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UPDATED PRELIMINARY ECONOMIC ASSESSMENT ON THE GREENWOOD PRECIOUS METALS PROJECT, GREENWOOD, BRITISH COLUMBIA, CANADA

NTS: 82E/02E
49° 06’ 30’ N and 118° 36’ 00’ W

INCLUDING

LEXINGTON-GRENOBLE DEPOSIT, LEXINGTON PROPERTY,
GOLDEN CROWN DEPOSIT, GOLDEN CROWN PROPERTY,
DEADWOOD DEPOSIT, TAM O’SHANTER PROPERTY,
PHOENIX PROPERTY
AND
BOUNDARY FALLS PROPERTY

Prepared For:

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Technical Report No. 322

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1.0 SUMMARY

P&E Mining Consultants Inc. ("P&E") was engaged by Golden Dawn Minerals Inc. ("Golden Dawn") to prepare a National Instrument 43-101 ("NI 43-101") Technical Report titled "Updated Preliminary Economic Assessment on the Greenwood Precious Metals Project, including the Lexington-Grenoble Deposit, Lexington Property, Golden Crown Deposit, Golden Crown Property, Deadwood Deposit, Tam O'Shanter Property, Phoenix Property and Boundary Falls Property, all located near Greenwood, B.C.", ("The Report"). The Report has an effective date of May 5, 2017. The Lexington-Grenoble Mine is a development project. The Golden Crown, Tam O'Shanter, Phoenix and Boundary Falls Properties are all intermediate stage exploration projects.

The Lexington-Grenoble Mine, the Golden Crown Deposit, the Deadwood Deposit, the Phoenix and Boundary Falls Properties and the central Greenwood Mill and tailings facility along with their related property land tenure, mining equipment and permits are collectively referred to as the Greenwood Precious Metals Project. Golden Dawn Minerals has acquired 100% interest in most of these properties and assets through multiple business arrangements made in 2016 and 2017.

The Greenwood Precious Metals Project lies between the towns of Greenwood and Grand Forks, BC. This project includes the 2,020 hectare Lexington gold-copper Property, comprised of a series of contiguous patented Crown-granted, located and reverted Crown-granted mineral claims, and mining lease claims, and the 1,017-hectare Golden Crown Property comprised of a series of contiguous patented Crown-granted and located mineral claims. The two properties are separated by 1.7 km. The deposits are separated by a straight line distance of 7.8 km. Also included in the Greenwood Precious Metals Project are the Phoenix, Tam O'Shanter and Boundary Falls Properties. The 9,817.51 hectare Phoenix Property adjoins the Golden Crown Property and is composed of 41 mineral claims and 75 Crown Grants. The 1,575 hectare Tam O'Shanter Property is composed of three staked claims, and seven reverted crown grants. The 971.92 hectare Boundary Falls Property is composed of 2 mineral claims and two mining leases.
The area of the Lexington Property has seen periods of intense exploration and mining activity since 1897. Since 1967, the Lexington Property drilling has been comprised of 84 percussion and 552 diamond drill holes, all totalling 45,817 m of drilling by various companies, and small scale gold and copper production from five separate mines. A total of 54,237 tonnes of mineralized material were mined from the underground Lexington-Grenoble Mine by Merit Mining Corp. from April to December 2008 and processed through the Greenwood gravity-flotation plant, producing 5,486 ounces gold, 3,247 ounces silver and 860,259 pounds of copper. Since then, the mine has ceased to operate due to low metal prices or inability of the owners to finance and has been kept on care and maintenance.

The area of the Golden Crown Property has had a long history of exploration and development since 1894. Small-scale underground gold-copper production came from the Winnipeg and Golden Crown Mines between 1900 and 1902. In addition to the shafts and drifts for this early production, a 2.4 m x 2.4 m trackless 1,070 m long exploration drift developed in 1985 accesses the vein system. The property drilling is comprised of 289 diamond drill holes totalling 19,016.32 m, completed since 1968 by various groups, and principally focussed on the vein system that supports the Golden Crown Mineral Resource Estimate.

The area of the Phoenix Property had an extensive period of exploration, development and production from 29 mines and well over 70 mineral prospects dating back to pre-1900; the most significant being the Phoenix Mine that produced 27 million mineralized tonnes at a grade of 0.9% Cu and 1.12 g/t Au. Numerous intermediate and small scale open pits, shafts and drifts explored and developed the various mines and showings on the Property. In excess of 250 exploration drill holes (excluding production grade control drilling), and numerous soil and geophysical grids are documented on the Property.

On the Tam O'Shanter Property, 50 drill holes have explored the Deadwood Zone and other targets.

The Boundary Falls Property has had a long history of intermittent exploration, development and limited production principally over the May Mac Mine from the Skomac veins since 1894. Estimates of total production from the Upper and Lower Skomac veins are 4,228 mineralized tonnes grading 5.35 grams per tonne gold (g/t Au), 227 g/t silver, 2.0% lead and 1.1% zinc.

The area of the Greenwood Precious Metals Project is composed of Late Paleozoic and Mesozoic volcanic and sedimentary rocks, mainly of greenschist facies regional metamorphism, which are intruded by Mesozoic plutons and unconformably overlain by Tertiary volcanoclastic and flow rocks. The geology of the Greenwood area is complicated by three Tertiary fault sets that affect the imbricated Paleozoic to Mesozoic strata, including an early, gently east-dipping set, a second set of low angle west-dipping, detachment-type faults, and a late set of steeply dipping, north to northeast trending normal faults.

The geology of the Lexington Property is strongly influenced by the No. 7 Fault. The key rock units related to mineralization are the Lexington Porphyry and an underlying serpentinite. The Lexington-Grenoble Deposit is interpreted as a series of twelve closely spaced shallow to moderately dipping en echelon overlapping zones hosted within a dacitic pyroclastic unit. Zones are composed of sheeted and stockworked pyrite-chalcopyrite veins, veinlets and disseminations carrying gold. With present knowledge, the multiple zones are confined to an area 525 m along strike, 20-60 m perpendicular to the strike and 25 m vertical thickness.

The Golden Crown Property is underlain principally by stratigraphy preserved in the north dipping Lind Creek thrust sheet. Permian-aged Knob Hill Group rocks of greenstone, pillow lava and breccia and serpentinite are intruded by the Old Diorite complex. The Golden Crown Deposit is composed of a corridor of west northwest trending sub-parallel and closely spaced steeply dipping massive sulphide (pyrrhotite-pyrite+/-chalcopyrite+/-arsenopyrite) and quartz-sulphide veins lying within an area 130 m wide by 800 m long. As many as 18 discrete veins have been identified in the system. Veins typically are 0.3-1 m true width, with local developments to 5 m true width near the serpentinite contact. Veins range in sulphide content from 50 to 90 % sulphides in a quartz gangue and carry high gold tenor.

The Deadwood Zone of the Tam O'Shanter Property lies in a wide zone of intense shearing and silicification occurs along the Wild Rose Fault where multiple zones of low grade gold and copper mineralization occur.

The Phoenix Property is strongly mineralized. Mineralization on the Phoenix Property, both mined out and remaining, is strongly influenced by limey lithologies and structures that are both shallow dipping and sub vertical. Limestones of the Brooklyn Formation and the Snowshoe Fault structure are dominant in the controls on the wide variety of styles of copper and gold mineralization on the Property including skarn, replacement, volcanogenic and epithermal. The structure, although strongly influential in the genesis of the mineralization, also disrupts continuity.

At least two principal Skomac polymetallic Au-Ag-Pb-Zn quartz veins occurs within the Attwood Group of bedded carbonaceous argillite, emplaced on northwest trending shear, dipping about 50^o. The Upper Skomac vein is traceable on surface, underground drifting and now diamond drilling for a 400 m along strike length. Mineralization consists of pyrite, galena, sphalerite, chalcopyrite, accessory tetrahedrite and some native silver with associated gold.

1.1 MINERAL RESOURCE ESTIMATES

The Mineral Resource Estimates referred to in this report for the Lexington-Grenoble and Golden Crown deposits have been confirmed and incorporated from the Mineral Rresource Estimates contained in the P&E April 8, 2016 Technical Report titled “Technical Report and Updated Mineral Resource Estimate for the Greenwood Gold Project British Columbia, Canada (“the April 2016 P&E Report”), prepared for Huakan and Golden Dawn. The Mineral Resource Estimates referred to in this report for the Deadwood Deposit is updated in this report from a previous Mineral Resource Estimate contained in the Apex Geoscience Ltd. January 25, 2013 Technical Report titled “Technical Report on the Updated Resource for the Wild Rose – Tam O’Shanter Property, Greenwood Area, South Central British Columbia, Canada (“the January 2013 Apex Report”), prepared for Golden Dawn.

The Mineral Resource Estimates for the Greenwood Precious Metals Properties are presented in Tables 1.1, 1.2 and 1.3.

TABLE 1.1 LEXINGTON-GRENOBLE DEPOSIT MINERAL RESOURCE ESTIMATE CUT-OFF 3.50 G/T AUEQ					
Classification	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq ozs**
Measured	58,000	6.98	1.10	8.63	16,100
Indicated	314,000	6.38	1.04	7.94	80,200
Measured & Indicated	372,000	6.47	1.05	8.05	96,300
Inferred	12,000	4.42	1.03	5.96	2,300

TABLE 1.2 GOLDEN CROWN DEPOSIT MINERAL RESOURCE ESTIMATE CUT-OFF 3.50 G/T AUEQ					
Classification	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq oz**
Indicated	163,000	11.09	0.56	11.93	62,500
Inferred	42,000	9.04	0.43	9.68	13,100

TABLE 1.3 DEADWOOD DEPOSIT PIT CONSTRAINED MINERAL RESOURCE ESTIMATE Cut-Off 0.4 g/t Au					
Classification	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq oz**
Inferred	874,000	0.66	Nil	0.66	18,500

(1) Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues. It is noted that no specific issues have been identified as yet.

(2) The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

(3) The mineral resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.

(4) The 3.5 g/t AuEq underground Mineral Resource cut-off grade for Lexington and Golden Crown were derived from the approximate Apr 30/17 two year trailing average Au price of US$1,200/oz and Cu price of US$2.50/lb, US$/C$ exchange rate of 0.80, 90% & 85% respective Au and Cu process recoveries, C$35/t process cost, C$75/t mining cost and C$30/t G&A cost. AuEq g/t = Au g/t + (Cu% x 1.5)

(5) The 0.4 g/t Au open pit Mineral Resource cut-off grade for Deadwood was derived from the approximate Apr 30/17 two year trailing average Au price of US$1,200/oz US$/C$ exchange rate of 0.80, 90% Au process recovery, C$13/t process cost, C$3/topen pit mining cost and C$5/t G&A cost.

Cautionary Note: Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource category.

The Lexington-Grenoble, Golden Crown and Deadwood Deposits Mineral Resource Estimates are considered appropriate for use in the Preliminary Economic Assessment contained herein.

1.2 PROPOSED MINING PLAN

1.2.1 Lexington-Grenoble

The Lexington-Grenoble Mine potential mill feed estimates were based on a 3.5g/t Au equivalent ("AuEq") cut-off grade for the 31 Lexington-Grenoble life of mine ("LOM") stopes considered. Initially 86%, or 377,000 tonnes grading 6.25 g/t Au, 1.03% Cu and 7.95 g/t AuEq of the total Measured, Indicated and Inferred Mineral Resources were considered for the financial evaluation. This material was diluted by 18% with 1.50 g/t AuEq and extracted 80% based on the Lexington-Grenoble mine plan and mining method. This resulted in 356,000 tonnes grading 5.47 g/t Au, 0.90% Cu and 6.96 g/t AuEq (diluted and extracted).

The Lexington-Grenoble mining operation is envisaged as a mechanized ramp access, pilot and slash, mining operation that would be expanded on the existing development in the mine. The mine currently has access to surface through two declines, one vent raise, two surface portals and related lateral development. In the proposed mine plan, the mine will have access to surface through two declines, several vent raises, three surface portals and related lateral development.

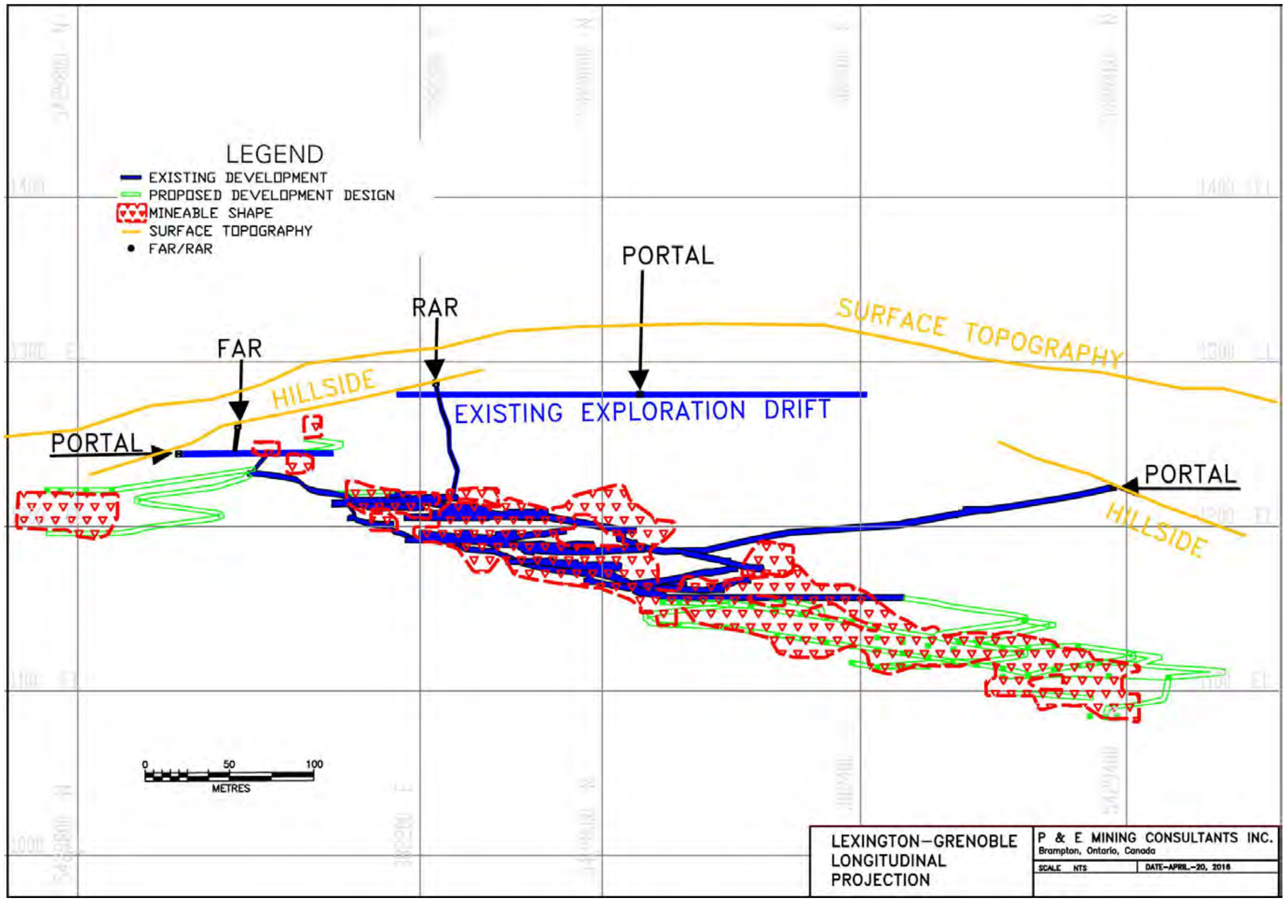
The mining method would employ industry standard jackleg and slusher equipment working in stoping panels oriented along the dip of the mineralized zones.

The mine will be serviced by surface support services located near the portals.

Mill feed from the mining operation would be hauled to surface using 13 tonne underground haulage trucks. The maximum Lexington-Grenoble forecast mill feed production rate is 200 tonnes per day, which equates to 6,000 tonnes per month, 72,000 tonnes per year.

A longitudinal projection of the proposed Lexington-Grenoble Mine looking northeast is presented in Figure 1.1.

Figure 1.1 Longitudinal Projection of the Proposed Lexington-Grenoble Mine



1.2.2 Golden Crown

Golden Crown's mill feed estimates were based on a 3.5g/t AuEq cut-off grade for 23 Golden Crown LOM stopes considered. Initially 90%, or 195,000 tonnes grading 9.76 g/t Au, 0.54% Cu and 10.66 g/t AuEq of the total Measured, Indicated and Inferred Mineral Resources were considered for the financial evaluation. This material was diluted by 15% with 1.50 g/t AuEq and extracted 85%, based on the Golden Crown mine plan and mining method. This resulted in 191,000 tonnes grading 8.67 g/t Au, 0.48% Cu and 9.46 g/t AuEq (diluted and extracted).

The Golden Crown Mine is envisaged as a narrow vein captive cut and fill mining operation, with ramp accesses to mining stopes developed from an existing portal and access drift. The mine currently has some sublevel development completed, several vent raises and related lateral development.

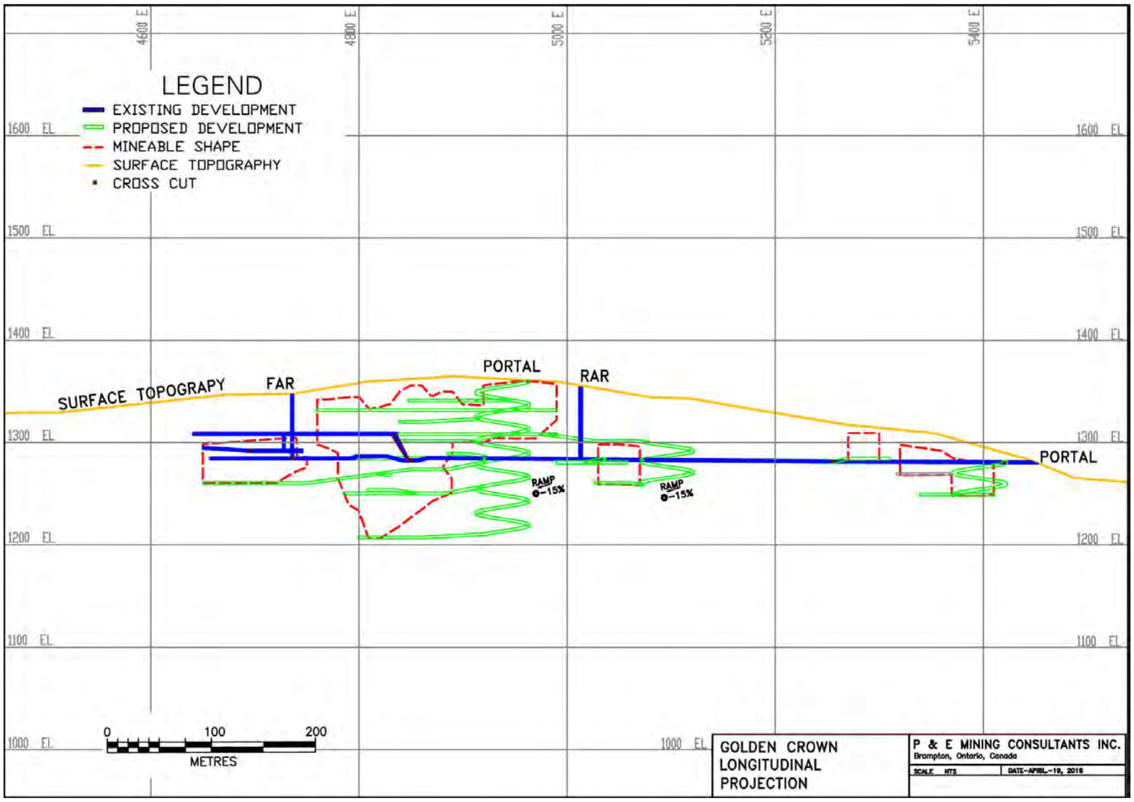
The mining method would employ industry standard captive cut and fill mining practices with hydraulic backfill. The dip of the mineralization is approximately 72 degrees.

The mine will be serviced by surface support services located near the portal.

Mill feed from the mining operation would be hauled to surface using 13 tonne underground haulage trucks. The maximum Golden Crown forecast mill feed production rate is 200 tonnes per day, which equates to 6,000 tonnes per month, 72,000 tonnes per year.

A longitudinal projection of the proposed Golden Crown Mine looking northeast is presented in Figure 1.2.

Figure 1.2 Longitudinal Projection of the Proposed Golden Crown Mine



1.3 PROPOSED PROCESSING PLAN

Mineral processing of the Lexington-Grenoble and Golden Crown Mine product will be performed at the existing Greenwood Mill and concentrator facility, currently on care and maintenance. The facility is accessed from the mine via all-weather gravel roads, 17 km to the Lexington-Grenoble Mine, and 2 km to the Golden Crown Mine. The existing processing facility consists of a concentrating plant and related equipment, including infrastructure and a tailings storage facility ("TSF").

The concentrating plant incorporates conventional mineral processing to produce a gold gravity concentrate, and a copper - gold flotation concentrate. Crushing is performed using a jaw crusher, followed by secondary cone crushing operating in closed circuit with a vibrating screen. The fine feed is directed to a grinding and flotation circuit that can process 8.8 tonnes per hour of feed, although the crushing plant is capable of processing double this throughput.

In addition to the outside crushing plant and the mill building, the site has an office /administration trailer, a sample preparation room contained in a metal sea cargo container, and a Sprung (tensioned fabric) cover structure for the storage of bagged sulphide flotation concentrate. There is an assay laboratory in a mobile trailer, which contains an atomic adsorption spectrophotometer and a fire assay furnace. The facility is pictured in Figure 1.3.

Figure 1.3 Mill Building and Site Area

The average life of mine head grade of mill feed from the Lexington-Grenoble Mine is 5.47 g/t gold, and 0.90% copper, with an overall process recovery of 86% for gold and 87.5% for copper. For Golden Crown the average life of mine mill feed grade is 8.67 g/t gold, and 0.48% copper, with an overall recovery of 70% for gold and 82% for copper. Metal recoveries for Lexington-Grenoble mill feed are based on laboratory test results and previous operating data.

The facility will initially process at a nominal daily throughput of 200 tonnes/day. Assuming 93% plant availability, this provides for an annual nominal production rate of 72,000 tonnes. Daily throughput will be doubled to 400 tonnes per day after one year, with the addition of a second primary grinding mill, modifications to the existing rougher flotation circuit and the receipt of additional throughput permitting or installation of a pre-sorting process. Much of the current remaining equipment including the crushing, regrind mill, scavenger/cleaner flotation cells, and dewatering system were previously designed to handle the expansion.

1.4 ENVIRONMENTAL CONSIDERATIONS

1.4.1 Lexington and Golden Crown

Various baseline studies completed and available to support past and future permitting include those for managing waste rock and tailings material at the mine and mill site, extensive surface water quality sampling at both Lexington-Grenoble Mine and mill site but little at Golden Crown, meteorological data collection, biodiversity assessments of Lexington-Grenoble and Golden Crown Mine sites and mill site, assessment of water quality and quantity, surface drainage, climate, hydrology, hydrogeology, wildlife, vegetation, fisheries and biodiversity values, ARD/ML, terrain ecosystem mapping, socioeconomics, socio-community, land use planning and culture and heritage.

The present land use is mineral exploration, mining, forestry and seasonal cattle grazing. The Project site is not located within any federal or provincial parks, or provincial special management areas. There are no known environmental or archaeological concerns within the Lexington or Golden Crown deposit sites.

There are no creeks, lakes or swamps above or in the immediate area of the two Lexington-Grenoble portals, or existing waste dumps. The drainage area above the current development is small and runoff via Goosmus Creek is minimal due to the vegetation and the small catchment area. Water sampling of Goosmus Creek since 1997 demonstrates that any portal discharge (which has been minimal and periodic in volume and frequency), does not affect downstream water quality.

The Greenwood Process Plant and Tailing Facility site is located between two tributaries of the Snowshoe Creek, which only during freshet drains to July Creek which flows south into the Kettle River. Water quality sampling since 2003 have demonstrated that the prior, during and post operation, has not had any impact to the water quality downstream of the site. The site has peripheral and internal drainage systems to manage surface run off.

There are no creeks, lakes or swamps in the vicinity of the Golden Crown Mine. The area is generally drained to the north by Snowshoe Creek and to the south by Skeff Creek both of which drain into July Creek. Snowshoe Creek is sampled for water quality but Steff Creek is not. The Golden Crown Adit, driven in 1988, has a natural water drainage rate of approximately 3 gallons per minute.

Fisheries studies on Goosmus and Snowshoe Creeks have demonstrated because of small flows and waterfalls that these creeks precluded the presence of fish and aquatic resources in these areas.

The major vegetation in the area consists of hemlock, tamarack, cedar, pine and some deciduous trees. Some of the land has been logged prior to 2007, including the Lexington-Grenoble, Golden Crown Mine sites and the Greenwood tailing site.

The most common wildlife in the area is deer. There are also occasional sightings of black bear, moose, coyotes, cougar and various small mammals such as squirrels. Bird life includes a variety of small birds plus eagles, hawks, owls and ravens. From studies in 2004 and 2006 of the existing or potential biodiversity values within the mineralized area and its multipurpose uses, it was opined that the proposed development was not likely to adversely harm fish or wildlife habitat.

The Lexington-Grenoble Mine site as presently developed is small, 3.5 hectares, and it is not expected that the area of disturbance upon reactivation will increase significantly, <1 hectare by adding to the Eastern portal waste dump area. The site will be used to service mining only, with processing of mineralization to occur at the Greenwood Process Plant.

The Greenwood Process Plant site will not require any new disturbance or work except improvements internal to the building, including the plan to increase the throughput capacity. The Tailings facility will require subsequent lifts. The material for the lifts will be sourced locally. Once the tailings facility reached it full design capacity, dry stack tailings on top of the hydraulic tailings would be employed.

The current portal and adit at Golden Crown would be slashed larger to permit trackless equipment. The waste rock would incrementally be added to the existing portal dump. A second portal with a spiral decline planned over the deposit would have a small footprint (< 1 hectare).

Due to the short storage time of mineralization and waste, the dry climate and stockpile graded base and run-off collection design, metal leaching and acid rock drainage ("ARD") considerations are mitigated throughout the project life. Run of mine ("ROM") mined material will be trucked from the underground Lexington-Grenoble and Golden Crown Mines and dumped in a ROM stockpile adjacent to the crushing plant. The total tailings volume will be susceptible to acid generation. The tailings stream will be transported to the tailings impoundment, which is fully lined and has been designed to maintain saturation of the tailings.

The tailings impoundment will be covered with a saturated rock fill cover on closure in order to mitigate the ARD potential. All buildings and operations materials for all three sites will be removed on closure and disturbed areas and inactive roads will be reclaimed under the direction of the BC Ministry of Energy and Mines. The mining and milling sites will be monitored for a two year period post closure.

The Lexington-Grenoble Mine falls under the current mine permit M-234, and the Greenwood Mill and tailing facility falls under current mill permit M-233, both under care and maintenance status. Reclamation bonds of $215,000 and $235,000 respectively, are placed with the BC government. To reactivate the mine and mill site will likely require a short permitting process through Victoria and the Cranbrook regional office of the BC Ministry of Energy and Mines. Any design variances desired to the current mine and mill permits would require a Mine Development Review Committee review for consideration and approval and First Nation consultation. The extent of the change will determine the depth of the review. A two-step permitting process is envisioned for the Golden Crown Mine, firstly, a Notice of Work application to mine a 10,000 tonne bulk sample. Due to the size and the existence of a Greenwood process facility, the Golden Crown Mine is not anticipated to trigger an Environmental Assessment Review, but permitting is expected to be through a Mine Development Review Committee chaired by the Regional Director of BC Ministry of Energy and Mines. Baseline environmental studies on Golden Crown will be needed prior to permitting.

The reactivation of the project including the construction of the Golden Crown Mine will likely affect the regional and local economy in a positive direction, in employment, relative incomes and real estate. Areas of insignificant impact would be in the areas of infrastructure, demographics, crime, education and local public services. Much of this spending will flow to businesses located within BC and the Kootenay Boundary Regional District, but due to the nature of the goods, many goods will need to be sourced from companies across the country and some goods may be sourced globally. During the operations phase, the project is expected to add significantly to the regional and local economy. Total operations cost for the life of the mine is estimated at $79.6 million. However, the decommissioning phase will begin to see reductions in investments in the regional and local economy.

The project area falls within the traditional territory of the Okanagan Nation. The Osoyoos Indian Band, part of the Okanagan Nation, is the nearest group that assumes caretaker responsibility for this part of the unextinguished territory of the Syilx Okanagan People. The Splatsin First Nation also asserts that this area falls within their traditional territory. Previous operators of the property signed Impacts and Benefits Agreement with the Osoyoos Indian Band in 2008 and 2011. It is anticipated that before operations resume and for subsequent permitting process that First Nation consultation and engagement will be required, potentially culminating in a new Impact Benefits Agreement. Golden Dawn has initiated consultation with the OIB and communications with the Splatsin.

The Osoyoos Indian Band is known for its pro-business approach. Among other successful businesses, the Osoyoos Band operates the Nk'Mip RV Park and Campground and Nk'Mip Corner Gas Station and Convenience, which are located 70 km east of the project.

1.4.2 Tam O'Shanter Property

The author is unaware of any environmental aspects on the Tam O'Shanter Property. The author is unaware if any baseline studies have been carried out on the property.

1.4.3 Phoenix Property

Extensive mining and exploration has been carried out on the Phoenix Property since 1900. There are sites of historic disturbance that are significant from environmental, reclamation and safety aspects. According to New Nadina's website "Upon termination of the Greenwood Area Noranda joint venture, Noranda fulfilled reclamation requirements on these properties to the satisfaction of mining and environment ministries." However, the author understands that the Province continues to pressure Kettle River for additional reclamation responsibilities. Many sites are not properly fenced or signed to protect the general public.

1.4.4 Boundary Falls Property

The Boundary Falls Property covers areas of historic and touristic value, including a small Provincial park. The historic mine workings at the underground May Mac Mine and the mill and tailings site (formerly Roberts or Bow Mines site) are the most significant disturbance, albeit in a small footprint. As owner, Golden Dawn is responsible to reclaim the mine in the future, particularly as they extend drifts and add to waste rock piles. The author is unaware if any baseline studies have been carried out on the property.

1.5 CAPITAL AND OPERATING COSTS (C$)

Total preproduction capital costs are estimated to be $3.4 million and total production capital costs are estimated to be $23.8 million. Combined, the total LOM capital costs are estimated to be $27.2 million. Total operating costs are estimated to be $79.6 million or on average, approximately $145.70/t processed.

1.6 FINANCIAL EVALUATION

A projected after-tax cash flow model has been developed for the conceptualized Greenwood Gold Mining and Processing Operation. All costs are in first quarter 2017 Canadian dollars with no allowance for inflation or escalation. The summary of the results of the cash flow analysis is presented in Table 1.4.

TABLE 1.4
AFTER TAX CASH FLOW ANALYSIS

Description	Discount Rate	Units	Value
Non Discounted After Tax CF		$(M)	26.6
Internal Rate of Return		%	103.4%
NPV at	0%	$(M)	26.6
	5%	$(M)	20.7
	7%	$(M)	18.8
	10%	$(M)	16.3
Project Payback Period in Years		Years	1.4

An estimated total of 100,100 equivalent ounces of gold is expected to be recovered over the life of mine. Total mill feed production during the first 18 months of the life of mine will be 200 tonnes per day. For the remainder of the life of mine, the mill feed production rate will be at 400 tonnes per day.

A CDN$1.00 = US$0.76 exchange rate has been assumed in this assessment.

Cumulative pre-tax and post-tax cash flows are estimated to be $37.0 and $26.6, respectively. Post-tax IRR, and NPV at a 6% discount rate, are estimated to be 103.4% and $19.7 million, respectively. The economic analysis is most sensitive to changes in the US$/CDN$ currency exchange rates and to gold and copper prices and less sensitive to changes in capital and operating costs.

This Preliminary Economic Assessment is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration. It is uncertain that the Measured and Indicated Mineral Resources will be converted to the Proven or Probable Mineral Reserves. There is no certainty that this Preliminary Economic Assessment will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability; the estimate of Mineral Resources in this Preliminary Economic Assessment may be materially affected by higher operating costs, lower metal prices, lower process recoveries, environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

1.7 RECOMMENDATIONS

The Base Case of this PEA indicates that the Greenwood Precious Metals Project has economic potential for producing gold doré bars and a gold-rich copper concentrate. P&E recommends that Golden Dawn advance the project with advanced technical studies, particularly including alternative mine planning, metallurgical, geotechnical and environmental matters with the intention to advance the Greenwood Precious Metals Project to trial mining. Ore pre-sorting investigation and a production decision.

A two phase budget is proposed for the Greenwood Precious Metals Project as follows:

A Phase 1 budget is presented in Table 1.5. Each element of Phase 1 would culminate in a decision point.

TABLE 1.5
PHASE 1 BUDGET

LEXINGTON MINE	Costs		
Dewatering and Rehab			
Capex - pumps and consumables	$150,000		
Opex - labour and equipment	$350,000		
Mill refurbishment	$340,000		
Indirect site capital (3 months)	$590,000		
Preliminary Start-up Engineering Studie	$150,000		
Permitting	$50,000		
Pre-concentration Testing	$65,000		
Test Mining	$385,000		
subtotal	**$2,080,000**		
Lexington-Grenoble Resource Expansion Drill Program			
	Costs	Metres	Holes
Up & Down Dip Targets			
Underground Drilling	$70,000	500	14
South Extension Target			
Surface Drilling	$310,000	2,200	12
Sub parallel Targets			
Surface Drilling	$280,000	2,000	10
Underground Drilling	$140,000	1,000	18
Drilling subtotal	**$800,000**	**5700**	**54**
Lexington Subtotal	**2,880,000**		
GOLDEN CROWN MINE			
Baseline Studies	$ 80,000		
Permit Preparation	$ 50,000		
Permitting Expenses	$ 80,000		
Metallurgical Testwork	$ 40,000		
Golden Crown Subtotal	**$ 250,000**		
PHASE 1 TOTAL	**$3,130,000**		

A Phase 2 budget is presented in Table 1.6. Advancing to Phase 2 is contingent on positive results from Phase 1. Each element of Phase 2 would culminate in a decision point.

TABLE 1.6
PHASE 2 BUDGET

LEXINGTON MINE			
Lexington-Grenoble Resource Expansion Drill Program			
	Costs	Metres	Holes
South Extension Target			
Surface Drilling	$215,000	1,500	8
Sub parallel Targets			
Underground Drilling	$285,000	2,000	30
Drilling Subtotal	**$500,000**	3,500	38
Lexington Subtotal	**$500,000**		
GOLDEN CROWN MINE			
UG Rehab			
Capex - pumps and consumables	$100,000		
Opex - labour and equipment	$250,000		
Subtotal	**$350,000**		
Resource Definition Drill Program			
	Costs	Metres	Holes
Surface Drilling	$70,000	500	5
Underground Drilling	$430,000	3,000	30
Golden Crown Subtotal	**$850,000**	**3,500**	**35**
TAM O'SHANTER			
Resource Definition & Exploration Program			
	Costs	Metres	Holes
Resource Drilling	$560,000	4000	20
Exploration Drilling	$140,000	1,000	10
Drilling Subtotal	**$700,000**	**5,000**	**30**
Geophysics Surveys and Mapping	$300,000		
Metallurgical Testwork and Pit Studies	$150,000		
Tam O'Shanter Subtotal	**$1,150,000**	**3,500**	**35**
PHASE 2 TOTAL	**$2,500,000**		

2.0 INTRODUCTION AND TERMS OF REFERENCE

2.1 TERMS OF REFERENCE

The following technical report was prepared to provide an updated independent NI 43-101 Preliminary Economic Assessment ("PEA") on the Greenwood Precious Metals Project, to include the Lexington-Grenoble Deposit on the Lexington Property, Golden Crown Deposit on the Golden Crown Property, Deadwood Deposit on the Tam O'Shanter Property, and the Phoenix and Boundary Falls Properties, all located near Greenwood, B.C. ("the Technical Report"). Golden Dawn Minerals Inc. ("Golden Dawn") has retained P&E Mining Consultants Inc. ("P&E") to prepare the Technical Report, which provides an updated economic analysis of the potential viability of Mineral Resources contained in the Greenwood Precious Metals Project.

The Mineral Resources referred to in this report have been confirmed and incorporated from the Mineral Resource Estimates contained in the P&E April 8, 2016 Technical Report titled "Technical Report and Updated Mineral Resource Estimate for the Greenwood Gold Project British Columbia, Canada ("the April 2016 P&E Report"), prepared for Huakan International Mining Inc. ("Huakan") and Golden Dawn. The Mineral Resources referred to in this report for the Deadwood Deposit is updated in this report from a previous Mineral Resource Estimate contained in the Apex Geoscience Ltd. January 25, 2013 Technical Report titled "Technical Report on the Updated Resource for the Wild Rose – Tam O'Shanter Property, Greenwood Area, South Central British Columbia, Canada ("the January 2013 Apex Report"), prepared for Golden Dawn. The Deadwood Mineral Resource update reflects a higher cut-off application, a pit optimization, and the fact that the eastward extension of the deposit lies on ground not secured by Golden Dawn.

This report was prepared by P&E, at the request of Wolf Wiese, President and CEO of Golden Dawn Minerals Inc., a BC registered company trading under the symbol of "GOM" on the TSX Venture Exchange with its corporate office at 318-1199 W. Pender Street, Vancouver, B.C., V6E 2R1.

This report effective date is May 5, 2017.

Mr. Paul Cowley, P.Geo., a qualified person under the terms of NI 43-101 has visited the Lexington, Golden Crown and Phoenix Properties on numerous occasions between 2003 and September 2016. Mr. Cowley's last site visit to the Golden Crown and Phoenix Properties was April 23rd and 24th, 2017. Mr. Cowley visited the Boundary Falls Property April 23rd, 2017. A data verification sampling program on Lexington and Golden Crown was conducted in 2006 as part of the on-site review by Eugene Puritch, P.Eng., a qualified person under the terms of NI 43-101. Mr. Puritch's last site visit to both properties was January 17, 2013. A limited verification sampling program was carried out by Mr. Cowley on the Boundary Falls Property during his April 2017 site visit. During the inspections this author examined and confirmed the some of the mineralization on the property, their host rock units, evidence of previous exploration and development, and the work, and its quality, recently conducted by Golden Dawn on the Boundary Falls Property.

In addition to the site visit, P&E held discussions with technical personnel from Golden Dawn regarding all pertinent aspects of the Project and carried out a review of all available literature and documented results concerning the properties. The reader is referred to those data sources, which are outlined in the References section of this report, for further detail.

This Technical Report is prepared in accordance with the requirements of NI 43-101 and NI 43-101F1 of the Ontario Securities Commission ("OSC") and the Canadian Securities Administrators ("CSA").

The Mineral Resource Estimates are considered compliant with the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions.

2.2 SOURCES OF INFORMATION

This report is based, in part, on internal company technical reports, maps and technical correspondence, published government reports, press releases and public information as listed in the References at the conclusion of this report. Several sections from reports authored by other consultants have been summarized in this report, and are so indicated where appropriate.

2.3 UNITS AND CURRENCY

All measurement units used in the mineral resource estimate are metric and the currency is expressed in Canadian dollars unless stated otherwise. Gold ("Au") assay and silver ("Ag") values are reported in grams of metal per metric tonne ("g/t Au"), unless ounces per short ton ("oz/T Au") are specifically stated. Copper ("Cu") grades are reported as a percentage (the proportion of contained metal of the whole sample).

2.4 GLOSSARY AND ABBREVIATION OF TERMS

The following list shows the meaning of the abbreviations for technical terms used throughout the text of this Report.

Abbreviation	**Meaning**
"3D"	Three Dimensional
"AA"	Atomic Absorption
"Ag g/t"	Grams of Silver per Tonne
"Ag"	Silver
"ARD"	Acid rock drainage
"ASL"	Above Sea Level
"Au g/t"	Grams of Gold per Tonne
"Au"	Gold
"BCSC"	British Columbia Securities Commission
"CA"	Certificate of Authorization
"CDN"	Canadian
"CDN$"	Canadian Dollars
"CIM"	Canadian Institute of Mining, Metallurgy And Petroleum
"cm"	Centimetre(s)
"CRM"	Certified Reference Material
"CSA"	Canadian Securities Administrators
"Cu"	Copper
"Cum"	Cumulative
"DCF"	Discounted Cash Flow
"DDH"	Diamond Drill Hole

"DGPS"	Differential Global Positioning System
"E"	East
“EA”	Environmental Assessment
"EIA"	Environmental Impact Assessment
“EIS”	Environmental Impact Statement
"ESE	East-South-East
"G&A"	General and Administration
“Golden Dawn”	Golden Dawn Minerals Inc.
"g/t"	Grams per Tonne
"GPS"	Global Positioning System
"ha"	Hectare(s)
“Huakan”	Huakan International Mining Inc
"IP"	Induced Polarization
"IRR"	Internal Rate of Return
"ISO"	International Organization for Standardization
“Ind.”	Indicated Resources
"k"	Thousands
"k$"	Thousands of Dollars
“KRR”	Kettle River Resources Ltd.
“kg”	Kilograms
"km"	Kilometre(s)
"km/h"	Kilometers per Hour
"kt"	Thousands of Tonnes
"LOM"	Life-Of Mine
"M"	Million
"m"	Metre(s)
"M$"	Millions of Dollars
"Ma"	Millions of Years
"MAG"	Magnetometer Survey
“Meas.”	Measured Resources
“ML/ARD”	Metal Leaching/Acid Rock Drainage
"mm"	Millimeters
"N"	North
"N/A"	Not Applicable
"NAG"	Non-Potentially Acid Generating Rock
"NE"	North-East
"NI 43-101"	National Instrument 43-101
"NN"	Nearest Neighbour
"NPV"	Net Present Value
"OK"	Ordinary Kriging
"opt"	Troy Ounces Per Ton
"OSC"	Ontario Securities Commission
“oz/T Au”	Troy Ounces Gold per Ton
“PAG”	Potentially Acid Generating Rock
“P&E”	P&E Mining Consultants Inc.
“PEA”	Preliminary Economic Assessment
“Project”	Greenwood Precious Metals Project
“RC”	Reverse Circulation Drilling
"QA/QC"	Quality Assurance/Quality Control
"QC"	Quality Control

"QP"	Qualified Person as Defined By Canadian National Instrument NI 43-101
"ROM"	Run-Of-Mine Material produced during mining
"S"	South
"SEDAR"	Website Developed by the CRA, that Provides Access to Public Securities Documents and Information Filed by Public Companies and Investment Funds in Canada
"t"	Metric Tonne(s)
"t/m^3"	Tonnes per Cubic Metre
"tph"	Tonnes per Hour
"tpd"	Tonnes per Day
"TSF"	Tailings Storage Facility
"XRF"	X-Ray Fluorescence Spectrometer

3.0 RELIANCE ON OTHER EXPERTS

P&E reserves the right, but will not be obligated to revise this report and conclusions if additional information becomes known to P&E subsequent to the date of this report.

Copies of the tenure documents, operating licenses, permits, and work contracts were not reviewed. Information relating to tenure was reviewed by means of the public information available P&E has verified the URL link to the BC Government Mineral Titles website (www.mtonline.gov.bc.ca/mtov/home) on the effective date to verify tenure. P&E has relied upon this public information, as well as tenure information from Golden Dawn and has not undertaken an independent detailed legal verification of title and ownership of the the Greenwood Precious Metals Project ownership. P&E has not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties but has relied on, and believes it has a reasonable basis to rely upon Golden Dawn to have conducted the proper legal due diligence.

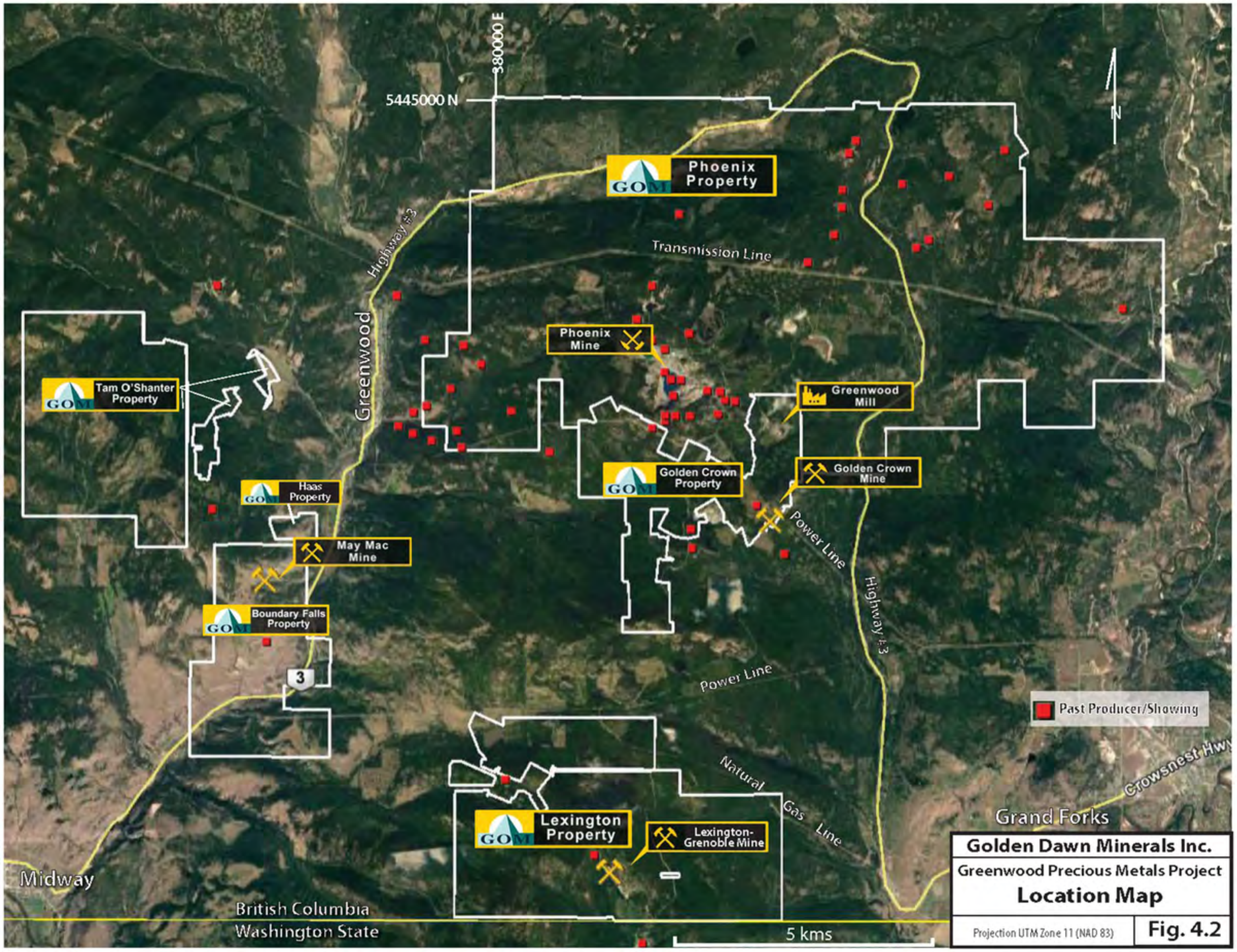
A draft copy of the report has been reviewed for factual errors by Golden Dawn. Any changes made as a result of these reviews did not involve any alteration to the conclusions made. Hence, the statement and opinions expressed in this document are given in good faith and in the belief that such statements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

4.0 PROPERTY DESCRIPTION AND LOCATION

The Greenwood Precious Metals Project lies between the towns of Greenwood and Grand Forks, in south central British Columbia (Figure 4.1). The gold-copper Lexington and Golden Crown Properties are separated by a straight line distance of approximately 1.7 km (Figure 4.2). The deposits are separated by a straight line distance of approximately 7.8 km. The Phoenix Property adjoins the northern boundary of the Golden Crown Property. Thus, the Lexington, Golden Crown and Phoenix Properties as a consolidated group lying in the height of land between Greenwood and Grand Forks. The Tam O'Shanter and Boundary Falls Properties lie across the valley to the west of Highway 3 on an east facing slope, as a cluster of 5 non-adjoining claim blocks.

Figure 4.1 Regional Location Map

Figure 4.2 Greenwood Precious Metals Project Location



4.1 LEXINGTON PROPERTY

The 2,020 hectare Lexington gold-copper property is centered on an area southeast of Greenwood, B.C., 9 km west of Grand Forks, B.C. (Figure 4.2). The Lexington-Grenoble Property is comprised of a series of contiguous patented Crown-granted, located and reverted Crown-granted mineral claims, and mining lease claims. The claims are located within the western half of the Greenwood Mining Division in south central British Columbia, Canada (Figure 4.2 and 4.3). The claims, as listed in Table 4.1 below, are located on NTS map sheet 82E/02E and centered at 49° 00' 35'' N and 118° 37' 00' W.

The majority of the mineral claims are in good standing until January 1, 2019. Golden Dawn holds a 100 % interest in the contiguous package of claims making up the Lexington Property, subject to a 2.5 % net profits interest on a portion of the claims. However, this net profit interest may be extinguished through the receivership and bankruptcy process managed by Grant Thornton in 2014. Based on a 2013 court case Anglo Pacific Group PLC v. Ernst and Young Inc., 2013 QCCA 1323, it can be interpreted that bankruptcy can settle and eventually extinguish all existing contractual and financial obligations depending on the establishment of real versus personal rights.

The taxes on the Crown Grants are invoiced by the BC government and need to be paid annually by July 1st. The Crown Grant fees on the Lexington Property total approximately $145.26 per year. The taxes of $450 for the two Mining Leases on Lexington are due June 28th of every year.

In addition, Golden Dawn holds 100% surface ownership to three Crown Grants in the vicinity of the Lexington-Grenoble Mine. These are L621 Lincoln, L622 City of Paris and L791 Number Four. The BC government provides invoices annually and taxes need to be paid July 1st of every year. These taxes for Lexington surface Crown Grants are approximately $27.30 per year.

To the extent known, there are no known significant factors or risks that may affect access, title, or the right or ability to perform work on the property.

There are environmental liabilities related to the Lexington-Grenoble Mine which are covered by the Mine Permit M-234 and the associated bond currently on safekeeping for Huakan (see Section 5 for details). The Lexington Property is also named in Huakan's MX4-500 general reclamation permit and bond (transfer to Golden Dawn is in progress), however, there are no additional reclamation responsibilities that are not already covered by M-234. Transferring title of M-234 to Golden Dawn is in progress.

Figure 4.3 Claim Map - Lexington Property

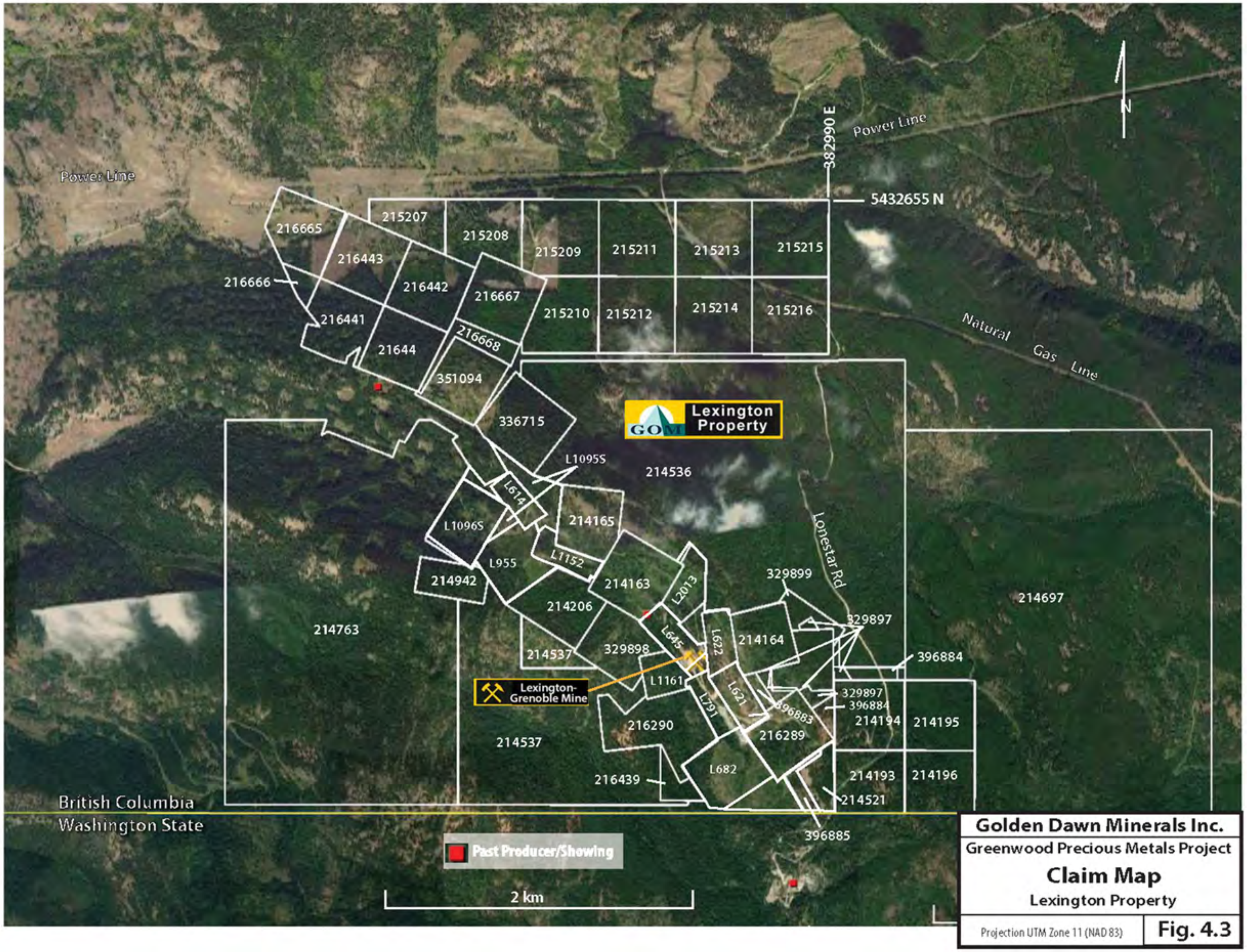


TABLE 4.1
LEXINGTON PROPERTY CLAIMS

Claim No.	Claim Name	Claim Type	No. of Units	Hectares	Expiry Date
L614	Oro	Crown Grant	1	6.75	01/07/2017
L621	Lincoln	Crown Grant	1	7.34	01/07/2017
L622	City of Paris	Crown Grant	1	7.38	01/07/2017
L645	Lexington	Crown Grant	1	8.36	01/07/2017
L682	New St. Maurice	Crown Grant	1	19.67	01/07/2017
L791	Number Four	Crown Grant	1	7.12	01/07/2017
L955	Golden Cache Frac	Crown Grant	1	14.34	01/07/2017
L1095S	N D Des Mines Frac	Crown Grant	1	8.7	01/07/2017
L1096S	Oro Fraction	Crown Grant	1	1.54	01/07/2017
L1152	Puyallup	Crown Grant	1	6.15	01/07/2017
L1161	City of Denver	Crown Grant	1	9.43	01/07/2017
L2013	City of Vancouver Fr	Crown Grant	1	9.41	01/07/2017
L2918	Richmond Fraction	Crown Grant	1	10.01	01/07/2017
214163	NEW JACK OF SPADES	Reverted Crown Grant	1	20.33	12/01/2019
214164	CUBA	Reverted Crown Grant	1	19.19	12/01/2019
214165	ST. LAWRENCE	2 Post Mineral Claim	1	16.75	12/01/2019
214193	LSE #1	2 Post Mineral Claim	1	25	12/01/2019
214194	LSE #2	2 Post Mineral Claim	1	25	12/01/2019
214195	LSE #3	2 Post Mineral Claim	1	25	12/01/2019
214196	LSE #4	2 Post Mineral Claim	1	25	12/01/2019
214206	EXCELSIOR	Reverted Crown Grant	1	18.77	12/01/2019
214521	ST. MAURICE FR	Fractional Mineral Claim	1	6	12/01/2019
214536	BING	4 Post Mineral Claim	20	330	12/01/2019
214537	BRUCE	4 Post Mineral Claim	9	115	12/01/2019
214697	IRON KING	4 Post Mineral Claim	20	450	12/01/2019
214763	DANDY	4 Post Mineral Claim	20	310	12/01/2019
214851	MARIE STUART	Reverted Crown Grant	1	2.4	12/01/2019
214942	NO. 5	Reverted Crown Grant	1	12	12/01/2019
215207	OR-2	2 Post Mineral Claim	1	12	12/01/2019
215208	OR-3	2 Post Mineral Claim	1	18	12/01/2019
215209	OR-5	2 Post Mineral Claim	1	25	12/01/2019
215210	OR-6	2 Post Mineral Claim	1	20	12/01/2019
215211	OR-7	2 Post Mineral Claim	1	25	12/01/2019
215212	OR-8	2 Post Mineral Claim	1	25	12/01/2019
215213	OR-9	2 Post Mineral Claim	1	25	12/01/2019
215214	OR-10	2 Post Mineral Claim	1	25	12/01/2019
215215	OR-11	2 Post Mineral Claim	1	25	12/01/2019
215216	OR-12	2 Post Mineral Claim	1	25	12/01/2019
216289	ML	Mining Lease	1	17.87	28/06/2017
216290	ML	Mining Lease	1	26.84	28/06/2017
216438	JEAN FR.	Fractional Mineral Claim	1	1	12/01/2019
216439	JEAN #11	2 Post Mineral Claim	1	5	12/01/2019
216440	NO.7-1	2 Post Mineral Claim	1	20	12/01/2019
216441	NO.7-2	2 Post Mineral Claim	1	20	12/01/2019
216442	NO.7-3	2 Post Mineral Claim	1	22	12/01/2019
216443	NO.7-4	2 Post Mineral Claim	1	20	12/01/2019
216665	NO. 7.-7	2 Post Mineral Claim	1	22	12/01/2019
216666	NO. 7.-8 FR.	Fractional Mineral Claim	1	5	12/01/2019
216667	NO. 7.-5	2 Post Mineral Claim	1	25	12/01/2019
216668	NO. 7.-6 FR.	Fractional Mineral Claim	1	10	12/01/2019
329897	BRIT #1	2 Post Mineral Claim	1	2	12/01/2019
329898	BRIT #2	2 Post Mineral Claim	1	3	12/01/2019
329899	BRIT #3	2 Post Mineral Claim	1	5	12/01/2019
336714	BRITANNIA #1	2 Post Mineral Claim	1	18	12/01/2019
336715	BRITANNIA #2	2 Post Mineral Claim	1	25	12/01/2019
351094	B.G.C.	2 Post Mineral Claim	1	20	12/01/2019
396883	LEX-1	2 Post Mineral Claim	1	4	12/01/2019
396884	LEX-2	2 Post Mineral Claim	1	4	27/09/2018
396885	LEX-3	2 Post Mineral Claim	1	3	12/01/2019
			124	**2020.35**	

4.2 GOLDEN CROWN PROPERTY

The Golden Crown Property is located within the Greenwood Mining Division in south central British Columbia, Canada (Figure 4.1). The claims are 4 km east southeast of Greenwood, BC and 1 km south of the Phoenix open pit at an average elevation of 1,370 m (Figure 4.2). The claims, centered at 49° 05' 00" N and 118° 35' 30" W, on NTS map sheet 82E/02E, are tabled below in Table 4.2. The Golden Crown Property is composed of 63 contiguous claims totalling 63 units and 1,017 hectares (see Figure 4.2 and 4.4).

The majority of the mineral claims are in good standing until December 2, 2018. Note that the Company will need to do work expenditures and report before December 2018 to keep the mineral claims in good standing (see section 4.6 for the minimum amount).

Golden Dawn holds a 100 % interest in the contiguous package of claims making up the Golden Crown Property, subject to various underlying Net Smelter Return Royalties ("NSR Royalties") on the claims. The NSR royalty shown as "Dynasty" in Table 4.2 is a 2.5 % NSR royalty to Dynasty Motorcar Corp. The NSR royalty shown as "Century" in Table 4.2 is a 4.5 % NSR royalty to Century Gold Corp., which is equally divided to Don Rippon, Karl Schindler, and Maureen McCann. The NSR royalty shown as "KNH" in Table 4.2 is a 2.5 % NSR royalty equally divided to John Kemp, Don Hairsine and George Nakade. The NSR royalty shown as "Rippon" in Table 4.2 is to 3.0 % NSR royalty to Don Rippon. The NSR royalty shown as "Kemp" in Table 4.2 is to 1.5 % NSR royalty to John Kemp. It should be pointed out that the above royalties may be extinguished through the receivership and bankruptcy process managed by Grant Thornton in 2014 with the exception of the Rippon and Schindler parties to the Century royalty and the Rippon royalty shown as Rippon. Based on a 2013 court case Anglo Pacific Group PLC v. Ernst and Young Inc., 2013 QCCA 1323, it can be interpreted that bankruptcy can settle and eventually extinguish all existing contractual and financial obligations depending on the establishment of real versus personal rights. The exceptions to this extinguishment above were negotiated with the receiver and those parties in 2014.

Mineral taxes of approximately $39.64 are paid annually July 1st for the two Crown Grants on the Golden Crown Property.

To the extent known, there are no known significant factors or risks that may affect access, title, or the right or ability to perform work on the property.

There are environmental liabilities related to the Greenwood Mill and tailings facility which are covered by the Mine Permit M-233 and the associated bond currently on safekeeping from Huakan (see Section 5 for details). The Golden Crown Property is also named in Huakan's MX4-500 general reclamation permit and bond for reclaiming exploration trenching it did. The approximate cost to reclaim is in the order of $20,000. Transferring title of M-233 and reassigning the exploration liability to Golden Dawn are both in progress.

Figure 4.4 Claim Map - Golden Crown Property

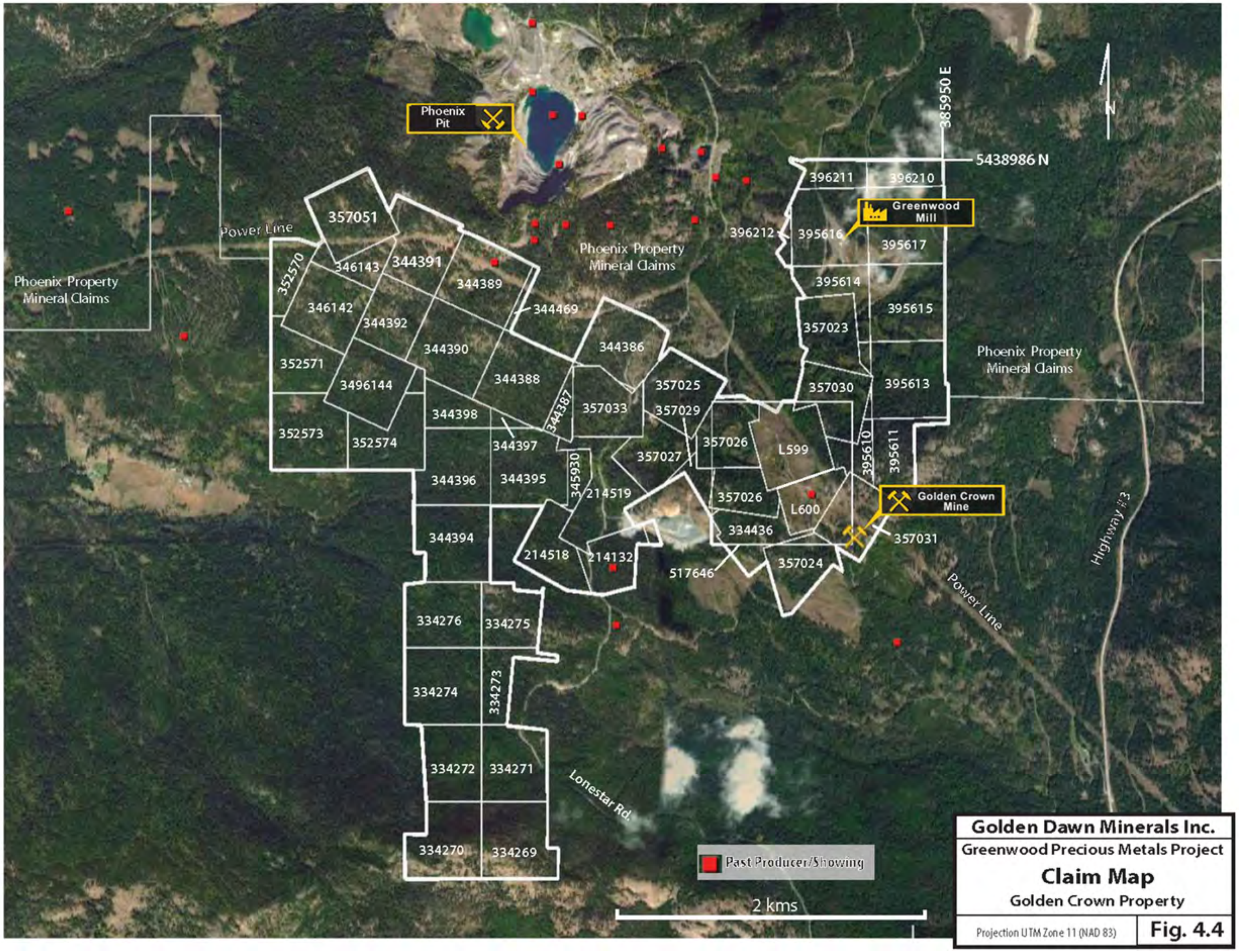


TABLE 4.2
GOLDEN CROWN PROPERTY CLAIMS

Claim No.	Claim Name	Claim Type	No. of Units	Hectares	Expiry Date	NSR
L599	Winnipeg	Crown Grant	1	10.81	01/07/2017	Dynasty
L600	Golden Crown	Crown Grant	1	20.90	01/07/2017	Dynasty
357023	JOEJOE L.759s	2 Post Bid Mineral Claim	1	17.46	02/12/2018	Century
357024	HECLA L.859	2 Post Bid Mineral Claim	1	15.34	02/12/2018	Century
357025	HARTFORD L.1057	2 Post Bid Mineral Claim	1	18.93	02/12/2018	Century
357026	J&R FR. L.1059	2 Post Bid Mineral Claim	1	16.11	02/12/2018	Century
357027	HARTFORD FR. L.1061	2 Post Bid Mineral Claim	1	15.27	02/12/2018	Century
357028	HARD CASH L.1062	2 Post Bid Mineral Claim	1	11.57	02/12/2018	Century
357029	NABOB FR. L.1063	2 Post Bid Mineral Claim	1	4.29	02/12/2018	Century
357030	SISSY L.1068	2 Post Bid Mineral Claim	1	17.24	02/12/2018	Century
357031	CALUMET	2 Post Bid Mineral Claim	1	16.41	02/12/2018	Century
357032	WAR CLOUD FR	2 Post Bid Mineral Claim	1	7.49	02/12/2018	Century
357033	SILVER STAR	2 Post Bid Mineral Claim	1	18.21	02/12/2018	Century
214132	WINNER L.1158	Reverted Crown Grant	1	13.07	02/12/2018	KNH
390756	BIT	2 Post Mineral Claim	1	1	02/12/2018	KNH
214518	WREN L.1170	Reverted Crown Grant	1	15.6	02/12/2018	KNH
214519	LEGAL TENDER L.1551	Reverted Crown Grant	1	22.26	02/12/2018	KNH
334269	JOE#1	2 Post Mineral Claim	1	22	02/12/2018	KNH
334270	JOE#2	2 Post Mineral Claim	1	22	02/12/2018	KNH
334271	JOE#3	2 Post Mineral Claim	1	25	02/12/2018	KNH
334272	JOE#4	2 Post Mineral Claim	1	18	02/12/2018	KNH
334273	JOE#5	2 Post Mineral Claim	1	12	02/12/2018	KNH
334274	JOE#6	2 Post Mineral Claim	1	25	02/12/2018	KNH
334275	JOE#7	2 Post Mineral Claim	1	12	02/12/2018	KNH
334276	JOE#8	2 Post Mineral Claim	1	20	02/12/2018	KNH
334436	WIN FR.	Fractional Mineral Claim	1	15	02/12/2018	KNH
344386	JD#1	2 Post Mineral Claim	1	24	02/12/2018	KNH
344387	JD#2	2 Post Mineral Claim	1	7	02/12/2018	KNH
344388	JD#4	2 Post Mineral Claim	1	25	02/12/2018	KNH
344389	JD#5	2 Post Mineral Claim	1	25	02/12/2018	KNH
344390	JD#6	2 Post Mineral Claim	1	2	02/12/2018	KNH
344391	JD#7	2 Post Mineral Claim	1	21	02/12/2018	KNH
344392	JD#8	2 Post Mineral Claim	1	16	02/12/2018	KNH
344393	JD#9	2 Post Mineral Claim	1	14	02/12/2018	KNH
344394	JD#10	2 Post Mineral Claim	1	18	02/12/2018	KNH
344395	JD#11	2 Post Mineral Claim	1	22	02/12/2018	KNH
344396	JD#12	2 Post Mineral Claim	1	18	02/12/2018	KNH
344397	JD#13	2 Post Mineral Claim	1	2	02/12/2018	KNH
344398	JD#14	2 Post Mineral Claim	1	8	02/12/2018	KNH
344469	JD#3	2 Post Mineral Claim	1	2	02/12/2018	KNH
345930	JD 23	2 Post Mineral Claim	1	4	02/12/2018	KNH
346142	JD 24	2 Post Mineral Claim	1	25	02/12/2018	KNH
346143	JD 25	2 Post Mineral Claim	1	12	02/12/2018	KNH
346144	JD 26	2 Post Mineral Claim	1	18	02/12/2018	KNH
352570	MICRO #1	2 Post Mineral Claim	1	10	02/12/2018	KNH
352571	MICRO #2	2 Post Mineral Claim	1	16	02/12/2018	KNH
352572	MICRO #3	2 Post Mineral Claim	1	1	02/12/2018	KNH
352573	MICRO #4	2 Post Mineral Claim	1	24	02/12/2018	KNH
352574	MICRO #5	2 Post Mineral Claim	1	20	02/12/2018	KNH
357051	NELLIE COTTON	2 Post Bid Mineral Claim	1	20.9	02/12/2018	KNH
517646	Golden Crown Fr	Mineral Claim	1	84.64	02/12/2018	Rippon
357698	Crown 2	2 Post Mineral Claim	1	25	02/12/2018	Rippon
395610	ZIP 1	2 Post Mineral Claim	1	7	02/12/2018	Kemp
395611	ZIP 2	2 Post Mineral Claim	1	10	02/12/2018	Kemp
395612	ZIP 3	2 Post Mineral Claim	1	1	02/12/2018	Kemp
395613	ZIP 4	2 Post Mineral Claim	1	24	02/12/2018	Kemp
395614	ZIP 5	2 Post Mineral Claim	1	12	02/12/2018	Kemp
395615	ZIP 6	2 Post Mineral Claim	1	25	02/12/2018	Kemp
395616	ZIP 7	2 Post Mineral Claim	1	23	02/12/2018	Kemp
395617	ZIP 8	2 Post Mineral Claim	1	25	02/12/2018	Kemp
396210	ZIP #9	2 Post Mineral Claim	1	5	02/12/2018	Kemp
396211	ZIP #10	2 Post Mineral Claim	1	5	02/12/2018	Kemp
396212	ZIP #11	2 Post Mineral Claim	1	2	02/12/2018	Kemp
			63	**1016.50**		

4.2.1 Greenwood Gold Project Sale

On February 24, 2016 Golden Dawn announced that it had signed a letter of intent with Huakan with respect to an option to acquire the mineral properties and assets generally known as the Greenwood Gold Project. The binding letter of intent "LOI" grants Golden Dawn the option to acquire all of the rights, title and interest in the Greenwood Assets subject to certain terms and conditions. Consideration for the acquisition consists of payments totalling CAD$4,035,000 cash, 2,000,000 units of Golden Dawn, consisting of a share and a warrant exercisable at $0.20 for two years, and 600,000 shares of Golden Dawn. An option agreement incorporating the principal terms of the LOI was to be entered into by the parties.

Under the terms of the agreement:

- 1045061 B.C. Ltd. ("the Vendor") was incorporated on August 6, 2015 by all the existing shareholders of Huakan with the authorized capital of an unlimited number of common shares. A "Spin-off Agreement" was to be entered into between Huakan and the Vendor prior to the Closing, pursuant to which Huakan was to transfer and assign the Greenwood Assets to the Vendor on an "as is, where is" basis in exchange for an aggregate of 45,091,939 common shares of the Vendor. Upon completion of the Spin-off and due exercise of the Option, Golden Dawn was to acquire all of the issued and outstanding common shares of the Vendor from the shareholders of the Vendor pursuant to a "Share Transfer Agreement".
- At the time of the execution of the LOI, Mr. Wolf Wiese, CEO of Golden Dawn was to advance 600,000 shares of Golden Dawn on behalf of Golden Dawn, as the first consideration **(completed).**
- Sixty (60) days after the execution of the LOI, Golden Dawn was to make a non-refundable deposit of CAD$30,000 to the Vendor, and issue 1,000,000 Units of the Golden Dawn to Huakan (or its designate), each Unit comprising of one common share of Golden Dawn and one warrant that entitles the holder to purchase one additional common share of Golden Dawn at a price of CAD$0.20 for a period of two years from the date of issuance ("the Second Tranche Securities Consideration"). **(completed)**
- The parties were to negotiate in good faith and enter into definitive agreements on or prior to June 22, 2016. The definitive agreements was to incorporate the principal terms of this LOI and contain customary provisions that are similar to the transactions contemplated herein. **An Option Agreement was signed April 11, 2016.**
- Upon Closing (no later than 120 calendar days after the execution date of the LOI), Golden Dawn was to make a payment in the amount of CAD$2,900,000 in cash to the Vendor **(completed)** and issue 1,000,000 Units to Huakan or its designate **(completed)**, and refund to Huakan or the Vendor (as the case may be) an amount of CAD$450,000 that is equal to the reclamation bond held by the Government of British Columbia, that was previously posted by Huakan. This transaction was subject to all regulatory approvals.
- An ongoing and post-Closing periodic payment of CAD$700,000 (the "Net Revenue Payment") were to be accumulated and paid to the Vendor on a

semi-annual basis for a period of no more than 30 months after the Closing **(2 of 3 payments have been made)**.

- Pursuant to a "Royalty Agreement", the Lexington-Grenoble and Golden Crown Mines shall be subject to an NSR Royalty of 3% payable on all proceeds of material mined and processed, subject to the Purchaser's right to repurchase the NSR Royalty at any time at a price of $700,000 during the Payment Period. If, in every 6 months during the Payment Period, the amount of net revenues received by the Vendor is less than a benchmark amount of CAD$140,000, the Vendor may have the option to accept the payment of balance in securities of the Purchaser. If the Vendor does not elect the foregoing option, the Purchaser shall still make the payment in cash for the remaining balance up to the Benchmark Amount in such 6-month period. The Purchaser will have the option to accelerate the cash payment of all or part of the Net Revenue Payment.
- This transaction was subject to TSX.V approval.

November 16, 2016 Golden Dawn announced TSX Venture approval for the filing of the property option agreement (the "Agreement"). To acquire the 100% interest in the Assets, the Golden Dawn paid a total cash consideration of $2,930,000, set aside in trust CAD$450,000 for a reclamation and other bonds, issued 2,600,000 common shares, and 2,000,000 warrants of the Company and has paid $500,000 of the $700,000 towards the Net Revenue Payment.

4.3 TAM O'SHANTER PROPERTY

The Tam O'Shanter Property is located in south-central British Columbia (BC), approximately 4 km southwest of Greenwood, BC (Figure 4.2 and 4.5). The Property consists of three staked claims and seven reverted crown grants (Table 4.3). The blocks are located in the Greenwood Mining District, and form a cluster of contiguous and slightly disconnected package of land totalling approximately 1,575 ha. The property is centred at latitude 49° 04' N and longitude 118° 43' W (NAD83) or Universal Transverse Mercator (UTM) easting 373790 and northing 5437437.

The Tam O'Shanter claims are 100% owned by Kettle River Resources Ltd. Golden Dawn entered into an option agreement with Kettle River to earn a 100% interest in the Tam O'Shanter Property in November, 2009 but relinquished the claims in 2013 due to financial constraints.

Subsequently, Golden Dawn acquired 100% interest in the Tam O'Shanter, Haas and Phoenix Properties through a share acquisition completed on February 15, 2017 of Kettle River Resources Ltd. a wholly owned subsidiary of New Nadina Explorations Limited. Golden Dawn and New Nadina Explorations Limited signed a binding Letter of Intent ("LOI") October 18, 2016 for the acquisition of Kettle River Resources which owns 100% of the Tam O'Shanter, Haas and Phoenix Properties. Consideration for the acquisition consisted of a non-refundable deposit of $80,000 on signing the LOI **(completed)**, $15,000 by November 26, 2016 **(completed)**, and on transaction closing, cash payments totaling CAD$1,000,000 (inclusive of deposits) and $600,000 in shares of the Golden Dawn **(completed)**. The properties will be subject to a 1% NSR where Golden Dawn can purchase a ½% of the NSR for $1,000,000 for up to five years, and thereafter $1,200,000 for up to 10 years, leaving a ½% NSR payable to New Nadina. This was a non-fundamental acquisition.

Figure 4.5 Claim Map – Tam O'Shanter and Haas Properties

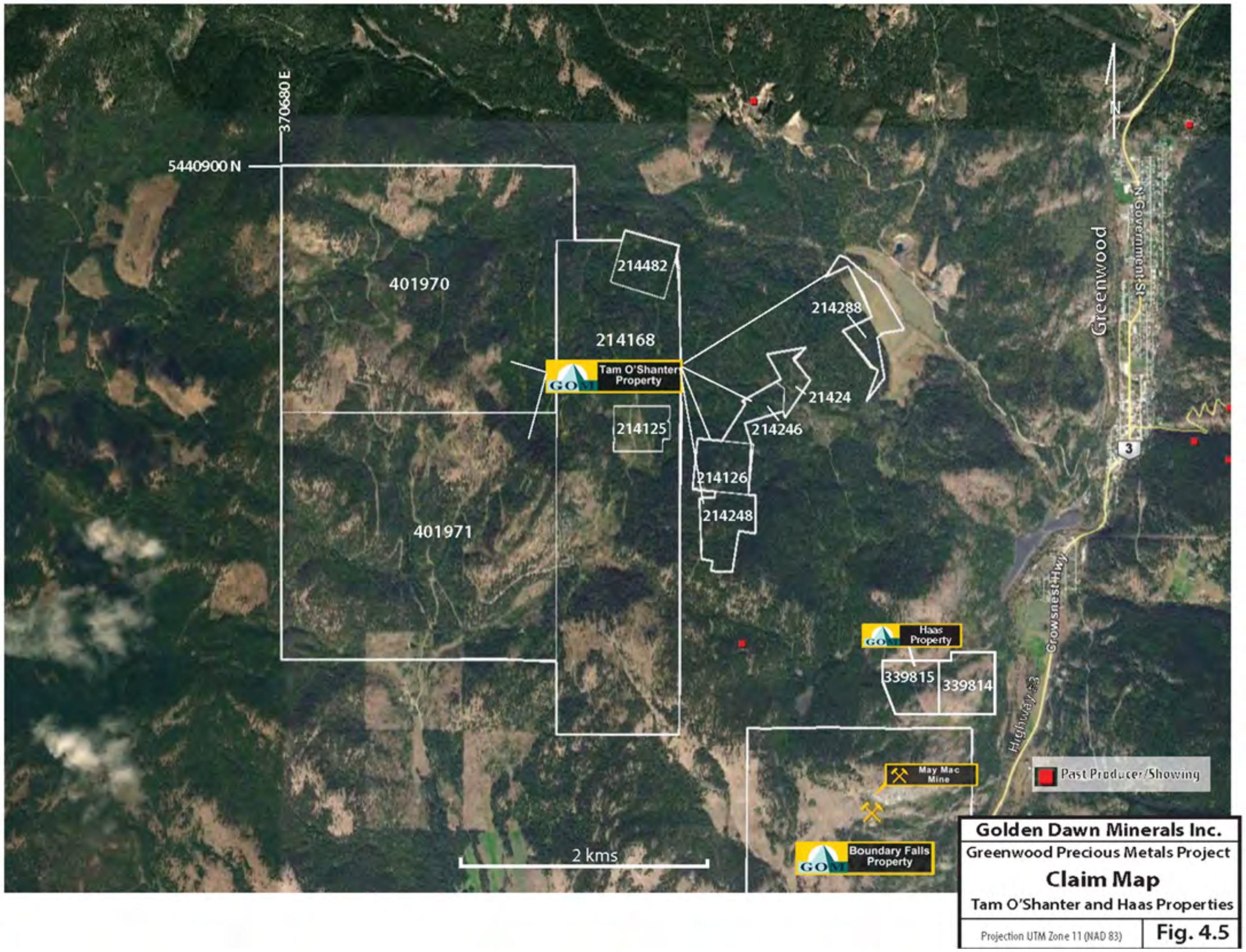


TABLE 4.3 TAM O'SHANTER PROPERTY CLAIMS				
Tenure Number	**Claim Name**	**Owner**	**Area (Ha)**	**Expiry Date**
214125	Tam O'Shanter	Kettle River Resources Ltd.	25.00	2023/Jan/31
214126	Iva Lenore	Kettle River Resources Ltd.	25.00	2023/Jan/31
214168	Shanter	Kettle River Resources Ltd.	400.00	2023/Jan/31
214246	Viceroy Fr.	Kettle River Resources Ltd.	25.00	2023/Jan/31
214247	Arlington Fr. No. 9	Kettle River Resources Ltd.	25.00	2023/Jan/31
214248	Salamanca Fr.	Kettle River Resources Ltd.	25.00	2023/Jan/31
214288	Montrose Fr.	Kettle River Resources Ltd.	25.00	2023/Jan/31
214482	Gold Bug No.2	Kettle River Resources Ltd.	25.00	2023/Jan/31
401970	Clodagh 1	Kettle River Resources Ltd.	500.00	2023/Jan/31
401971	Clodagh 2	Kettle River Resources Ltd.	500.00	2023/Jan/31

A very small portion of the southernmost extent of the Tam O'Shanter Property is underlain by private land. Additionally, the non-congruous portions of the Tam O'Shanter Property, which reside to the east of the main claim block, are partially or totally underlain by private land. Private surface rights held by a third party do not infringe on the mineral rights of the claim holder, nor can access to these areas be denied. Permission is required to be obtained for any instances requiring access to private land.

4.4 PHOENIX PROPERTY

The Phoenix Property lies in southern B.C. near Provincial Highway 3 (Figure 4.2), between Greenwood to the west and Grand Forks to the east. It lies in the Greenwood Mining Division British Columbia on NTS map 82E/2. The Phoenix Property is a contiguous package of Crown Grants, Mining Leases and Mineral claims centred at approximate latitude 49º 6' 50" N and longitude 118º 34' 24" W, on NTS 082E/2, and cover a total area of approximately 9,817.51 ha. The Property includes 41 mineral claims and 75 Crown Grants (see Figures 4.6, 4.7 and 4.8). The 55 Crown Granted claims with sub-surface mineral rights cover 841.1 hectares; the 20 Crown Granted claims with surface and sub-surface rights cover 258.5 hectares; and the 41 mineral tenure claims with subsurface rights cover 8,717.91 hectares. Details of the mineral claims and crown grants are shown in Tables 4.4 to 4.6.

A GPS claims survey was completed in 2004 (MacDonald and Klassen, 2004). In 2005 Kettle River staked MTO cell claims to cover all available ground overlying crown grants within the Phoenix Property, and converted most of the legacy mineral claims within the Property to MTO cell claims.

All of the mineral claims, Crown Grants and Mine Leases comprising the Property are 100% owned by Kettle River Resources Ltd., with no underlying royalties. Kettle River acquired ownership to the Crown Grants, Mine Leases and most of the claims in the 1980's, through a series of agreements with a number of different parties. Some claims were acquired by the company, by staking. The author has not reviewed the agreements assigning title to Kettle River.

Within the Phoenix Property there are four valid crown grants, held by others that are not part of the Property (see Figure 4.6). In addition, there are some areas of privately owned surface title that are adjacent to Highway 3 in the Eholt and July Creek valleys that coincide with part of the mineral titles.

