	56.39	RC	22	42.1	
F13-08	670420	5775480	1830	38.21	RC	19	35.06	
F13-09	670390	5775580	1835.93	80.77	RC	32	58.61	
F13-10	670420	5775430	1830	47.85	RC	10	20	
F13-11	670420	5775430	1830	16.97	RC	7	14.92	
F13-12	670470	5775360	1828.87	48.77	RC	12	23.28	
F13-13	670550	5775320	1840	93.27	RC	6	12	
F13-14	670470	5775290	1835.97	36.31	RC	11	22.24	
F13-15	670350	5775450	1832.39	62.79	RC	21	39.76	
F13-16	670350	5775450	1832.39	74.37	RC	36	73.09	
F13-17	670400	5775225	1841.81	105.16	RC	29	57.12	
F13-18	670450	5775660	1840.76	108.81	RC	18	36.85	
F13-19	670385	5775615	1838.41	103.63	RC	32	60	
F13-20	670470	5775580	1831.03	62.48	RC	13	25.95	
F13-21	670390	5775560	1834.77	65.23	RC	29	55.37	
RT1	670547	5775361	1824.93	7.6	RCT	7	7.6	
RT2	670537	5775353	1830.66	15	RCT	10	10	
RT3	670542	5775364	1825.16	6.2	RCT	5	6.2	
RT4	670539	5775367	1824.46	7.5	RCT	6	7.2	
RT5	670524	5775377	1822.42	10.8	RCT	8	10	

HOLE ID	LOCATION X	LOCATION Y	LOCATION Z	LENGTH	AREA	Assay Count	Assay Length	Comments
RT6	670503	5775524	1806.37	2	RCT	2	2	
RT7	670493	5775533	1812.02	6	RCT	5	6	
RM4	670408	5775206	1842	3	RMT	3	3	
RM5	670399	5775206	1841	3	RMT	3	3	
RM6	670390	5775210	1843	3	RMT	3	3	
<b>Total</b>	<b>59</b>	<b>holes</b>		<b>3317</b>	<b>meters</b>	<b>1329</b>	<b>1876</b>	
<b>Core</b>	<b>48</b>			<b>3253</b>		<b>1277</b>	<b>1818</b>	
<b>Trench</b>	<b>10</b>			<b>64</b>		<b>52</b>	<b>58</b>	

#### Holes Excluded

HOLE-ID	LOCATIONX	LOCATIONY	LOCATIONZ	LENGTH	AREA	Assay Count	Assay Length	Comments
F13-01	670390	5775560	1834.77	30.43	RC	16	27.85	Abandon and re-drill as F13-03
RM1	670410	5774937	1832	7.7	RMT	5	7.3	In excess of 200m. from the resource area
RM2	670348	5774944	1832	6.6	RMT	4	5.9	In excess of 200m. from the resource area
RM3	670398	5774944	1832	7	RMT	5	7	In excess of 200m. from the resource area
<b>Total</b>	<b>4</b>	<b>holes</b>		<b>52</b>	<b>meters</b>	<b>30</b>	<b>48</b>	
<b>Core</b>	<b>1</b>			<b>30</b>		<b>16</b>	<b>28</b>	
<b>Trench</b>	<b>3</b>			<b>21</b>		<b>14</b>	<b>20</b>	

#### Grand Total

<b>Core</b>	<b>49</b>	<b>Holes</b>		<b>3283</b>	<b>meters</b>	<b>1293</b>	<b>1845</b>	
<b>Trench</b>	<b>13</b>	<b>Trench</b>		<b>85</b>		<b>66</b>	<b>78</b>	
<b>Total</b>	<b>62</b>			<b>3369</b>		<b>1359</b>	<b>1924</b>	