Figure 4.6 Claim Map - Phoenix Property Mineral Claims

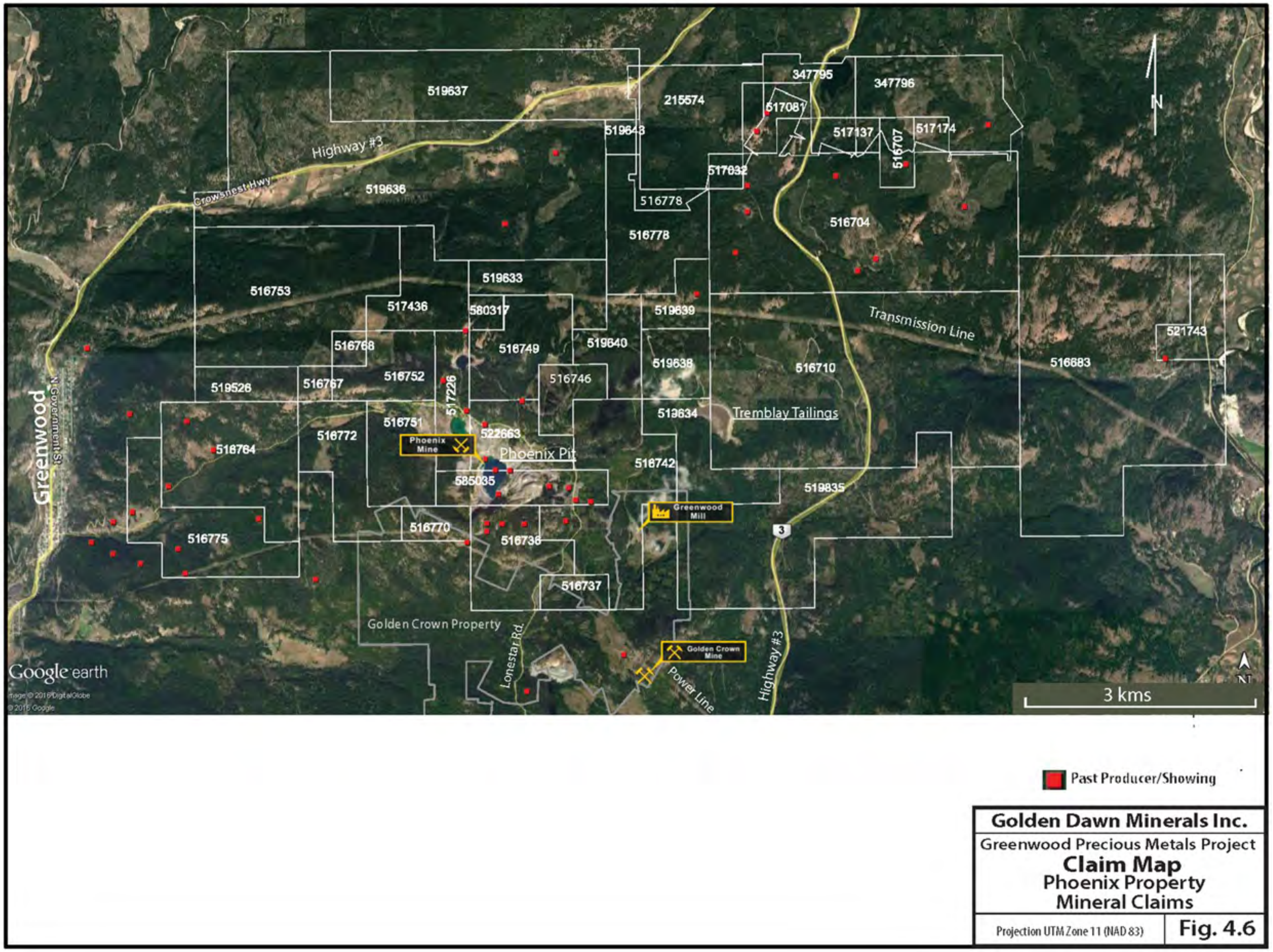


Figure 4.7 Phoenix Property Crown Grants - Central Area

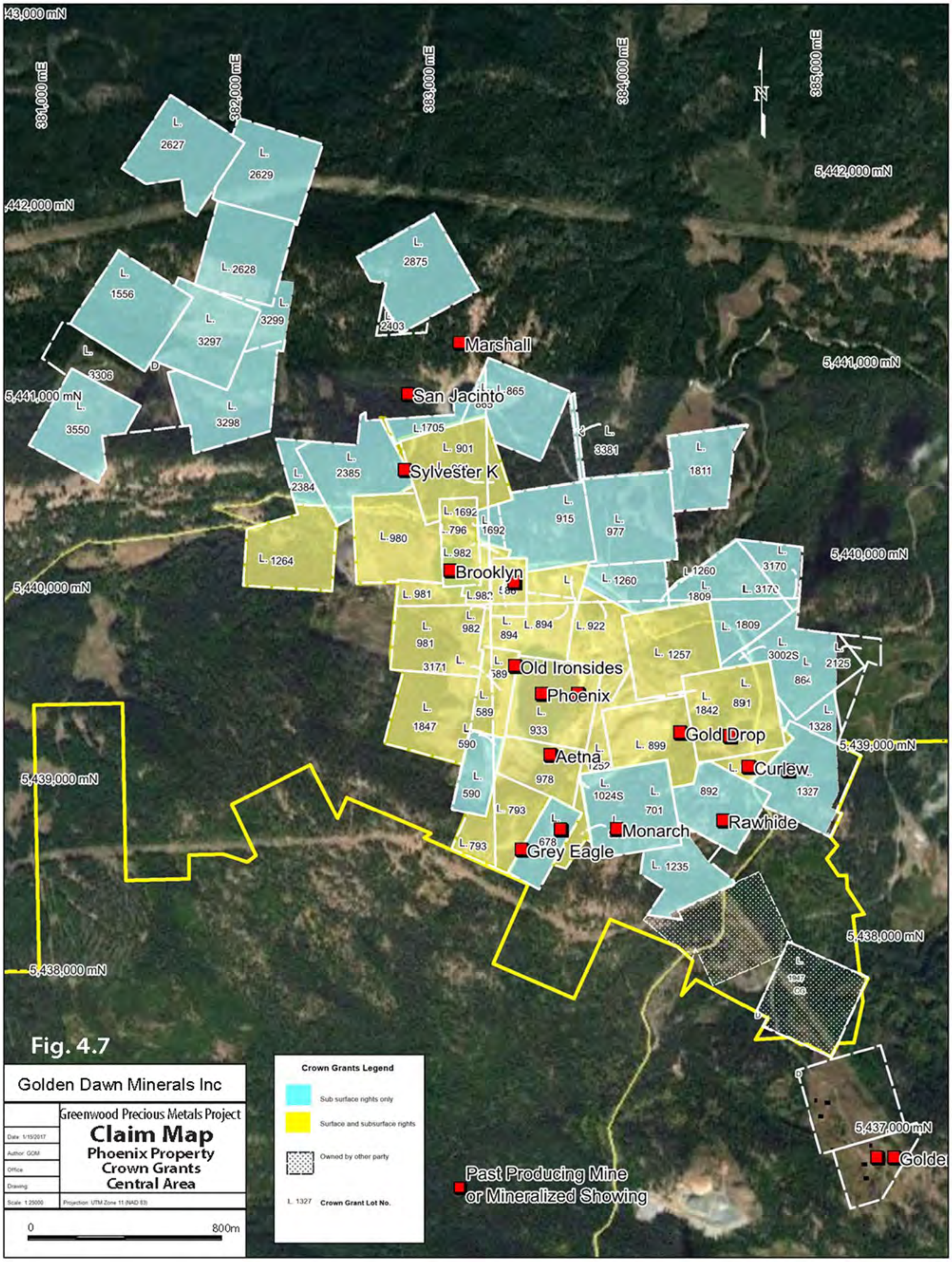


Figure 4.8 Phoenix Property Crown Grants - NE Area

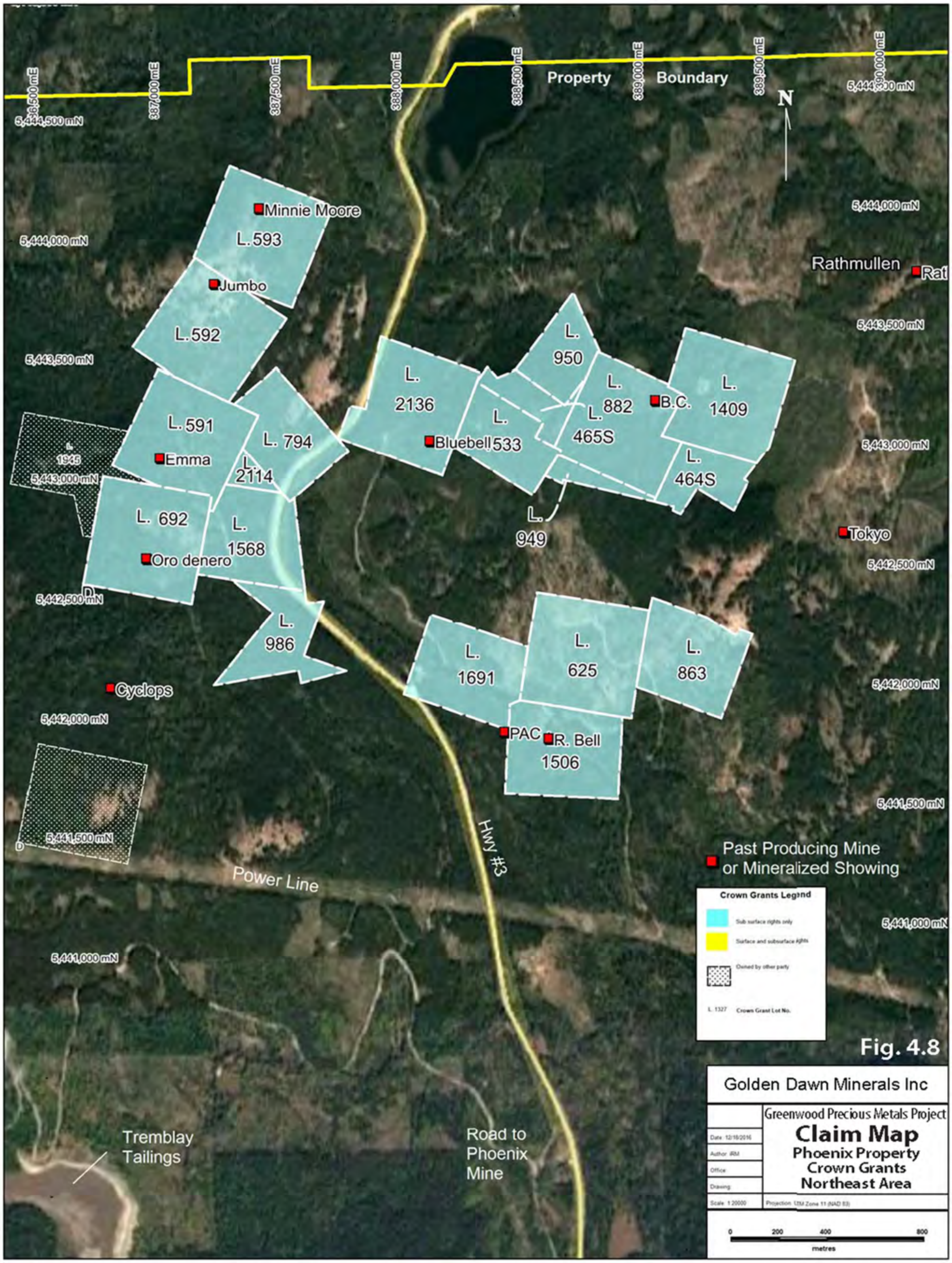


TABLE 4.4 PHOENIX PROPERTY CROWN GRANTS WITH SURFACE RIGHTS

CG Name	DL #	Hectares	Registered Owner	PID	Notes
Old Ironsides	589	8.2	KRR	List	4 separate titles
Grey Eagle	793	13.7	KRR	014-865-645	
Brooklyn	796	8.4	KRR	List	old twn site lots
Snowshoe	891	20.9	KRR	014-894-271	
Curlew	893	3.1	KRR	014-895-994	
Phoenix	894	12.1	KRR	List	old twn site lots
Gold Drop	899	13.1	KRR	014-884-925	
New York	901	19.3	KRR	013-890-549	
Golden Eagle	921	4.5	KRR	List	old twnsite lots
Fouth of July	922	11.7	KRR	List	old twnsite lots
Victoria	933	18.9	KRR	List	old twnsite lots
Missing Link	979	2.9	KRR	014-909-740	
Cimeron	980	19.6	KRR	List	old twnsite lots
Idaho	981	19.3	KRR	List	old twnsite lots
Gold Drop Fr.	1252	5.5	KRR	014-988-569	
Nugget	1257	18.7	KRR	List	6 separate titles
Garfield	1264	17.4	KRR	014-990-547	
Phillipsburg Fr.	1842	0.5	KRR	015-082-181	
Banner	1847	19.3	KRR	015-079-309	
Boston	1645	18	KRR	015-363-554	
Willamena Fr.	1693	3	KRR	014-048-811	
Stafford Fr.	1703	0.4	KRR	015-082-861	

TABLE 4.5
PHOENIX PROPERTY CROWN GRANTS WITH SUBSURFACE RIGHTS ONLY

Crown Grant Name	DL#	Hectares	Owner	PID #
B.C. Fr.	464s	7.1	KRR	014-779-005
London No2 Fr.	465s	5.3	KRR	014-778-921
Emma	591	19.6	KRR	014-883-571
Jumbo	592	20.5	KRR	014-883-601
Minniemoore	593	20.3	KRR	014-883-686
Cordick	625	20.9	KRR	014-787-636
Oro Denoro	692	20.9	KRR	014-793-296
Mountain Rose	794	12.1	KRR	004-574-681
Duplicate	863	15	KRR	014-882-124
B.C.	882	19.2	KRR	014-896-150
Novelty Fr.	949	2.8	KRR	014-935-252
Vashti Fr.	950	8.1	KRR	014-935-261
Norton Fr.	986	6.8	KRR	014-909-499
May	1409	19.8	KRR	014-779-021
R.Bell	1506	16.9	KRR	014-993-490
Mountain View	1533	11	KRR	014-996-634
Mary B	1568	14.9	KRR	015-009-581
Erwin	1691	15.5	KRR	015-048-713
Matabelle Fr.	2114	1.9	KRR	015-085-791
Blue Bell	2136	19.6	KRR	015-085-911
Stemwinder	588	5.6	KRR	

Crown Grant Name	DL#	Hectares	Owner	PID #
Old Ironsides	589	8.2	KRR	
Knob Hill	590	7.7	KRR	
War Eagle	678	8.4	KRR	
Monarch	701	20.7	KRR	
Pheasant	864	17.7	KRR	
Bullion	865	16.8	KRR	
Snowshoe	891	20.9	KRR	
Rawhide	892	14.2	KRR	
Montezuma	915	18.2	KRR	
Gilt Edge	977	20.2	KRR	
Aetna Fr.	1024	129.5	KRR	
Bank of England	1235	12	KRR	
No. 13	1260	8.7	KRR	
Yellow Jacket	1327	18.8	KRR	
Fairplay Fr.	1328	4.2	KRR	
Rob Roy	1556	20.9	KRR	
Joker	1692	2.9	KRR	
Timer Fr.	1705	3.9	KRR	031-890-531
Midnight	1809	18.2	KRR	
Gypsy	1811	13	KRR	
Alma Fr.	2125	5.3	KRR	015-085-856
Surprise Fr.	2384	4.2	KRR	
Sylvester K	2385	17.1	KRR	013-890-506
Woodstock	2627	19.4	KRR	
Little Dallas	2628	18.9	KRR	
May	2629	19.1	KRR	
Denver	2875	20.5	KRR	
Snowshoe Fr.	3002s	0.8	KRR	
Ethel Verne	3170	6.1	KRR	
Toothpick Fr.	3171		KRR	
Pilot	3297	17.8	KRR	
Dexter Fr.	3298	18.9	KRR	
Log Cabin	3299	5.6	KRR	
Montr-Cristo	3381	1	KRR	
Four Paws	3550	17.5	KRR	

Crown Grants are maintained by making annual mineral land tax payments, by July 2 of each year. On the Phoenix Property the annual taxes total $1,169.39 which was paid in 2016 and due in 2017. Kettle River Resources holds surface title to DL 2710 SL2, which covers the Tremblay tailings site. Title to the surface lands is maintained by making annual land taxes payments July 2 of each year. These taxes for the Phoenix Property total $2,329.53 which was last paid in 2016 and due in 2017.

Note that the Company will need to do work expenditures and report before December 30, 2017 to keep the mineral claims in good standing (see section 4.6 for the minimum amount).

Golden Dawn acquired 100% interest in the Tam O'Shanter, Haas and Phoenix Properties through a share acquisition completed February 15, 2017 of Kettle River Resources Ltd. a wholly owned subsidiary of New Nadina Explorations Limited. The details have been described in Section 4.3.

TABLE 4.6
PHOENIX PROPERTY MINERAL CLAIMS

Tenure Number	Claim Name	Owner	Good To Date	Hectares
215574	Bat #3	KKR	2017/Dec/30	400
347795	Summit 96-1	KKR	2017/Dec/30	225
347796	Summit 96-2	KKR	2017/Dec/30	375
516683		KKR	2017/Dec/30	803.625
516704		KKR	2017/Dec/30	739.87
516707		KKR	2017/Dec/30	42.27
516710		KKR	2017/Dec/30	930.46
516736		KKR	2017/Dec/30	148.09
516737		KKR	2017/Dec/30	42.32
516742		KKR	2017/Dec/30	274.98
516746		KKR	2017/Dec/30	63.44
516749		KKR	2017/Dec/30	148.02
516751		KKR	2017/Dec/30	126.91
516752		KKR	2017/Dec/30	105.73
516753		KKR	2017/Dec/30	444
516764		KKR	2017/Dec/31	274.967
516767		KKR	2017/Dec/30	21.15
516768		KKR	2017/Dec/30	21.15
516770		KKR	2017/Dec/30	42.31
516772		KKR	2017/Dec/30	148.06
516775		KKR	2017/Dec/31	211.547
516778		KKR	2017/Dec/30	190.26
517032	BB1	KKR	2017/Dec/30	21.14
517081	BB2	KKR	2017/Dec/30	63.4
517137	BB3	KKR	2017/Dec/30	42.27
517174	BB4	KKR	2017/Dec/30	21.14
517226	PP-1	KKR	2017/Dec/30	84.59
517436	Mt. Lease Area	KKR	2017/Dec/30	126.86
519526		KKR	2017/Dec/31	63.442
519633		KKR	2017/Dec/30	105.71
519634		KKR	2017/Dec/30	126.9
519635		KKR	2017/Dec/30	465.39
519636		KKR	2017/Dec/30	951.15
519637		KKR	2017/Dec/30	380.38
519638		KKR	2017/Dec/30	84.58
519639		KKR	2017/Dec/30	63.43
519640		KKR	2017/Dec/30	84.58
519643		KKR	2017/Dec/30	21.14
552663	Phoenix Tailings	KKR	2017/Dec/30	105.75
580317		KKR	2017/Dec/30	21.14
585035	Phoenix Pit	KKR	2017/Dec/30	105.76
			TOTAL	**8717.911**

4.5 BOUNDARY FALLS PROPERTY

The Boundary Falls Property lies in Boundary Country of the Southern Interior of British Columbia and 750 m south southwest of the City of Greenwood, British Columbia, Canada (Figure 4.2). A central point in the property is located at UTM coordinates 375,387 m East and 5,435,596 m North or Latitude 49.060N and Longitude 118.705W. The area is covered by NTS Topographic Map Sheet 082E02 and TRIM 082E007.

The Boundary Falls Property tenure comprises of 2 mineral claims and two mining leases totaling 971.92 hectares or 9.7 square kilometers (Table 4.7 and Figure 4.9). The May Mac Mine lies on Mining Lease #'s ML 423 and 430, which consist of reverted crown-grant claims and are surrounded by Tenure # 516278.

TABLE 4.7
BOUNDARY FALLS PROPERTY CLAIMS

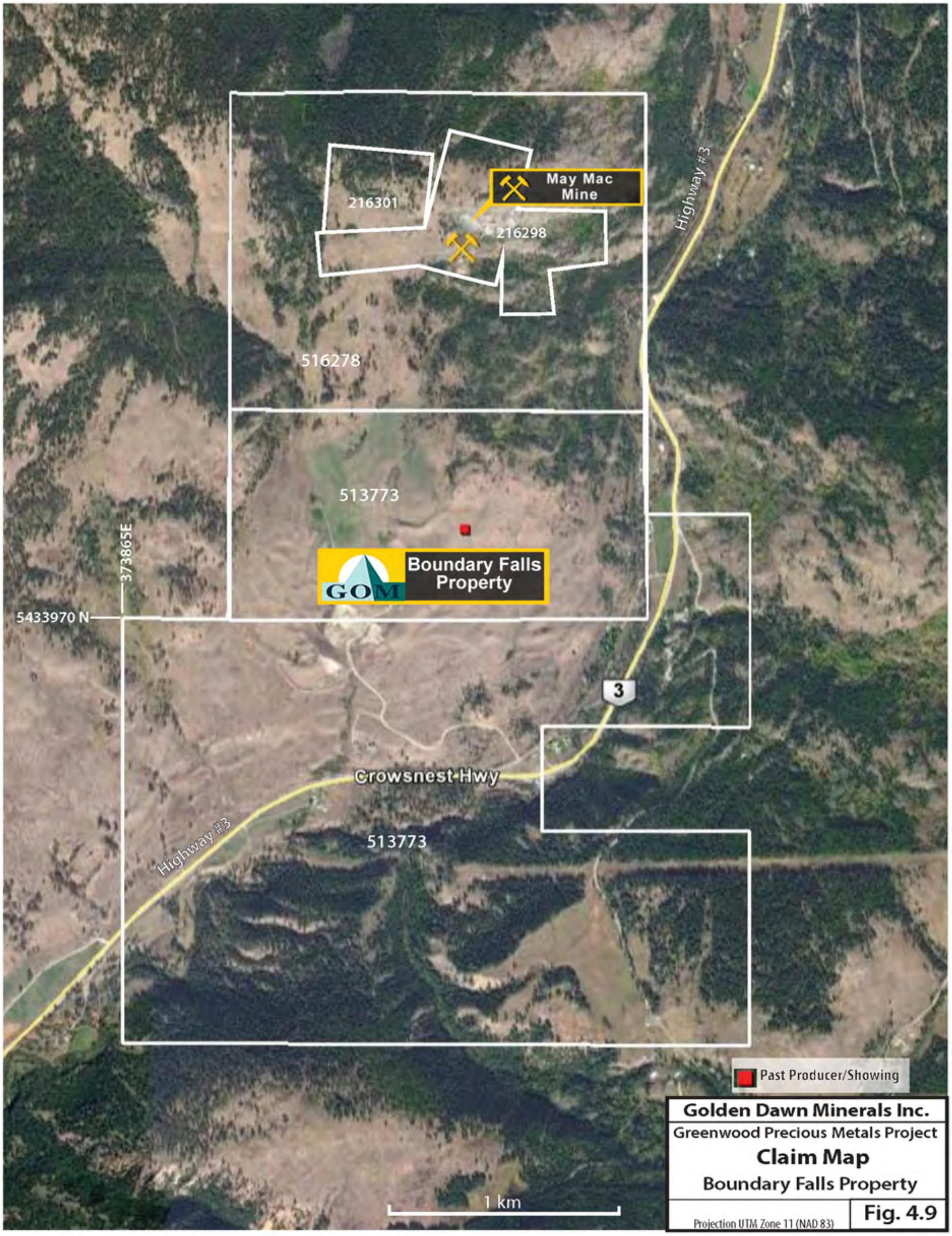
Title No.	Name	Type	Date Granted	Expiry Date	Owner	Area (Hectares)
516278		Mineral claim	July 7, 2005	January 31, 2023	Golden Dawn Minerals Inc.	254.0
513773		Mineral Claim	June 2, 2005	January 31, 2023	Golden Dawn Minerals Inc.	656.43
216301		Mining Lease	November 15, 1972	November 15, 2017	Golden Dawn Minerals Inc.	16.27
216298		Mining Lease	August 8, 1972	November 8, 2017	Golden Dawn Minerals Inc.	45.22

Golden Dawn Minerals Inc. owns 100% of these claims and the mining leases. On March 22, 2013, the Company entered into a purchase agreement to replace the February 25, 2010 option agreement related to the Boundary Falls property to acquire the 300 hectares of the northern portion of the Boundary Falls claims and leases hosting the permitted May Mac Mine (formerly known as the Roberts Mine), 100 tonnes/day processing plant, and tailing pond including water rights as well as power line to the processing plant by issuing 1,000,000 common shares of the Company.

Golden Dawn Minerals Inc. initially acquired 100% interest in 8 cells of the mineral claim no. 513773, subject to an NSR royalty of 3.0% to the vendors by executing an Acquisition Agreement dated March 24, 2015, issuing 200,000 shares of the Company's stock and paying $10,000 in cash to the owners. Ownership of 513773 was subsequently transferred to the name of Golden Dawn Minerals Inc. on April 4, 2017, following an agreement whereby the Company acquired 100% of the entire 513773 mineral claim by issuing 100,000 shares of the Company's stock to the owners.

The current mining leases appear to have originally been crown granted mineral claims. Based on information in Church (1985), Mining Lease 216301 covers the former Last Chance (L644) claim. Mining Lease 216298 covers the former Republic (L426), Nonsuch (L389) and Cosmopolitan (L1680) claims. Furthermore, the current mineral claim 513773 covers the former Boundary Falls (L889) and Tunnel (L888) crown granted claims (Tully, 1975). These historic references are helpful to relate and trace past exploration and mining activities to recent exploration described in Section 6.5.

Figure 4.9 Claim Map - Boundary Falls Property



Surface rights covering portions of the mineral claims and mining leases are held by local ranchers. The Company has a letter agreement with the main landowner for access to the Mac May Mine.

Note that the Company will need to pay the annual lease before August 8, 2017 to keep the mineral leases in good standing (see section 4.6 for the minimum amount).

4.6 GENERAL REQUIREMENTS FOR MINERAL CLAIMS

To keep British Columbia mineral claims in good standing, assessment work is required. Effective July 1, 2012, all mineral claims in the province were set back to a Year 1 requirement, regardless of how many years had elapsed since their original staking. As of that date, annual work commitments were set on a 4 tier schedule, as follows:

- $5.00 per hectare for anniversary years 1 & 2,
- $10.00 per hectare for anniversary years 3 & 4,
- $15.00 per hectare for anniversary years 5 & 6, and,
- $20.00 per hectare for subsequent anniversary years.

Assessment work in excess of the annual requirement may be credited towards future years. Companies are permitted to pay cash in lieu of work expenditures, however, the cost is double the schedule rate above.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Greenwood Precious Metals Project lies in Boundary Country of the Southern Interior of British Columbia. The project is located on the cusp of the semi-arid Okanagan Valley and the Interior rain forest. The Greenwood Precious Metals Project lies in a region that is mountainous and has an elevation range of between 300 to 2,000 m above sea level. The Lexington, Golden Crown and Phoenix Properties lie in the high ground between the towns of Greenwood and Grand Forks (see Figure 4.2) whereas the Tam O'Shanter and Boundary Falls Properties lie across the valley, west of Highway 3 on eastern slopes. The Lexington Property claims occur at elevations between 900 and 1,600 m. Mt. Wright, Mt. McLaren and Rusty Mountain stand on the Property. Goosmus, Stacey and Gibbs Creeks cut the area. The Golden Crown Property averages an elevation of 1,370 m. The Phoenix Property has elevations that range from about 875 m in the Fisherman Creek valley in the eastern part of the claim group to 1580 m at the height of land on Knob Hill just south of the former Phoenix Mine. On the Tam O'Shanter, elevation ranges from about 580 m along the southern property boundary, to about 1,525 m at the height of land on Copper Mountain. On the Boundary Falls Property elevations range from about 700 m in the Boundary Creek valley in the southeast portion of the property, to about 1100 m at the top of the diorite cliffs to the northwest. The May Mac Mine workings are located just south of the base of a prominent diorite cliff with over 300 m of vertical relief.

In the region, the higher elevations are generally forest covered while the lower elevations are grass ranch land. The forest cover is second growth Ponderosa Pine, Douglas Fir and Larch with minimal underbrush. Parts of Golden Crown, Lexington and Phoenix Properties have been clear-cut by forest companies. The area is encompassed in the Kettle Provincial Forest Department and lies within the drainages of Boundary, Eholt and July Creeks. The largest drainage basin in the district is the Kettle River basin 8 km west of the claims.

The climate in the region is characterized by hot, dry summers and winters with snowfall generally less than 1 m although the higher ground can more typically receive 1-2 m but less than 0.5 m on lower south facing slopes. Work can be carried out year round with snow ploughing during winter months. The BC government ploughs the Phoenix road between Greenwood and the Phoenix Ski slope turn off and the Lone Star road to as far as Hartford Junction. The Snowshoe Main forest service road serving the Greenwood Mill has been snow plowed by Golden Dawn's contractors to maintain access for the 24/7 security during the care and maintenance period.

Infrastructure is available in the immediate area to support mining. A natural gas pipeline and power line run close to the northern limits of the Lexington Property. A high tension powerline passes through the central part of the Phoenix Property in a general east-west direction. A second powerline passes just south of the former Phoenix Mine and through the Golden Crown Property, to the Greenwood Mill and also passes within 100 m of the Golden Crown portal. There is also a powerline to the mill at the May Mac Mine. In addition, there is a large, skilled workforce of trades and technical professionals as well as equipment suppliers available throughout the region. The City of Greenwood has a population in the range of 1,000. The nearest major town is Grand Forks, some 40 km east of Greenwood. Grand Forks has a population of 8,000 and is serviced by a municipal airport. Midway with a population of 675, lies 7 km to the southwest and the town of Osoyoos with a population of 6,700 is 83 km towards Vancouver on Highway 3. The nearest full service airports are found at Castlegar, Penticton and Kelowna.

5.1 LEXINGTON PROPERTY

The 2,020 hectare Lexington gold-copper property is easily accessible by paved provincial highway to the Greenwood area (i.e. Crowsnest Highway No. 3), followed by a choice of four different gravel access roads: McCarren Creek Road, Hartford-Phoenix Road, Phoenix Ski Hill Road and May-Gibbs Creek Road which links to the Phoenix-Lonestar Haul road. At the 17 km mark on the Lone Star Haul Road, the City of Paris public dirt road runs west about 1.3 km to the Lexington-Grenoble Mine.

5.1.1 Lexington-Grenoble Mine

The network of dirt roads in the vicinity of the Lexington-Grenoble Mine was established over decades of logging and mineral exploration. The original Lexington-Grenoble adit, decline (900 m long) and associated portal waste rock dump were emplaced by other workers by 1997. The Lexington-Grenoble Mine and its infrastructure were expanded in 2007 and 2008 by Merit Mining Corp. when they mined from the Lexington-Grenoble Deposit. The underground gold-copper mine can be accessed by two portals and interconnected declines and workings. Four main development levels (1210, 1187, 1175, 1166) were driven from the decline into the stope areas by first crosscutting, then drifting along the zones. Site infrastructure includes a mechanics shop, dry and administration building. These are need of repair or rebuilding due to vandalism.
Along the roadside of the City of Paris public road which forms part of the mine infrastructure, are two areas of buildings installed by Merit both with plumbing and underground sumps. One trailer was the mine office in 2007/2008. This trailer is in poor shape due to vandals but may be cleaned up and reused if the plumbing and electrical wiring can be repaired. The other site has two trailers that served as the miner's dry in 2007/2008. These trailers are in particularly bad shape due to vandalism. These may or may not be repairable depending on when clean up can occur. The generally drier climate of the area reduces the rate of deterioration.

A spur road off of the City of Paris public road accesses the original Lexington-Grenoble portal and laydown area which collectively covers an area of approximately 1.9 ha. This spur road is currently blocked by large cement blocks. The Lexington-Grenoble portal and 900 m of decline were installed in 1996/1997 and later rehabilitated 2007 by Merit. The portal has since been damaged by vandals which resulted in a local timber collapse and unconsolidated till sloughing in the entrance. This currently bars entrance of this portal until rehabilitation steps are taken. The portal itself is also boarded up and gate locked. During the mining period, the 1997 decline was determined by Merit to be too narrow in size and would only allow 3.5-cubic yard load-haul-dump machines to pass and not the 13 tonne trucks they anticipated to be used in haulage. On the laydown area of the Lexington-Grenoble portal is a maintenance shop and two "Seacan" shipping containers. The maintenance shop with a cement foundation is in a deteriorating state due to vandals removing the corrugated roof which collapsed. Two metal Seacans that were used as storage and lunchroom during 2007/2008 mining operations are still in place but were also vandalized. The explosive magazines used during 2007/2008 mining have been removed from site.

Another spur road off of the City of Paris public road leads to the old City of Paris mine (circa 1914) and some core racks from Merit's 2007 exploration campaign. This spur road also accesses the vent raise that connects surface with the 1997 decline at the 1210 level. The vent raise was lined with a 5' diameter inclined culvert and has wooden ladders within. The vent raise is sealed at surface with metal plating, barring entry. Metal remnants of the mine's heating system is located beside the vent raise. The old City of Paris mine does not connect with the Lexington-Grenoble underground development.

Another spur road off of the City of Paris public road leads to the second or Eastern Portal, which was installed in 2008 by Merit. This 500 m long, 5 m x 5 m profile decline connects to the 1210 level, as well as to the bottom of the 1997 decline. This decline was completed only days before the mine shutdown. Its purpose is to enable access for 30-ton mining trucks to the bottom of the current development. The Eastern Portal is currently flooded and gated, preventing access into the workings. The timbers of this portal appear in good shape. The portal does not generally discharge groundwater except at spring freshet. The Eastern Portal, laydown and access spur covers an area of approximately 1.36 ha as a waste rock pile of non-acid generating dacite.

A small spur road above the Eastern Portal leads to a 0.27 ha area where there are two lobes of low grade and very low grade Lexington-Grenoble rock stockpile.

5.2 GOLDEN CROWN PROPERTY

The property is easily accessible by; a paved provincial highway to Greenwood (i.e. Crowsnest Highway No. 3); followed by a paved/gravel road immediately east of the town of Greenwood accessing the Phoenix open pit and linking to the main Lone Star Haul road. Secondary dirt roads east and west of Hartford Junction provide access across the claims. Alternatively, the property can be accessed from the Highway No. 3 along the Phoenix ski slope road found between Greenwood, BC and Grand Forks, BC, and branching onto the Snowshoe Main forest service road at Km 5, then to various parts of the property along numerous secondary dirt/gravel forest service roads.

5.2.1 Greenwood Mill and Tailing Facility

Part of the infrastructure for the Greenwood Precious Metals Project includes a modern crushing-grinding-gravity-flotation facility with a mill rated at 212 tonnes per day capacity, assay laboratory and tailing facilities, all fully permitted and under care and maintenance since operations ceased in late 2008. This mill and tailings facility was constructed on the Zip claims within the Golden Crown Property by Merit between September 2007 and May 2008, when the mill was commissioned to process material from the Lexington-Grenoble Mine. Merit operated the Greenwood Mill and tailings facility processing Lexington-Grenoble mill feed from May 2008 until the end of December 2008. The operation is currently under care and maintenance. The crushing and conveyor belts are outside the mill building and appear in reasonable shape. The equipment inside the mill building includes a ball mill, a regrind ball mill, a centrifugal gravity concentrator system, a series of flotation banks and a filter that all appear in good shape. There is a dry and lunch room also inside the building. There is a fork lift and one portable living trailer also inside the mill building.

The assay laboratory is fully equipped for gold and copper assaying inside a Seacan and sits near the mill building. This laboratory was not available to the mining operation until days before the mining ceased. Another small Seacan served as a sample preparation room is fully equipped to crush and pulverize. A sprung structure sits adjacent to the mill building where various spares, electrical panels and cables are stored, as well as a small underground diamond drill. There is a new 3 bedroom Atco living trailer for security. There is a separate set of Atco trailers that form the administration offices, which require clean up. There is a small shed over a lined containment where used oils are kept.

Currently on the mill site is the fleet of underground mining equipment used by Merit during the 2007/2008 Lexington-Grenoble mining operation. These include three 2.5-yard load-haul-dump machines, three 3.5-yard load-haul-dump machines, two 2-boom jumbos, three tractors, two generators, two compressors and two 13-tonne mine trucks. The equipment has been left exposed to the elements since 2008. Minor hydrocarbon stains below the equipment indicate hoses are gradually deteriorating and need replacement. The author is not in a position to comment of the condition of the equipment, however, the last time each piece of equipment was started was about 3 years ago.

On the mill site is approximately 15 tonnes of oversize Lexington-Grenoble mined material in stockpile. In addition, there is approximately 10 tonnes of oversize King Vein material from the Golden Crown Deposit in a stockpile. The Golden Crown stockpile shows signs of oxidation and oxide water puddling.

Weekly tailing impoundment site inspections are made by on-site security. The perimeter-fenced and lined tailings facility remains stable and does not appear to show signs of leakage. Water levels within the impoundment fluctuate annually about 1 m with input from snow melt and evaporation through the summer/fall. The tailings dam was built to the first lift (10 m) for a design capacity of 100,000 tonnes, and at this state, has further input capacity (about 50,000 tonnes) before additional lifts are needed. The full design capacity determined by Klohn-Crippen-Berger was for a total of 400,000 tonnes. The impoundment has four piezometers in its downslope bank and four survey monuments on its crest for stability monitoring. A seepage trench is at the toe of the impoundment, spillway in its north bank and four monitoring wells downslope of the impoundment for water management and monitoring. Pipelines between the mill and the tailing impoundment lie within a lined ditch and all appear in good shape. There is a fresh water emergency pond between the mill and the tailings impoundment which is also lined and holding water.

5.2.2 Historic Mine Development

A 2.4 m x 2.4 m profile trackless 1,070 m long exploration adit was developed in 1985 and accesses the Golden Crown vein system. The portal is still intact and is boarded up with a locked gate, preventing entry. The workings remain generally intact for the full length with local ground support concerns in sectors of serpentinite roofline. The portal discharges mine water at approximately 3 gallons per minute. There is flow-through ventilation with the connection to a short shaft at the back end. This shaft had been part of the small scale production history dating back to the early 1900’s (the Golden Crown shaft). There is a wooden shack over this shaft and wooden ladders that descend into the shaft, however, the conditions of this shaft and ladders are questionable. Another shaft that also was part of early 1900s production (the Winnipeg shaft) is collapsed at surface.

5.3 PHOENIX PROPERTY

Access to and around the Phoenix Property is excellent by virtual of the extensive logging, mining and exploration history. Provincial Highway 3 transects the Property from east to west. There are a number of logging roads, mine access roads and rural roads along with a number of 4 wheel roads allowing access to almost all the claims. There are also several high voltage power lines traversing the area along with the Southern Crossing natural gas pipeline. The Property has 29 past producing mines including the large Phoenix open pit mine and lesser open cuts, shafts and pits. This author has not visited all of the extensive old workings but at least some with high walls and open shafts adjacent to roads are inadequately fenced and signed for safety for the general public. The old town sites of Phoenix and Summit are long gone with very little signs of the original towns. Concrete pads from the Phoenix mill site are still evident. There are two tailings sites related to the past production at the Phoenix Mine, one the Twin Tailings, lies west of pit and the Tremblay Tailings lies adjacent to the Phoenix ski slope road at Km 5. In 1969, the Twin Tailings dam failed sending many tonnes of tailings into Twin Creek and down into the town of Greenwood. The tailings dam was repaired with a water bypass installed. The Phoenix Ski hill lies on the Property and an area of cross-country trails lie north of Marshall Lake. According to New Nadina's website, "Upon termination of the Greenwood Area Noranda joint venture, Noranda fulfilled reclamation requirements on these properties to the satisfaction of mining and environment ministries." However, the author understands that the Province continues to pressure Kettle River for additional reclamation responsibilities.

5.4 TAM O'SHANTER PROPERTY

Access to the Tam O'Shanter Property and local infrastructure are good. Highway 3 crosses the southern part of the Property, the town of Greenwood is located approximately 1 km northeast of the Property boundary. The claims are reached by following the Motherlode logging road west from the City of Greenwood, after approximately 1.5 km, an unmaintained gravel road accesses the Property. Additional access to the Property is available after continuing west on the Motherlode Road where an unnamed road branches off, leading into the Property (Hutter, 2004).

5.5 BOUNDARY FALLS PROPERTY

Access to the Property and local infrastructure are both excellent. Highway 3 passes through the southern and eastern parts of the Property. Access to the May Mac Mine is via a gravel road that heads north from Highway 3. The junction is approximately 7.3 km north of the town of Midway or 4.8 km south of the City of Greenwood. This is known as the Boltz Farm Road. This gravel/dirt road passes northward through the center of the property and terminated at the May Mac Mine and the old mill and tailings site over a distance of 3 km. Part of this road is a public road. The road crosses the rancher's grass field. Golden Dawn has an access agreement with the landowner.

The Boundary Falls Property also covers the small community of Boundary Falls, the Boundary Creek Provincial Park and a historic slag heap from a copper smelter which operated between 1901 and 1907.

The small community of Boundary Falls, which consists of only a few small buildings, lies on the north banks of Boundary Creek at the head of a canyon the creek flows into. Not far downstream from the town, within the canyon, the creek drops over Boundary Falls (12 m in height), for which the town was named. The town of Boundary Falls was settled in 1890 by a large flock of miners. There were many mining opportunities in the area so a smelter was built in 1901. In 1902, though, the smelter was faced with high operating costs, coke shortages, financial difficulties, and low copper prices. In 1907, the smelter officially closed and was eventually forgotten. Today, only slag piles remain of what was once a good sized refining and power generating settlement.

The actual falls of Boundary Falls is located about 60 m below the head of a small canyon that Boundary Creek enters as it passes by the town of Boundary Falls. The falls are easily viewed from the canyon rim and the base of the falls can be reached by carefully climbing down the steep canyon walls. The brink of the falls can also be reached with relative ease. Remains of an old dam which generate power from the city of Greenwood can be found about 30 m upstream from the falls' brink.

The 2 hectare Boundary Creek Provincial Park camp ground lies on the east edge of the property and on the banks of Boundary Creek. In the creek, small rainbow or brook trout are known that may reward the patient angler. Its campground is road accessible and operational between May 5 – Sept 24 with 17 campsites which may not offer full services such as water and security.

At the May Mac Mine there is a total of 936 m of underground development in 7 levels plus cross-cuts and raises that was and is used to explore for and produce from the Skomac veins (Table 5.1). The development between the elevations 860 and 1,000 m was installed incrementally over a period from 1890's to present by various groups. The development profile is generally 6' X 6'. The development was installed with hand steel and wheel barrel so no track was used. No. 4 to 7 levels (numbering increasing with decreasing elevation) comprise the main workings and No. 1 to 3 levels (numbering increasing with increasing elevation) are on what appears to be a parallel vein system that is further downslope. Currently, the No. 6 and 7 levels are accessible. The No. 1 level is barracaded and the No. 2 and 3 levels have been sealedThese No 6 and 7 workings provide access for underground drilling to evaluate the Skomac veins.

TABLE 5.1
SKOMAC WORKINGS

Vein	Level	Elevation (m)	Length (m)
Upper Skomac	4	1000.4	117
Upper Skomac	5	990.4	85
Upper Skomac	6	966.4	290
Upper Skomac	7	902.4	212
Lower Skomac	3	867.4	123
Lower Skomac	2	867.4	7
Lower Skomac	1	860.4	102

5.6 PERMITTING

5.6.1 General

Mining projects may or may not require a review by the British Columbia Environmental Assessment Office ("EAO") pursuant to the British Columbia Environmental Assessment Act ("BCEAA") to determine whether the project can be issued an Environmental Assessment Certificate. A Mines Act Permit, from the BC Ministry of Energy and Mines, and an Environmental Management Permit, from the BC Ministry of Environment is required for commercial production.

The thresholds to determine the triggering of an Environmental Assessment Review of a new metal mine or amending an existing mine are found in the Reviewable Projects Regulations associated with the Environmental Assessment Act. The threshold for triggering an Environmental Assessment Review for a new metal mine facility is when, during operations, it will have a production capacity of > 75,000 tonnes/year of mineral ore. The threshold for triggering an Environmental Assessment Review on an existing facility, or a proposed facility (were they new facilities in the same category as the existing facility), is when production capacity is > 75,000 tonnes/year of mineral ore, and the modification will result in the disturbance of:

i) At least 750 hectares of land that was not previously permitted for disturbance, or,
ii) An area of land that was not previously permitted for disturbance and that is at least 50% of the area of land that was previously permitted for disturbance at the existing facility.

The current approach to permitting amendments to an existing mining project or a new metal mining project in British Columbia follows a prescribed process that has been streamlined by the Ministry of Energy and Mines, through the BC Mines Act, should the project not trigger an Environmental Assessment.

Should a new mine or amended existing mine not trigger an Environmental Assessment, proponents approach the regional office of the BC Ministry of Energy and Mines overseeing the project area. The Ministry is there to help and streamline the process of permitting. An initial meeting with the regional director provides the scoping of the required forms and Project Description, which the proponent needs to prepare and submit. The Project Description will require within it a number of baseline data studies such as site surface water quality, fish and wildlife studies, chemistries of waste and mineralized rock, hydrology etc. prepared by in-house and/or outside consultants. The depth of each study would be variable but are not as rigorous as for an Environmental Assessment. Some of these studies are season-specific such as nesting birds. The longest timeline is likely a full year of site surface water quality collection.

The Project Description, once adequately prepared would be submitted and presented to the regional office, for the Mine Development Review Committee ("MDRC"), a review committee established by the BC Ministry of Energy and Mines with representatives from various ministries and affected First Nations groups to review the submission. From this point, there is an expected review period by the stakeholders, with potential requests for more information, which could extend the time frame. It is in the best interests of the proponent to be proactive with First Nation and community consultation, which should be rigorously documented.

5.6.2 Greenwood Precious Metals Project Permits

The Lexington-Grenoble Mine falls under the current mine permit M-234. Although under care and maintenance status, Golden Dawn continues to monitor the Lexington-Grenoble site periodically for waste rock dump stability and surface water quality, as well as submits an Annual Reclamation Report to the Ministry of Energy and Mines for the mine site. There is a $215,000 bond with the government of British Columbia in safekeeping for the costs of reclaiming the mine site and area upon closure. The permit and bond are currently in the name of Huakan, however, title transferring to Golden Dawn is in progress. The bond amount will be replaced by Golden Dawn, and Huakan's bond will be released.

The Greenwood Mill and tailing facility fall under current mill permit M-233. Although under care and maintenance status, Golden Dawn keeps 24/7 security at the site. Golden Dawn continues to monitor the mill and tailings site weekly for tailings impoundment stability, water management and surface water quality. Golden Dawn and Huakan jointly submitted an Annual Reclamation Report to the BC Ministry of Energy and Mines for 2016. Golden Dawn also submitted the required Annual Dam Safety Inspection report for 2016 and a desktop review of the DSI by the Dam Safety Review Board. In 2015 Huakan submitted a Dam Safety Review Report, documenting the condition and monitoring of the impoundment. There is a $235,000 bond with the government of British Columbia in safekeeping for the costs of reclaiming the mill and tailings facility and area upon closure. The permit and bond are currently in the name of Huakan, however, title transferring to Golden Dawn is in progress. The bond amount will be replaced by Golden Dawn, and Huakan's bond will be released.

The Golden Crown deposit/mine does not have a bulk sample or mine permit currently and would require a permitting process.

5.6.3 Reactivating Lexington-Grenoble Mine and Greenwood Mill and Tailings

Prior to reactivating the operation, one would have to meet and submit a Project Description with plans to the BC Ministry of Energy and Mines for approval. This may or may not require review by the MDRC. Consultation with First Nations is likely required.

Any design variances desired to the current mine and mill permits would require a MDRC review for consideration and approval. The larger the change, the deeper the review will be. This too may require First Nation Consultation. A water discharge permit has been granted by the BC Ministry of Environment for initial dewatering the Lexington workings as well as discharge during mining operations.

5.6.4 Golden Crown Mine

Golden Dawn is waiting on permit approval of a surface exploration permit for diamond drilling (up to 10,000 m) at the Golden Crown Property with the aim to expand resources.

In addition, a two-step permitting process is envisioned for the Golden Crown Mine. Firstly, a Notice of Work application to mine a 10,000 tonne bulk sample from the Golden Crown Mine would be filed through the Cranbrook regional office. Available studies along with additional surface water quality sampling and assessments would be a part of this application.

It is envisioned that the Golden Crown Mine would produce 72,000 tonnes per year, and be processed through the existing Greenwood Mill and Tailings Facility. Due to the size and the existence of a process facility, the project is not anticipated to trigger an Environmental Assessment Review, but permitting would be through a Mine Development Review Committee chaired by the Regional Director of BC Ministry of Energy and Mines. Dialogue with the director and MDRC would determine the studies needed in the application. The studies currently on file for the project may be adequate for the application or may require updating and additional studies undertaken. Once the application has been submitted, a process of review, including requests for additional information is envisioned until a Mines permit and discharge permit could be granted. No technical difficulties are anticipated for obtaining these permits. A reclamation bond determined by the Ministry of Energy and Mines must be deposited with the BC government on the issuance of permits.

The mine permit process would concurrently require an application to amend the Greenwood Mill and Tailings Facility M-233 permit approving the processing of the Golden Crown mill feed (including any design changes to the plant flowsheet) and the deposition of the Golden Crown tailings into the existing lined impoundment. No technical difficulties are anticipated for obtaining this amendment as the impoundment is lined.

5.6.5 May Mac Mine

Golden Dawn is currently drilling underground at May Mac which required a Notice of Work permit. To the extent known by this author, the permits that must be acquired to conduct the work proposed to date for the property have been obtained and are in good standing.

Golden Dawn is waiting on approval of its permit application for additional surface drilling to test the northwest strike extension of the Skomac veining.

Golden Dawn is preparing additional information requested by the government to support its permit application to extend the May Mac No. 7 Level drift to the northwest to facilitate additional diamond drilling and bulk sampling of up to 10,000 tonnes through an application to the Ministry of Mines through the Cranbrook office. As part of the bulk sample program, it will be required to prepare and request an amendment (with supporting documentation) to the Mines Act Permit M-233 to have the bulk sample processed at its Greenwood Mill and deposit related tailings into the Greenwood tailings facility. This author is unaware of the level of environmental baseline studies completed or expected for future permitting for the property. However, with the appropriate baseline studies, good planning, communications, care and management and well thought out mitigating measures, the Company should be able to succeed in its permitting process with time.

As part of the application there will likely be a number of studies and actions required. With the tourism aspect of the Boundary Falls and historic dam remains, the Company will need to define mitigating measures to accommodate its visitors into future permitting. The 2 hectare Boundary Creek Provincial Park camp ground lies on the east edge of the property and on the banks of Boundary Creek which hosts small rainbow or brook trout. Its campground is road accessible, seasonal. The park is small and not within site of the May Mac Mine, however, the Company will need to define mitigating measures to accommodate and protect the park and the fish habitat in future permitting. Highway 3 passes through the Boundary Falls Property which provides excellent access value. Any future mining and related mineral transport will require mitigating measures in future permitting for Ministry of Transport to accommodate its use. The property's proximity to the City of Greenwood and the town of Boundary Falls is of value for vendors, services and accommodation, however, the Company will need to have community consultations and define mitigating measures to local concerns into future permitting. The May Mac Mine has historic waste dumps in front of each portal. It is not expected that the Company will be liable to reclaim these waste rock dumps, however, with future mining and disturbance to these dumps by the Company will need to define mitigating measures to address reclamation on its activities into future permitting. The old Roberts Mine mill and tailings site is too inadequate and run down and with the Company's Greenwood Mill across the valley, it is very unlikely that the Roberts Mill and tailings facility would be used for May Mac processing. According to the 2016 TSF Dam Safety Inspection, the Company should either advance plans and construction for closure and decommissioning of the facility, or follow protocols appropriate to the current 'care and maintenance'status. The potential tasks required to maintain the facility include dam classification under CDA guidelines, geotechnical and hydrotechnical assessment, regular visual monitoring and annual dam safety inspection. An emergency spillway is required to be constructed. The Discharge Permitted under MOE 6005 requires that permission is needed to re-activate if the TSF is full. The tailings facility is very small and unlikely to stand up to current design and geotechnical standards required for tailings facilities in British Columbia. There could be room for some material (possibly 10,000 tonnes) in the tailings facility with additional lifts but this author is not qualified to comment on its design and geotechnical aspects. It is likely that the Company would eventually need to reclaim this site, the cost of which, this author is unqualified to provide.

This author does not expect the Company to be liable to reclaim the historic slag pile from a copper smelter which operated between 1901 and 1907.

To the extent known by the author, there are no other environmental liabilities to which the property is subject.

The Boundary Falls Property lies within the traditional territory of the Okanagan Nation Alliance within which the Osoyoos Indian Band has asserted caretaker staus. The Splatsin First Nation has requested ongoing communication. Proactive consultation and accommodation is essential with these First Nation groups to facilitate the permitting process.

The ranchers who hold surface rights to part of the property including where the access road is, should be consulted of any significant company plans.

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

6.0 HISTORY

6.1 LEXINGTON PROPERTY

The area of the Lexington Property has seen periods of intense exploration and mining activity since 1897 through to present. The Lexington Property has received a total of 84 percussion and 552 diamond drill holes since 1967 by various companies, and small scale gold and copper production from 5 separate mines (Lexington (northwest of Lexington-Grenoble), City of Paris, No. 7, Lincoln and Lexington-Grenoble). The Lexington-Grenoble Deposit saw a short period of production in 2008 by Merit Mining Corp., after which it ceased operation due to high costs and low metal prices and kept on care and maintenance. A total of 54,237 tonnes of mineralized material were mined from the underground Lexington-Grenoble Mine by Merit Mining Corp. from April to December 2008 and processed through the Greenwood gravity-flotation plant, producing 5,486 ounces gold, 3,247 ounces silver and 860,259 pounds of copper. Only a portion of the Lexington-Grenoble Deposit was mined in that episode. Drill core from the 2003-2007 campaigns are stored in Grand Forks.

Chronologically, a summary of the history of the property is as follows:

1898 to 1901: Development and production from saw ore shipped from the Lexington, City of Paris and other proximal claims to the Granby smelter.

1902: Underground work commenced on the No. 7 Mine culminating in about 900 tonnes shipped by 1903.

1909: The property was acquired by Consolidated Mining and Smelting Co. where they continued underground development, installed an aerial tram to the Boundary Falls mill and shipped over 4,500 tonnes between 1910 and 1913.

1920: Low copper prices forced the closure of all of the mines in the area.

1930's: Interest in precious metal began in the area.

1927-40: A few tonnes were shipped from the City of Paris Group to Trail. In addition, a new shaft was sunk on the Mabel claim where a few tonnes were produced.

1951: Attwood Copper Mines Ltd. started assembling a large land package in the area. Attwood opened the old workings and conducted mapping, sampling and a diamond drilling program.

1955: Granby Mining optioned the Richmond from Attwood and conducted a diamond drilling program at the old workings.

1959: An airborne geophysical survey was flown over the Canadian portion of the property by Lundberg Exploration.

1961: Richmond was optioned to Moneta Porcupine who conducted drilling and geophysical surveys.

1962: King Midas Ltd. assembled many of the old Crown-granted claims, carrying out surface and underground exploration on Lincoln and Mabel.

1967-70: Lexington Mines Ltd. acquired the Lexington property and expanded the land package to include all of the current Canadian claims. Lexington Mines Ltd. completed an extensive program of geological, geochemical and geophysical surveys, bulldozer trenching, diamond drilling and underground rehabilitation resulting in the discovery of the Grenoble deposit and others. During this period Silver Standard and Kenogamisis Gold Mines optioned the Richmond, exploring the ground south of Richmond by drilling and geophysics.

1970–71: Israel Continental conducted a drill program on Richmond.

1972: Granby optioned the Lexington property forming a joint venture with Coastal Mining and optioned the Richmond. The Lexington received drilling in 1972 and Richmond in 1976.

1974: Aelenian Resources optioned the Lexington property and drilled in the Grenoble deposit area in 1975.

1979: Grenoble Energy acquired the key Lexington claims and drove a test adit into the Grenoble deposit in 1980. Twenty underground holes were drilled into the Grenoble deposit from the new workings.

1981: Teck Corp. optioned Grenoble's holdings in addition to the Richmond area claim and completed 47 drill holes by 1983.

1984-86: Canadian Pawnee Oil Corp. acquired much of the property on the British Columbia side of the border.

1986-88: Surface geophysical and geochemical surveys and 33 diamond drill holes were completed.

1991: Britannia Gold Corp. assembled the various holdings into the current property.

1993-97: Britannia Gold conducted a systematic exploration program including data compilation, detailed mapping of the Goosmus Shear Zone, surface induced polarization and magnetometer surveys, underground rehabilitation and mapping, re-logging of previous drill holes, bulldozer trenching and diamond drilling.

1992: Wortman conducted a study of proposed mining methods. A simple mechanized mining system of 27,000 tonnes/year for a mine life of 3-4 years was proposed.

1995: Bren-Mar Resources Ltd. formed a joint venture with Britannia Gold Corp. and together completed a 900 m long decline and 29 underground drill holes in 1996-1997 to assess the Grenoble deposit mineralization. The decline, crosscuts and underground drilling were designed for detailed definition of the ore body geometry, evaluation of grade continuity and assessment of ground stability conditions. Water quality and ARD sampling data was also collected by Britannia.

1997: Apr 3, 1997, a permit was granted to conduct a 2,000 tonne bulk sample on the Grenoble deposit, however, Britannia Gold Corp./Bren-Mar Resources Ltd. did not initiate the bulk sample.

2002-2004: Aug 2002-Dec 2004 - Gold City Industries Ltd. (GC) acquired the Lexington Property, conducted metallurgical and ARD testwork, water quality sampling, submitted a dewatering application subsequently granted March 31, 2003, submitted a 10,000 tonne bulk sample application subsequently granted December 19, 2003, conducted a six hole surface diamond drill program in 2003 and a 40 hole surface diamond drill program in 2004, reinterpreted drill data, rehabilitated the portal and the initial 25 m of timbering, identified a new site for a mill and tailings, contracted Klohn-Crippen Consultants Ltd. for a geotechnical report on the tailings site, had a mill layout and flowsheet prepared, submitted permit application for the mill and tailings facility and was subsequently granted subject to detailed engineering drawings and had two 43-101 compliant resource calculations and a preliminary mine plan completed by Snowden Mining Consultants.

2005: Merit acquired the Lexington Property from Gold City and conducted a 19 hole diamond drill hole program.

2007: In May 22, 2007, Merit filed a Preliminary Economic Assessment entitled, "Technical Report and Preliminary Economic Assessment on the Greenwood Precious Metals Project, Greenwood, British Columbia, Canada" authored by Eugene Puritch, James Roxburgh, Paul Cowley and Jay Collins, May 2007. This report filed on "SEDAR" on July 24, 2007 is available under Huakan International Mining Inc.'s associated documents. Golden Dawn does not consider the report to be current or should not be relied upon, as the metal prices and costs are out-of-date and the Lexington-Grenoble Deposit has seen some production since the publication.

Merit completed 19 HQ-sized surface diamond drill holes on the Lexington-Grenoble Deposit, testing the up-dip and down-dip fringes of the deposit to determine the edge limits of the deposit. Drill hole collar locations were surveyed by Merit-employed on-site Lexington-Grenoble Mine surveyors. The 2007 drilling program used the Easymark system to orient the drill hole with downhole readings taken every 50 m by drill contractors and recorded by on-site geologists. Core recoveries through both porphyry and Lexington-Grenoble sections were normally >90% and often >95%. Foraco Drilling Ltd. of Kamloops, BC was the drilling contractor. The 2007 core was photographed before being sampled. The core transfer procedures, logging conventions and security measures conformed to standard industry practice. Sample bags were placed in address-labeled rice bags, sealed and shipped to Eco Tech Laboratory Ltd. of Kamloops, BC. Eco Tech's sample preparation and analysis procedures were as follows:

- Samples were crushed in their entirety to pass -6 mesh;
- The crushed sample was then split in half;
- Half of the sample was stored for Acid Base Accounting or metallurgical testing and the other half was further crushed to pass -10 mesh;
- A 250 g sub-sample was taken from the -10 mesh material and pulverized to pass -100 mesh;
- A 30 g sample was taken from the -100 mesh material and Fire Assayed ("FA") with an Atomic Absorption ("AA") finish for gold;
- A 15 g sample was also taken from the -100 mesh material for 28 element ICP analysis;
- Eco-Tech Laboratory Ltd. inserted its suite of standards for QC purposes. Individual sample batches were subjected to 10-65% repeats (average 30%), 2-4% re-splits and 3-5% internal standards.

Financing, and permitting were secured in 2007 for Merit to construct, develop and commence operations at the Lexington-Grenoble Mine.

The Lexington-Grenoble Mine operated under a Notice of Work bulk sample permit between July 2007 and May 2008 where portal rehabilitation, decline dewatering, and the mining of a 10,000 bulk sample were performed by Merit. Subsequently, Merit operated the Lexington-Grenoble Mine under the production Mines Permit M-234 until December 3, 2008, when production was suspended due to high costs and low metal prices. The operation has remained since December 2008 under care and maintenance.

The Lexington-Grenoble Mine is an underground gold-copper mine accessed by two portals and interconnected declines and workings. Four main development levels (1210, 1187, 1175, 1166) were driven from the declines into the stope areas by first crosscutting, then drifting along the zones. Stoping occurred as slashing, breasting, benching and raising. A total of 54,237 tonnes of mineralized material were mined and 52,420 tonnes waste rock stockpiled (45,468 tonnes put on surface dumps and 6,320 tonnes remained underground as backfill) and 2,684 tonnes of low grade stockpiled. With the aid of visual, laboratory analysis and on-site XRF testing the waste rock was segregated. Three on-site kinetic test pads of high, moderate and low sulfide-bearing waste rock were established in 2008 and had been monitored to provide in-situ ARD and metal leaching information which will ultimately aid in the final reclamation plan of the waste piles, however, the test pads were disturbed by vandals. When operation resume, the test pads should be repaired and monitoring resumed.

During the course of the mining period Merit performed 285 short BQ-sized diamond drill holes in 2,709 m using a bazooka underground drill to aid in stope definition. Drill hole collar locations were surveyed by Merit-employed on-site Lexington-Grenoble Mine surveyors. No downhole readings were taken because of the short drill depths. Core recoveries through both porphyry and Lexington-Grenoble sections were normally >90% and often >95%. DMAC Drilling Ltd. of Delta, BC initially were the drilling contractor. Later, Merit employed its own drillers. The core was not photographed before being sampled. Full core was sampled. Sample bags were placed in address-labeled rice bags, sealed and delivered by a Merit mine employee to Kettle River Operations Lab, Republic, Washington. Kettle River Operations sample preparation and analysis procedures were as follows:

- Samples were crushed in their entirety to pass -10 mesh;
- A 250 g sub-sample was taken from the -10 mesh material and pulverized to pass -100 mesh;
- A 30 g sample was taken from the -100 mesh material and Fire Assayed (FA) with an AA finish for gold;
- A 15 g sample was also taken from the -100 mesh material for AAS – Nitric analyses for copper percentage;
- The Kettle laboratory inserted its internal suite of standards and blanks for QC purposes. Individual sample batches were subjected to check assays, a gold standard, a gold-copper standard, a spike, 2 blanks and occasionally a sulfide standard.

P&E was satisfied that the 2007 and 2008 diamond drill samples were collected according to standard industry practices. P&E has not observed any adverse drilling or sampling factors that would affect the accuracy and reliability of the core samples. All core is considered to be representative of the mineralization that was drilled.

2010-2014: Merit sold the Lexington Property to Gold Crown, LLC and AMT Industries Canada Inc. but they were forced into receivership in late 2013. Huakan regained possession of the Lexington Property through the receivership process in March 2014.

6.1.1 Surface Development To-date

The following provides details of the construction and development events between fall 2007 and December 2008.

- The laydown area in front of the original Lexington-Grenoble portal was lengthened by 20 m followed by the installation of a shop, portable dry and parts buildings with supporting certified plumbing; installed generators, compressors and fuel storage
- Established separate explosives magazines according to code
- Placed a portable office/first aid room on the road side above the portal with supporting certified plumbing
- Purchased underground mining equipment
- Dewatered and rehabilitated the existing decline
- Completed waste development and stope development for mining a 10,000 bulk sample
- Established one waste rock dump (“Drill Pad Waste Dump”) of 10,343 tonnes covering an area of 0.06 ha on an old drill pad 550 m southeast of the Lexington-Grenoble portal
- Established one low grade stockpile (“Second Drill Pad Stockpile”) of 960 tonnes covering an area of 0.02 ha on an old drill pad 600 m southeast of the Lexington-Grenoble portal
- Established temporary mined material stockpiles at Lexington-Grenoble portal laydown area covering an area of 0.02 ha
- Mined 10,000 tonne bulk sample which was trucked to a temporary crushing site at the Winner Quarry in February which was cleaned up by July 2008
- Mining of 44,237 tonnes of mineralized material (over and above the 10,000 tonne bulk sample) which was temporarily stockpiled at the principal Lexington-Grenoble portal and trucked on a daily basis to the Greenwood Mill for processing
- Approximately 6,320 tonnes of waste rock was used as backfill
- Incrementally expanded of the low grade stockpile (“Second Drill Pad Stockpile”) from 960 tonnes to 2,684 tonnes; no incremental surface area disturbance
- Created a second waste rock dump along the City of Paris access road 350 m southeast of the Lexington-Grenoble portal (“Roadside Dump”) totalling 18,463 tonnes and covering an area of 0.15 ha
- Established the Eastern Portal, laydown area 600 m southeast of the Lexington-Grenoble portal and its associated decline that connected with the existing decline; provided second egress, better ventilation and more cost effective ore/waste handling
- Established a second temporary mill feed stockpile covering an area of 0.2 ha as part of the Eastern Portal laydown area

- Established third waste rock dump, associated with Eastern Portal ("Eastern Portal Waste Dump"), 600 m southeast of the Lexington-Grenoble portal of 16,662 tonnes covering an area of 0.32 ha
- Waste rock dumps are generally less than 5 metres high with the exception of two edge areas on the Roadside Dump and Eastern Portal Dump which local reach 10 metres on the down slope side
- No soil stockpiles were created prior to the waste rock stockpile placement due to the very limited quantity available. Much of the areas selected had already been disturbed by drill pad or road building. In addition, the soil development in this area is very thin (generally <3cm).
- Installed three in-situ kinetic test pads of differing sulfide content to gather data for ARD performance to aid in final stockpile reclamation design
- Initiated 2 humidity cell tests on two PAG waste rock samples which are at the Canadian Environmental and Metallurgical Inc. (CEMI) lab
- Mine put on care and maintenance on December 3, 2008; both portals gated and locked, mining equipment stored and secured on site, buildings secured, underground mine electricals temporarily pulled out, mine flooded, no discharge from the Lexington-Grenoble Portal and sporadic mine water discharge from the Eastern Portal)
- Cleaned up the temporary crushing site at the Winner Quarry used in spring 2008

6.1.2 Lexington-Grenoble Previous Resource Estimates

There have been 2 previous resource estimates on the Lexington-Grenoble Deposit that are summarized below. These resource estimates have been superseded in April 2016 and should not be relied upon.

June 2004 Snowden Resource

In June 2004, Snowden Mining Industry Consultants estimated Lexington's Grenoble deposit resources at a cut-off grade of 6 grams gold equivalent/tonne. These historic resource estimates have been superseded in May 2017 and should not be relied upon, therefore have not been restated here.

May 2005 Snowden Resource

In May 2005, Snowden Mining Industry Consultants completed an updated NI 43-101 Mineral Resource estimate at a 6 g/t gold equivalent cut-off grade. These historic resource estimates have been superseded in May 2017 and should not be relied upon, therefore have not been restated here.

6.2 GOLDEN CROWN PROPERTY

The key Golden Crown and Winnipeg Crown-granted claims and the immediate area have had a long history of exploration and development since 1894 through to present. Small-scale underground gold-copper production came from the Winnipeg and Golden Crown mines between 1900 and 1902. Besides the shafts and drifts for this early production, a 2.4 m x 2.4 m profile trackless 1,070 m long exploration drift developed in 1985 accesses the vein system. The property has received a total of 289 drill holes since 1968 by various workers, principally focussed at the vein system that supports the 2006 and the updated 2016 Mineral Resource Estimate. Drill core from the 2003-2007 campaigns are stored in Grand Forks.

Chronologically the history on the property is summarized as follows:

1894: The Winnipeg and Golden Crown claims were originally staked and subsequently Crown granted in 1896, however, owned and worked independently.

1900 and 1901: The owners of the Golden Crown sunk a 98 m deep shaft on the Golden Crown vein and conducted a series of cross-cuts, raises and drifts totaling approximately 760 m on the 100, 150 and 300 foot levels. Production of 2,488 tonnes averaging 15.4 g/t Au and 1.5% Cu was mined during this period. Production was reported from three stopes on the 100 foot level reaching 55 m either side of the shaft. A 100 m long exploration/access adit (4' x 4') was later driven on the Golden Crown claim, however the adit reached its target.

1899 – 1902: The owners of the Winnipeg claim sunk a 91 m deep shaft on one of two veins separated by 25-30 m. Approximately 84 m of drifting was done along the 100 foot level, however, by 1902 a total of 305 m of sinking and raises and 915 m of cross-cuts and drifts were completed.

May 1902 a disastrous fire and financial difficulties resulted in a suspension of operations. Although some production was reported from 1900-1903, the majority of the production was completed for the period 1910-1912 through the Golden Crown development. The property lay dormant until 1940, when some minor production occurred. The total production from the Winnipeg claim stands at 53,316 tonnes averaging 6.9 g/t Au and 0.16% Cu. It should be noted that the production figures reported on both the Winnipeg and Golden Crown claims do not appear to be consistent with the extent of their respective workings and dumps.

1965-68: Sabina Mines and Scurry Rainbow conducted a diamond drilling and geophysical program targeting serpentinite-hosted nickel and chromite. Sixteen BQ holes totaling 1650 m were completed. Data is only available for 10 of these holes (Kim, 1987c). Late 1960's, Meridian Exploration Syndicate conducted a geochemical and geophysical survey and diamond drilling program on the property. They report a 21 m intercept of 0.2% Cu although the location of this work is uncertain.

1970: Granby conducted an IP survey over the property but the details of this work are not known.

1976: Grand Forks Syndicate completed a 5 hole drill program totaling 200 m.

1977-1978: Con Am Resources optioned the claims and conducted a 12 hole drill program.

1979: Boundary Exploration Ltd. (later Consolidated Boundary Exploration) acquired the claims and completed a 4 hole, 300 m drill program.

1980 The claims were optioned to Mundee Mines. Drill holes were resurveyed. The Golden Crown shaft was de-watered to the 100 foot level allowing access for the surveying, mapping and chip sampling (56 samples). Mundee drilled 16 additional holes totaling 1500 m and conducted a surface mapping program.

1983 to 1990: Grand Forks Mines Ltd. optioned 50% interest in the claims. 1983 to 1990 - a total of 137 surface and 53 underground diamond drill holes were conducted on the Winnipeg and Golden Crown claims and their adjacent claims culminating in the discovery of nine mineralized zones. At this point the Winnipeg and Golden Crown claims were explored as part of a larger property, the Golden Crown Project, which included eleven additional adjoining reverted crown grants.

Mid-1980's: Consolidated Boundary Exploration, completed 5 drill holes on JD (now part of Golden Crown Property) at that time, reporting an 8.6 g/t Au intercept across 3.6 m.

1986-1988: Noranda conducted significant work on the northwestern part of the JD claim group. Work included grid establishment, soil sampling, geophysics, 26 trenches, 8 diamond drill holes totaling 672 m and 10 reverse circulation (RC) drill holes totaling 1078 m. Results were encouraging. A 1 km long elevated gold soil anomaly was identified. Trenching over a 90 m strike length of the 1 km long anomaly identified sub-parallel mineralized shear zones. Highlights of the trenching and drilling were 5.0 m grading 14.2 g/t Au, and 2.0 m grading 18.2 g/t Au. Follow-up work recommended by Noranda was never completed.

1995: Noranda allowed the JD claim area to lapse.

1987: All of the available data was entered into a digital database which allowed the preparation of a preliminary resource that was encouraging enough to recommend a $1.3 million surface drilling and underground program. A program of 750 m of drifting and cross-cuts was carried out to provide for underground drilling access, future haulage access and a 150lb bulk sample from the King vein. In addition, the Golden Crown workings were de-watered to the 150 level and a vent raise connected the exploration adit to the old 100 foot level. The Golden Crown workings are still accessible via the shaft, although some ladders may require improvements. Ten surface drill holes were also completed in this phase.

1988: A $1 million Phase II program was conducted consisting of 48 underground drill holes, 12 surface drill holes, and 365 m of additional drifting and cross-cutting. The trackless exploration drift length was extended to 1070 m long with dimensions of 2.4 X 2.4 m. Drilling discovered the main shoot on the King vein below drift level and defined a southwest rake.

1989: Grand Forks Mines underwent a name change and share consolidation to Attwood Gold Corporation and earned the remaining 50% interest in the claims. A minimal (5 holes) underground drilling program was completed in 1989.

1989: Geologist R. Seraphim estimated a resource, however, since it pre-dates National Instrument 43-101, it does not comply with NI 43-101 requirements for mineral resource estimation. Further, any historic resource estimates on Golden Crown have been superseded in April 2016 and should not be relied upon, therefore have not been restated here. Seraphim recommended a $1.9 million program to better define the shoots by drifts and raises and driving a decline 100 feet below the adit level, however, the program was not initiated.

1990: Attwood completed 34 surface drill holes, as well as soil geochemistry and geophysical survey on the claims and the adjoining claims. Re-surveying of all locatable drill holes was also accomplished. The digital database was thoroughly reviewed and updated by a new exploration team who identified errors in the original database used by Seraphim.

1990: G. Ford, P.Eng. estimated a resource for Attwood Gold Corporation, however, since it pre-dates National Instrument 43-101, it does not comply with NI 43-101 requirements for mineral resource estimation. Further, any historic resource estimates on Golden Crown have been superseded in April 2016 and should not be relied upon, therefore have not been restated here.

1990: A dispute arose between Attwood Gold and Consolidated Boundary over the perceived reduction in resource base. The issue was later settled in 1991; however, a change in management at Attwood resulted in the property lying dormant.

1995: The JD area was re-staked as the JD claim group by the current owners.

1997: Pender Gold Corp. optioned the property and established a new grid, conducted mapping, ground magnetics and VLF and completed 5 diamond drill holes in the area of the Noranda drilling. In1999 - Pender dropped the option.

1997: The Winnipeg and Golden Crown claims were acquired by Century Gold. The surrounding 11 reverted Crown grants were also acquired by Century Gold and maintained under the title of Golden Crown Property.

1998 and 1999: Century Gold conducted a database review and corrected additional errors in the database. A mapping and trenching program was conducted on the Golden Crown Property. Only a small portion of this trenching program was conducted on the Winnipeg and Golden Crown claims, specifically on the Tiara, Golden Crown, Samaritan and Princess veins. The work provided an improvement to structural and geological controls, resulting in similarities to mineralization at Rossland, B.C being established.

1998: The main exploration adit accessing the vein system on Winnipeg and Golden Crown was rehabilitated for mapping. Century Gold did not fulfill their obligations, thus the claims were returned to Dynasty Motor Car Corporation (Dynasty) in 2002.

2002: Gold City Industries Ltd. (GC) acquired by way of option the Dynasty, Century, JD and Zip claim groups, now falling under the general name of the Golden Crown Property. No work was conducted on the property until fall 2003 when a 47 hole 2138.7 m HQ size drill program was completed by GC. At total of 21 holes were directed at definition drilling (15 m centers) on the King Vein, the main resource vein on the property. The remaining 26 holes in the campaign explored five other fringe veins outside of the heart of the Golden Crown system – the Samaritan, Tiara, Golden Crown, Portal, and Calumet Veins. Concurrently the Company completed 12 trenches 2.5 km to the west northwest along the gold/copper corridor on several north dipping shear zones. GC submitted an application and was granted a permit to construct a 200 tpd mill and tailing facility on the Golden Crown Property subject to detailed engineering draw review.

2004: Gold City conducted a 2 hole 229.8m HQ drill program directed to test the down dip extent of the King vein. Gold City also conducted a detailed soil and ground magnetic survey as well as an extensive trenching program. Strikelength trenching along the King and Golden Crown veins allowed for detailed chip sampling and established vein orientations applied to the interpretations of the drill data.

2005: Merit acquired the Golden Crown property from Gold City.

2006: Merit completed a 3D analysis and re-interpretation of the vein system in preparation of the new resource estimate and mine plan.

Merit conducted a six-hole surface diamond drill program in 2007 over the Golden Crown 2006 resource area consisting of 6 HQ diameter totalling 509 m. Four holes were directed at the King Vein, to define the King Vein near surface covering a strike length of 65 m. One hole was directed at extending the strike length of the Samaritan Vein and the down dip extension of the King Vein. One hole was directed at the down dip extension of the Golden Crown Vein. Drill hole collar locations were surveyed by Merit-employed Lexington-Grenoble Mine surveyors. The 2007 drilling program used the Easymark system to orient the drill hole with readings taken every 50 m by drill contractors and recorded by on-site geologists. Core recoveries through diorite and massive sulfide sections were normally >90% and often >95%. Core recoveries through serpentinite sections ranged from 50%-80%. Foraco Drilling Ltd. of Kamloops, BC was the drilling contractor. The core transfer procedures, logging conventions and security measures conformed to standard industry practice. After taking custody of the drill core, Merit's geologists conducted an industry compliant program of geological and geotechnical logging, photography, density measurements and core sampling, Eco Tech's sample preparation and analysis procedures were as follows:

- Samples were crushed in their entirety to pass -6 mesh;
- The crushed sample was then split in half;
- Half of the sample was stored for Acid Base Accounting or metallurgical testing and the other half was further crushed to pass -10 mesh;
- A 250 g sub-sample was taken from the -10 mesh material and pulverized to pass -100 mesh;
- A 30 g sample was taken from the -100 mesh material and Fire Assayed ("FA") with an Atomic Absorption ("AA") finish for gold;
- A 15 g sample was also taken from the -100 mesh material for 28 element ICP analysis;
- Eco-Tech Laboratory Ltd. inserted its suite of standards for QC purposes. Individual sample batches were subjected to 10-65% repeats (average 30%), 2-4% re-splits and 3-5% internal standards.

P&E was satisfied that the 2007 diamond drill samples were collected according to standard industry practices. P&E has not observed any adverse drilling or sampling factors that would affect the accuracy and reliability of the core samples. All core is considered to be representative of the mineralization that was drilled.

In the fall of 2008, Merit conducted some surface trenching of the King Vein. The average width and grade of the King Vein along this 120 m long trench was found to be 0.8 m at 19.98 g/t Au (chip samples across the vein every 2 m). In 2011, Huakan conducted two ground based Horizontal Loop Electromagnetic surveys over the 2006 resource area and to its immediate west through Apex Geoscience Ltd.

In fall 2007, Merit commenced construction of the Greenwood Mill and tailings facility on the Zip claims of the Golden Crown Property. The Greenwood Mill and tailings facility was constructed under a Notice of Work to Process a 10,000 bulk sample from the Lexington-Grenoble Mine between September 2007 and May 2008. Subsequently, Merit operated the Greenwood Mill and tailings facility processing Lexington-Grenoble mill feed under the current Mines Permit M-233 to the end of December 2008 when December 3, 2008 production was suspended at Lexington-Grenoble and all available broken mill feed was processed until the end of December 2008. The operation is currently under care and maintenance.

From November 2007 to the end of December 2008, a total of 54,237 tonnes of mineralized material was mined from the Lexington-Grenoble Mine and processed through the Greenwood Mill and tailings facility, that is 10,000 tonnes during the bulk sample phase and 44,237 tonnes on the issue of the production permit, Permit M-233. Mined material was trucked daily from the Lexington-Grenoble Mine to a stockpile at the mill site. Material passed through a crusher before entering the mill where material passed through a gravity-flotation circuit to remove gold and copper minerals. A gold concentrate from the gravity circuit was shipped by armoured truck to Vancouver where it was rendered to doré and sold. The copper concentrate was filtered and put in 2 tonne sealed bags. The bags were mustered outside the mill building until 250 tonnes accumulated and the shipment was trucked to a Vancouver port facility and shipped to a Philippine smelter. The tailings from the circuit were slurried 300 m by pipeline to the lined tailings impoundment. Site monitoring of the tailings facility is on-going to ensure stability of the impoundment. Site surface water quality testing is on-going to ensure protection to the downstream environment from the operation.

2010 and 2011: Merit changed its name to Huakan International Mining Inc. In late 2011, Merit sold the Golden Crown Property to Gold Crown, LLC and AMT Industries Canada Inc. but they were forced into receivership in late 2013. Huakan regained possession of the Golden Crown Property through the receivership process in March 2014.

6.2.1 Surface Development To-date

The following provides details of the construction and development events between fall 2007 and December 2008.

- The plant site and laydown area was logged and levelled for the plant site
- Soil stockpiled from the site preparation are placed on the edges of the work area
- Cement foundations were poured, building erected and mill equipment installed
- Stockpile area flattened
- Crusher and fine stockpile area flattened, cement foundations poured and crusher and hopper installed
- 450 m of access roads were installed
- Soil from the area of tailing impoundment and fire water reserve was stockpiled (area was previously clear-cut by logging company)
- Tailings dam constructed under the management of Klohn Crippen Berger; installed four piezometers in the rock filled dam
- Lined and fenced the tailings impoundment and fire water reserve
- Installed toe seepage trench downslope of dam as a way to monitor leakage from dam
- Installed 2 monitoring wells downslope of dam as a way to monitor leakage from dam
- Installed diversionary ditches around site to allow upslope run-off to divert around site area and all run-off within site area to drain into impoundment
- Extended electrical grid to mill site, 1 km

- Established a pipeline on surface between the Snowshoe Pit and the mill to provide fresh water as needed
- Installed first aid and lunch room and wash room facilities to code within the plant
- Installed portable administration trailers near plant
- A temporary stockpile (10,000 tonne bulk sample) and crusher was set up in February at the Winner Quarry which was later removed by July 2008
- Removed the temporary crusher and stockpile at the Winner Quarry used in spring 2008
- Processed 54,237 tonnes of Lexington-Grenoble mill feed and the input of 52,012 tonnes of tailings into the tailings impoundment
- Installed assay lab

6.2.2 Golden Crown Previous Resource Estimate

There has been one previous resource estimate reported for the Golden Crown deposit that is summarized below. This should be considered as an historical resource estimate and should not be relied upon.

2004 Snowden Resource

In June 2004, Snowden Mining Industry Consultants estimated Golden Crown Deposit resources at a cut-off grade of 6 grams gold equivalent/tonne. These historic resource estimates have been superseded in May 2017 and should not be relied upon, therefore have not been restated here.

6.3 TAM O'SHANTER PROPERTY

1898: Two shafts were reported on the Iva Lenore Claim (Minfile 082ESE172) (11 m deep) and the Emerald mineralization (12 m deep) (Minister of Mines Annual Report, 1898).

1921-23: Work on a shear zone displaying mineralization was conducted on the Tam O'Shanter Claim, and included a 63 m adit and an 8 m raise. Additional evidence of work includes two old shafts, which are thought to be part of earlier work on the property. The Tam O'Shanter workings reported a 2.7 tonne shipment of ore, showing an average grade of 14 g/t Au and 2260 g/t Ag (Minister of Mines Annual Report, 1922).

1964: Silver Dome Mines conducted significant work on claims in the Iva Lenore and Tam O'Shanter area. This work included the construction of 16 km of road, 1,865 m of diamond drilling, almost 4,000 m of stripping, line cutting, magnetic surveys and soil sampling (Shear, 1964). The purpose of these programs was to determine the potential for bulk tonnage copper deposits. No economic copper grades had been discovered in spite of the presence of low grade copper mineralization on the Property (Hutter, 2004).

1966-74: Considerable exploration work was conducted by Crown Silver Development, Utah Construction and Mining, San Jacinto Exploration, Sun Oil, Phelps Dodge, Mapletree Exploration, and Mascot Mines and Petroleum. The majority of the work was focused east of the main block of claims that comprises the present day Tam O'Shanter Property. Silver Dome and several interested companies had an airborne magnetic survey flown over the area in 1969. The average total field intensity was determined to be 58,032 gammas, 5 magnetic highs were interpreted with the maximum response reaching +952 gammas and the minimum reaching -229 gammas in a magnetic depression (Cochrane et al, 1969). Sun Oil conducted a percussion drilling program in 1972, and the following year further percussion drilling was done by Mapletree Exploration. During this program low grade Cu mineralization was discovered locally within a zone of epidote skarn (Dickinson and Simpson, 1973). In 1973 and 1974, Mascot Mines drilled 27 percussion drill holes. No sampling or assay results are available for this program, although it was noted that higher Cu concentrations coincide with areas displaying intense shearing related to intrusion of diorite (Shear, 1974a,b). A total of 43 diamond drill holes (approximately totalling 3,810 m) and 63 percussion drill holes (totalling 3,048 m) were completed by these various companies through 1972-1974 in the area (many of which fall outside of the present Tam O'Shanter Property). Results of this work found that a "medium sized zone of 0.3% Cu" was identified on the Buckhorn claim (not part of the current Tam O'Shanter Property) and a zone found on the Iva Lenore Claim was 300 m long by 60-120 m wide, with intercepts ranging from 0.15-0.3% Cu (Caron, 2005b).

1975: Oneida Resources acquired the property, and subsequently discovered the Bengal Zone. In 1979, Oneida conducted a drilling program to test the newly discovered target, and drilled 3 diamond drill holes totalling 658 m. The program was designed to determine the potential for economic porphyry copper-molybdenum mineralization. Geochemical analyses returned values on one metre samples ranging from <0.005 g/t Au to 0.9 g/t Au (Stewart, 1980).

1982: The merger of Oneida Resources with three other companies resulted in the formation of New Frontier Petroleum. Geological mapping was done on the Bengal shaft area, and new exploration of some old trenches elsewhere on the property was conducted using a backhoe. Work continued into 1983 (Caron, 2005b).

1983: New Frontier Petroleum finished work on a 60 m backhoe trenching program in the area near the Bengal shaft. Approximately 1.5 km north minor amounts of trenching were conducted to test an exposure of copper staining on a newly built logging road. No anomalous values of precious metals were returned during trenching. New Frontier Petroleum later became Petro Mac Energy, which then went into receivership, giving the Receiver an interest in the property. The remaining interest was transferred to a subsidiary of New Frontier, Bulkley Silver Resources (Caron, 2005b).

1984-87: In 1984 Jim Fyles mapped the Tam O'Shanter Property. During the same year Herb Shear prepared a data compilation for Bulkley Silver Resources (Shear, 1984; Fyles, 1985). In 1986, Houston Metals was formed by a merger between Bulkley Silver Resources and Cater Energy. Examinations of the property were conducted by Echo Bay Mines and BP Selco, and drill core from the 1979 program was relogged as part of the property examination. The new logs are not available (Fraser, 1987; Wong, 1986).

1988: An IP survey was conducted by Houston Metals on the property. Two anomalous zones were identified by the survey, in which one zone was determined to be sulphide mineralization within a fault zone. The economic interest in the results of the survey resulted in the drilling of 3 diamond drill holes (806 m) to test the anomalies encountered during the IP survey. The most significant results include 1.85 g/t Au over 1.5 m in hole 88-01, 1.99 g/t Au over 0.6 m in hole 88-02, and 1.30 g/t over 1.0 m in hole 88-03 (Arnold, 1989a, 1989b).

1989-90: In 1989, Houston Metals formed Pacific Houston Resources (Caron, 2005b). In 1990, Pacific Houston's interest in the Tam O'Shanter Property was purchased by Kettle River Resources and Dentonia Resources Ltd. The purchase also included the interest held by the

Receiver. Additional claims were also staked (Caron, 2005b). The Property was optioned to Minnova Inc. as part of a larger block of ground. An airborne magnetic and VLF/EM (very low frequency electromagnetic) survey was flown over the property by Aerodat. The 1988 grid was re-established and geological mapping, ground magnetics and VLF/EM, and rock and soil sampling were done over the grid area. The mapping conducted did not discover any new geological structures, mineralization, or areas of alteration. Ground geophysics returned the existence of three conductors, one large and two small, thought to be faults with potential for mineralization. Overall rock analyses returned very low precious metal values, although new areas of mineralization were discovered. Soil sample results showed a significant Au anomaly within a 400 m by 200 m area, analyses returned a maximum value of 150 ppm Au (Lee, 1990a,b).

1991: Minnova retained its option on the Property. The 1988 Tam 91 grid was lengthened with an additional 25.9 line km. Soil and rock sampling was carried out on the new grid, as well as geological mapping. Induced Polarization and magnetometer geophysical surveys were conducted over a portion of the grid, and program entailing 21 diamond drill holes to test soil and geophysical targets were completed (9 of these drill holes were located on the current Tam O'Shanter Property). No significant economic mineralization had been reported, although hole 91-20a is noted to have intersected the Wild Rose Vein and returned a grade of 7.30 g/t Au over 3.30 m (Clayton, 1992a,b, Caron, 2005b).

1992: Minnova established the Wild Rose grid and completed detailed mapping over the grid. A program including 22 diamond drill holes, 8 of which were situated on the current Tam O'Shanter Property, was completed (Caron, 2005b). The Deadwood Zone was the primary target for the majority of the 1992 drilling. Drilling results averaged 0.65 g/t Au over an 11.5 m wide shear zone. Some more promising results returned from TM-28 showing include 6.26 g/t Au over 3 m. Minnova dropped their options on both the Tam O'Shanter and Wild Rose Property early in 1993 (Heberlein, 1993; Heberlein and McDowell, 1992).

1995: Kettle River Resources obtained Dentonia's interest in the Tam O'Shanter Property, resulting in a 100% interest in the claims. A compilation detailing previous work was completed, and detailed geological mapping was also done in the same area. A drilling program of 10 holes totalling 1,732 m was conducted at the Deadwood Zone, of which 3 drill holes lie within the current Wild Rose claims. The drill holes testing the vein returned 5.09 g/t over 2.9 m, while drill holes testing the Wild Rose Fault returned 1-2 g/t Au in hole TM-24. Others, such as hole TM-25, returned no anomalous values (Caron, 1995, 1996c).

1997: Echo Bay concluded an agreement with Kettle River Resources to option all of the Greenwood claims. Exploration for volcanogenic targets similar to those found in the Belcher District of Washington State became the primary focus, however the Tam O'Shanter Property was not considered to host the appropriate target, and as a result of this, no work was conducted on the Property other than a small rock and soil sampling program. The program was conducted primarily for assessment requirements and returned no anomalous values of gold (Caron, 1997c).

2002: The Buck and Wet claims which formed part of the former Tam O'Shanter Property were allowed to lapse. Subsequent staking meant that these claims became the property of others. As a result, the eastern boundary of the current Tam O'Shanter Property is different from the historic boundaries of the Property (Caron, 2005b).

2004: In 2004, the Deadwood Zone (Wild Rose Vein) was tested by drilling 8 diamond drill holes (totalling 1,418 m) carried out by Kettle River Resources. Although low Au grades were predominant, some drill holes did return decent assay results. Hole 92-31 returned an assay of 25.1 g/t Au over 1.03 m, while holes 91-20a and 95-02 returned 7.3 g/t Au over 3.3 m and 20.16 g/t Au over 1.2 m, respectively. Claims were surveyed by GPS, and a single 52 m long trench was also completed, although no analyses were completed (Hutter, 2004; MacDonald and Klassen, 2004).

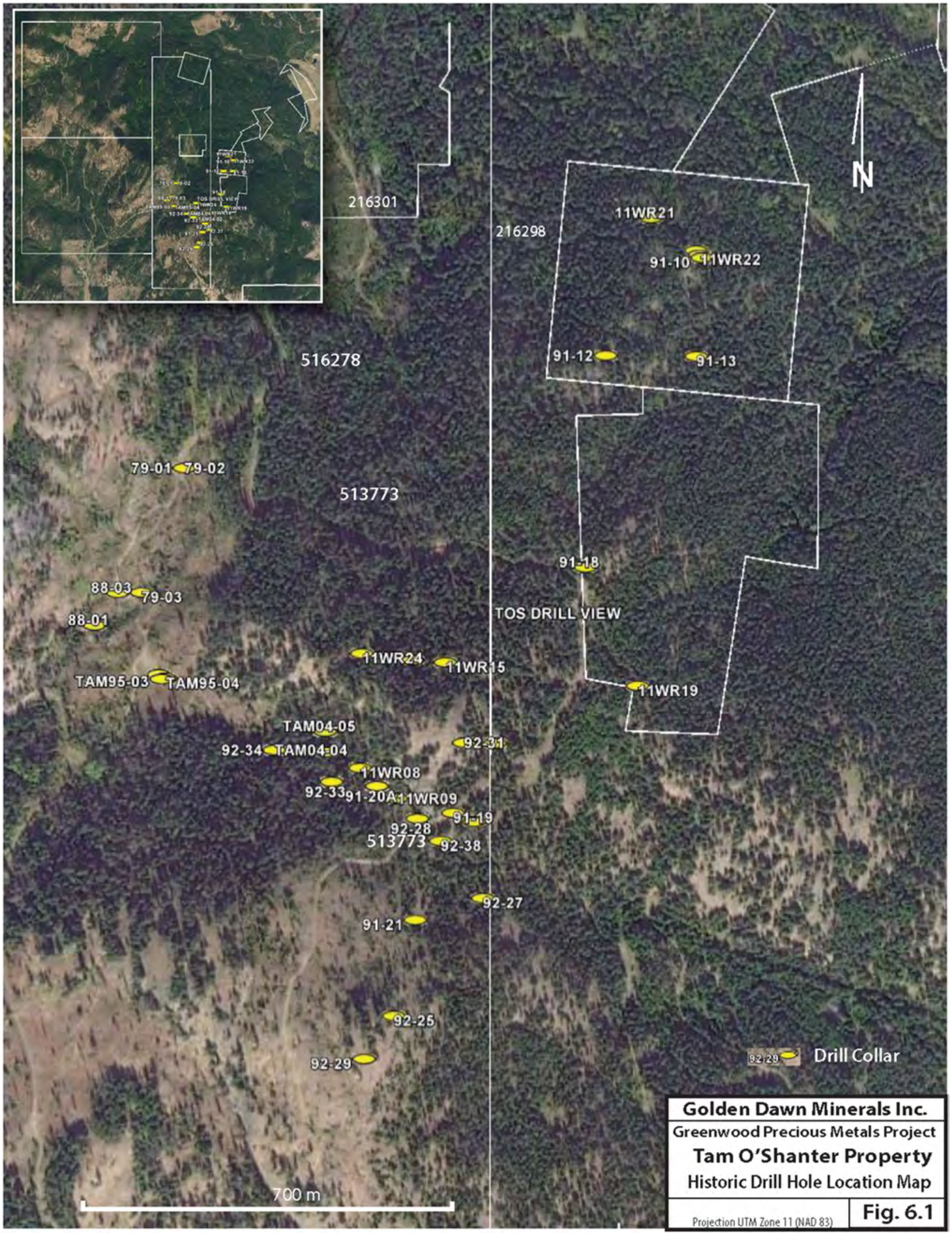
2010-2011: Golden Dawn did a soil sampling survey over and area of 504 hectares in spring 2011 and drilled 1,385.64 m in 7 diamond drill holes at the Tam O'Shanter Property between November, 2010 and March, 2011. Golden Dawn drilled 5 diamond drill holes on the adjacent Wild Rose Property between November, 2010 and March, 2011. Follow-up drilling on the Tam O'Shanter Property was completed by Golden Dawn in fall 2011, between August and October, which included 12 diamond drill holes totalling 3,476.5 m. Preliminary metallurgical test work was conducted in 2011 on seven composite samples created from drill core sample rejects.

2012: Golden Dawn engaged APEX to complete an updated mineral resource estimate for the Deadwood and adjacent (currently not owned) Wild Rose Gold Zones. The mineral resource model was generated using data derived from historic and recent drilling between 1986 and 2011. The mineral resource estimate is derived from a total of 61 diamond drill holes, including 20 recent holes drilled by Golden Dawn in 2010-2011. Spacing between drill holes varies from 20 m to 120 m, with an average at the Deadwood zone being 75 m, and at the Wild Cat – Wild Rose domain being 20 m. The estimation of the Deadwood-Wild Rose resource was calculated using both Inverse Distance to the power of two (ID^2) and Ordinary Kriging (OK). Both estimation methods were completed to ensure that there were no gross discrepancies between the estimation methodologies. The ID2 was chosen for the final model estimation method on the basis that it honoured the input sample data the better than ordinary kriging. Each lode within the Deadwood – Wild Rose Zone was looked at individually and the search ellipsoid was tailored to the orientation of that particular lode. The size of the search ellipsoids used was guided by the identified ranges of maximum continuity of mineralization. A nominal density of 2.86 g/cm3 was applied to all blocks.

The Deadwood – Wild Rose 2012 mineral resource which comprised the low grade, bulk tonnage style domain (Deadwood zone) and the higher grade vein domain (Wild Rose zone), respectively, was classified as inferred based upon the quality of the historic drilling data and the drill hole sample spacing and was reported according to the "CIM Definition Standards on Mineral Resources and Reserves". The mineral resource contained within the deposit was calculated at a series of gold cut-off thresholds for comparison purposes. The base case cut-off grade of 0.3 g/t Au was considered reasonable based on assumptions derived from other deposits of similar type, scale and location. Although this project is at an early stage and little is known with respect to potential mining or metallurgical properties, the resource has been considered with respect to exhibiting reasonable prospects for economic extraction. The resource, at the base case cut-off threshold, forms a near surface relatively continuous zone, which is a favourable configuration for open pit mining and heap or vat leach processing.

The 2012 updated geological and resource model constructed for the Deadwood – Wild Rose defined an Inferred Mineral Resource of 24,483,000 tonnes at an average grade of 0.53 g/t Au using a cut-off grade of 0.3 g/t Au (Dufresne, 2012). Golden Dawn considers this resource estimate now as historic, as this 2017 current report further updates the Deadwood Gold Zone (see Section 14) at a higher cut-off and excludes the portion on the Wild Rose claims which are not currently in the portfolio.

Figure 6.1 Tam O'Shanter Property Historic Drill Hole Location Map



6.4 PHOENIX PROPERTY

The Phoenix Property is large and well mineralized, thus has had a long and extensive history of exploration and mining. Copper mineralization was first discovered in the Phoenix area in early-1890's. The city of Phoenix was incorporated in 1900 with full-scale copper production was underway at the number of Phoenix mines under various owners until 1919. Following World War I, copper prices declined along with the grades in the mines, and shortages of coal for the smelter in Grand Forks (as a result of a strike in the Fernie coalfield) forced the mines to close. Limited exploration and production occurred until 1956, when Granby re-evaluated the property for its open-pit potential. A flotation mill was constructed on-site with production from the main Phoenix open-pit and immediate surrounding sites (Brooklyn-Idaho, Snowshoe, Old Ironsides, Rawhide, Monarch) occurring from 1959 to 1978. Total production at Phoenix during the period 1900 - 1976 is reported at 27 million tonnes at a grade of 0.9% Cu and 1.12 g/t Au, from a number of different ore bodies (Church, 1986). This amounts to over 1 million ounces of gold production from the Phoenix deposit. Production data from the Property is tabulated below in Table 6.1. Production data is reported separately for the Brooklyn-Idaho, Snowshoe, Rawhide and Phoenix claims prior to 1956 when they were under separate ownership. After 1959, these properties were operated together by Granby as the Phoenix Mine with production post-1960 attributed to the Phoenix Mine.

Twenty-nine past producing mines and well over 70 Minfile showings occur on the Phoenix Property (Table 6.1 and Figure 6.2). This author describes the most significant occurrences in Section 7.5.1 and there, includes their more significant exploration and production history for each occurrence for better context.

Only a brief summary of the fascinating exploration and development history of the Property is given below. Details of the early history on the property are found in LeRoy (1912) and in numerous Minister of Mines Annual Reports.

1891-1900: First claims recorded in the Phoenix area was in 1891. In 1896, the Miner-Graves Syndicate (became Granby Consolidated Mining and Smelting, and Power Company) began development of the Old Ironsides - Knob Hill ore body. A smelter was constructed in Grand Forks, with the first ore shipment from Phoenix to the smelter in 1900. The City of Phoenix was incorporated the same year. Two railways (the CPR and the Great Northern) serviced the mines. Granby operated the Phoenix Mine until 1919. Primarily an underground operation in the early years, Phoenix was also one of the earlier open pit mines in B.C. with 3 steam shovels and a large electric shovel mining from surface.

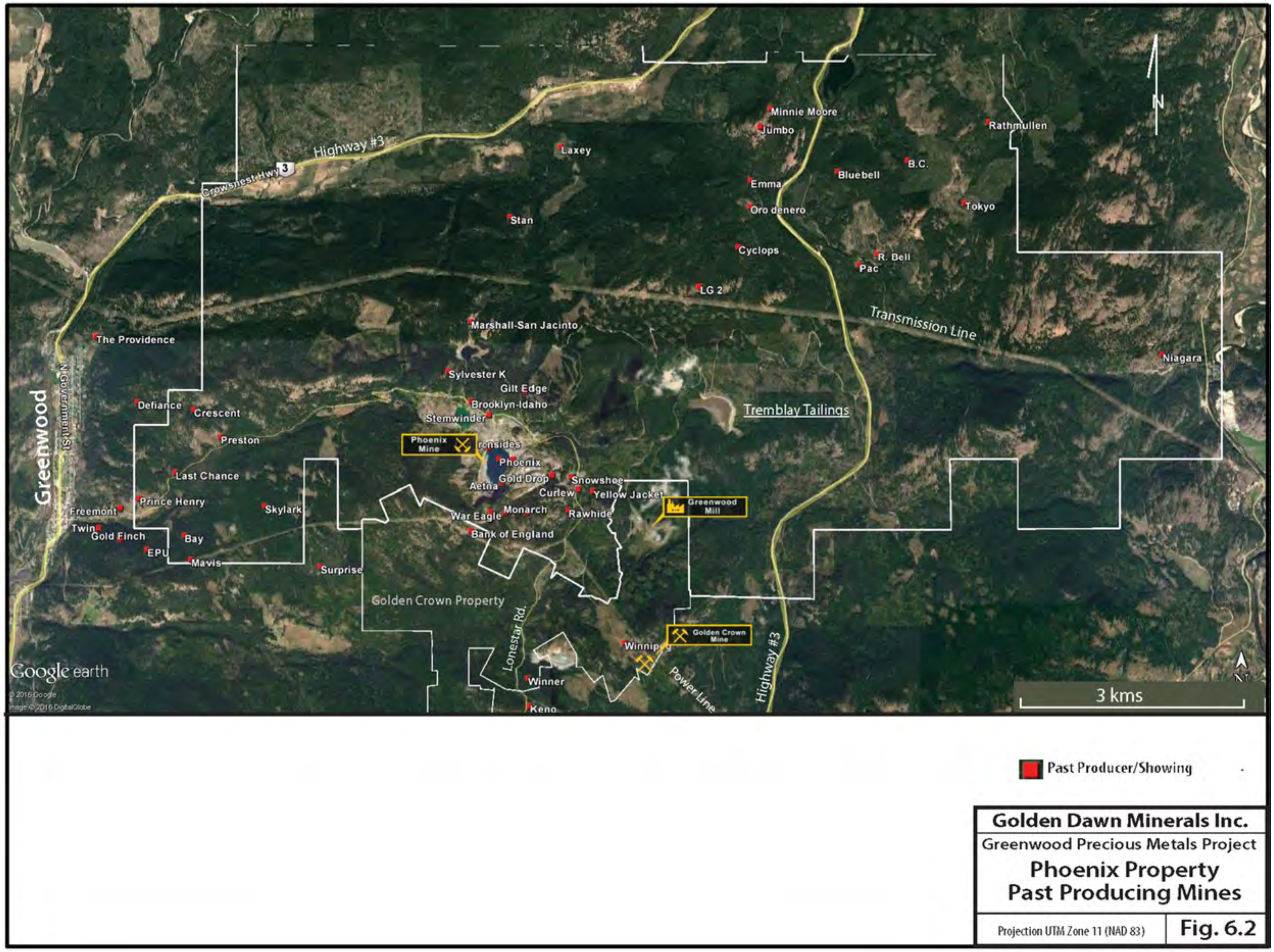
1900-1904: Production began in 1900 at the Snowshoe mine in 1900 by Snowshoe Gold & Copper Mines, Limited.

1904-1916: Production from the Rawhide, Brooklyn and Idaho Mines was by the Dominion Copper Company (became the New Dominion Copper Company, with controlling interest held by the B.C. Copper Company). Ore was shipped until 1908 to the Dominion Copper Company smelter in Boundary Falls, and then to the B.C. Copper Company's Greenwood smelter.

TABLE 6.1
PHOENIX PROPERTY PRODUCTION RECORDS AND MINERAL OCCURRENCES

Property	Minfile	Northing	Easting	Model	Commodity	Production (Tonnes)
Phoenix	082ESE020	5438785	383228	Skarn	Cu-Au-Ag	21,552,283
Rawhide	082ESE026	5438732	384281	Skarn	Cu-Au-Ag	855,634
Snowshoe	082ESE025	5439164	384331	Skarn	Cu-Au-Ag	545,129
Brooklyn	082ESE013	5440016	383093	Skarn	Ag-Au-Cu	292,834
Emma	082ESE062	5443063	386967	Skarn	Cu-Au-Ag-Gr-Mo-Co	241,538
Oro Denoro	082ESE063	5442630	387019	Skarn	Cu-Au-Ag-Co	123,782
Stemwinder	082ESE014	5439926	383333	Skarn	Cu-Au	105,336
B.C. Mine	082ESE060	5443204	389159	Skarn	Cu-Au-Ag	93,874
Grey Eagle	082ESE018	5438536	383324	Skarn	Fe-Cu	45,360
Skylark	082ESE011	5438910	380288	Poly Vein	Ag-Pb-Zn+-Au	38,761
Last Chance	082ESE216	5439276	379099	Vein	Au-Ag-Pb-Zn	704
Bay	082ESE005	5438408	379202	Poly Vein	Ag-Pb-Zn+-Au	447
Marshall	082ESE031	5441016	382930	Skarn	Au-Cu-Pb,Zn	370
Bluebell	082ESE188	5443134	388063	Skarn	Cu-Au-Ag	353
R.Bell	082ESE064	5441827	388523	Skarn/Vein	Cu-Ag-Au	287
Cyclops	082ESE122	5442111	386724	Skarn(strat)	Zn-Pb-Ag-Cu	259
Crescent	082ESE012	5440073	379360	Vein Meso	Ag-Pb-Zn+-Au	250
Mavis	082ESE027	5438129	379277	Vein	Ag-Au	29
Prince Henry	082ESE250	5438915	378625	Vein	Ag-Au-Pb-Zn	19
Preston	082ESE249	5439725	379718	Vein	Ag-Pb-Zn+-Au	16
Gold Drop	082ESE028	5439105	384168	Skarn	Cu-Au	12
Tam O'Shanter	082ESE130	5438870	373754	Vein	Cu-Au-Ag-Pb-Mo	3
Aetna	082ESE022	5439027	384476	Skarn	Cu-Au-Ag	Part of Phoenix
Curlew	082ESE024	5438913	384508	Skarn	Cu-Au-Ag	Part of Phoenix
Monarch	082ESE027	5438619	383812	Skarn	Cu-Au-Ag	Part of Phoenix
Old Ironsides	082ESE021	5439494	383324	Skarn	Cu-Au-Ag	Part of Phoenix
Victoria	082ESE023	5439333	383625	Skarn	Cu-Au-Ag	Part of Phoenix
War Eagle	082ESE019	5438625	383324	Skarn	Fe-Cu	Part of Phoenix
Gilt Edge	082ESE015	5440225	383826	Skarn	Cu	N/A
Lake	082ESE003	5439330	379425	Poly Vein	Ag-Pb-Zn+-Au	N/A
May Alice	082ESE197	5441175	371596	Skarn	Cu	N/A
Niagara	082ESE065	5440546	392391	unknown	unknown	N/A
Pac	082ESE194	5441826	388341	Vein	Au	N/A
Rathmullen	082ESE059	5443710	390122	Vein	Cu-Ag-Au-Zn	N/A
Stan	082ESE132	5442576	383673	Skarn	Cu-Mo	N/A
Sylvester K	082ESE046	5440524	382798	Skarn(hornfels)	Au	N/A
Tokyo	082ESE257	5442636	389776	Vein	Cu-Ag-Au-Zn	N/A
Yellow Jacket	082ESE030	5438878	384711	Skarn	Cu-Au	N/A
Iva Lenore	082ESE172	5438519	374213	Vein	Cu-Mo	N/A

Figure 6.2 Phoenix Property Past Producing Mines



1906-1911: The Consolidated Mining and Smelting Company of Canada (CM&S) leased the Snowshoe Mine in 1906, and continued to operate it until 1911. CM&S worked on the War Eagle property during this time where they sunk a 30 m deep vertical shaft and drove a 100 m long cross-cut adit. A gravity tram line was constructed to transport ore to a railway spur near Hartford Junction. Most of the Snowshoe ore was shipped to the Trail smelter, although some was smelted in Greenwood.

1913-1919: Granby acquired the Snowshoe Mine in 1913. Granby continued to produce from the Phoenix Mine and surrounding claims until 1919.

1930's-40's: W.E. McArthur purchased the Phoenix area claims from Granby and operated on a small scale from the Old Ironsides, Brooklyn and Idaho Mines.

1938: The Marshall property was optioned by the CM&S who did trenching and drilled 8 holes. Twelve "veins" were reported; one vein was said to be 2.4 m wide and 100 m long averaging 8.2 g/t Au (Malcolm, 1945). The optioned was dropped the same year.

1951-53: Attwood Copper Mines optioned the Phoenix property and completed geological mapping, geochemical and geophysical surveys as well as diamond drilling.

1955-78: Granby re-acquired the Phoenix property from McArthur and re-evaluated the property for its open pit potential. By 1963, Granby had also acquired the Snowshoe, Brooklyn-Idaho, Stemwinder and Rawhide Mines. A flotation mill was built on-site and open pit production at Phoenix began in 1959 at a rate of 900 tons per day. This was increased to 2000 tons per day in 1961, and 3000 tons per day in 1972. Granby terminated mining operations at Phoenix in 1976, and later dismantled and moved the Phoenix mill. Subsequent to the mine closure, Noranda purchased all of Granby's assets, including the Phoenix property.

During active mining at Phoenix in the 1960's and 1970's, extensive exploration was done on the property by Granby. Considerable diamond and percussion drilling was done in the vicinity of the mine and to a lesser extent, elsewhere on the property. Numerous IP surveys were also completed in various parts of the property. No attempt has been made to document the many drill holes completed in the mine area many of which were subsequently mined out. A summary of drilling by Granby and others is given below in Section 10. It is very likely that other holes were drilled which are not listed.

1966-1974: San Jacinto Explorations Ltd. acquired the Marshall and adjacent claims from Herb Shear, completing geological mapping, soil sampling, IP and trenching. Two zones of auriferous massive pyrite-pyrrhotite were discovered. In 1967-1968 and 1971, several small shipments of sulfide were made to the Cominco smelter in Trail. Six shallow drill holes were completed in 1969 (Drummond, 1983). In 1973, San Jacinto optioned the Marshall property to Highland Lode Mines Ltd. who completed a magnetometer survey, geological mapping, percussion drilling and metallurgical testing. In 1974, a surface bulk sampling was reported of some 750 to 800 tons of which 300 to 350 tons averaged between 1.0 and 1.5 oz/t Au and 0.5 oz/t Ag with some zinc and copper values. One 8 to 10 ton lot assayed 7.3 oz/t Au, 5.43 oz/t Ag and 4.56% Cu. An additional shipment was made in 1975 (Britton, 1974; Drummond, 1983).

1980-83: Kettle River Resources optioned the Phoenix Property from Noranda, assessing for gold. In 1981-1982, geological mapping, VLF-EM survey and rock sampling were completed in the Brooklyn and Sylvester K areas. Follow-up backhoe trenching led to the discovery of the

Sylvester K gold zone. Twenty-three diamond drill holes tested the Sylvester K zone for continuity.

1984-87: Noranda elected to participate in the Phoenix joint-venture, and became operator of the project. In 1984, an airborne magnetics and EM geophysical survey was flown over the property followed with ground geophysics, mapping and soil sampling on airborne conductors. In 1984, four diamond drill holes were completed in the Sylvester K - Brooklyn area.One drill hole was drilled at the Brooklyn in 1985 (Keating and Bradish, 1984; Keating, 1985). In 1987, one reverse circulation drill hole was completed on the Wendy 13 claim, south of the Phoenix pit, to test for mineralization along gently dipping (Tertiary) shear zones, such as on the adjoining Golden Crown (JD Property) Property (Gill, 1987).

1985: Kettle River Resources optioned the Marshall-San Jacinto claims from Canbec Resources Ltd. which then fell under the Noranda-Kettle River joint venture. Backhoe trenching and diamond drilling were done to test the Marshall zone.

1988-89: The Noranda-Kettle River joint venture granted Skylark Resources Ltd. the right to mine 250,000 tons of gold-bearing ore from the Sylvester K occurrence. Skylark conducted a close-spaced drill program. Only 5,090 tonnes of material was shipped to the Dankoe Mill near Keremeos for processing before Skylark abandoned the project in March, 1989.

1989-91: Kettle River Resources acquired 100% ownership to all of Noranda's claims, crown grants (surface and under surface) and Mine Leases in the Phoenix area.

1990-92: Battle Mountain (Canada) optioned the Phoenix Property from Kettle River, completing geological mapping, rock and soil sampling and a ground magnetometer survey. Battle Mountain's work was focussed on a gold skarn model, similar to the then recently discovered Crown Jewel (Buckhorn Mountain) deposit. Most of Battle Mountain's work was focused within 2 to 3 km of the Phoenix pit. In 1991, a 10 hole (960 metre) diamond drill program and IP survey were completed. In 1992, a further 9 holes (1364 metres) were drilled (Deighton et al, 1991; Leigh, 1991; Caron, 1992a,b; Roth, 1992).

1997: Echo Bay Minerals optioned the Phoenix Property from Kettle River. Nine diamond drill holes were completed at Sylvester K and one hole on the Marshall zone (Caron, 1997; Rasmussen, 1997).

2002: Kettle River completed a limited trenching program on the Phoenix marble occurrence.

2004-2005: Access roads in the vicinity of the Phoenix Mine were decommissioned and gated by Kettle River.

2006-2008: Kettle River conducted soil and magnetics survey followed by a trenching and drilling program on the Minnie Moore showing. In 2007 Kettle did 10 diamond drill holes into Minnie Moore and in 2008, 14 diamond drill holes in Minnie Moore, Battle Zone, Bank of England and Stemwinder.

With the extent of exploration campaigns on the Phoenix Property over the years by various company's such as Noranda, Canamax and Battle Mountain and Echo Bay to name a few, it is helpful to demonstrate the extent of soil grids, soil anomalies, geophysical grids, geophysical anomalies and drill holes on the Property in graphic form. Figures 6.3 through 6.8 summarizes these campaigns.

Figure 6.3 compiles soil geochemical values for gold from a total of 12,728 sample results. Gold soil anomalies are evident along the eastern and southern portion of the historic Phoenix pit. These could represent an extension of mineralization or could be caused by contamination from the extensive mining operations carried out over decades. The anomalous gold in soils extends north to the Sylvester K area and beyond to the Marshall deposit area. In the northern area there is a gold soil anomaly located in the area of the R. Bell Mine and Summit showing.

Figure 6.4 compiles of soil geochemical values for copper. Copper soil anomalies are essentially coincident with the gold in soil anomalies although anomalous copper is more widespread or broadly dispersed. The coincident anomalies for gold and copper are high priority for follow-up and should be part of the initial ground proofing phase.

Figures 6.5 shows the extent of airborne and ground magnetics surveys conducted to date on the Property. Figure 6.6 demonstrates the anomalies from Induced Polarization surveys on the Phoenix Property. Figure 6.7 shows electromagnetic conductor anomalies identified from a previous Digem airborne electromagnetic survey.

Figure 6.8 displays diamond drill hole collar locations on the Phoenix Property. The drilling is concentrated into two main areas of drilling, the central cluster and northeast cluster. A third, western cluster should be evident, however, databases for this sector are a work in progress. Hole lengths are not available at this time so the total meterage drilled has not been determined. This area has also been broadly separated into Granby Mining drill holes before 1976 and drill holes completed after 1985. The clustering of the drill holes are primarily located in the areas of the historic mines with a vast majority of the Granby holes are located around the Phoenix pit. In the northeast cluster, a total of 100 diamond and reverse circulation drill holes are included in the database. This drilling was conducted by companies such as Granby, Echo Bay, Kettle River Resources, Skylark Resources and Canamax to name a few.

Figure 6.3 Phoenix Property Soil Grids and Au Results

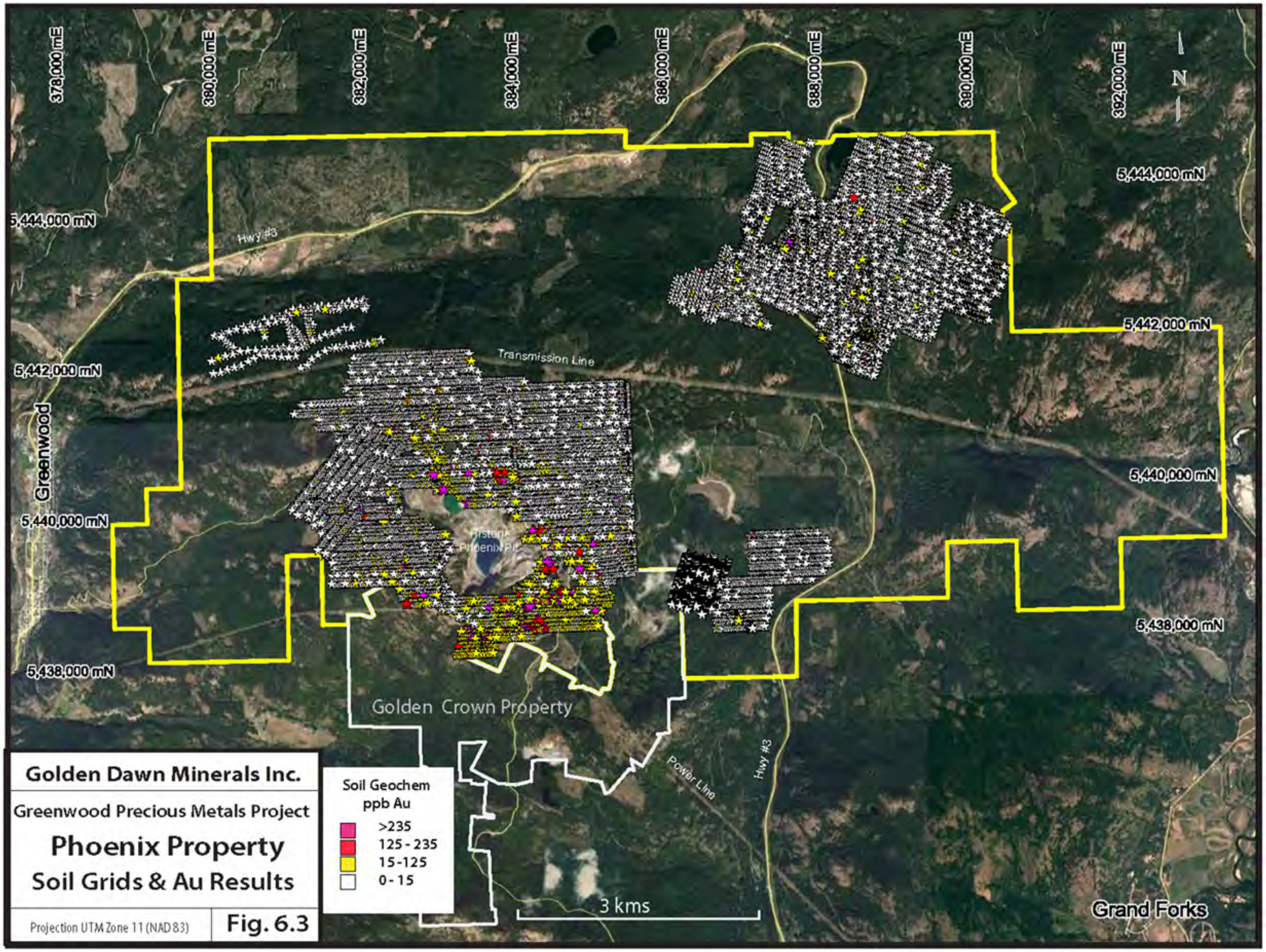


Figure 6.4 Phoenix Property Soils Grids and Cu Results

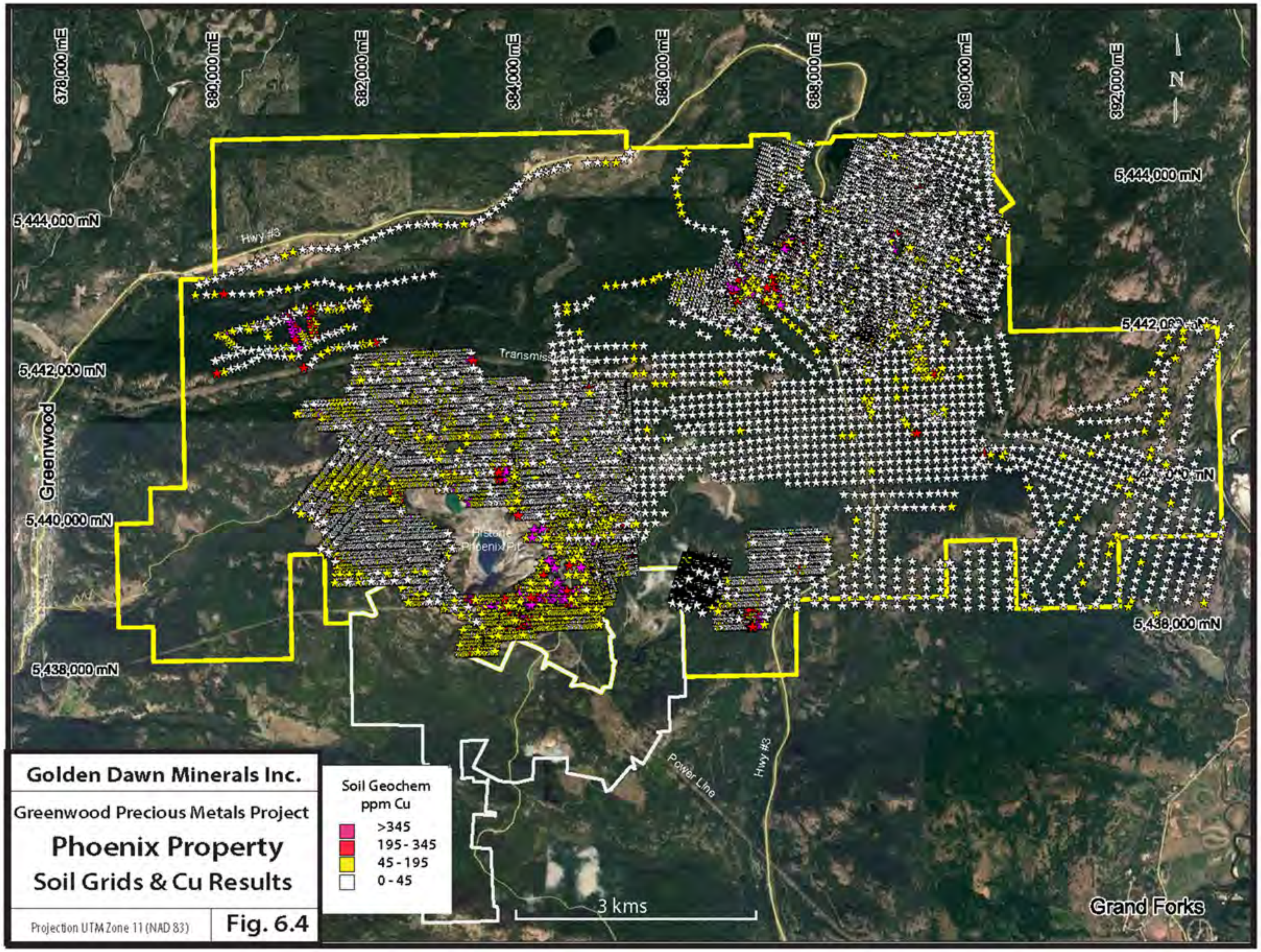


Figure 6.5 Phoenix Property Historic Airborne and Ground Magnetics Survey Grids

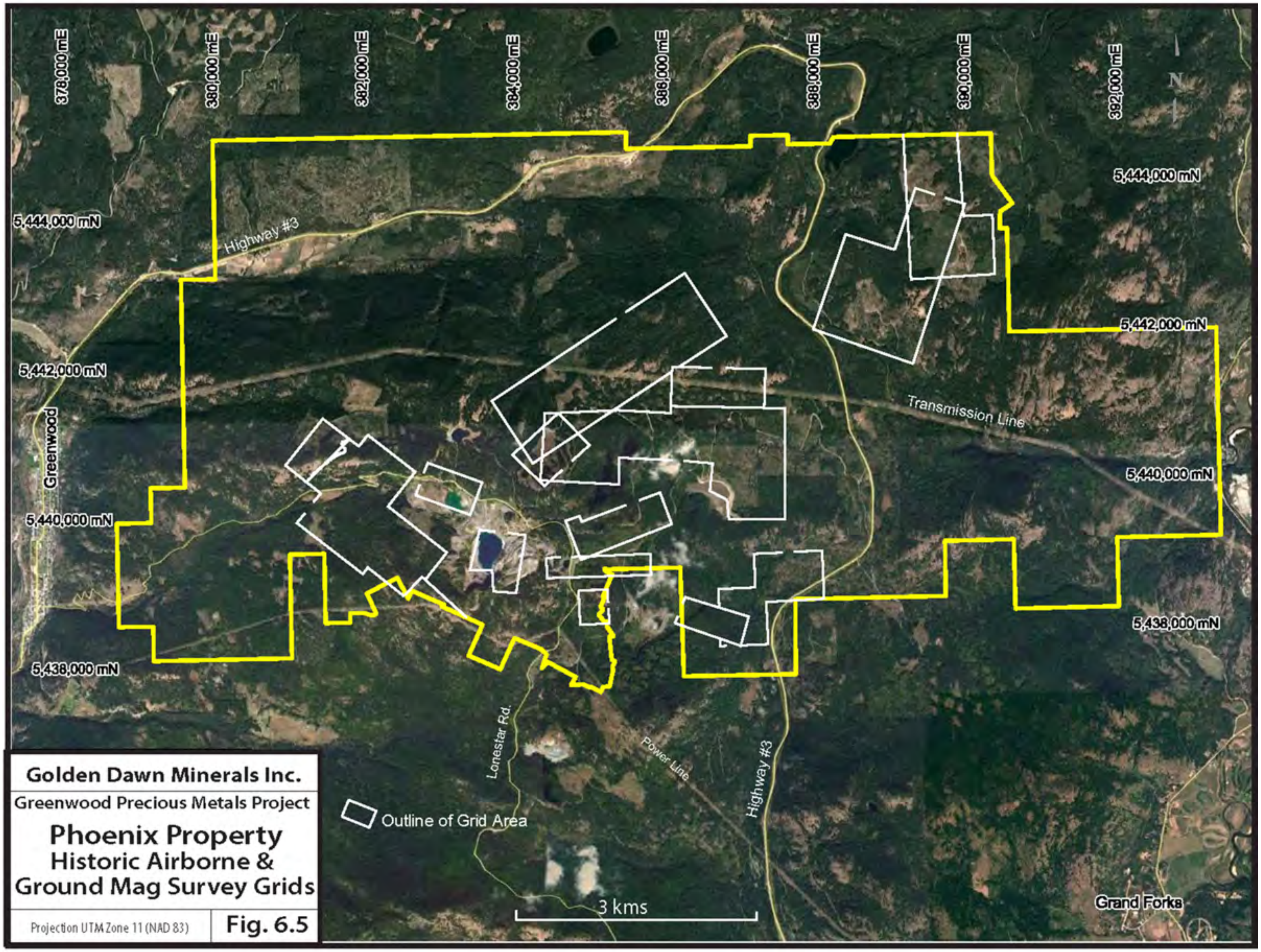


Figure 6.6 Phoenix Property Historic IP Grids and Chargeability Anomalies

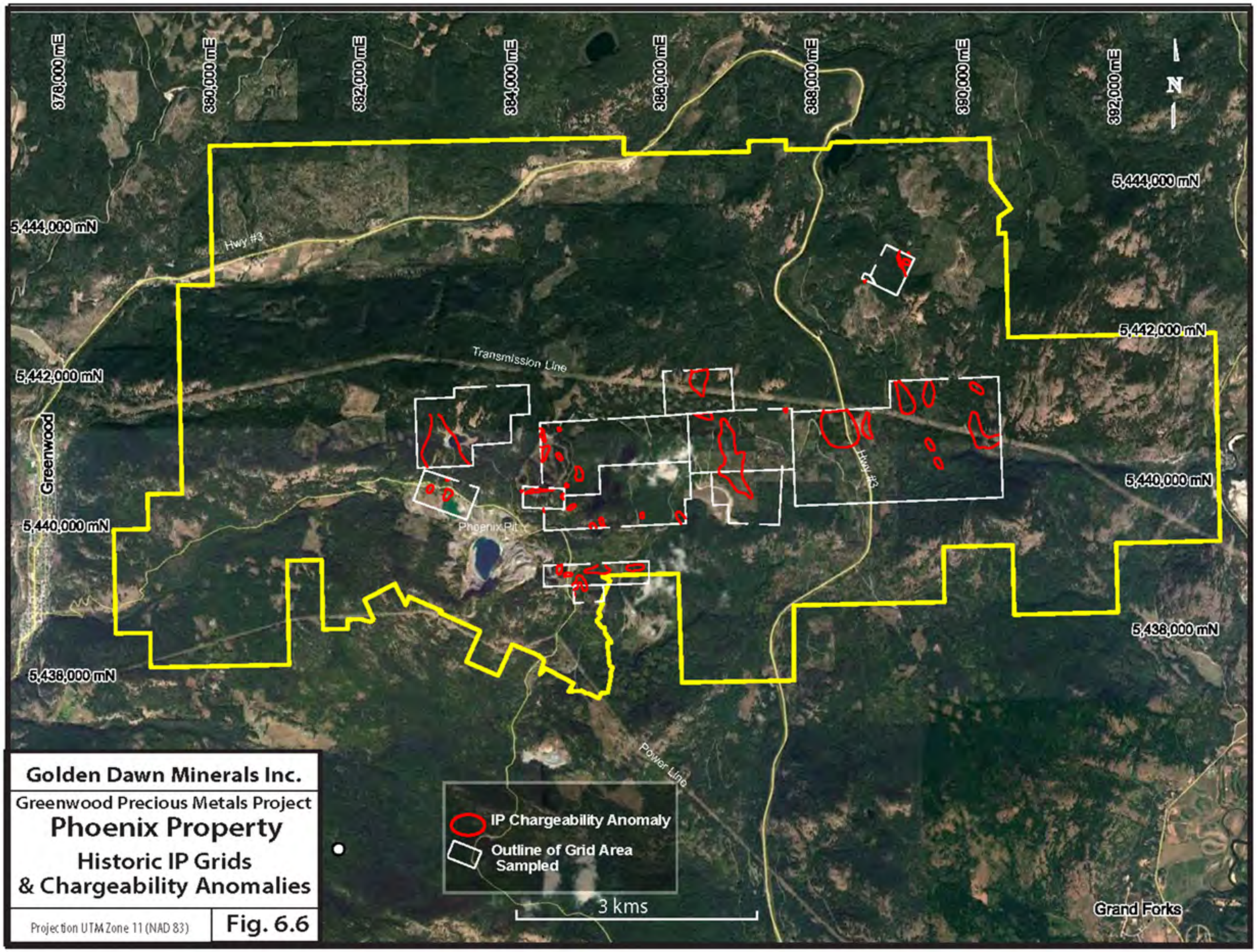


Figure 6.7 Phoenix Property DIGEM EM Survey and Anomalies

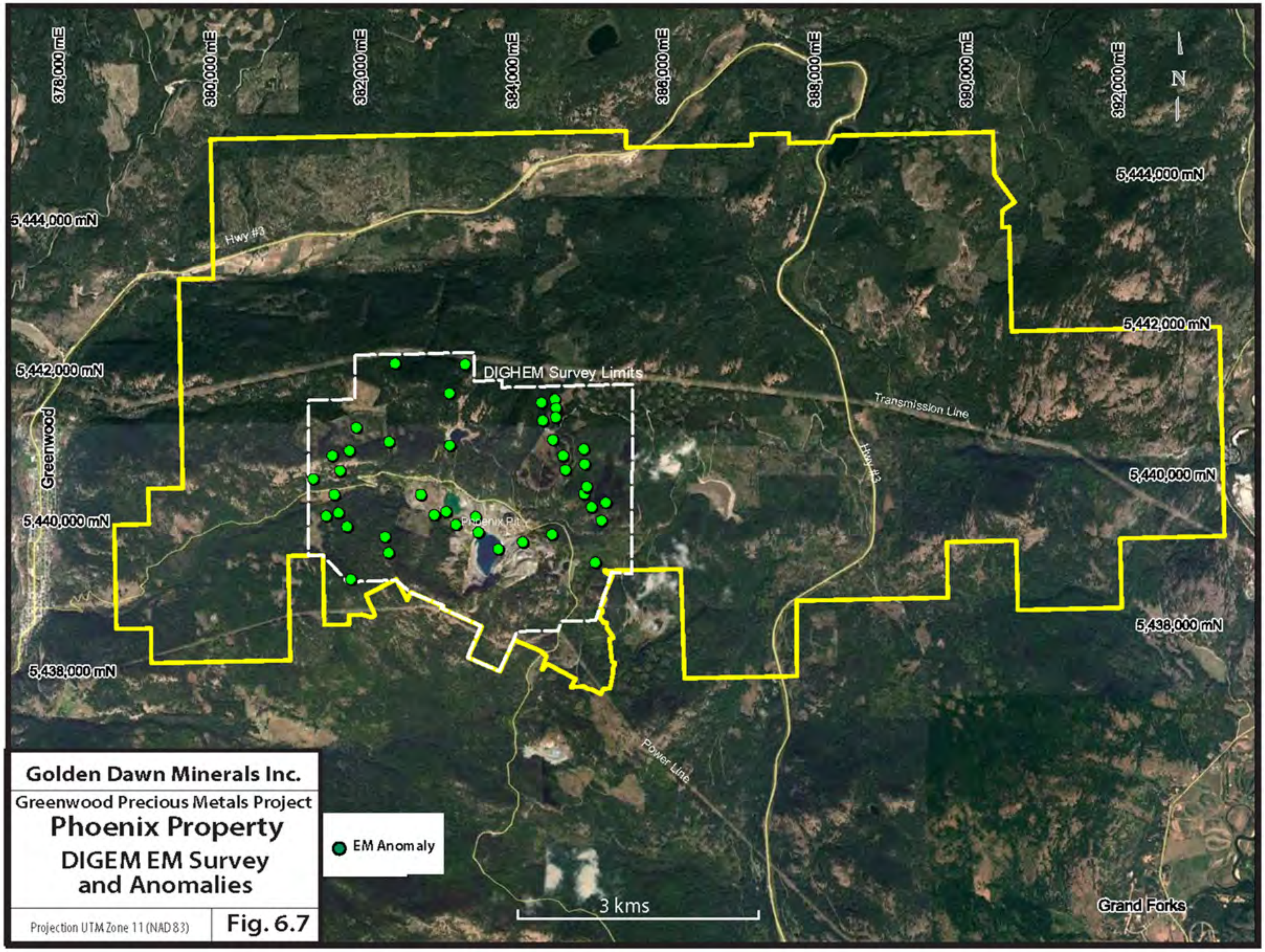
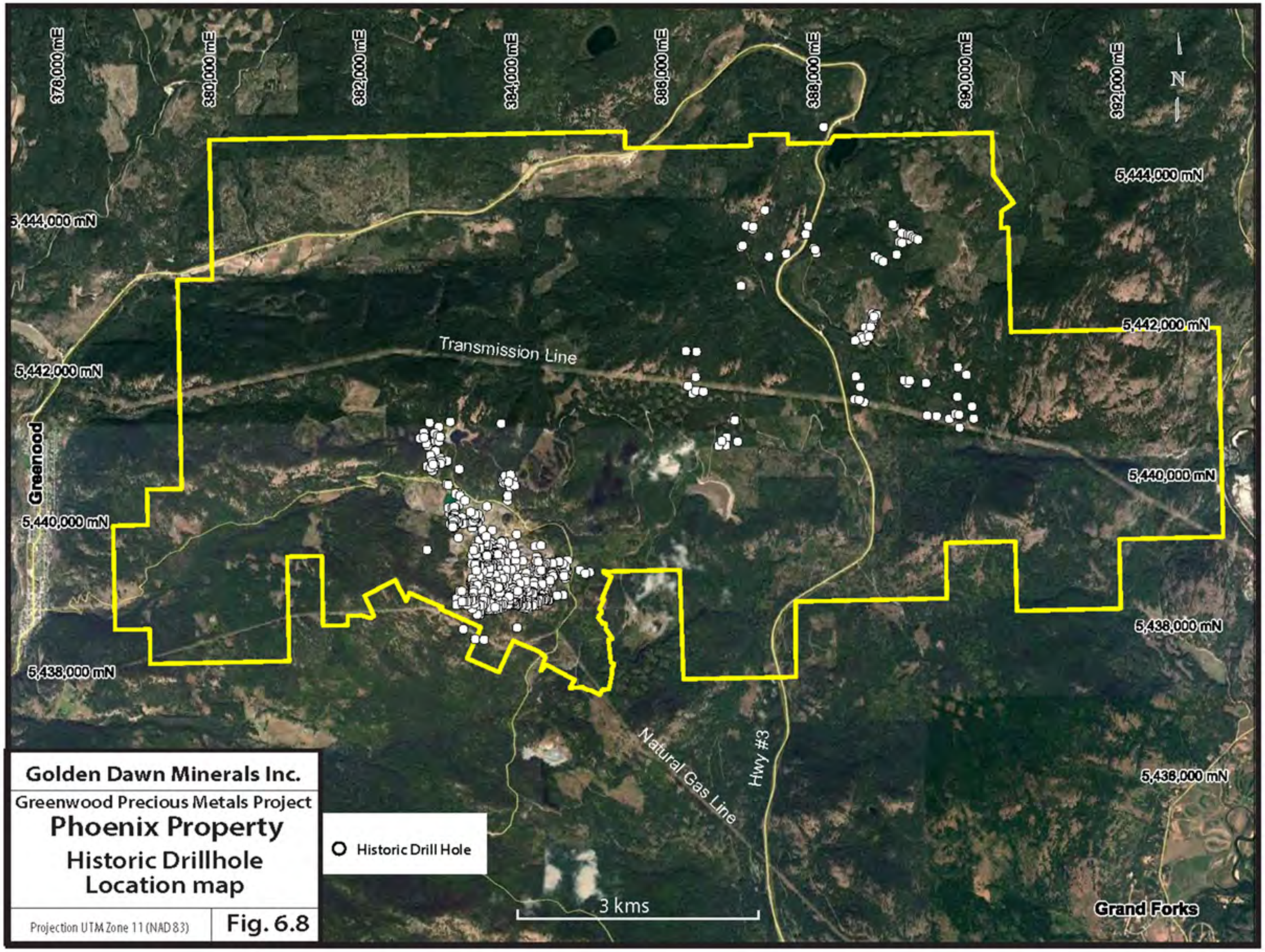


Figure 6.8 Phoenix Property Historic Drillhole Location Map



6.5 BOUNDARY FALLS PROPERTY

The area of this property covers two known metal prospects in the BC Minfile, numbers 082ESE045 for the May Mac or Skomac and 082ESE171 for the Boundary Falls, No. 1 and Gloryhole occurrences, each of which have extensive histories.

6.5.1 May Mac (Skomac)

The historic accounts described below are summaries from Annual Reports of the Minister of Mines for the Province of British Columbia and various company exploration reports.

1880s-1900: The earliest known work in the vicinity of the May Mac Mine dates back to 1884 when placers were being worked on Boundary Creek. Their workings were reported to extend a mile or two up from Boundary Creek's junction with Kettle River. In 1887 a Crown Grant (Nonsuch) was staked on 1 m of pyritic slate carrying galena, gold and chalcocite and gave the place the name Smith's Camp (Hodges 1897). Minister of Mines of British Columbia (BCMM)Reports mention that oxide ore was originally treated using a 2-stamp mill but had been discontinued when sulfides were encountered. Two tunnels 24 m and 61 m long, (separated by 23 m vertically), were driven on the same 0.60- 0.90 cm wide quartz vein carrying gold to 1 oz/ton. (These tunnels were later referred to as the No. 1 (lower level) and No. 2 (upper level) mine levels.) By 1897, the upper tunnel (No. 2) was 30 m long showing a vein 0.45 – 1.2 m wide, but the lower tunnel (No. 1) 73 m long with an 18 m long cross-cut, was along the vein at the beginning, but shows nothing but stringers of quartz in the schists for most of its distance. By 1898, the upper tunnel was extended to 91 m long and a 20 m raise was made to surface. The vein although irregular, showed a width of about 1.06 m in the face of the tunnel with assays averaging values of $18 to $20/ton. Immediately north, on an adjoining Crown Grant (The Last Chance), a 23 m deep shaft exposed 0.60- 0.90 m of pyrite with galena and native silver with values as high as 150 oz/ton silver, supposedly on the same zone as on the Nonsuch claim. By 1897 an incline 29 m deep was sunk on this vein on a dip of 35 to 50 degrees (believed by Paxton to be halfway between the No. 2 and No. 4 portals). About 8 m below the collar of the shaft the vein splits in three veins 0.20 m, 0.30 m and 0.60 m. These veins graded between 0.18 oz/ton Au, 12.8 oz/ton Ag, 0.59 % Cu and 1.7% Pb; and 0.03 oz/ton Au, 1.10 oz/ton Ag, 0.27 % Cu and 0.9% Pb. Several tons of fine looking ore, showing the native silver; the vein was traced in several open cuts. Another adjoining Crown Grant (The Republic) exposed a 0.30 cm wide vein carrying grades of 3 oz/ton gold, 18 oz/ton silver and 1% lead from a 6 m shaft (by 1897 was 15 m deep). On the nearby Hidden Treasure Crown Grant, a 18 m deep shaft was sunk.

1903: A total of 19 tons of ore from the Non Such claim was reported to have been processed at the British Columbia Copper Company's smelter at Greenwood.

1904: A 20 tons of ore from The Last Chance treated at the Hall Mines smelter, Nelson, B.C. averaged 18.67% lead, 0.15 oz/ton gold, and 22 oz/ton silver. A similar shipment None Such claim from the same vein (lower Skomac vein) (0.90-1.5m wide) averaged 0.53 oz/ton Au and 2 oz/ton Ag. A 60 ton shipment from the Republic claim averaged 0.82 oz/ton Au and 7.5 oz/ton Ag from a 0.3-0.45m wide vein perpendicular to the vein (lower Skomac vein) on Last Chance and Non Such. The Upper Skomac was discovered360 m west of No. 1 adit.

1905: A 690 ton shipment from Last Chance. Lengthy cross-cuts and drifts at the 100-foot level opened up bodies of ore up to 3 m wide, with about 0.60 m of galena running well in silver. The upper tunnel (No. 2) exposing a persistent 0.35-1.8m wide vein was 121 m long and the lower adit (No.2) was 69 m long. In the upper tunnel in width The mine was equipped with a steam power plant. A 20 ton shipment was reported from the Republic mine. At some point a No. 3 drift was done. This drift, between the No. 1 and No.2 was on a separate vein 6-8 m into the hangingwall of the Lower Skomac vein (Paxton, 1987).

1915: Work was minimal and insignificant between 1905 and 1915. In 1915 the Tipperary Mine in Smith's Camp made a shipment of 62 tons assaying from $7 to $15 a ton in gold and silver. The ore is improving with depth.

1920: A 26 ton shipment was treated from Last Chance by the Trail smelter mostly from hand-picked dumps.

1921: No activity but a sample from the dump reported 0.46 oz/ton Au, 81.2 oz/ton Ag, 2% Pb and 5% Zn.

1934: Activity resumed by new parties with reconditioning the old lower adit, numerous open-cuts and a new drift 12 m long was driven on a quartz vein from 0.15-0.90 m wide containing pyrite, galena, sphalerite, and variable quantities of gold and silver.

1937: Greenwood Gold Mines Limited installed a small power plant, consisting of a Holman single-stage 7 3/4 by 6-inch compressor, driven by an International P.K. model internal-combustion engine and 168 m of drifting was done on the Last Chance claim. 114 tons were shipped yielding 4 oz. gold, 696 oz. silver, 12,093 lb. lead and 4,432 lb. zinc.

1962: Skomac Mines Limited opened the No. 4 adit (upper Skomac vein) on a quartz vein up to 1.8 m wide carrying galena, sphalerite, and considerable pyrite. Paxton (1987) suggests that the No. 4 level was driven parallel but some 100m into the footwall side of the Lower Skomac vein. A total of 166 tons were mined from No. 4 level and shipped to the Trail smelter. This contained 8 ounces of gold and 819 ounces of silver. A new No. 5 level was started 30 m below the No. 4 level.

1963: Production of 8 ounces gold, 1345 ounces silver, 3209 pounds lead and 1013 pounds zinc is reported from 42 tons of crude ore from the Skomac mine.

1964: Ganda Silver Mines Ltd. acquired control of Skomac Mines Limited. The No. 4 level (on upper Skomac vein) is reported to be 122 m long, and the No. 5 level 15 m verticallt below No. 4 (on upper Skomac vein) was 35 m long. Three higher adits are very short. In 1964 most work was done on No. 5 level. Ore shipments to the Trail smelter amounted to 530 tons. Note: Paxton (1994) cited production for the period 1962-64 at 670 tons grading 1.37 g/t Au, 185 g/t Ag, 2.1% Pb and 1% Zn.

1965: A crosscut was driven 27 m into the hangingwall of the vein (upper Skomac vein) on No. 5 level to provide a diamond-drill site. Subsequently, several down-holes were diamond drilled from this site. Diamond drilling, including some surface drilling, amounted to 3,500 feet of EX core. Ash (2011) refers to a letter written in 1994 that describes an underground diamond drill hole that was completed in 1965 and before the No. 6 Adit was collared in 1973. The hole was drilled from the No. 5 Adit cross-cut, down at 19 degrees into the footwall of the vein, to test for the down-dip continuation of the vein beneath the No. 5 Adit. The letter states that three, closely-spaced quartz veins were intersected. The first sample was 1.2 m wide, grading 1.46 ppm (0.05 oz/ton Au, 271 ppm (7.9 oz/t) Ag, 16.7% Pb, 1.1% Zn, and 0.4% Cu. The second intersection was 0.91 m wide, grading 31 ppm Au (0.9 oz/ton), 260 ppm Ag (7.6 oz/ton), 2.5% Pb, 0.6% Zn, and 0.2% Cu. The third intersection had a width of 0.3 m, grading 192 ppm Au (5.6 oz/ton), 11,130 ppm Ag (324.6 oz/ton), 17% Pb , 5.4% Zn, and 4.0% Cu. The writer of that letter noted that it was for this reason that the No. 6 Portal was collared.

1969: Production is recorded as 19 tons crude ore containing 3 oz. gold, 264 oz. silver, 1,707 lb lead and 493 lb zinc.

1975/6: The Skomac Mine was revived in 1972 when Robert Mines Ltd. gained control of the property. Adit No. 6 on the Nonsuch claim was collared in 1974. Four shoots were identified ("AA", "A", "B", and "C" zones). A total of 434 tonnes were shipped to Trail grading 4.94 g/t Au; 694.9 g/t Ag, 3.01% Pb and 1.94% Zn and 548 tonnes in 1976. No. 7 adit some 60 m below No. 6, was started to investigate the down dip extension of the upper Skomac vein and advanced 110 m long (Church, 1976). Conversely, Paxton (1986) reported stoping above the 6th level in the A and AA zones in 1975 which produced 478 tons of ore with an average grade of 0.14 oz/ton Au and 20.3 oz/ton Ag. In 1976 stoping in the B and C zones produced 604 tons with an average grade of 0.07 oz/ton Au and 11.8 oz/ton Ag.

1977: Seven diamond drill holes totaling 245 m from the No. 7 adit were completed to test parallel vein structures. Some geochemistry and geological mapping were also completed. A small mill was also transported to the site at this time.

1978: Robert Mines Ltd. continued its work on the Skomac mine in 1978 with drifting extending the No. 7 level by a further 50 m. They established a grid and completed a pulse electromagnetic survey (approximately line 10.4 km).

1979: Robert Mines Ltd. extended the No. 7 level 10 m to a total length of 160 m and completed surveying of that level.

1980: Robert Mines Ltd. completed 70 m of crosscuts and drifting and 80 m of test holes. On the Upper Skomac vein, a raise was driven from the No. 7 Level to the No. 6 Level, below the AA zone, and a sublevel was driven on the vein. The total length of No. 7 was now 210 m long. A 100 ton (90.7 tonne) per day flotation mill was constructed at the Skomac showing (the Bow Mines/Robert's mill) (Paxton, 1986).

1982: The Roberts mill was tested on old dump material (Paxton, 1986).

1983: Mining continued from the Upper Skomac vein, primarily from the AA zone. A total of 1901 tons were mined and milled on site, returning an average grade of 3.0 g/t Au and 205 g/t Ag (Paxton, 1986).

Note on Cumulative Production from May Mac Mine: There are a number of records of historic production from the May Mac mine including the descriptions in annual reports, BC mineral production tables, MinFile, and corporate records. Unfortunately, the information is not entirely consistent between these sources. The data reported in Table 6.2 below is comparable but not the same as that in the previous technical report by Ash (2011).

Total production is estimated at 4,228 tonnes, grading 5.35 grams per tonne gold (0.16 ounce per ton Au), 908 g/t silver (26.5 ounce per ton).

Initial production was from the first two mine levels and indicates a relatively high grade in gold (9.366 ounce per ton). This was not the case for the upper levels.

Data for lead and zinc are incomplete for the range of years. Information from Robert Mines indicates 49,462 kg lead and 26,243 kg zinc were produced up to 1977, giving average calculated grades of 2.0% lead and 1.1% zinc. Production of 894 kg copper in 1983 is also reported on the MinFile report.

TABLE 6.2
HISTORIC PRODUCTION FOR THE MAY MAC MINE

Period	Tonnes	Gold Oz	Silver Oz	Au g/t	Ag g/t	Gold opt	Silver opt	Property	Source
1903-34	37.3	384	185	320	154	9.37	4.51	Republic NonSuch	1
1904-37	809.1	154	3430	5.92	132	0.17	3.85	Last Chance	1, 5
1962-64	670.9	32	3995	1.48	185	0.04	5.41	Last Chance	2
1975	434.0	69	9697	4.94	695	0.15	20.31	Skomac	3
1976	548.0	43	7117	2.42	404	0.07	11.81	Skomac	3
1983	1728.2	45	6405	0.81	115	0.02	3.37	Skomac	4
Total	**4227.5**	**767**	**30,829**	**5.35**	**227**	**0.16**	**6.63**		

Abbreviations: Oz = ounces, g/t = grams per tonne, Au = gold, Ag = silver
Sources:
1: Table 1 of Index 3 to Ministry Annual Reports 1937 to 1953 (p 210)
2: Table 1 of Index 4 to Ministry Annual Reports 1954 to 1964 (p 125)
3: Mining in BC 1975-1980 (p 11) Note: These figures match Assay certificates from Cominco, copies of which were retained by Robert Mines Ltd.
4: Paxton (1994) Note: Production reported by Paxton (1994) closely matches that reported in the Minfile production report for 1983.
5: Record of Production of Ore and Smelter Net Return by Years (Robert Mines Ltd).
Note: Production records from Robert Mines Ltd. indicate silver production for the period 1904-37 was 3430 ounces (106685 grams) whereas reference #1 states 96,005 ounces.

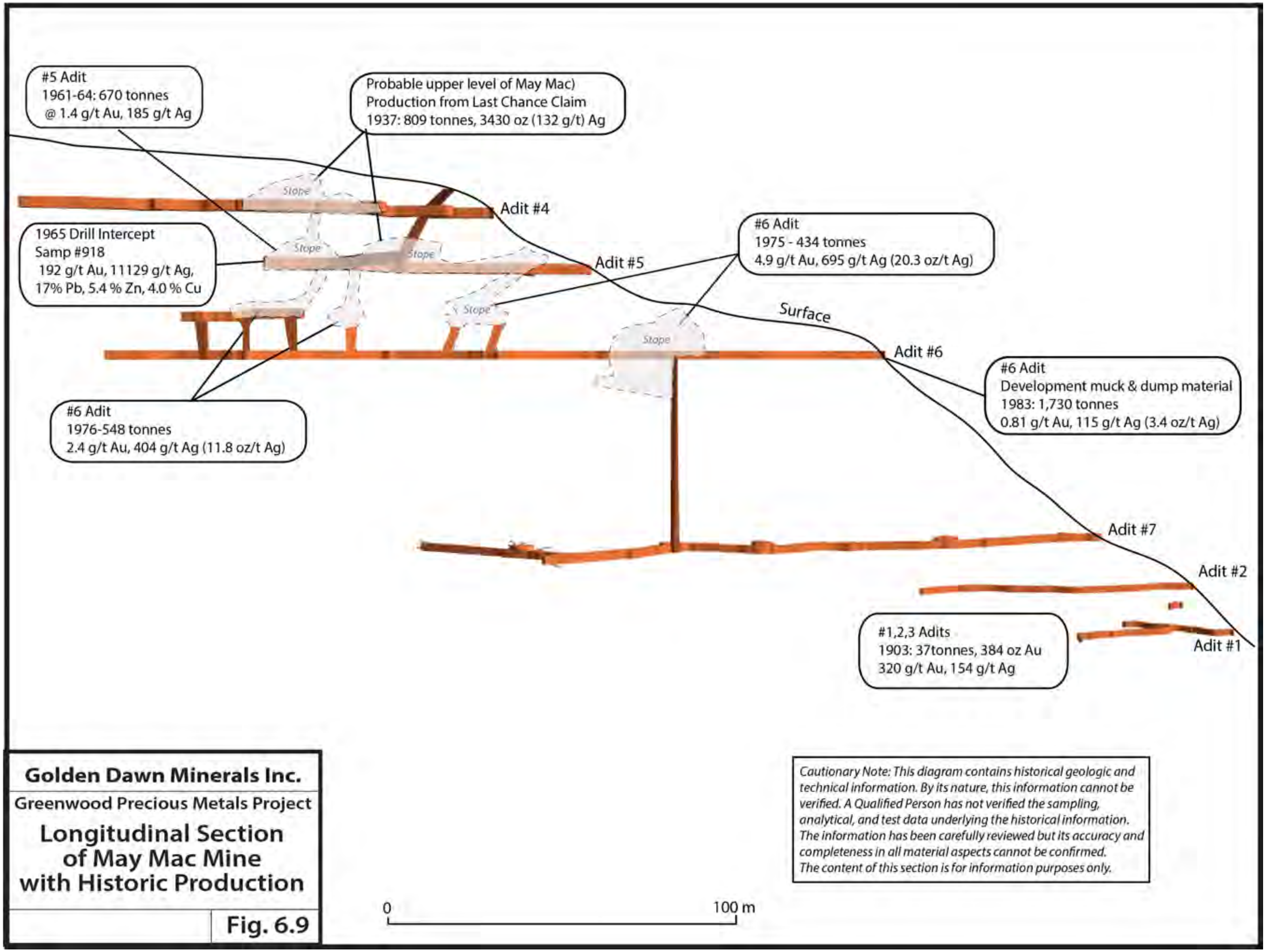
Total production from the May Mac (Skomac) mine was stated as 5,734 tons (5,212.7 tonnes) by Paxton (1994) who included small tonnages reported for which no grades or metal production were available.

The source stopes for the production reported in 1976 and 1976 was plotted on a longitudinal section by Paxton (1994) indication the AA and A, B and C zones. This longitudinal is shown in Figure 6.9 which also shows an interpretation of where the rest of the past production was sourced.

1984: A summary report was prepared by Paxton for Silver Hoard Resources Inc. for the Skomac area (then called the Robert Mines Property), but no work was carried out.

1985: Empire Gold Resources entered into an agreement to explore the Robert Mines Property (on the Skomac veins) in return for a 42% NPI in the mine and mill, and had a technical report on the Property prepared (Paxton, 1986). The agreement with Empire Gold Resources has since terminated, with no retained interest in the claims or in the mill.

Figure 6.9 Longitudinal Section of May Mac Mine with Historic Production



1987: Empire Gold carried out significant work on the Robert Mine Property on the Skomac veins in 1987 including driving the 6-3 cross-cut and drilling below the 6-2 and 6-3 cross-cuts to test the downward extension of the Upper Skomac vein. Fifteen underground holes totaling 450 m were drilled and showed that the Upper Skomac vein dipped more shallowly than previously believed below the No. 6 level (Paxton 1987). DDH # U-87-7 encountered 0.6 m of 2.4 g/t Au and 220 g/t Ag. DDH # U-87-12 intercepted 0.58 m grading 11.8 g/t Au and 122 g/t Ag (Paxton, 1994). Paxton interpreted that the No. 7 Adit had been driven on a "false" lead, some 45 m into the footwall of the Upper Skomac vein, postulating why the No. 7 level had failed to encounter significant mineralization except for the stretch of some 15 m grading 14 g/t Au over a width of 0.6 m (Ash, 2011).

Underground mapping and sampling of the Lower Skomac vein in the No. 1 and No. 2 adits were also done. A narrow section of the mineralized argillite footwall to the vein in the No. 2 level returned 82.3 g/t Au and 169 g/t Ag. A small amount of trenching was done near the No. 2 adit. Geological mapping and soil sampling (for gold and silver) were also carried out. Soil samples collected at 50 m intervals on 100 m spaced lines identified a gold anomaly 400 m southeast of the No. 1, 2 and 3 adits with values to 230 ppb Au (0.23 g/t) (Dufresne, 2012).The anomaly is poorly defined by the very coarse sample spacing, but appears to be northeast trending and exceeds 200 m in length.

1994: Paxton prepared a report for 593749 Alberta Ltd. recommending that the No. 7 level on the Upper Skomac vein be extended to test for unexplored vein at this level.

1995: A single diamond drill hole totaling 91.4 m was drilled for Bow Mines Ltd. The hole was collared approximately 200 m west of the No. 7 portal and was drilled vertically to test the contact between the underlying serpentine and overlying argillite. No significant intersects were reported (Ash, 2011).

2000: InvestNet Inc. acquired the Bow Mines Property, which covered both the Skomac and Boundary Falls showings and had a technical report on the property prepared (Caron, 2000).

2002: A small prospecting program was carried out by InvestNet Inc., around the Lower Skomac vein (Caron, 2002). Also during 2002, the Property was examined by Echo Bay Minerals Co., who recognized similarities to the Lamefoot district in northern Washington (Rasmussen, 2002).

2005: 730821 B.C. Ltd. commissioned an airborne time-domain EM geophysical survey over all of their Greenwood area land holdings (Caron, 2006).

2010 and 2011: Golden Dawn signed an option agreement on the Boundary Falls Property and compiled a large database of all pre-existing data. Golden Dawn retained APEX Geoscience Ltd. to conduct exploration at the Boundary Falls property which included soil sampling, rock sampling, a ground Induced Polarization (IP) resistivity survey and diamond drilling. A total of 2,211 conventional B–horizon soil samples were collected from the property. The objective of the soil sampling programs was to locate additional anomalous precious and base metal targets. Samples were taken on a 100 m line spacing with sample stations every 25 m. Results of the program helped define over 20 discreet gold soil anomalies, several of which are adjacent to or spatially associated with the May Mac Mine workings and vein system. A total of 36 rock (grab) samples were collected from the property. Sampling was directed at visible mineralization or alteration in outcropping bedrock as well as in the vicinity of old workings such as adits, trenches, and pits. Geotronics Consulting Inc. (Geotronics) completed a resistivity IP ground survey on the property. Seven NQ sized drill holes totaling 1934.8m were completed on the property (Dufresne, 2012).

2013: In June, the Company received a permit from the Ministry of Mines to conduct underground diamond drilling in the No. 7 adit at the May Mac mine.

2014: Golden Dawn increased the size of its property by acquiring the 513773 mineral claim.

2015: In the fall, Golden Dawn conducted a surface diamond drilling program designed to test extensions of the known silver and gold bearing zones at the May Mac Mine. A total of 9 surface diamond drill holes totaled 1,041 m. Eight of the nine holes intersected their target zones and one hole intersected 2 zones including the target and a new, deeper zone. A rock chip sampling program (85 samples) confirmed the presence of silver mineralization in the May Mac upper Skomac vein, and gold mineralization in the May Mac Lower Skomac vein, and the Glory Hole and No 1 veins.

2016: Surface drilling at May Mac resumed in early 2016 and by May 12, 2016, reported 8 surface holes drilled for a total of 729 m drilled. In September, the Company received a permit to rehabilitate, construct underground drill stations, and commence underground drilling in the No.7 Adit, and resumed surface diamond drilling on the at the May Mac Mine. The Company filed a Technical Report for the Boundary Falls Property.

Golden Dawn reported an exploration target for the May Mac Mine based on the updated geological model. The target ranged from 200,000 to 600,000 tonnes in size at an estimated average grade of between 100 and 400 g/t Ag, 1.5 to 5.9 g/t Au, 0.7 to 3.0% Pb and 0.3 to 1.9% Zn, based on historic results. This number has been revised in Section 14.6.5.

Note: The potential quantity and grade of this Exploration Target was conceptual in nature; there has been insufficient exploration to define a mineral resource and it is uncertain if further exploration will result in the target being delineated as a mineral resource.

Surface diamond drilling on the May Mac Mine Skomac vein system resumed in late November. Three drill holes totaling 550 m were completed northeast of the May Mac Mine. The No. 6 and 7 levels were rehabilitated. Three underground drill stations were excavated on the No. 7 level. Nine underground diamond drill holes totaling 805 m were completed. The first hole was drilled horizontally from the end of No. 7 adit to see how far the drift must be extended to intersect the vein. The remaining holes were collared in drill station # 3, 35 m from terminus of the No.7 level, to intersect the vein above and below the level.

2017: Golden Dawn continued its underground drill program from the No. 7 level and in 2017 completed 22 holes totaling 3028 m. A suite of 2016 and 2017 core samples totaling 16 kg was collected for metallurgical testing to determine the requirements for processing in the Company's Greenwood Mill. Metallurgical results are summarized in Section 13.6.

6.5.2 Boundary Falls Mineral Occurrences

The historic accounts described below are summaries from Annual Reports of the Minister of Mines for the Province of British Columbia and various company exploration reports.

The earliest known work in the vicinity of the Boundary Falls minerals occurrences dates back to 1884 when placers were being worked on Boundary Creek. Their workings were reported to extend a mile or two up from Boundary Creek's junction with Kettle River.

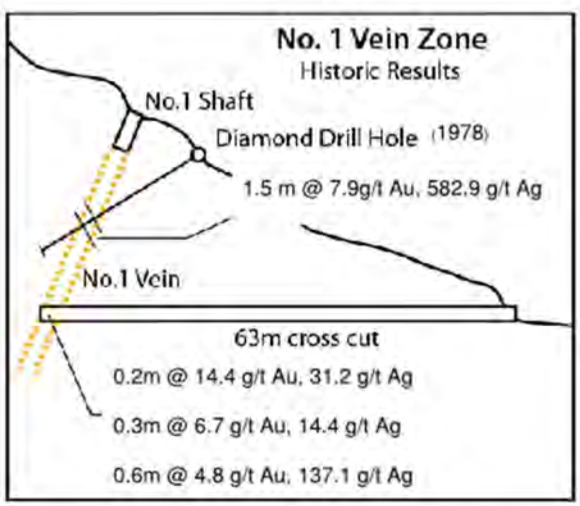
1885-1897: A Crown Grant (Tunnel) was staked on a 0.60cm quartz-pyrite vein carrying gold and galena. A 2 m tunnel was excavated on it with recorded grades running about 0.58 oz/ton gold and 28 oz/t silver but was abandon in 1890 due to its remoteness. By 1897, the tunnel was reactivated to a length of 12 m (Hodges 1897).

Immediately south of the Tunnel Crown Grant, the Northern Chief staked in 1892 showed 0.30 cm of free milling ore in a 3 m deep shaft. The Spokane & Great Northern Mining Company erected a two-stamp mill and milled the ore until, at 12 m depth, gave way to only pyrite. The claim was abandoned and the mill removed. In 1896 it was relocated as the Boundary Falls Crown Grant, sinking the shaft 2 m deeper and ran into $50 free milling ore. By 1897, the white quartz vein was exposed for 60 m and 0.1 – 1.5 m wide but split up into stringers at depth in the shaft (Hodges 1897).

1975: Amigo Silver Mines Ltd. completed a VLF EM survey covering the Tunnel (Lot 888), Boundary Falls (Lot 889), and A 1-6 claims; a 31 m long adit was driven on A 1 (Tully, 1978). Five 1 5/16-inch diamond-drill holes totaling 331.2 m were completed on Tunnel, Boundary Falls and A 3 claims (ARIS 6067).

1978: Amigo Silver Mines Ltd. completed crosscutting from 18 m to 63 m on the Boundary Falls claim and completed 2 BQ diamond drill holes totaling 90 m on the A 3 claim. They also completed a pulse electromagnetic survey over the A 3 and Tunnel claims. Samples from the 5-60 cm 75^{o} NW dipping vein reported up to 14.4 g/t Au and up to 137.1 g/t Ag. A single drill hole was drilled, which intersected 1.52 m grading 7.9 g/t Au and 582.9 g/t Ag (Refer to Figure 6.10, from Tully, 1978).

Figure 6.10 Historic Results from the No. 1 Vein



Rock samples from the Glory Hole zone reported values of 14.1 g/t Au and 31.9 g/t Ag over 1.2 m (Tully, 1978).

2000: InvestNet Inc. acquired the Bow Mines Property, which covered both the Skomac and Boundary Falls showings and had a technical report on the property prepared (Caron, 2000).

2002: A small prospecting program was carried out by InvestNet Inc., primarily to assess known targets at the Boundary Falls showing. A number of high-grade gold samples were returned from the No. 1 vein and Glory Hole (Caron, 2002). The property was examined by Echo Bay Minerals Co., who recognized similarities to the Lamefoot district in northern Washington (Rasmussen, 2002).

2016: Golden Dawn completed a total of 904 m in 16 surface diamond drill holes at the Amigo Tunnel No. 1 and Glory Hole mines. Holes BF16-09 to 18 were drilled at the Tunnel No. 1 and Holes BF16-19 to 24 were drilled at the Glory Hole. The holes were drilled to test for extensions of known veins.

6.5.3 May Mac Historic Mineral Resource Estimate

In 1981, a Mineral Resource Estimate was quoted for the Skomac Mine (Robert Mines) (Exploration in BC 1981 p xii).

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

Numerous workers have mapped portions of the Boundary District on a regional basis; Hoy and Dunne (1997), Fyles (1984, 1990), Little (1957, 1961, 1983), Church (1986), and Parker and Calkins (1964), Muessig (1967), and Cheney and Rasmussen (1996). Below is text modified from Ball (2016) describing the regional geology.

The area is located in the Omenica physiographic belt and is underlain by rocks of Quesnellia, accreted to North America during the mid-Jurassic, which overlie older Proterozoic to Paleozoic North American basement rocks exposed in the Kettle and Okanogan metamorphic core complexes. Middle Jurassic calc-alkaline intrusions of intermediate composition, and late Jurassic/early Cretaceous age granodiorite plutons intrude the accreted terranes and the basement complexes. Eocene-age microdiorite intrusions also occur as small stocks and feeder dikes to overlying andesite lavas. Volcanic and sedimentary strata were deposited during the Eocene. The Tertiary was a major period of extension during which metamorphic core complexes were uplifted and low-angle normal (detachment) faults formed, separating the autochthonous rocks in the core complexes from the overlying rocks. Grabens also formed in the hanging wall of the detachment faults, within which Tertiary strata are now preserved. The distribution of stratified rocks is thus controlled by a complex series of faults, including Jurassic (accretionary) thrust faults and Tertiary detachment and graben-related faults.

The Greenwood - Grand Forks area contains Late Paleozoic and Mesozoic volcanic and sedimentary rocks, mainly of greenschist facies regional metamorphism, which are intruded by Mesozoic plutons and unconformably overlain by Tertiary volcanoclastic and flow rocks (Figure 7.1 and 7.2). The rock units are described below (modified after Fyles, 1990).

Figure 7.1 Regional and Property Geology Map

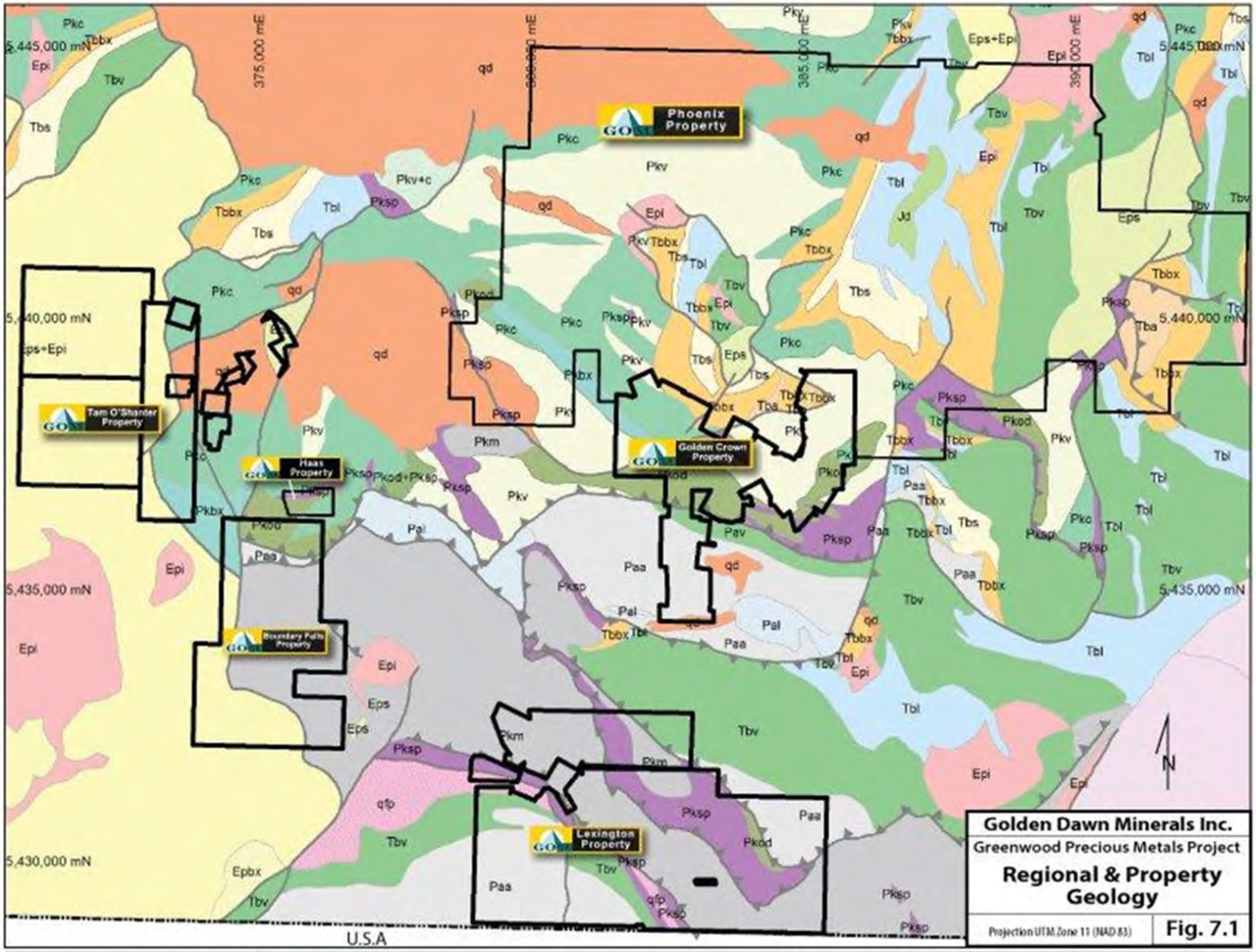


Figure 7.2 Regional Geology Legend

Legend

- GOM Claims
- Normal Faults
- Thrust Faults

Geology

Eocene

- Epm — Epm - Marron Formation
- Eps — Eps- Stratiform units-volcaniclastic and arkosic sediments, flows of andesite, trachyte and phonolite
- Epbx — Epbx-Slide breccia
- Epi — Epi- Dikes, sills and intrusions of syenite, pulaskite, monzonite and diorite
- Eps/Epi — Eps/Epi - Marron Fm./ Kettle River Fm; strat units- volcaniclastic and arkosic sediments, flows of andesite, trachyte and phonolite

Jurassic and Cretaceous

- Jd — Jd- Gabbro
- qd — qd- quartz diorite and granodiorite
- qfp — qfp- Quartz feldspar porphyry, quartz porphyry and porphyritic diorite
- qfp+ Epi — qfp+Epi - Quartz feldspar porphory, quartz porphyry and porphyritic diorite + Dikes, sills and intrusions of syenite, pulaskite, monzonite and diorite

Triassic

- Tba — Tba- Dark grey to black siltstone
- Tbbx — Tbbx- Chert breccia, minor tuff, tuffaceous sandstone, and maroon and green limestone cobble conglomerate
- Tbl — Tbl- Limestone, calcareous sandstone and conglomerate, minor skarn
- Tbs — Tbs- Green and maroon tuffaceous sandstone, siltstone and hornfels
- Tbbx — Tbbx- chert breccia, minor tuff, tuffaceous sandstone, and maroon and green limestone cobble conglomerate

Paleozoic

- Paa — Paa- Black siltstone and phyllite, cherty siltstone, minor sandstone, conglomerate and greenstone
- Pal — Pal- Grey and white limestone, cherty limestone and minor white dolomite
- Pkod — Pkod- Old diorite complex- coarse to fine grained hornblende diorite laced with felspathic veinlets
- Pkbx — Pkbx- Chert breccia and conglomerate
- Pkc — Pkc- Chert, grey argillite, siliceous greenstone and minor limestone
- Pkm — Pkm- Grey and green schist and phyllite, buff to white quartzite, minor crystalline limestone, white dolomite, fine grained calc-silicate gneiss, quartz biotite gneiss and amphibolite
- Pkod — Pkod- Old diorite complex- coarse to fine grained hornblende diorite laced with felspathis veinlets
- Pkod+ Pksp — Pkod+Pksp- Old diorite complex-carse to fine grained hornblende diorite laced with felspathic veinlets + Serpentinite and listwanite
- Pksp — Pksp- Serpentinite and listwanite
- Pkv — Pkv- Greenstone, pillow lava and breccia, amphibolite and minor limestone
- Pkv+c — Pkv+c- Greenstone, pillow lava and breccia, amphibolite and minor limestone+ Chert, grey argillite, siliceous greenstone and minor limestone

- Units Not Identified

7.1.1 Paleozoic Units

Paleozoic volcanic rocks and sedimentary rocks are the oldest of the accreted rocks in the area. These rocks are separated into the Knob Hill Complex and the overlying Attwood Formation.

Knob Hill Complex

The Knob Hill Group (Complex) occurs throughout the area in two distinct facies of deformation and metamorphism; a relatively undeformed part with greenschist facies regional metamorphism (Units Pkv, Pkc and Pkbbx), and a sheared and deformed part (Unit Pkm) in a higher grade of metamorphism. The first three types include greenstone and chert, with minor amounts of black siltstone, chert-pebble conglomerate, greenstone conglomerate, chert breccia and small lenses of limestone. The greenstones are aphanitic, commonly calcareous meta-basalts and meta-andesites which grade into massive fine-grained diorite. Some of the diorites are dikes whereas others cover large areas and become coarse grained and are mapped as part of the Old Diorite (od). The Old Diorite is commonly closely associated with serpentinite. In the subject area of this report, the Old Diorite is well exposed on the Boundary Falls and Golden Crown Properties. Fine-grained sediments of the Knob Hill Group (Pkc) are mainly grey, buff or creamy white cherts, and grey chert grades into dark grey and black argillite, which in a few places contains small lenses of blue-grey finely crystalline limestone.

Chert breccia and pebble conglomerate (Pkbx) occur locally in the Knob Hill Group. Extensive areas of buff chert breccia occur west of the Greyhound Creek fault 2 to 3 km southwest of Greenwood, which contain small lenses of black siltstone and buff chert sandstones that dip to the north, and grade into massive white to buff chert. These outcrops were mapped as Brooklyn Formation by Little (1983) and as Attwood Group by Church (1986).

Fyles (1990) suggested that the Knob Hill Group consists of distinct lower and upper parts. The lower part is comprised of a mixed sequence containing chert, argillite, conglomerate and breccia interfingering with mafic pillow lavas and greenstone that grades into and is intruded by fine-grained diorite (Old Diorite). The lower Knob Hill is well exposed on the Boundary Falls Property. The upper part is mainly chert and greenstone and is more than 5 km thick.

The deformed part of the Knob Hill Group (Pkm) includes schists, quartzites, gneisses, amphibolite, marble, dolomite, calc-silicate gneiss and mylonite, which characteristically show a penetrative foliation and one or more lineations. The upper contact of this deformed part of the Knob Hill Group with the relatively undeformed part is not well defined. Unit Pkm is well exposed along both sides of Boundary Creek and on the southwestern slopes and western ridge of Mount Attwood.

Serpentinite (sp) occurs in irregular lenticular bodies in the relatively undeformed parts of the Knob Hill Group, and as fairly continuous sheets along faults. The most continuous layers of serpentinite are along the Lind Creek, Mount Attwood, Mount Wright and No. 7 faults, and along unnamed faults obscured by Tertiary rocks in the western part of the area. These layers are sinuous and generally dip northward at low to moderate angles more or less parallel to the foliation and attitudes of the adjacent rocks. They range in size from very small lenses to prominent masses estimated to be as much as 700 m thick. Commonly, the serpentinite bodies have undergone Fe-carbonate alteration to listwanite. The close association between serpentinite, the Old Diorite and the greenstones of the Knob Hill Group, and the pillow lava-chert association within that group suggest that these rocks are parts of a disrupted ophiolite suite (Fyles, 1990).

Attwood Group

The Attwood Group is mainly dark grey to black argillite, siliceous argillite, phyllite and slate, light and dark grey limestone, minor chert- and argillite-chip conglomerate and minor greenstone. The age based on several collections of fossils is comparable to that of the Knob Hill Group, but the stratigraphic relationship between the two groups is not known.

7.1.2 Mesozoic Units

The Brooklyn Formation unconformably overlies the Knob Hill and Attwood groups and has three main lithological components. These are: (1) chert breccia (Trbbx) commonly referred to as sharpstone conglomerate, (2) limestone (Trbl), and (3) volcanic rocks (Trbv) including greenstone and green pyroclastic breccia and subvolcanic microdiorite. The main components, beginning with the sharpstone conglomerate and grading upward and laterally through finer grained clastic sediments into limestone and/or volcanic rocks, are repeated one or more times. All the components are highly lenticular and change rapidly through lateral and vertical transition zones containing sandstones, siltstones, calcareous sandstones and siltstones (Trbs), and conglomerate and various volcanoclastic rocks.

7.1.3 Tertiary Units

Eocene sedimentary and volcanic rocks of the Penticton Group unconformably overlie the older rocks. The oldest of the Tertiary rocks are conglomerate, arkosic and tuffaceous sediments of the Eocene Kettle River Formation. These sediments are overlain by andesite, trachyte and phonolitic lava flows of the Eocene Marron Formation, and locally by rhyolite flows and tuffs. The Marron volcanics are in turn unconformably overlain by lahars and volcanics of the Oligocene Klondike Mountain Formation.

7.1.4 Intrusive Units

At least six separate intrusive events are known regionally, including 1) Old Diorite (Permian or older), 2) Jurassic-aged alkalic intrusions including the Lexington porphyry, 3) Rossland monzonite, 4) Triassic microdiorite (Providence Lake) related to the Brooklyn greenstones, 5) Cretaceous-Jurassic Nelson intrusions including the Greenwood intrusion, and 6) Eocene age dykes and stocks of andesitic and syenitic composition (Coryell-type). Eocene intrusions are variable in composition and include feldspar porphyry and pulaskite, grey diorite, syenodiorite and monzonite, as well as irregular small plutons of pink syenite, light grey monzonite and large bodies of pink syenite and quartz monzonite (Fyles, 1990).

7.1.5 Fault Structures

The geology of the Greenwood area is complicated by numerous faults related to distinct deformational events. The oldest structures are structures related to the accreted terranes. In the Greenwood-Grand Forks area, Fyles (1990) interpreted a total of five thrust slices, dipping gently to the north and marked in many places by bodies of serpentine. The regional northward dip of the strata and the thrust faults is interpreted to be caused by the uplift on the flank of the gneiss dome exposed further south in Washington. A strong spatial association between thrust faults and gold mineralization in the area has been noted (Dufresne, 2012).

Fyles (1990) also recognized three Tertiary fault sets that affect the imbricated Paleozoic to Mesozoic strata, including an early, gently east-dipping set, a second set of low angle west-dipping, listric normal (detachment-type) faults, and a late, steeply dipping, north to northeast trending set of right or left lateral or west side down normal faults. The earliest fault set is offset and possibly reactivated by the later faults, lies at or near the base of the Penticton Group, and dips eastward less steeply than overlying strata. The second set is west-dipping, listric normal faults that have segmented a section of the Triassic Brooklyn stratigraphy into a series of discrete fault blocks. From east to west this fault set includes the Granby River, Thimble Mountain, Snowshoe, Bodie Mountain, Deadwood Ridge, Windfall Creek, and Copper Camp faults. The third fault set includes steeply dipping faults such as the Greyhound Creek and July Creek faults. These latest faults often contain vugs lined with crystalline and chalcedonic quartz (Fyles, 1990).

Tertiary volcanic and sedimentary strata are preserved in local, fault-bounded grabens in the United States including the Republic and Toroda Creek grabens (Cheney and Rasmussen, 1996). The Toroda Creek graben extends north into the western part of the area mapped by Fyles (1990), and the Republic graben and the horst between the two grabens extend into the region but die out close to the International Boundary. The eastern bounding fault of the Republic graben continues north as the Granby River fault. A number of epithermal precious metal deposits have been discovered beneath the Tertiary strata in these grabens south of the border.

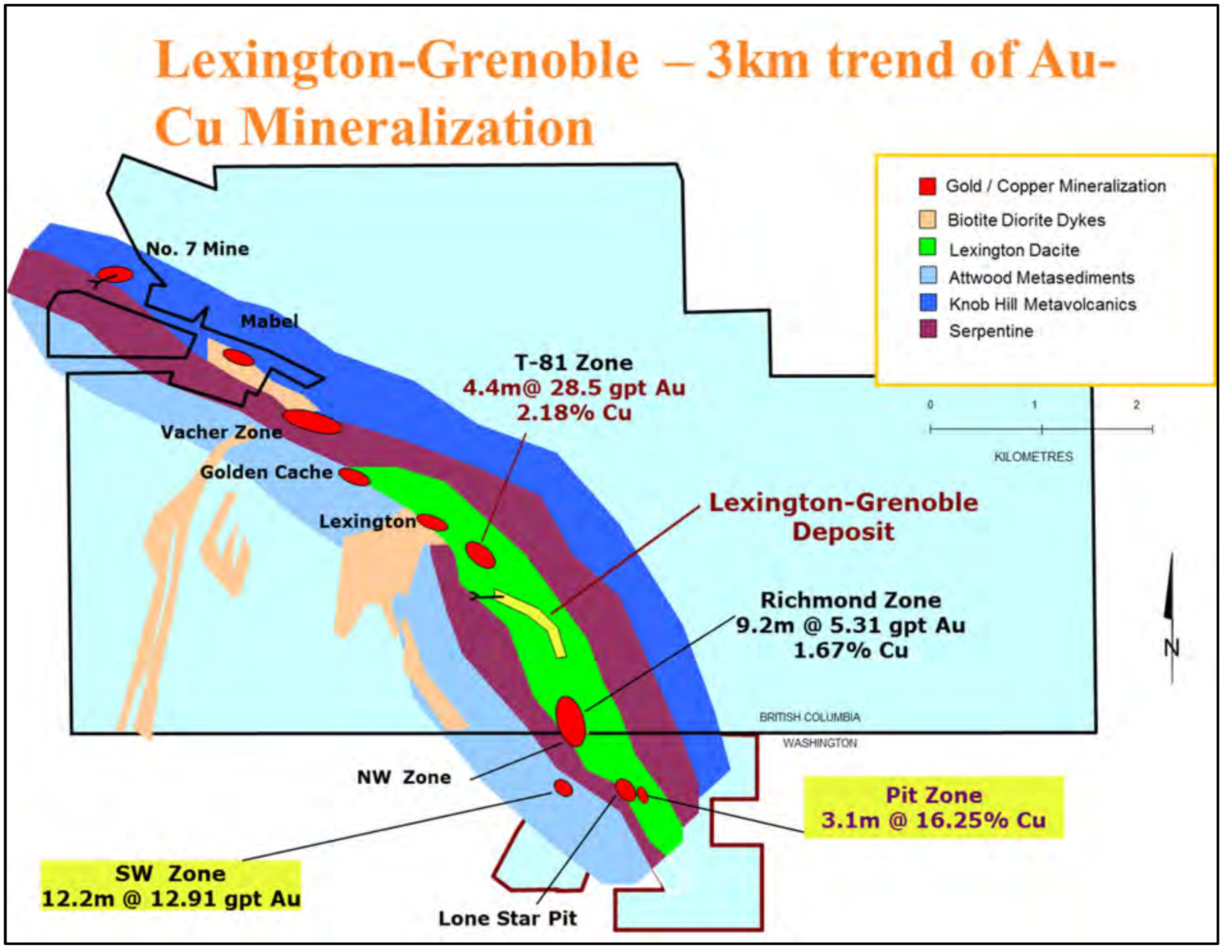
7.2 LEXINGTON PROPERTY GEOLOGY

The geology of the Lexington Property is strongly influenced by the No. 7 Fault. The fault has an arcuate northeasterly trace to the south becoming convex to the northeast with a moderate northeast dip reflecting the underlying influence and shape of the Tenas Mary Creek Core Complex. Within the 600 m wide No. 7 Fault zone is a predictable sequence. The western limit of the fault zone is marked by a tabular serpentinite, locally called the Lower Serpentinite. A similar sheet, the Upper Serpentinite marks the hangingwall. These two serpentinite units are separated by a 300 m thick package locally termed the “Dacite” unit. Church (1986) describes the “dacite” unit as the Lexington Porphyry which he interprets as being injected between these two serpentinite units. The “Dacite” package is composed of a complex assemblage of quartz and quartz-feldspar porphyry, andesitic lapilli tuff and crystal and lithic tuffs. This package is locally intruded by Shasket Creek andesite dykes and sills, Eocene-aged Scatter Creek diorite dykes and Eocene-aged Coryell pulaskite dykes. The key stratigraphic package described above related to the No. 7 Fault Zone persists on both sides of the border although different names are used.

7.2.1 Lexington-Grenoble Mineralization

The Lexington-Grenoble Deposit is composed of multiple shallow to moderately dipping closely spaced overlapping en echelon zones that appear to be confined to a basal pyroclastic unit within the dacite unit (See Figure 7.3). At least twelve individual zones have been interpreted by P. Cowley (2006). These zones range from 1-24 m thick but commonly are 1-6 m thick. The series of zones collectively lie within a volume of rock resembling a flattened arcuate cigar. The long axis of the cigar trends 110° and has been traced by drilling for at least 525 m along the main axis, 20-60 m wide normal to the long axis and 25 m thick vertically. The margins of the zones are gradational. The individual zones are separated by 1-5 m of low sulfide (disseminated pyrite) dacite pyroclastics. The deposit lies at the contact or just above the lower serpentinite unit following its dip at about 20-30° to the northeast. Over 90 % of the mineralization is hosted in the dacite unit, with only minor mineralization in serpentinite. The footwall of the deposit has a sharp tectonic contact of broken and crushed serpentinite and subordinate gouge.

Figure 7.3 Simplified Lexington Property Geology and Mineralized Trend



Note: *Numbers shown in Figure 7.3 are drill hole intercepts.*

The individual zones comprise a congregation of massive sulfide veins, veinlets and disseminations in a sheeted, roughly foliation-parallel fashion. The massive sulfide veins tend to have a favored dip of between 20° and 35° towards the northeast, east and southeast. Most veins within a zone are foliation parallel, but there appears also to be a subordinate vertical vein orientation present that may represent feeder veins. These orientations were established from the core orientation program implemented during the 2003, 2004 and 2005 HQ diamond drilling programs (EasyMark method) and confirmed during the underground mining in 2007/2008 by Merit. Individual veins range from 0.1 to 200 cm wide but are commonly 1-50 cm. The lateral extent of individual veins had been seen underground to extend from several metres, to in excess of 15 m. Each individual zone is thus a higher density of massive sulfide veins that gradual decrease to its upper and lower margins. A typical zone has in the order of 25-35 % total sulfide content as veins, veinlets and disseminations. The widths of the gradational upper and lower margins of a zone are typically in the order of 30-50 cm where grade drops to between 1-3 g/t Au reflecting a drop-off of sulfide/vein content. The veins are predominantly pyrite with subordinate and later chalcopyrite. Copper grades in the individual zones are commonly 1.5 % but can reach 9.4 %. Magnetite is present in the veins hosted in serpentinite. There appears to be two pulses of gold, one associated with the chalcopyrite event and one associated with epithermal pathfinder elements.

The TG-81 zone was discovered by Teck Exploration Ltd. drillhole TG-81 in 1981, 150 m north of the Lexington-Grenoble Deposit adit and 100 m southeast of the old Lexington underground workings. The TG-81 zone is hosted in the lower serpentinite near its upper contact with the overlying dacite. The thickest and highest grade portions form in rolls and structural depressions in the upper contact of the serpentinite. Further drilling is required to define its shape, orientation and extent.

7.3 GOLDEN CROWN PROPERTY GEOLOGY

The property is underlain by rocks confined to sections of three thrust sheets related to the Jurassic-aged Mt Attwood, Lind and Snowshoe Thrust Faults.

The southern part of the property is underlain by stratigraphy preserved in the upper plate of the north dipping Mt. Attwood Fault. Rocks here are predominantly siltstone, cherty siltstone and minor sandstones and greenstones of the Permian age Attwood Group. This stratigraphy is intruded by small plugs of quartz diorite related to the Jurassic and Cretaceous-aged Nelson Plutonic Complex.

The bulk of the property is underlain by stratigraphy preserved in the north dipping Lind Creek thrust sheet. Permian aged Knob Hill Group rocks of greenstone, pillow lava and breccia and serpentinite are intruded by the Old Diorite complex of coarse to fine-grained hornblende diorite laced with felspathic veinlets. A series of medium to coarse-grained monzonite to monzodiorite to dark green diorite to amphibolite sills cut fine-grained dark green volcanics and massive dark green microdiorite. The composite intrusion is spatially associated with the east-west oriented Jurassic-aged Lind Creek thrust fault commonly marked by serpentinite bodies. The serpentinite bodies are postulated to be part of a disrupted ophiolite sequence. A large body of serpentinite in the southeast corner of the property exhibits four northwest trending fingers of serpentinite extending from the main mass. As serpentinites in this district often demark faults by squeezing in and along them, the four fingers probably reflect unmapped thrust splays or faults, one of them closely associated with the robust sulfide vein system on the property.

In the immediate area of the robust sulfide vein system, medium to coarse-grained dark green diorite to monzodiorite outcrops dominantly east of the Winnipeg shaft, dark green coarse-grained amphibolite occurs near the Winnipeg workings and pale grey porphyritic monzonite is closely associated with the mineralization. The diorite to monzodiorite often occurs in step-like exposures suggestive of a series of dykes. Drill data supports this interpretation. A sample of diorite from core was dated by Church (1986) at 258 +/- 10 Ma, thus establishing this unit as the Old Diorite of Permian-aged Knob Hill Group. The amphibolite, thought to be a phase of the diorite intrusive occurs only in drill core. This unit is also closely associated with veining and looks much like the amphibolite found adjacent to stopes in the Rossland camp. The Monzonite porphyry is commonly strongly altered and pyritic. It weathers recessively compared to the diorites so is only seen in core and trenches. This unit is also similar to intrusive rocks in the Rossland where it has been linked genetically with the mineralization. The Rossland mining camp recovered 85,904,623 grams of gold, 109,509,814 grams of silver, and 71,502 kg of copper between 1897 and 1941.) (Höy and Dunne, 1997). The issuer may not obtain similar results on the Golden Crown Property.

The multi-phase intrusive described above cuts fine-grained, sulfidic, strongly chlorite-sericite altered pyroclastics and rhyodacite, undifferentiated strongly chloritic altered greenstone and augite porphyry. The age of the volcanics is uncertain but is likely the Knob Hill Group or Brooklyn Formation (Church, 1986, Fyles, 1990) which may be analogous to the Elise Group of the Jurassic-aged Rossland volcanics (Little, 1983).

Serpentinite surface exposures are rare due to their recessive character. Trenching has exposed more serpentinite but serpentinite is common underground and from drill core on the property. A large serpentinite body has been identified by trenching and soil geochemistry 100 m south of the main vein system. This main mass appears to locally approach the vein system at depth at the deepest part of the King Vein. For a 100 m segment, this serpentinite body becomes steeply north dipping. This main flexure of the serpentinite's upper contact corresponds to the thickened richer part of the King Vein. Elsewhere more discontinuous bodies of serpentinite occur such as in the drift. In the past, the serpentinite bodies in the drift have been interpreted as a 50 m thick sub-horizontal undulating body that forms a tentative footwall to the robust vein system on the property. Merit geologists drill tested under this unit and encountered mineralized greenstone which supports a more discontinuous poddy nature to the serpentinites in the drift. Other serpentinite contacts on the claims exhibit similar associations to mineralization but have received less exploration. Additionally, late shallow dipping mineralized detachment faults are present and may offset principal veins as well as be important mineralized targets.

Volcanic rocks, various intrusive phases, and to a lesser degree serpentinite, all host numerous gold bearing massive sulfide veins composed of pyrrhotite-pyrite and lesser chalcopyrite.

The third thrust sheet related to the Snowshoe Fault preserves Triassic stratigraphy of the Brooklyn Formation and Knob Hill Group in the northeast and northern part of the property. Brooklyn Formation chert breccia, minor tuff and dark grey siltstone are underlain unconformably by Knob Hill chert, argillite, greenstone and chert breccia.

7.3.1 Golden Crown Property Mineralization

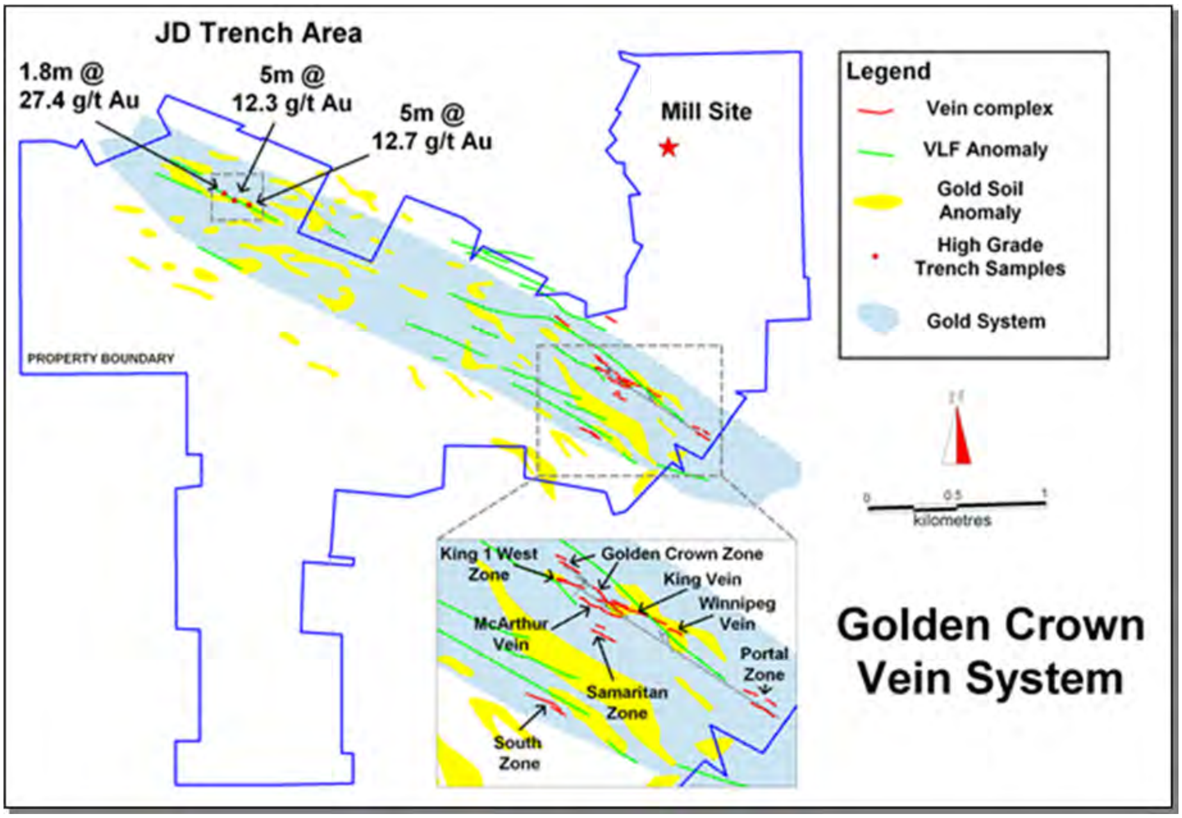
A corridor of west northwest trending sub parallel and closely spaced, steeply dipping massive sulfide and quartz-sulfide veins occur in the southeastern part of the property as part of a 4 km long gold/copper system defined by drill hole intercepts, trenches, gold soil geochemical anomalies and geophysical ("VLF") anomalies. The core of the known vein system (the resource) lies within an area 130 m wide by 800 m long. As many as 17 discrete veins have been identified in the heart of the system. A plan map (Figure 7.4) is provided.

The veins are generally sub parallel and closely spaced (generally 15-25 m apart), trending west northwest and steeply dipping. Veins typically are 0.3-1 m true width, with local developments to 5 m true width near the serpentinite contact. Veins range in sulfide content of 50-90 % sulfides of pyrrhotite-pyrite and lesser chalcopyrite, with very local arsenopyrite in a quartz gangue and carry high gold tenor. According to metallurgical testing, the bulk of the gold is free and associated with pyrite. The vein system appears to be the result of two separate mineralizing events.

Wallrock alteration associated with veins varies in intensity depending on the host rock type. The fine-grained pyroclastics and porphyry hosts, which are regionally strongly sericite-pyrite altered, become more intensely altered adjacent to veins. Diorite, microdiorite, augite and serpentinite hosts exhibit very little wallrock alteration.

A total of 17 sub parallel steeply south dipping veins are identified in the resource calculation. The principal veins from north to south are within the Golden Crown, King, George, McArthur, Samaritan, Portal and South Zone vein systems. The veins are generally 15-25 m apart. Veins can be discontinuous, disappearing and then reappearing along their strike length and locally have smaller associated sub veins. The veins are described below in sequence from footwall to hanging wall (north to south), which does not reflect the order of importance in the system.

Figure 7.4 Plan View of Golden Crown Vein System



Note: *Numbers shown in Figure 7.4 are chip samples from surface trenches.*

7.3.2 Golden Crown Vein

A total of 2,488 tonnes grading 15.4 g/t Au and 1.5% Cu were reportedly mined from the Golden Crown Vein during the early part of the 1900's, although the extent of workings and dumps suggest more (BC Minfile). Production came from a steep south dipping vein averaging 1.5 m in thickness, via three stopes on the 100-foot level within 55 m of the shaft.

Strike length trenching in 1998, 1999 and 2004, combined with underground development and drilling have traced the Golden Crown vein for 260 m laterally. The vein appears to be segmented (possibly offset) into three portions 130 m, 75 m, and 60 m long. The vein is traced vertically by drilling for 40 m to 60 m from surface, however, it was reported by George Nakade (oral comm.) that significant grade and width on this vein was found at the bottom of the Golden Crown shaft at a depth of 100 m. The strike of the Golden Crown vein varies between 100^{o} and 115^{o} and it dips south at about 80^{o}.

Surface chip sampling of the vein varies from 1 g/t Au to over 30 g/t Au. The vein averages about 1 m in thickness and has variable sulfide content from 20 to 90 %. The vein appears relatively continuous along this exposure with minor segments necking down to under 10 cm. Drill hole 76-5 returned an intercept of 6.1 m grading 13.7 g/t Au at a depth of about 5 m vertical below surface.

King Vein

The King Vein is the chief resource vein and is the most persistent, laterally and down-dip. The King Vein was continuously exposed in a 2004 and 2008 trench for 190 m immediately west of the Winnipeg Shaft and has been intersected by numerous drill holes. The King Vein has been drill tested vertically 150 m and laterally for 220 m. In the fall of 2008, Merit conducted surface trenching along the King Vein. The average true width of the King Vein along this 120 m long trench was found to be 0.8 m and an average grade of 19.98 g/t Au was obtained from chip samples across the vein every 2 m. The King vein strikes at 090° and dip about 80° southward. The small western extent of the vein crosses that of the eastern extremities of the Golden Crown vein. The persistent King vein rakes 35° to the west and is open at depth. Greenstone, diorite and lesser serpentinite host the King Vein. The vein exhibits a marked thickening within and near the serpentinite contact.

The King Vein is reported to be exposed for 38 m along its strike in the King drift where it is seen to be thin and splaying. Chip sampling of the vein returned gold values commonly between 0.1 and 0.3 oz/t. One chip sample returned 1.7 oz/t Au and 1% Cu across 0.4 m. The location of the King drift unfortunately corresponds to where the vein is poorly developed as multiple thin horse-tailed splays in comparison to drill hole intercepts above and below the drift.

A small sub parallel vein 10 m to the footwall of the main King Vein has been identified as the King 2 Vein. It has been traced 60 m laterally by 70 m vertically.

Approximately 50 m to the west end of the King Vein trace are two veins labeled King West and King West 2 that have been tentatively interpreted as the western continuation of the King and King 2 structure. The King West Vein has a trace from drilling of 180 m laterally and 50 m vertically. The King West 2 Vein has been traced by drilling for 30 m laterally by 50 m vertically. These two veins also strike 090° and dip about 80° southward.

Winnipeg Vein

The Winnipeg Vein was developed by the Winnipeg shaft (circa 1899, now caved) and a series of drifts, however, little is really known about them. Sketchy historic records indicate that the old timers sank a shaft on one of two veins separated by 25-30 m. A production figure of 53,316 tonnes averaging 0.2 oz/t Au and 0.16 % Cu was reported from the Winnipeg workings (BC Minfile). Previous workers speculate from the extent of dumps that there was less production from the Winnipeg Vein on the Winnipeg claim and more from the Golden Crown Vein on the Golden Crown claim. The 1988 exploration drift broke into several flooded old workings connected to the Winnipeg shaft but the extent of the workings was not determined at that time.

The Winnipeg Vein strikes 090° and dips about 80° southward. It has been traced 65 m laterally and 50 m vertically and appears to be 15 m to the hangingwall of the King Vein. The western extent of the Winnipeg Vein coincidentally starts where the eastern limit of the King Vein ends. Previous workers had speculated that the Winnipeg Vein is the lateral equivalent of the King Vein. Remnants of rock exposure in the Winnipeg shaft show a vein at the contact between serpentinite and diorite. This would correspond with the projection of the King Vein. However, as the serpentinite forms the footwall of the King Vein, and the vein and the serpentinite dip towards each other, it seems that there may not be room for the King Vein to develop at depth.

It should be mentioned that the reference to two veins at Winnipeg and the position of old workings indicates an independent second vein striking 135^{o} and to the hangingwall of the Winnipeg Vein. The location and configuration of this second vein does not correspond to any other vein in the system except perhaps a splay off of the King Vein. Further exploration drilling is warranted east of the Winnipeg shaft after the available data from the underground workings has been compiled and reviewed.

George Vein

The George Vein lies between the King and McArthur Vein, approximately 15 m to the hangingwall of the King Vein. The vein has not been seen in the exploration adit but is defined only by drilling. Two examples of drill hole intercepts are 1.25 m grading 29.5 g/t Au from U88-18 and 0.91 m grading 42.9 g/t Au from U88-23. It has a strike of 090^{o} and dips steeply southward. It has been traced 20 m laterally and 50 m vertically by drilling. The thickened part of the George Vein corresponds closely with the thickened part of the King Vein, near the serpentinite contact.

McArthur Vein

The McArthur Vein lies about 25 m to the hangingwall of the King Vein. The McArthur Vein parallels the King Vein and, at the 1988 exploration drift level, the vein occurs 15 m south of the drift where the King cross-cut diverges from the drift. There has been some production on the vein as there are some open stopes near the road that are interpreted to be from the McArthur Vein.

The McArthur Vein has been traced by drilling for 135 m laterally and 80 m vertically with a variable strike that averages 095^{o} and dip of 80^{o} southward.

Good width and grade make this vein an attractive target; however, there is a point of caution as the resource is close to old workings that are not described in detail. No drilling has been done below drift level on this vein, nor has the vein been adequately tested along strike.

Samaritan Vein

The Samaritan Vein has been intersected by several near surface drill holes. DDH 76-2 returned an intercept of 4.9 m at 17.5 g/t Au. Other holes were not nearly as successful, shedding doubt on the continuity of this vein. The vein is located 85 m south of the King Vein shoot. Trenching in 1998 and 1999 uncovered a 0.75 to 1 m thick, shallow south dipping mineralized fault zone that may represent the surface expression of the Samaritan Vein. Sampling returned a 1,050 ppb Au value, however, potential for better mineralization lies along strike of this structure.

Drilling has identified 2 veins, Sam 1 and Sam 2. Sam 1 is traced for 75 m laterally and 25 m vertically with a strike of 103^{o} and dip of 80^{o} southward. Sam 2, 15 m to the footwall of Sam 1, has been traced for 25 m laterally and 25 m vertically, and parallels Sam 1.

Queen

The Queen Zone was exposed in a large deep trench located opposite to the Winnipeg shaft road. A 5 m long vein was exposed and returned a sample of 17.8 g/t Au and >2% Cu, however, no thickness was documented. Vein contacts and host rock were unclear. A grab sample of a massive pyrrhotite float boulder in the trench yielded 6.2 g/t Au and 1.1% Cu.

In 1998, the trench was re-opened at its western end and extended eastward to the main road. The Queen vein was exposed for a distance of 26 m. Exposures showed a complex zone where two faults intersected. A sub vertical north trending fault is cut by a north trending shallow west dipping mineralized fault zone, the Queen Vein. The shallow dipping fault zone is at least 2.5 m thick, comprising oxidized and intensely altered intrusive rocks, carrying pods of quartz-sulfide and massive sulfide mineralization. A grab sample from this zone returned 4.8 g/t Au. Caron (1999) suggests that mapping demonstrates this shallow dipping mineralized fault zone may coincide to the Tiara and Samaritan zones.

The zone was further trenched in 1999 to test for strike length continuity towards the Tiara Vein. Two trenches confirmed a major west-dipping fault similar to that found in the Samaritan, Queen, and Portal trenches (the strike orientation is not documented). The fault exposed by these two trenches did not encounter significant mineralization. A grab sample from this trench returned a value of 1,415 ppb Au, 0.9 % Cu and 11.4 g/t Ag.

Princess Vein

The Princess Zone is located where there are several old workings and pits directly south of the main Golden-Crown – Winnipeg access road. Here, a quartz-sulfide vein is exposed and hosted by microdiorite. In 1998, a trench exposed the vein on strike, however, minimal drilling has tested this target. The vein varies from a massive pyrite-pyrrhotite-chalcopyrite vein to a quartz-sulfide vein. The vein trends 140°/75° NE with an average width of 1.0 m and is exposed for a 34 m strike length. Beyond that strike length to the northwest the structure continues as a splay of stringer sulfide veinlets. Potential exists for the structures to coalesce back into a mineralized vein to the northwest. This prediction should be considered for future exploration. The vein is open to the southeast of the trench exposure and could be tested further by trenching. Sampling of the vein exposure returned relatively low gold values. One grab sample returned 3.36 g/t Au.

Tiara Vein

The Tiara Vein is located about 150 m southeast of the Winnipeg shaft. The vein had been previously explored by an old trench, which exposed a massive pyrrhotite body of unknown dimensions. In 1998, workers re-visited and sampled the trench. One grab sample returned a value of 12 g/t Au. The zone has also been tested by several short diamond drill holes that encountered thick intercepts of massive sulfides, bearing low gold values.

In 1998, the zone was trenched. The massive sulfide body is developed at a moderately to steeply dipping serpentinite-diorite contact. The trench exposed this contact for 110 m, 90 m of the contact being mineralized. The orientation of mineralized trend is variable. The north end of the exposure trends 155°/40°W but steepens toward the south end to 175°/90°.

The southern part of the zone of massive pyrrhotite is up to 7 m thick but with only moderately anomalous gold values from the 1998 sampling campaign. It has been found that the hangingwall and footwall contacts of the massive pyrrhotite body are faulted, with grade considerably higher than the massive core itself. Massive pyrrhotite-pyrite from the zone can return good gold values, although not consistently. Further, it appears that the presence of fine-grained black sooty pyrite may indicate the presence of high gold values. The gold to silver ratio for the Tiara Zone is approximately 10:1. The zone is anomalous in arsenic, locally exceeding the 1% analytical limit and is accompanied by copper grades of 0.1-0.2 % Cu.

At the south end of the trench, the serpentinite-diorite contact swings dramatically to the west and continues to be mineralized with values from chip samples averaging of 5.1 g/t Au across a 1 m true width. This contact remains untested to the west. Anomalous gold values in soils lie on strike to the north and south of the exposure, which could signify further strike length potential. Some of the soil values obtained were in the order of 187 ppb Au, 380 ppb Au, and 450 ppb Au.

A follow-up trenching program in 1999 extended the southern zone from 28 m to 41 m in length. The average width increased to 1.35 m with an average gold grade of 0.33 opt Au. Channel cuts from the southern end returned an average grade of 61.7 g/t Au across 7 m. The sites of anomalous gold values in soils referred to in the previous paragraph were trenched but without encountering any mineralization.

Drilling in fall 2003 targeted this contact-related massive sulfide with 12 shallow holes. The tight spaced drilling was aimed at intersecting the 10 m, 20 m and 30 m depth projection of the vein. The vein was intersected in 3 of the 12 holes, however, the low recoveries (30 % with HQ) at the contact from the Tiara drilling campaign may have under estimated the vein development.

Blasting in 2005 of the main pod of the Tiara Vein suggested the vein is focused at the crest of a small anticline, although interpretations vary. The discontinuities on the vein reduce the attractiveness of its potential.

South Zone

This zone is situated about 325 m south of the King Vein. The zone was discovered by drilling a strong Electromagnetic conductor in 1986. To date, a total of eight diamond drill holes have explored the zone with two parallel veins being documented. The stronger vein averages 0.75-1.0 m in width grading 3.4 to 10.3 g/t Au. One drill hole encountered 43.2 g/t Au across 1.2 m.

In 1998, trenching exposed a 2 m wide strongly oxidized zone and a thin zone of quartz-sulfide veining 15 m to the south. A grab sample returned a value of 9.6 g/t Au. The zone is surrounded by a large gold soil anomaly 600 m long by 80 m wide where values between 50 and 1,290 ppb Au have been recorded. The zone is thought to be located in the upper plate of the detachment fault that hosts the Samaritan and Queen Zones. This data and interpretation suggests good potential to expand the South Zone along strike and possibly to locate additional sub parallel zones.

Trenching in 1999 on strike revealed a wide oxidized fault zone hosting narrow quartz-sulfide veins. The trench exposed the fault zone for 20 m where it averaged 1.5 to 2 m in thickness. A chip sample near the eastern end of the trench produced 64.1 g/t Au across a true width of 1.5 m. Another chip sample from this end of the trench returned 23.7 g/t Au across 1.7 m true thickness. Arsenic values can be elevated with values up to 0.1%.

Drilling has identified 2 zones, South 1 and South 2 Veins. South 1 Vein has been traced for 70 m laterally and 50 m vertically with a strike of 090° and 80° south dip. South 2 Vein, 10 m to the hangingwall, has been traced laterally for 40 m and 50 m vertically.

Portal Vein

Ford interprets the vein to be steeply dipping, while Caron (1999) interpreted the vein to be a shallow dipping mineralized detachment fault zone trending 140°/30° S, as interpreted from trenches of the Queen, Tiara and Samaritan Zones. Caron's interpretation implies more continuity to the mineralization as other intercepts in the area are brought into the picture. In addition, it would imply thicker true widths than if the vein was sub vertical. Caron goes on to suggest that there is potential in the footwall of the mineralized detachment fault zone for the vein to continue as a sub vertical structure. Elevated gold in soils over the Portal area could represent the surface expression. Trenching in summer 1999 apparently confirmed the shallow dipping mineralization (Caron, 1999a). Three trenches exposed narrow low grade gold values. Re-logging of old drill data by Caron supported this orientation, and indicates it to be the same structure tested at the Queen Zone.

Huakan interprets the vein as a composite structure. The vein hosted in diorite/greenstone is locally sub vertical but thickens and spreads out near the shallow dipping diorite-serpentinite contact. The fall 2003 drilling program targeted a shallow dipping contact related zone. The sub vertical drilling tested around an intercept of 5 m grading 17.1 g/t Au but could not extend this intercept. The drilling did find narrow massive sulfide development at the contact supporting the model for the property but without economic grades and widths.

2006 interpretations indicate three Portal Veins, Portal 1, 2 and 3. Portal 1 Vein exposed in the adit, has been traced for 75 m laterally and 30 m vertically with a strike of 105° and 80° south dip. Portal 2 and 3 Veins 50 m to the north of Portal 1 Vein correspond to the Calumet vein.

Calumet

The Calumet Zone occurs 50 m north of the portal of the 1988 exploration drift. Several old trenches and pits exposed massive pyrrhotite and quartz-sulfide veining hosted in altered volcanics. One grab sample taken from the old dumps for these workings produced a 16.1 g/t Au value. Unfortunately the old workings are now sloughed. The zone has been tested by four diamond drill holes along a strike length of 60 m with limited success. Intercepts are narrow. A value of 5.3 g/t Au was encountered.

Trenching in the summer of 1999 exposed a 3 m wide zone adjacent to a sloughed pit. Chip sampling produced a 9.3 g/t Au value across 3.0 m while samples taken a short distance on strike gave much lower values. The strike length of this zone is unknown. Its projection 50 m to the east runs up against the Calumet claim boundary. Caron (1999a) speculates that the Portal Fault to the west will mask the surface expression of the Calumet vein.

In 2006, the Portal 2 and 3 Veins were interpreted as strike continuations of the same vein but separated by 25 m and corresponding to the Calumet Vein 50 m to the footwall of the Portal 1 Vein. Portal 2 and 3 each are traceable by drilling for 50 m laterally and 30 m vertically with a strike of 090° – 105° and 80° south dip.

J & R

The J&R Zone is located approximately 500 m northwest of the Golden Crown shaft. Numerous old workings occur within an area of porphyry and microdiorite. The area coincides with a 300 m long gold and copper soil anomaly where gold values of 650 ppb have been recorded. There are additional soils anomalies to the west. It is speculated by Caron that the target is the western strike extent of the Golden Crown vein, representing a 300 m trace of unexplored territory between the zones. A total of 26 diamond drill holes have been located in the area of the JR target. Complete records are available for 9 of the holes while only assay data is unavailable for the remaining 17, preventing proper location and orientation of the holes. Several holes in the J&R target area returned encouraging results. Hole 90-25 intersected 2.5 m grading 15.8 g/t Au and 2.8% Cu. Others include hole 84-10 with 1.52 m grading 15.4 g/t Au and hole 84-9 with 5.36 m grading 5.5 g/t Au.

Trenching in 1999 resulted in three exposures of a broad mineralized zone with multiple 0.5-1 m wide veins and a multitude of intervening veinlets. Chalcopyrite was found in the veins as well as disseminations in silicified intrusive host rock. A grab sample of the vein material returned 4.8 g/t Au, 84.4 g/t Ag and >1 % Cu (assays incompletely reported). Continuous chips returned a 15 m wide zone averaging 0.25 % Cu, 3.8 g/t Ag and 275 ppb Au and a 13 m wide zone grading >0.4% Cu, 5.8 g/t Ag and 408 ppb Au. These trench results appear inconsistent with the higher grade gold intercepts reported above. This suggests to P Cowley that, either a higher-grade system lies below the trench level, or the gold intercepts are scattered and isolated without promise of continuity. Locating and re-logging the holes that are partially documented may provide some answers to clarify the potential of the target.

Main and Footwall Shears (JD)

Merit's 2003 trenching program expanded the previously tested area of the Main Shear Zone from 90 m to 300 m of the 1,000 m long soil anomaly. This area is 2 km northwest of the resource area. The trenching program exposed the Hangingwall and Main Shear zones with 12 sub-parallel trenches spaced 25 to 35 m apart.

The Main Shear zone was exposed in nine trenches over a strike length of 250 m. The sub-parallel Hangingwall zone, 50 m to the north, was exposed in five trenches over a strike length of 200 m. Both zones are composed of semi-massive to massive sulphides within northwest trending, shallow-dipping shear zones hosted in chert and greenstone. The Hangingwall and Main Shear zones are open to the northwest. The eastern extensions, which are offset by faulting, are interpreted to continue to the southeast.

Four chip samples from trenches in the area returned 27.4 g/t gold across 1.8 m, 12.69 g/t gold across 5 m, 12.28 g/t gold across 5 m, and 8.1 g/t gold across 2 m, indicating near surface high-grade sections within a gold enriched shear system.

7.4 TAM O'SHANTER PROPERTY GEOLOGY

The Tam O'Shanter Property is located at the eastern boundary of the Toroda Creek graben. The western part of the Property is largely covered by Eocene volcanics and lesser sediments (unit EPs on Figures 7.1 and 7.2), which are separated from the older rocks to the east by the low angle, west dipping Deadwood Ridge Fault. The Property geology discussed below is largely taken from Dufresne et.al., 2013 a report written on behalf of Golden Dawn. The QP of this technical report has reviewed the Dufresne report and in his opinion is a fair, reasonable and is still a current account, therefore this QP does not disclaim responsibility for the referenced information.

Rocks in the footwall of the Deadwood Ridge Fault include chert, greenstone and related diorite intrusives of the Knob Hill Group (Figure 7.1). In the extreme southern portion of the Property, the Knob Hill rocks are separated from chert, sediments and conglomerate (also part of the Knob Hill Group) to the south by a major northwest trending, moderate northeast dipping fault (the Wild Rose Fault; Figure 7.1). The Wild Rose fault terminates against the Deadwood Ridge fault in the vicinity of the Bengal Zone. It is believed to be a (Jurassic-aged) thrust fault, with later re-activation during the Eocene extensional event (Dufresne et.al, 2013).

Intrusive rocks on the property are complex. In the northern portion of the property, the Knob Hill rocks are intruded by a large body fine to medium grained Nelson diorite (Figure 7.1). Pervasive weak propylitic alteration and low-grade copper mineralization is common within the intrusion. Shear (1974) reports that "higher concentrations of copper occur in places of more intense shearing along the contact zone of this intrusive" (i.e. the Tam O'Shanter, Buckhorn and Iva Lenore showings).

In the vicinity of the Deadwood Zone, the earliest intrusive is the Knob Hill Group diorite. Ultramafic rocks cut the Knob Hill rocks, but their relationship to other intrusives is unknown. Knob Hill diorite is intruded by the Jurassic-Cretaceous (?) Golden Fleece quartz diorite. The Golden Fleece quartz diorite is a blonde coloured quartz-feldspar porphyry which is typically strongly altered (argillic, phyllic) and is visually similar to the Lexington quartz-feldspar porphyry. Contacts between the Golden Fleece intrusive and Knob Hill Group rocks seem to be an important control for Au mineralization. The Golden Fleece intrusive is cut by relatively fresh "B-phase" dykes and stocks of probable Cretaceous Nelson affinity (although the relationship of the "B-phase" unit to the larger area of Nelson diorite to the north is unknown). Three distinct Tertiary aged dykes cut earlier intrusives, including a dark gabbroic dyke, which may be related to olivine basalt flows seen on surface, and a coarse quartz-eye dyke both of which are unknown elsewhere in the area, as well as the typical Eocene-aged feldspar (± biotite) porphyry and syenite dykes that are common throughout the area (Dufresne et.al, 2013).

7.4.1 Tam O'Shanter Property Mineralization

Numerous areas of gold ± silver, copper and other metal occurrences have been identified during past exploration by different companies and prospectors on the Tam O'Shanter Property. Much of the information presented here related to the mineralization of the Tam O'Shanter Property is taken from Dufresne et. Al. (2013).

There are four main areas of known mineralization on the Property: the Bengal Zone, Deadwood Zone, Tam O'Shanter, and Iva Lenore in which the latter two zones are Minfile occurrences.

7.4.1.1 Deadwood Zone

Three or more sub-parallel quartz veins, located in a wide zone of intense shearing and silicification, occurs along the Wild Rose Fault and is collectively known as the Deadwood Zone. The Deadwood Zone lies on Tam O'Shanter Property and extends eastward onto the Wild Rose property owned by others. A number of Eocene syenite dykes occur within the Wild Rose Fault Zone. These dykes usually appear intensely altered and are closely associated with the veining. These Eocene events have not definitively linked the resultant alteration to gold mineralization in the veins.

Widespread silicification, argillic, and phyllic alteration in the rocks located within the hanging wall of the Wild Rose fault (the Deadwood Zone) are accountable for the elevated gold values present in the area.

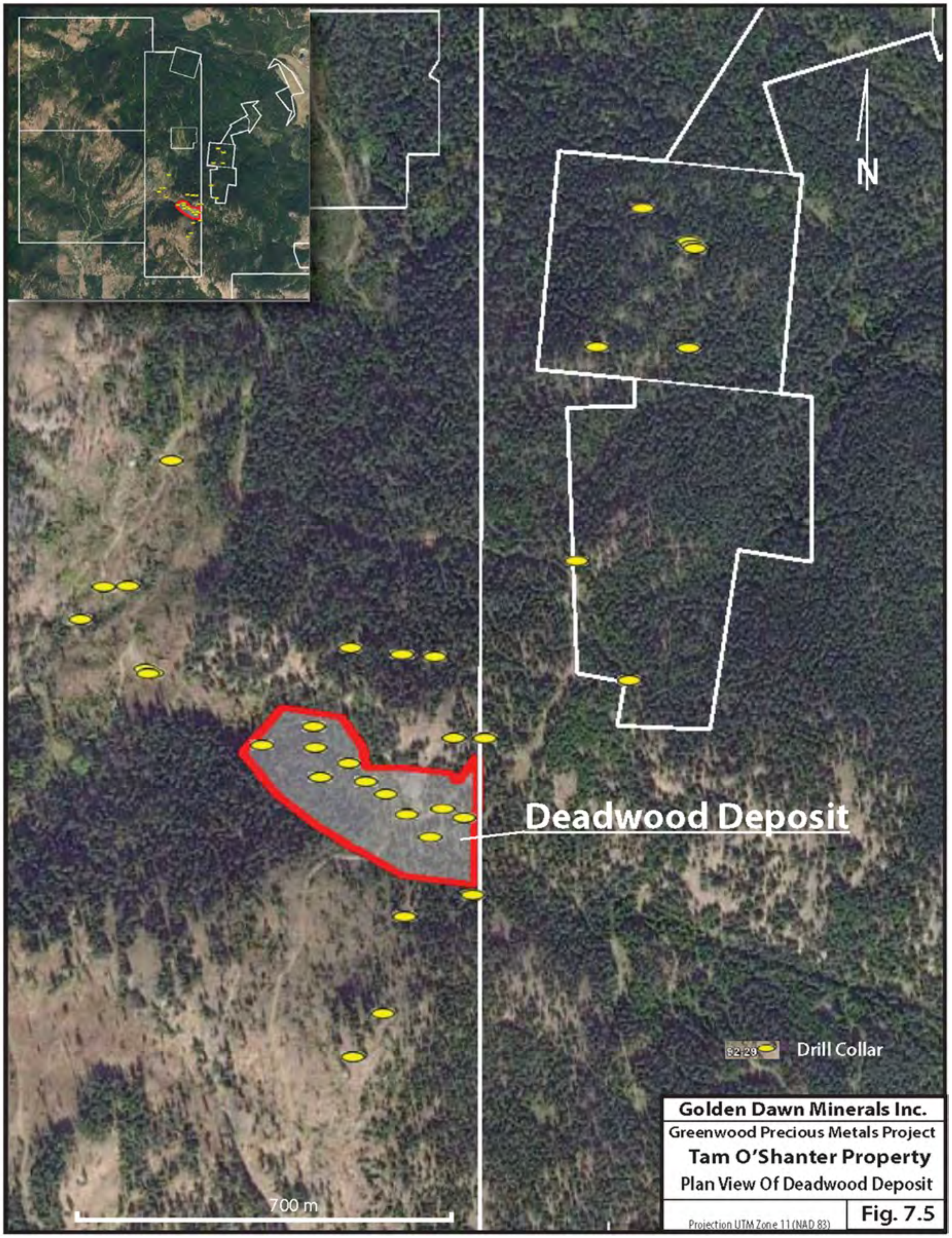
The Wild Rose vein is located within the Deadwood Zone on the Tam O'Shanter Property and is considered the main vein. The Wild Rose vein, which occurs within the main Wild Rose fault zone, is a gold bearing quartz vein approximately 1-4 m wide, striking approximately 125º and dipping at 65-70º to the north. The vein is composed of massive white quartz containing localized pods of massive pyrite, pyrrhotite and lesser amounts of chalcopyrite and arsenopyrite. Chloritic fractures and local mariposite also occur within the vein. Very commonly, a "pulaskite" dyke is recognized along the immediate hanging wall or footwall of the vein. Locally this dyke divides the vein, forming two segments. Initially, the vein was discovered through drilling because it does not outcrop. The location of the drilling took place on-strike along the Wild Rose fault from the Deadwood Zone.

Historically, 50 drill holes have been drilled on the Tam O'Shanter Property mostly to test the Deadwood Zone (on the Tam O'Shanter Property), although the records prior to 1979 are incomplete (see Figure 7.5). The drilling defines the Deadwood Zone over a strike length of approximately 500m and to a depth 400m. The Wild Rose vein continues into the adjoining Wild Rose Property to the southeast along strike. While to the west, near the junction of the Wild Rose and Deadwood faults, the vein is weaker and the gold grade is considerably less.

North of the drilling area, a shaft and adit (the Golden Fleece workings) exposed an area of bleached, altered quartz diorite, cut by a stockwork of quartz veinlets. A 0.5 m vein, mineralized with pyrite, chalcopyrite and molybdenite, is exposed in this area which may be the surface expression of the (upper?) hanging wall vein.

Golden Dawn completed drilling on the Tam O'Shanter Property in 2 campaigns. In the Deadwood Zone hole 11WR08 intersected 0.54 g/t Au and 0.03% Cu over 81.68 m core length, with a higher grade zone of 0.72 g/t Au over 57.0 m core length. Hole 11WR10 yielded 0.43 g/t Au over 127.0 m core length, with higher grade intervals of 0.78 g/t Au over 29.0 m core length and 0.86 g/t Au over 11.0 m core length (Dufresne et al., 2011). Golden Dawn's follow-up drill campaign totaled of 3,467.5 m in 12 NQ sized diamond core holes. Holes 11WR013 to 11WR18, and 11WR24 tested the continuity and attempted to expand the size of the Deadwood Gold Zone. The other five holes tested soil anomalies north of Deadwood. Holes encountered wide zones of sulphide mineralization and silicification along with quartz vein stockworks associated with multiple gold zones in the Deadwood gold system. The drilling program targeted the northwest, southeast and depth extension of the Deadwood Gold Zone. The Deadwood Gold Zone has now been extended to depth and along strike to the northwest and southeast but remains open along all directions. Table 7.1 provides reported intercepts from the 2 Golden Dawn drilling campaigns. The holes on the flank of the Deadwood Inferred Resource zone encountered widespread pyrite, and chalcopyrite in disseminations, blebs, and clusters, and in several wide vein-associated systems.

Figure 7.5 Plan View of Deadwood Deposit



The Deadwood Zone is oriented in an approximately northwest – southeast direction and dips approximately 70° to the northeast. Drilling was oriented at ~220° to cut across the zone. True width ranges from about 65% to 85% and averages about 75% of core length.

TABLE 7.1
SUMMARY DRILL RESULTS FOR DEADWOOD BY GOLDEN DAWN

Drillhole	Zone	From (m)	To (m)	Interval (m)‡	Au (g/t)	Cu %
10WR07		43.0	138.0	95.0	0.2	0.03
	includes	51.0	75.0	24.0	0.023	0.03
		92.0	134.0	42.0	0.29	0.03
	includes	105.0	106.0	1.0	3.62	0.01
11WR08		82.0	163.7	81.7	0.54	0.03
	includes	90.0	147.0	57.0	0.72	0.04
	includes	101.0	107.5	6.5	4.41	0.13
		143.0	147.0	4.0	1.48	0.02
11WR09		36.0	147.2	111.2	0.19	0.02
		52.0	54.2	2.4	1.49	0.07
		72.0	91.0	19.0	0.3	0.03
11WR10		4.0	131.0	127.0	0.43	0.02
	includes	4.0	75.0	71.0	0.55	0.02
		94.0	131.0	37.0	0.4	0.04
		111.0	122.0	11.0	0.86	0.04
11WR13	Deadwood1	259.7	316.2	56.5	0.32	0.03
	includes	263.5	303.5	40.5	0.38	0.02
	Deadwood2	131.5	233.57	92.07	0.1	0.01
	includes	141.5	170	46.5	0.15	0.01
	Deadwood4	36.5	44	7.5	1.4	
	includes	42.5	44	1.5	6.47	
11WR14	Deadwood	84.5	344	157	0.21	0.02
	Deadwood1	270.5	296	25.5	0.15	0.03
	Deadwood2	195.5	211.6	18	0.12	0.01
	Deadwood4	84.5	98	13.5	0.11	0.02
11WR15	Deadwood	244	401	162.33	0.19	0.02
	Deadwood1	356	401	45	0.44	0.04
	includes	356	383.2	27.2	0.62	0.03
	Deadwood2	244	269	25	0.21	0.03
	Includes	257	263	6	0.62	0.04
	Deadwood4	15.3	23	7.7	1.51	0.03
	includes	15.3	17	1.7	6.62	0.07
11WR24*	Deadwood	137.25	378.5	241.25	0.18	0.04
	Deadwood1	325	372.5	47.5	0.51	0.09
	Deadwood2	246.5	277.39	30.89	0.16	0.05
	Deadwood3	213.5	215	16.5	0.26	0.03

**Based upon the 2011 statistical analysis, a 5 g/t upper cut has been applied to individual high grade assays.*
‡The Deadwood Zone dips approximately 70 degrees northeast. True width ranges from about 65% to 85% and averages about 75% of core length

Drillhole 11WR19 targeted a series of significant Au±Cu soil anomalies identified north of the Deadwood Gold Zone surrounding and overlapping a distinct north trending magnetic anomaly.

The hole was also extended at depth to test the depth extension of the Deadwood Zone. This hole intersected a significant silver bearing zone grading 72.6 g/t Ag over 31.5 m, including a 12 m zone of 166.5 g/t Ag. This new silver zone is located at the contact between basalt and mudstone and is characterized by silicification along with a stock-work of thin to very thin (<1 cm to mm size) quartz-carbonate veins with fine grained galena and sphalerite. At depth the hole intersected Lodes 3 and 4 of the Deadwood gold zone, with grades of 0.47 g/t Au over 9.0 m core length and 0.44 g/t Au over 27.0 m core length, including a higher grade zone of 0.68 g/t Au over 15.0 m core length. These intersections represent extensions to Lodes 3 and 4 of the Deadwood Gold Zone.

Tam O'Shanter - Minfile 082ESE130

The Tam O'Shanter showing consists of 2 shafts, a 63 m long adit, and an 8 m raise. These showings all occur within weakly mineralized (pyrite, chalcopyrite and locally native copper) Nelson diorite (Dufresne et.al, 2013).

Bengal Zone

Within the Eocene sediments which are found adjacent to the Deadwood Ridge Fault (the Bengal Zone and its southern extension – the "Sinter" zone) is a large area of epithermal alteration (silica flooding, hydrothermal (?) brecciation and widespread alteration). An old shaft (undocumented in the historical records) was dug on the Bengal silicified zone. Gold and silver results have consistently remained low from this area. The older rocks to the East of the Bengal Zone exhibit silicification and chalcedonic veining, with elevated gold values up to 2 g/t Au ().

Three holes were drilled in 1979 to test the Bengal Zone, while later in 1983 a trenching program was conducted in the area. All of the trenching and drilling targeted the footwall of the Deadwood Ridge Fault, however significant precious metal values were not encountered during this exploration. Logging west of the Bengal Zone has opened access to the area through the creation of logging roads, allowing drill testing of the Deadwood Ridge fault at depth to the west. Eocene rocks in the immediate hanging wall of the fault would also be tested by drilling in this area (Dufresne et. al. 2013).

Iva Lenore - Minfile 082ESE172

Disseminated pyrite, pyrrhotite and chalcopyrite (and locally native copper) occur in Knob Hill greenstone which shows epidotization as well as chloritization, near the contact with Nelson diorite. Disseminated pyrite and minor chalcopyrite also occur in the intrusion. The greenstone is cut by narrow quartz stringers and molybdenite and chalcopyrite containing veins (Dufresne et. Al, 2013).

Other Occurrences on Tam O'Shanter

Three percussion holes were drilled in 1973 on the detached northeastern block of the Tam O'Shanter Property, known as the Montrose Fraction. A zone of epidote (+/- chlorite, pyrite, hematite) skarn showing local low grade copper mineralization was found during drilling (Dickinson and Simpson, 1973).

7.5 PHOENIX PROPERTY GEOLOGY

The rock units of the Paleozoic Knob Hill Formation and of the Brooklyn Formation are exposed in the central area. The Knob Hill Formation rocks are volcanic and sedimentary. The Brooklyn Formation unconformably overlies the Knob Hill rocks. The Brooklyn Formation is described as tuffs, siltstones and argillites which are overlain by the sharpstone conglomerate, this in turn is overlain by a tuffaceous unit which is then overlain by limestone. The overlying sequence of rock units changes to polymictic conglomerate overlain by greenstone and volcanic breccias. The sharpstone conglomerate composed of angular chert fragment breccia, and minor tuff, tuffaceous sandstone and maroon and green limestone cobble conglomerate. The sharpstone conglomerate is used as an important marker horizon, as it forms the footwall or lies in close proximity in the footwall to many of the metasomatic replacement deposits. In the central area of the Phoenix Property, Brooklyn Formation rocks are exposed with the unit's thickness appearing to thicken to the northeast. In the northeast area which hosts numerous replacement style deposits, the Brooklyn Formation appears to be relatively thick as no Paleozoic Knob Hill or Attwood Formation rocks have been mapped. The rocks of the western area are dominated by units of the Upper Paleozoic Knob Hill and Attwood Formations which have been intruded by stocks of the Jurassic-Cretaceous Greenwood Plutons.

The geology of the Phoenix Property is complicated by numerous faulting events of varying orientations. These include sub vertical graben structures and low angle thrust faults. These faults have dissected the Brooklyn stratigraphy into discreet blocks each separated by a low angle fault. Units exposed at surface in the central area are truncated at depth by the Snowshoe Fault, a listric normal type structure. These units are interpreted to have been displaced westward from their roots below the fault. A Tertiary extensional event tilts older rocks as well as pre-Tertiary mineralized zones moderately to steeply. The Phoenix syncline is postulated in the Phoenix area, with the Phoenix deposit outlining the hinge zone.

All of the known mineralization in the Phoenix mine area (including the Phoenix, Stemwinder, Brooklyn and Snowshoe deposits, and the War Eagle, Sylvester K, Marshall and Gilt Edge showings) occur within a typically 150 m thick (to a maximum 300 m) panel of Brooklyn rocks in the hangingwall of the Snowshoe fault. As such the Phoenix deposit is rootless.

7.5.1 Phoenix Property Mineralization

The Phoenix Property is extensively mineralized with a variety of types. The Phoenix Property covers 29 past producing mine and in excess of 70 mineral showings. Table 7.2 lists the past producers and some mineral occurrences on Phoenix Property. Figure 6.2 shows their location on the Property. As a way to present and summarize the vast amount of mineralization, this author organizes the sites into a central cluster proximal to the Phoenix Mine, a northeast cluster centred on the Emma Mine and a western cluster centred on Last Chance. The order within each cluster will be presented based on the magnitude of production and size and significance of the zone or showing. Much of the information comes from Minfile and Minister of Mines Annual Reports, augmented by a vast number of company reports.

TABLE 7.2
PHOENIX PROPERTY PAST PRODUCERS AND SOME MINERAL OCCURRENCES

Property	Minfile	Northing	Easting	Model	Commodity	Production (Tonnes)
Phoenix	082ESE020	5438785	383228	Skarn	Cu-Au-Ag	21,552,283
Rawhide	082ESE026	5438732	384281	Skarn	Cu-Au-Ag	855,634
Snowshoe	082ESE025	5439164	384331	Skarn	Cu-Au-Ag	545,129
Brooklyn	082ESE013	5440016	383093	Skarn	Ag-Au-Cu	292,834
Emma	082ESE062	5443063	386967	Skarn	Cu-Au-Ag-Gr-Mo-Co	241,538
Oro Denoro	082ESE063	5442630	387019	Skarn	Cu-Au-Ag-Co	123,782
Stemwinder	082ESE014	5439926	383333	Skarn	Cu-Au	105,336
B.C. Mine	082ESE060	5443204	389159	Skarn	Cu-Au-Ag	93,874
Grey Eagle	082ESE018	5438536	383324	Skarn	Fe-Cu	45,360
Skylark	082ESE011	5438910	380288	Poly Vein	Ag-Pb-Zn+-Au	38,761
Last Chance	082ESE216	5439276	379099	Vein	Au-Ag-Pb-Zn	704
Bay	082ESE005	5438408	379202	Poly Vein	Ag-Pb-Zn+-Au	447
Marshall	082ESE031	5441016	382930	Skarn	Au-Cu-Pb,Zn	370
Bluebell	082ESE188	5443134	388063	Skarn	Cu-Au-Ag	353
R.Bell	082ESE064	5441827	388523	Skarn/Vein	Cu-Ag-Au	287
Cyclops	082ESE122	5442111	386724	Skarn(strat)	Zn-Pb-Ag-Cu	259
Crescent	082ESE012	5440073	379360	Vein Meso	Ag-Pb-Zn+-Au	250
Mavis	082ESE027	5438129	379277	Vein	Ag-Au	29
Prince Henry	082ESE250	5438915	378625	Vein	Ag-Au-Pb-Zn	19
Preston	082ESE249	5439725	379718	Vein	Ag-Pb-Zn+-Au	16
Gold Drop	082ESE028	5439105	384168	Skarn	Cu-Au	12
Tam O'Shanter	082ESE130	5438870	373754	Vein	Cu-Au-Ag-Pb-Mo	3
Aetna	082ESE022	5439027	384476	Skarn	Cu-Au-Ag	Part of Phoenix
Curlew	082ESE024	5438913	384508	Skarn	Cu-Au-Ag	Part of Phoenix
Monarch	082ESE027	5438619	383812	Skarn	Cu-Au-Ag	Part of Phoenix
Old Ironsides	082ESE021	5439494	383324	Skarn	Cu-Au-Ag	Part of Phoenix
Victoria	082ESE023	5439333	383625	Skarn	Cu-Au-Ag	Part of Phoenix
War Eagle	082ESE019	5438625	383324	Skarn	Fe-Cu	Part of Phoenix
Gilt Edge	082ESE015	5440225	383826	Skarn	Cu	N/A
Lake	082ESE003	5439330	379425	Poly Vein	Ag-Pb-Zn+-Au	N/A
May Alice	082ESE197	5441175	371596	Skarn	Cu	N/A
Niagara	082ESE065	5440546	392391	unknown	unknown	N/A
Pac	082ESE194	5441826	388341	Vein	Au	N/A
Rathmullen	082ESE059	5443710	390122	Vein	Cu-Ag-Au-Zn	N/A
Stan	082ESE132	5442576	383673	Skarn	Cu-Mo	N/A
Sylvester K	082ESE046	5440524	382798	Skarn(hornfels)	Au	N/A
Tokyo	082ESE257	5442636	389776	Vein	Cu-Ag-Au-Zn	N/A
Yellow Jacket	082ESE030	5438878	384711	Skarn	Cu-Au	N/A
Iva Lenore	082ESE172	5438519	374213	Vein	Cu-Mo	N/A

7.5.1.1 Central Cluster

Phoenix, Aetna, Curlew (Reference: Minfile 082ESE020)

The Phoenix Mine is located 6 km east of Greenwood and can be accessed from Greenwood by the Phoenix Mine road to the summit. The pit lies 0.5 km south of the road at GPS coordinates 5438785N x 383228E.

Total production from the Phoenix Mine (including the Knob Hill, Old Ironsides, Gold Drop, Monarch, Victoria, Snowshoe and the Curlew) was 21,552,284 tonnes that yielded 28,341 kg of

Au, 183,036 kg of Ag and 235,693 tonnes of Cu in two episodes. From 1900-1919 a total of 12,434,620 tonnes were mined. From 1959-1974, a total of 9,117,664 tonnes was mined. The Phoenix Mine alone was the source of 1 million ounces of gold.

The past-producing Phoenix Mine is the largest mineralized site in the region. In 1890, copper skarn mineralization was discovered at Phoenix. The Granby Company was formed to work the Phoenix area in 1896, and in 1900 the Granby Smelter in Grand Forks was completed to process ore from the Phoenix Mine. In the early years, Phoenix was primarily an underground high grade copper operation, although there was also open cut surface mining in Glory holes at the time. Most of the ore was produced from the Old Ironsides, Victoria and Knob Hill claims and was shipped to the Granby smelter in Grand Forks for processing. Significant production from the Gold Drop is also included with the production quoted for the Phoenix. In 1956, the property was re-evaluated for its open-pit potential. A flotation mill was built on-site and open pit production at Phoenix began in 1959 at a rate of 900 tons per day, increased to 2,000 and 3,000 tons per day in 1961 and 1972, respectively, and finally terminating by 1976. The open-pit mining resulted in a large elliptical open pit, measuring 425 m x 800 m which consumed most of the nearby historic underground workings. The waste dumps and tailings from the open pit operation now cover other old workings in the area. The mill continued to operate until 1978, but was later dismantled and moved from the site.

The main ore body trended 010º and dipped moderately eastward, cropping out on the south side of the ravine that is the headwaters of Twin Creek. The dip of the ore zones flattened with depth, to between 15-30º eastward. The main ore body was composed of 2 lenticular zones that merged in the middle. The western lens was 750 m long, 112-275 wide and 12-38 m thick. The eastern lens was not as long but its thickness and width were of similar magnitude as the western lens. The combined thickness of the two lenses where they merged in the middle was 57 m. Mineralization consisted of massive pods, bands and disseminations of pyrite, chalcopyrite and magnetite (+specularite) within chlorite-epidote (+/- garnet, calcite, quartz) skarn. The mineralization and skarn alteration occur in a band of impure limestone above a well-defined argillite footwall.

The geology of the Phoenix Mine area is complicated. It is underlain by an intricately, folded, faulted and metamorphosed sequence of Paleozoic and Mesozoic volcanic and sedimentary rocks. All of the known mineralization in the Phoenix mine area (including the Phoenix, Stemwinder, Brooklyn and Snowshoe deposits, and the War Eagle, Sylvester K, Marshall and Gilt Edge showings) occur within a typically 150 m thick (to a maximum 300 m) panel of Brooklyn rocks in the hangingwall of the Snowshoe fault. As such the Phoenix deposit is rootless.

The entire Phoenix section is complexly faulted with a series of Tertiary faults of various attitudes, and as a result, it is difficult to identify pre-Tertiary structures. The older rocks (and pre-Tertiary mineralization) have been tilted in the Tertiary extensional event. A large fold (the Phoenix syncline) is postulated in the Phoenix area, with the U-shaped form of the Phoenix deposit outlining the hinge zone.

The ores of the Phoenix Mine and area are almost all the result of metasomatic alteration of limestone. The extensive deposits all occurred in the Brooklyn Group limestone. These metasomatic alteration ores are hosted within chlorite-epidote skarn rocks with variable amounts of garnet, quartz and calcite.

A Tertiary gold event is also recognized overprinting the Phoenix Mine sequence which may be responsible for some of the gold in the skarn. A strong epithermal stockwork is located along the east wall of the Phoenix pit, near a fault which separates Eocene sediments from Brooklyn skarn.

Old Ironsides (Reference: Minfile 082ESE021)

Old Ironside lies 100 m south of the Phoenix pit. Access from Greenwood to the Old Ironside Mine is by the Phoenix road. It is located on the west side of the road at GPS location 5439494N x 383324E.

Production from 1900 to 1919 totaled 12,434,620 tonnes (no assays or recoveries given). Production includes that from Knob Hill, Drop Gold, Monarch, Victoria, Snowshoe and Curlew mines.

The main ore bodies outcropped on the Old Ironside and Knob Hill claims. The Old Ironsides ore body was composite in character, consisting of two lenses that coalesce. The western lens is 750 m long, 112 to 275 m wide and 12 to 38 m thick. The eastern lens is not as long but is similar in thickness and width to the Western lens. The general strike of the ore body was 010o dipping 45 to 60^{o} eastward. The ore body flattened out with depth. The ore has characteristics of iron skarns, gold skarns and copper skarns.

Copper ore in the mineralized portions of the Triassic limestone has the characteristics of metasomatic replacement skarns. The gangue is principally chlorite-epidote skarn rocks with variable amounts of garnet, calcite and quartz. Associated with these replacement zones are blebs and disseminations of pyrite, chalcopyrite, magnetite and specularite.

The mine is underlain by chert, cherty argillite, greenstone and a minor amount of limestone from the Upper Paleozoic Knob Hill Groups. These rocks are unconformably overlain by limestone, Sharpstone Conglomerate, argillite and Eholt volcanics of the Triassic Brooklyn Group.

Gold Drop (Reference: Minfile 082ESE028)

The Gold Drop Mine lies 750 m east of the Phoenix pit. It is accessed from Greenwood by the Phoenix mine road for 5-6 km to the Phoenix pit. It can be found at GPS location 5439105N x 384168E.

Production from 1905 to 1919 totaled 1,600,583 tonnes from the Gold Drop Mine. The recoveries are reported in the Phoenix Mine totals.

The Gold Drop Mine was developed as only a portion of the larger deposit that traverses the Rawhide, Curlew and terminates on the Snowshoe. It crops out on the Gold Drop and swings down and across the Curlew and Snowshoe claims.

According to Minfile, the deposit in plan view had a complex shape of a compressed crescent with northward trending horns, broken by the occurrence of the detached ore body of the Gold Drop No.1 and the north ore body of the Snowshoe. The Sharpstone Conglomerate formed the base of the ore body. The strike of the ore body varied from 013^{o} to 032^{o} dipping easterly 40^{o} dip on average but flattened out to 25^{o} below the level of the Monarch drift. The ore body was over 320 m long by 96 m and the thickness averaged 9 m but varied from 2 to 17 m.

Rawhide (Reference: Minfile 082ESE026)

The Rawhide Mine lies 1 km southeast of the Phoenix pit, adjacent to the Monarch claim to the west, and the Gold Drop, Snowshoe and Curlew claims to the north. The Rawhide can be accessed from Greenwood by the Phoenix mine road for approximately 5-6 kilometres and past the Phoenix pit. The mine is located at GPS coordinates 5438732N x 384281E.

Production from 1904 to 1916 was 856,634 tonnes yielding 1056 kg of Au, 6,919 kg of Ag and 8,441 tonnes of Cu (estimated grade of 1.2 g/t Au, 8.1 g/t Ag and 2.2% Cu). Until 1908, ore was shipped to the Dominion Copper Company smelter in Boundary Falls, and then after 1908, to the B.C. Copper Company's Greenwood smelter. Further production occurred between 1959-1962 by Granby Mining Company Ltd on a royalty basis with the production included in the Phoenix Mine totals.

The Rawhide Mine developed the on-strike workings from the Gold Drop-Monarch ore body. The mine workings consisted of 7 large stopes and glory holes accessed by 1400 m of underground workings on seven levels, over an area of 3 hectares. The ore body which attains its maximum thickness of 23 m near the northeast boundary of the claim, rests on Sharpstone Conglomerate, reddish brown argillite and tuff of the Triassic Brooklyn Group. The body dipped 13-25^{o} to the north and northeast. The body was composed of chalcopyrite with garnet and epidote gangue minerals.

The ore is similar in character to the majority of the ore in the Phoenix area, in that it is a result of metasomatic alteration of limey units and limestone of the Brooklyn Group. Deighton et al (1991) reported on narrow (10-20 cm wide) epithermal vein west of the Rawhide pit where 3 grab samples returned between 47 g/t Au and 55 g/t Au. In 1991, Battle Mountain drilled some holes at Rawhide to test various copper and gold targets in this area (Caron, 1992a). No results known. According to Caron (2005) the epithermal vein west of the Rawhide pit does not appear to have had any follow-up work.

Snowshoe (Reference: Minfile 082ESE025)

The Snowshoe is located 1.0 km east of the main Phoenix pit. The property is accessed from Greenwood by the Phoenix mine road, passed the Phoenix pit in and Twin Creek. The Snowshoe is adjacent to the west side of the Lone Star road at GPS location 5439164N x 384331E.

Production occurred 1900-1904 and 1906-1911. Total production from this time was 545,129 tonnes which yielded 1,284 kg Au, 4,950 kg Ag and 6,322 tonnes of Cu (estimated grade of 2.4 g/t Au, 9.1 g/t Ag and 1.2% Cu). Most of this Snowshoe ore was shipped to the Trail smelter. Further production occurred in 1959 and 1962-1964 by Granby Consolidated Mining and Smelting with an additional 270,000 tonnes of a lower grade ore by open pit mining and processing at the Phoenix mill.

The main Snowshoe ore body was an extensive zone of mineralization that outcropped in the southwest on the Gold Drop claim, then trended north and northeast across the Monarch, Rawhide and Curlew claims and finally terminated against the Snowshoe fault on the Snowshoe claim. The Snowshoe Mine consists of two zones that were worked to a depth of 65 m. Development at the end of 1911 consisted of open cuts, glory holes and 2 shafts and a series of stopes that were accessed by 3,000 m of drifting. Later, surface excavations of a 70 m by 120 m pit resulted in the production of 270,000 tonnes of lower grade copper ore.

The south ore body was broadly thought as a continuation of the ore body located at the Curlew, Rawhide and Gold Drop Mines. This ore body of disseminated chalcopyrite with some massive magnetite lenses occurring in Sharpstone conglomerate and was somewhat discontinuous due to bands, wedges and ribs of slightly mineralized epidote-garnet skarn gangue rock. Along the Snowshoe-Curlew claim boundary the footwall of the Snowshoe body dipped to the north about 40°. To the west, it had a curving northerly strike with easterly dips from 30 to 65°. In its downward extension the ore body apparently dips to the northeast which brings it adjacent to or in contact with the ore body from the north. The north-south axis of the ore body is about 180 m long, the east-west axis is about 80 m wide and its thickness was 8-11 m with localized thickening.

The north ore body was at one time probably joined to the Gold Drop number 1 and the south Snowshoe but has been subsequently eroded. The main part of the north ore body had a north trend of 110 m long, 34-46 m wide and 2-17 m thick (averaged 11 m).
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The mine area contains rocks of Upper Paleozoic Knob Hill Group that is in turn are unconformably overlain by Triassic sediments, Sharpstone Conglomerate and argillites. The footwall rocks are Sharpstone Conglomerate, tuffs and red and grey argillites with local patches of quartzose crystalline limestone of the Triassic Brooklyn Group. The ore body is underlain at a relatively shallow depth by the Snowshoe fault. The hanging wall consists of garnet and epidote rocks of the mineralized zone in which the ore dies out or is terminated by a gouge filled fault. Battle Mountain completed significant rock sampling in the Snowshoe area during 1990 and 1991. Rock sampling identified an area of gold mineralization in a small pit northwest of the main Snowshoe pit that returned 7.7 g/t Au across 8 m. A second area was identified along the west side of the Snowshoe pit with 3 g/t Au across 4 m (Caron, 1992a; Deighton et al, 1991).

Monarch (Reference: Minfile 082ESE027)

The Monarch Mine is located 800 m southeast of the Phoenix pit. It can be accessed from Greenwood by travelling the Phoenix mine road for about 5-6 km, past the Phoenix pit. The workings are on the west side of the road and west of the Rawhide deposit located at GPS coordinates 5438619N x 383812E.

Past Production for the Monarch is included in the Phoenix Mine summary.

The original underground workings are located in the northwest section of the original claims. The mine was developed on drifts at the base of an inclined 2 compartment shaft that was 30 m deep. In 1909, an important ore body was delineated by diamond drilling in the area east of the shaft. This was subsequently developed from a tunnel connecting the old workings with the shaft. A raise from the Monarch drift at the Gold Drop Mine joined the main tunnel at the Monarch Mine allowing the ore to be conveyed to the Curlew portal.

The main ore body east of the shaft dipped slightly to the southeast, was roughly circular in shape with a diameter of about 45 m and had an average thickness of about 9 m. The ore was mainly magnetite and carried 1.17% Cu, 1.0 g/t Au and 13.7g/t Ag (GSC Memoir 21, page 84).

In the vicinity of the shaft, a shallow open cut exposed a mineralized zone of narrow bands of magnetite with chalcopyrite and pyrite, and veinlets of sulphides accompanied by specularite. The gangue here is composed mainly of epidote and coarse crystalline, grey calcite. The magnetite is often interbanded with calcite and contains calcite inclusions; the banding ranges in thickness from 0.5 to 1.0 m thick. Along the west side of the open cut the ore was broken and the sulphides were heavily oxidized.

The mineralogy of the ores indicates that the deposit was formed from metasomatic alteration of the limey sedimentary rocks and limestone units of the Triassic Brooklyn Group.

Brooklyn (Reference: Minfile 082ESE031)

Access from Greenwood is by the Phoenix Mine Road, past the Phoenix pit to GPS location 5440116N x 383093E. The Brooklyn glory hole is located just off the road to the west.

Past production (Including the Idaho and Stemwinder) from 1900-1960 (mostly 1900-1908 which was processed at the Boundary Falls smelter) totaled 292,834 tonnes yielding 854,990 grams of Au, 3,430,655 grams of Ag, 3,567,397 kg of Cu (estimated grade of 2.9 g/t Au, 11.7 g/t Ag and 1.2% Cu). Production after 1960 is included in the Phoenix summary.

The Brooklyn Mine is located on a mineralized zone crossing the valley of Twin Creek, some 700 m northwest of the Phoenix Mine. The majority of the Brooklyn mineralization was north of Twin Creek whereas the Phoenix deposit was south of Twin Creek. The mineralized zone took on a north trending elongated pear shape with a broad and shallow southern segment and narrowing and becoming steeper to the north. In the glory hole, the mineralization is vertical. The earlier Brooklyn workings consisted of two glory holes, one 130 m deep inclined shaft and workings on various levels to a depth of 106 m. Later in the 1970s, the Brooklyn was mined by a 75 x 150 m pit (now under tailings). The length of the mineralized zone is about 565 m long and varies from 120 m in the south to 15 m at the north end. A second small body of mineralization parallels the main ore body to the east. Mineralization was described as massive and disseminated magnetite-pyrite-chalcopyrite +/- hematite. Good bedding textures and best copper grades were reported in the massive ore, particularly along the footwall of the deposit.

The mineralized zone is hosted within sediments of the Brooklyn Group including Sharpstone Conglomerate, argillaceous transitional facies and limestone units. The Sharpstone Conglomerate lies to the east with the limestone to the west. In the southern part, the floor is mainly Brooklyn limestone with some Sharpstone Conglomerate. Ultramafic rocks are intruded into the volcanoclastic rocks and sedimentary rocks of the Triassic Brooklyn Group; the ultramafic rocks show massive and serpentinized facies, and talc was noted at the Brooklyn. The sheared margins often are altered to talc and talc-carbonate at shear boundaries. The ultramafic rocks are Mesozoic in age and lie below a major thrust that separates the Triassic Brooklyn Group from the Upper Paleozoic basement rocks of the Knob Hill Group. Flat-lying syenite sills are recognized associated with the Brooklyn mine rocks suggesting some potential flat-lying structures that could complicate tracing mineralized trends.

In the literature (Caron, 2005) there is a west-bearing drill hole SK-26-84 that tested under the northern segment of the Brooklyn mine, however, no results are known.

Most of the early work at the Brooklyn Mine (including the 1966 and 1968 percussion drilling by Granby) did not assay for gold. However, there are various reports of high grade gold in and around the Brooklyn. Leroy (1912) reported a 10.3 g/t Au sample. The 1932 Minister of Mines Annual Report reported a 1.52 m chip sample returned 27.4 g/t Au from pyrite and calcite in brecciated volcanics on the hanging-wall side. Gilmour (1981) quotes an article in the Northern Miner (Jan. 23, 1947) that described 0.90 m grading 15.08 g/t Au and 1.83 m grading 12.0 g/t Au immediately east of the north end of the southern glory hole. Historic drilling (beneath the road south of the glory hole) reported an average of 10.3 g/t Au over 2.6 m (date and reference uncertain). In 1981, trenching north of the northern glory hole returned 16.1 g/t Au over 0.5 metres (Gilmour, 1981). Noranda drilled one hole, SK-26-84, in 1984 to test under the (northern) Brooklyn Glory hole that reported 0.78 g/t Au over 16 m (Keating and Bradish, 1984). One drill hole B-1-85 in 1985 testing this hit to the south did not report significant results (Keating, 1985). Phoenix Mine tailings and waste rock cover much of the original Brooklyn trend making further exploration complicated.

Stemwinder (Reference: Minfile 082ESE014)

The Stemwinder Mine is found 300 m east of the Brooklyn Mine, and 500 m north of the Phoenix Mine. Access from Greenwood is by the Phoenix Mine road to about 100 m past the Brooklyn pit. The pit (glory hole) is located on the south side of the Phoenix road is found at GPS location 5439926N x 383333E.

Production occurred from 1900 until 1949 when a total of 32,014 tonnes were mined. The ore was taken from an open stope and a glory hole, this glory hole was connected to 450 m of drifting. There were 2 mine levels underground namely the 32 m and the 61 m levels, serviced by an inclined shaft and 2 portals. From 1964 and 1967, an additional 73,000 tonnes of ore was produced from a 55 m x 146 m open pit on the Stemwinder claim (included with the Phoenix production).

The mineralization was taken from 2 north trending ore bodies that had a curved lenticular shape categorized as a limestone breccia. This unit was described as greyish white fine crystalline limestone breccias/conglomerate with fragments ranging from 1 to a few cms, and smaller fragments of chert, set in a fine-grained matrix of carbonate, chlorite, quartz and clay minerals. The mineralization had a different strike from that at the Brooklyn, and occurred within a zone of abundant and complex faulting. The ore bodies were fault bounded of the limestone breccia which had been partially recrystallized as coarse-grained grey calcite containing irregular veinlets and larger masses of chalcopyrite and pyrite. It was truncated at depth by a low-angle fault (White, 1949).

The mineralization is hosted by volcanoclastic rocks, Sharpstone Conglomerate, limestone breccias and limestone of the Triassic Brooklyn Group. There are 2 ages of faulting associated with the ore zone. The first set of faults strikes variably west of north (one fault dips steeply to the east and the second set dips 25-40o to the west). The second set of faults cuts phase 1 faults, and generally strikes northeast and dips moderately to steeply northwest or southeast.

A second area of mineralization, the West Zone, occurred northwest of the Glory Hole. The northwest striking and steeply east-dipping West Zone was within a shear zone in chert pebble "sharpstone" conglomerate, intermittently exposed for 120 m. Quartz-calcite veins with pyrite and chalcopyrite occurred along the shear zone. Vein widths were variable, but typically less than 0.5 m. Good copper and gold values occur within the vein, with values such as 67 g/t Au and 5.5% Cu over 0.23 m (White, 1949).

Grey Eagle (Reference: Minfile 082ESE018)

The Grey Eagle Mine is 800 m south of the Phoenix pit.

Production occurred in 1916 with 45,360 tonnes grading 0.2% Cu., 36% Fe and 0.7g/t Au.

Prior to 1912 the ore body was diamond drilled and was developed by open cuts and stripping which exposed a magnetite body as much as 10 m thick with a lateral extent of more than 370 m2. The deposit was mined by No. 2 tunnel.

The massive magnetite body containing grains of pyrite and subordinate chalcopyrite occurs within flat lying Sharpstone Conglomerate. It was similar to the upper ores on the Knob Hill and Ironside claims and was interpreted to be an "iron cap". Garnet occurs in masses and as solitary crystals within the ore body itself. Due to the small size of the body and the low copper and gold grades there has not been sustained mining on this deposit.

Sylvester K (Reference: Minfile 082ESE031)

The Sylvester K can be reached from Greenwood about 6 km along the Phoenix Mine road. The site is located north of the Phoenix Mine road at GPS coordinates 5440508N x 5438969E. The Sylvester K lies predominantly on Montezuma Hill, a gentle rolling upland area that has little exposed outcrop.

Production occurred in 1987 with 5,090 tonnes grading 5.1g/t Au (approximate grade reported J. Seguin 1987, Inspector of Mines). Mineralization was shipped to the Dankoe Mill near Keremeos for processing.

Mineralization consists of a gold-bearing massive sulphide zone comprised of massive to sub-massive pyrrhotite, pyrite and minor chalcopyrite including a wider zone of lesser sulphide in the fotwall. The mineralized zone strikes 020º and is vertical to steeply dipping eastward. It can be traced on surface for between 150 m and 230 m long, and where uncomplicated by faulting, ranges from 2 to15 m thick. The deposit thins both in the north and south exposures. Grades are typically in the order of 8-10 g/t Au. The zone is truncated at a depth of about 30 m by a flat fault (Caron 2012). Sulfidic, fine-grained volcaniclastics occur in the footwall to the massive sulfide horizon that typically carries about 10 g/t Au. The footwall mineralization is poorly described, by some as stringer, as others, sulfidic, others disseminations and carries gold in the 10 g/t range. Extensive sub vertical normal faults dice the succession.

The mineralization appears to be a stratabound massive sulphide lens with sulphide disseminations at the regional Brooklyn limestone-Sharpstone Conglomerate contact, the same stratigraphic horizon as the Lamefoot deposit in Washington State. The mineralization is hosted by sedimentary rocks of the Triassic Brooklyn Group and cross cut by sills and dikes of the Lower Jurassic Providence Lake microdiorite stock. The Brooklyn Group rocks are steeply dipping mostly to the east, and are comprised of thick basal units of the Sharpstone Conglomerate, overlain by thinly bedded transitional argillaceous facies in turn overlain by thick limestone units. About 150 metres below surface, the entire Brooklyn section is truncated by the Eocene-aged Snowshoe Fault.

In 1982, trenching exposed the zone averaging 3.5 m wide with a grade averaging 10.3 g/t Au. A footwall "stringer zone" returned similar gold grades. Twenty-three diamond drill holes were drilled to test the Sylvester K zone by Kettle River. Drilling showed that the mineralized horizon was complexly faulted (Gilmour, 1981, 1982b, 1982c; Stewart, 1986). Four diamond drill holes were drilled in the Sylvester K - Brooklyn area in 1984 by Noranda. In 1988, Skylark Resources completed a close spaced drill program and then commenced mining in January-February 1989. In 1997, Echo Bay completed seven diamond drill holes in an attempt to locate the at-depth faulted offset of the Sylvester K zone. An additional 2 holes tested the northern strike extension of the zone (Caron, 1997; Rasmussen, 1997). Drilling in 1997 was successful in intersecting the fault-displaced Sylvester K "stratigraphic horizon" to the east of the showing, however, was not mineralized. Additional drilling was recommended to test the horizon on strike to the north and south, but has yet to be carried out. The massive sulphide is evident geophysically by an EM anomaly that has been traced for 250 m.

Golden Dawn took 8 rock chip samples in 2016 from the Sylvester K south trench. The average grade of the continuous channel across the zone on the south wall was 9.92 g/t Au over 15.2 m. This included massive sulphide and quartz stockwork. Gold results for only the massive sulphide samples were 7.67 and 8.03 g/t Au over a true thickness of 2.2 m. Results for just the footwall stringer zone ranged from 28.2 g/t to 1.65 g/t and averaged 10.24 g/t Au over a true thickness of 13.0 m.

Some geologists have interpreted the Sylvester K zone as having volcanogenic origin, while others argue for a distal skarn, manto style model or a structural replacement model.

Marshall - San Jacinto (Reference: Minfile 082ESE031)

The Marshall occurrence is located just north of Marshall Lake, 1.7 km northwest of the Phoenix pit, and 5.8 km northeast of Greenwood. Access from Greenwood is 6 km up the Phoenix mine road, then turn north onto the Marshall Lake road. About 100-200 m north of the lake, the showing is found on the west side of the road at GPS coordinates 5441016N x 3829390E.

Production occurred from 1967 to 1975, when a total of 370 tonnes of ore was shipped returning 15.2 kg of Au, 17.6 kg of Ag, 0.47 tonne of Cu, 2.3 tonnes of Pb, and 0.56 tonne of Zn (estimated grade 41.1 g/t Au, 47.7 g/t Ag, 0.12% Cu, 0.57% Pb).

The property is underlain by sedimentary rocks of the Triassic Brooklyn Group. The beds are steeply dipping to the east and are comprised of a thick basal unit of Sharpstone Conglomerate overlain by a transitional argillaceous unit which is in turn overlain by a thick sequence of limestone. The Providence Lake microdiorite stock, dated at 206 Ma, intrudes the limestone and conglomerates and is interpreted as feeders to volcanic strata in the upper part of the Triassic Brooklyn Group.

Mineralization at Marshal is comprised of massive sulphide lenses in limestone and sulphide disseminations in the accompanying Sharpstone Conglomerate and argillaceous units of the Brooklyn Group. Ore mineralogy consists primarily of pyrite with smaller amounts of pyrrhotite and marcasite, and traces of chalcopyrite accompanied by quartz carbonates and chlorite. Numerous pyrite stringers carry gold and silver values from 2 to 10 m distal from the sulphide bodies. At the San Jacinto, massive pyrrhotite, pyrite and lesser chalcopyrite and magnetite is exposed in a stripped area near the contact with Brooklyn limestone.

In 1937, a program of 8 diamond drilling and trenching was done. Twelve "veins" were reportedly intersected, including one delineated as 2.4 m wide and 100 m long, averaging 8.2 g/t Au (Malcolm, 1945). In 1966-71 a program of geological mapping, soil sampling, IP and trenching was completed. Two zones of auriferous massive pyrite-pyrrhotite were discovered. In 1969, six shallow drill holes were done (Drummond, 1983). In 1974, a percussion drilling program was carried out on the Marshall Lake showings. In 1985 Kettle River reported backhoe trenching and diamond drilling were done. Details of this work are unknown. In 1992, Battle Mountain drilled 4 holes to test the Marshall-San Jacinto zone. In 1997 one hole was drilled on the Marshall zone (Caron, 1997; Rasmussen, 1997). Drilling showed that the surface showings are underlain by a flat to gently west dipping (Eocene-aged) fault at a shallow depth.

Caron (2005) speculates that the source of the mineralizing fluids is believed to be from the Providence Lake stock although no sulphide mineralization is seen south of Providence Lake where the main microdiorite body intrudes the Triassic Brooklyn Group.

Tremblay Tailings

The Tremblay tailings are found 8 km east of Greenwood and 3 km east of the former Phoenix Mine pit. Access from Grand Forks is 4 km along the Phoenix Ski slope road (turn-off from Highway 3 is 15 km by road from Grand Forks). The Tremblay tailings are on the side of the road at an elevation of 1140 m. The tailings cover a semi-circular area, approximately 15 hectares in size.

These tailings were derived from the milling operation at the Phoenix mill between 1956 and 1967 (Hardwicke, 1992). Refer to Section 14.6.4 for Exploration Target ranges of tonnes and grade for these tailings.

Sampling by Noranda including a vibra-core drill program of 18 vertical NQ sized holes spaced on a 100 me grid for a total of 191.7 m (1985). Samples taken every 1.5 m down each hole. The total number of samples collected and analyzed was 137 with an arithmetic mean of 304.8 ppb Au (0.30 g/t Au), 1088.5 ppm Cu (0.11% Cu), 2.4 ppm Ag, 83.6 ppm Zn and 6.7 ppm Pb.

In 1991, Kettle River Resources sent some tailings for initial metallurgical testing to Bacon Donald and Associates of Vancouver. Echo Bay Exploration Inc. carried out additional gravity (shaker table) testing in 1994 and 1995. In 1995 and 1996, Kettle River did 2 Sonic drill holes (Caron, 1996a). One hole determined the berm to be 23.6 m thick. The second hole, 150 m from the berm, found the fine tailings to be 18.7 m thick. Samples collected at 5 or 10 foot intervals showed the berm holes averaged 0.38 g/t Au. The second hole returned an average grade of 0.28 g/t Au. Additional flotation testing was carried out at International Metallurgical and Environmental Inc. in Kelowna (Austin, 1996) (see Section 13.4 for summary of all metallurgical results).

Due to its potential size, the Tremblay tailings deposit warrants re-evaluation and sufficient work to enable a mineral resource to be estimated. Further metallurgical testing would also be required to determine recovery and costs.

Minnie Moore

The Minnie Moore is 1 km northeast of the Emma Mine.

The Minnie Moore showing is a silver-rich epithermal style breccia vein carrying high silver values and hosted in limestone. The Minnie Moore showing ranges from 2.9 to 8.5 m wide bounded on the east and west by strong, north-northeast trending vertical west-dipping faults. Excavator trenching in 2007 exposed the zone over an area of 8 m x 13 m in one trench. It is a well-defined breccia vein comprised of intensely silicified limestone and siltstone that is cut, and cemented by vuggy silica and quartz-carbonate veinlets and breccia matrix. Sulfide content is generally low but can exceed 5% of pyrite, with lesser chalcopyrite, sphalerite, galena, tetrahedrite, and ruby silver. Native gold has been seen in thin section and in hand specimen. Trace element geochemistry shows elevated mercury, arsenic, antimony and selenium. Thirty m south of the first exposure, trenching uncovered a second vein segment 5 m wide and 7 m long. The southern vein segment is truncated by faults on the north, south and east. Chip sampling has returned high-grade silver mineralization over significant widths including 8.5 m of 414 g/t Ag, 5.9 m of 432 g/t Ag and 6.2 m of 1044 g/t Ag. Additional trenching further south failed to penetrate the overburden while trenching to the north exposed a thick Eocene sill.

15 diamond drill holes have tested the Minnie Moore zone with only limited success. Two intercepts of 2 m of 66.0 g/t Ag and 5.3 m of 77.3 g/t Ag were reported. At least three separate post-mineral fault sets with accompanying post-mineral dykes and sills, are present. A 50 m thick post-mineral sill cuts the zone 10 m below surface. The best results from drilling were in a second hole.

7.5.1.2 Northeast Cluster

Emma (Reference: Minfile 082ESE062)

The Emma Mine is accessed by traveling north on Highway #3 to just south of Wilgress Lake where a logging road takes off to the west. 100 m up this logging road, take the first left and follow that road up onto the old railway grade, traveling south. Emma is north of the Oro Denoro mine, is one of the three main past-producers in the Summit Camp.

Past production from the Emma, chiefly occurred between1901 and 1921, when 254,000 tons grading 1.01% Cu, 0.9 g/t Au, and 10.1 g/t Ag were mined. The iron-rich ore was valuable as a flux in the smelters.

The mineralization is considered a garnet skarn, although others suggest a volcanogenic origin with a later skarn overprint. Semi-massive to massive magnetite with chalcopyrite predominates at the north end of the mine, whereas massive pyrite and chalcopyrite dominate at the southern end of the mine. Emma measured 10 m wide by 180 m long and traced to 125 m deep. The mine was developed by several large (now water filled) open cuts and six levels of underground workings along a north-south trend. The zone was vertical to steeply east dipping. The mineralization at the north end of the mine may indicate copper-gold mineralization extending north of the existing workings. One sample by Kyba (1996a) returned 10.3 g/t Au. Rasmussen (1997) reported an assayed of 3.8 g/t Au from the same site. A grab sample taken in the north end by Kyba (1990) returned values of 8.76% Cu, 0.1% Zn, 45.4 g/t Ag and 6.31 g/t Au. The host rocks are interbedded tuffs, limestones and the Sharpstone Conglomerate unit of the Triassic Brooklyn Group, conformable to bedding in the limestone.

Skylark Resources drilled two holes in 1987 to test the northern extension of Emma. Two intercepts returned 1.6% Cu over 1.3 m and 1.6% Cu over 1.0 m (Burns, 1988). In 1997 Echo

Bay drilled 3 (NE97-1, 2 and 3) holes at Emma for its northern extension that returned a 3.77 g/t Au intercept across 1.54 m and suggested that the Emma lens tapers off to the north. 250 m southeast of the Emma workings is a zone of magnetite (+ pyrite, chalcopyrite, pyrrhotite) in garnet skarn. 300 m northeast of the Emma working, is more exposed massive magnetite and chalcopyrite skarn. Canamax's 1991 airborne geophysical survey detected a mag high between the north end of the Emma showing and the Jumbo showing, which remains undrilled (Hitchens, 1991). The Emma vein trends to the north and may be the same structure that the Minnie Moore showing is developed along. The Mountain Rose and Breyfogle showings are about 600 m east of the Emma workings. Approximately 10,500 tonnes of "sulfide rich smelter flux", grading 0.21% Cu, was produced from the Mountain Rose (massive magnetite-pyrrhotite-pyrite-chalcopyrite mineralization in garnet skarn) from 1905-1910, which is reported with the Emma numbers. The Breyfogle showing is situated 150 m northeast of the Mountain Rose and is described by Hitchens (1991) as a sphalerite-rich garnet-calcite skarn. In 1987, Skylark Resources drilled one hole near the Mountain Rose zone without any significant intercepts.

An north-northeast trending epithermal siliceous breccia zone within garnet-pyroxene skarn altered limestone, 200 m northeast of the Emma workings, outcrops intermittently over a length of 300 m sub paralleling the Emma horizon. Surface rock chip samples from the trend have returned elevated gold values (0.5 g/t Au; Rasmussen, 1997) and spotty gold soil anomalies. Two holes in 1997 test the zone without significant intercepts (Rasmussen, 1997). Burns (1988) speculates that the 1.0 m wide quartz-chalcedony breccia zone reported in Skylark's 1987 three drill hole program is of the same epithermal system.

Oro Denoro (Reference: Minfile 082ESE063)

The Oro Denoro Mine and deposit is located 10.2 km northeast of Greenwood at an elevation of 1066 m on the divide between Eholt and Fisherman Creeks. Access from Greenwood to the site is by Highway #3 to 100 m south of Wilgress Lake where a logging road turns west across a cattle guard. 100 m on the logging road take the first left which winds up onto the old railway grade. Travel south along the railway grade to GPS location 5442630N x 387019E.

Past production was from 1903 to 1910 with 123,782 tonnes grading 1.4% Cu, 0.9 g/t Au, 7.7 g/t Ag, shipped to the smelter in Greenwood for processing. In 1975, test mining was done from an open pit at Oro Denoro and 123,400 tonnes of "mineralized rock" was taken to the Phoenix mill.

The Oro Denoro is centrally located in a northeast trending, 2.4 km long limestone belt, in which a number of massive sulphide skarn deposits and historic mines are located; Emma, Jumbo, Cyclops and Lancaster Lass. This 2.4 km trend of limestone remains very prospective for discovering new copper zones.

The Oro Denoro was mined from extensive underground workings, including a 40 m deep shaft and 240 m of underground workings on 2 levels. The mine also produced from 5 surface pits. The principal source of the copper ore came from pits 1 and 2 which have a general east-west trend, suggesting the sulphide mineralization was controlled by east-west trending granitic bodies.

Garnet (+/- chalcopyrite, magnetite, pyrite) skarn occurs along the southern contact of a narrow east-west trending tongue of granodiorite interpreted by Caron (2005) as an apophysis of the main Lion Creek granodiorite stock, with Brooklyn limestone. Mineralization has a strong structural control trending east-west, parallel to the intrusive contact but perpendicular to regional bedding. The skarn is an elongate 150 m wide N-S trending body. The Oro Denoro skarn is centered upon the Emma horizon. Caron (2005) speculates that some of the metals in the skarn may indeed be attributable to an earlier volcanogenic event. A 20-30 m thick diorite sill cuts the body at a depth of about 100-140 m below surface. There is some discrepancy among previous workers as to whether the diorite truncates the body or not. Numerous smaller diorite, granodiorite and syenite dykes also cut the mineralization.

From the late 1950's to early 1970's, well over 100 holes (surface and under-surface) were drilled to test the Oro Denoro,

In 1955, Noranda Mines Ltd. completed geological mapping, geophysics and drilling at Oro Denoro. 17 holes (including 2 underground holes) were drilled at the Oro Denoro. Between 1963-1970, West Coast Resources Ltd. did ground magnetics, mapping, and drilled 29 surface and 17 underground holes. Furukawa Mining Co. Ltd. drilled an additional 42 vertical diamond drill holes to test the deposit. West Coast Resources Ltd then completed 120 m of drifting at the Oro Denoro.

Between 1966 and 1970, a number of historic and non NI 43-101 compliant mineral resource estimates were made for the Oro Denoro. Kermeen (1966) on behalf of Granby made a resource estimate Weymark Engineering quoted an Indicated reserves (Weymark, 1966) Dolmage, Campbell and Assoc. (1968) stated a drill indicated resource and Western Miner (1968) reported an Indicated resource estimate (Minfile). **Golden Dawn does not treat these historical estimates as current mineral resources or mineral reserves because a qualified person has not done sufficient work to classify the historical estimates as current mineral resources or mineral reserves and the key assumptions, parameters, and methods used to prepare the historical estimate have not been verified. The historical estimates used categories other than the ones set out in sections 1.2 and 1.3 of NI 43-101 because they were completed prior to that Instrument, and any differences cannot be explained without further work being done. The estimates cannot be regarded as reliable, therefore they have not been stated here.**

The Oro Denoro is underlain by the Triassic Sharpstone Conglomerate unit, tuffaceous sediments, minor limestone and fine grained volcanic breccias intruded by a series of granitic rocks ranging in age from the Lower Cretaceous Nelson Intrusions to Coryell (Paleocene) intrusions. Extensive skarn development associated with these intrusions is evident and remains an exploration target. Skarn development in this area is primarily epidote-garnet-calcite. The 2.4 km long of limestone that hosts the Oro Denoro remains very prospective for discovering new copper zones.

In 1996, Kettle River Resources did rock sampling at the Oro Denoro in an attempt to define the gold control and distribution within the skarn and test for a southern extension of the skarn system for gold mineralization. The sampling indicated the strong link of gold to copper grades in steep narrow cross-cutting north trending structures with poddy pyrite and chalcopyrite. One such sample returned 67.6 g/t Au, 182 g/t Ag and 3.5% Cu.

B.C. Mine (Reference: Minfile 082ESE060)

The B.C. Mine is located 12.5 km east-northeast of Greenwood. Access is gained from Highway #3 north of the Phoenix Ski Hill turn-off by way of the B.C. Mine Road. Follow the B.C. Mine road east to the T-intersection. Turn to the north and follow this road to the end as it wraps around Thimble Mountain. GPS location: 5,443,204N x 389,159E.

Production at the B.C. Mine occurred 1900-1907, 1916-1918, 1938 when a total of 93,874 tonnes were mined grading 0.3 g/t Au, 71.0 g/t Ag, and 4.4% Cu.

Production was primarily from a shaft sunk 50 m deep with 610 m of drifting and a 30 m raise. Additional production came from a glory hole. The ore from the B.C. mine is atypical for the camp. It was a much higher copper and silver grade and less gold grade than typical to the camp.

The deposit was a series of aligned vertical to steeply eastward dipping mineralized pods trending 010^{o} over a strike length of 300m and tested by shafts, pits and trenches. The main pod was 60 m long by 20 m wide (narrowing with depth) and dips gently to the east, this pod was mined to a depth of 125 m. The ore zone was also cut by sub-horizontal sheets of porphyry that make regular floors in the ore.

The BC Mine has been categorized as a skarn deposit however Caron (2005) suggests it may have volcanogenic origins. Mineralization occurred as massive to semi-massive lenses of chalcopyrite with subordinate pyrrhotite, pyrite and magnetite replacements in the Triassic Brooklyn Group, near the contact of the sharpstone conglomerate on the west (footwall) and a narrow band of marble/limestone on the east (hangingwall). Associated skarn gangue minerals include garnet (most abundant), quartz, calcite, epidote, actinolite and chlorite. The Brooklyn Group is composed of interbedded greenstone breccias, volcanic tuffs and conglomerates. These rocks are intruded by pulaskite dikes and flat-lying sills that are interpreted to be feeders to the nearby Tertiary Marron volcanic rocks.

Underground drilling during production tested to 280 m depth, encountering mineralization separated by multiple flat-lying sills. Multiple drill holes tested the deposit and area post-production, during the 1950's, 1960's and 1970's, with apparently limited success (Hitchens, 1991). Granby drilled 2 holes 130 m south of the Glory Hole that returned 2.74% Cu over 2.5 m and 0.47% Cu over 5.5 m. Canamax drilled 2 holes north of the Glory Hole with no significant intersections. Fault offsets probably complicate tracing mineralized extensions of this prospect but an airborne EM survey may provide direction for future exploration here.

Bluebell (Reference: Minfile 082ESE188)

Past production in 1938 and 1939 totalled 353 tonnes, yielding 8055 grams of gold, 3795 grams of silver and 422 kilograms of copper; estimated grade of 22.8 g/t Au, 10.75 g/t Ag and 0.1% Cu (higher gold and lesser copper than most producing mines in the camp).

The Bluebell is located is located 1 km south of Wilgress Lake, 1 km east of the Emma (Lot 591) claim and 700 m west southwest of the B.C. Mine.

A 1-2 m wide skarn mineralized zone, with small lenses of massive magnetite, pyrite, pyrrhotite, sphalerite and chalcopyrite along a 200 m trend, occurred in limestone at the contact with a microdiorite or greenstone (Triassic Brooklyn Group). Epidote and garnet was observed.

The area is underlain by greenstones which are interbedded with tuffs, limestone and sharpstone conglomerates of the Triassic Brooklyn Group. These are intruded by granodiorite of the Jurassic Nelson Intusions and alkaline syenite of the Eocene Coryell Intrusions.

Turn of the century work on the property consisted of a 40 m deep shaft, with 27 m of drifting at the 30 m level and 9 m of drifting at the bottom. In 1921, M. Blufontein rehabilitated the old shaft and drove an 8 m drift. In 1937, F. Simpson drove a short drift, 15 m below the surface, from a 40 m dep shaft. In 1939, L. Hanley developed the property with 87 m of drifting, 113 m of crosscutting, 3 m of sinking and 2 m of raising.

Kyba (1990) reports of a strong copper soil anomaly north and south of Bluebell that were not followed up in their 1983 trenching program, however, massive pyrite and pyrrhotite boulders were reported in till of a trench 180 m south of the Bluebell shaft (Kyba, 1984). In 1991, Canamax completed 1 diamond drill hole to test the Bluebell horizon (Hitchens, 1991). Echo Bay completed 3 diamond drill holes in 1997 on the target. One of these holes intersected 0.45 m of massive sphalerite, pyrrhotite and pyrite within a 6.4 m intercept of skarn with elevated copper and zinc values. Numerous syenite dykes were encountered disrupting and possibly offsetting the skarn contact. In 2007, Kettle River Resources completed a program of soil geochemistry, trenching and diamond drilling in the vicinity which resulted in the discovery of the Minnie Moore zone to the northwest.

R. Bell (Reference: Minfile 082ESE064), Cordick (Reference: Minfile 082ESE194) and Summit and Sleeper Showing

The R. Bell mine is 11 km northeast of Greenwood and 2.3 km south of Wilgress Lake, just north of the old Summit City. The property is accessed from Greenwood north along highway #3 from the Phoenix Ski Hill turn-off, turning east on the B.C. Mine road, turning right at the T intersection and following the upper road (staying to the left) for approximately 1 km. GPS coordinates at the mine are 388586E x 5441905N.

Production on R. Bell occurred in 1901 and 1918. Total production from the mine was 287 tonnes grading 392.9 g/t Ag and 7.4% Cu.

The R. Bell is comprised of north-northeast trending chalcopyrite veins and garnet-epidote-quartz skarn with chalcopyrite and sphalerite. The veins dip vertically within epidotized pyritic volcanics as well as in the skarn that follow the contact between limestone on the west and overlying greenstone on the east and is associated with a major north-northeast trending structure that dips moderately to steeply eastward. Massive magnetite-manganese occurs locally in the footwall of the copper "skarn" zone Total underground development was a 120 m deep of shaft and 180 m of drifts and crosscuts.

The Cordick showing lies 300 m north and on-strike of the R. Bell. A number of pits and trenches expose A vertical garnet-epidote-calcite skarn with associated magnetite and chalcopyrite mineralization runs along the limestone/volcanic contact, exposed by pits and trenches.

The host rock in the area is greenstone, stained locally with azurite and malachite and is cut by a 30 m wide barren pulaskite dike. The greenstones are interbedded volcanic tuffs, limestone, and the Sharpstone Conglomerate unit of the Triassic Brooklyn Group. These are in intruded by granodiorite of the Jurassic Nelson Intrusions and alkaline syenite (pulaskite) of the Eocene Coryell Intrusions.

In 1955, Noranda Mines Ltd. drilled 2 holes at the R. Bell (Weymark, 1966). In 1966, a limited ground mag survey was done over the R. Bell (Sullivan, 1966). In 1997, Echo Bay Minerals Co. did a fence of drill holes that tested the main north-northeast fault zone over a strike length of 300 m, from the R. Bell zone north to the Cordick showing with discouraging results (Rasmussen, 1997).

In 1995, the Summit showing was discovered from gold-in-soils near the R. Bell skarn. The Summit showing lies 75 m north of the main R. Bell workings, hosted within Brooklyn limestone. The Summit showing comprises irregular patches and discontinuous quartz veins carrying high gold values, hosted in limestone across a width of 10 m. Blast trenching and sampling returned an average grade of 9.8 g/t Au across 10 m (Caron, 1997a). Echo Bay's sampling in 1997 returned 30.2 g/t Au over 7.3 m (Rasmussen, 1997). Controls to mineralization are uncertain from steep north trending bedding controlled fractures to low angle cross faults. A similar Sleeper vein is nearby.

In 1996, Kettle River Resources drilled 14 diamond drill holes to test the Summit zone and three zones of structurally controlled silicification exposed on surface nearby. Numerous (+/- flat lying) Tertiary dykes are exposed on surface and in drilling. Echo Bay drilled 15 holes into Summit in 1997 (Rasmussen, 1997). No significant mineralization was intersected by drilling, Caron (2005) concluded that both high and low angle Tertiary faults appear to be important in controlling, and possibly off-setting, the mineralization.

Cyclops (Reference: Minfile 082ESE122)

The Cyclops occurrence is 10.2 km northeast of Greenwood, at an elevation of 1140 m on the divide between Eholt and Fisherman creeks. The property adjoins the Oro Denoro Mine (082ESE063) to the north. Access to these properties is about 0.6 km southwest from Highway 3 by level gravel road along an old railway bed.

Production occurred in 1952 when 258.5 tonnes averaged 5.9% Zn (15,254 kg) were mined.

The mineralization is reported as massive to semi-massive sphalerite and magnetite with subordinate chalcopyrite, pyrite and galena. The mineralization lies at the contact between Brooklyn limestone and silicified volcanics(?), near the contact with a concordant body of gabbro. It has been interpreted by (Gilmour, (1982a) and Rayner (1995) as volcanogenic in origin. Caron (2005) suggested that it is probably on the same stratigraphic horizon as the Emma deposit. Development work in the 1950's showed a mineralized zone from several cm's to 3.6 m wide, traceable for 60 m long.

Work by New Jersey Zinc in 1950 included 488 m of diamond drilling, reporting grades of 8-10% Zn, then in 1952, an adit was driven about 40 m and a short raise connected to the bottom of an old shaft. In 1968 a trenching program (5 trenches totaling 131 m) was done on the showing (Wilson, 1968). In 1981 and 1982, Kettle River Resources conducted trenching and reported a 1.8 m chip sample of 16.0% Zn, 0.5% Pb and 4.5 g/t Ag (Gilmour, 1982a). An aeromagnetics anomaly and a (not coincident) airborne EM conductor delineated by Canamax in 1991 remain untested. There is little outcrop in the area. Poddy massive sphalerite occurs about 400 m north of the Cyclops showing.

7.5.1.3 Western Cluster

Skylark (Reference: Minfile 082ESE011); and R.Krause, B.Sc., mine geologist 1987-1989)

The Skylark is 2.7 km east of Greenwood and 0.8 km southeast of Twin Creek. Access from Greenwood is by the old Phoenix Mine road and then turning south on a winding road for 1.8 km to the mine site. The mine is at located at GPS coordinates 5438910N x 380288E.

Production occurred in 1905-1907, 1915, 1935. Total production was 1,866 tonnes yielding 5,282 kg of Ag, 22.5 kg of Au, 25.8 tonnes of Pb, and 4.8 tonnes of Zn (estimated grade of 2831 g/t Ag, 12.1 g/t Au, 1.3% Pb and 0.26% Zn), from 2 shafts 46 m and 61 m deep and 183 m of drifting on the 45.7 m and 60.1 m level. Further production form H Zone 1988-1989 of 33,298 tonnes yielded 11,751 kg of Ag, 90 kg of Au, 107,538 kg of Pb, 43,608 kg of Zn and 9,536 tonnes of Cu (estimated grade of 352.9 g/t Ag, 2.7 g/t Au, 0.3% Pb, 0.1% Zn and 0.03% Cu). In 1988-1989, the mine was developed by a 458 m long trackless decline driven in the footwall with a subdrift driven along the vein, and draw points for ore removal along the decline.

The main vein is a north-northeast striking, moderately east dipping well mineralized quartz-carbonate vein/fault, hosted in argillites and andesite of the Upper Paleozoic Attwood Group. The mineralization consists of bands of 1) fine-grained galena accompanied by tetrahedrite, tennantite, +/- ruby silver, 2) massive arsenopyrite with fine-grained galena and sphalerite, and 3) a silver-rich zone characterized by stibnite and native wire silver (R. Krause B.Sc., mine geologist Skylark 1987-1989). The vein averaged 15-20 cm width, attaining a maximum width of 38 cm.

San Jacinto Explorations completed five EX diamond drill holes totalling 32 metres concluded that the Skylark vein does persist beyond the old workings (Kruzick, 1974). In 1983-1985, Skylark Resources completed ground magnetics, VLF-EM and IP geophysical surveys, soil sampling, trenching and drilling (3 holes in 1984 and more in 1985), discovering the H Zone (Lloyd, 1983, and (SKR news release - May 28, 1985).

The H Zone is a narrow shear hosted polymetallic silver (+ gold) vein that strikes at 040º and dips 50º southeastward and is situated in the hangingwall of the Snowshoe fault. The H Zone varies from 2.5 cm to 60 cm wide, with an average width of about 10 cm. The vein is a sulphide-rich quartz vein (30% and 90% sulphide). Sulphides include pyrite, sphalerite, galena, chalcopyrite, arsenopyrite, pyrargerite, proustite, argentite, hematite and native silver with a banded appearance. The “H” zone is hosted in an andesite dyke system intruding into a granodiorite body. This zone is believed to be the faulted off section of the original Skylark vein. Thirty-three drill holes were by Skylark (1985-68) and five holes by Kingsman in 2005 define the H Zone with a 200m strike length on surface.

The Serp Zone cuts the vein shear at an oblique angle in the southwest portion of the mine. Twenty-five surface diamond drill holes, drilled by Skylark Resources and Viscount Resources in 1985 and 1986, tested the Serp Zone. Eighteen rotary reverse circulation drill holes were also drilled from surface. Twenty one underground percussion holes were drilled on the Serp Zone in 1989. Most were reported to have returned less than 3.4 g/t Au (0.1 oz/t Au), but 4 holes were reported to have returned high-grade gold assays (Seguin, 1989). The 1989 decline was extended to intersect the Serp Zone. The mineralization was found to be variable in size but generally irregular and discontinuous 1-6 cm thick pyrite veinlets with local native gold and lesser chalcopyrite, galena, specular hematite, and sphalerite and in narrow zones of massive to semi-massive pyrite-pyrrhotite-chalcopyrite in serpentinite and listwanite along the regional Snowshoe fault. Gold assays from the reverse circulation drilling ranged from 0 to 1 oz/ton but were not consistent and overall, were not significant. No production ever came from the Serp Zone.

Last Chance (Reference: Minfile 082ESE216)

The Last Chance Mine is 1.6 km east of the town of Greenwood. Access from Greenwood is by the Phoenix mine road to an elevation of 1050 m. The mine is just off the south side of the road at GPS coordinate 5439276N x 379099E.

Production occurred in 1904, 1905, 1920 and 1935. Total production from the mine was 704 tonnes yielding 4665 grams of Au and 3,026,116 grams of Ag (estimated grade of 6.6 g/t Au and 4299 g/t Ag).

A series of irregular quartz and carbonate veins and lenses occur in talc-carbonate altered serpentinite associated with the Snowshoe fault zone. Mineralization within the veins is of pyrite, galena, sphalerite and tetrahedrite with gold and silver values. This body follows the contact locally between the Jurassic-Cretaceous Greenwood granodiorite pluton on the west and the metamorphosed Permo-Carboniferous rocks of the Upper Paleozoic Attwood Group (limestone) on the east.

By 1898, a two-compartment shaft had been sunk to a depth of 30 m on the Last Chance, without intersecting ore. In 1904 a cross-cut from the 100-foot level in the shaft was driven. A sample of the dump assayed 15.8g/t Au, 278g/t Ag, 2% Pb and 5% Zn (Minfile 082ESE216).

Bay (Reference: Minfile 082ESE005)

The mine, 1.5 km east of Greenwood at an elevation of 1021 m can be accessed by the old Phoenix road and turning to the south for just over 0.4 km. The mine can be found at GPS coordinates 5438408N x 379202E.
Production occurred 1904-1941 (majority in 1935) with 447 tonnes yielding 17 kg of Au and 17 kg of Ag (estimated grade 38.03 g/t Au and 38.03 g/t Ag).

The mine was developed by 2 inclined shafts and 60 m of underground drifts on a quartz vein that varied from cm’s to 1 m wide and was traced on surface for 150 m in a north-south orientation. The vein had a banded appearance. The ore minerals included pyrite, galena, sphalerite, petzite and free gold within a quartz-carbonate gangue. The vein was hosted by medium-grained mesocratic granite that locally displayed with some shearing and propylitic alteration adjacent to the fractures. The granodiorite is part of the Jurassic-Cretaceous Greenwood granodiorite pluton.

Crescent (Reference: Minfile 082ESE012)

The Crescent claim is located 2.7 km northeast of Greenwood and can be accessed from Greenwood by the Phoenix road and then from a side road that connects the Phoenix mine to the old railway grade. It is at GPS coordinates 5440073N x 379360E.

Production occurred in 1905-1908 with 250 tonnes grading 7.6 g/t Au, 1815 g/t Ag, 1.3 % Pb, 1.1 % Zn.

The mine development consisted of a shaft and an adit on a narrow quartz vein. The adit is collapsed.

The quartz vein is 15 cm wide striking 020° and dipping vertically. The vein is mineralized with galena, sphalerite and tetrahedrite. Near the vein, the country rock has an appearance of an "iron cap" due to the amount of oxidation of pyrite which was reportedly sampled but returned only trace amounts for gold and silver (unknown source). A sample taken from the vein returned 8.2 g/t Au, 204 g/t Ag, and 0.2% Pb (unknown source).The hand cobbed ore reportedly assayed 3,806 g/t Ag.

The host rocks on the Crescent claim are mostly dark grey argillite and conglomerate of the Attwood Group.

Mavis (Reference: Minfile 082ESE027)

The Mavis mine is located 1.5 km east of Greenwood at an elevation of 1125 m and is directly south of the Bay Mine. The mine is accessed from Greenwood by the old Phoenix road and lies to the south of the road at the GPS coordinates 83 5438129N x 379277E.

Production occurred in 1906 with 29 tonnes yielding 591 grams of Au and 1742 grams of Ag (estimated grade of 20.4 g/t Au and 60.07 g/t Ag).

The mine was developed by a 10 m deep shaft and a 3 m drift.

Mineralization consists of a quartz vein with gold and silver values probably hosted in the Jurassic-Cretaceous Greenwood Granodiorite pluton.

Prince Henry (Reference: Minfile 082ESE250)

The Price Henry mine is located just east of Greenwood and southwest of the Last Chance Mine. Access is by the old Phoenix mine road to about the 1000 m elevation where the mine is located just on the north side of the Phoenix road at GPS coordinates 5438915N x 378625E.

Production occurred in 1906 and 1917. Total production was 19 tonnes yielding 40,060 kg of Ag, 404 grams of Au and 1130 kg of Pb (estimated grade of 21.26 g/t Au and 2108.5 g/t Ag).

Development consisted of a 3 m deep shaft and 20 m of drifting.

It is classified as a mesothermal polymetallic quartz vein. The vein is reported (minfile) as a 0.45 m thick vein carried pyrite, galena and sphalerite with values in silver, gold and lead. The vein occurs within granodiorite of the Jurassic-Cretaceous Greenwood stock.

Preston (Reference: Minfile 082ESE249)

The Preston mine is 2 km east of Greenwood, directly south of the Crescent Mine. The mine is accessed by the old Phoenix mine road and is located just on the south side of the road at GPS coordinates 5439725N x 379718E.

Production occurred in 1906 when 16 tonnes of ore were shipped yielding 62 grams of Au, 18,444 grams of Ag, and 306kg of Pb (estimated grade of 2.9 g/t Au and 1153 g/t Ag and 1.9% Pb).

In 1905, the mine was developed on a 35 m deep shaft with 80 m of drifts and crosscuts. The ore type was that of a narrow quartz vein most likely hosted by argillites and conglomerates of the Upper Paleozoic Attwood Group.

7.6 BOUNDARY FALLS PROPERTY GEOLOGY

The geology of the property area is presented on regional maps published by Fyles (1990), Church (1986) and Little (1983), and property-scale mapping by Church (1971). The property is underlain mainly by the Paleozoic Knob Hill Complex and the Attwood Group, separated by interpreted thrust faults marked by serpentinite bodies (Figure 7.1). These units are intruded by Tertiary microdiorite dikes and small plugs, and offset by north-trending Tertiary faults. Tertiary faults forming the eastern boundary of the Toroda Creek Graben occur near the west boundary of the property, west of which Tertiary strata are exposed in the down-dropped block. Good rock exposure can be found in some areas, particularly at higher elevations, but a thick layer of glacial till obscures the bedrock at lower elevations.

The Attwood Group in this area consists of black slate and argillite with minor conglomerate (Skomac Formation as proposed by Church, 1985). This unit is limited in extent because, as interpreted by Fyles (1990), the Attwood rocks form a sliver between the serpentinite and Old Diorite on the Lind Creek fault to the north, and serpentinite along the Mount Wright fault to the south. The two thrust faults approach each other and the intervening Attwood Group tapers towards the east (Fyles, 1990). Caron (2006) interpreted the Lind Creek fault to be located further to the north, marked by a serpentinite body in Hass Creek. The faults bounding the Mt Attwood Group were interpreted by Dufresne (2012) as splays of the Mount Attwood fault system. Regardless, there appears to be a significant structure that bounds the Mt Attwood Group argillite unit on the northeast of the Old Diorite unit and is occupied in part by foliated serpentinite.

The massive Old Diorite unit forms cliffs along and above the Lind Creek Fault of Fyles (1990) within the Knob Hill Complex. It consists of coarse-grained hornblende diorite with many crisscrossing light coloured veins of felsic rock. The texture is highly variable and the veins commonly bound blocks of differing texture and composition. Fyles (1990) noted that coarse-grained phases grade into finer grained diorite and these in turn into greenstone of the Knob Hill Group.

Serpentinite occurs as massive relatively thin lenses bodies. It ranges from dark green to black serpentinite to yellow-brown-weathering, hard, listwanite. The listwanite is highly variable in colour and texture, but generally is aphanitic to fine-grained, grey to light grey rock with veinlets of quartz and iron carbonate and flecks of dark minerals and locally of bright green mica.

On the property area, Fyles (1990) had serpentinite lenses tapering out to the west along the Mount Wright and Lind Creek Faults. Caron (2006) also mapped two lenses of serpentinite with a small one extending along the western contact of the Old Diorite for approximately 190 m to the northwest from a larger serpentinite body located along the Mount Wright Fault. Church (1986) noted that at the Skomac Mine lenses of ultrabasic rock were intruded into the pre-existing sheared intrusive contact between the Old Diorite and the Attwood argillite.

A 2005 magnetic survey (Rudd, 2006) supports and adds to the serpentinite distribution in the area as the serpentinite outcrops mapped by Caron (2006) and Fyles (1990) correlate well with magnetic high trends. The magnetics indicate the serpentinite on the Boundary Falls property is essentially a continuous sinuous body (possibly offset by minor faults) along the Mount Wright Fault to the east of Boundary Creek, supporting Fyles (1990) interpretation. The Tilt image also shows a subtle northwest trending high that splits from the main body, in the position of the split mapped by Caron (2006) but extending further, around 700 m to the northwest. This may be significant since mineralization at the May Mac Mine (Skomac) is in part associated with this structure.

Fyles (1990) distinguished the rocks exposed in the footwall (south) of the Mount Wright fault as the deformed and higher grade metamorphic unit of the Knob Hill Complex (Pkm). These rocks include schists, quartzites, amphibolite, marble, dolomite, calcsilicate, and local greenstone, sheared greenstone and chlorite schist. Minor amounts of grey and white crystalline limestone are also present. A sinuous northerly dipping band of marble was traced for a distance of about 150 m westerly from the Provincial campsite on Highway 3 (Church, 1985) and also discontinuously in an east-west band across the property. Church (1985) also designated higher grade metamorphic rocks including contorted quartz-mica schists and gneisses of archaic origin to a "basement complex", exposed only in small areas along Highway 3 and the Kettle Valley Railway.

Triassic Brooklyn Formation has been mapped in the southern part of the property, in two locations; on the southwest part of the property just north of Highway 3 and in the southeast part of the Property near the Ruby showing.

Minor occurrences of granodiorite similar to the Cretaceous Greenwood and Wallace Creek plutons were also mapped by Church (1985) in the property area.

Tertiary volcanic rocks underlie the hilly terrain in the southwest part of the map-area. These are medium brown homogenous lavas comprising what is recognized as Park Rill andesites; the uppermost member of the Marron Formation. The andesites have evidently been displaced downward and tilted easterly against the east-bounding fault of the Toroda Creek Graben (Church, 1985).

Tertiary microdiorite dikes and small plugs cross cut the Knob Hill Complex in the southern portion of the property. These are dark green, fine to medium grained intrusive rocks. Church (1986) describes them as generally fresh and showing little sign of fault dislocation or metamorphism, petrographically similar to lavas of the Marron Formation and best defined as microporphyritic alkali-rich monzodiorites.

A number of Tertiary Faults transect the property area, including the Greyhound Creek fault and Bodie Mtn faults as shown by Fyles (1990). The Greyhound Creek fault occurs on the western part of the property, is northerly striking, and marks the eastern boundary of the Toroda Creek Graben. Knob Hill chert breccia is depicted by Fyles (1990) in the area between the Greyhound Creek fault and northwest branch faults; however, alternatively this unit was interpreted as Triassic chert conglomerate (sharpstone) by Church (1985) and possibly Tertiary in age by Caron (2006). This unit forms rusty cliffs, is locally silicified and carries anomalous gold values in rocks and in soil (Caron, 2006). To the north, two northwest trending faults branch off to the west from the Greyhound Creek fault and strike parallel to the Deadwood fault, which is located further to the northwest and off the property. Another north trending fault was interpreted by Church (1986) near the eastern boundary of the property. The Bodie Mtn. fault extends south from the southern end of the Greyhound Creek fault forming an arcuate west-dipping normal fault that trends southeast and them swings to southwest.

7.6.1 Geology of the May Mac Mine

The geology of the May Mac (Skomac) Mine area was published by Church (1976, 1985) and the only record of the geology on mine levels No. 4, 5 and 6. The May Mac quartz vein system occurs within the Attwood Group of bedded carbonaceous argillite, interbedded locally with cherty sandstone and chert pebble conglomerate, trending southeasterly, subparallel to a sheared contact between the host rocks and the Old Diorite. Bedding consistently strikes northwest and dips moderately.

Lenses of altered ultramafic rock occur north and south of the mine near the contacts of the Skomac argillite. These serpentinite bodies are variably altered to antigorite-talc-carbonate schist (Church, 1985). In 2011, exploration holes were drilled through these serpentinite bodies. From this information the base of the Mount Attwood Formation (Mount Wright Thrust fault) appears to dip moderately northeast at about 40^{o}, and may extend beneath the May Mac mine. The northern contact with the Old Diorite dips steeply to the northwest.

A major fault structure is indicated by Church (1977) along the south margin of the old diorite mass located northeast of the mine. This structure was intersected in drill hole 11BF06 at a distance of about 5 m in the hangingwall of a void interpreted as the Upper Skomac mine workings. Based on the surface map trace, this fault appears to intersect the Upper Skomac vein to the north of the mine, and may also intersect the vein in the vicinity of the Lower Skomac workings.

The Mt Attwood thrust fault of Fyles (1990) dips easterly and therefore may intersect the Skomac vein system at significant depth beneath the deeper part of the mine.

The quartz veins in the mine have been emplaced on shear fractures striking 325^{o}, dipping about 50^{o} northeast thought to be the result of regional shearing stress deflected into and taken up by the incompetent formations along the diorite contact. The shear zone is 3.8 m wide. The relative age of mineralization at the Skomac mine is bracketed by the age of the argillite host rock and the crosscutting microdiorite dyke; an age of Late Cretaceous or Early Tertiary was proposed.

The vein continuity in the mine is affected by pinching, fault offsets, and crosscutting dykes. A number of sinistral northeast-trending offsets on the veins of 1.5 to 4.5 m are noted. A 10 m wide northeast-trending microdiorite dike at the portal area of No. 4 level intersects levels 5 and 6 below at slightly more northerly positions due to its north-northwest 45^{o} dip. The dike clearly cuts the Upper Skomac vein on those levels, with little if any offset in strike; however, alteration, and pyritization of the dike suggests that it was intruded closely after the main mineralization event. Church also documented a granodiorite body that is cut by the Upper Skomac vein, and a pulaskite dike that cuts the vein on No. 4 Level.

7.6.2 Boundary Falls Property Mineralization

7.6.2.1 May Mac Mine

The Skomac quartz vein system is composed of two principal veins carrying precious metal and polymetallic values and lesser parallel sympathetic weakly mineralized quartz veins. The two principal veins, the Upper and Lower Skomac veins, although somewhat different, may in fact be the same vein, either offset by faulting or folded. There has been insufficient drilling between veins to support a positive correlation. Golden Dawn interprets the Lower Skomac vein to be distinct from the Upper Skomac vein based on its steeper dip, different host rocks and relatively elevated gold content.

The Skomac vein system is traceable on surface, underground drifting and now diamond drilling for a 400 m along strike length. The Upper Skomac vein is traceable for 150 m in the dip direction. The Lower Skomac vein has been traced down dip for 250 m.

Church's (1985) maps show the Upper Skomac quartz vein is about 180 metres long and 0.5 to 2.0 m thick. The Upper Skomac vein has a variable northwest strike and for the most part dips 55^{o} northeast, although local variations are common; dips are as low as 35^{o}. Caron (2002) described the Lower Skomac vein as a steeply dipping, northwest trending, massive white quartz vein, 0.75 m wide, which occurs at the contact between argillite and serpentinite.

A 3D model of the May Mac Mine and Skomac veins was constructed by Golden Dawn using available information including the mine area geology by Church (1977) and Golden Dawn's mapping, sampling and drilling to date (Figures 7.6 and 7.7).

Figure 7.6 Longitudinal Section of May Mac Mine and Skomac Veins

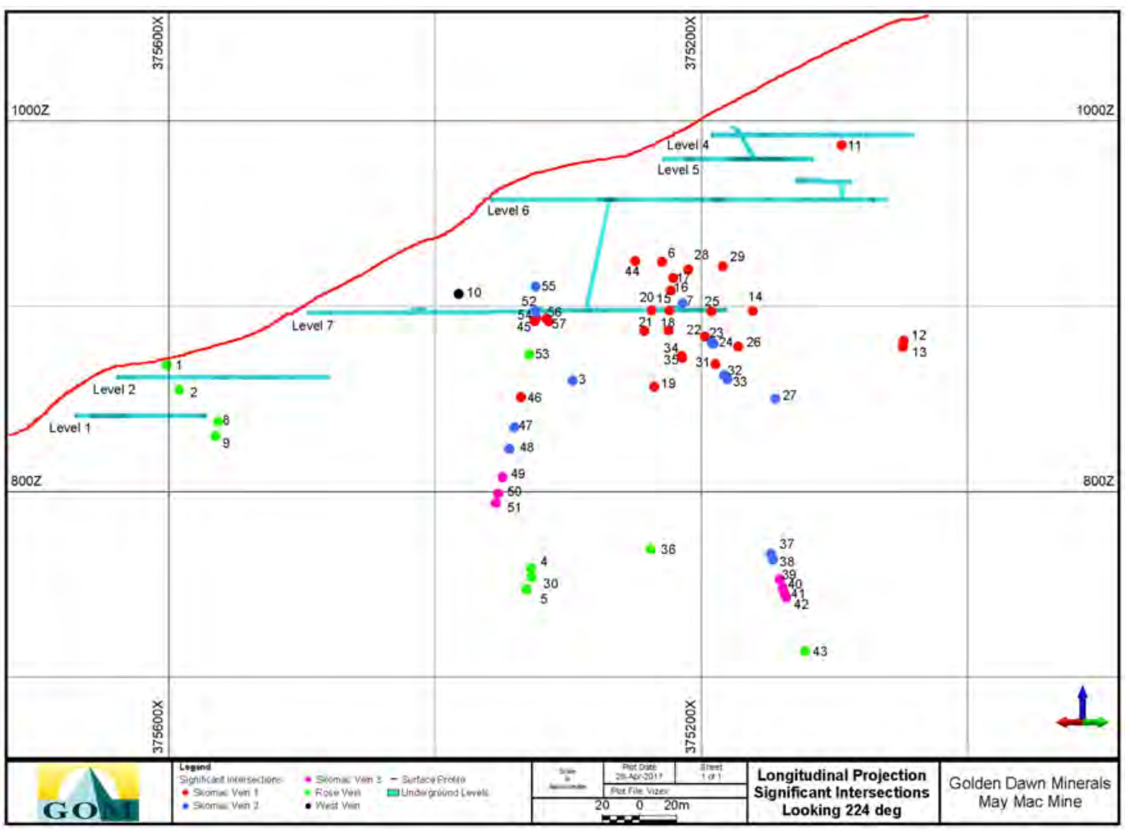
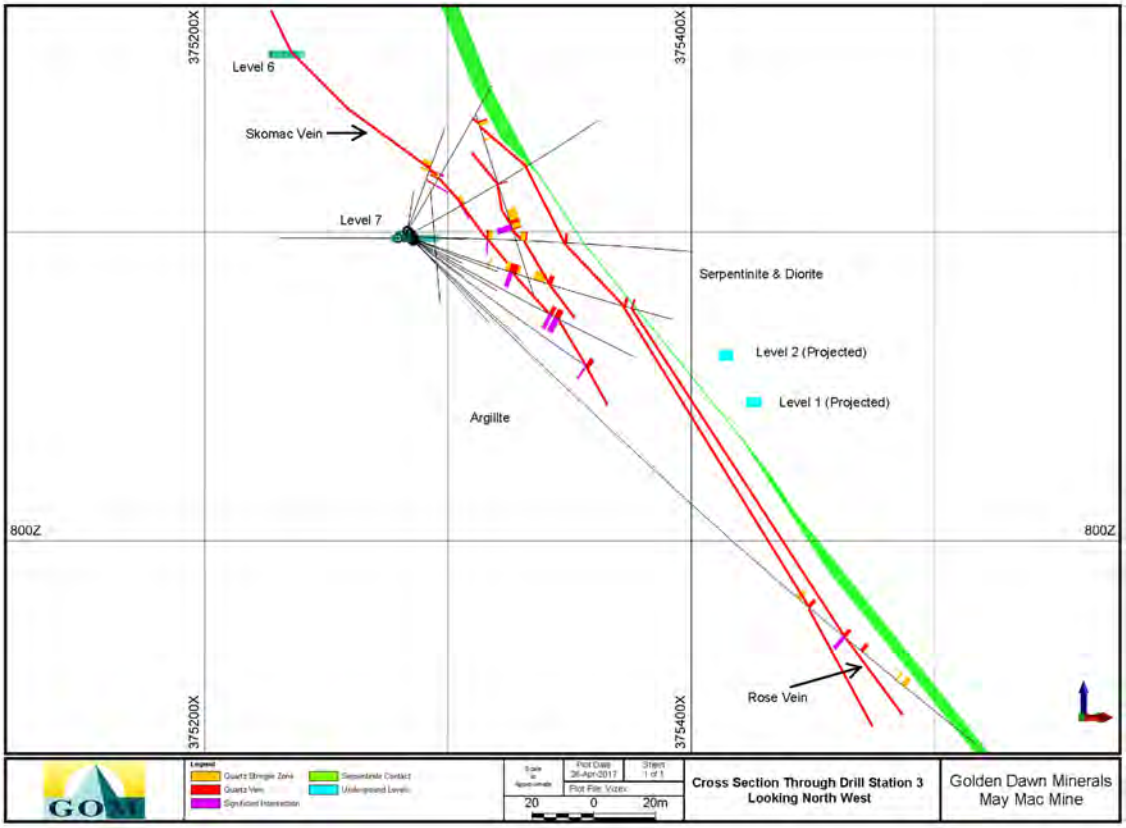


Figure 7.7 Cross-section of May Mac Mine and Skomac Veins



At least four parallel quartz veins are interpreted from the underground drilling, namely, Skomac 1, 2 ,3 and Rose veins (formerly called lower Skomac). Underground drilling has intersected additional veins suggesting there may be up to 6 vein zones of interest but not all appear to be continuous. There are also likely a series of discontinuous quartz stringer zones which locally host mineralization locally. The presence and influence of faulting is poorly understood at this time but it is suspected that a fault off set is present between drill stations 2 and 3. Silver-gold-base metal mineralization appears to be concentrated in discreet shoots. The mineralization abundance and grade generally increases to the northwest where it remains open along strike. Higher grade mineralization is also present locally at depth where it may represent the continuation of historically mined zones below working levels. Deeper drilling has shown that the Rose vein previously drifted on Levels 1 and 2, continuous well beyond the historic workings.

Mineralization consists of pyrite, galena, sphalerite, chalcopyrite, accessory tetrahedrite and some native silver with associated gold. Argentite and polybasite have also been identified. Paxton (1986) writes that the silver minerals appear to be associated with the oldest generation of quartz and occur as intergrowths with coarse subhedral quartz crystals. Later generations of quartz are finer grained and are apt to contain crystals or irregular masses of pyrite and little or no galena. The youngest generation of quartz appears to be completely barren of sulphides. In the high-grade zones sphalerite and chalcopyrite commonly occur with the galena and argentite.

Rock sampling was done in 2015 on all surface outcrops of quartz veins between the lowest level (No. 1 Level) and the highest level (No. 4 Level), including the West vein. Underground samples were collected from the No. 2 level, No. 7 level and No. 6 level.

Surface exposures of quartz veins all returned low values, including samples of veins that have been mined. This suggests that leaching of silver, lead and zinc mineralization may be significant in the near surface environment. Alternatively, the exposures may be located outside of any mineralized shoots within the veins.

A sample on a small secondary vein exposed in the No. 7 level contained galena and assayed 188 g/t Ag, 11% Pb and 3.6% Zn. This is the first time precious metal mineralization has been identified on the 7th level, and the result supports the concept that the mineralized zones mined in the upper workings extend to depth below the 6th level.

Upper Skomac Vein

The Upper Skomac vein has been explored for and exposed in the No. 4, 5, 6 and 7 levels (see Figure 7.8). Within the total strike on the vein, there are four known "shoots" or vein segments labelled AA, A, B and C, each 15 to 35 m long of thickened mineralized quartz lenses. The shoots or segments appear to be aligned on the same structure as gash structures, striking 015^{o} and plunging 40^{o} northerly, almost at right angles to the principal shear direction. The interruption of the gash segments appears to be caused by pinching, fault offsets and crosscutting dykes. Zones A and B are separated by a 10 m wide crosscutting micro-diorite dyke dipping 45 degrees northeast. Zones B and C are separated by a combination of pinching of the vein and offsetting faults with sinister strike slip displacement. Church (1977) also stated that the mineralized shoots plunge 40^{o} towards azimuth 015^{o}. Mining (stoping) was apparently carried out in the thicker portions of the vein. The hangingwall rock appears to be very solid and stoped areas remain open. The excellent ground conditions may be attributed to the competent nature of the argillite.

The vein is strongly banded and is typically composed of massive white quartz separated by stylolitic septae and bands of argillite (Figure 7.10) and is commonly comprised of multiple quartz veins or lenses as shown at the No. 7 portal (Figure 7.9). Lenses of brecciated quartz also occur locally.

Observed mineralization within the vein where it has not been mined varies from non-existent to minor (less than 2%) disseminated and clustered medium-grained pyrite. In the mined out sections of the Upper Skomac, the vein is strongly mineralized with sulphides (10 to 60%), including mainly disseminated to clustered, fine-to medium grained sphalerite, galena, pyrite and chalcopyrite. Well mineralized sections commonly semi-massive sulphides and cockscomb textured quartz with sulphides filling the interstices. Galena commonly occupies dentritic fracture networks likely as a result of remobilization due to its relatively ductile nature. Native silver was observed locally in drill core in very strongly mineralized sections.

Minor quartz veins were noted in the upper workings including secondary veins associated with the Upper Skomac vein, cross veins, and stockwork-type veins hosted in dioritic dikes. All of these minor veins are generally less than 10 cm thick and some of them are mineralized with pyrite and locally sphalerite. The secondary veinlets associated with the Upper Skomac vein are interpreted as extensional veins formed on the margins of main shear that hosts the main vein. The cross veinlets appear to be cross fractures formed during and related to fold deformation, which were subsequently mineralized. Irregular or stockwork type veinlets hosted by diorite dikes appear to be closely related to the same vein event as they are composed of coarse-grained white quartz and are also mineralized with pyrite and very locally contain sphalerite and galena.

In 2011, four character samples taken from the No. 6 level during an inspection by Wayne Ash, a mining engineer, returned high precious and base metal values. These character samples returned values ranging from 10.4 to 84.2 g/t Au and 404 to 2080 g/t Ag from the Upper Skomac vein and wall rock materials within the No. 6 level (Golden Dawn, News Release, May 14, 2013).

Golden Dawn's 2015 rock chip sampling program of 21 samples on the Upper Skomac vein showed the presence of gold, silver, lead and zinc. Chip sample widths ranged from 0.2 m to 1.5 m but averaged 0.55 m wide. Gold grades ranged from detection to 4.65 g/t Au but averaged 0.48 g/t Au. Silver grades ranged from detection to 529 g/t Ag but averaged 68 g/t Ag. Lead values ranged from 20 ppm to >100,000 ppm (11% on assay) but averaged 12,284 ppm. Zinc values ranged from 36 ppm to 36,347 ppm (3.63%) but averaged 3,970 ppm.

Golden Dawn targeted the Upper Skomac vein in its surface drilling in BF15-04, 06, 08, 09, BF16-07, 08, 25, 26, 27 and 28. It also targeted the Upper Skomac vein in underground drilling in holes MU16-001 through MU16-009, MU17-001 through MU17-012 and MU17-014 through MU17-022.

Drill hole BF15-06 intersected the Upper Skomac vein below the No. 7 level and proved that silver-gold mineralization similar to that historically mined from the No. 6 level extends down approximately 60 m to and below the No. 7 level. This indicates the potential for additional mineralization in the areas above and below the No.7 level which has been the focus of subsequent underground drilling by Golden Dawn. Table 7.3 lists the significant mineralized Upper Skomac vein intercepts. Note that in 2017 drilling by Golden Dawn has identified 2 sub parallel veins which they call Upper Skomac 2 and 3, which are identified in the table below.

Figure 7.8 Photo of May Mac Portals


No. 4 Portal
No. 6 Portal
No. 7 Portal
Golden Dawn Minerals Inc.
Greenwood Precious Metals Project
Photos of
May Mac Portals
Projection UTM Zone 11 (NAD 83)
Fig. 7.8

Figure 7.9 Photo of Upper Skomac Vein at May Mac No. 7 Level Portal

Figure 7.10 Photo of Upper Skomac Vein in May Mac No. 7 Level - shows banded texture

TABLE 7.3 SIGNIFICANT UPPER SKOMAC INTERCEPTS FROM GOLDEN DAWN DRILLING										
Hole No.	**Vein**	**From (m)**	**To (m)**	**Drill Length (m)**	**Ag (g/t)**	**Au g/t**	**Pb (%)**	**Zn (%)**	**Cu (%)**	**Estimated True Thickness (m)**
BF15-06	1	144.1	148.5	4.4	218.6	2.49	1.5	2.9	0.2	2.20
Including	1	148.1	148.5	0.4	779.0	4.15	0.4	0.2	0.1	0.20
BF15-06	1	288.3	290.6	2.3	152.0	0.36	1.9	1.9	1.2	0.79
Including	1	289.1	289.7	0.6	377.0	0.81	0.6	1.1	2.9	0.21
BF15-08	1	87.3	88.2	0.9	38.0	0.17	0.4	0.2	N/S	0.45
BF15-09	1	117.2	119.3	2.1	185.9	3.50	1.5	1.8	0.34	1.35
BF16-07	1	39.16	41.20	2.04	2.08	50.9	0.22	+0.5	0.98	0.53
MU16-01	1	17.45	19.78	2.33	131.3	2.34	0.59	0.42	N/S	1.17
including	1	18.68	19.78	1.1	250	4.96	1.2	0.89	N/S	0.55
MU16-02	1	24.09	24.64	0.55	132	0.14	1.9	1.6	N/S	0.45
MU16-03	1	18.38	18.87	0.49	21.1	0.55	0.08	0.1	N/S	0.48
MU16-04	1	17	17.5	0.5	57.5	0.32	0.7	1.1	N/S	0.43
MU16-05	1	32.92	34.42	1.5	176.5	1.06	3.2	1.1	N/S	0.86
MU16-06	1	69.28	70.04	0.76	173	0.22	2.7	2.5	N/S	0.26
MU16-07	1	23.4	23.84	0.44	105	0.15	3.7	0.3	N/S	0.36
MU16-08	1	34.57	35	0.43	84.8	0.2	0.6	0.1	N/S	0.35
MU17-001	1	32.05	33.61	1.56	235	2.7	0.8	1.4	0.2	0.89
MU17-002	1	59.44	61.36	1.92	231.2	0.51	5.9	6.4	0.3	0.96
MU17-003	1	103.67	104.8	1.13	23.4	1.64	0.3	0.1	N/S	0.87
MU17-004	1	21.98	22.87	0.89	57.5	0.58	0.6	0.6	0.1	0.77
MU17-005	1	32.67	33.72	1.05	177	7.91	0.5	0.4	0.1	0.80
MU17-006	1	224.82	226.18	1.36	32.1	6.32	0.3	0.6	0.1	0.87
including	1	225.72	226.18	0.46	79.5	14.55	0.6	0.3	0.1	0.30
MU17-009	1	188.71	190.07	1.36	2	2.61	N/S	N/S	N/S	0.68
BF16-26	1	177.47	183.54	6.07	133.6	0.54	3.6	1.5	N/S	3.04
including	1	177.94	178.9	0.96	688	1.18	19	7	N/S	0.48
MU17-007	1	62.7	63.2	0.5	371	8.86	0.7	N/S	0.2	0.25
MU17-008	1	50.77	52.13	1.36	149	0.53	0.31	0.5	0.1	0.96
including	1	51.62	52.13	0.51	338.5	0.77	6.9	1	0.2	0.36
MU17-010	1	188.82	194.07	5.25	81.1	0.06	2.1	0.6	N/S	2.63
including	1	188.82	191.48	2.66	121.4	0.07	3.5	1	N/S	1.33
BF16-26	2	184.2	184.66	0.46	49.4	2.15	0.7	2.7	N/S	0.30
MU16-09	2	55.3	55.78	0.48	151	2.97	0.9	0.7	N/S	0.28
MU17-007	2	76.68	77.28	0.6	111	1.26	2.12	3.84	0.39	0.39
MU17-008	2	52.8	54.86	2.06	559.4	1.27	0.2	2.1	0.1	1.32
MU17-010	2	195.78	196.78	1	86	0.01	5.3	1.6	N/S	0.50
MU16-09	3	58.54	58.94	0.4	152	0.4	4.5	1.7	N/S	0.20
MU17-007	3	82.1	82.8	0.7	23.2	3.77	0.8	1	N/S	0.35
MU17-010	3	211.6	212.8	1.2	174.3	8.2	3.7	2.6	0.1	0.60
including	3	211.6	212.1	0.5	228	19.65	8.8	6.2	0.2	0.25
including	2	52.8	53.34	0.54	1935	4.21	0.7	7.1	0.2	0.35
MU17-012	1	30.93	31.39	0.46	335	7.53	0.2	0.5	N/S	0.3
MU17-014	1	7.4	7.84	0.44	1.4	1.19	N/S	0.1	N/S	0.25
MU17-014	1	65.97	67.5	1.53	49	1.63	0.1	0.6	N/S	0.98
MU17-014	2	89.96	90.6	0.64	77.5	0.58	0.1	0.6	N/S	0.32
MU17-014	2	105.92	108.49	2.57	252.6	0.93	9.9	4.3	0.1	1.29
including	2	107.2	108.49	1.29	494.5	1.21	19.6	8	0.1	0.65
MU17-014	3	129	129.56	0.56	49.5	12.55	1.4	2	0.1	0.28
MU17-014	3	141.43	143.06	1.63	5.7	3.28	N/S	0.1	N/S	0.28
MU17-014	3	149.45	150	0.55	11.6	2.65	0.1	0.3	N/S	0.19
MU17-015	2	13	13.41	0.41	18	1.26	0.3	0.6	N/S	0.29

Table 7.3 Significant Upper Skomac Intercepts From Golden Dawn Drilling										
Hole No.	**Vein**	**From (m)**	**To (m)**	**Drill Length (m)**	**Ag (g/t)**	**Au g/t**	**Pb (%)**	**Zn (%)**	**Cu (%)**	**Estimated True Thickness (m)**
MU17-017	1	6.65	7.02	0.37	6.4	4.23	0.1	0.4	0.1	0.19
MU17-018	2	15.37	15.84	0.47	74	0.3	1.2	0.9	0.1	0.39
MU17-021	1	11.94	12.33	0.39	22.5	6.12	1.5	1.2	0.1	0.2
MU17-021	1	15.84	16.4	0.56	58.8	16.17	2.3	3.3	0.1	0.28
including	1	15.84	16.15	0.31	90.5	23.7	3.7	5.5	0.1	0.16

N/S: no significant result

Lower Skomac Vein (Rose)

The lower levels, No.1 to 3, were thought to be driven on a parallel vein system further down slope by Church (1985). Caron (2002) described the lower vein in these adits as a steeply dipping northwest trending massive white quartz vein 0.75 m wide. The steep dip of this vein and its different host rocks distinguish it from the vein in the upper mine levels.

The Lower Skomac vein can be examined in the No. 2 level. The Lower Skomac vein strikes approximately parallel to the Upper Skomac vein in the upper workings but dips steeply. The vein consists of banded massive white quartz (Figure 7.11). The banding is generally less prominent than in the Upper Skomac vein. Mineralization consists of local lenses or clusters of medium grained pyrite along the footwall portion of the vein and finely disseminated pyrite in the immediate footwall argillite.

At the portal of the No. 2 level, the Lower Skomac vein occurs at a sheared contact between argillite on the west and altered ultramafic rock on the east. Deformed secondary extensional quartz veins are developed in the footwall argillite adjacent to the main vein.

No. 1 level is flooded and not accessible. The portal is situated approximately directly down dip from the No. 2 portal but there is no vein at the portal. Host rocks are entirely ultramafic rocks. No. 3 level was located a short distance to the northeast from No. 2 portal but is thought to be on a separate parallel vein to the Lower Skomac. A relatively small vein is exposed in the adit. The No. 3 level is inaccessible due to overgrowth.

Figure 7.11 Photo of Lower Skomac Vein in No. 2 Level - shows banded texture

Limonitic stain along footwall where the vein is associated with pyrite.

Golden Dawn's 2015 rock chip sampling program of 26 samples on the Lower Skomac vein showed the presence of gold, silver, lead and zinc. The 2015 set of chip samples on the Lower Skomac vein averaged 0.53 m width, ranging from 0.18m to 0.97 m. Gold grades ranged from detection to 36.37 g/t Au but averaged 3.08 g/t Au. Silver grades ranged from detection to 178 g/t Ag but averaged 34 g/t Ag. Lead values ranged from 20 ppm to 3,699 ppm (0.37%) but averaged 509 ppm. Zinc values ranged from 20 ppm to 2,563 ppm (0.26%) but averaged 555 ppm. Within that set was a series of 10 samples collected over a strike length of 34 m at intervals of 3 to 4 meters of the vein and wall rocks. The 34 m strike length averaged 0.64 m wide with an average grade of 5.2 g/t Au and 61.8 g/t Ag.

Golden Dawn targeted the Lower Skomac vein in its surface drilling in BF15-01, 02, 03, 06 and BF16-01, 02, 03 and 04.

Drill hole BF15-06, extended beyond the Upper Skomac vein towards the projected strike extension of No. 1 and 2 adits, and intersected a second mineralized quartz vein zone. This new zone lies 140 m further northwest of the No. 1 and No 2 levels, 150 m deeper than the No. 7 level and 90 m vertically below the No. 1 level.

Continuation of silver-gold mineralization to nearly double the previously known depth is demonstrated by the discovery in the lower intercept in hole BF15-06. Furthermore, elevated copper and gold values in the lower intercepts may indicate a metal zonation from silver, lead, and zinc in the upper zones to copper and gold at lower elevations. Such zonation is consistent with models of veins related porphyry systems with metals sourced from a mineralized intrusion at depth. It is postulated that the lower vein zone extends south westerly to the Lower Skomac vein intercepted in Holes BF15-01 and BF15-02.

Holes BF16-3 and BF16-4 were drilled to intersect below the No. 2 level where significant gold assays were obtained. These holes intersected banded quartz veins mineralized with pyrite, sphalerite and minor chalcopyrite and galena, with significant gold, silver, copper lead and zinc values. The intercepts are elevated in gold relative to those in the Upper Skomac vein and are located along strike to the southeast of the new zone discovered in hole BF15-06. The mineralization consists of banded quartz vein and quartz stockwork with disseminated to massive iron and base-metal sulphides (pyrite, sphalerite galena and chalcopyrite). Holes BF16-03 and BF16-04 demonstrate that the Lower Skomac vein extends below the historic mine workings and is generally higher in gold content than the Upper Skomac vein. In addition, these intercepts may be an extension of the deep zone intersected in hole BF15-06. Table 7.4 lists the significant mineralized Lower Skomac vein intercepts.

TABLE 7.4
SIGNIFICANT LOWER SKOMAC INTERCEPTS FROM GOLDEN DAWN DRILLING

Hole No.	From (m)	To (m)	Length (m)	Ag (g/t)	Au g/t	Pb (%)	Zn (%)	Cu (%)	Estimated True Thickness (m)
BF15-01	24.4	24.7	0.3	16.0	9.85	N/S	N/S	N/S	0.26
BF15-02	35.0	35.5	0.5	5.0	2.55	0.1	N/S	N/S	0.41
BF16-03	56.83	57.47	0.64	8.85	25.5	0.12	0.31	0.35	0.32
BF16-04	62.34	64.40	2.06	3.53	80.2	0.39	>0.5	>0.95	1.46
including	62.34	63.43	1.09	4.77	151.0	0.55	>0.5	>1.00	0.70

West Vein

The West Vein is a parallel vein to the Upper Skomac vein and is located 100 m west of the No. 7 Portal. This vein is exposed in outcrop at the collar of an historic shaft at coordinates 375228E, 5435570N and 951m elevation, which lies on the southeast corner of the historic Republic claim. It is hosted within argillite and consists of a banded quartz vein 0.2 m wide that strikes and dips subparallel to the Upper Skomac vein. Quartz material in the dump at below the outcrop is mineralized with coarse pyrite and local galena.

Golden Dawn's 2015 rock chip sampling program of 1 sample and 2 grab samples on the West vein showed variation on gold, silver, lead and zinc values. The chip sample was 0.2 m width returned low values. The grab samples returned 6.6 and 8.37 g/t Au and low silver, lead and zinc values.

Golden Dawn targeted the West vein in its surface drilling in BF15-05, 07 and BF16-05. Hole BF16-06 intersected quartz vein mineralized with pyrite, sphalerite and galena, with significant assays for gold, silver, copper, lead and zinc values. Table 7.5 lists the significant mineralized West vein intercepts.

TABLE 7.5
SIGNIFICANT WEST VEIN INTERCEPTS FROM GOLDEN DAWN DRILLING

Hole	From (m)	To (m)	Interval (m)	Gold (g/t)	Silver (g/t)	Copper (%)	Lead (%)	Zinc (%)	Estimated True Thickness (m)
BF16-06	59.60	60.50	0.90	2.13	12.1	0.02	0.41	>1.00	0.16

Greyhound Creek Fault Breccia

The Greyhound Creek Fault Breccia is a relatively large area of limonitic altered rocks exposed on cliffs west of the creek that marks the Tertiary Greyhound Creek fault. Although somewhat difficult to ascertain due to the highly altered and oxidized nature of the rocks, the rocks appear to be comprised of chert conglomerate or breccia.

Alteration includes argillic clay alteration and very local fine drusy silica veinlets. The only evidence of mineralization is the strong limonitic staining, presumably derived from oxidation of pyrite.

The area of altered rocks correlates with elevated values for gold, silver, copper and arsenic in soil samples from the 2011 geochemical survey. Golden Dawn's 2015 rock chip sampling in the Greyhound Creek area, sampled along the cliffs to investigate the source of elevated metal values in soils from the previous geochemical survey (Dufresne, 2012) and reports of altered rocks (Caron, 2002). The results were generally low with many values below detection for gold and silver. Slight elevations in gold values were detected in the southernmost three samples, with values between 0.180 and 0.197 g/t Au.

7.6.2.2 Boundary Falls - MinFile No 082ESE171

The Boundary Falls mineral occurrence includes the Glory Hole, No. 1 Vein and a number of other mineral showings. The Glory Hole vein has a similar strike to the Skomac veins, but a much different dip. The No. 1 vein is north-northeast trending and steeply west dipping, similar in orientation to Tertiary faulting and dyking in the Skomac area.

Glory Hole

The Glory Hole occurrence is located 1 km south of the May Mac mine at UTM coordinates 375,278E and 5,434,577N hosted in a shear zone within Knob Hill Group chert and mica schist close to the contact with a Tertiary diorite-monzodiorite intrusion. The Glory Hole showing consists of more than one quartz-veined zone. The accessible historic underground development consists of a portal and short adit that crosscut the main zone, which was drifted on to the west and then raised on. The main zone appears to strike approximately 082^{o} and dips 68^{o} north, and consist of a veined zone up to 1.5 m wide bounded by a fault on the hangingwall and an adjacent quartz stringer zone on the footwall side that is 0.7 m wide. Individual quartz veins in the stockwork range up to 20 cm wide constituting 30-50% of the zone. The veins are massive coarse-grained white quartz containing local clots of disseminated pyrite and locally semi-massive pyrite with lesser galena and sphalerite. At the lowest level exposed, the vein zone is truncated and presumably offset by a shallow-dipping fault that dips 24^{o} southeast.

In 1975, Amigo completed two holes testing beneath the Glory Hole vein which lacked encouraging results (Tully, 1976). The vein was reported to contain pyrite, galena, tetrahedrite and minor grains of chalcopyrite ion surface outcrop. An assay of 14.1 g/t Au and 31.9 g/t Ag was reported by Tully (1978).

In 2002, InvestNet Inc. conducted limited prospecting activities, recovering high-grade gold samples from the Glory Hole areas. A grab sample of semi-massive pyrite with lesser galena and sphalerite assayed 69 g/t Au, 2335 ppm Pb, 8341 ppm Zn and 100.6 g/t Ag with anomalous molybdenum, cobalt, arsenic, cadmium, bismuth and mercury (Assessment Report 28307).

It is noteworthy that at the portal on the southwestern side of the Glory Hole, the host rocks consist of marble that is mineralized with abundant pyrite and local (5 x 20 cm) lenses of oxide material that is magnetic. Pyrite content increases toward the vein and approaches 30%, occurring as fine disseminations that are laminated following folded bedding. This appears to be a local skarn type occurrence formed where the vein intersects a marble unit. The marble unit appears to be limited in width, of about 10 m.

Golden Dawn's 2015 rock chip sampling program of 4 samples on the Glory Hole showed the presence of gold, silver, lead and zinc. Chip sample widths ranged from 0.6 m to 8.0 m but averaged 2.65 m wide. Gold grades ranged from 0.11 g/t to 6.22 g/t Au but averaged 2.18 g/t Au with low silver, lead and zinc values.

Golden Dawn targeted the Glory Hole in its surface drilling with 6 holes; BF16-19 to BF16-24. Table 7.6 lists the significant mineralized Glory Hole vein intercepts.

TABLE 7.6
SIGNIFICANT GLORY HOLE VEIN INTERCEPTS FROM GOLDEN DAWN DRILLING

Hole	From (m)	To (m)	Drill Interval (m)	Silver (g/t)	Gold (g/t)	Lead (%)	Zinc (%)	Copper (%)	Estimated True Thickness (m)
BF16-24	31.35	31.6	0.25	148	N/S	N/S	N/S	N/S	0.14

No. 1 Vein

The No. 1 vein is the more developed prospect of the occurrences within the Boundary Falls sector and is located at UTM coordinates 375,532E and 5,434,363 N some 350 m southeast of the Glory Hole and 1.2 km south-southeast of the May Mac mine on the former Amigo property and Boundary Falls crown grant (L889). No. 1 Vein is a massive white quartz vein 0.5 to 1 m wide striking northeast and dipping steeply northwest. Mineralization includes pyrite, sphalerite, galena and tetrahedrite. This showing was developed in 1975 by a tunnel that was driven 45 metres in a northwesterly direction to the No. 1 Vein Zone, which was extended 18 m in 1978. The tunnel was driven to intersect the downward projection of a mineralized quartz vein exposed at surface. Historical workings have exposed the vein over a strike length of 35 m (Tully, 1976).

Samples from underground are reported by Tully (1978) to contain 0.42 oz/t Au and 4.0 oz/t Ag over widths of 0.3 to 2.0 feet. A diamond drill hole is also reported to have been drilled westerly into the vein from surface that intersected 7.9 g/t Au and 582 g/t Ag over a 1.5 m intercept (true width ~ 1.1 metres).

Three chip samples by Caron (2002) reported near the face of the cross-cut were 0.2 m of 14.4 g/t Au, and 31.2 g/t Ag, 0.3 m of 6.6 g/t Au and 13.7 g/t Ag and 0.6 m of 4.8 g/t Au and 137 g/t Ag. A further sample of the vein from surface returned 3.9 g/t Au and 21.9 g/t Ag across 0.6 m. One drill hole which
tested the vein returned.

Golden Dawn's 2015 rock chip sampling program of 5 samples on the No. 1 showing showed the presence of gold, silver, lead and zinc. Chip sample widths ranged from 0.4m to 1.3 m but averaged 0.74 m wide. Gold grades ranged from 0.27 g/t to 17.07 g/t Au but averaged 5.2 g/t Au, with low silver, lead and zinc values.

Golden Dawn targeted the No. 1 vein in its surface drilling with 10 holes; BF16-09 to BF16-18. Table 7.7 lists the significant mineralized No. 1 vein intercepts.

TABLE 7.7
SIGNIFICANT NO. 1 VEIN INTERCEPTS FROM GOLDEN DAWN DRILLING

Hole	From (m)	To (m)	Drill Interval (m)	Silver (g/t)	Gold (g/t)	Copper (%)	Lead (%)	Zinc (%)	Estimated True Thickness (m)
BF16-10	41.31	42.46	1.15	3	1.04	N/S	N/S	N/S	0.81
BF16-11	19.26	20	0.74	5.8	6.12	N/S	N/S	N/S	0.42
BF16-15	5.5	5.7	0.2	28	0.98	N/S	N/S	N/S	0.13
BF16-17	44.94	46.26	1.32	2.8	1.3	N/S	N/S	N/S	1.01
BF16-18	14.5	15	0.5	0.5	1.13	N/S	N/S	N/S	0.43
BF16-18	36.57	37.83	1.26	1.8	1.37	N/S	N/S	N/S	0.89

Other Vein Occurrences

A number of additional barren to weakly mineralized quartz veins are exposed in various historic mine workings on the Boundary Falls property. Generally, these veins are hosted in the lower Knob Hill Complex, are less than 1 m wide as massive to banded quartz. Mineralization is sporadic and includes disseminated fine to medium-grained pyrite and local chalcopyrite and/or galena.

8.0 DEPOSIT TYPES

The Greenwood area is a strongly mineralized region, ranking sixth largest in gold production in British Columbia with 38,278 kg of gold (approximately 1.3 million ounces of Au) (BCMEM, 2016). Much of the production was from the Phoenix copper-gold skarn, on the Phoenix Property. The Republic district of northern Washington, USA 50 km south of the claims, through to 1997, produced at least 3 million troy ounces (93 tonnes) gold and 17 million troy ounces (550 tonnes) silver from all deposits of epithermal origin (Fifarek, Devlin, and Tschauder, 1996). Within the past 20 years there has been approximately 10 new deposits discovered immediately south of the border many of which have been mined, adding to the production history of the Republic Graben. The Republic District is geologically and structurally similar to the Greenwood District. Greenwood District has not received the same amount of exploration activity as the Republic District partly because of unconsolidated land packages in the Greenwood Camp. It is suspected that some of the gold in the Phoenix skarn and at the Lexington-Grenoble Deposit may has been introduced in Tertiary times along steeply dipping fractures sets related to Tertiary extension. Furthermore, the Rossland mining camp 50 km east of the claims recovered 85,904,623 grams of gold, 109,509,814 grams of silver, and 71,502 kg of copper between 1897 and 1941 from similar veins and geology to that on the Golden Crown Property.

There are a number of mineralizing styles and models in the Republic/Greenwood Districts:

1) Gold and Copper-Gold Skarns: Fe-Cu massive sulfide/oxide horizon in Brooklyn Fm. Present in all major "skarn" deposits in the district. Examples are Phoenix, Motherlode and Crown Jewel ("Buckhorn Mtn").
2) Mesothermal Quartz Veins with Gold (+/- Ag, Pb, Zn). Examples are Providence Mine, Dentonia, Camp McKinney, May Mac. Polymetallic silver-lead-zinc veins with lesser gold.
3) Epithermal Quartz Veins commonly in the Republic District and often marked by the paleosurface between the Eocene Marron and Kettle River Formations and the overlying Oligocene Klondike. Examples are Mountain Formation Knob Hill Mine, Emanuel Creek, Union Mine and Picture Rock Quarry.
4) Cretaceous – Jurassic Alkalic Intrusives with Cu-Au-Ag (+/- PGE's) with a strong spatial association between these intrusives and Jurassic thrust faults. Examples are Lexington-Lone Star alkalic porphyry type mineralization, Franklin Camp, Sappho cpy rich shears with PGE's and Au, Golden Crown, Wildrose and Rossland type veins close spaced, parallel, en-echelon veins of gold in massive pyrrhotite-pyrite-chalcopyrite veins & quartz veins.
5) Gold Mineralization Associated with Serpentinite related to #3, #4 because an association with structure = an association with serpentinite. Known bodies of mineralization have traditionally been small, but often high grade. Examples are Athelstan – Jackpot - gold in massive arsenopyrite + pyrite in listwanite and Lexington-Grenoble Deposit.
6) Gold-bearing volcanogenic magnetite-sulfide mineralization. Syngenetic mineralization within the Triassic Brooklyn Formation. Gold-bearing massive magnetite and sulfides along the same stratigraphic horizon. At least some of the gold is attributed to a late stage epigenetic (Jurassic or Tertiary) event. Examples are Lamefoot and possibly Sylvester K.

9.0 EXPLORATION

9.1 LEXINGTON PROPERTY

The issuer has not completed any exploration on the Lexington Property.

9.2 GOLDEN CROWN PROPERTY

The issuer has not completed any exploration on the Golden Crown Property.

9.3 TAM O'SHANTER PROPERTY

Golden Dawn drilled 972.47 m in 5 diamond drill holes at the Tam O'Shanter Property between November, 2010 and March, 2011. Drilling targeted the Wild Rose Vein System as well as the Deadwood Gold Zone. Golden Dawn also completed soil sampling during the spring 2011 program. Data from the soil sampling surveys delineated a distinct 1.4 km long Au in soil geochemical anomaly that is coincident with the Wild Rose – Deadwood gold zones along with untested anomalies along strike northwest and southeast of the west-northwest trending zones and a number of other Au-Cu targets that require follow-up exploration. The results of the 2010-2011 drilling and soil sampling program are reported in detail in Dufresne et al. (2011).

Golden Dawn completed follow-up drilling at the Tam O'Shanter Property in fall 2011. The fall 2011 drill program, completed between August and October, 2011, consisted of a total of 9 NQ sized diamond drill holes totalling 2,796.0 m. Four of the holes (11WR13 – 11WR15, 11WR24) were designed to continue testing and extending the Deadwood gold zone. The remaining 5 holes (11WR19 – 11WR23) were exploration holes testing various soil geochemical anomalies identified by the soil sampling program completed earlier in the year. The details of the diamond drilling program can be found in the "Drilling" section of this report.

9.4 PHOENIX PROPERTY

The issuer has not completed any exploration on the Phoenix Property other than taking limited rock chip samples at the Sylvester K prospect in 2016 to verify the tenor of gold values stated by previous explorers. A total of 8 rock chip samples were collected from Sylvester K from the south wall of the south trench at this showing.

9.5 BOUNDARY FALLS PROPERTY

Golden Dawn Minerals Inc. carried out mineral exploration work in 2015, 2016 and spring 2017 on the property. Geological mapping, rock chip sampling and drilling were conducted to re-assess, confirm and extend the various zones and prospects on the property.

9.5.1 Rock Geochemical Sampling

In 2015, a total of 85 rock chip samples were collected from various sites where veins or altered and mineralized rocks were exposed. The sampling confirmed the presence of silver mineralization in the May Mac Upper Skomac vein, and gold mineralization in the May Mac Lower Skomac vein, and the Glory Hole and No. 1 veins of the Boundary Falls mineral occurrences. Results are discussed under Mineralization in Section 7.6.2.

9.5.2 Sampling Method and Approach

Rock samples were collected by the Dr. Matt Ball or by a field assistant under his direct supervision. Samples consisted of chip sampling across outcrops or underground exposures of mineralized rocks. Individual chip sample lengths ranged from 1 to 5 m. Continuous chip samples were collected by collecting rock chips along a line perpendicular to the orientation of the structure or feature being sampled. All samples were collected by hand, using geological hammers. Each sample was placed in a plastic sample bag (12x20 inch) with a sample tag, and the bags were labeled with sample numbers by felt marker pen. Sample weights varied from 1.5 to 2.5 kg. Care was taken to sample the interval equally and continuously for a representative sample, and to collect multiple samples of the mineralized zones so that multiple results could be obtained for the zone samples. Sample locations were marked in the field with red spray paint, fluorescent plastic flagging, and/or aluminum tags.

It is this author's opinion that the sample quality was typical of and suitable for exploration sampling for geochemical analyses, and that there were no readily apparent factors that may have resulted in sample biases for the samples.

10.0 DRILLING

10.1 LEXINGTON PROPERTY

Table 10.1 provides a summary of all documented historic drill programs conducted on the Lexington Property by all explorers.

TABLE 10.1
SUMMARY OF ALL DRILLING PROGRAMS ON LEXINGTON PROPERTY

Year	Diamond Drillholes	Percussion Drillholes	Total Metres	Company
1967		R-1 – R-5	457	Silver Standard
1968	68-1 68-2		289	Silver Standard
1970		R-6 – R-22	1,226	Silver Standard
1969-1970	DDH-1 – DDH-33		5,564	Lexington
1972		P-1 – P-37	2,018	Granby
1974	DDH-34 – DDH-37		336	Aalenian
		P-74-1 – P-74-13	974	Aalenian
1976		R-23 – R-34	863	Granby
1980	UG-1 – UG-20		1,056	Grenoble
1981	T-38 – T-60		4,535	Teck
1982-1983	TG-61 – TG-84		2,858	Teck
1983	TS-85 – TS-87		218	Teck
1986	L-86-1 – L-86-7		641	Canadian Pawnee
1987	CP-87-1 – CP-87-9		1,039	Canadian Pawnee
1988	88-1 – 88-17		2,783	Candol
1992	92B1 – 92B6		228	Britannia Gold
1993	93B1 – 93B13		1,862	Britannia Gold
1996-1997	B96-1 – B97-29		1,396	Britannia Gold
2003	O3GCD-1 – 6		905	Gold City
2004	DHL04-01 – 40		7,389	Gold City
2005	DHL05-41 – 59		3,189	Merit Mining
2007	DHL07-01 - 19		3,282	Merit Mining
2008	UG08-001 - 297		2,709	Merit Mining
Total			**45,817**	

The issuer has not completed any drilling on the Lexington Property.

10.2 GOLDEN CROWN PROPERTY

Table 10.2 provides a summary of all documents historic drill programs conducted on the Golden Crown Property by all explorers.

TABLE 10.2 SUMMARY OF ALL DRILLING PROGRAMS ON GOLDEN CROWN PROPERTY			
Year	**Number of Holes**	**Metres**	**Diamond Drill Holes**
1968	10	1,028.37	68-1 to 68-16
1976	5	221.10	76-1 to 76-5
1978	10	608.45	78-2 to 78-12
1979	4	328.50	79-1 to 79-4
1980	16	1,537.10	80-1 to 80-16
1980	2	121.00	JR-1 to JR-2
1981	4	304.00	JR81-1 to 81-4
1981	9	746.50	81-1 to 81-9
1983	18	671.44	83-1 to 83-18
1984	16	1,864.79	84-1 to 84-11; 84-22 to 84-26
1985	4	619.27	85-1 to 85-4
1986	15	862.07	86-1 to 86-17
1987	8	523.96	87-18 to 87-26
1988	60	3,479.95	88-1 to 88-12; U88-1 to U-48
1989	19	1,108.38	89-1 to 89-14; U89-1A to U89-5
1990	34	2,116.01	90-1 to 90-34
2003	47	2,136.61	03CDH-01 to 47
2004	2	229.82	DCH04-01 to 02
2007	6	509.00	GCD-01 to 06
Total	**289**	**19,016.32**	

The issuer has not completed any drilling on the Golden Crown Property.

10.3 TAM O'SHANTER PROPERY

Table 10.3 summarizes the extent of documented drilling by all explorers on the property.

TABLE 10.3 SUMMARY OF ALL DRILL PROGRAMS ON TAM O'SHANTER PROPERTY				
Year	**Company**	**Number of Holes**	**Metres**	**Target**
1979	Oneida Resources	3	658.37	Bengal Zone
1988	Houston Metals	3	806.20	Deadwood
1991	Minnova	3	403.36	Deadwood
1992	Minnova	9	1181.24	Deadwood
1995	Kettle River	10	1731.90	Deadwood
2004	Kettle River	8	1408.80	Deadwood
2010	Golden Dawn	1	181.97	Deadwood
2011	Golden Dawn	8	2,283.05	Deadwood
2011	Golden Dawn	5	1,303.00	Reconnaissance
	Totals	**50**	**8,984.89**	

10.3.1 Golden Dawn Drilling

Golden Dawn completed drilling on the Tam O'Shanter Property in 2 campaigns: a fall 2010 - spring 2011 program and a fall 2011 program. The initial 2010-2011 drilling comprised of 972.47 m of NQ sized drill core in 5 diamond drill holes targeting the Deadwood Gold Zone on the Tam O'Shanter Property (10WR07 to 11WR11). Golden Dawn's fall 2011 drilling campaign ran from August 30, 2011, to October, 2011 with drilling duties being conducted by T-Drilling Limited of Timmins, ON. Geological services and overall project supervision were provided by personnel from APEX Geoscience. A total of 2,796.0 m in 9 NQ sized diamond core holes were completed. The collar locations were pegged using a hand held GPS and were not re-surveyed after completion of drilling. Holes 11WR013 to 11WR15, and 11WR24 tested the continuity and attempted to expand the size of the Deadwood Gold Zone. The other five holes, 12WR19 to 12WR23 were reconnaissance drill holes designed to test strong copper and gold anomalies. The locations of the drill holes are presented in Appendix IX.

10.4 PHOENIX PROPERTY

Table 10.4 attempts to summarize the historic exploration drilling but gaps in the data at this time make the table incomplete. For much of the historic drilling, specific hole locations, drill logs and assay data are not available. Much of the early drilling did not assay for gold. Additional drilling may have been done by Granby during the late 1960's and early 1970's which is not included in Table 10.4. At least 250 holes are known on the property. Of this total, 102 holes relate to drilling at the Oro Denoro. No attempt has been made to summarize the vast amount of mine-related percussion and diamond drilling at the Phoenix mine, which according to some records may be in excess of 1,115 diamond drill and reverse circulation holes.

Only the more recent drill core (post-1980) is stored and available at Kettle River Resources' core facility on DL 2701, SL2 and is in good condition.

TABLE 10.4
SUMMARY OF ALL DRILL PROGRAMS ON PHOENIX PROPERTY

Year	Showing	No. of Holes	Type of Drilling	Total metres	Operator	Reference
1938	Marshall	8	core	409	Cominco	Malcolm, 1945
1950	Cyclops	?	core	488	Silver Chief	MOM Ann Report 1952
1953-65	B.C. Mine	?	core + perc	?	?	Hitchens, 1991; KRR maps
1955-56	Oro Denoro	15	core	1700	Noranda	Weymark, 1966
1955-56	Emma	2	core	126	Noranda	Hitchens, 1991
1955-56	R. Bell	2	core	123	Noranda	Hitchens, 1991
1963-65	Oro Denoro	29	core	4417	West Coast	Weymark, 1966
1966	Oro Denoro	9	core	?	West Coast	Giroux, 1989
1966	Twin Creek	2	core	?	Granby	Paxton, 1966
1967??	Oro Denoro	42	core	4091	Furukawa	KRR Report 46
1967-70	Gilt Edge	?	core + perc	?	Granby	Paxton, 1970
1968-69	Emma	?	core	?	West Coast	Hitchens, 1991
1968	Pac	9	core	919	Granby	Caron, 1996a
1969	LG 1-3 areas	6	core	?	Granby	Paxton, 1970
1969	Marshall	6	core	?	San Jacinto	Drummond, 1983
1970	Tokyo	?	core	?	Bayland	Minfile 082ESE257
1971	Pac	11	core + perc	1004	Granby	Caron, 1996a
1973-74	Monte Cristo etc	?	percussion	?	Highland Lode	Drummond, 1983
1974	B.C. Mine	15	core	?	Granby	Hitchens, 1991
1975	Oro Denoro	7	percussion	201	Granby	KRR Report 46
1983	Rathmullen	4	core	37	Kettle River	Kyba & Daughtry, 1984
1983	Sylvester K	23	core	1900	Kettle River	KRR maps 2310-2316
1984	Sylvester K -Brooklyn	4	core	290	Noranda	Keating & Bradish, 1984
1985	Brooklyn	1	core	182	Noranda	Keating & Mitchell, 1985
1987	Emma	6	core	873	Skylark	Burns, 1988
1987	Wendy 13	1	rc	55	Noranda	Gill, 1987
1991	Monarch, Rawhide, Snowshoe, Wendy 13	10	core	960	Battle Mtn	Leigh, 1991; Caron, 1992a
1991	B.C. Mine	2	core	233	Canamax	Hitchens, 1991
1991	Wilgress Lake	3	core	567	Canamax	Hitchens, 1991
1991	Bluebell	1	core	167	Canamax	Hitchens, 1991
1992	Marshall, New York, Gilt Edge, Glenside	9	core	1364	Battle Mtn	Caron, 1992b
1996	R. Bell/Summit	14	core	1080	Kettle River	Caron, 1997a
1997	Sylvester K	9	core	1004	Echo Bay	Caron, 1997
1997	Marshall	1	core	52	Echo Bay	Caron, 1997
1997	Emma	5	core	252	Echo Bay	Rasmussen, 1997a
1997	R. Bell/Summit	15	core	967	Echo Bay	Rasmussen, 1997a,b
1997	Bluebell	3	core	257	Echo Bay	Rasmussen, 1997a
2007	Minnie Moore	10	core	1485.55	Kettle River	Caron, 2012
2008	Minnie Moore	5	core	1019.5	Kettle River	Caron, 2012
2008	Battle Zone	7	core	1137.09	Kettle River	Caron, 2012
2013	Stemwinder	1	core	239.85	Kettle River	Caron, 2012
2014	Stemwinder	1	core	154.51	Kettle River	Caron, 2012

The issuer has not completed any drilling on the Phoenix Property.

10.5 BOUNDARY FALLS PROPERTY

To date, approximately 11,268 m of drilling in 105 diamond drill holes by all parties have been completed on the May Mac property, mostly on the Skomac veins. Table 10.5 provides a summary of the campaigns to date. Information is very limited on the drilling prior to Golden Dawn's campaigns. Drill logs are available for the 1975 drilling. No core is available from these earlier campaigns.

TABLE 10.5
SUMMARY OF ALL DRILL PROGRAMS ON BOUNDARY FALLS PROPERTY

Table 10.5						
Summary of All Drilling Programs on May Mac Property						
	May Mac/ Skomac		**Glory Hole, No. 1**			
Year	**Surface Diamond Drillholes**	**Underground Diamond Drillholes**	**Surface Diamond Drillholes**	**Core Size**	**Total Metres**	**Company**
1965				EX	1067	Skomac Mines
1975			5		331.2	Amigo Silver Mines
1977		7			245	Roberts Mines
1978			2	BQ	90	Amigo Silver Mines
1987		15			450	Empire Gold
1995	1				91	Bow Mines
2011	7			NQ	1934.8	Golden Dawn
2015	9			NQ	1021	Golden Dawn
2016	12	9	16	NQ&BQTW	3008.97	Golden Dawn
2017		22		BQTW	3028.8	Golden Dawn
Total	**29**	**53**	**23**		**11,268**	

10.5.1 Golden Dawn Drilling

2011 Drill Program

Seven NQ diamond drill holes were completed in a total of 1934.8 m in 2011. The surface drilling was performed by 2163694 Ontario Ltd. (T-Drilling) of Timmins, Ontario. Surface drilling in 2011 was conducted in two twelve hour shifts with a MTM 2500 Marcot rig. In 2011, drill holes were logged by Sean Milliken, Tomas Poitras and Edward Parker of APEX Geoscience Ltd. Drill core was logged and is stored in wooden, covered racks at a facility located 4.5km east of Rock Creek BC, approximately 30 km west of the property.

2015 Drill Program

A total of 1,041 metres of NQ size core was drilled by 2163694 Ontario Ltd. (T-Drilling) of Timmins, Ontario in 9 surface diamond drill holes in 2015, between October 28 and December 14, targeting the Skomac veins. The drilling took place on a single twelve hour shift using a skid-mounted Boyles BBS-37 rig. The program were supervised and managed by Dr. Matt Ball, P. Geo. Geologists who logged the 2015 holes were mainly Matt Ball, P.Geo. Drill core was logged and is stored in wooden, covered racks at a facility located 4.5 km east of Rock Creek BC, approximately 30 km west of the property. A total of 443 core samples were collected and shipped to the Met-Solve Analytical Services Inc. laboratory in Langley, BC. for gold and multi-element geochemical analysis.

2016 Drill Program

A total of 28 NQ-sized surface diamond drill holes in 2,204.0 m were completed by 2163694 Ontario Ltd. (T-Drilling) of Timmins, Ontario on a single twelve hour shift using a skid-mounted Boyles BBS-37 rig between March 18 and December 5, 2016; twelve surface holes targeting the Skomac veins and sixteen surface holes targeting the Glory Hole and No. 1 vein. A total of 9 BTW thin wall-sized underground diamond drill holes in 804.98 m were completed by DMAC Drilling of Abbotsford, BC between November 21 and December 5, 2016 targeting the Skomac veins. The program were supervised and managed by Dr. Matt Ball, P. Geo. The 2016 surface holes and were mainly logged by Rachelle Hough, P.Geo. of Apex Geoscience Ltd. During underground drilling program, the logging geologists were Rachelle Hough, P.Geo., Jerry Holmes B.Sc. and Bob Krause, B.Sc. Drill core was logged and is stored in wooden, covered racks at a facility located 4.5 km east of Rock Creek BC, approximately 30 km west of the property. A total of 784 samples were collected and delivered by Greyhound bus to Activation Laboratories in Kamloops, BC.

2017 Drill Program

A total of 22 BQ thin wall-sized diamond drill holes in 3028.8 m were drilled underground between January 24 and March 31 by DMAC Drilling of Abbotsford, BC, using an electric-hydraulic Discovery 1 core drill (600Volt, 75HP), targeting the Skomac veins. The program were supervised and managed by Dr. Matt Ball, P. Geo. During underground drilling program, the logging geologists were Rachelle Hough, P.Geo., Jerry Holmes B.Sc. and Bob Krause, B.Sc. Drill core was logged and is stored in wooden, covered racks at a facility located 4.5 km east of Rock Creek BC, approximately 30 km west of the property. Density measurements were done on a suite of samples from the 2016 underground drill core at Act Labs in Kamloops BC. A total of 799 samples were collected and delivered by Greyhound bus to Activation Laboratories in Kamloops, BC.

10.5.2 Collar Surveying

Drill hole collar locations in 2011 and 2015 were located by hand held GPS. The 2016 surface drill holes and 2016 and 2017 underground drill holes were surveyed by Siegmund Hepperle of McKeil Construction Surveying Ltd.

10.5.3 Downhole Surveying

The 2015 holes were not surveyed with a downhole instrument. The 2011 and 2016 surface drill program used the Reflex EZ-Shot system to survey the drill hole azimuth and inclination. Readings were taken nominally every 50 m by drill contractors and entered into the drilling database by on-site geologists. The 2016 and 2017 underground drilling used Reflex EZ-Shot system to survey the drill hole drill hole azimuth and inclination. Readings were taken at the collar and nominally every 50 m by drill contractors and entered into the drilling database by on-site geologists.

10.5.4 Core Recovery

Core Recoveries for the 2011 surface drill program ranged from 48% to 130% averaging 98%. Core recoveries through 2015 and 2016 surface and 2016 and 2017 underground drill programs ranged from 38% to 110%, averaging 95%. Core recovery through mineralized intersects were normally >90% and often >95%. Core size for the surface drilling was NQ. Core size for the underground drilling was BTW.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The issuer has not conducted any sampling on the Lexington or Golden Crown Properties.

11.1 TAM O'SHANTER PROPERTY

11.1.1 SAMPLING METHOD

Core was logged and sampling conducted at a secure geology camp set up in Rock Creek. After taking custody of the drill core, geological staff supplied by APEX conducted an industry compliant program of geological and geotechnical logging, photography, and core sampling for both the 2010 and 2011 drill programs. The author found that industry standard logging conventions were used by APEX to capture information from the drill core.

Drilling was oriented roughly southwest and was conducted along a northwest-southeast trending direction, targeting the mineralization associated with the Deadwood Zone. As with the 2010-2011 drill program, the fall 2011 drilling sampled drill core continuously from top to the bottom of each hole. Samples were generally collected over 1.5 m intervals, however, samples were started and ended based upon geological contacts, therefore, in some cases there are samples intervals that are less than or greater than 1.5 m. Samples less than 1.5 m are restricted to sections with quartz or high sulphide veins or zones that were expected to return anomalous gold values. Drill core was marked for sampling and halved with a diamond saw or manual hydraulic splitter; samples were then bagged and labeled. This preparation was conducted by the geological staff supplied by APEX.

Previous operators have indicated that exploration in this area had been hindered by poor recovery. This program carefully recorded all recoveries, and though there were extensive intervals of broken core and some intervals with poor recovery, overall the core recovery was considered satisfactory.

11.1.2 CHAIN OF CUSTODY

Core was delivered by drill contractor personnel to a secure geology camp set up in Rock Creek. Geological staff supplied by APEX took possession of the core through the geological logging and sampling steps. Samples were shipped by geological staff supplied by APEX via Overland West Freight Lines to the Inspectorate America Corp (Inspectorate) lab in Richmond, BC. Inspectorate conducted the analysis. At no time did a director or employee of Golden Dawn take possession of the core or samples.

In the author's opinion the core transfer procedures and security measures described by Golden Dawn conform to standard industry practice.

11.1.3 SAMPLE PREPARATION AND ANALYSES

Sample preparation was conducted by Inspectorate, in which drill core samples up to 2 kg are dried for 24 hours, followed by crushing. They are then riffle split to approximately 250 g and pulverized to greater than 85% -200 mesh. The Inspectorate laboratory equipment is cleaned between each sample with compressed air and brushes. Gold was assayed by Inspectorate method Au-1AT-AA, which is a 1AT fire assay and Atomic Absorption Spectroscopy (AAS). Copper was assayed by method Cu-4A-OR-ICP, which is inductively coupled plasma (ICP) analysis designed to test for ore grade. A 30-element geochemical analysis was conducted, by Inspectorate method 30-4A-TR, in which 30 trace elements are analyzed using inductively coupled plasma atomic emission spectroscopy (ICP-AES) with a 4-acid (near total) digestion.

11.1.4 QUALITY CONTROL AND QUALITY ASSURRANCE

A stringent QA/QC protocol was adhered to during drilling and sampling in which standards, duplicates, and blanks were inserted at an interval of every seven to ten samples, alternating between blanks and standards. A field blank sample consisting of gravel and containing negligible elemental trace was also inserted in to the sample stream. Standard references were either a gold standard (CDN-GS-3H, CDN-GS-4C, CDN-GS-7B or CDN-GS-1P5D), or a copper-gold standard (CDN-CGS-24, CDN-CGS-28 or CDN-CM-6). Results were monitored for accuracy and are described below in the following subsections.

Inspectorate uses an in-house quality assurance/quality control (QA/QC) program for soil sampling which involves the insertion of blank and standard samples. Inspectorate is accredited under International Organization for Standardization (ISO) 9001:2008, as well as by other international and national standards, such as the United Kingdom Accreditation Service (UKAS), National Accreditation of Measurement and Sampling (NAMAS), and the Dutch National Accreditation Board (STERLAB). Inspectorate participates in round robin testing managed by Canada Centre for Mineral and Energy Technology (CanMet), and employs assayers who are BC Certified.

The author cannot comment on the quality control measures that may or may not have been taken by other companies during previous sampling programs that are discussed in the history section of this report. The author does not see any reason to question the quality, accuracy and validity of the historical data.

Blanks

A total of 128 blanks, or 4.70% of the total number of samples, were submitted for analysis. Blank material consisted of gravel containing negligible elemental trace. Of the 128 blank samples sent for analysis a total of three exceeded accepted limits. Two exceeded 0.045 ppm Au, and one exceeded the accepted Ag limit of 1.315 ppm.

Re-assay of the failed Au blanks and surrounding samples showed good agreement with the original results. The failed Ag blank was also re-assayed along with several samples on either side of it. The re-assays showed that four additional samples had been contaminated. This failure was due to contamination of Teflon beakers at the lab that were shared between high grade and geochem samples. The assay certificates that were affected by the failures were re-issued following the re-assaying process.

Standards

Certified Reference Material (CRM) with known Au and/or Cu values was inserted into the sample stream with the same frequency as blanks material in order to provide a check on the accuracy of the lab. One hundred and twenty-nine standard samples were sent for assay, or 4.73% of the total assays. A total of seven different standards were used during the fall 2011 drill program (Table 11.1). All standards were obtained from CDN Resource Laboratories in Langley, BC.

TABLE 11.1 CDN LABORATORIES CERTIFIED REFERENCE MATERIAL USED						
Standard	Certified Data (Au)			Certified Data (Cu)		
	Mean (g/t)	SD (g/t)	%RSD*	Mean (%)	SD (%)	%RSD*
CDN-CGS-24	0.487	0.025	5.1%	0.486	0.017	3.5%
CDN-GS-3H	3.04	0.115	3.8%	-	-	-
CDN-CM-6	1.43	0.045	3.1%	0.737	0.0195	2.6%
CDN-GS-4C	4.26	0.11	2.6%	-	-	-
CDN-GS-7B	6.42	0.23	3.6%	-	-	-
CDN-GS-1P5D	1.47	0.075	5.1%	-	-	-
CDN-CGS-28	0.727	0.038	5.2%	2.089	0.0480	2.3%

As with banks the assay results were generally good, but there were several that assayed outside the ±2 standard deviation limit. Four of these were re-assayed along with a group of samples on either side. Results of the re-assays show that there was likely contamination but it only seems to have affected the standards and not the surrounding assay samples. The assay certificates affected by the re-assays have been re-issued. More of the out of limits standards should be re-assayed to further increase confidence in the assay results.

Duplicates

In addition to blank and CRM material duplicate samples were also inserted into the sample stream. These duplicates consisted of a second split taken from the coarse reject of every seventh to tenth sample. A total of 127 duplicates were analyzed from the 2011 fall drill program, comprising 4.67% of the assays. The duplicate results show good correlation with the original assay results.

11.2 PHOENIX PROPERTY

11.2.1 SAMPLING METHOD

A total of 8 rock chip samples were collected from Sylvester K from the south wall of the south trench at this showing. Rock samples were collected by a field geologist supplied by APEX, under the direct supervision of Dr. Ball, P. Geo. and COO of Golden Dawn. Samples were of 2.0 to 3.0 m long continuous chips traverses along a line perpendicular to the orientation of the mineralized outcrop. All samples were collected by hand using a geological hammer. Each sample was placed in a plastic sample bag (12x20 inch) with a sample tag, and the bags were labeled with sample numbers by felt marker pen. Sample weights varied from 1.5 to 2.5 kg. Care was taken to sample intervals and not to collect spot samples so that the samples are representative of the intervals sampled. Sample locations were marked in the field with fluorescent plastic flagging, and/or aluminum tags. The samples were shipped to ActLabs in Kamloops, B.C.

It is this author's opinion that the sample quality was typical of and suitable for exploration sampling for geochemical analyses, and that there were no readily apparent factors that may have resulted in sample biases for the samples.

11.2.2 SAMPLE PREPARATION AND ANALYSES

No field sample preparation was done for rock chip samples collected from surface outcrops. The samples were shipped to ActLabs in Kamloops, B.C. Analyses for gold were by Fire assay method using 50 gram samples and ICP-AES finish. The samples were crushed to 90% passing 10 mesh, then riffle split 1000g, and pulverized (mild steel) to 95% passing 150mesh (105µ), cleaning the pulveriser bowl with sand after each sample, for improved sub-sample representivity and analysis precision. Silver and other elements were analyzed by ICP-AES using a four acid digestion. Over detection limits for gold were re-analyzed by 30g Fire Assay with a gravimetric finish.

11.2.3 QUALITY CONTROL AND QUALITY ASSURRANCE

Quality control measures employed before dispatch of samples to the analytical laboratory included the insertion into the sample stream of certified standard pulps and a field blank sample consisting of gravel and containing negligible elemental trace, each at a frequency of 1 for every 20 samples. The standards were prepared and certified by CDN Resource Laboratories of Langley, B.C., Canada. Analytical results for the standards were found to be within ±15% of the acceptable range for the standard values, which is deemed acceptable for geochemical analyses of this nature and considering slight differences in analytical methods. The analytical results were also monitored by the laboratory following their routine internal QA/QC protocol.

It is this author's opinion that the sample preparation, security and analytical procedures on the samples taken by Golden Dawn are adequate and meet typical industry standards for geochemical analyses of mineralized rocks.

11.3 BOUNDARY FALLS PROPERTY

11.3.1 SAMPLING METHOD

The following points describe the sampling procedures and steps taken during Golden Dawn's 2011 surface diamond drill program:

- Core was first cleaned, organized and photographed;
- Geotechnical logging was done by a geologist;
- Core boxes were properly labeled, using scribed aluminum tags that were stapled to the ends of the core boxes;
- Core logging and sample selection was performed by the geologists;
- Core from the entire hole was sampled in 1.5-2.0 m regular intervals with occasional variance depending on lithologic contacts;
- Core logging geologists measured and marked the designated "from" and "to" of each interval on the core for specific sample breaks;
- Sample tags were assigned to each interval with a corresponding tag number stapled to the box at the end of each sample;
- Every 10th sample tag was designated for a Golden Dawn insert standard, blank or duplicates, alternating. The core cutting technician retained the standards and placed the entire pouch of the standard into the labeled plastic sample bag in the corresponding tag order, duplicate samples were quartered;
- Core was transported by the drill crew to the Golden Dawn's Rock Creek office/facilities for logging and later cutting, sample dispatching and storage;

- Prior to cutting, the core was adjusted to identify any important fabrics;
- The core was split or cut in half, bisecting fabric or vein material evenly;
- Technicians were instructed to place the same side of core back into the box and the other into a labeled clean plastic sample bag; Sample bags were placed in address-labeled rice bags, sealed and shipped by either Greyhound or Overland West Freight Lines to Inspectorate in Richmond, BC for gold and multi-element geochemical analysis;
- Sample shipment records were maintained. Records were also kept of sample preparation, analysis requested and the person intended to receive the results;
- Frequent visits were made by the site geologists to the core cutting facilities to ensure the quality of the sampling was maintained; and
- No samples were cut by an officer, director or associate of Golden Dawn.

The following points describe the sampling procedures and steps taken during Golden Dawn's 2015 and 2016 surface and 2016 and 2017 underground diamond drill programs:

- Core was first cleaned, organized and photographed;
- Geotechnical logging was done by a geologist;
- Core boxes were properly labeled, using scribed aluminum tags that were stapled to the ends of the core boxes;
- Core logging and sample selection was performed by the geologists;
- Rock units that exhibited sulfide content >1% were sampled in widths determined on the basis of rock type and sulfide mineral content, with the maximum typically being 0.3 to 2.0 m. Sampling in massive to semi-massive sulfide vein material was essentially continuous, generally no longer than 1.0 m long but varied depending on similar mineralization characteristics or lithology. Samples of unmineralized hangingwall and footwall material were generally done at 0.5 to 1.5 m lengths around heavy sulfide sections;
- Core logging geologists measured and marked the designated "from" and "to" of each interval on the core for specific sample breaks;
- Sample tags were assigned to each interval with a corresponding tag number stapled to the box at the top of each sample;
- Every 10th sample tag was designated for a Golden Dawn insert standard or blank, alternating. The core cutting technician retained the standards and placed the entire pouch of the standard into the labeled plastic sample bag in the corresponding tag order;
- Core was transported by the drill crew to the Golden Dawn's Rock Creek office/facilities for logging and later cutting, sample dispatching and storage;
- Prior to cutting, the core was adjusted to identify any important fabrics;
- The core was cut in half, bisecting fabric or vein material evenly;
- Technicians were instructed to place the same side of core back into the box and the other into a labeled clean plastic sample bag;
- Sample bags were placed in address-labeled rice bags, sealed and shipped to Activation Laboratories Ltd. of Kamloops, BC. for sample preparation and analyses;
- Sample shipment records were maintained. Records were also kept of sample preparation, analysis requested and the person intended to receive the results;
- Frequent visits were made by the site geologists to the core cutting facilities to ensure the quality of the sampling was maintained; and
- No samples were cut by an officer, director or associate of Golden Dawn.

The protocol for the 2016 and 2017 underground drill programs did not differ from that of the 2016 surface drilling campaign.

11.3.2 CHAIN OF CUSTODY

The 2015 samples were collected by Dr. Mathew Ball, P.Geo., COO and Chief Geologist of Golden Dawn or under close supervision by Dr. Ball. The samples collected by Dr. Ball were retained in his possession and personally delivered to the sample preparation laboratory or to a courier for delivery. At no time were the samples left in possession by any director of Golden Dawn. The samples were delivered to Met-Solve Analytical Services in Langley, B.C.

The drill core samples collected for holes drilled in 2016 were collected under direct supervision by Dr. Mathew Ball, P.Geo., COO and Chief Geologist of Golden Dawn. Half core samples were cut from the NQ size drill core and bagged at a core processing facility located near the property. The 2016 samples were shipped to ActLabs in Kamloops, B.C.

11.3.3 SAMPLE PREPARATION AND ANALYSES

The 2015 samples were delivered to Met-Solve Analytical Services in Langley, B.C. Met-Solve is part of the Sepro group of companies and is an independent commercial laboratory that is ISO 9001 certified and operates according to ISO 17025 standards. Analyses for gold were by Fire assay method using 50 gram samples and ICP-AES finish, with a detection limit of 0.03 ppm. Ag and other elements were analyzed by ICP-AES using a four acid digestion. Detection limits are given on the analytical certificates. Samples with contents above the detection limit were re-analyzed by methods suitable for most ores and high grade materials (aqua regia digestion and ICP-AES or AAS). Samples suspected of having native precious metals were selected and re-analyzed by the metallic screen method. Results were comparable to the original results but the screen analyses were regarded as final.

The 2016 and 2017 samples were shipped to ActLabs in Kamloops, B.C. Actlabs is an independent, Canadian company, based in Ancaster, ON, and operates 25 laboratories in 13 countries; including a full-service, ISO 17025 accredited lab in Kamloops, BC. Analyses for gold were by Fire assay method using 50 gram samples and ICP-AES finish. The samples were crushed to 90% passing 10 mesh, then riffle split 1000g, and pulverized (mild steel) to 95% passing 150mesh (105µ), cleaning the pulveriser bowl with sand after each sample, for improved sub-sample representivity and analysis precision. Silver and other elements were analyzed by ICP-AES using a four acid digestion. Over detection limits for silver were re-analyzed by 30g Fire Assay with a gravimetric finish. Blank and certified reference standard samples were included at a frequency of 1 in 20 to monitor the assay lab QA/QC performance.

It is this author's opinion that the sample preparation, security and analytical procedures on the samples taken by Golden Dawn are adequate and meet typical industry standards for geochemical analyses of mineralized rocks.

11.3.4 QUALITY CONTROL AND QUALITY ASSURRANCE

Quality control measures employed before dispatch of samples to the analytical laboratory included the insertion into the sample stream of certified standard pulps and a field blank sample consisting of gravel and containing negligible elemental trace, each at a frequency of 1 for every 20 samples. The standards were prepared and certified by CDN Resource Laboratories of Langley, B.C., Canada. Analytical results for the standards were found to be within ±15% of the acceptable range for the standard values, which is deemed acceptable for geochemical analyses of this nature and considering slight differences in analytical methods. Analytical results for the standards were found outside of the ±15% acceptable range for the standard values were re-assayed. The analytical results were also monitored by the laboratory following their routine internal QA/QC protocol.

12.0 DATA VERIFICATION

Technical information in this report has been derived from a review of existing reports, memos and data collected by previous exploration companies working on land in and around the Greenwood Precious Metals Project area, from data in government reports, assessment reports and public papers and records. It should be noted that some of the source records have been lost through the course of various owners but the majority is preserved and available. The available files are extensive. The authors have referenced these documents where applicable, but cannot verify the accuracy or completeness of the information given in these reports. Some of the reports do not report Quality Assurance and Quality Control practises now expected in the industry.

12.1 SITE VISIT AND INDEPENDENT SAMPLING

Paul Cowley, P.Geo., former Vice President Exploration of Gold City Industries and Merit Mining Corp. for a time, supervised the 2003, 2004, 2005 and 2007 drilling and sampling activities on Lexington-Grenoble and Golden Crown deposits. Mr. Cowley resigned as Huakan's Vice President Exploration in April 2014. Since then, Mr. Cowley provides independent consulting services to numerous companies including Huakan and Golden Dawn. Mr. Paul Cowley, P.Geo., has visited both Lexington-Grenoble and Golden Crown sites on numerous occasions from 2003 to fall 2015. His last site visit to the Lexington Property was September 2016. Snow blocked access to prevent a site visit in April 2017. His last site visit to the Golden Crown Property was April 23, 2017 confirming the static conditions of assets at the Greenwood process plant and tailing facility.

The Golden Crown Project was visited by Mr. Eugene Puritch, P. Eng. on April 24, 2006. Data verification sampling was done on diamond drill core, with twelve samples distributed in eleven holes collected for assay. Mr. Puritch's last site visit to Golden Crown was January 17, 2013.

The Lexington-Grenoble Property was visited by Mr. Eugene Puritch, P.Eng. on April 25, 2006. Data verification sampling was done on diamond drill core, with twelve samples distributed in twelve holes collected for assay. Mr. Puritch's last site visit to Lexington was January 17, 2013.

There has been no drilling or material change to the Lexington and Golden Crown Properties since December 2008.

Mr. Cowley has made numerous visits to parts of the Phoenix Property since 2003. Mr. Cowley performed a site visit to the Phoenix Property on April 23 and 24th, 2017. During this visit he was able to visit a number of sites including the Snowshoe, Phoenix, Oro Denoro and Emma Mines as well as looked at drill core from Sylvester K. Mr. Cowley also confirmed the presence and condition of drill core on site from drill campaigns between 1983 and 2008. Snow on secondary and tertiary access roads during the April 2017 visit limited and prevented the visiting of other mineral occurrences on Phoenix.

Mr. Cowley was unable to visit the Tam O'Shanter Property in April 2017 due to snow barring access.

Mr. Cowley performed a site visit to the Boundary Falls Property on April 23, 2017, where he visited the Glory Hole and No. 1 vein occurrences and well as the May Mac Mine. The No. 7 and 2 levels were inspected where the Upper and Lower Skomac veins and stopes were examined. Drill collars to underground and surface drilling was inspected. Underground drilling was in progress within the No. 7 level workings. Mr. Cowley examined core from the 2015 – 2017 drill programs from core storage at the Rock Creek camp facilities. Seven verification core samples were taken from 2015 – 2017 core from the Upper Skomac vein. Results are presented in Section 12.7.

12.2 LEXINGTON-GRENOBLE DEPOSIT DRILLING TO 2006

12.2.1 MERIT QC PROGRAM

Reference Material

For the year 2003, Gold City/Merit geologists inserted an uncertified reference standard, which was obtained from International Metallurgical Ltd. of Kelowna, B.C. It was made from the Boston deposit in the Hope Bay Greenstone Belt in Nunavut and was characterized simply as either high (7.85 g Au/t) or low (3.01 g Au/t). Graphs were made for these reference materials but the fact that there were very few data to work with and this material was not certified, the results were not considered statistically significant.

Beginning in 2004 and continuing into 2005, the Gold City/Merit geologists inserted three different certified reference materials obtained from CDN Resource Laboratories in Delta, B.C. The CDN standards were GS-1A, GS-10 and GS-11. Standards were inserted into the sample stream at a rate of 1 in 20 by the project geologists.

Certified reference material is inserted regularly into batches of samples sent to the lab for analysis in order to monitor the accuracy (lack of bias) of the lab results. The CDN GS-1A, which was used in 2004 and 2005, fared very well, in that the results fell within the 95% confidence limits of +/- 2 st dev.

The CDN standard GS-10 did not perform well and the results of the batches into which it was inserted may have been compromised. The CDN standard GS-11 had 7 out of 20 data points removed as outliers, and this was undoubtedly due to the erroneous insertion of the standard GS-1A in its place, with a mean value of 0.78 g/t Au. Analysis of the remaining data points indicate it too performed poorly in its task if quantifying accuracy in lab results.

Blanks

Gold City/Merit purchased blanks consisting of pulverized river rock (predominantly granite) from CDN for use in the 2004 and 2005 drilling programs. CDN's assaying of the blank material found it to contain <0.01 g/t Au.

Blanks were inserted into the sample stream at a rate of 1 in 20. Results show the occasional outlier, but P&E considers the overall results to be satisfactory without any indications of contamination.

Duplicate Sampling Program

The 2003-2005 Lexington-Grenoble drilling program implemented a comprehensive duplicate check sampling program at the Ecotech Lab. For the purposes of this data verification, only pulp duplicates were verified, because if the pulp duplicates were shown to have poor precision, it stands to reason that all other sub-samples would have even poorer precision.

All pulp duplicates for 2003, 2004 and 2005 were imported into a database and subjected to a series of tests, which are designed to quantify precision (reproducibility).

The 2003 data for Lexington-Grenoble had a duplicate precision (error) of 22% on the Thompson-Howarth precision plot and a corresponding error of 31% on the absolute relative difference versus the sample pair mean plot. The fact that these two methods of precision estimation do not agree well is due to the large spread of data. The precision likely lies somewhere between the values derived by the two methods say approximately 26.5%.

The 2004 pulps for Lexington-Grenoble remained within the 10% precision threshold using both methods, and according to this, there appear to be no problems with the 2004 results.

The 2005 pulps are borderline acceptable, but there are fewer data to work with, so this may be a factor.

When error in pulp precision rises, it is related to a higher heterogeneity in the pulps, which can either be due to a coarse gold problem, or poor lab sample preparation. An acceptable precision in pulp duplicates for Au is 10%.

12.2.2 2006 Pulp Re-Analyses

P&E requested the re-analysis of all 2003 data and 20 % of the 2004 data for samples, which were shown to be within the constrained model constructed in Gemcom. There were too few 2005 data, (which was borderline), and there were no recommendations for re-analysis.

The 2003 and 2004 re-runs were done on the remaining pulp material. The pulps were divided into two samples, with each being analyzed separately. Each batch of sample re-runs had quality control samples (standards and blanks) inserted to monitor lab accuracy.

Results of 2006 Pulp Re-Analyses

The 2003 re-runs had a precision (error) of 37 % on the Thompson-Howarth precision plot, and a precision of 39% on the absolute relative difference versus sample pair mean plot. These two methods agree well, therefore the error is in between the two at 38 %. The 2004 re-runs had a precision (error) of 45% on the Thompson-Howarth precision plot, and a precision of 30 % on the absolute relative difference versus sample pair mean plot. These two methods do not agree well. The poor precision and lack of agreement in the two methods is the result of a large data spread.

All certified reference material inserted in the batches of re-runs fell within the acceptable limits, which indicates good lab accuracy.

All blanks inserted in the batches of re-runs were acceptable, indicating no contamination at the preparation stage.

The consistently poor precision in the pulp duplicates from the 2003 program (26.5 % Ecotech original) and (38 % Ecotech, 2006 re-runs), coupled with the lab's good performance on the certified reference material and blanks, indicates a homogenization problem due to coarse gold.

12.2.3 Sampling and QC Recommendations

It is recommended that Golden Dawn work closely with the lab to implement a better sampling protocol aimed at reducing the duplicate precision problems.

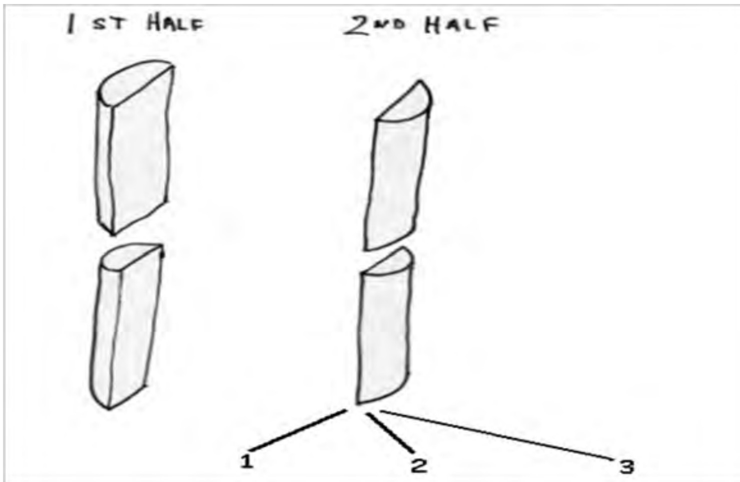
The sampling protocol may include:

- Grinding larger sample masses to smaller sizes prior to sub-sampling;
- Screening gold particles for fire assay out of larger pulp portions;
- Using larger sample aliquots (e.g. 50 g) for fire assay.

Improvements to the QC program should include:

- Using a certified reference material at all times with grades of the reference material tailored to the estimated grades of the batches and the matrix of the standard matched as closely as possible to the matrix of the deposit body;
- Maintaining the pass or fail criteria of the standards to two consecutive data points at between ±2 and 3 standard deviations on the same side of the mean and an automatic failure at ± 3 standard deviations;
- Plotting results as they are received, with requests made to the laboratory to re-analyze batches that contain failed standards or blanks;
- Tailor the duplicate program as per the following guidelines:
- A duplicates program should involve between 10% and 20% of the total number of samples. Assuming 100 original core samples are taken, 10 samples should be subjected to the duplicates monitoring program. The duplicates should include sample duplicates, (i.e. second half of drill core), and sub-sample duplicates, (i.e. rejects). For each half core that includes a sample duplicate, a reject sample from either the original half core or the duplicate half core should be analyzed in duplicate. Assuming that 10 samples are being considered, the necessary QC duplicate analyses by the principal lab total 30, (i.e. 10 duplicate half cores, and 10 rejects with two pulps being analyzed per reject), (source Sinclair, A.J., Bentzen, A.). This duplicate program should be undertaken at the principal lab. In addition, approximately 3 in every 40 to 100 duplicate pulps should be sent to a secondary lab as a routine monitor on the principal lab.

Figure 12.1 Duplicate Sampling Method



Note: *Second Half of Drill Core to be sampled includes Half Core (1), and Coarse Reject with Two Pulps run off Coarse Reject, (2, 3).*

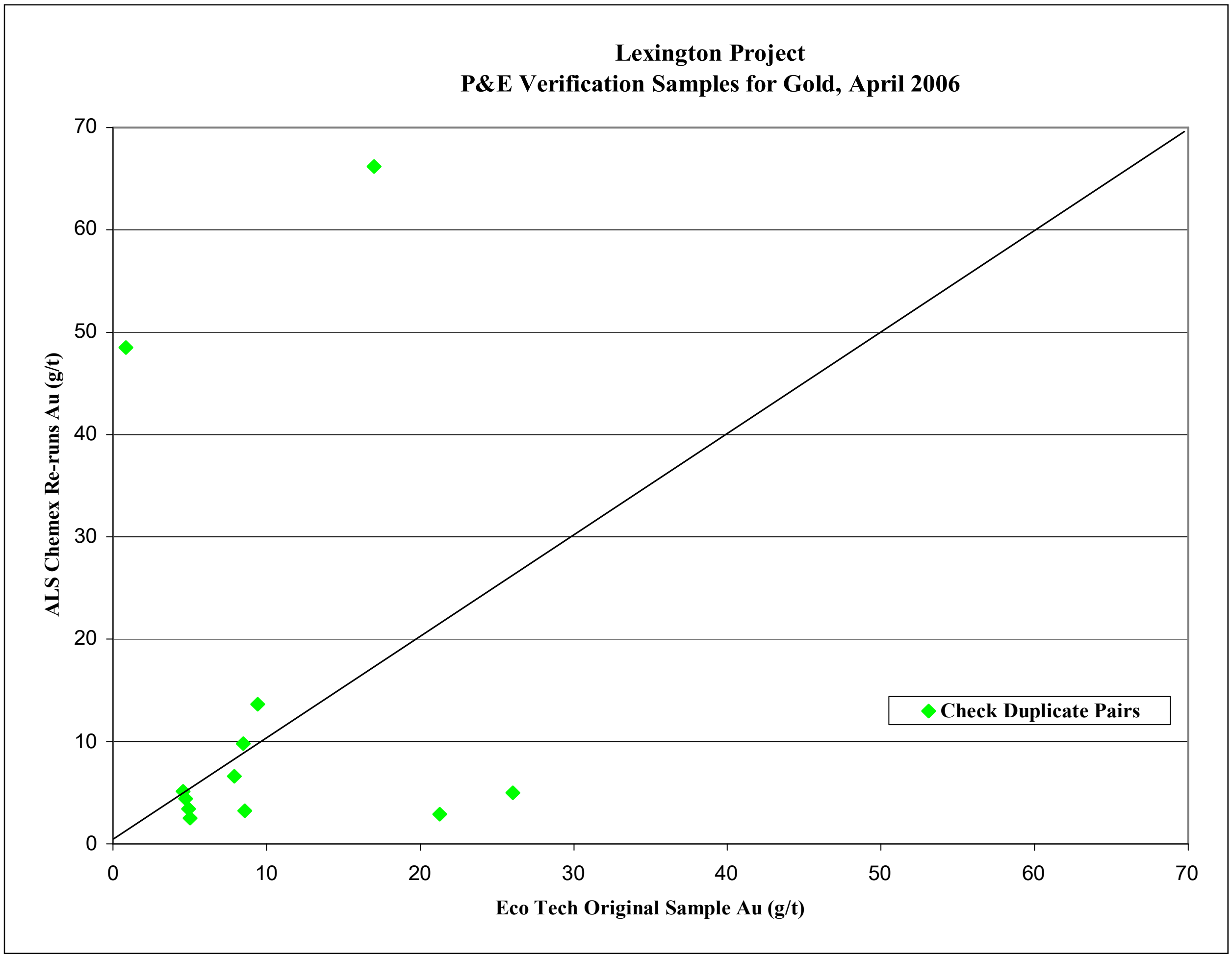
12.2.4 Independent Sampling by P & E

The Lexington-Grenoble Property was visited by Mr. Eugene Puritch, P.Eng. on April 25, 2006. Data verification sampling was done on diamond drill core, with twelve samples distributed in twelve holes collected for assay. An attempt was made to sample intervals from a variety of low and high-grade material. The chosen sample intervals were then sampled by taking quarter splits of the remaining half-split core. The samples were then documented, bagged, and sealed with packing tape and were shipped by the author from Grand Forks to ALS Chemex in Vancouver for analysis.

At no time, prior to the time of sampling, were any employees or other associates of Merit advised as to the location or identification of any of the samples to be collected.

A comparison of the P&E independent sample verification results versus the original assay results for Au can be seen in Figure 12.2. The P&E results for Au demonstrate the presence of the metal in both high and low grades, however the precision of the pairs is poor. This can be expected in this deposit, which demonstrates a moderate to high nugget effect.

Figure 12.2 Lexington-Grenoble Site Visit Verification Sample Comparison



It is Eugene Puritch's opinion that the data are of good quality and appropriate for use in the current Mineral Resource Estimate and technical report.

12.3 GOLDEN CROWN DEPOSIT DRILLING TO 2006

12.3.1 Quality Control

Gold City incorporated a system of QC into the 2003 and 2004 diamond drilling program.

In 2003 the standards material was provided by International Metallurgical Ltd. ("IM") of Kelowna, BC. IM received material from the Boston Project in Nunavut. This material was from auriferous quartz veins that were noted to behave predictably. The following 2 standards were created:

- A low grade standard at 3.01 g/t Au; and
- A high grade standard at 7.85 g/t Au.

Standards were systematically inserted into the sample stream and sent to Eco Tech for analysis. Results of standards are shown in Figure 12.2 and Figure 12.3. The figures show that the Eco Tech gold assays fall well within +/- 25 % of the IM standard gold values. The range in copper results is small indicating a high degree of precision with the sampling however, the accuracy cannot be determined as the standard copper standard value is unknown (thus is by definition not a standard but rather a repeat).

Figure 12.3 Golden Crown High Grade Standard

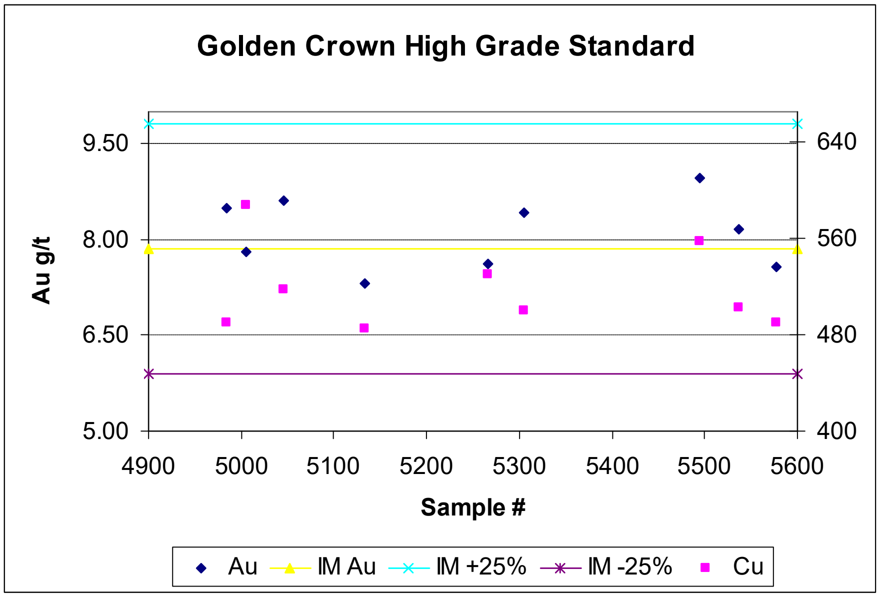
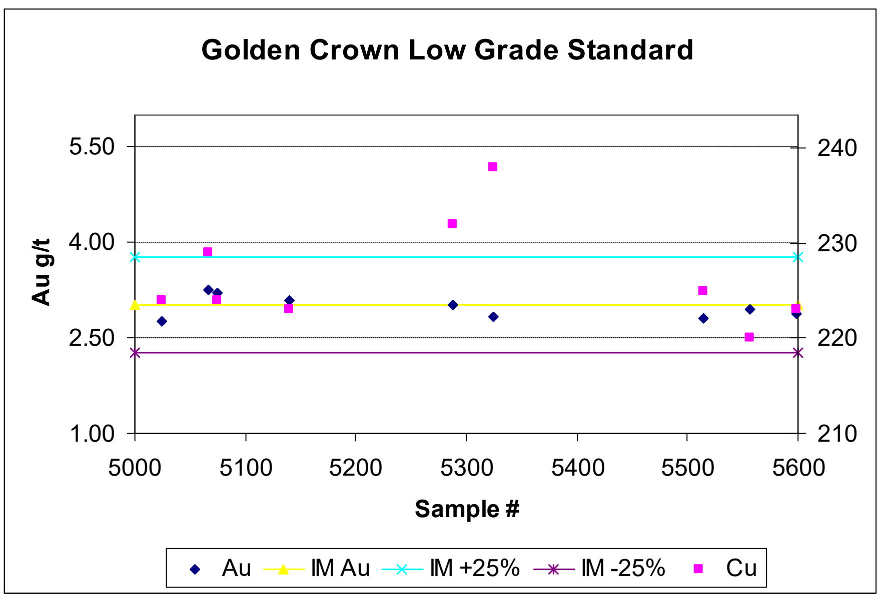


Figure 12.4 Golden Crown Low Grade Standard



12.3.2 Independent Sampling by P & E

P&E reviewed the QC protocols from the available documents and at site. Sample reject material was selected subsequent to the site visit, and arranged to be sent from Eco Tech Laboratories to ALS Chemex Laboratories for the purpose of independent check analysis. Table 12.1 contains the results of the independent check analysis. Samples 4855 and 5091 are from the Lexington-Grenoble and 5491 is from Golden Crown.

The original and check assay results appear to be highly variable, however this is an entirely expected result for a nuggety vein-style gold deposits.

TABLE 12.1
P&E INDEPENDENT SAMPLING RESULTS

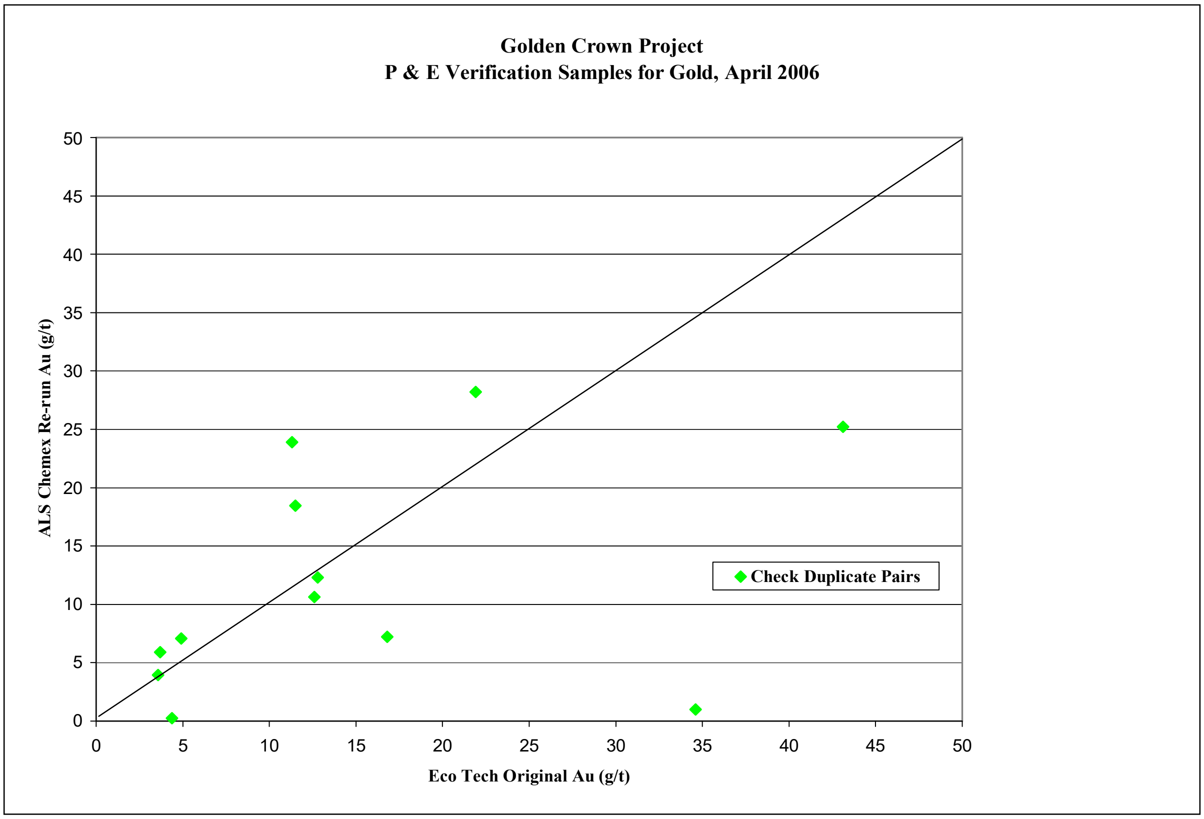
	Eco Tech		ALS Chemex		% Difference	
Sample #	Au g/t	Cu %	Au g/t	Cu %	Au g/t	Cu %
4855	17.20	1.47	6.55	1.46	-162.6%	-0.7%
5091	0.19	0.14	0.13	0.12	-46.2%	-18.5%
5491	58.40	1.26	89.6	1.19	34.8%	-5.9%

The Golden Crown Property was visited by Mr. Eugene Puritch, P. Eng. on April 24, 2006. Data verification sampling was done on diamond drill core, with twelve samples distributed in eleven holes collected for assay. An attempt was made to sample intervals from a variety of low and high-grade material. The chosen sample intervals were then sampled by taking quarter splits of the remaining half-split core. The samples were then documented, bagged, and sealed with packing tape and were shipped by the author from Grand Forks to ALS Chemex in Vancouver for analysis.

At no time, prior to the time of sampling, were any employees or other associates of Merit advised as to the location or identification of any of the samples to be collected.

A comparison of the P&E independent sample verification results versus the original assay results can be seen in Figure 12.4. The P&E results for Au demonstrate the presence of the metal in both high and low grades, however the precision of the pairs is moderate to poor. This can be expected in this deposit, which demonstrates a moderate to high nugget effect.

Figure 12.5 Golden Crown Site Visit Verification Sample Comparison



Assay Certificate Review

Merit supplied all of the available historic data on the Golden Crown Property to P&E for data verification. This data included collar and downhole survey information; assay certificates assessment reports, memos and QA/QC results. Table 12.2 shows the number of drill holes with the various types of supporting documents. These documents were reviewed and compared to the values in the digital database.

TABLE 12.2
NUMBERS OF DRILL HOLES WITH SUPPORTING DOCUMENTATION

Logs	Surveyed	Certificates	QA/QC
123	45	95	78

P&E's review of the assay certificates found that the transfer of data to the digital database was performed accurately and no errors were identified.

Each drill hole was assigned a code representing a degree of confidence in the primary data and this was then used to assist the resource classification process.

It is Eugene Puritch's opinion that the data are of good quality and appropriate for use in the current Mineral Resource Estimate and technical report.

12.4 MERIT QC PROGRAM AND ASSAY VERIFICATION FOR 2007-2008 DRILLING

12.4.1 Golden Crown Deposit

Subsequent to the 2006 mineral resource estimates in 2007 at Golden Crown, 7 surface diamond drill holes were completed which were utilized in the 2016 mineral resource estimate in this report.

Reference Material

Merit geologists inserted three different certified reference materials obtained from CDN Resource Laboratories in Delta, B.C. The CDN standards were GS-1A, GS-10 and GS-14. Standards were inserted into the sample stream at a rate of 1 in 20 by the project geologists. Certified reference material is inserted regularly into batches of samples sent to the lab for analysis in order to monitor the accuracy (lack of bias) of the lab results. All three standards fared very well, in that the results fell within the 95% confidence limits of +/- 2 st dev.

Blanks

Merit purchased blanks consisting of pulverized river rock (predominantly granite) from CDN for use in the 2007 drilling programs. CDN's assaying of the blank material found it to contain <0.01 g/t Au. Blanks were inserted into the sample stream at a rate of 1 in 20. Results were found to be satisfactory, without any indications of contamination.

Certificates

Independently acquired laboratory analysis certificates were obtained and used to verify resource wireframe constrained Au and Cu assay values.

12.4.2 Lexington-Grenoble Deposit

Subsequent to the 2006 mineral resource estimates in 2007 at Lexington-Grenoble, 19 surface diamond drill holes were completed which were utilized in the 2016 mineral resource estimate in this report.

Reference Material

Merit geologists inserted three different certified reference materials obtained from CDN Resource Laboratories in Delta, B.C. The CDN standards were GS-1A, GS-10 and GS-14. Standards were inserted into the sample stream at a rate of 1 in 20 by the project geologists. Certified reference material is inserted regularly into batches of samples sent to the lab for analysis in order to monitor the accuracy (lack of bias) of the lab results. All three standards fared very well, in that the results fell within the 95% confidence limits of +/- 2 st dev.

Blanks

Merit purchased blanks consisting of pulverized river rock (predominantly granite) from CDN for use in the 2007 drilling programs. CDN's assaying of the blank material found it to contain

<0.01 g/t Au. Blanks were inserted into the sample stream at a rate of 1 in 20. Results were found to be satisfactory, without any indications of contamination.

Certificates

Independently acquired laboratory analysis certificates were obtained and used to verify resource wireframe constrained Au and Cu assay values. In addition to the 19 surface diamond drill holes of 2007, 285 underground short Bazooka drill holes were completed in 2008. The Bazooka drill holes that were within the resource constraining wireframes were also verified against independently acquired laboratory analysis certificates.

It is Eugene Puritch's opinion that the data are of good quality and appropriate for use in the current Mineral Resource Estimate and technical report.

12.5 TAM O'SHANTER PROPERTY

As the 2010 and 2011 drill program was staffed and managed by geological crews from APEX who handled the core and sampling, there was no need to do independent verification sampling on Tam O'Shanter core.

It is Eugene Puritch's opinion that the data are of good quality and appropriate for use in the current Mineral Resource Estimate and technical report.

12.6 PHOENIX PROPERTY

No verification sampling was performed on mineralization from the Phoenix Property as the numerous mines and mineral occurrences have been documented extensively for decades in public records of Annual Reports of the Ministry of Mines as well as BC Minfile.

12.7 BOUNDARY FALLS PROPERTY

Seven verification samples were taken by Mr. Cowley from drill core of the Upper Skomac vein. Samples were taken as representative of the main Upper Skomac vein and the Upper Skomac 2 vein from a broad spatial scatter of the vein intercepts. Samples were quarter cored over the full interval of each selected sample, respecting the original sample's from and to length. The samples were in the custody of Mr. Cowley from cutting to delivering to ALS Laboratories in North Vancouver. Similar sample preparation and analyses were performed on the verification samples as was the original samples. Table 12.3 reports the original Golden Dawn sample and grade compared to Cowley's verification duplicated sample (highlighted in grey). The sampling verified the tenor of the mineralization as originally reported. Only minor differences were noted, but expected and acceptable, seeing as the quarter core samples were not a mirror image of the original and the patchy nature of the mineralization.

TABLE 12.3
INDEPENDENT VERIFICATION SAMPLING

Hole	From (m)	To (m)	Sample ID	Au (ppm)	Ag (ppm)	Cu (%)	Pb (%)	Zn (%)
BF16-26	178.9	179.94	M253098	1.29	64.1	0.16	0.87	0.96
			16-26-098	2.35	59.9	0.14	0.98	0.34
BF15-09	117.2	118.1	A2013076	4.97	151	0.23	1.36	2.27
			15-09-076	7.34	281	0.43	1.54	3.57
BF15-06	288.32	289.05	A2012856	0.1	97	0.83	4.73	4.61
			15-06-857	0.13	99.6	0.95	3.41	3.38
BF15-06	145.3	146.4	A2012200	2.45	88	0.05	0.88	0.11
			15-06-200	1.76	13.5	0.03	0.2	0.14
MU17-002	59.44	60.03	M256234	0.187	86	0.38	0.46	1.3
			17-002-234	0.51	83.4	0.29	0.52	1.03
MU17-002	60.03	60.66	M256235	1.175	503	0.37	15.2	17.2
			17-002-235	0.86	519	0.42	13.45	18.35
MU16-005	32.92	33.9	M256087	0.4	181	0.35	3.88	1.35
			16-005-087	0.53	374	0.38	3.23	1.57

It is Mr. Cowley's opinion that the verification sampling and its results are adequate for the purpose of data verification in the technical report.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 LEXINGTON AND GOLDEN CROWN INTRODUCTION

Considerable metallurgical test work has been performed by various laboratories on mineral samples obtained from the Lexington–Grenoble Deposit which was subsequently supported by several months of operating data obtained during the 2008 mining campaign of Lexington-Grenoble with processing undertaken at the Greenwood Mill. The Golden Crown mineralization has had limited investigation into metallurgical testing. The two resources show significant differences in process response.

Some of the earliest laboratory studies did not have the original reports available either as hardcopies or in the electronic database for review. However, most of this work appears well summarized in an earlier technical report titled "Technical Report and Preliminary Economic Assessment on the Greenwood Precious Metals Project", issued by P&E Mining Consultants in November 2006. More recent laboratory data for both projects, as well as the operating information from the Greenwood Mill relating to the processing of Lexington-Grenoble material was available for review.

13.2 LEXINGTON-GRENOBLE

Laboratory studies have been performed on Lexington-Grenoble mineral samples for a number of prior property participants. This includes test work undertaken for Teck Resources conducted by Lakefield Research in 1982. The program consisted of flotation studies including mineralogical examination and cyanide leaching of several flotation product streams. Gravity and flotation studies were subsequently performed in 1998 by PRA for Britannia Gold Corp., and in 2003 to 2007 for Gold City Mining that constituted the majority of the test work performed for the property. This included locked cycle tests performed in 2004.

In September 2010, a study was performed for Merit Mining on Lexington-Grenoble mineral samples using dry mill feed sorting technology for evaluation into pre-concentrating the mill feed. The mill feed sorting was based on dual energy X-ray transmission (DEXRT) technology.

13.2.1 Gravity and Flotation

Lakefield Research

Two samples were provided to Lakefield Research, labelled as Sample A (Dacite hosted) and Sample B (Serpentine hosted). The Dacite sampled was described by the project geologist (P. Cowley, P.Geo.) as being representative of the zone. It was composited from of drill core T-43 (156-159 m), T-45 (144-159 m), T-46 (153-156 m), T-49 (118-120 m) and T-54 (184-187 m). The serpentine sample was described by Mr. Cowley as not being representative, as it is generally taken outside the limits of the resource. Sample B consisted of drill core T-43 (156.0-159.0 m), T-44 (152.7-155.2 m), T-47 (171.0-172.6 m), and T53 (238.0-238.4 m).

The head assays of the two samples are provided in Table 13.1.

TABLE 13.1 HEAD SAMPLES – 1982 LAKEFIELD STUDY FOR TECK				
Sample	**Au (g/t)**	**Cu (%)**	**Fe (%)**	**S (%)**
Dacite	4.71	1.07	6.56	6.04
Serpentinite	2.32	1.10	24.8	13.2

Lakefield performed ten flotation tests including differential and bulk float procedures. Details of the test procedure are provided below;

- Test 1 (Sample A - dacite) – selective flotation (lime, with potassium amyl xanthate (PAX) and Aerofloat 208 collectors, CMC-6CTL) – no regrind. Grind - 62.1% minus 200
- Test 2 (Sample B - serpentine) selective flotation (lime, with potassium amyl xanthate and Aeroflot 208 collectors, CMC-6CTL) – no regrind. Grind 82.0% minus 200
- Test 3 (Sample A – dacite) – same conditions as for Test 1, except soda ash instead of lime for pH control and CMC eliminated – selective flotation. No regrind. Grind 62.1% minus 200 Test 4 (Sample B – serpentine) – same conditions as for Test 2, except soda ash instead of lime for pH control and CMC used only in cleaning stage. No regrind. Grind 66.0% minus 200
- Test 5 (Sample A – dacite) – selective flotation (lime, with PAX) but regrind Cu concentrate prior to cleaning and float pyrite combined cleaner and rougher tailings (allows for recovery of gold lost in cleaner tailings to be recovered in the pyrite cleaner concentrate)
- Test 6 (Sample B – serpentine) – bulk flotation at natural pH (lime, PAX, Aerofloat 211, CMC-6CTL). Bulk rougher concentrate cleaned, then reground with lime to pH 11.5 or 12.0 to depress pyrite in cleaning. No CMC in copper cleaning.
- Test 7 (Sample A – dacite) – bulk flotation at natural pH (lime, PAX, Aerofloat 211, CMC-6CTL). Bulk rougher concentrate cleaned, then reground with lime to pH 11.5 or 12.0 to depress pyrite in cleaning. No CMC in copper cleaning.
- Test 8 (Sample B – serpentine) - selective flotation (lime, with PAX) but regrind Cu concentrate prior to cleaning and float pyrite combined cleaner and rougher tailings (allows for recovery of gold lost in cleaner tailings to be recovered in the pyrite cleaner concentrate)
- Test 9 (Sample A – dacite) – bulk flotation with reduced collector addition (lime, PAX, A211, CMC), regrind Cu concentrate prior to cleaning
- Test 10 (Sample B – serpentine) - bulk flotation with reduced collector addition (lime, PAX, A211, CMC), regrind Cu concentrate prior to cleaning

The open cycle results indicated the procedures used for Test 9 & 10 achieved the best results, which are provided in Table 13.2 below.

TABLE 13.2 OPTIMIZED OPEN CYCLE RESULTS – 1982 LAKEFIELD STUDY FOR TECK							
Test No.	**Sample**	**Product**	**Weight %**	**Assays,**		**Distribution**	
				Cu (%)	**Au (g/t)**	**Cu (%)**	**Au (g/t)**
9	Dacite	Cu 3rd Cl Conc	3.65	26.2	89.1	92.0	76.8
		Head (calc)		1.04	4.23		
10	Serpentinite	Cu 5th Cl Conc	3.73	25.6	62.3	82.3	65.4
		Head (calc)		1.16	3.55		

The data indicates that improved concentrate grade can be expected by depressing pyrite with lime, along with minimizing potassium amyl xanthate ("PAX") addition, and using PAX in combination with more selective gold collectors. Generally, the open cycle rougher recovery showed copper recovery could exceed 90%, with gold recovery in the mid to upper eighty percent range.

Mineralogical studies were performed by Lakefield on various cleaner tailing produced from the flotation test work. The principal sulfide mineral noted was pyrite, with minor chalcopyrite observed. Non–sulfide minerals consisted of primarily quartz, and muscovite, in the Dacite (Sample A) along with minor talcose minerals, with calcite, chlorite, dolomite, and magnetite. The serpentine sample had similar sulfides, but with talc minerals being identified as the major gangue mineral. For serpentine (Sample B) it was also noted during laboratory test work that use of carboxymethyl cellulose ("CMC") was beneficial for slimes dispersement. This observation had important implications during commercial operation in that talc mined from the hanging wall was reported to adversely impact the copper flotation concentrate grade.

Process Research Associates

PRA initially undertook a test program for Britannia Gold Corp. in 1996 on an underground sample taken from the Lexington-Grenoble Mine. The sample was described as being removed from the upper portion of the mine at the 170 m point of the Lexington-Grenoble decline ramp. The grade of the grab sample was assayed at 0.79% Cu, 2.91 g/t Au and 7.56% Fe. A Bond Ball Mill Work Index taken on the material gave a result of 12.8 kW/h/tonne. Baseline gravity and open cycle bulk flotation testing was then performed, with a significant portion of the gold reporting to a Knelson gravity concentrate. This concentrate was not cleaned, and as a result accounted for 2.9% of the feed weight and assayed 103 g/t Au. As well, the gravity concentrate contained a significant copper content, making an estimate for separate gravity and flotation response difficult. Gold recovery was 76.5% to the Knelson concentrate, and 20% to the rougher float concentrate indicating a good combined response. Copper recovery was 6.9% to the Knelson concentrate, and 77.9% to the rougher float concentrate. The final cleaned float concentrate grade achieved was 21.1% Cu and 28.7 g/t Au, showing a reasonable response with basic mineral processing procedures.

PRA followed up this work using similar procedures on two high grade samples. These samples included a drill core sample from DH B96-2, described as sulfides having approximately 30% chalcopyrite and 60% pyrite assaying 6.6 g/t Au and 10% Cu. The second sample from drill hole B96-3 contained visible gold, including sulphides, silicates, and carbonates and assayed 45 g/t Au and 4.76% Cu. Once again high mass pull to the uncleaned gravity concentrate skewed distribution between the gravity and flotation response. The response showed good combined overall recoveries that were well into the ninety percent range. High float concentrate grades exceeding 25% Cu and up to 68 g/t gold resulted, although the samples would not be considered representative of average mill head grades from Lexington-Grenoble.

During 2003 to 2004 further test work was performed by PRA on Lexington-Grenoble for Gold City Industries Ltd. The sample was collected by Gold City in November 2002, and was described as a 25 kg bulk sample obtained from a raise off a sublevel above the original Grenoble adit, in an isolated pod, approximately 30 m northwest of the main mineralization. The pod mineralization was described as dacite-hosted, conformable to stratigraphy, and massive pyrite, with little chalcopyrite, and therefore not typical of the rest of the deposit, which contains higher chalcopyrite.

Knelson Concentrators Ltd. initiated a test for gravity recoverable gold on the sample prior to flotation studies by PRA. A two-pass scoping test indicated that the adit material was amenable to gravity recovery of gold, achieving a gold recovery of 31%, on a calculated head of 6.39 g/t. The gravity tailing was forwarded to PRA along with a composite sample of 1982 Teck diamond drill core (DDH T-45), which had been re-logged and re-sampled by Gold City. The T-45 sample assayed 10.6 g/t Au and 2.21% Cu.

PRA continued with the program using the three available samples, consisting of;

- T-45: The T-45 sample assayed 10.6 g/t Au and 2.21% Cu.
- LEX: which was the original sample, collected by Gold City in Nov. 2002. Assaying 5.96 g/t Au, and 0.67% Cu
- MD3: the previously generated Knelson tailing material labelled as MD3 Tails (MD3). Assaying 4.4 g/t Au, and 0.72% Cu.

Initial scoping tests were conducted on the LEX and MD3 samples. LEX used the same test parameters as had previously been previously applied by PRA in the 1996 investigations for Britannia Gold. This was a primary grind of ~ 80% minus 200 mesh going to gravity concentration with a Knelson concentrator, followed by upgrading with hand panning. The combined Knelson and pan tailing were sent to four stages of bulk rougher flotation to determine the kinetics of the copper and gold flotation at neutral pH. As the MD3 sample was previously treated by gravity the sample was subjected directly to kinetic flotation.

Results gave a large mass pull to the rougher float concentrate of 71% and 72%, respectively, for the LEX and MD3. This was primarily due to the presence of a significant quantity of iron sulphides (pyrite) floating with the chalcopyrite. A mineralogical examination of the first rougher concentrate from the LEX sample confirmed that the sample consisted predominantly of pyrite, with a lesser amount of chalcopyrite. Microscopic examination indicated the liberation of chalcopyrite was greater than 98%.

Additional tests were conducted on LEX material including using a courser grind, adjusting collector addition, and using lime for pyrite depression. The coarser grind provided similar results, with the other modifications to the procedures resulting in lower mass pull, and with an improved concentrate grade, albeit with a reduced recovery. Continuing the program the T-45 material using was subjected to gravity concentration using a Falcon concentrator at a grind of 80% minus 94 microns. The Falcon concentrate was cleaned by hand panning. The combined Falcon and pan tailing was sent to rougher flotation using selective copper and gold collectors in the first stages of rougher flotation, followed by PAX in the last stage of flotation, at two different pH's – 10.5 and 8.5. Test results were nearly identical with good recoveries of copper and gold. A final test (F7) for this program was conducted on the T-45 material in April 2003 investigated cleaning of the rougher concentrate, using four cleaner stages. Test F7 returned a second cleaner concentrate grading 28.6% copper and 97.3 g/t gold, with copper recovery of 96%. The gold recovery in test F7 was 50% into a gravity concentrate assaying 4,533 g/t gold and 42% in the copper second cleaner concentrate for an overall gold recovery of 92%.

The PRA test work culminated in a program under the direction of F. Wright Consulting Inc. in 2004. The work was performed using drill core assay reject samples obtained from Ecotech Laboratories that arrived at PRA on February 19, 2004. The list of sub-samples and proportions used for generating the metallurgical composites were provided by the Gold City geologists to represent Zone A and Zone B of the Lexington-Grenoble. This list of sample identifications and weights, were included with the original PRA data (PRA Project # 0402102).

The initial portion of the laboratory study consisted of head sample characterization and an open cycle gravity – float test performed on each of two metallurgical composites labelled as Zone A and Zone B. Both the Zone A and Zone B had similar gold grades of ~15 g/t, with Zone A having a higher copper content of 3.3%, compared to 0.92% Cu for Zone B. An optimized gravity-flotation procedure was based on the historical laboratory test work, and achieved bulk open cycle gold and copper recoveries into the upper ninety percent range. This corresponded to low final tailing assays of less than 0.04% Cu, and 0.05 g/t Au for both zones. However, gold reporting with the float cleaner tailing was significant at up to 8%, due to depression of the pyrite. The results were considered encouraging, so the test program proceeded to locked cycle testing.

A blended Zone A+B composite was used for lock cycle testing and analyzed 15 g/t Au, 7.2 g/t Ag, 1.9% Cu, 14% Fe, 13% total sulfur. The locked cycle procedure incorporated six cycles grinding to a target particle size of 80% passing 105 microns (150 Tyler mesh). The ground product was subjected to gravity separation using a Knelson centrifugal concentrator, with the resulting rougher concentrate cleaned by hand panning. The Knelson and pan tailing were combined and sent to bulk sulfide flotation. The bulk concentrate was reground in lime, and cleaned in three stages to upgrade the copper and gold content, by rejecting pyrite and gangue minerals. Most of the pyrite reports to the first cleaner tailing, which was kept separate from the bulk tailing.

The final cycle of the lock cycle test reported that the cleaned gravity concentrate recovered nearly half the gold into 0.16% of the original mass, resulting in a gold grade of 4,408 g/t. Remaining mass distribution was 6.7% to the chalcopyrite (Cu) concentrate, 29.5% to pyrite (1st cleaner) tailing, and 63.6% to the final (bulk) tailing. The product concentrate analyses, and the distribution of copper and gold from the locked cycle test are provided in the following two tables.

TABLE 13.3
PRA LOCKED CYCLE - FINAL CYCLE FLOAT 3RD CL. CONCENTRATE ASSAYS

Stream	Au g/t	Ag g/t	Cu %	ST %	Fe %	Sb Ppm	As ppm	Hg ppm
3rd Cl Float Conc	73.4	61.3	28.2	35.1	34.1	182	<5	<3
Pyrite (1st Cl.) Tail	3.68	3.1	0.07	31.0	30.7	<5	<5	<3
Bulk (Rougher) Tail	0.30	0.2	0.02	0.14	2.0	<5	<5	<3

Table 13.4 PRA Locked Cycle Results* - % Metal Distribution					
Metal	**Gravity Pan Conc.**	**Flotation 3^{rd} Cl. Conc**	**Pyrite 1^{st} Cl Tail**	**Bulk Tail**	**Total Recovery**
Copper	<0.1	97.9	1.2	0.8	97.9
Gold	49.0	41.4	8.5	1.1	90.4

**averaged for cycles 3 to 6*

The locked cycle resulted in approximately 90% gold recovery and 98% copper recovery. The bulk tailing grades are 0.02% Cu and 0.3 g/t Au. The recovered gold was roughly split evenly between the gravity and copper concentrates. Most gold losses report to the pyrite tailing, which graded ~3.7 g/t and account for 8.5% of the contained gold. It was recommended to further investigate treating the pyrite tailing stream to recover additional gold values.

13.2.2 Leaching Studies

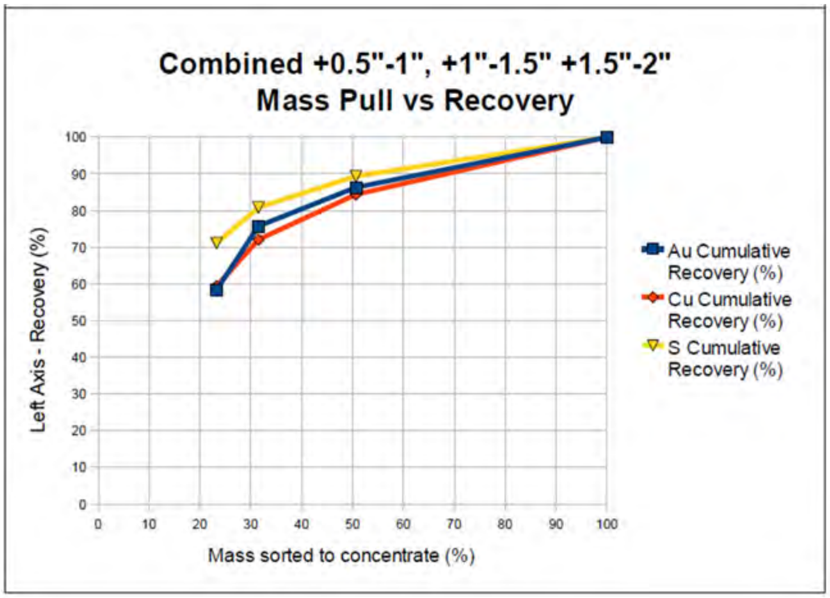
Cyanide leaching studies were performed on various flotation products including the cleaner (pyrite) tailing streams and a separate pyrite concentrate. The test conditions consisted of two 24 hour batch bottle roll tests, in which residue from the first batch was re-pulped in fresh cyanide solution and the cumulative gold dissolution calculated to establish recovery. The pulp density used was 33 wt.% solids and alkalinity maintained at pH 10.5 with hydrated lime ("CaCO3"), with cyanide strength maintained at 1 g/L sodium cyanide ("NaCN"). The results showed gold responded well to standard leaching techniques with gold recoveries in the 80% to 90% range.

13.2.3 Dry Mill Feed Sorting

Mill feed sorting using X-ray technology was performed on a low grade (1.46 g/t Au) Lexington-Grenoble mineral sample collected by Merit Mining. The study's report was issued on September 14, 2010, by Terra Vision and titled Ore Sorting Test on Production Scale DEXRT Ore Sorter. The study was performed through Commodas Ultrasort GmbH of Wedel, Germany and overseen by Merit Mining personnel. The test work used close to ½ tonne of material at three pre-screened particle size ranges consisting of ½" (12.7 mm) to 1" (25.4 mm); 1" to 1.5"(38.1 mm), and 1.5" to 2" (50.8 mm).

The technique used is described as dual energy X-ray transmission ("DEXRT"). The three pre-screened size fractions mentioned above are fed separately on a continuous dry basis to the DEXRT sorting unit. Each fraction of rejects and concentrate was then separately assayed. A summary of the combined results showed that upgrading of gold and copper content was accomplished, varying with the mass pull incorporated. The response is plotted and indicated in Figure 13.1 below.

Figure 13.1 Lexington-Grenoble Mill Feed Sort Response using DEXRT



The calculated combined mill feed upgraded the sorted concentrate to 2.49 g/t Au, and tailing assayed at 0.41 g/t Au. This resulted in an 86% gold recovery. The copper and sulfur content on a percent basis generally followed the gold. The findings indicate that DEXRT sorting on a 1.46 g/t Au feed material could reject 49% of the mass while maintaining reasonable gold recovery and upgrading characteristics.

13.2.4 Greenwood Mill Operating Response

The Greenwood mill was built to treat mineralized material from the Lexington-Grenoble deposit and operated for nine months from April to December 2008. The mill and concentrator circuit design was based on evaluation of the historical laboratory test work (outlined above) that was used to develop the flowsheet. Mineral processing consisted of bulk sulfide flotation following gravity pretreatment at a moderate grind of approximately 65% passing 200 mesh (74 microns). The gravity circuit consisted of a Knelson centrifugal concentrator operating from feed split off the mill hydrocyclone underflow. The Knelson concentrate was cleaned by tabling. The rougher float concentrate was reground and lime was used to depress pyrite during flotation cleaning to produce a final chalcopyrite - gold concentrate for sale. A more detailed description of the treatment circuit and recovery process is provided in Section 17.

A review of the mill operating data and discussion with previous management indicated the process response to the mill circuit was generally as expected. However, due to lower than anticipated mill head grades (as a result of dilution during mining) the metal recovery was lower than that exhibited in the prior test work. Originally mill head grades were expected to average about 8 g/t Au with a resulting gold recovery of 90%. The actual operating head grade averaged about 3.96 g/t Au, less than half of what had originally projected. Consequently, gold recovery averaged about 80%. Approximately half the gold typically reported to the final gravity concentrate, which is what the historical test work had indicated.

Copper mill head grades were originally expected to be in a range of 1.0% to 1.3% Cu, for an expected plant recovery of approximately 95%. Actual plant operating data gave a mill head grade that averaged about 0.83% Cu, resulting in 86% recovery. The plant data gave a copper concentrate grading approximately 23% Cu, 35 g/t Au and 48 g/t Ag. There were no reported penalty charges associated with the Lexington-Grenoble float concentrate for deleterious elements such as arsenic or mercury.

A review of the actual plant performance as compared to historical test work suggests a reasonable correlation, after accounting for the lower than expected mill head grades and other operational issues.

13.3 GOLDEN CROWN

13.3.1 Historical Testing

The historical laboratory test work undertaken on the Golden Crown deposit is significantly less extensive than was performed on the Lexington. Reports of the earliest studies by Coastech Research in 1988, and by Bacon Donaldson a year later were not available for review, but were cited in the November 2006, technical report by P&E. The most recent test work data performed by PRA was reviewed.

The Coastech study was performed for Inlet Metals and Machinery Co. Ltd., as a preliminary study on a blend of two high grade samples. The test work consisted of gravity and flotation scoping studies, along with cyanidation of whole mineralized material and gravity tailing. There is no record of the origin of the two samples used, which for Sample A assayed 22.5 g/t Au and 0.98% Cu, and Sample B which assayed 26.2 g/t Au and 0.98% Cu. ICP analyses also recorded greater than 10,000 ppm arsenic (“As”) in both samples. Gravity procedures recovered over half the gold with most of the rest reporting to the flotation concentrate. The float concentrate showed high bulk mass pulls of close to two thirds of the initial weight. Cleaning improved on this but resulted in significant gold losses. Bottle roll tests with 48 hour retention time gave gold recoveries of 80% and 77% respectively, on the whole mineralized material and gravity tailing.

Bacon Donaldson & Associates performed flotation and cyanidation test work on samples of unknown origin from the Golden Crown property in 1989 and 1990. Head grades and source of the samples for the 1989 test work samples were not available. The findings did indicate that a copper concentrate grading 21.9% was achieved in 2 stages of cleaning with overall copper, gold, and silver recoveries of 86.9%, 66.6%, and 79.5%. The follow-up work performed in 1990 used a composite with a head grade of 4.5 g/t Au, 0.98% Cu, and 0.34% As. Optimized open cycle cleaner flotation procedures showed recoveries of 87% copper, and 60% gold into a concentrate grading 22% Cu and 34 g/t Au were achieved. Cyanidation of the cleaner tailing achieved 75% gold recovery.

13.3.2 Process Research and Associates

PRA performed standard mineral processing procedures on two Golden Crown composite samples. The first sample was obtained from a November 2003 diamond drill program undertaken on the King Vein, comprised of assay rejects from drill holes 03CDH-01, 03, 06, 015, and 016. The head grade of the King Vein sample was 44.5 g/t Au, 0.46% Cu, 25.4% Fe, 15.4% S, and 6806 ppm As. A second sample was taken from surface trenching and had a head assay of 11.3 g/t Au, 0.66% Cu, 49.7% Fe, 33.2% S, and 807 ppm As.

Process Research Associates (“PRA”) undertook several procedures using open cycle gravity and flotation focusing primarily on the King Vein sample. In general, gravity testing comprised of a batch Knelson, followed by cleaning the Knelson concentrate by hand panning. The Knelson and pan tailing were then combined and subjected to various flotation procedures to generate a copper concentrate.

For the King Vein composite an acceptable grade of the copper concentrate of 22-25% Cu was produced following three or four stages of cleaner flotation incorporating pyrite depression using elevated pH with lime. This recovered close to 80% of the copper, depending on the procedures used. Between a quarter to a third of the gold went into the gravity concentrate, but this might be expected to be less with a more typical head grade material. Gold content in the copper concentrate was elevated at over 1000 g/t given the high head grade of the King Vein composite. Since the pyrite contained significant gold it was re-activated to produce a separate gold concentrate. Even with the high grade King Vein sample the resulting pyrite concentrate only graded ~50 g/t Au, which may prove challenging to market to most smelters. Transport costs will also be a significant consideration. Examination of the concentrate ICP analyses suggests most of the arsenic follows the pyrite so that while the copper concentrate had less than 300 ppm As, the pyrite concentrate had 8672 ppm As. This would be an additional marketing issue to address for producing a separate gold pyrite concentrate for sale from Golden Crown.

A bottle roll cyanidation test was performed on a rougher scavenger (pyrite) concentrate grading 51 g/t Au to determine the leach response. The sample was reground to P80 ~40 microns, and leached at 40% solids. A gold recovery of 96% was achieved after 24 hours retention time. Lime consumption, as CaOH2, was approximately 1.3 kg/t to maintain protective alkalinity at pH 11. Cyanide consumption appeared elevated requiring approximately 16 kg/t sodium cyanide ("NaCN"). Possible reasons include that test conditions were not optimized, with a high concentration of 3 – 5 g/L NaCN used to ensure maximum kinetic leachability was achieved. Elevated copper (a cyanacide) content may have also played a role in elevated cyanide consumption. Further leach optimization studies would be required.

Scoping testing using high intensity magnetic separation were also undertaken on the iron sulfide materials generated from the flotation tests, in hopes of achieving some upgrading of the gold. The results did not show any significant benefit for improving the gold content of these products.

The trench sample had a greater content of iron sulfides, as both pyrite and pyrrhotite, and a lower gold content as compared to the King Vein. The sample appeared to have significant sulfide oxidation, likely due to the near surface location of the sample origin. Consequently, the mineral process response was more challenging than that of the King Vein. Less gold (~15%) reported to the gravity circuit. The cleaned float concentrate achieved a gold grade of approximately 60 to 120 g/t Au, at 75% to 85% gold recovery, which varied depending on the procedures used. Finer grinding appeared to benefit this sample. The lower copper to iron ratio, and heavy oxidation of the sample prevented an acceptable copper concentrate from being produced on the trench sample.

In general, the open cycle data for the preliminary test work performed on the King Vein work indicated that approximately a third of the gold reports to the gravity concentrate. Of the remainder, 30-40% of the gold is recovered with the copper concentrate, and up to 25-30% goes with a pyrite concentrate. The balance is lost to final bulk float tailing. The pyrite concentrate appears to be a marketing challenge due to low gold grade, and potential presence of detrimental elements such as arsenic. Further upgrading of the pyrite concentrate may be possible, but likely with significant gold losses. Alternate treatment methods such as cyanide leaching can be evaluated further.

Most of the Golden Crown test work information is of limited use, as the results were primarily performed on samples not fully representative of the deposit. The optimized grade-recovery profile requires locked cycle testing to be performed on samples more representative of the mineralogy and mill head grade. Consequently, further laboratory evaluation is required to properly establish the mineral processing response.

13.4 PHOENIX PROPERTY

The Tremblay tailings are found adjacent the Phoenix Ski slope road at Km 4. The tailings cover a semi-circular area, approximately 15 hectares in size. These tailings were derived from the milling operation at the Phoenix mill between 1956 and 1967. Refer to Section 14.6.4 for Exploration Target ranges of tonnes and grade for these tailings.

There have been several scoping level laboratory treatment procedures undertaken historically investigating reprocessing of these tailing and other nearby tailing deposits originating from the same operation. The test work primarily focussed on gold, and secondly on copper or magnetite values. This includes gravity, flotation, and magnetic procedures that have been tested; resulting in variable corresponding concentration grade and recovery response. The results show that the material responds reasonably well to conventional processing procedures. While past test work have not been optimized, or led to developing a conceptual treatment flowsheet, the earlier authors of this work have generally deemed the Tremblay tailing worthy of further investigation. There are also some variations to the past test work procedures that do not appear to have been examined and which should be investigated. The nearby Zip Mill / Concentrator (Golden Dawn) and Buckhorn Mill / Leach Circuit (Kinross) may offer further opportunities.

The following text has been taken from Caron (2012) entitled "National Instrument 43-101 Technical Report on the Phoenix Tailings Property, Boundary District" that summaries some of the testwork.

In 1991, Kettle River Resources sent some tailings for initial metallurgical testing to Bacon Donald and Associates of Vancouver. Bacon Donaldson conducted testing and put together a first pass flow chart for the processing of the Tremblay Tails. The initial process envisioned magnetic separation to remove the magnetic material which would be discarded. This would be followed with a gravity concentrate of pyrite (assuming gold was tied up in pyrite). The final stage would be a cyanide leach to pull the gold from the pyrite concentrate. Bench scale tests showed gold recovery by cyanidation was 67%. A regrind of the gravity concentrate was recommended to increase the gold recovery, however, were never done (Bacon Donaldson May 8 1991, Letter communication from Bacon Donaldson to George Stewart).

Echo Bay Exploration Inc. carried out additional gravity (shaker table) testing in 1994 and 1995. A head grade for the coarser berm material was 0.48 g/t Au, and for the finer grained tailings from the pond area, was 0.24 g/t Au. Gold recoveries from the berm material ranging up to 56.4% in 3.3 weight percent of the feed (with a concentrate grade of about 9.5 g/t Au). Gold recoveries were to 37% in 5.8 weight percent for the finer tailings (with a concentrate grade of about 1.7 g/t Au).

In 1995 and 1996, additional flotation testing was carried out at International Metallurgical and Environmental Inc. in Kelowna (Austin, 1996). Preliminary testing was done on a surface sample of tailings from the berm area, with a (calculated) head grade of 0.64 g/t Au and 0.14% Cu.

Copper and gold recoveries were found to be dependent on grinding. A maximum recovery of 37% Cu and 73% Au was achieved with a grind to 65% at minus 200 mesh in a rougher concentrate of 3.2 weight percent of the original feed. The concentrate graded 1.7 % Cu and 13.9 g/t Au. Austin (1996) recommended further work, including tests on a series of different tailings samples from different parts of the deposit, and additional work to upgrade the concentrates into saleable copper concentrate grades (focusing on the selectivity of the flotation process). Although preliminary testing had shown that metal recoveries were grind sensitive and that comparable recoveries can be achieved from samples of the finer tailings compared to the coarser tailings. The rougher concentrate was upgraded using re-grinding and cleaner flotation to produce a viable final concentrate that graded approximately 18% Cu and 207 g/t Au. Based on these batch tests, predictions for gold and copper recovery range from 60-65% for gold and 35-45% for copper, with concentrate grades of 15-20% copper and 100-200 g/t Au (Austin, 1996).

Due to its potential size, the Tremblay tailings deposit warrants re-evaluation and sufficient work to enable a mineral resource to be estimated. Further metallurgical testing would also be required to determine recovery and costs.

Further work needs to include more detailed exploration of the Tremblay tailing in order to better define representative process feed characteristics.

13.5 TAM O'SHANTER PROPERTY

Preliminary metallurgical testwork has been performed on the Deadwood Zone. The text that follows is taken from Dufresne, e.al. (2013).

Preliminary metallurgical testing was conducted during April and May 2011 by F. Wright Consulting Inc. (FWCI) on drill core sample rejects from hole 11WR10. Seven composite samples were created from drill core sample rejects from hole 11WR10. The samples were composited based on contiguous intervals representing specific lithologies and gold grades within the Deadwood Gold Zone that were reported for hole 11WR10. The laboratory and analytical work was conducted at Inspectorate. The test work consisted of head grade characterizations, specific gravity measurements, a flotation test and bottle roll leach tests to determine response to cyanidation procedures. The testing methods and results were reported on by FWCI (Wright, 2011). The studies were conducted in order to provide a preliminary response of this material to conventional mineral processing procedures. This included a single scoping flotation study and eleven cyanide leaching tests to observe leach characteristics at various feed particle size ranges. The results of the study are summarized below and are largely taken from Wright (2011).

Composites were created to represent the grade, lithology and mineralization expected of the resource, and were made using continuous intervals taken from the assay rejects from drill hole 11WR10. The assay rejects were sized by -10 Tyler mesh, segregated and riffle blended. Head analyses for precious metal assays, sulphur speciation, and multi-element ICP analysis required splits be removed. Splits were also used to attain charges for the bench scale work. Preparation of samples included grinding in a stainless steel laboratory rod mill, which was slurried to ~65% by weight solids content for a standard charge. The sieves were 20 cm in diameter and were stacked in ascending mesh sizes on a RotapTM in order to analyze particle size, which were weighed for each sieved fraction, and calculated to determine retained individual and cumulative percent. A Denver D12 laboratory machine using feed of 3 kg was used to conduct a single bench scale flotation test. Gold was targeted by recovery of sulphide minerals and associated metals using standard sulphide collectors. Regrinding was done of rougher concentrate, followed by four stages of flotation cleaning. Bottle roll tests were conducted to investigate gold dissolution by baseline cyanidation. Details of the production and concentration determinations of the cyanide can be found in Appendix 2 of F. Wright's summary report. Procedures were conducted at various particle sizes, and gold leaching versus time was evaluated using intermediate solution samples. Filtration collected the resultant leachate solution and the cake filter underwent a hot cyanide solution wash and two hot water displacement washes. Analyses for precious metals in the leachate and resultant residue were conducted by standard fire assay procedures.

Seven composites, Comp. 1 through 7, were created, the intervals determined by drill hole depth, geological drill log data, and geochem analyses. Two master composites were created for larger samples. MC1 consists of the upper portion of the drill core representing depths of 4 m to 20 m, and was made up from Comp. 1 and 2. MC2 represents the lower 20 m to 35 m depth, and is made up of Comp. 3 and 4. Head analyses returned gold fire assay grades ranging from 0.17 g/t to 1.23 g/t, copper grades 0.05% or less, and 2.4% to 7.6% sulphur. Additional analyses returned silver grades less than 1 g/t, except Comp. 4 which showed 2.1 g/t Ag. Correlation with other elements was not strong for gold in the heads, but did generally increase with higher content of sulphides, copper and arsenic. A test on MC1 and MC2 determined that gold was generally in the mid to finer particle size range, according to gold assay versus particle size. Higher grade composites of Comp. 2 and 4 exhibited little coarse gold during investigation of the metallic gold content. Gravity pretreatment is therefore not likely to be useful in this case.

Comp. 3 exhibited a gold head grade of 1.2 g/t and about 0.05% copper, and so was subjected to a single flotation test. An 80% particle passing size (P80) of 54 microns was yielded in the primary grind. Regrinding and a four stage cleaning was then conducted of the coarser concentrate. This yielded a final concentrate grade of almost 50 g/t and bulk gold recovery of 93%, therefore production of a saleable copper gold concentrate is unlikely without an increase in the grades of the copper head.

Cyanide leach testing focused on the master composites, and was conducted at various feed particle sizes, with leach times ranging from 240 hours for coarser samples to 48 hours for finer samples. Finer grinding of the composites appears to result in lower losses for gold recovery. Up to 95% recovery over a period of one day was achieved with a P80 of 48 microns. Particles with a P80 of about 1300 microns yielded about 80% recovery within 100 hours. Cyanide leach testing of an intermediate sample and the lowest grade sample, Comp. 5 and 6, respectively, returned similar results that correspond to the earlier work. The report suggests the testing of coarser particle sizes with the intent of moving to column leach examinations for implications with heap leaching for lower grade material. Further work is also recommended to explain poor gold recovery in a final carbon in leach (CIL) cyanide test conducted on flotation concentrate. Suggestions in Wright's report in regard to this issue include elevated copper and zinc consuming the available free cyanide by acting as cyanicides.

Results of the above mentioned analyses suggest that the material may be a good candidate for conventional mineral processing procedures. While the grade of the flotation concentrate appears too low to be saleable as a copper gold concentrate, testing is encouraged for higher content copper zones for the potential to sell a copper concentrate with gold credits. Gold extractions during cyanide leaching ranged from 63% to 95%, the higher recoveries corresponded to finer grinding and higher head grades. Tank leaching may be suitable for higher grade samples in this instance, although column leach studies are suggested to determine whether heap leaching would be a contending alternative. Further research is recommended as the project progresses to determine the most efficient extraction techniques and the potential for saleable copper gold concentrate production.

13.6 BOUNDARY FALLS PROPERTY

A suite of 2016 and 2017 core samples totaling 16 kg was collected for metallurgical testing to determine the requirements for processing in the Company's Greenwood Mill. The head assay of the metallurgical composite for the main metals of interest was 1.48 g/t Au, 124 g/t Ag, 0.19% Cu, 1.29% Pb and 1.48% Zn. Precious metal recovery will be the primary focus of the metallurgical test program. Golden Dawn reports the preliminary findings of initial testing were:

- Gold: Gravity recovered 49% Au, and flotation a further 49% into a bulk sulphide concentrate, resulting in a combined gravity and flotation recovery of 98%.
- Silver: Gravity and flotation recovery for silver was 97.7% of which 4.7%, reported to the gravity concentrate.

Golden Dawn reported that overall, the initial results show very good bulk flotation recovery for precious metals following the flowsheet of the existing treatment circuit at the Company's 100% owned Greenwood mill. Flotation cleaning will now be tested in order to make a higher grade concentrate for sale. Optionally, cyanide leaching results after 48 hours retention indicate approximately half the silver was recovered, and with a gold recovery of 90%.

13.7 TEST WORK RECOMMENDATIONS

13.7.1 Lexington-Grenoble

The commercial mineral processing response for Lexington-Grenoble has shown a good correlation to the historical laboratory work. Unfortunately, grade dilution while mining at Lexington-Grenoble resulted in lower metal production than what had been expected. The lower mill head grades also resulted in reduced copper and gold recoveries during processing.

Pre-concentration of mine material at the mine site prior to delivery to mill may offer opportunities for operating flexibility and as a contingency for maintaining mill head grades. A preliminary investigation into dry sorting using X-ray procedures has been shown to be a promising procedure and justifies further evaluation. Similarly for mineralogy of this type the material may respond well to dense media separation (DMS) methods and an initial investigation into this procedure is recommended.

13.7.2 Golden Crown

Laboratory studies performed on Golden Crown material is limited and has generally been performed on samples of a higher grade than what is anticipated for the actual mill head grade. Consequently, further testing is recommended on representative samples as defined by the Golden Crown mine plan. This work should include work index testing, flotation optimization, and comparison to pre-concentration methods selected for Lexington-Grenoble.

While the work to date suggests that the Golden Crown material can be processed at the existing Greenwood facility there are a number of potential differences to the process response. These include;

1) A lower copper grade and higher iron sulfide (pyrite and pyrrhotite) content evident in the Golden Crown material as compared to Lexington-Grenoble. This may cause additional challenges to achieving the required minimum copper grade in the concentrate, while maintaining satisfactory metal recovery.
2) The gold grade for Golden Crown, while higher than Lexington-Grenoble is more closely associated with the iron sulfides. This potentially results in less gold reporting to both the cleaned gravity and flotation products. In addition the iron sulfides must be depressed to allow for producing a saleable copper concentrate. Laboratory results to date suggest a significant quantity of gold will report with the iron sulfides depressed during flotation. Two potential options to investigate to improve gold recovery are to generate a separate gold pyrite concentrate for sale, or leach the gold to produce onsite Dore. Cyanide leaching of either a rougher gold pyrite concentrate or subsequently reprocessing the bulk or cleaner float tailing can be evaluated.
3) There are indications that the arsenic content of the Golden Crown material is higher than that of Lexington-Grenoble. Arsenic content should be established in the resource model. Environmental and processing implications including arsenic as a potential penalty element in sale of copper concentrate need to be clarified.

The above issues can be addressed in a test program, which should culminate in locked cycle testing of the recommended flowsheet performed on representative mineral samples of the Golden Crown Deposit.

13.7.3 Tremblay Tailings

Further work needs to include more detailed exploration of the Tremblay tailing in order to better define representative process feed characteristics. From this work, metallurgical samples could be obtained Tremblay Tailing both spatially and at depth from the tailing impoundment. The exploration results can then be re-evaluated in the context of proceeding with metallurgical testing.

A proposed metallurgical testing program would include sample compositing and characterization. Compositing would be based on blending representative material from various areas of the tailing impoundment. Characterization would include physical (particle size distribution, SG etc.) and chemical analyses of the various composites. The treatment evaluation would determine if comminution is warranted, as well as how the various composite samples respond to gravity, magnetic, and flotation concentration procedures. Leaching techniques should also be included directly on the tailing, as well as on pre-concentrated material. Depending on the number of samples generated the anticipated budget for a laboratory metallurgical investigation on a PEA level basis is estimated at $90,000. This cost does include the costs to collect and analyze the exploration samples or to prepare any corresponding sections of a follow-up technical report.

14.0 MINERAL RESOURCE ESTIMATES

14.1 INTRODUCTION

P&E has prepared a Mineral Resource estimate for the Lexington-Grenoble and Golden Crown Deposits, British Columbia, Canada, using all data and information available.

Apex Geoscience Ltd. has prepared an Mineral Resource estimate for the Deadwood Deposit on the Tam O'Shanter Property, British Columbia, Canada, using all data and information available.

The Lexington-Grenoble and Golden Crown Mineral Resources described in this report have been updated from the Mineral Resource Estimates contained in the P&E April 8, 2016 Technical Report titled "Technical Report and Updated Mineral Resource Estimate for the Greenwood Precious Metals Project British Columbia, Canada ("the April 2016 P&E Report"), prepared for Huakan International Mining Inc. and Golden Dawn.

The Mineral Resource Estimate presented herein is reported in accordance with the Canadian Securities Administrators' NI 43-101 and has been developed in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the mineral resource will be converted into mineral reserve. Confidence in the estimate of Inferred Mineral Resources is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Mineral Resources may also be affected by further infill and exploration drilling that may result in changes to subsequent mineral resource estimates. P&E is not aware of any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource Estimate.

The Lexington-Grenoble and Golden Crown Mineral Resource Estimation work reported herein was carried out by Fred. H. Brown, P.Geo., an independent Qualified Person in terms of NI 43-101 under the supervision of Eugene Puritch, P.Eng. also an independent Qualified Person. Mineral resource modeling and estimation were carried out using Gemcom GEMS and Supervisor software programs.

The Deadwood – Wild Rose Mineral Resource Estimation and statistics were completed by Mr. Nicholls, MAIG under the direct supervision of Mr. Dufresne, M.Sc., P. Geol., who is a Qualified Person with respect to Mineral Resource Estimation as defined by National Instrument 43-101. Mineral Resource modelling and estimation was carried out using a 3-dimensional block model based on geostatistical applications using commercial mine planning software MICROMINE (v12.5.4).

14.2 PREVIOUS MINERAL RESOURCE ESTIMATES

P&E released a previous Mineral Resource Estimate for the Lexington-Grenoble and Golden Crown Deposits with an effective date of September 20, 2006. The current Updated Mineral Resource Estimate (April 2016) supersedes the 2006 resource estimate. (Table 14.1; Puritch and Cowley, 2006).

TABLE 14.1 SUMMARY OF MINERAL RESOURCE ESTIMATES DATED SEPTEMBER 2006					
Golden Crown September 2006 Mineral Resource (6.0 g/t AuEq cut-off)					
Class	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**Au ozs**
Indicated	105,000	13.78	0.55	15.33	46,500
Inferred	8,000	16.80	0.55	18.35	4,300
Lexington September 2006 Mineral Resource (6.0 g/t AuEq cut-off)					
Class	Tonnes	Au g/t	Cu %	AuEq g/t	Au ozs
Measured	6,000	11.55	1.87	16.84	2,200
Indicated	291,000	8.29	1.34	12.08	77,600
Inferred	45,000	6.58	1.03	9.50	9,500

(1) Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

(2) The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

It should be noted that the Mineral Resources in this estimate were calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions.

Apex Geoscience released a previous Mineral Resource Estimate for the Deadwood Deposit with an effective date of January 25, 2013. The current Updated Mineral Resource Estimate (April 2017) supersedes the 2013 Mineral Resource Estimate. (Table 14.2; Dufresne, 2013).

TABLE 14.2 INFERRED MINERAL RESOURCE FOR THE DEADWOOD DEPOSIT (0.3G/T CUTOFF)			
Classification	**Tonnes (t)**	**Average Au Grade (g/t)**	**Au (oz)**
Inferred	24,483,000	0.53	415,000

(1) Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

(2) The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

14.3 GOLDEN CROWN DEPOSIT UPDATED MINERAL RESOURCE ESTIMATE

14.3.1 Data Supplied

Information used for the Golden Crown Deposit Mineral Resource Estimate incorporates drilling information recovered from records compiled by previous operators. The drilling information includes collar coordinates, drill hole survey data, assay values and lithology intervals. The compiled database contains 235 surface drill holes and 53 underground drill holes, as well as 133 trench sampling records and 30 underground chip sample records (Table 14.3 and Appendix

I). All data are expressed in metric units and grid coordinates are relative to a local coordinate system. A topographic surface was also supplied.

TABLE 14.3 GOLDEN CROWN DEPOSIT DATABASE RECORDS		
Type	**Count**	**Total Metres**
Chip Samples	30	18.90
Surface Drill holes	235	15,777.87
Trench Samples	133	99.62
Underground Drill holes	53	3,238.45
Total	**451**	**19,134.84**

14.3.2 Database Validation

Industry standard validation checks were completed on the supplied databases. P&E typically validates a mineral resource database by checking for inconsistencies in naming conventions or analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, and missing interval and coordinate fields. P&E noted a small number of out-of-sequence and zero-length interval errors, which were corrected. P&E believes that the database meets the minimum requirements for mineral resource estimation.

14.3.3 Bulk Density Data

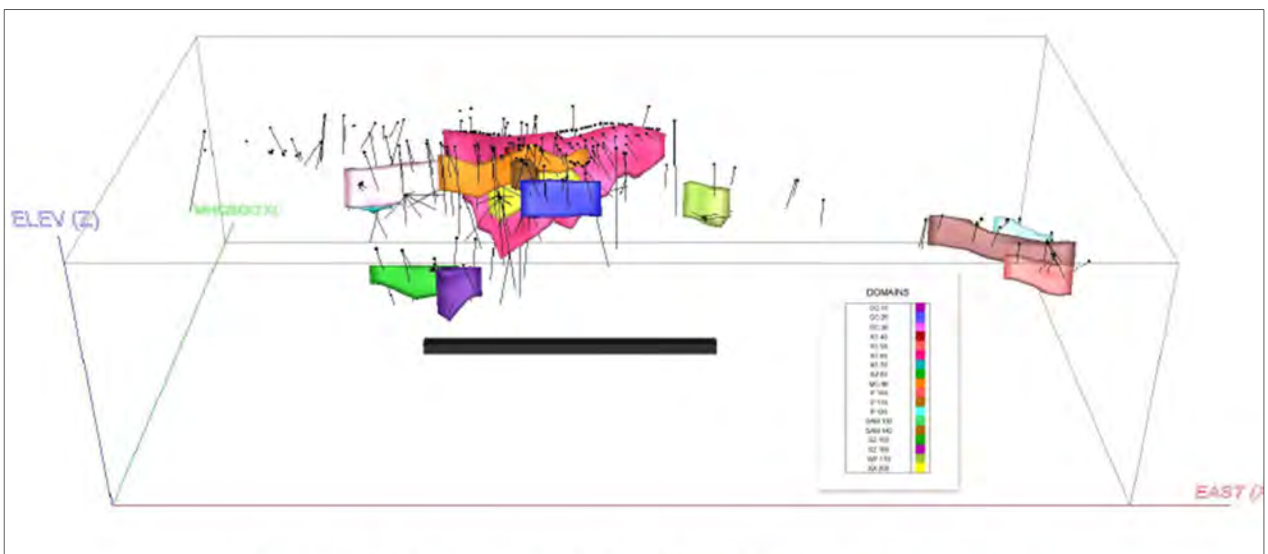
A global assigned bulk density value of 3.50 tonnes per cubic metre was used for the mineral resource model, based on twelve field samples collected by P&E at Golden Crown in 2006. No additional bulk density information is available. P&E recommends that comprehensive bulk density samples be collected across all lithologies.

14.3.4 Domain Modeling

Seventeen mineralization domains were previously identified for the Golden Crown Deposit, based on a 2.00 g/t gold-equivalent threshold. These mineralization domains were re-interpreted using successive polylines oriented perpendicular to the general trend of the mineralization and spaced every 2.50 m, resulting in a total of fifteen domains (Table 14.4 and Appendix II). The domain outlines were influenced by the selection of mineralized material above 3.50 g/t gold-equivalent that demonstrated lithological and structural zonal continuity along strike and down dip. Where appropriate, lower grade mineralization was included for the purpose of maintaining zonal continuity, and a minimum of two contiguous intervals were normally selected. All polyline vertices were snapped directly to drill hole assay intervals, in order to generate a true three-dimensional representation of the extent of the mineralization. The domain wireframes were then clipped to a topographic surface.

Table 14.4 Golden Crown Deposit Modeled Domains	
Domain	**Rock Code**
K1 South	40
K1 Main	50
K1 West 1	60
K1 West 2	70
K2	80
MC	90
P South	100
P Main	110
P North	120
SAM North	130
SAM South	140
SZ North	150
SZ South	160
WP	170
XX	200

Figure 14.1 3D View of Golden Crown Resource Domains and Drill holes



Golden Crown modeled domains. View looking North. Scale bar = 250 m.

14.3.5 Compositing

Assay sample lengths within the modeled domains range from 0.60 m to 5.20 m with an average length of 0.73 m, with 81% of the constrained assays having a sample length of 1.00 m or less. In order to ensure equal sample support a compositing length of 1.00 m was selected for estimation. Length-weighted composites were calculated within each domain starting at the first point of intersection between the drill hole and the domain intersected, and halting upon exit from the domain wireframe. Composites were then assigned a domain rock code value based on the domain wireframe that the interval fell within.

P&E notes that only heavily mineralized intervals appear to have been logged and sampled. Implicit missing samples (single samples less than 1.00 m in length or short unsampled intervals between sampled intervals) were therefore assigned grades of 0.10 g/t for Au and 0.01% for Cu before compositing. The composite data were visually validated against the applicable domain wireframe and exported to an extraction file for data analysis and grade estimation. Residual composites less than half the compositing interval were discarded.

14.3.6 Exploratory Data Analysis

P&E generated summary statistics for the composite samples within the modeled domains in order to provide a baseline for model comparison and validation (Table 14.5 and Table 14.6). No significant correlation between gold and copper composite values was noted.

14.3.7 Treatment of Extreme Values

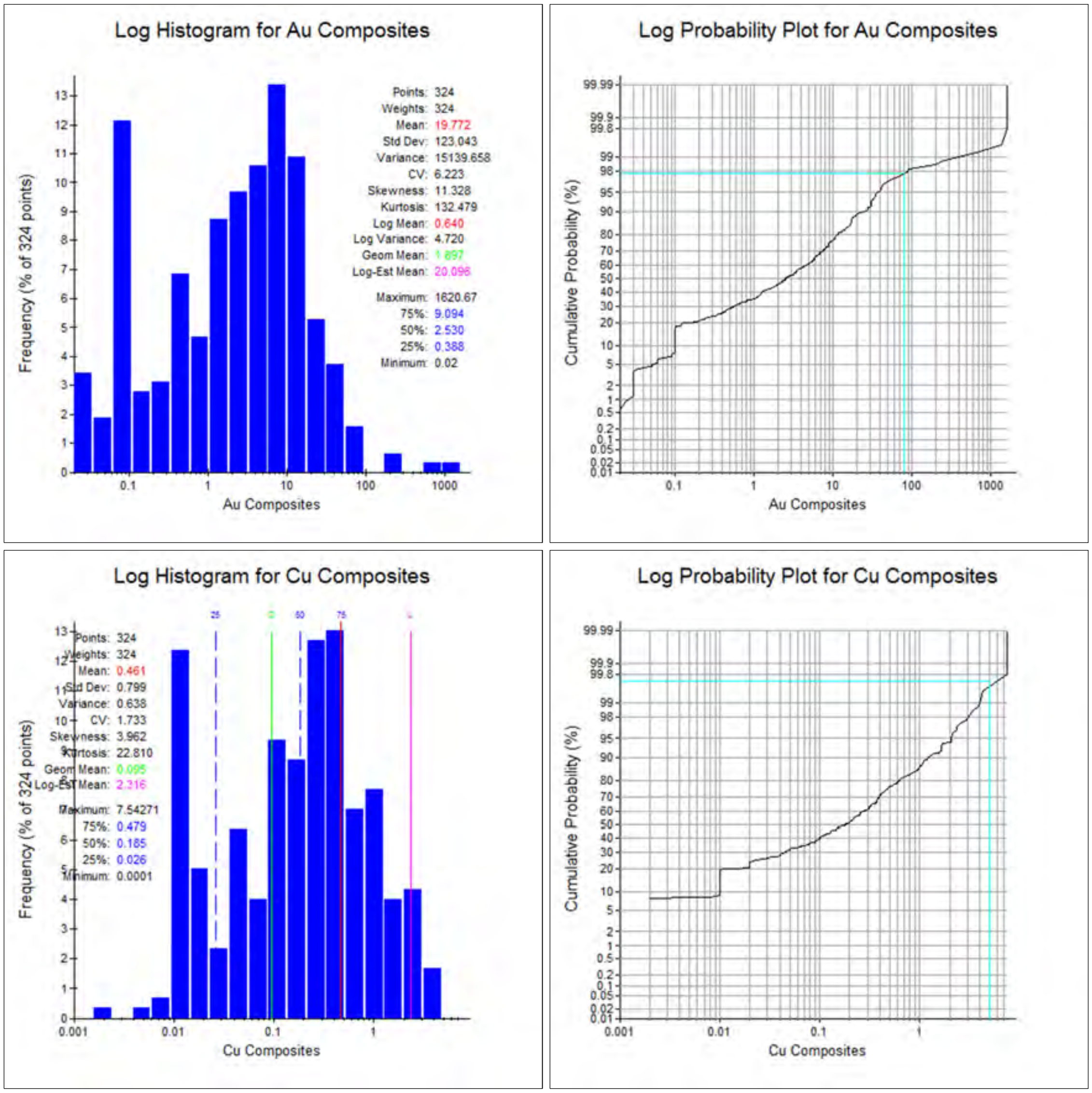
Higher-grade composite values were adjusted prior to estimation in order to reduce the influence of anomalous data on the resulting mineral resource estimates. Capping levels of 60.00 g/t gold and 5.00 % copper were selected as global capping thresholds based on examination of histograms and probability plots (Figure 14.1) as well as the iterative comparison of estimated block means and composite means. In addition, a range restriction restricted the influence of composite grades greater than 50 % of the capping thresholds to 30 m. A total of six gold composites and one copper composite were capped prior to estimation.

TABLE 14.5
GOLDEN CROWN DEPOSIT AU COMPOSITE SUMMARY STATISTICS BY DOMAIN

Domain	Rock Code	Samples	Minimum Au g/t	Maximum Au g/t	Mean Au g/t	Standard Deviation	CoV
K1 South	40	15	0.02	87.96	11.84	26.10	2.20
K1 Main	50	154	0.03	1620.67	34.03	177.21	5.21
K1 West 1	60	20	0.10	17.36	5.15	5.23	1.02
K1 West 2	70	11	0.07	9.79	2.55	2.95	1.15
K2	80	17	0.10	11.84	3.97	3.92	0.99
MC	90	20	0.02	22.99	3.54	6.21	1.76
P South	100	11	0.10	77.50	16.28	24.82	1.52
P Main	110	11	0.06	24.10	4.72	7.19	1.52
P North	120	3	1.22	2.70	2.05	0.75	0.37
SAM North	130	12	0.03	19.76	6.31	7.36	1.17
SAM South	140	11	0.10	27.37	13.53	10.15	0.75
SZ North	150	6	0.10	43.10	13.50	16.09	1.19
SZ South	160	4	0.24	7.53	3.65	2.99	0.82
WP	170	6	0.10	10.63	5.29	4.26	0.81
XX	200	23	0.10	38.47	5.63	9.77	1.74
Total		**324**	**0.02**	**1,620.67**	**19.77**	**123.04**	**6.22**

TABLE 14.6 GOLDEN CROWN DEPOSIT CU COMPOSITE SUMMARY STATISTICS BY DOMAIN							
Domain	**Rock Code**	**Samples**	**Minimum Cu %**	**Maximum Cu %**	**Mean Cu %**	**Standard Deviation**	**CoV**
K1 South	40	15	0.01	2.99	0.73	0.84	1.15
K1 Main	50	154	0.0001	7.54	0.57	0.91	1.59
K1 West 1	60	20	0.0001	2.92	0.86	0.91	1.05
K1 West 2	70	11	0.01	0.48	0.25	0.19	0.76
K2	80	17	0.01	1.57	0.33	0.43	1.29
MC	90	20	0.01	3.41	0.50	0.88	1.78
P South	100	11	0.01	0.31	0.13	0.11	0.88
P Main	110	11	0.0001	0.21	0.06	0.07	1.24
P North	120	3	0.03397	0.41	0.17	0.21	1.23
SAM North	130	12	0.0001	4.33	0.48	1.22	2.54
SAM South	140	11	0.0001	0.10	0.02	0.04	1.98
SZ North	150	6	0.0001	0.01	0.00	0.00	1.59
SZ South	160	4	0.0001	0.01	0.00	0.00	1.92
WP	170	6	0.01	0.22	0.10	0.08	0.79
XX	200	23	0.0001	1.25	0.24	0.34	1.42
Total		**324**	**0.0001**	**7.54**	**0.46**	**0.80**	**1.73**

Figure 14.2 Golden Crown Deposit Histograms and Probability Plots



14.3.8 Continuity Analysis

Due to the small number of sample points in the individual domains, valid semi-variograms could not be developed and interpreted. Based on the drill hole spacing, experience with similar domains, and observed continuity of mineralization, a range of 30 m was selected as an appropriate guideline for classification and estimation.

14.3.9 Block Models

An orthogonal block model was established in the local coordinate system containing the modeled domains, with the block model limits selected so as to cover the extent of the economic mineralization and with the block sizes reflecting the local continuity of the mineralization and the drill hole spacing (Table 14.7). Modeled domains within a block model are identified by a unique rock code, and each block model consists of separate folders for estimated grade, rock codes, percent, density and classification attributes. A percent block model was used to accurately represent the volume contained within the constraining wireframes.

TABLE 14.7
GOLDEN CROWN BLOCK MODEL SETUP

	Minimum	Maximum	Count	Size
Easting	4,400	5,500	440	2.5 m
Northing	4,800	5,400	240	2.5 m
Elevation	1,140	1,420	112	2.5 m

14.3.10 Estimation & Classification

Mineral Resources were estimated and classified in compliance with guidelines established by the Canadian Institute of Mining, Metallurgy and Petroleum:

Indicated Mineral Resource
An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

Inferred Mineral Resource
An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Block grades were estimated using Inverse Distance Cubed ("ID^3") linear weighting of capped composite grades. Composite data used during grade estimation were restricted to samples located inside their defined domain. A series of expanding search ellipsoids with varying minimum sample requirements was used for sample selection, grade estimation and classification (Appendix VI):

- During the first estimation pass, four to twelve capped composites from two or more drill holes within a search ellipsoid measuring 30 m along strike, 30 m down dip, and 10 m perpendicular to the dip were required for estimation.

All blocks estimated during the first estimation pass were algorithmically classified as Indicated.

- During the second estimation pass, one to twelve capped composites from one or more drill holes within a search ellipsoid measuring 90 m along strike, 90 m down dip, and 30 m perpendicular to the dip were required for estimation. All blocks estimated during the second estimation pass were algorithmically classified as Inferred.

14.3.11 Cut-Off

All mineral resources are reported relative to a 3.50 g/t gold equivalent cut-off (Table 14.8). Commodity prices are based on the approximate twenty-four month trailing average as of April 30, 2017.

Economic Parameters

Gold Price:	US$1,200/oz
$US:$CDN Exchange Rate	$0.80
Gold Recovery:	90%
Gold Smelter Payable:	96%
Copper Price:	US$2.50/lb.
Copper Recovery:	85%
Copper Smelter Payable:	90%
Processing Cost:	$35/t
G&A Cost:	$30/t
Underground Mining Cost:	$75/t
g/t gold equivalent:	1.50% Cu
Cut-off:	3.50 g/t gold-equivalent

14.3.12 Golden Crown Deposit Mineral Resource Estimate

All mineral resources have been estimated in compliance with the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines, as prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council and NI 43-101.

Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

TABLE 14.8
GOLDEN CROWN DEPOSIT MINERAL RESOURCE ESTIMATE

Golden Crown Updated Mineral Resource (3.5 g/t AuEq cut-off)					
Class	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq ozs**
Indicated	163,000	11.09	0.56	11.93	62,500
Inferred	42,000	9.04	0.43	9.68	13,100

(1) Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues. It is noted that no specific issues have been identified as yet.

(2) The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

(3) The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council

14.3.13 Validation

Block models were validated visually by the inspection of successive section lines in order to confirm that the model correctly reflects the distribution of high-grade and low-grade samples (Appendices III, IV and V).

The total estimated volume reported at zero cut-off was compared by domain to the calculated volume of the defining mineralization wireframe (Table 14.9). All reported volumes fall within acceptable tolerances.

As a further check on the model the average model block grade was compared to the NN block average. No significant global bias between the block model and the input data was noted (Table 14.10).

TABLE 14.9
GOLDEN CROWN DEPOSIT VOLUME COMPARISONS

Domain	Rock Code	Resource Volume (cubic metres)	Wireframe Volume (cubic metres)
K1 South	40	1,700	1,700
K1 Main	50	43,800	43,800
K1 West 1	60	6,700	6,800
K1 West 2	70	1,600	1,600
K2	80	2,800	2,800
MC	90	4,300	4,300
P South	100	2,700	2,700
P Main	110	4,400	4,400
P North	120	1,000	1,000
SAM North	130	4,100	4,100
SAM South	140	1,400	1,400
SZ North	150	1,800	1,800
SZ South	160	1,200	1,200
WP	170	2,700	2,700
XX	200	3,900	3,900
Total		**84,100**	**84,200**

TABLE 14.10 GOLDEN CROWN DEPOSIT VALIDATION STATISTICS					
Domain	**Rock Code**	**ID^3 Avg Au g/t**	**NN Au g/t**	**ID^3 Avg Cu %**	**NN Cu %**
K1 South	40	9.75	6.83	0.53	0.43
K1 Main	50	9.34	8.06	0.45	0.45
K1 West 1	60	5.04	4.85	0.89	0.85
K1 West 2	70	2.61	2.87	0.27	0.30
K2	80	4.28	4.30	0.30	0.21
MC	90	5.61	6.04	0.96	0.90
P South	100	14.92	15.55	0.12	0.11
P Main	110	4.92	4.00	0.04	0.05
P North	120	2.68	2.70	0.41	0.41
SAM North	130	6.24	6.98	0.49	0.72
SAM South	140	13.74	18.33	0.02	0.01
SZ North	150	13.84	16.45	0.01	0.01
SZ South	160	3.64	3.57	0.01	0.01
WP	170	4.86	4.14	0.09	0.08
XX	200	4.07	3.83	0.23	0.20
Total		**8.00**	**7.39**	**0.43**	**0.43**

14.4 LEXINGTON-GRENOBLE DEPOSIT MINERAL RESOURCE ESTIMATE

14.4.1 Data Supplied

Information used for the Lexington-Grenoble Mineral Resource Estimate incorporates drilling information recovered from records compiled by previous operators. The drilling information includes collar coordinates, drill hole survey data, assay values, bulk density and lithology intervals. The compiled database contains 236 surface drill holes and 359 underground drill holes. In addition there are 50 drill hole records with ambiguous collar elevations, and 20 duplicate underground drill hole records (Table 14.11). All data are expressed in metric units and UTM coordinates. A topographic surface was also supplied.

TABLE 14.11 LEXINGTON-GRENOBLE DEPOSIT DATABASE RECORDS		
Type	**Count**	**Total Metres**
Unknown Collar Elevation	50	3,455.00
Surface Drillholes	236	36,850.16
Underground Drillholes	359	5,748.58
Exploration Drillholes	110	11,069,48
Total	**755**	**57,123.22**

14.4.2 Database Validation

Industry standard validation checks were completed on the supplied databases. P&E typically validates a mineral resource database by checking for inconsistencies in naming conventions or analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, and missing interval and coordinate fields. P&E noted a small number of out-of-sequence and zero-length interval errors in the surface drill hole records, which were corrected. P&E also noted some discrepancies in the surveyed position of some underground drill holes, as well as underground assay results. P&E believes that the surface drill hole database meets the minimum requirements for mineral resource estimation.

14.4.3 Bulk Density Data

A total of 231 bulk density measurements were reported from drill hole core within the project boundaries, ranging from 2.29 tonnes per cubic metre to 4.70 tonnes per cubic metre. The average reported bulk density value is 3.17 tonnes per cubic metre.

14.4.4 Domain Modeling

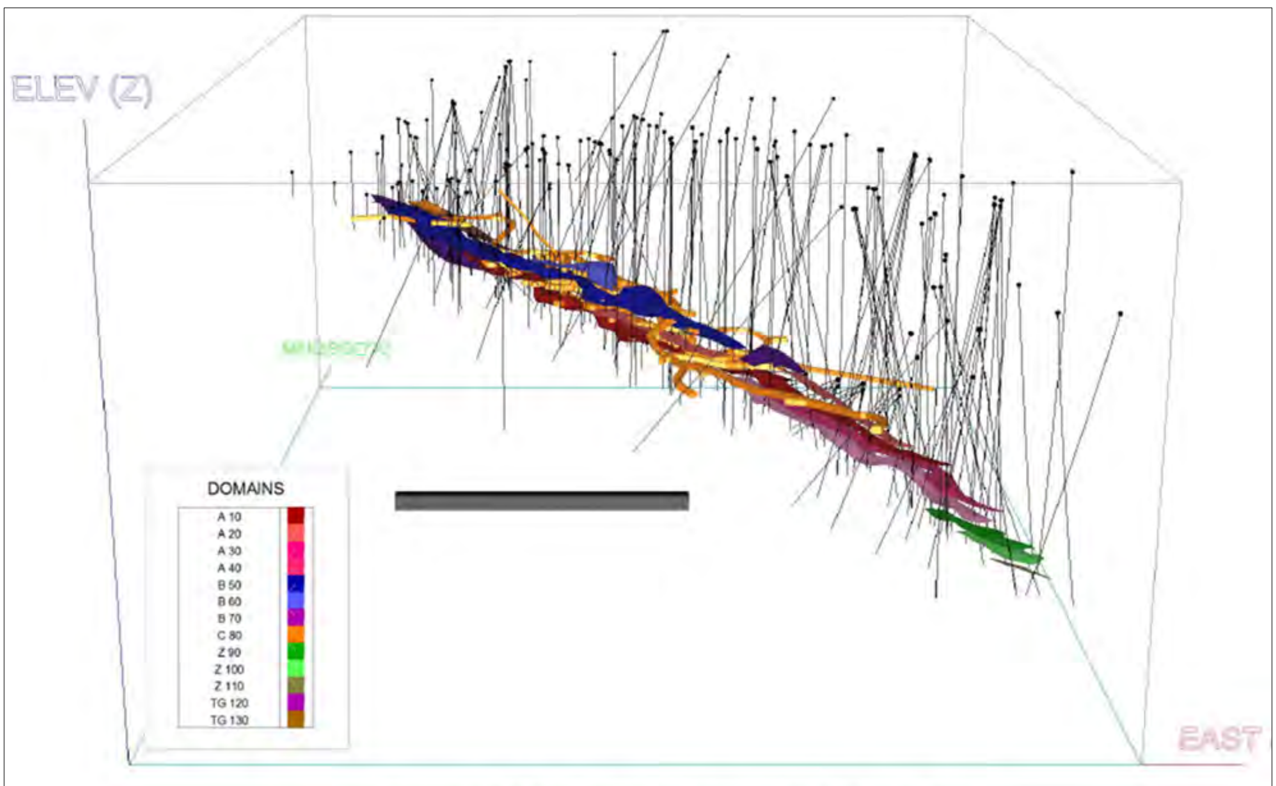
Twelve mineralization domains were previously identified for the Lexington-Grenoble Deposit, based on a 2.00 g/t gold-equivalent threshold. These mineralization domains were re-interpreted using successive polylines oriented perpendicular to the general trend of the mineralization and spaced every 2.50 m, resulting in a total of thirteen domains (Table 14.12 and Appendix II). The domain outlines were influenced by the selection of mineralized material above 3.50 g/t gold-equivalent that demonstrated lithological and structural zonal continuity along strike and down dip. Where appropriate, lower grade mineralization was included for the purpose of maintaining zonal continuity and a minimum of two contiguous intervals were normally selected. All polyline vertices were snapped directly to drill hole assay intervals, in order to generate a true three-dimensional representation of the extent of the mineralization. The domain wireframes were then clipped to a topographic surface.

Underground drill holes were used as a visual check during construction of the mineralization wireframes. However, the majority of the underground drill holes have been drilled parallel or sub-parallel to the modeled domains, and were therefore not used for compositing nor used during estimation. P&E recommends that a comprehensive audit and review of underground drilling results be completed moving forward.

In addition to the mineralization domains a series of intrusive bodies were modeled from lithological logging and used to deplete the block model.

TABLE 14.12 LEXINGTON-GRENOBLE DEPOSIT MODELED DOMAINS	
Domains	**Rock Code**
A Main	10
A Upper	20
A Lower	30
A Middle	40
B Lower	50
B Upper	60
B East	70
C Main	80
Z Upper	90
Z Middle	100
Z Lower	110
TG Lower	120
TG Upper	130

Figure 14.3 3D View of Lexington-Grenoble Resource Domains and Drill holes



Lexington modeled domains. View looking North. Scale Bar = 200 m.

14.4.5 Compositing

Assay sample lengths within the modeled domains range from 0.06 m to 6.10 m with an average length of 0.85 m, with 84 % of the constrained assays having a sample length of 1.00 m or less In order to ensure equal sample support a compositing length of 1.00 m was selected for estimation. Length-weighted composites were calculated within each domain starting at the first point of intersection between the drill hole and the domain intersected, and halting upon exit from the domain wireframe. Composites were then assigned a domain rock code value based on the domain wireframe that the interval fell within.

P&E notes that only heavily mineralized intervals appear to have been logged and sampled. Missing samples were therefore assigned grades of 0.10 g/t for Au and 0.01 % for Cu before compositing. The composite data were visually validated against the applicable domain wireframe and exported to an extraction file for data analysis and grade estimation. Residual composites less than half the compositing interval were discarded.

14.4.6 Exploratory Data Analysis

P&E generated summary statistics for the composite samples within the modeled domains in order to provide a baseline for model comparison and validation (Table 14.13 and Table 14.14).

A correlation between gold and copper composite grades was noted, with a correlation coefficient of 0.38.

TABLE 14.13
LEXINGTON-GRENOBLE DEPOSIT AU COMPOSITE SUMMARY STATISTICS BY DOMAIN

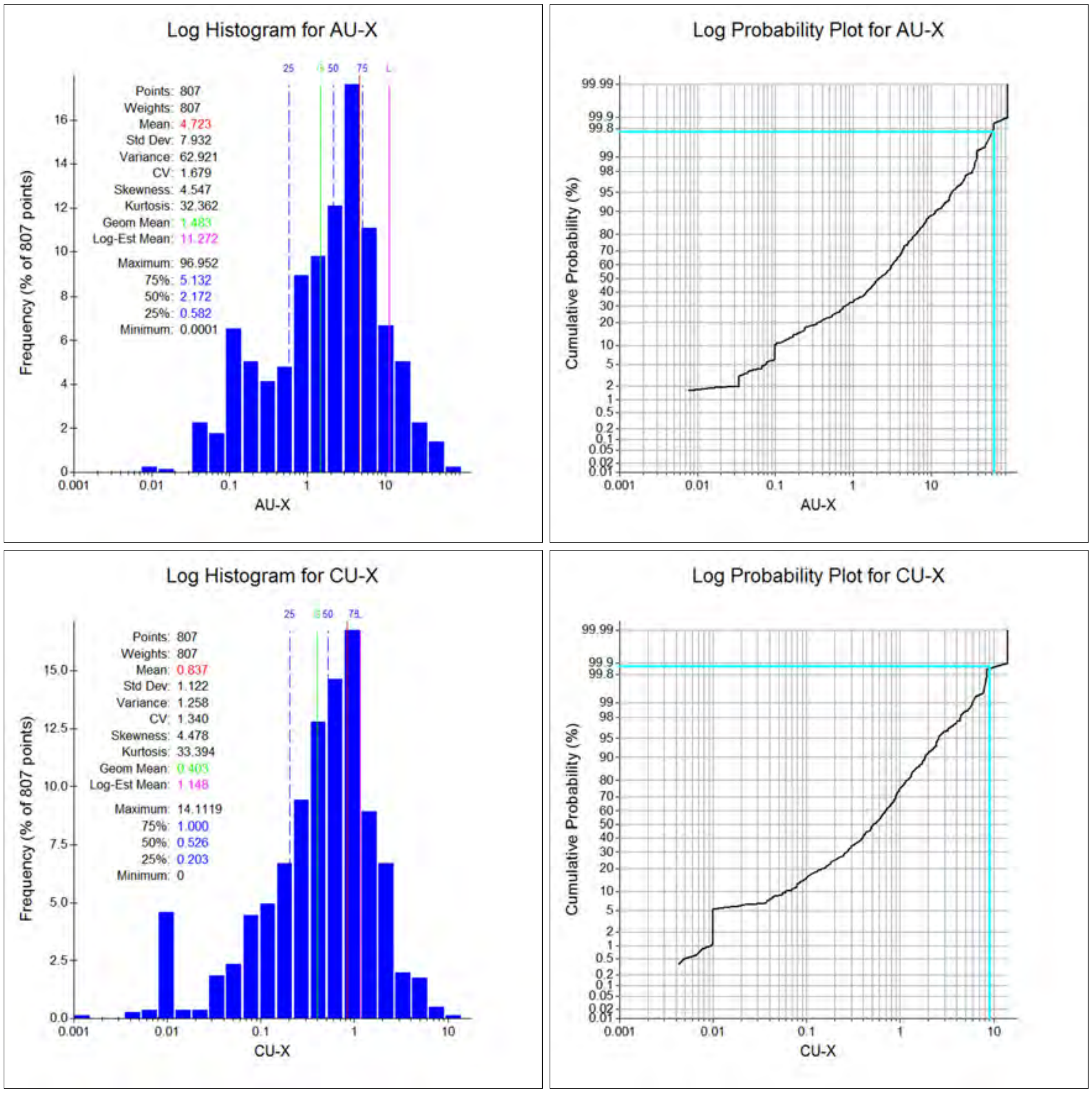
Domain	Rock Code	Samples	Minimum Au g/t	Maximum Au g/t	Mean Au g/t	Standard Deviation	CoV
A Main	10	203	0.03	96.95	5.41	10.20	1.88
A Upper	20	82	0.01	65.31	6.09	11.15	1.83
A Lower	30	121	0.08	49.19	6.50	8.45	1.30
A Middle	40	57	0.10	24.63	5.06	5.69	1.13
B Lower	50	194	0.00	24.56	2.68	3.94	1.47
B Upper	60	29	0.08	11.29	3.38	2.85	0.84
B East	70	6	0.87	16.76	4.52	6.11	1.35
C Main	80	6	1.71	6.67	4.19	2.72	0.65
Z Upper	90	22	0.15	20.98	4.34	5.36	1.24
Z Middle	100	16	0.12	27.01	8.27	8.63	1.04
Z Lower	110	3	0.85	3.90	2.80	1.70	0.61
TG Lower	120	62	0.01	28.05	3.62	6.00	1.66
TG Upper	130	6	0.07	3.18	1.11	1.25	1.13
Total		**807**	**0.00**	**96.95**	**4.72**	**7.93**	**1.68**

TABLE 14.14 LEXINGTON-GRENOBLE DEPOSIT CU COMPOSITE SUMMARY STATISTICS BY DOMAIN							
Domain	**Rock Code**	**Samples**	**Minimum Cu %**	**Maximum Cu %**	**Mean Cu %**	**Standard Deviation**	**CoV**
A Main	10	203	0.0001	8.53	0.97	1.23	1.27
A Upper	20	82	0.04	14.11	0.93	1.72	1.86
A Lower	30	121	0.0001	7.94	0.91	1.34	1.46
A Middle	40	57	0.01	4.04	0.80	0.80	0.99
B Lower	50	194	0.01	6.06	0.67	0.87	1.29
B Upper	60	29	0.04	1.39	0.65	0.34	0.53
B East	70	6	0.30	1.51	0.77	0.48	0.62
C Main	80	6	0.74	1.62	1.18	0.48	0.41
Z Upper	90	22	0.06	3.41	0.92	0.85	0.92
Z Middle	100	16	0.0001	2.44	0.90	0.77	0.85
Z Lower	110	3	0.17	1.04	0.48	0.48	1.00
TG Lower	120	62	0.00	2.52	0.72	0.67	0.93
TG Upper	130	6	0.04	1.43	0.67	0.56	0.85
Total		**807**	**0.0001**	**14.11**	**0.84**	**1.12**	**1.34**

14.4.7 Treatment of Extreme Values

Higher-grade composite values were adjusted prior to estimation in order to reduce the influence of anomalous data on the resulting mineral resource estimates. Capping levels of 70 g/t gold and 9 % copper were selected as global capping thresholds based on examination of histograms and probability plots (Figure 14.4) as well as the iterative comparison of estimated block means and composite means. A total of one gold composite and one copper composite were capped prior to estimation.

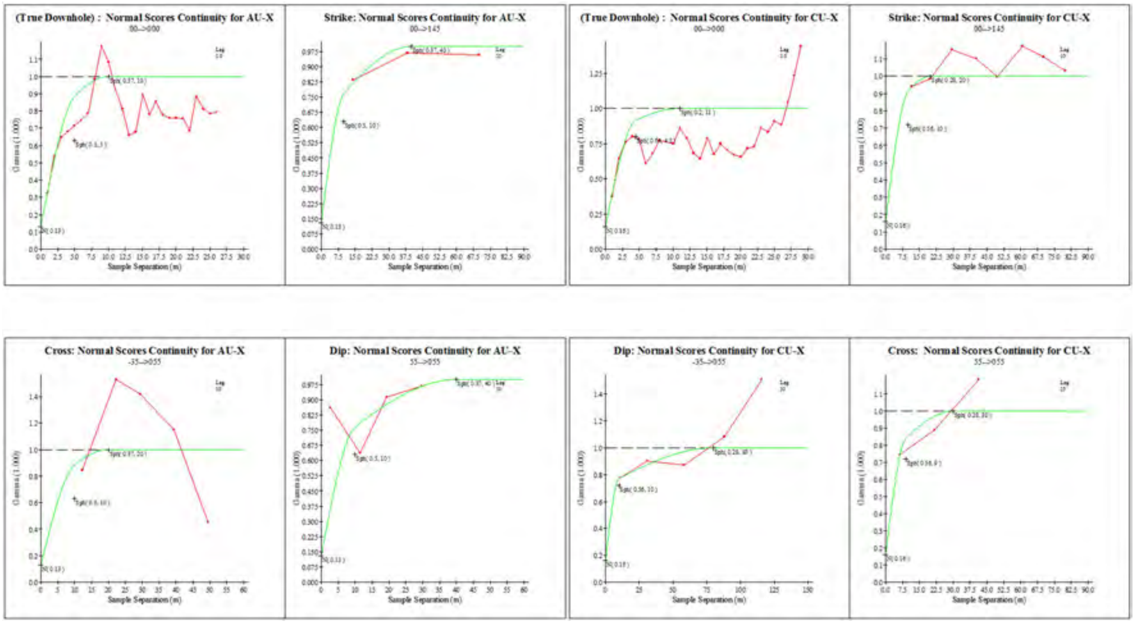
Figure 14.4 Lexington-Grenoble Deposit Histograms and Probability Plots



14.4.8 Continuity Analysis

Domain-coded, composited sample data were used for continuity analysis. Global orientations for the deposit were developed using the modeled geometry of the mineralization. Conventional and normal-scores experimental semi-variograms aligned with the best-fit orientation of the mineralization were then generated. The nugget effect was derived from the down-hole experimental semi-variogram and variogram ranges were checked and iteratively refined. Back-transformed variance contributions were calculated and continuity ranges based on the semi-variogram models were then generated for Au and Cu and used to define an appropriate search strategy. Modeled global variograms suggest a strike distance of ~40 m, dip distance of ~40 m and cross-dip distance of ~20 m (Figure 14.5).

Figure 14.5 Lexington-Grenoble Experimental Semi-Variograms



14.4.9 Block Models

A rotated block model was established in the local coordinate system containing the modeled domains, with the block model limits selected so as to cover the extent of the economic mineralization and with the block sizes reflecting the local continuity of the mineralization and the drill hole spacing (Table 14.15). Modeled domains within a block model are identified by a unique rock code, and each block model consists of separate folders for estimated grade, rock codes, percent, density and classification attributes. A percent block model was used to accurately represent the volume contained within the constraining wireframes.

Table 14.15 Lexington-Grenoble Block Model Setup				
	Minimum	**Maximum**	**Count**	**Size**
Easting	382,450	382,800	140	2.5 m
Northing	5,429,250	5,430,000	300	2.5 m
Elevation	1,030	1,380	140	2.5 m
Rotation	50° counter-clockwise			

14.4.10 Estimation & Classification

Mineral resources were estimated and classified in compliance with guidelines established by the Canadian Institute of Mining, Metallurgy and Petroleum:

Measured Mineral Resource

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.

Indicated Mineral Resource

An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

Inferred Mineral Resource

An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Block grades were estimated using Inverse Distance Cubed (“ID^3”) linear weighting of capped composite grades. Composite data used during grade estimation were restricted to samples located inside their defined domain. A series of expanding search ellipsoids with varying minimum sample requirements was used for sample selection, grade estimation and classification (Appendix VI):

- During the first estimation pass, twelve capped composites from four or more drill holes within a search ellipsoid measuring 20.0 m along strike, 20.0 m down dip, and 10.0 m perpendicular to the dip were required for estimation. All blocks estimated during the first estimation pass were algorithmically classified as Measured.
- During the second estimation pass, six to twelve capped composites from two or more drill holes within a search ellipsoid measuring 40.0 m along strike, 40.0 m down dip, and 20.0 m perpendicular to the dip were required for estimation. All blocks estimated during the second estimation pass were algorithmically classified as Indicated.
- During the third estimation pass, three to twelve capped composites from one or more drill holes within a search ellipsoid measuring 120.0 m along strike, 120.0 m down dip, and 30.0 m perpendicular to the dip were required for estimation. All blocks estimated during the second estimation pass were algorithmically classified as Inferred.

Blocks were then depleted on a whole-block basis to reflect historical mining and intrusives.

Bulk Density was estimated using Inverse Distance Squared (“ID^2”) linear weighting of three to nine bulk density measurements from one or more drill holes within a 90 m x 270 m x 270 m search ellipsoid oriented to the best-fit of the mineralization trend. The average estimated bulk density is 3.51 tonnes per cubic metre.

14.4.11 Cut-Off

All mineral resources are reported relative to a 3.50 g/t gold equivalent cut-off (Table 14.16). Commodity prices are based on the approximate twenty-four month trailing average as of April 30, 2017.

Economic Parameters

Gold Price:	US$1,200./oz
$US:$CDN Exchange Rate	$0.80
Gold Recovery:	90%
Gold Smelter Payable:	96%
Copper Price:	US$2.50/lb.
Copper Recovery:	85%
Copper Smelter Payable:	90%
Processing Cost:	$35./t
G&A Cost:	$30./t
Underground Mining Cost:	$75./t
g/t gold equivalent:	1.50% Cu
Cut-off:	3.50 g/t gold-equivalent

14.4.12 Mineral Resource Estimate

All Mineral Resources have been estimated in compliance with the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines, as prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council and NI 43-101.

Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource category.

TABLE 14.16
LEXINGTON-GRENOBLE DEPOSIT MINERAL RESOURCE ESTIMATE

Lexington Updated Mineral Resource (3.5 g/t AuEq cut-off)					
Class	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq ozs**
Measured	58,000	6.98	1.10	8.63	16,100
Indicated	314,000	6.38	1.04	7.94	80,200
Meas & Ind	372,000	6.47	1.05	8.05	96,300
Inferred	12,000	4.42	1.03	5.96	2,300

(1) Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues. It is noted that no specific issues have been identified as yet.

(2) The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

(3) *The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council*

14.4.13 Validation

Block models were validated visually by the inspection of successive section lines in order to confirm that the model correctly reflects the distribution of high-grade and low-grade samples (Appendices III, IV and V).

The total estimated volume reported at zero cut-off was compared by domain to the calculated volume of the defining mineralization wireframe (Table 14.17). All reported volumes fall within acceptable tolerances.

As a further check on the model the average model block grade was compared to the NN block average. No significant global bias between the block model and the input data was noted (Table 14.18).

TABLE 14.17
LEXINGTON-GRENOBLE VOLUME COMPARISONS

Domain	Rock Code	Depleted Resource Volume (cubic metres)	Wireframe Volume (cubic metres)
A Main	10	43,900	53,300
A Upper	20	15,500	20,700
A Lower	30	34,000	35,900
A Middle	40	17,000	18,600
B Lower	50	47,700	51,700
B Upper	60	5,300	6,300
B East	70	1,400	1,500
C Main	80	2,000	2,000
Z Upper	90	5,400	6,500
Z Middle	100	4,200	5,000
Z Lower	110	1,000	1,000
TG Lower	120	24,200	24,200
TG Upper	130	5,700	5,700
Depleted Volume		25,100	0
Total		**232,500**	**232,500**

TABLE 14.18 LEXINGTON-GRENOBLEDOMAIN VALIDATION STATISTICS					
Domain	**Rock Code**	**ID^3 Avg Au g/t**	**NN Au g/t**	**ID^3 Avg Cu %**	**NN Cu %**
A Main	10	4.74	5.33	0.81	0.90
A Upper	20	5.80	6.13	0.82	0.82
A Lower	30	6.70	6.54	1.16	1.19
A Middle	40	5.16	5.06	0.79	0.85
B Lower	50	2.60	2.50	0.61	0.55
B Upper	60	2.96	3.00	0.62	0.67
B East	70	4.45	4.62	0.80	0.79
C Main	80	2.47	2.43	0.88	0.87
Z Upper	90	3.61	3.16	0.79	0.68
Z Middle	100	7.33	7.62	0.83	0.78
Z Lower	110	2.89	2.97	0.55	0.58
TG Lower	120	2.85	2.67	0.88	0.81
TG Upper	130	1.18	1.32	0.72	0.68
Total		**4.26**	**4.33**	**0.82**	**0.82**

14.5 DEADWOOD ZONE MINERAL RESOURCE ESTIMATE

14.5.1 Introduction

The project limits area is based in the Local grid coordinate system which is a grid conversion from the NAD 1983, Zone 11 system. Estimation was performed into a parent block size of 25 m x 10 m x 25 m with sub-blocking down to 2.5 m x 1 m x 2.5 m. The Deadwood resource modeling utilized 61 core holes completed between 1986 and 2011. A total of 41 drill holes were historic holes (1986-2004) and 20 holes were from the recent drilling completed by Golden Dawn (2010-2011). Mr. Dufresne, M.Sc., P.Geol, supervised both the 2010, 2011 and 2012 drilling campaigns along with logging and sampling of the drill core during both campaigns. Grade (assay) and geologic information is derived from work conducted by APEX personnel during the 2010 to 2011 field seasons and historic data compilation.

The Deadwood Mineral Resource Estimate is reported in accordance with the Canadian Securities Administrators National Instrument 43-101 and has been estimated using the CIM “Estimation of Mineral Resources and Mineral Reserves Best Practice GuidelinesÈ Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the Mineral Resource will be converted to a Mineral Reserve.

14.5.2 Data

Data Summary and Histograms

The Deadwood Mineral Resource Estimate has been calculated utilizing the estimated raw assayed grade for only gold. Although silver, copper, lead and zinc have also been analysed, gold is the only commodity at this stage that demonstrates potential for economic concentrations.

Histograms and summary statistics were calculated for the Deadwood Mineralized Zone (Figure 14.6, 14.7, and14.8). The deposit was broken up into two domains, which included the low grade Deadwood mineralization and the higher grade vein style mineralization which is referred to as the Wild Cat veins. The Deadwood domain exhibits a clear single population of data, whereas the Wild Cat domain has insufficient data points to determine if only a single or double population is present.

Figure 14.6 Histogram of Un-composited All Assay Data within the Mineralized Wireframes

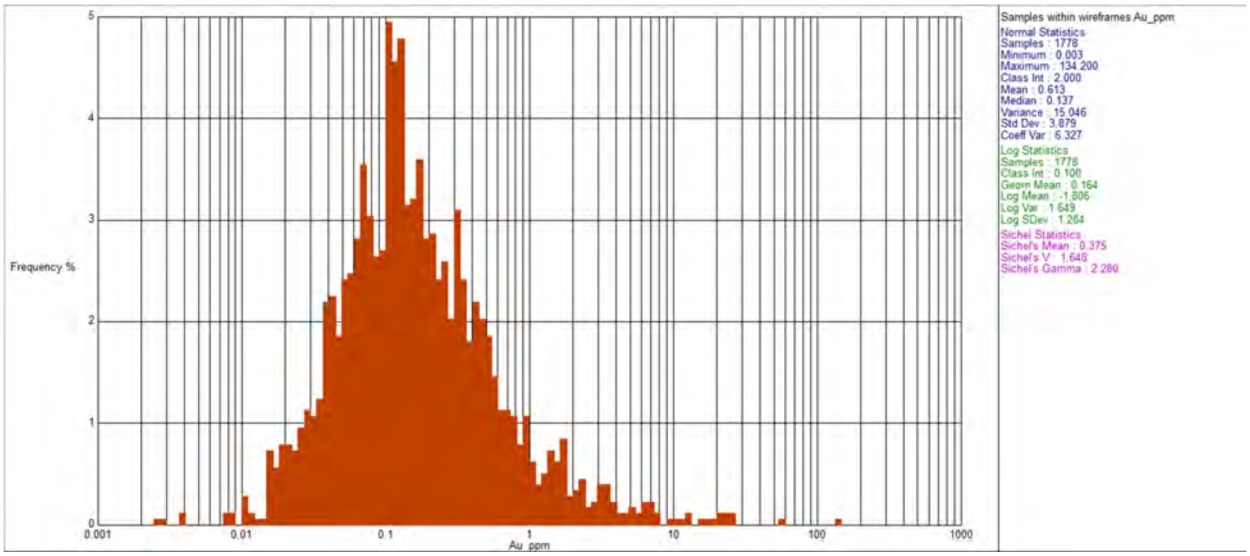


Figure 14.7 Histogram of the Un-composited Assay Data within the Deadwood Domain

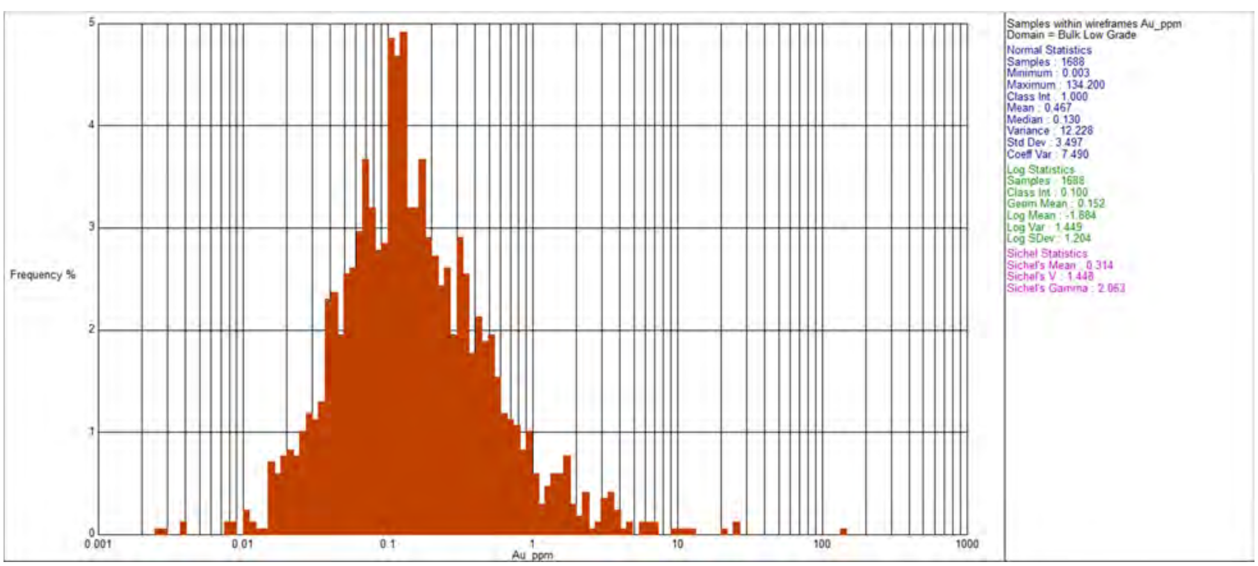
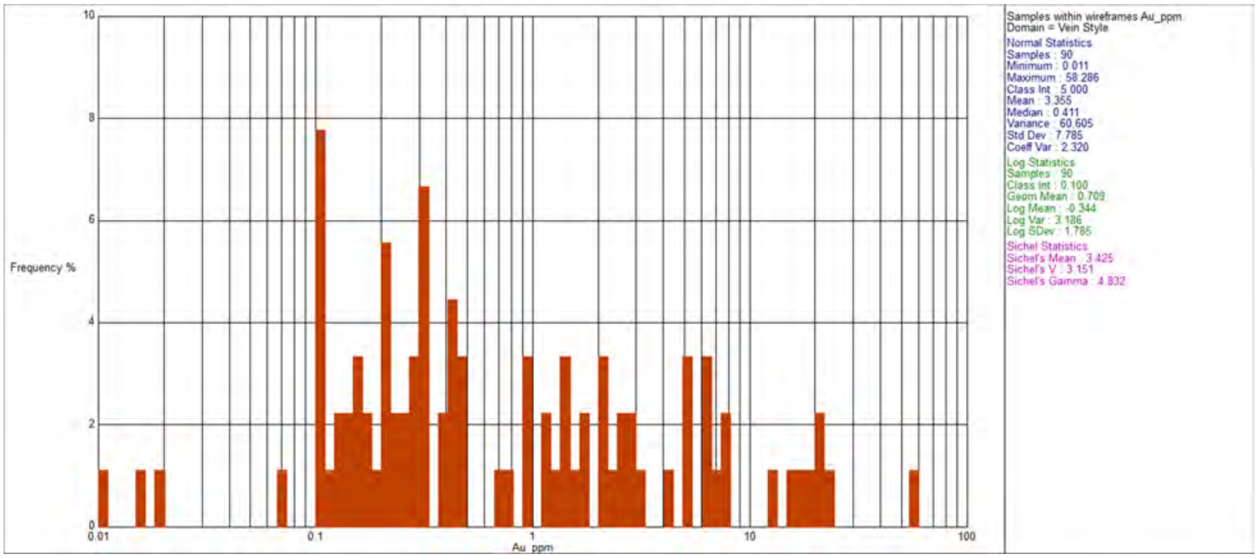


Figure 14.8 Histogram of the Un-composited Assay Data within the Wild Cat Domain



14.5.2.1 Database Validation

A total of 50 diamond drill holes are known to have been drilled on the Tam O'Shanter Property, which includes drilling completed by Golden Dawn. The drilling completed by Golden Dawn in 2010 and 2011, under the direct supervision of APEX personnel, was comprised of 14 drill holes. The remainder of the historic drilling was completed by previous operators, the majority of those historical drill holes at Deadwood have drill collars that were not surveyed. It is believed that the remainder of the holes have only hand held Garmin GPS co-ordinates in UTM NAD 83 assigned to the collar location. The elevations of the drill holes were initially obtained by hand held Garmin GPS, however, they have subsequently been modified by using the topographic DTM created from the 1:50,000 topographic contours to assign the elevations. It is recommended that all of the drill holes be located and the collar locations be surveyed in prior to any further Mineral Resource Estimations.

All drill logs, summaries, survey data and analytical results for all of the drilling is currently stored in a combination of excel spreadsheets and MICROMINE data files. Drill data, cross sections and 3D plots were interpreted and generated using, excel and MICROMINE software. The 2010 and 2011 drill core were logged and sampled by APEX personnel under the direct supervision of either Mr. Dufresne or Mr. Turner.

At the end of the 2011 program, the excel drillhole database was copied into MICROMINE by APEX personnel. Using MICROMINE's drillhole database validation function, the data was checked for overlapping sample and geological intervals, as well as survey, collar and hole length data. A few minor discrepancies were found and fixed within the database promptly.
The database is considered reliable for Mineral Resource Estimation purposes.

14.5.2.2 MICROMINE Database

The drilling database used is current as of December 1st, 2012. The database incorporates all available diamond drilling and analytical data. All data for the Mineral Resource Estimation was copied from excel into MICROMINE format. The four main MICROMINE .DAT files that were utilized in this estimation include:

- WR_Collar_AT – Collar file
- WR_Survey_AT – Survey file
- WR_Assays_AT – Sample file
- DTM wireframe – Surface topography

There were a total of 45 Tam O'Shanter drill holes within the export, of which all were used to guide the geological/mineralization interpretation. Of the 45 drill holes on the Property only 30 holes were actually used for the estimation of the resource calculation. Of the 30 holes 14 were completed (2010-2011) by Golden Dawn and 16 are historical holes. Spacing between drill holes varies from 20 m to 120 m, with an average for the Deadwood domain being 75 m and for the Wild Cat domain being 20 m.

The Tam O'Shanter Property assay file comprised 2,583 analyses of variable length, of which 917 samples are located within the mineralized wireframes. Upon the completion of the compositing process a total of approximately 905 composites were used in the grade estimation process.

Data supplied and utilized in MICROMINE included collar easting, northing and elevation (RL) coordinates, lithology information, gold assay data, and bulk density data. The collar co-ordinates were mostly obtained by hand held GPS and the RL were assigned using a MICROMINE generated DEM of the 50,000 scale topographic contour data. All drill holes were drilled at varying inclinations along approximately 220° UTM orientations (north-south Local grid). Little to no down hole survey data is available for the historical drill holes with only collar setups available which were set up using a clinometer after the drill was properly leveled. The more recent drilling completed by Golden Dawn had detailed down holes surveys completed every 50 m using a Reflex Instruments EZ-Shot downhole survey tool.

The drillhole database was validated and as such all sample duplicates and repeat duplicates were removed from the estimation sample file. Other than the duplicate samples there were no errors identified.

14.5.2.3 Grid Transformation

In light of the deposit being oriented at 300° which is 45° to the UTM grid, a local grid was established to perform the 2011 resource estimation. This local grid was once again utilised for the 2012 resource estimation. There was an old approximate local grid provided that was inaccurate with no northings documented. As such a new grid was established based on the old easting grid lines and new northings calculated. From this a two point grid conversion was calculated and applied to the existing UTM co-ordinates. The two points chosen were the north-eastern and south-western limits of the grid/resource (Table 14.19 and Figure 14.9). It is recommended that the licensed surveyor establish a formal local grid conversion at the time the drill holes are being surveyed.

TABLE 14.19
LOCAL GRID TO AMG TWO POINT GRID CONVERSION

	Local East	Local North	AMG East	AMG North
Point 1	300	9800	373254.167	5437486.656
Point 2	1500	10300	374499.222	5437112.717

14.5.2.4 Data Type Comparison

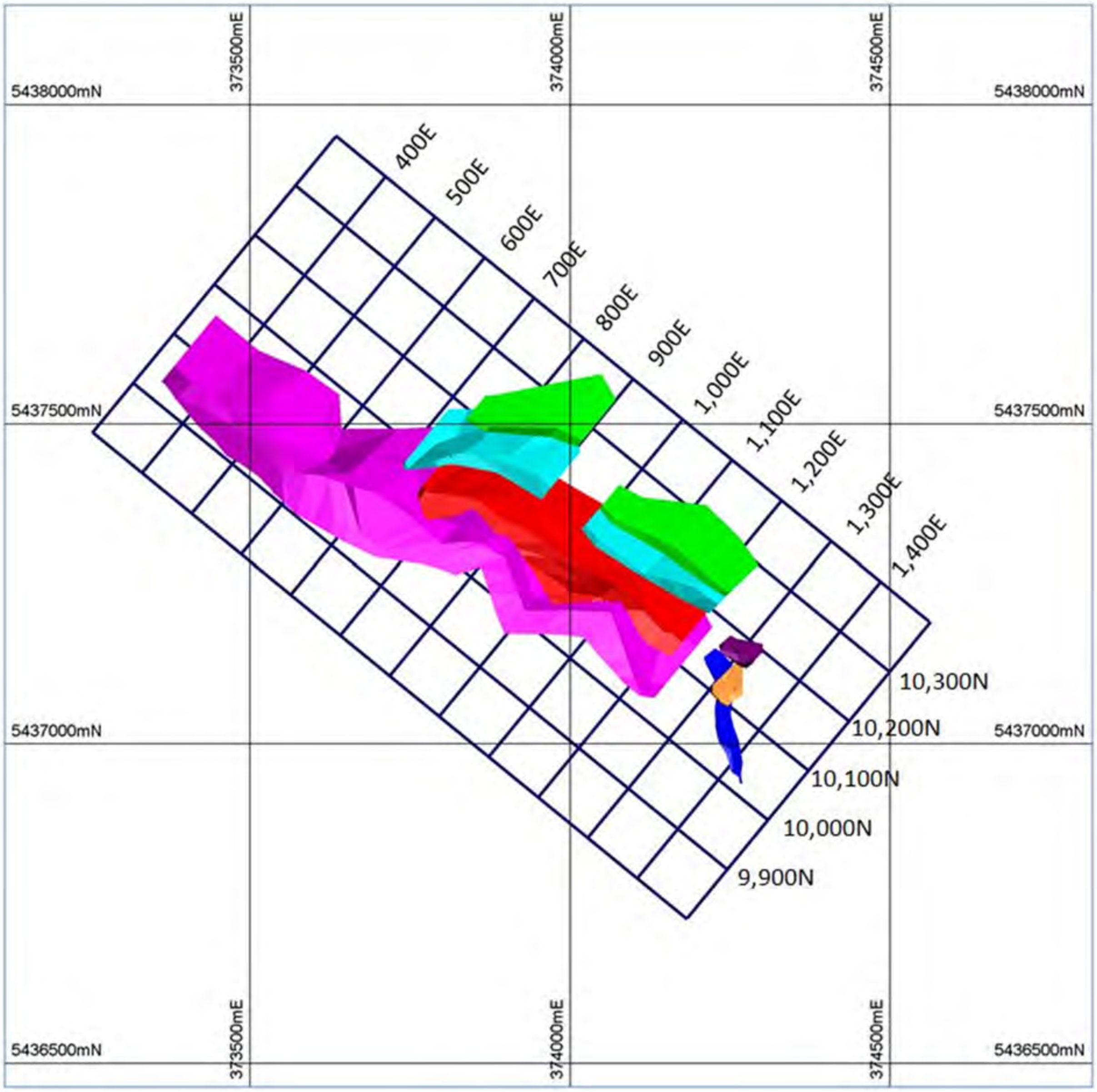
As there has only been diamond drilling conducted at the Tam O'Shanter Property a data type comparison is not required. Diamond drilling is considered a good quality drilling method and suitable for Mineral Resources Estimation.

14.5.2.5 Wireframing/Lode Interpretation

In light of the Deadwood deposit being a bulk, low grade mineral resource, a lower cut off was selected. An initial lode/mineralization interpretation was completed by Mr. Michael Dufresne (APEX Geoscience) who is familiar with the local geology and mineralization of the Deadwood deposit. Based on this interpretation a second interpretation was constructed that refined the mineralization to produce a mineralization model that was used for the grade estimation.

The lode interpretation involved wireframing the majority of mineralization greater than 0.1 g/t Au. The wireframes included some zones where there was no mineralization, but as long as the weighted down hole gold intersection from one mineralized zone to another was greater than 0.1 g/t then it was included in the wireframe. This was considered reasonable as the potential mining operation would not be that selective. The aim was to identify and wireframe any mineralization below the surface that had possibilities of future extraction by open pit mining. The interpretation was conducted on transform sections orientated 180° (Local Grid) looking east on 20 to 50 m spaced sections (±10 m or 25 m window).

Figure 14.9 Plan View of the Local Grid Layout



The lodes were extrapolated 20 to 80 m along strike or halfway to the next drill hole (whichever one was less) and up to 75 m down dip.

All drilling data was used to conduct and guide the lode wireframe interpretation.

14.5.3 Drillhole Flagging and Compositing

Drillhole samples situated within the mineralized wireframes were selected and flagged with the wireframe name/code. The flagged samples were checked visually next to the drillhole to check that the automatic flagging process worked correctly. All samples were correctly flagged and there was no need to manually flag or remove any samples.

A review of the sample lengths was conducted on the samples that were situated within the mineralized wireframes. The drill hole sample width analysis results showed a variable sample length from 0.09 m to 6.31 m in length (Table 14.20 and Figure 14.10). Looking at all of the sample widths, there are three dominant sample length populations, 1 m, 1.5 m and 3 m. A composite size of 1.5 m was selected and deemed as an appropriate composite size on the grounds that 72.7% of the sample data is less than 1.5 m in length and the composite size of 3 m may create an overly smoothed effect in the final estimation.

TABLE 14.20
SAMPLE LENGTH STATISTICS FOR THE DEADWOOD DOMAIN

	Width
Number	1778
Minimum	0.09
Maximum	6.31
Mean	1.516
Median	1.15
Std Dev	0.813
Variance	0.661
Std Error	0
Coeff Var	0.536

Length weighted composites were calculated for all the gold samples within the mineralized wireframes. The compositing process starts from the first point of intersection between the drillhole and the wireframe, and is halted upon reaching the end of the mineralized wireframe.

Upon completion of the 1.5 m compositing it was decided to examine the remaining samples less than 1.5 m in length to determine if they would unduly bias the estimation. This included only 94 composites less than 1.5 m in length. Sample grade analysis was performed on the remainder of the sub 1.5 m composites to determine what effect they would have on the overall grade. It was noted that these 94 sub 1.5 m composites raised the overall grade of the sample population (Table 14.21). Based on this it was decided to remove all sub 1.5 m samples from the main sample set. This resulted in an overall sample set of 1,750 samples to be used in the estimation process.

Figure 14.10 Histogram of the Sample Length for the Deadwood Domain Prior to Compositing

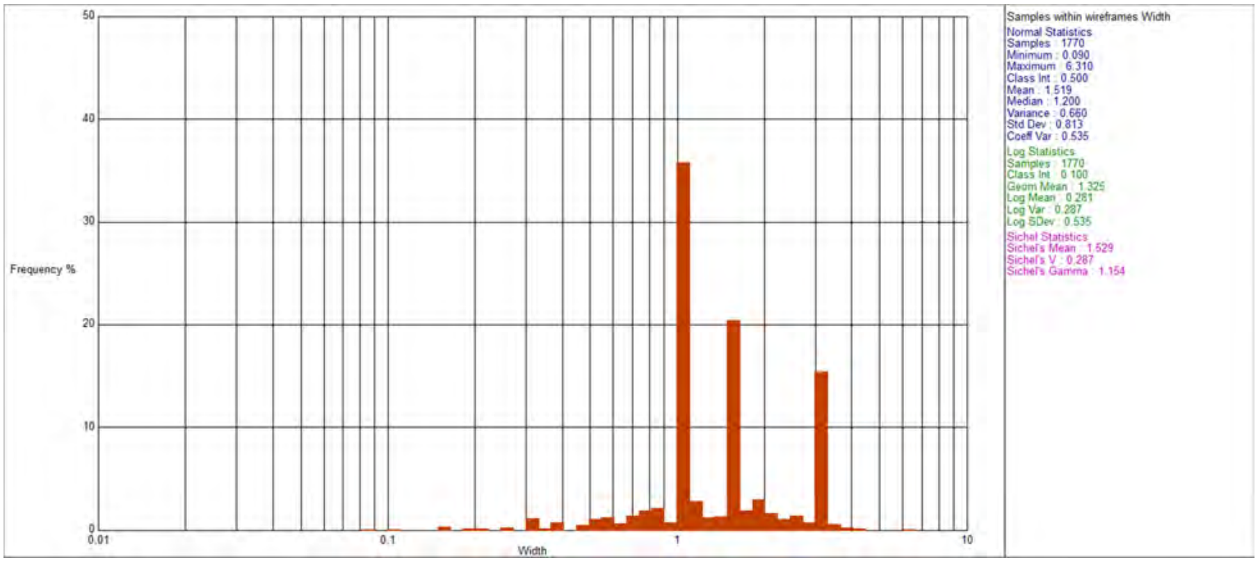


TABLE 14.21 COMPOSITED SAMPLE SUMMARY STATISTICS FOR GOLD SAMPLES			
	Un-composited samples	**All 1.5 m composited samples (with sub 1.5 m comps)**	**Final 1.5 m Composites (with sub 1.5 m comps removed)**
Number	1778	1844	1750
Minimum	0.003	0.008	0.008
Maximum	134.2	24.37	24.37
Mean	0.613	0.421	0.405
Median	0.137	0.153	0.148
Std Dev	3.879	1.257	1.208
Variance	15.046	1.58	1.459
Std Error	0.002	0.001	0.001
Coeff Var	6.327	2.985	2.986

There are some sample intervals within the historical diamond drilling that had selective sampling completed on only intervals that were thought to contain high grade mineralization. Since then it was identified that the mineralization was more amendable to a large, low grade deposit. These un-sampled intervals are believed to host low grade mineralization. It is recommended that the drill core be located and have any un-sampled drill core re-analysed.

The composited samples were used for all sample statistics, capping, estimation input file and validation comparisons.

14.5.4 Assay Summary Statistics

Examination of the gold mineralization identified from diamond drilling on the Tam O'Shanter Property has highlighted that there is wide, low grade mineralization known as the Deadwood Zone.

TABLE 14.22 **SUMMARY STATISTICS OF THE GOLD MINERALIZATION PRESENT IN DEADWOOD ZONE**	
Number	1711
Minimum	0.008
Maximum	24.37
Mean	0.359
Median	0.146
Std Dev	1.059
Variance	1.122
Std Error	0.001
Coeff Var	2.953

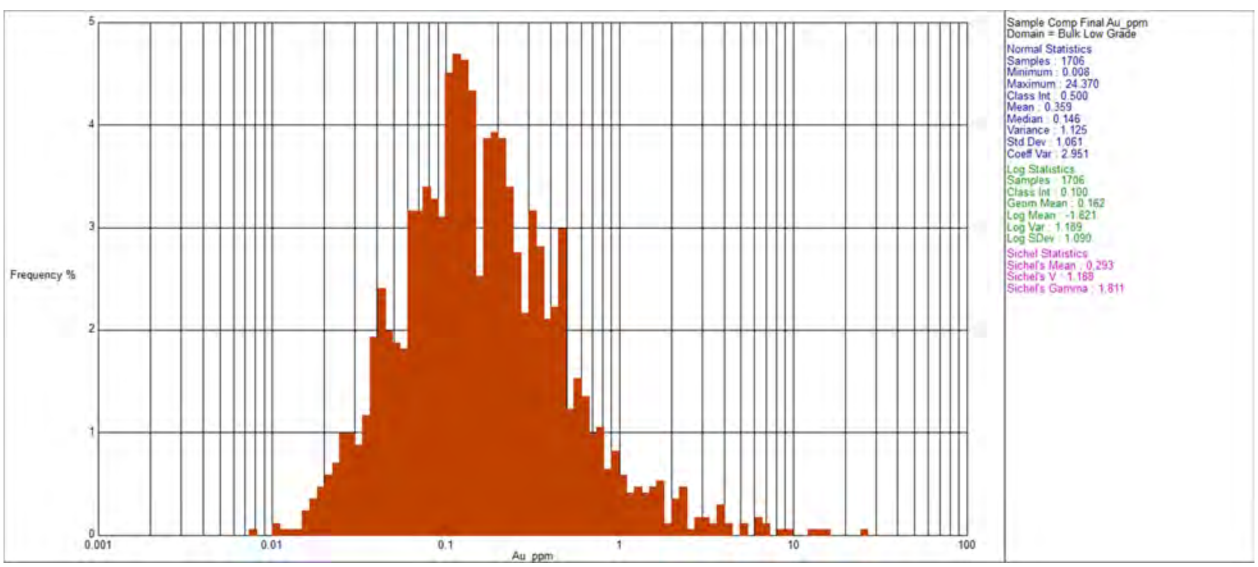
14.5.5 Top Cut Cutting

The composited sample data for the Tam O'Shanter Property was used for the top cut analysis. Gold grades within the domain was examined individually to determine suitable top cupping to apply to the respective grade populations. A combination of histograms, probability plots and inflection points were used to determine the extreme values to be cut. During the estimation the extreme values were capped to the values provided in Table 14.23, Figure 14.11.

TABLE 14.23
CAPPING LEVELS APPLIED TO THE DEADWOOD DOMAIN COMPOSITED (IN PARTS PER MILLION)

	Capping Level	Number of samples	Percentile
	5.0 g/t Au	13	99.2

Figure 14.11 Log Histogram of the Bulk Low Grade Domain Composite File



14.5.6 Grade Continuity

The variography utilized the composite data within the mineralized "Bulk Low grade" domain s to produce spherical semi variogram's. Difficulties were encountered with some of the variograms.

The Bulk Low grade domain suggested a maximum continuity of grade along a 086° strike orientation with a -6° plunge to the east. The maximum range of variogram was 145 m. The strike of the mineralization has been interpreted to be 84° so the variography has confirmed this interpretation. The secondary axis of the variography was orientated at 74° to the north which was essentially the down dip of the mineralization suggested a maximum range of 45 m. The variography in the third direction was poor with no meaningful variograms able to be generated. The down hole variogram which is essentially across strike of the mineralization suggested a range of 3 m. The variograms for the first two directions can be seen in Figures 14.12 to 14.14.

TABLE 14.24 SEMI-VARIOGRAM PARAMETERS FOR THE COMPOSITED MINERALIZED DOMAIN					
	Nugget (%)	**C1 (gamma)**	**Range 1 (m)**	**Range 2 (m)**	**Range 3 (m)**
	24.4	0.61	146	45	3

Figure 14.12 Down Hole Variogram of the Bulk Low Grade Domain

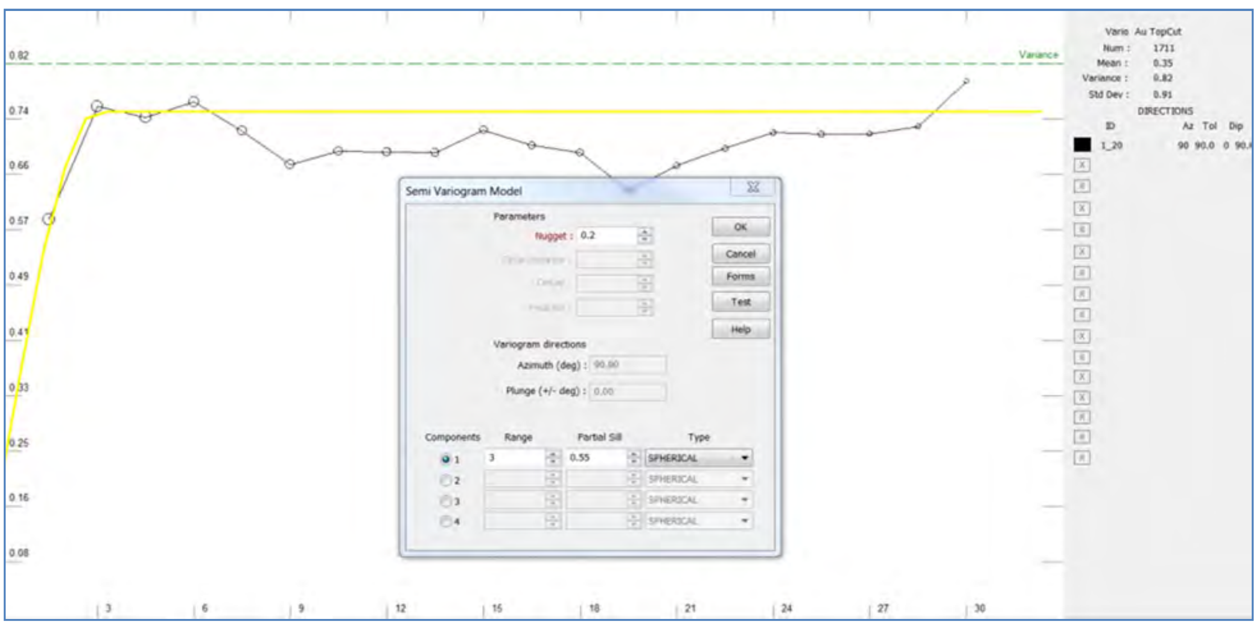


Figure 14.13 Direction One Semi - variogram of the Bulk Low Grade Domain

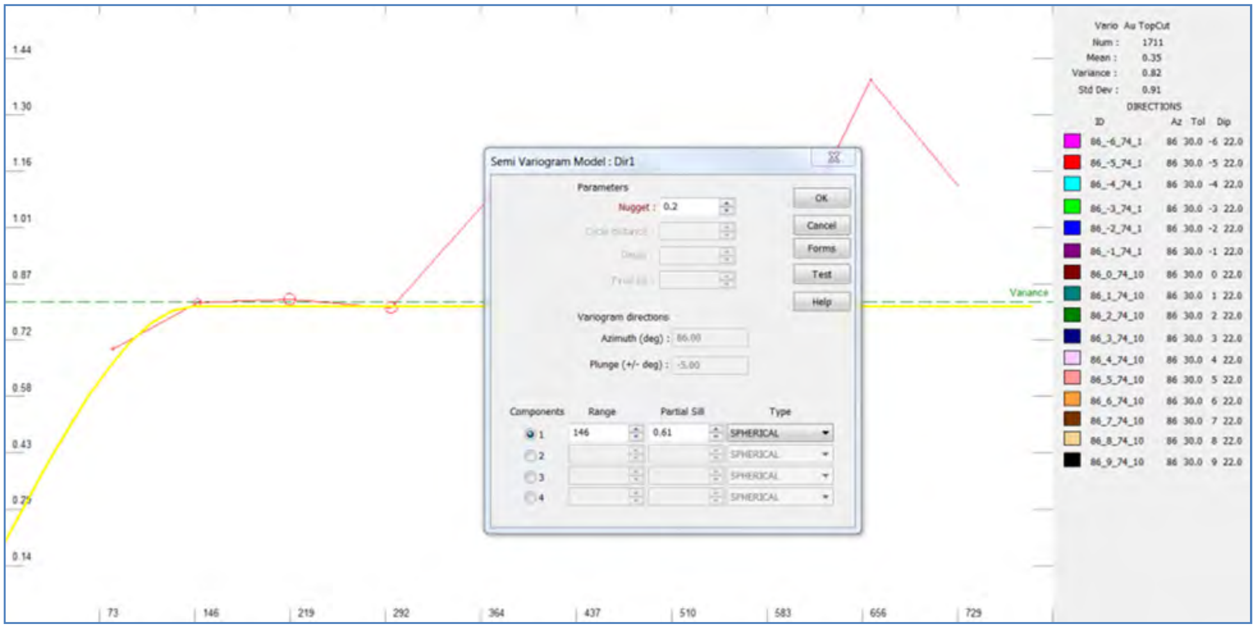
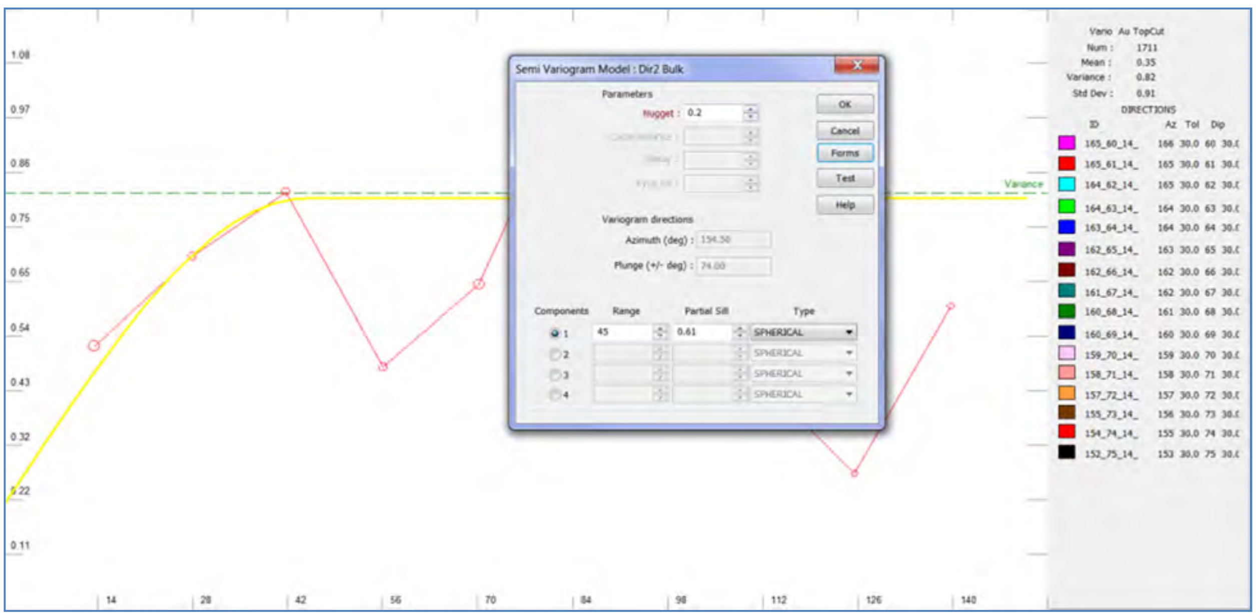


Figure 14.14 Direction Two Semi - variogram of the Bulk Low Grade Domain



14.5.7 Search Ellipsoids

The search orientations and size of the an-isotropic ellipsoids used in the estimation was largely based on a combination of the variography and the geological interpretation of the individual lodes. Each lode was looked at individually and the search ellipsoid was tailored to the orientation of that particular lode. The size of the search ellipsoids used, were guided by the identified ranges of maximum continuity of mineralization. These search orientations honour the geological interpretation of the mineralization (Table 14.25).

FIGURE 14.15 SEARCH ELLIPSOIDS USED IN THE ESTIMATION PROCESS				
Lode	**Search Ellipsoid**	**Strike Orientation**	**Dip Orientation**	**Plunge Orientation**
Lode01	Lode01	080	-74N	-6E
Lode02	Lode02	086	-70N	-6E
Lode03	Lode03 East	089	-68N	-6E
	Lode03 West	062	-75N	-6E
Lode04	Lode04 East	090	-65N	-6E
	Lode04 West	085	-62N	-6E

14.5.8 Bulk Density

Limited bulk density measurements have been collected at the Tam O'Shanter Property. One diamond hole (11WR10) was selected and composites down the hole were selected for builk density determinations. This was conducted at the same time as metallurgical test work by F. Wright Consulting Inc. (FWCI), North Vancouver, BC. It is unknown what method was used for the bulk density calculations.

In looking at the bulk density readings there is not much difference with depth or gold grades. The higher bulk density measurements tend to be the samples with the higher sulphide content. Due to the small dataset available it was decided to use an average of all available bulk density measurements. The mineralization is located within siliceous sediments with high sulphide content. Considering this an average bulk density of 2.86 t/m^3, it seems reasonable for use. It is recommended that further bulk density measurements be collected when additional drilling is conducted.

TABLE 14.25 BULK DENSITY SAMPLES COLLECTED FROM DRILL HOLE 11WR10						
Depth From	**Depth To**	**Au (g/t)**	**Cu (ppm)**	**ST (%)**	**Sample ID**	**Bulk Desnity, g/cm^3**
8	12	1.233	150	2.37	Comp.2	2.8
17	19					
20	30	0.173	80	3.43	Comp.3	2.85
30	35	1.215	521	7.6	Comp.4	2.98
35	37	0.383	237	3.86	Comp.5	2.86
47	54	0.843	87	4.49	Comp.6	2.89
62	64					
54	62	0.973	51	4.91	Comp.7	2.86

14.5.9 Block Model Extents and Block Size

In light of the current drill hole spacing of between 20 and 100m a model block size of 25 m (X) x 10 m (Y) x 25 m (Z) was chosen for the Deadwood Mineral Rsource Estimate. The block model extents were extended far enough past the mineralized wireframes to encompass the entire mineralization.

Table 14.27 presents the coordinate ranges and block size dimensions used to build the 3D block models from the mineralization wireframes. Sub-blocking was used to more effectively honour the volumes and shapes created during the geological interpretation of the mineralized wireframe or lode. A comparison of wireframe volume versus block model volume was performed to ensure there was no overstating of tonnages (Table 14.28). Each block was coded with the domain name and lode number to enable these to be estimated separately.

TABLE 14.26
BLOCK MODEL EXTENTS AND CELL DIMENSIONS FOR THE DEADWOOD MINERAL RESOURCE

Block Model Dimensions	Easting	Northing	RL
Maximum	1450	1390	1390
Minimum	300	940	940
Parent Cell Size	25	10	25
Sub Blocking Cell Size	2.5	1	2.5

TABLE 14.27
BLOCK MODEL VERSUS WIREFRAME VOLUME COMPARISON

Lode	Wireframe Volume	Block Model Volume	% Difference
Lode01	14269203.16	14,271,800	0.02%
Lode02	3313804.13	3,314,594	0.02%
Lode03	1582535.16	1,576,294	-0.39%
Lode04	884999.73	885,488	0.06%

14.5.10 Grade Estimation

The estimation of the Deadwood Mineral Resource was calculated using both Inverse Distance to the power of two (ID2) and Ordinary Kriging (OK). Both estimation methods were completed to ensure that there were no gross discrepancies between the estimation methodologies. The ID2 was chosen for the final model estimation method on the basis that it honoured the input sample data the better than ordinary kriging. This can be seen in the block model validation section.

The grade was interpolated into an anisotropic ellipsoid to a power of two. A block discretization of 4 (E), 1 (N) and 3 (RL) was chosen. Estimation was only calculated on parent blocks. All sub blocks within the parent block were assigned the parent block grade.

There were four passes of estimation conducted for each lode. The size of the anisotropic search ellipsoid was based on the suggested ranges obtained from variography. The requirements for the number of samples and number of drill holes required decreased with the run number. The size of the search ellipsoid also increased with each run (Table 14.29).

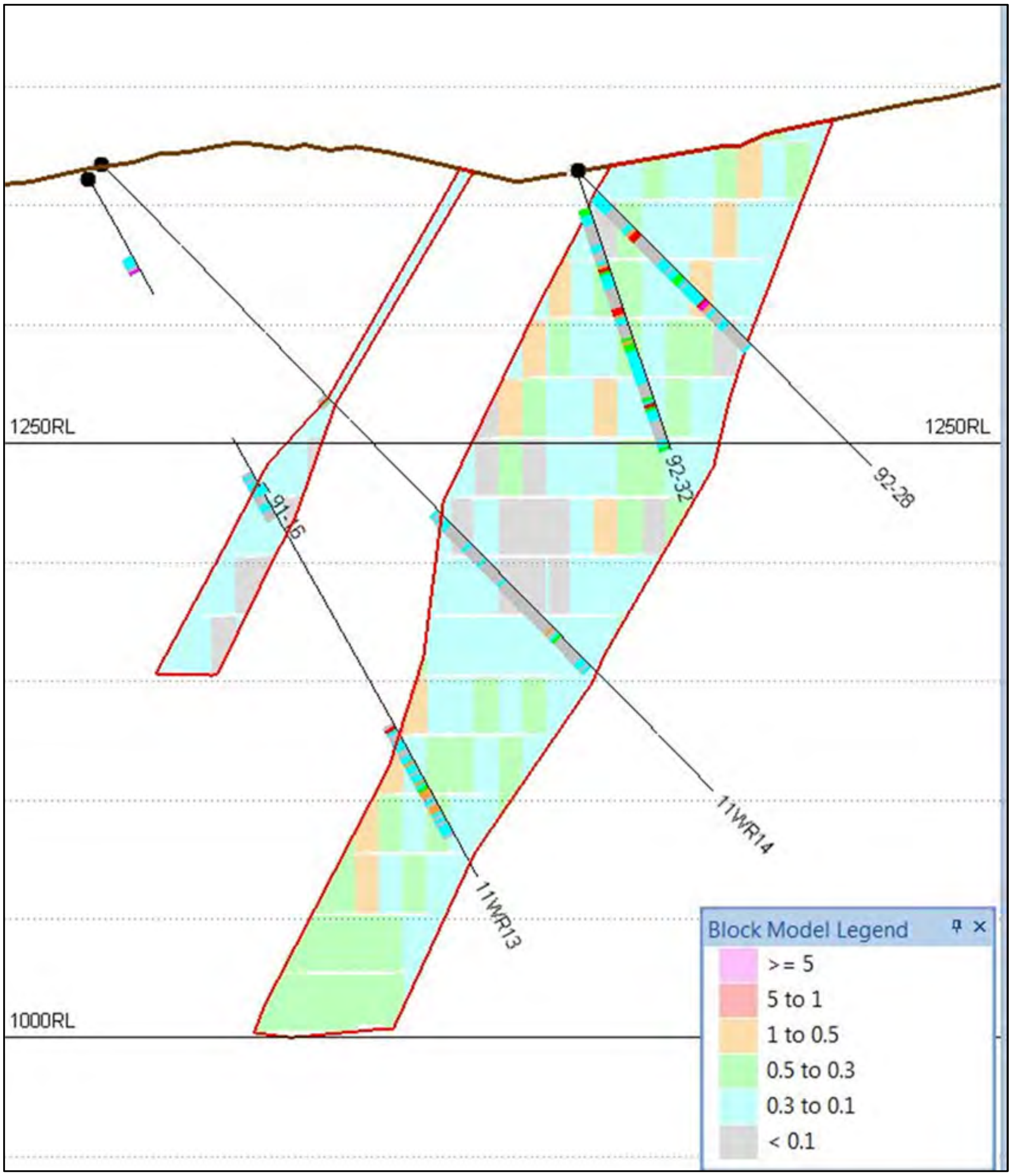
TABLE 14.28 SEARCH ELLIPSOID CRITERIA FOR THE DEADWOOD GRADE ESTIMATIONS				
Run Number	**Minimum No. of Samples**	**Minimum No. of Holes**	**Factor x Radius**	**%Blocks Estimated**
1	12	3	1	0.1%
2	8	2	2	22.3%
3	2	1	3	51.9%
4	1	1	30	25.7%

14.5.11 Model Validation

Visual Validation

The blocks were visually validated on cross sections comparing block grades versus the sample grades for all sections and drill holes (Figure 14.15). In addition, the block and sample data were compared by Lode, Easting and RL. These comparisons are presented in (Figures 14.16).

Figure 14.16 Transform Cross-section Comparing Composited Sample File Versus ID² Block Model



Statistical Validation

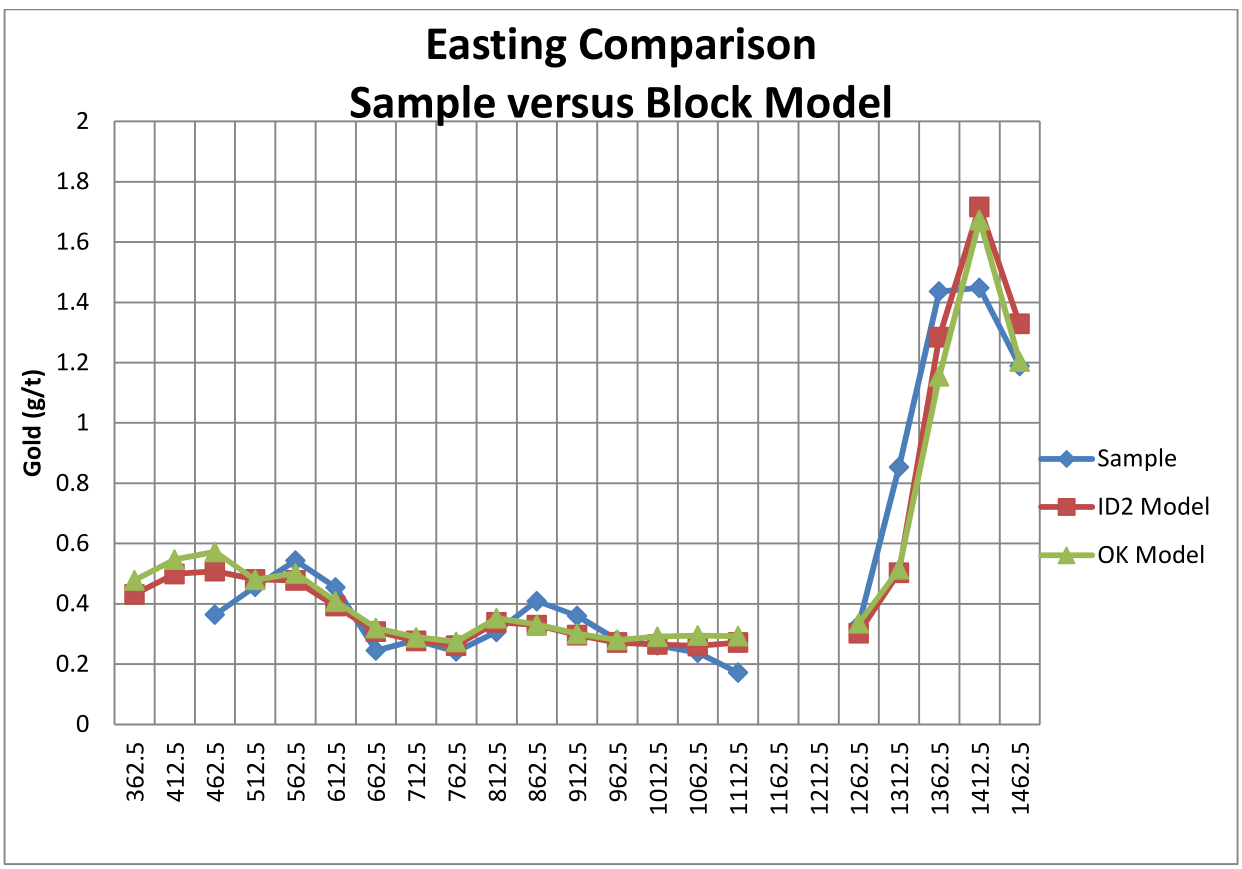
Table 14.30 shows the average grade of the composited capped sample data versus the calculated block model grade data. It can be concluded that the average/mean grade of the ID2 block model data is very close to or generally slightly lower than the sample data This is the expected result for well-behaved data and if the block model estimation process is being done correctly. The model data tends to have a reduced dispersion of the block grades resulting from the grade estimation process. The Ordinary Kriging block modeling and estimation process tends to lower both the high end grades and the low end grades compared to the sample data. This is expected with the overall smoothing of the estimation process.

Table 14.29 Composited Capped Input Sample Versus Block Model Comparison by Lode				
Lode	**No Of Samples**	**Sample**	**ID2 Model**	**OK Model**
Lode01	1216	0.327	0.34	0.35
Lode02	294	0.322	0.29	0.31
Lode03	130	0.229	0.23	0.25
Lode04	42	0.564	0.55	0.63

Easting Comparison

The sample and ID2 block model averages were calculated on 50 m composite sections across the easting for the use of comparisons. This is essentially along strike of mineralization. The purpose is to compare the input sample file with the resulting block model data to make sure there is no gross over or under estimation occurring. The easting composites generally compare quite well. There is some local over and under estimation observed but this is to be expected with the estimation process. Overall the block average grades follow the general trend of the input sample data (Figure 14.17).

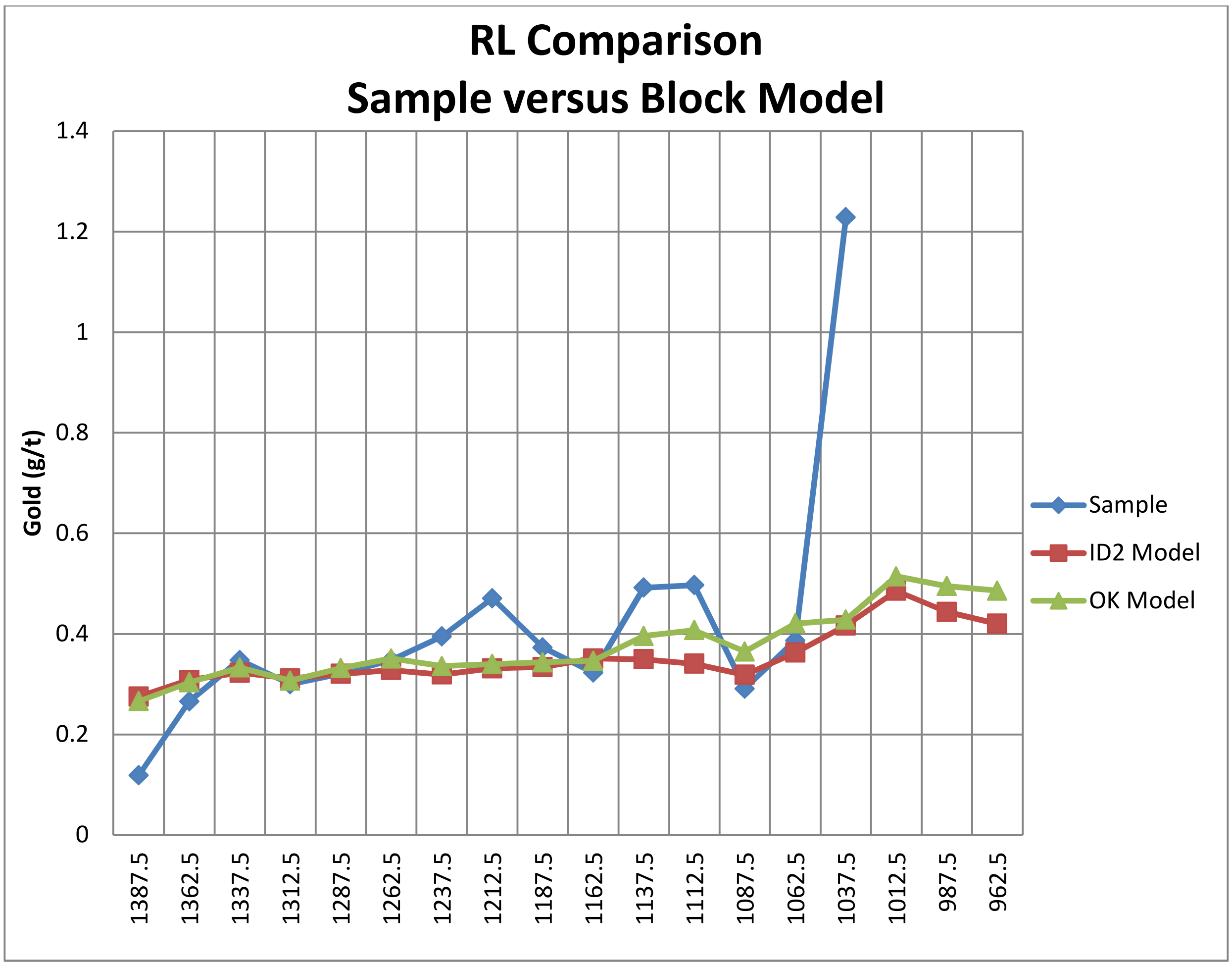
Figure 14.17 Easting Comparison of Composited Sample Data Versus Calculated Block Model Grades



RL Comparison

The input sample and ID2 block model averages were calculated on 25 m composite sections down the northing for comparison purposes. This is essentially down dip of mineralization. The purpose is to compare the input sample file with the resulting block model data to make sure there is no gross over or under estimation occurring. The RL composites generally compare quite well. There is some local over and under estimation observed but this is to be expected with the estimation process and the wide spaced nature of the drilling. Overall the block averages follow the general trend of the input sample data (Figure 14.18).

Figure 14.18 RL Comparison of Composited Sample Data Versus Calculated Block Model Grades



14.5.12 Mineral Resource Classification

The Tam O'Shanter Property is considered to be an early stage resource project, therefore little is known about the potential mining or metallurgical characteristics of the Deadwood Zone. However, the Mineral Resource is considered to exhibit reasonable prospects for open pit economic extraction under the following:

Gold Price:	US$1,200/oz (April 30/17 approx 24 month trailing average)
$US:$CDN Exchange Rate	$0.80
Gold Recovery:	90%
Processing Cost:	$13/t
G&A Cost:	$5/t
Open Pit Mining Cost:	$3/t
Pit Slopes	50 deg
Cut-off:	0.4 g/t gold

The Deadwood Mineral Resource which comprises the low grade and the higher grade vein domains were classified in accordance with guidelines established by the CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines".

The Deadwood Mineral Resource Estimate has been classified as an Inferred Mineral Resource according to the CIM definition standards. An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. The Mineral Resource Estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

This Inferred Deadwood Mineral Resource classification is based on a number of factors including historic nature and lack of documented procedures of some of the drilling, lack of down hole and collar location surveying and absence of systematic density data collections. Additional metallurgical and recovery test work should also be completed.

In addition, Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the Inferred Mineral Resource will be converted to a Mineral Reserve. The effective date of the pit constrained Deadwood Mineral Resource Estmate is May 5, 2017 as determined by P&E.

TABLE 14.30
INFERRED PIT CONSTRAINED MINERAL RESOURCE FOR THE DEADWOOD DEPOSIT (0.4G/T AU CUTOFF)

Classification	Tonnes (t)	Au Grade (g/t)	Au (oz)
Inferred	874,000	0.66	18,500

(1) Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

(2) The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

14.6 EXPLORATION TARGETS

Based on the strength and character of the mineralizing systems on the Lexington, Golden Crown, Phoenix, Tam O'Shanter and Boundary Falls Properties, there is potential for exploration targets that can be reasonably estimated.

14.6.1 Lexington Property

At the deposit scale, there are obvious drill targets that could expand the resource. The Lexington-Grenoble deposit remains open, up and down dip as well as along strike. Merit has identified and carefully quantified these extensions as realistic deposit extension potential.

Firstly, cross-sectional work every 20 m shows that more than 50% of the sections contain open edge intercepts of > 3 g/t AuEQ over > 1 m either up dip, down dip or both. Extrapolating specific edge intercepts (grade and width) a further 20 m outward and applying a 50% success rate identifies a reasonable potential of additional Mineral Resources.

Secondly, the Lexington-Grenoble deposit is 520 m long to date. Drilling beyond the southern projection of the deposit is limited and inconclusive. However, the mineralizing system continues in some form for a further 1.2 km southward through the Richmond and Northwest zones and the Lone Star Pit in Washington State. To project the Lexington-Grenoble deposit only a further 100 m with a probability of success rate of 40% would potentially provide additional Mineral Resources.

Thirdly, the Lexington-Grenoble deposit occurs as a wrinkle on a thrust plane. Due to the laterally extensive nature of a typical thrust plane and their inherent undulations or ripples, there is probability of repeated wrinkles on the plane, thus probability of separate new sub parallel deposits like that of the Lexington-Grenoble deposit. It is speculated that the two resource pods known as TG-81 and B93-6 may be the start of two separate downdip sub parallel deposits to the Lexington-Grenoble deposit. The two speculated trends have been modeled to mimic the Lexington-Grenoble deposit. Applying a 20% probability of success there are reasonable potential to encounter additional Mineral Resources.

A collective exploration target in the vicinity of the Lexington-Grenoble deposit is estimated at:

150,000 – 200,000 tonnes with a grade of 5.0 – 7.0 g/t Au and 0.8 – 1.2% Cu.

The potential quantity and grade of these exploration targets is conceptual in nature; there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the targets being delineated as a Mineral Resource.

A two Phase drill campaign totaling $2,000,000 would test the exploration target at Lexington. The table below details this recommended program. Figure 14.18 shows these exploration target areas relative to the current Mineral Resource.

Figure 14.19 Lexington-Grenoble Exploration Targets

14.6.2 Golden Crown Property

There is potential for additional Mineral Resources at the Golden Crown Deposit in the immediate area of the known veins as these are open to expand in the down dip and along strike directions. These areas are highlighted in orange in Figure 14.19. Small target areas lie to the immediate fringes of the stopes to the resource which are not cost effectively explored by surface drilling. These fringes will probably be explored at the mining stage. There are, however, two areas in particular, labeled Depth1 and Depth2 in Figure 14.19 that have significant potential to expand the resource, down dip and down rake of the King Vein that should be drilled. Furthermore, as there have been comparisons draw between the Golden Crown vein system and the Rossland gold camp, further potential lies in the 4 km gold-copper trend on Golden Crown to host significant additional ounces with further exploration.

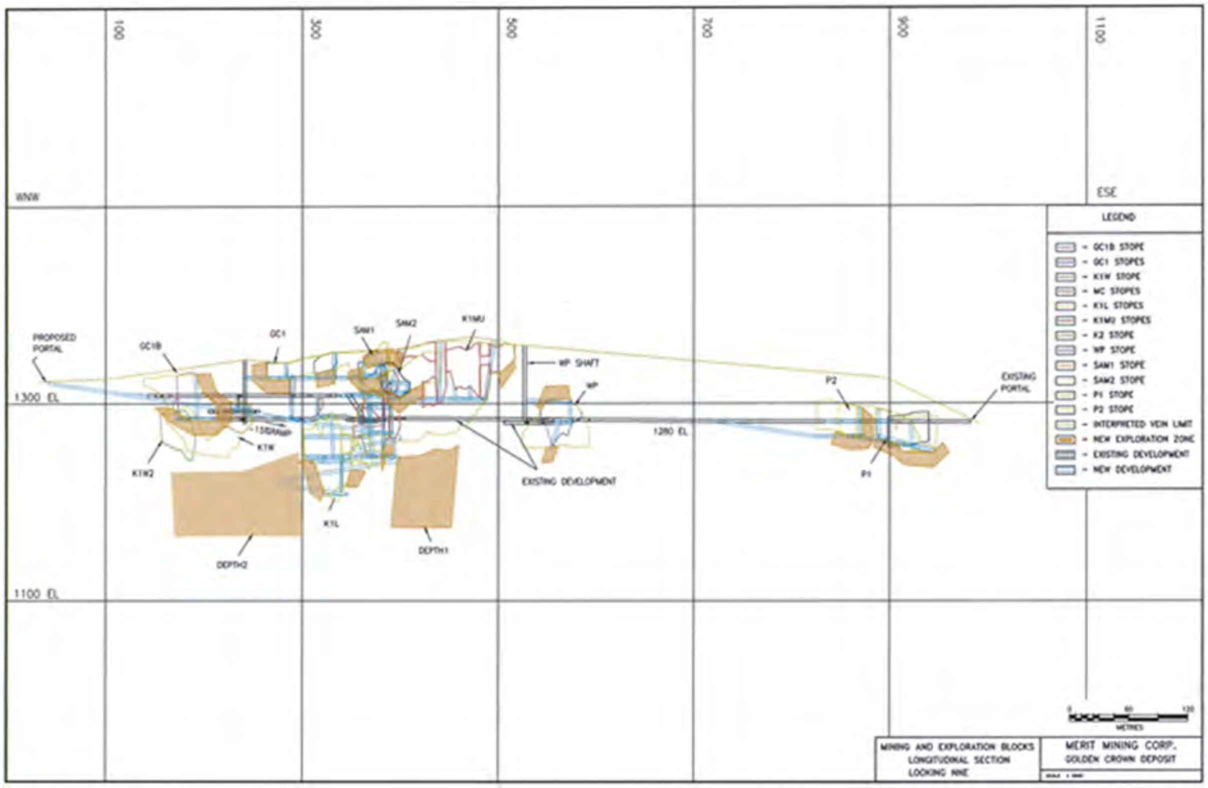
A collective exploration target in the vicinity of the Golden Crown deposit is estimated at:

65,000 – 80,000 tonnes with a grade of 8 – 10 g/t Au and 0.4 – 0.5 % Cu.

The potential quantity and grade of these exploration targets is conceptual in nature; there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the targets being delineated as a Mineral Resource.

A $300,000 drilling and trenching program is recommended to expand the Mineral Resource on the Property.

Figure 14.20 Golden Crown Exploration Targets



14.6.3 Tam O'Shanter Property

There is potential for additional Mineral Resources at the Tam O'Shanter Property in the immediate vicinity of the known veins and Inferred Mineral Resource since these are open to expansion in the down dip and along strike direction to the northwest. With additional drilling there is reasonable potential to expand the known Mineral Resource.

Utilizing a strike length of 500m, depth of 400m, width of 40m, bulk density of 2.8 and a 50% drilling success ratio, an exploration target for Tam O'Shanter is estimated between 10 to 12 million tonnes at a gold grade between 0.5 to 0.7 g/t

The potential quantity and grade of these exploration targets is conceptual in nature; there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the targets being delineated as a Mineral Resource.

14.6.4 Phoenix Property

Sylester K

Drilling and trenching to date on the Sylvester K has met with limited success to delineate a stand-alone mine and Mineral Resource due to discontinuities from faulting. However, with the Greenwood Mill or the Republic Mill nearby, small scale mining opportunities may be a realistic opportunity for such zones such as Sylvester K, particularly when its tenor is attractive and the zone comes to surface for trenching.

Grades of the massive sulphide and the footwall stringer zone from trenching range between 8 and 10 g/t Au, although the 1989 5,090 bulk sample saw an average of 5.1 g/t Au. From limited drilling, grades are in the 5-7 g/t Au range. Based on drill holes that penetrate along the 150 m sulphide zone, trenching that has exposed the zone between 150 m nd 230 m long, a vertical depth of 30 m (from drilling it is interpreted faulting cut-off the zone at this depth) and a bulk density of 3.5 t/m^3, the tonnage range for this exploration target is: 150,000 – 250,000 tonnes with a grade range of 6-8 g/t Au.

The potential quantity and grade of these exploration targets is conceptual in nature; there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the targets being delineated as a Mineral Resource.

Tremblay Tailings

Due to its potential size, the Tremblay tailings deposit warrants re-evaluation and sufficient work to enable a Mineral Resource to be estimated as well as further metallurgical testing would also be required to determine recovery and costs. However, the available data may be sufficient at this time to roughly quantify an exploration target for the Tremblay Tailings.

The information available on the Tremblay Tailings has not been verified but assuming the information is correct regarding quantities, averaged grade and ranges of recoveries, the following is an exploration target for Tremblay Tailings is:

3.8 – 4.2 million tonnes grading 0.2 – 0.3 g/t Au and 0.05 – 0.1 % Cu.

The potential quantity and grade of these exploration targets is conceptual in nature; there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the targets being delineated as a Mineral Resource.

Assumptions: Mill records show that tailings were discharged to the Tremblay site (Hardwicke, 1992). Based on these batch tests, predictions for gold and copper recovery range from 60-65% for gold and 35-45% for copper. These recoveries could be improved with further testwork.

14.6.5 Boundary Falls Property

May Mac (Skomac Veins)

The interval between No. 6 Level and approximately 180 m vertically below the No. 7 level has now been tested by historic mining and more recent surface and underground drilling. Mineralization has been identified in multiple veins in 36 out of 53 holes drilled into this area. This area has exploration potential and an exploration target is justifiable with the data to date. The size of vein area is about 250 m in strike length and 200 m in vertical height. Considering the dip of the mineralized zones, the vertical distance equates to about 260 m along the inclination. A 50% success ratio is proposed over this area as about 50% of the intercepts are greater than 80 cm. One could extapolate that the mineralization may extend another 650 m along strike to the northwest to the Greyhound Creek Fault. With this area, one could assume a 20-30% success ratio as no drilling supports it to date. Based on these assumptions and the grades from drilling to date, an exploration target is proposed as follows:

150,000 and 250,000 tonnes with a grade range of 100-200 g/t Ag, 1-2 g/t Au, 1-2% Pb and 1-2% Zn.

The potential quantity and grade of these exploration targets is conceptual in nature; there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the targets being delineated as a Mineral Resource.

15.0 MINERAL RESERVE ESTIMATES

There are no Mineral Reserve Estimates on Lexington-Grenoble, Golden Crown or Deadwood Deposits.

16.0 MINING METHODS

16.1 LEXINGTON-GRENOBLE MINE

The Lexington-Grenoble Mine is currently accessed by the Grenoble portal and decline (3.1 m by 3.7 m) (previously called the Britannia / Bren-Mar decline), developed in 1996 and the Eastern Portal and decline (5 m by 5 m). Both declines will provide general access first to the initial mining blocks to be developed, provide egress for the mine and be a fresh airway for the ventilation system. The principal decline in this report has been extended down plunge to access mining blocks on a priority basis that maximizes operating cash flow.

A process plant and tailings facility is constructed on the Golden Crown property located 1.5 road kilometres from the Golden Crown Mine and 17 road kilometres from the Lexington-Grenoble Mine.

16.1.1 Lexington-Grenoble Potentially Economic Resources

Lexington-Grenoble's potentially economic Mineral Resources were estimated based on a 3.5g/t AuEq cut-off grade. Table 16.1 is a summary of the tonnes and grades of the 31 Lexington-Grenoble LOM stopes considered. Initially 86%, or 377,000 tonnes grading 6.25 g/t Au, 1.03% Cu and 7.95 g/t AuEq, of the total Measured, Indicated and Inferred Mineral Resources were considered 'Potentially Economic Resources'. These potentially economic Mineral Resources were diluted 18% with 1.50 g/t AuEq and extracted 80% based on the Lexington-Grenoble mine plan and mining method resulting in 356,000 tonnes grading 5.47 g/t Au, 0.90% Cu and 6.96 g/t AuEq, diluted and extracted.

TABLE 16.1
LEXINGTON-GRENOBLE POTENTIALLY ECONOMIC DILUTED EXTRACTED RESOURCES

Stope	Tonnes (t)	Au (g/t)	Cu (%)	AuEq (g/t)	Diluted Tonnes (t)	Extracted Tonnes (t)	Diluted Grade		
							Au (g/t)	Cu (%)	AuEq (g/t)
B060_A	3,632	5.04	0.72	6.22	4,286	3,428	4.45	0.64	5.50
B060_B	5,503	2.91	0.70	4.06	6,494	5,195	2.65	0.62	3.67
C080_A	1,347	4.25	1.19	6.22	1,589	1,271	3.78	1.04	5.50
B050_B	2,711	1.61	1.80	4.58	3,199	2,559	1.54	1.56	4.11
B050_C	15,167	3.78	1.18	5.73	17,897	14,318	3.39	1.03	5.09
B050_D	26,276	5.57	0.83	6.94	31,006	24,805	4.90	0.73	6.11
B050_E	18,333	4.18	0.63	5.22	21,632	17,306	3.72	0.56	4.65
B060_C	1,649	4.18	0.38	4.80	1,946	1,557	3.72	0.35	4.30
B070_A	3,026	5.60	0.67	6.71	3,571	2,857	4.93	0.60	5.92
A020_A	14,440	12.55	1.25	14.61	17,040	13,632	10.81	1.09	12.61
A020_B	7,116	5.05	1.11	6.88	8,396	6,717	4.46	0.97	6.06
A010_A	2,444	4.11	0.71	5.28	2,884	2,307	3.66	0.63	4.70
A010_B	73,244	7.14	1.12	8.99	86,427	69,142	6.23	0.98	7.85
A020_C	13,761	4.03	0.86	5.46	16,238	12,990	3.60	0.76	4.86
A010_C	15,034	4.48	0.78	5.76	17,740	14,192	3.98	0.68	5.11
A010_D	3,858	5.50	0.40	6.15	4,552	3,642	4.84	0.36	5.44
TG130_A	2,405	1.72	1.33	3.91	2,837	2,270	1.64	1.15	3.54
TG120_A	23,540	6.14	1.06	7.89	27,777	22,222	5.38	0.93	6.92
A040_A	15,891	6.47	1.00	8.12	18,751	15,001	5.66	0.88	7.11
A040_B	15,213	5.99	0.69	7.12	17,952	14,361	5.25	0.61	6.26

TABLE 16.1 LEXINGTON-GRENOBLE POTENTIALLY ECONOMIC DILUTED EXTRACTED RESOURCES									
Stope	**Tonnes (t)**	**Au (g/t)**	**Cu (%)**	**AuEq (g/t)**	**Diluted Tonnes (t)**	**Extracted Tonnes (t)**	**Diluted Grade**		
							Au (g/t)	**Cu (%)**	**AuEq (g/t)**
A040_C	8,149	4.60	1.03	6.30	9,615	7,692	4.08	0.90	5.57
A030_A	2,371	17.45	0.98	19.07	2,798	2,238	14.97	0.86	16.39
A030_B	25,244	6.86	1.64	9.56	29,788	23,831	5.99	1.42	8.33
A030_C	37,481	5.88	1.03	7.57	44,227	35,382	5.16	0.90	6.64
A030_D	18,026	8.79	1.12	10.64	21,271	17,017	7.63	0.98	9.25
Z090_A	6,641	5.14	1.17	7.08	7,836	6,269	4.54	1.02	6.23
Z090_B	4,019	3.39	0.74	4.61	4,742	3,794	3.05	0.65	4.13
Z100_A	178	3.17	0.43	3.88	210	168	2.86	0.40	3.52
Z100_B	8,830	9.65	1.05	11.39	10,420	8,336	8.36	0.92	9.88
Z110_A	230	2.12	0.21	2.48	271	217	1.98	0.21	2.33
Z110_B	845	3.52	0.95	5.09	998	798	3.16	0.84	4.54
Total	**376,603**	**6.25**	**1.03**	**7.95**	**444,392**	**355,514**	**5.47**	**0.90**	**6.96**

The Lexington-Grenoble production schedule is presented in Table 16.2, below.

TABLE 16.2
LEXINGTON-GRENOBLE LOM POTENTIALLY ECONOMIC RESOURCE PRODUCTION SCHEDULE

Stope	YR 1				YR 2				YR 3				YR 4				YR 5				Total			
	Tonnes (t)	Au (g/t)	Cu (%)	AuEq (g/t)	Tonnes (t)	Au (g/t)	Cu (%)	AuEq (g/t)	Tonnes (t)	Au (g/t)	Cu (%)	AuEq (g/t)	Tonnes (t)	Au (g/t)	Cu (%)	AuEq (g/t)	Tonnes (t)	Au (g/t)	Cu (%)	AuEq (g/t)	Tonnes (t)	Au (g/t)	Cu (%)	AuEq (g/t)
B060_A	3,428	4.45	0.64	5.51																	3,428	4.45	0.64	5.51
B060_B	5,195	2.65	0.62	3.67																	5,195	2.65	0.62	3.67
C080_A	1,271	3.78	1.04	5.50																	1,271	3.78	1.04	5.50
B050_B	2,559	1.54	1.55	4.10																	2,559	1.54	1.55	4.10
B050_C	14,318	3.39	1.03	5.09																	14,318	3.39	1.03	5.09
B050_D	24,805	4.90	0.74	6.12																	24,805	4.90	0.74	6.12
B050_E	6,792	3.72	0.57	4.66	10,514	3.72	0.57	4.66													17,306	3.72	0.57	4.66
B060_C					1,557	3.72	0.35	4.30													1,557	3.72	0.35	4.30
B070_A					2,857	4.93	0.60	5.92													2,857	4.93	0.60	5.92
A020_A	13,632	10.81	1.09	12.61																	13,632	10.81	1.09	12.61
A020_B					6,717	4.46	0.97	6.06													6,717	4.46	0.97	6.06
A010_A					2,307	3.66	0.63	4.70													2,307	3.66	0.63	4.70
A010_B					48,048	6.23	0.98	7.85	21,094	6.23	0.98	7.85									69,142	6.23	0.98	7.85
A020_C									12,990	3.60	0.76	4.85									12,990	3.60	0.76	4.85
A010_C									14,192	3.98	0.69	5.12									14,192	3.98	0.69	5.12
A010_D									3,642	4.84	0.36	5.43									3,642	4.84	0.36	5.43
TG130_A									2,270	1.64	1.16	3.55									2,270	1.64	1.16	3.55
TG120_A									17,812	5.38	0.93	6.91	4,410	5.38	0.93	6.91					22,222	5.38	0.93	6.91
A040_A													15,001	5.66	0.88	7.11					15,001	5.66	0.88	7.11
A040_B													14,361	5.25	0.61	6.26					14,361	5.25	0.61	6.26
A040_C													7,692	4.08	0.90	5.57					7,692	4.08	0.90	5.57
A030_A													2,238	14.97	0.86	16.39					2,238	14.97	0.86	16.39
A030_B													23,831	5.99	1.42	8.33					23,831	5.99	1.42	8.33
A030_C													4,467	5.16	0.90	6.65	30,915	5.16	0.90	6.65	35,382	5.16	0.90	6.65
A030_D																	17,017	7.63	0.98	9.25	17,017	7.63	0.980	9.25
Z090_A																	6,269	4.54	1.02	6.22	6,269	4.54	1.02	6.22
Z090_B																	3,794	3.05	0.66	4.14	3,794	3.05	0.66	4.14
Z100_A																	168	2.86	0.400	3.52	168	2.86	0.40	3.52
Z100_B																	8,336	8.36	0.92	9.88	8,336	8.36	0.92	9.88
Z110_A																	217	1.98	0.21	2.33	217	1.98	0.21	2.33
Z110_B																	798	3.16	0.84	4.55	798	3.16	0.84	4.55
Total	**72,000**	**5.28**	**0.87**	**6.71**	**72,000**	**5.51**	**0.88**	**6.96**	**72,000**	**4.89**	**0.84**	**6.28**	**72,000**	**5.76**	**1.01**	**7.43**	**67,514**	**5.96**	**0.92**	**7.47**	**355,514**	**5.47**	**0.90**	**6.96**

16.1.2 Lexington-Grenoble LOM Mine Plan

Figure 16.2 and Figure 16.3 show the underground arrangement of existing development, proposed life-of-mine (LOM) development and the proposed LOM stope blocks planned to be mined.

Surface infrastructure will be established near the existing portal, equipped with mine office, dry, shop, generator, compressors, sanitary and environmental control systems. Access to the mine will be via the existing three surface portals, drifts and ramp.

The proposed mining method is jackleg/stoper pilot raise and slash. The overall mine sequence will generally be mined from the top down. A typical stope layout is shown in Figure 16-4 which will average 3 m thick and dip at +30 degrees. Initially a 2.4 m by 2.4 m pilot raise will be driven, in ore, from the lower sublevel transport drift to the upper sublevel overcut drift, at a central location along the stope strike. A three-drum slusher cut-out will be excavated at the base of the pilot raise in the operator accessway.

Open stope jackleg/stopper slashing will start at the base of the pilot raise, slashing outward along strike to the stope pillar locations on either side of the stope, and upward along the dip of the deposit body to the overcut drift. Drill steel will be 29 mm diameter and up to 2.4 m in length. The powder factor is estimated to be 0.50 kg per tonne. Open stope slashing will proceed outwards and upwards from the pilot raise. Access to the stope face will be via the sublevel overcut drift and pilot raise. A nipping slide and stope access ladders will be installed in the pilot raise. Blasted mineralization will be slushed down to the sublevel transport drift where it will be picked up by 2.5 and/or 3.5 cubic yard load/haul/dump/machines. These machines will not be able to access broken mineralization in the stope, from the lower sublevel, due to the average +30 degree stope dip. A 2.4 m drift sill pillar will be left at the top of the stope (base of the overcut sublevel) to maintain access to all mine areas.

TABLE 16.3
LEXINGTON-GRENOBLE UNDERGROUND EQUIPMENT REQUIREMENTS

Item	Units
JDT 413 Rock Trucks (Existing Refurbished)	2
Wagner ST 3.5 Scooptram (Existing Refurbished)	2
JCI 2.5 yd Scooptram (Existing Refurbished)	1
AC Boomer 282 2-Boom E/H Jumbo (Purchase Used)	1
Jacklegs & Stopers (New)	10
Bazooka Drill	1
MCFA Pneumatic Lift Truck s/n 1CM00119	1
Ingersoll Rand Three Drum Air Operated Slushers	4
Roof Bolter plus ROPS	1
Main Surface Fan	1
Auuxilary Fans	5
Mine Air Heaters	1
Kubota L3400ST Tractor	2
1600 CFM 150 PSI Air Compressor (Existing Refurbished)	1
Pumping, Misc	1
Dozer (Existing refurbish)	1
Grader w/v plow & wing, 250 hp (renovate existing)	1

Standard 1.8 m length mechanical rock bolts will be installed on the hanging wall on a 1.2 m by 1.2 m pattern. There is a 20% cost allowance for screen. Primary ramps and underground infrastructure have additional ground support allowances. Ground conditions are expected to be fair to very good.

A preliminary ventilation analysis using VENTSIM simulations was performed for the Lexington-Grenoble Mine. Two simulations were considered:

1) At mine start-up simulation, and
2) A LOM simulation, as the critical case.

Results of the Lexington-Grenoble Mine ventilation simulations are summarized below and snapshots of the LOM cases are presented in Appendix A.

Following assumptions were used in the ventilation network simulations:

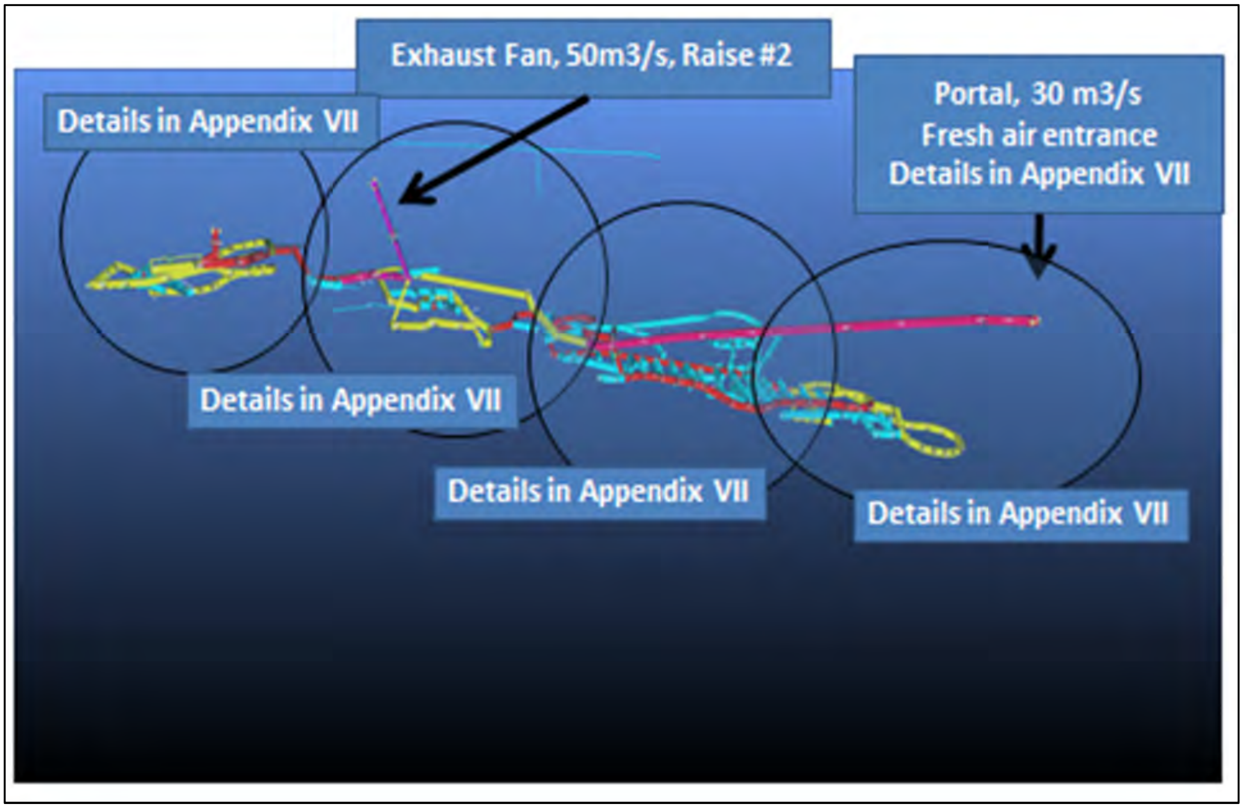
- The simulations performed were based on preliminary assumptions
- Density of air as standard density of 1.2 kg/m^3
- Drifts were sized as 2.75 m high x 3.20 m wide
- Raises were sized as 1.8 m x 1.8 m
- Ramps were sized as 3 m high x 3.5 m wide
- 600 mm diameter flexible ducts were used for auxiliary ventilation
- Fresh air (to be heated in winter) intake will be through the west end raise and also the portal, and the central raise will be used as the Return Air Raise ("RAR")
- There will be 2-3 working areas at the LOM case.

Results of the ventilation simulation:

- Total fresh airflow of 30 m^3/s will be required at start-up. The LOM case will require 50 m^3/s of fresh air.
- The Fresh Air Intake fan is sized as a 25 kw fan and the Return Air Exhaust fan is sized as a 50 kw fan. These fans are equipped with Variable Frequency Drives ("VFD"s) for airflow control and power savings as required during the mining operation.
- Three (3) auxiliary fans (10 m^3/s, 30kW with VFD option) will be required for development work, or as booster fans as required.

Details of the LOM ventilation simulation plan for the Lexington-Grenoble Mine are presented in Appendix A. A summary of the LOM mine ventilation plan for the Lexington-Grenoble Mine is presented in Figure 16.1.

Figure 16.1 LOM Ventilation Plan for the Lexington-Grenoble Mine



Ventilation fresh air is initially provided using heading fans and ventilation ducting in existing development. The permanent ventilation system includes one fresh air raises ("FAR") and one RAR to surface, and the existing portals. The FAR will provide a second egress from the mine. The permanent fresh air fan and mine air heating system will be installed on surface on top of the FAR and southern portal. The long-term ventilation system will include ventilation bulkheads and secondary underground fans. Please refer to Appendix A - Ventilation Simulation For Lexington-Grenoble Mine.

Development headings will be driven by a two-boom electric hydraulic jumbo. A LOM summary of development requirements is presented in Table 16.3, below.

TABLE 16.4
LEXINGTON-GRENOBLE MINE LOM DEVELOPMENT QUANTITIES

Development Item	Type	Size (hxw)	Metres (m)
Ramp - Capitalized Development	Waste	3.0 m x 3.5 m	1,183
Drift - Capitalized Development	Waste	2.75 m x 3.2 m	1,481
Total Capitalized Development			**2,664**
Cross-cut - Sustaining Development	**Waste**	**2.75 m x 3.2 m**	**1,902**
Cross-cut - In OPEX	Mineral	2.75 m x 3.2 m	60
Pilot - In OPEX	Mineral	2.4 m x 2.4 m	2,730
Drift - In OPEX	Mineral	2.75 m x 3.2 m	1,022
Total - In OPEX			**3,812**

Mined material will be hauled to surface using 13 tonne trucks. At the end of the life of the mine, any waste rock which is potentially acid generating can be transported by truck underground and placed in open stopes and development areas.

Figure 16.2 Longitudinal Projection of Lexington-Grenoble Deposit Showing Existing and Proposed LOM Development/Stopes

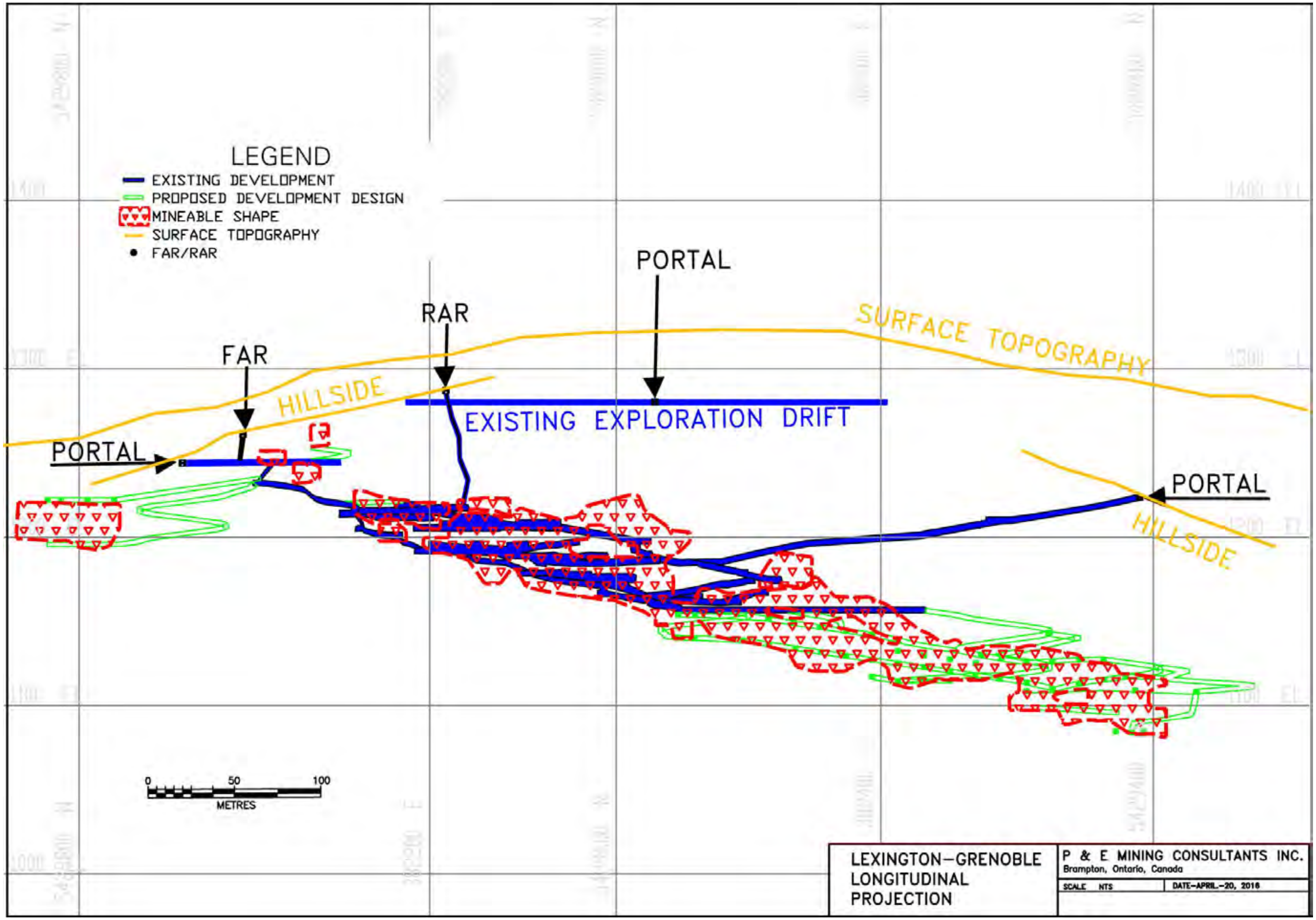


Figure 16.3 Plan View Projection of Lexington-Grenoble Deposit Showing Existing and Proposed LOM Development/Stopes

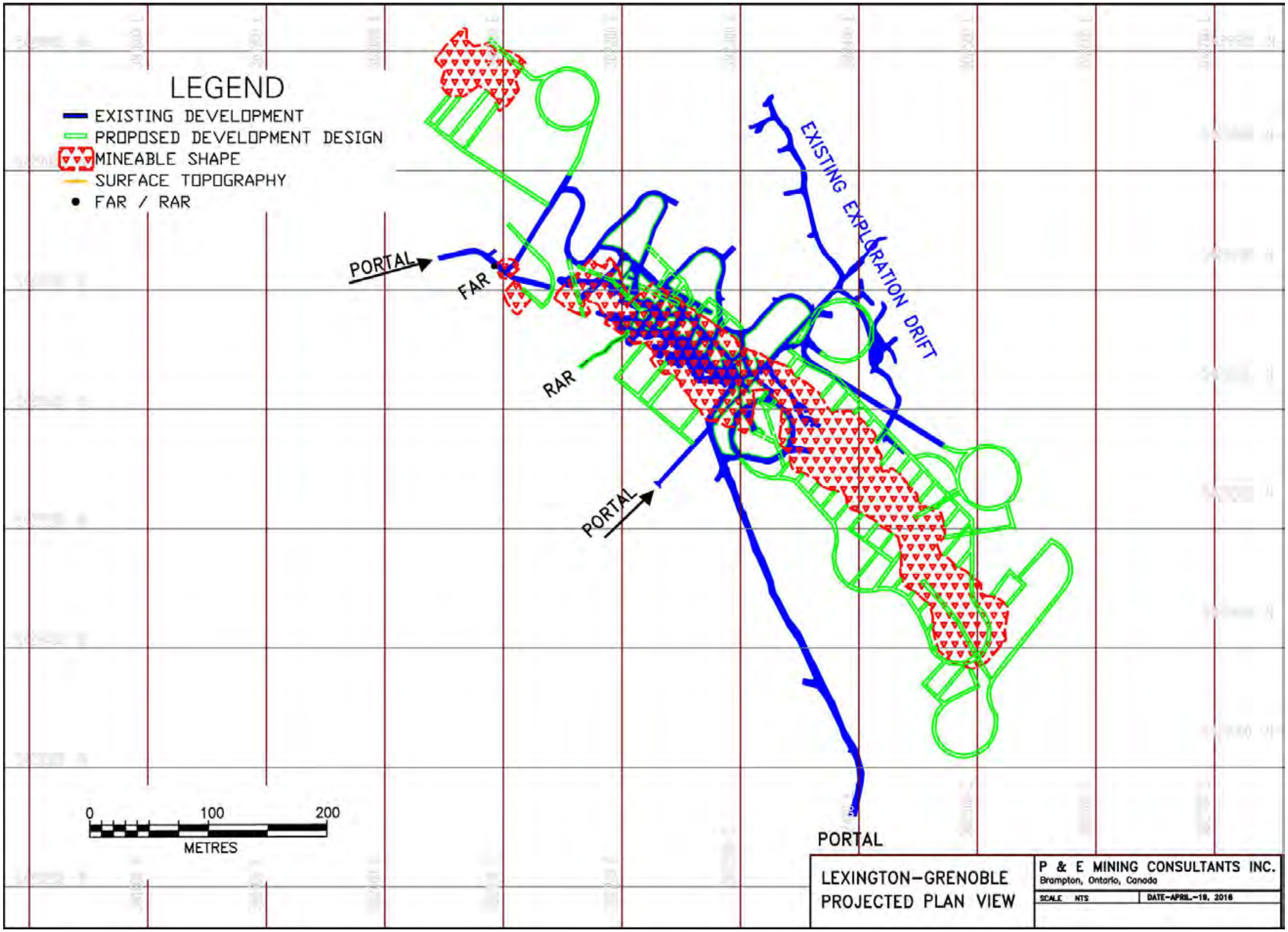
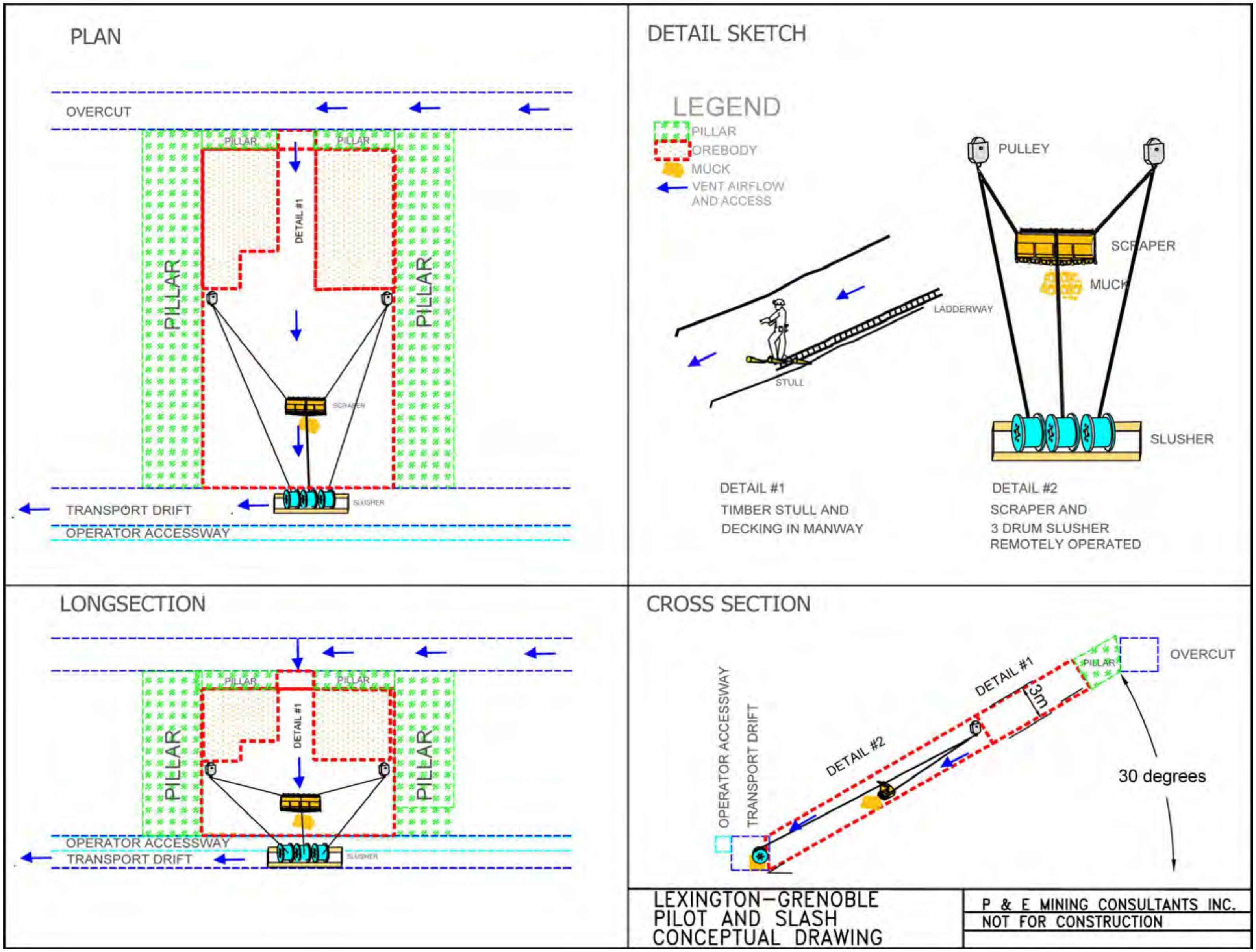


Figure 16.4 Typical Lexington-Grenoble Raise and Slash Stope



The Lexington-Grenoble Mine forecast production rate is 200 tonnes per day, 6,000 tonnes per month, 72,000 tonnes per year.

16.2 GOLDEN CROWN MINE

16.2.1 Golden Crown Potentially Economic Resources

Golden Crown's potentially economic resources were estimated based on a 3.5g/t AuEq cut-off grade. Table 16.4 is a summary of the tonnes and grades of the 23 Golden Crown LOM stopes considered. Initially 90%, or 195,000 tonnes grading 9.76 g/t Au 0.54% Cu and 10.66 g/t AuEq, of the total Measured, Indicated and Inferred mineral resources were considered 'Potentially Economic Resources'. These potentially economic resources were diluted 15% with 1.50 g/t AuEq and extracted 85% based on the Golden Crown mine plan and mining method resulting in 191,000 tonnes grading 8.67 g/t Au, 0.48% Cu and 9.46 g/t AuEq diluted and extracted.

TABLE 16.5
GOLDEN CROWN POTENTIALLY ECONOMIC DILUTED EXTRACTED RESOURCES

Stope	Tonnes (t)	Au (g/t)	Cu (%)	AuEq (g/t)	Diluted Tonnes(t)	Extracted Tonnes(t)	Diluted Grade		
							Au (g/t)	Cu (%)	AuEq (g/t)
K1080_A	3,495	5.01	0.24	5.40	4,019	3,416	4.53	0.22	4.89
K1080_B	7,509	4.60	0.30	5.09	8,635	7,340	4.18	0.27	4.62
K1050_C	19,578	13.48	0.48	14.28	22,514	19,137	11.90	0.43	12.61
K1050_B	34,789	10.77	0.52	11.62	40,007	34,006	9.54	0.46	10.30
WP170_A	6,708	5.77	0.11	5.96	7,714	6,557	5.20	0.10	5.37
MC090_A	7,174	9.70	1.42	12.04	8,250	7,012	8.61	1.24	10.66
MC090_B	3,690	9.00	2.07	12.42	4,244	3,607	8.01	1.81	11.00
MC090_C	863	5.25	0.21	5.61	993	844	4.75	0.19	5.07
P110_B	5,027	6.99	0.01	7.00	5,782	4,914	6.25	0.02	6.28
P110_A	3,484	8.86	0.02	8.90	4,006	3,406	7.88	0.03	7.93
SAM140_A	4,159	13.61	0.02	13.64	4,783	4,065	12.01	0.02	12.05
K1040_A	1,739	19.73	0.78	21.02	2,000	1,700	17.34	0.68	18.47
K1040_B	3,110	6.49	0.44	7.20	3,577	3,040	5.82	0.39	6.46
K1070_A	2,161	3.70	0.28	4.17	2,485	2,112	3.40	0.25	3.82
K1060_A	8,672	4.73	0.67	5.84	9,972	8,476	4.29	0.59	5.27
K1060_B	11,002	5.94	1.19	7.90	12,652	10,754	5.34	1.04	7.06
K1050_A	41,908	12.24	0.59	13.21	48,194	40,965	10.82	0.52	11.68
XX200_A	5,079	5.44	0.24	5.83	5,841	4,964	4.91	0.22	5.27
XX200_B	2,816	5.41	0.40	6.06	3,239	2,753	4.88	0.36	5.47
SAM130_A	6,324	5.12	0.47	5.89	7,273	6,182	4.63	0.42	5.32
SAM130_B	6,799	7.42	0.57	8.35	7,818	6,646	6.63	0.50	7.46
P100_A	5,694	19.20	0.07	19.30	6,548	5,566	16.87	0.07	16.98
P100_B	3,647	8.70	0.21	9.04	4,194	3,565	7.74	0.19	8.05
Total	**195,424**	**9.76**	**0.54**	**10.66**	**224,738**	**191,027**	**8.67**	**0.48**	**9.46**

The Golden Crown production schedule is presented in Table 16.5, below.

Table 16.6 Golden Crown LOM Potentially Economic Resource Production Schedule																								
Stope	**YR 1**				**YR 2**				**YR 3**				**YR 4**				**YR 5**				**Total**			
	Tonnes (t)	**Au (g/t)**	**Cu (%)**	**AuEq (g/t)**	**Tonnes (t)**	**Au (g/t)**	**Cu (%)**	**AuEq (g/t)**	**Tonnes (t)**	**Au (g/t)**	**Cu (%)**	**AuEq (g/t)**	**Tonnes (t)**	**Au (g/t)**	**Cu (%)**	**AuEq (g/t)**	**Tonnes (t)**	**Au (g/t)**	**Cu (%)**	**AuEq (g/t)**	**Tonnes (t)**	**Au (g/t)**	**Cu (%)**	**AuEq (g/t)**
K1080_A					3,416	4.53	0.21	4.88													3,416	4.53	0.22	4.89
K1080_B					7,340	4.18	0.27	4.63													7,340	4.18	0.27	4.63
K1050_C					19,137	11.90	0.44	12.63													19,137	11.90	0.43	12.61
K1050_B					6,107	9.54	0.46	10.30	27,899	9.54	0.46	10.30									34,006	9.54	0.46	10.30
WP170_A									6,557	5.20	0.11	5.38									6,557	5.20	0.11	5.38
MC090_A									7,012	8.61	1.24	10.66									7,012	8.61	1.24	10.66
MC090_B									3,607	8.01	1.81	11.00									3,607	8.01	1.81	11.00
MC090_C									844	4.75	0.20	5.08									844	4.75	0.20	5.08
P110_B									4,914	6.25	0.02	6.28									4,914	6.25	0.02	6.28
P110_A									3,406	7.88	0.03	7.93									3,406	7.88	0.03	7.93
SAM140_A									4,065	12.01	0.03	12.06									4,065	12.01	0.03	12.06
K1040_A									41	17.34	0.69	18.48	1,658	17.34	0.69	18.48					1,700	17.34	0.69	18.48
K1040_B													3,040	5.82	0.39	6.46					3,040	5.82	0.39	6.46
K1070_A													2,112	3.40	0.26	3.83					2,112	3.40	0.26	3.83
K1060_A													8,476	4.29	0.59	5.26					8,476	4.29	0.59	5.26
K1060_B													10,754	5.34	1.04	7.06					10,754	5.34	1.04	7.06
K1050_A									13,655	10.82	0.52	11.68	27,310	10.82	0.52	11.68					40,965	10.82	0.52	11.68
XX200_A													4,964	4.91	0.22	5.27					4,964	4.91	0.22	5.27
XX200_B													2,753	4.88	0.35	5.46					2,753	4.88	0.35	5.46
SAM130_A													6,182	4.63	0.42	5.32					6,182	4.63	0.42	5.32
SAM130_B													4,749	6.63	0.50	7.46	1,896	6.63	0.50	7.46	6,646	6.63	0.50	7.46
P100_A																	5,566	16.87	0.07	16.99	5,566	16.87	0.07	16.99
P100_B																	3,565	7.74	0.19	8.05	3,565	7.74	0.19	8.05
Total		**-**	**-**		**36,000**	**9.23**	**0.38**	**9.86**	**72,000**	**9.01**	**0.50**	**9.84**	**72,000**	**7.51**	**0.56**	**8.44**	**11,027**	**12.16**	**0.18**	**12.46**	**191,027**	**8.67**	**0.48**	**9.46**

16.2.2 Golden Crown LOM Mine Plan

Figure 16.6 and Figure 16.7 show the underground arrangement of existing development, proposed LOM development and the proposed LOM stope blocks planned to be mined.

Surface infrastructure will be established near the existing portal, equipped with mine office, dry, shop, compressors, sanitary and environmental control systems. Access to the mine will be via the existing surface ramp which will be extended as mining progresses down plunge.

The proposed mining method is narrow vein captive cut and fill. The mine will generally be mined on a retreat basis. A typical stope, shown in Figure 16-8, will average 2 m thick and dip at +72 degrees. Initially two 1.8 m by 1.8 m stope access/ventilation raises will be driven, in ore, from the lower sublevel drift (undercut access) through a 5 m high sill pillar to a sill drift location above the sill pillar near the two stope boundaries, along strike. A 1.8 m diameter culvert will be installed in each raise. One of the two stope raises/culverts will be equipped with a manway and the other stope raise will be equipped with a nipping slide and ladder. Next a sill drift will be driven above the sill pillar the full width and length of the stope. A captive cut-and-fill 0.75 yd micro scooptram will be hoisted into the stope. A stope mined material pass will be excavated half way along the stope from the lower undercut access sublevel through the sill pillar, and chute installed. The stope will be excavated and backfilled, lift-by-lift, upward to the upper sublevel. The sill pillar will be left in-place above the lower sublevel. Just prior to pouring hydraulic backfill into the mined out lift a 1.8 m diameter section of mined material pass culvert will be installed in the stope mined material pass, extending the mined material pass in order that the level of the mine material pass opening will be above the level of the backfill pour. Access and ventilation to the stope will be via the two stope access/ventilation raises from the undercut access.

Stope mineralized material movement on the undercut access sublevel will be via 2.5 and 3.5 cubic yard scooptrams, and 13 tonne trucks. A captive 0.75yd micro scooptram will muck mine material into the pass/culvert within the stope.

TABLE 16.7
GOLDEN CROWN UNDERGROUND EQUIPMENT REQUIREMENTS

Item	Units
JDT 413 Rock Trucks (Purchased Used)	1
Wagner ST 3.5 Scooptram (Existing Refurbished)	1
Wagner ST 3.5 Scooptram (Purchased Used)	1
JCI 2.5 yd Scooptram (Existing Refurbished)	1
Micro Scoops - 0.75 yd	3
AC Boomer 282 2-Boom E/H Jumbo (Purchase Used)	1
Jacklegs & Stopers (New)	10
Bazooka Drill	1
Auuxilary Fans	5
Kubota L3400ST Tractor	1
1600 CFM 150 PSI Air Compressor (Used)	1
Pumping, Misc (lot)	1

Standard 1.8 m length mechanical rock bolts will be installed as required. There is a 20% cost allowance for screen. Ground conditions are expected to be fair.

A preliminary ventilation analysis using VENTSIM simulations was performed for the Golden Crown Mine. Two simulations were considered:

1) At mine start-up simulation, and
2) LOM simulation, as the critical case.

Results of the Golden Crown Mine ventilation simulations are summarized below and snapshots of the LOM cases are presented in Appendix B.

Following assumptions were used in the ventilation network simulations:

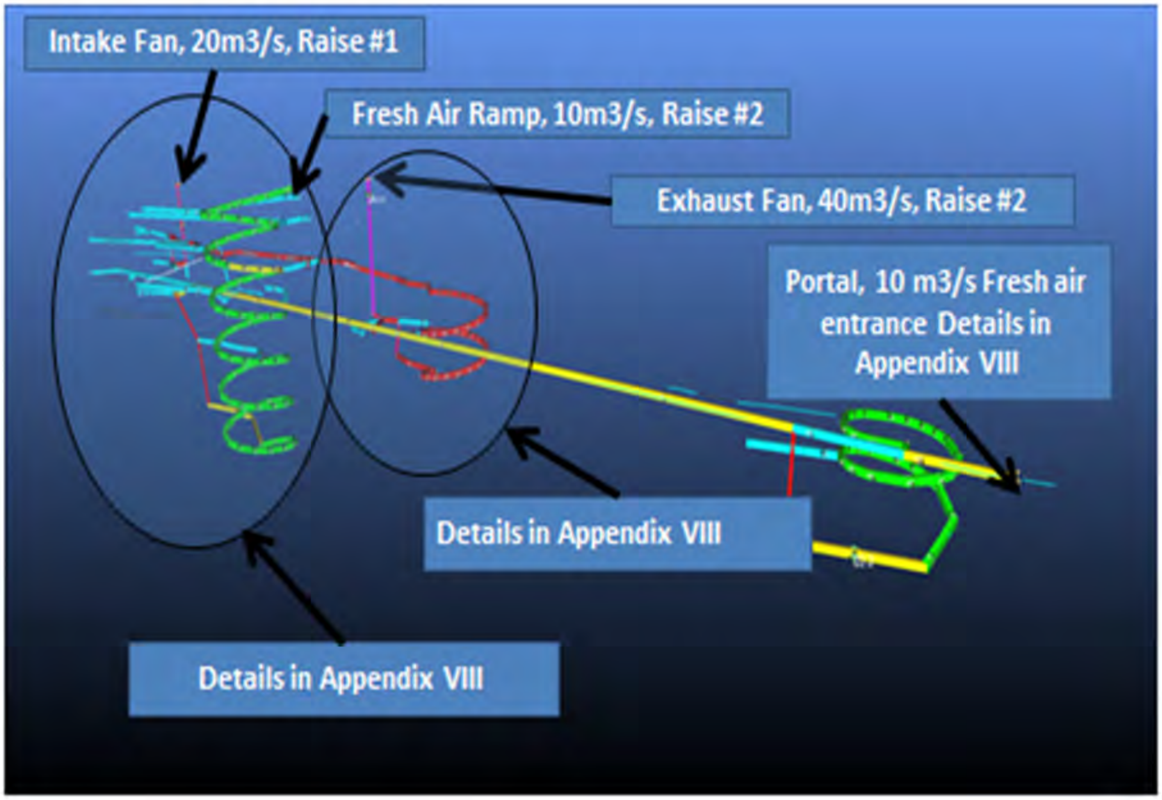
- The simulations performed were based on preliminary assumptions
- Density of air as standard density of 1.2 kg/m^3
- Drifts were sized as 2.75 m high x 3.20 m wide
- Raises were sized as 1.8 m x 1.8 m
- Ramps were sized as 3.0 m high x 3.50 m wide
- 600 mm diameter flexible ducts were used for auxiliary ventilation
- Fresh air (to be heated in winter) intake will be through the west end raise and also the portal, and the central raise will be used as the RAR
- There will be 2-3 working areas at the LOM case.

Results of the ventilation simulation:

- Total fresh airflow of 30 m^3/s will be required at start-up. The LOM case will require 40 m^3/s of fresh air.
- The Fresh Air Intake fan is sized as a 25 kw fan and the Return Air Exhaust fan is sized as a 50 kw fan. These fans are equipped with VFDs for airflow control and power savings as required during the mining operation.
- Three (3) auxiliary fans (10 m3/s, 30kW with VFD option) will be required for development work, or as booster fans as required.

Details of the LOM ventilation simulation plan for the Golden Crown Mine are presented in Appendix B. A summary of the LOM mine ventilation plan for the Golden Crown Mine is presented in Figure 16.5.

Figure 16.5 LOM Ventilation Plan for the Golden Crown Mine



Ventilation is initially established using the existing adit/portal, the FAR, the RAR, and secondary fans and ducting. The long term ventilation system will include a new fresh air intake spiral ramp and portal, ventilation bulkheads and underground secondary fans and ducting. Please refer to Appendix B - Ventilation Simulation For Golden Crown Mine.

Development heading will be driven by a two-boom electric hydraulic jumbo, and the 2.5 and 3.5 cubic yard scooptrams. A LOM summary of development requirements is presented in Table 16.6.

TABLE 16.8 GOLDEN CROWN MINE LOM DEVELOPMENT QUANTITIES			
Development Item	**Type**	**Size (hxw)**	**Metres (m)**
Ramp - Capitalized Development	Waste	3.0m x 3.5m	2,048
Access - Capitalized Development	Waste	2.75m x 3.2m	1,006
Adit Slashing - Capitalized Development	Waste	2.75m x 3.2m	800
Total Capitalized Development	**Waste**		**3,854**
Undercut Drift - Sustaining Development	Waste	2.75m x 3.2m	594
Raise - Sustaining Development	Waste	1.8m x 1.8m	376
Overcut Drift - Sustaining Development	Waste	2.75m x 3.2m	376
Total Sustaining Development	**Waste**		**1,347**
Undercut Drift- In OPEX	Mineral	2.75m x 3.2m	518
Raise - In OPEX	Mineral	1.8m x 1.8m	1,500

TABLE 16.8 GOLDEN CROWN MINE LOM DEVELOPMENT QUANTITIES			
Development Item	**Type**	**Size (hxw)**	**Metres (m)**
Sub Drift - In OPEX	Mineral	1.8m x 1.8m	64
Overcut Drift - In OPEX	Mineral	2.75m x 3.2m	50
Undercut Sill Drift - In OPEX	Mineral	2.75m x 3.2m	1,151
Total - In OPEX			**3,283**

At the end of the life of the mine, any waste rock which is potentially acid generating can be transported underground and placed in open stopes and development.

The mine is not expected to make much water. Mine water would be collected at a central sump in the mine and pumped to surface via the existing decline or shaft.

The Golden Crown Mine forecast mill feed production rate is 200 tonnes per day, 6,000 tonnes per month, 72,000 tonnes per year.

Figure 16.6 Longitudinal Projection of Golden Crown Deposit Showing Existing and Proposed LOM Development and Stopes

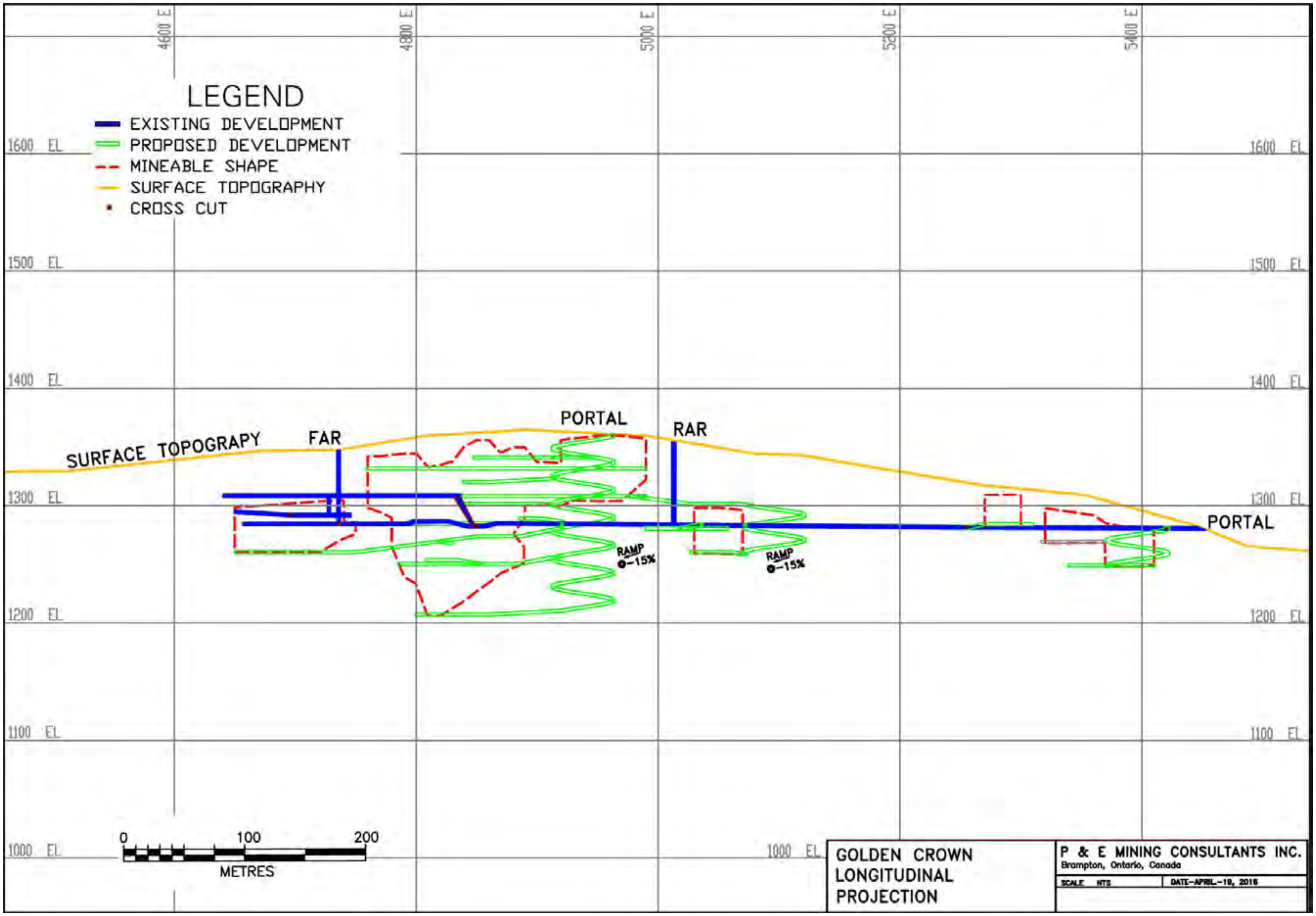


Figure 16.7 Plan View Projection of Golden Crown Deposit Showing Existing and Proposed LOM Development and Stopes

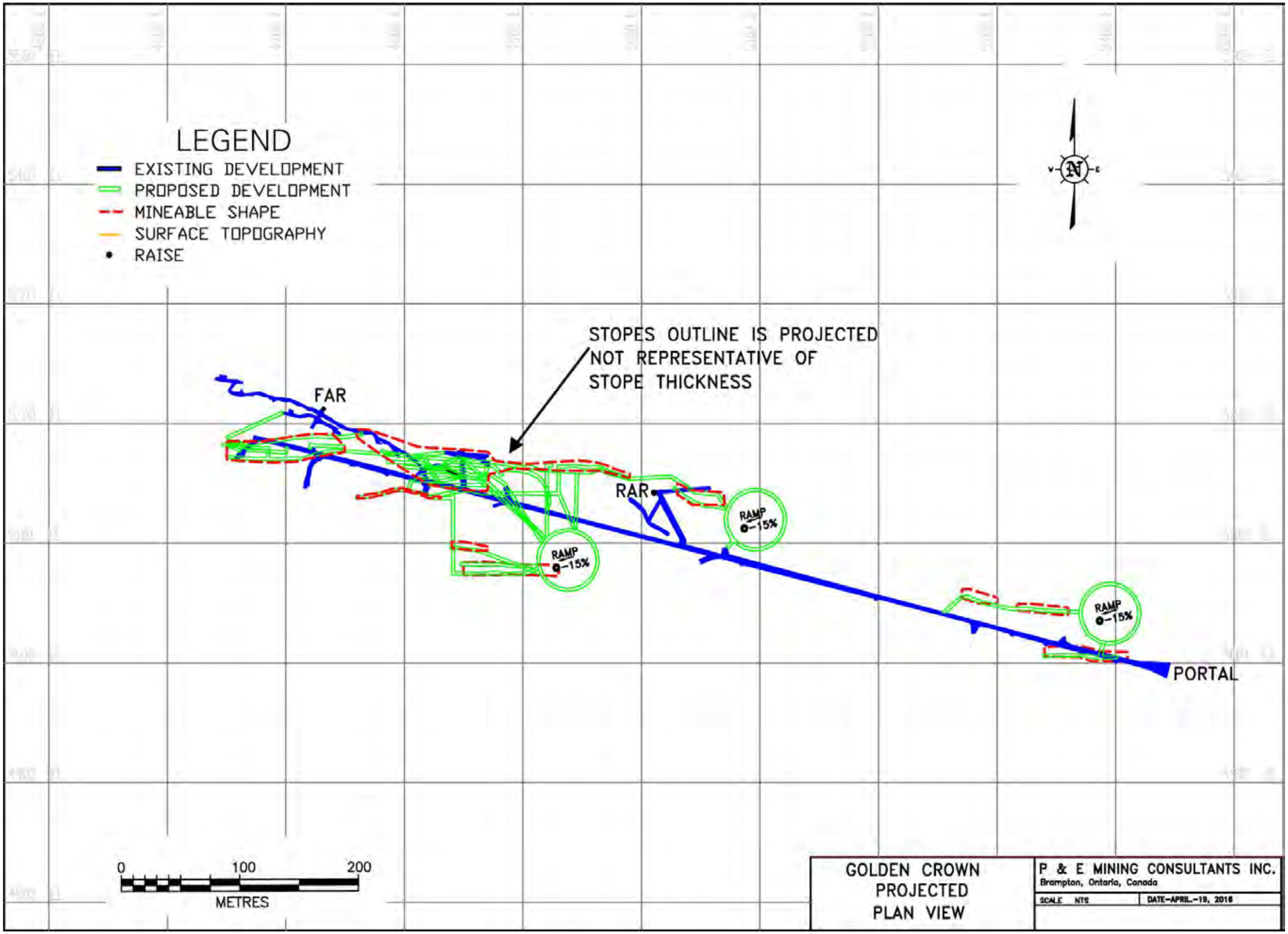
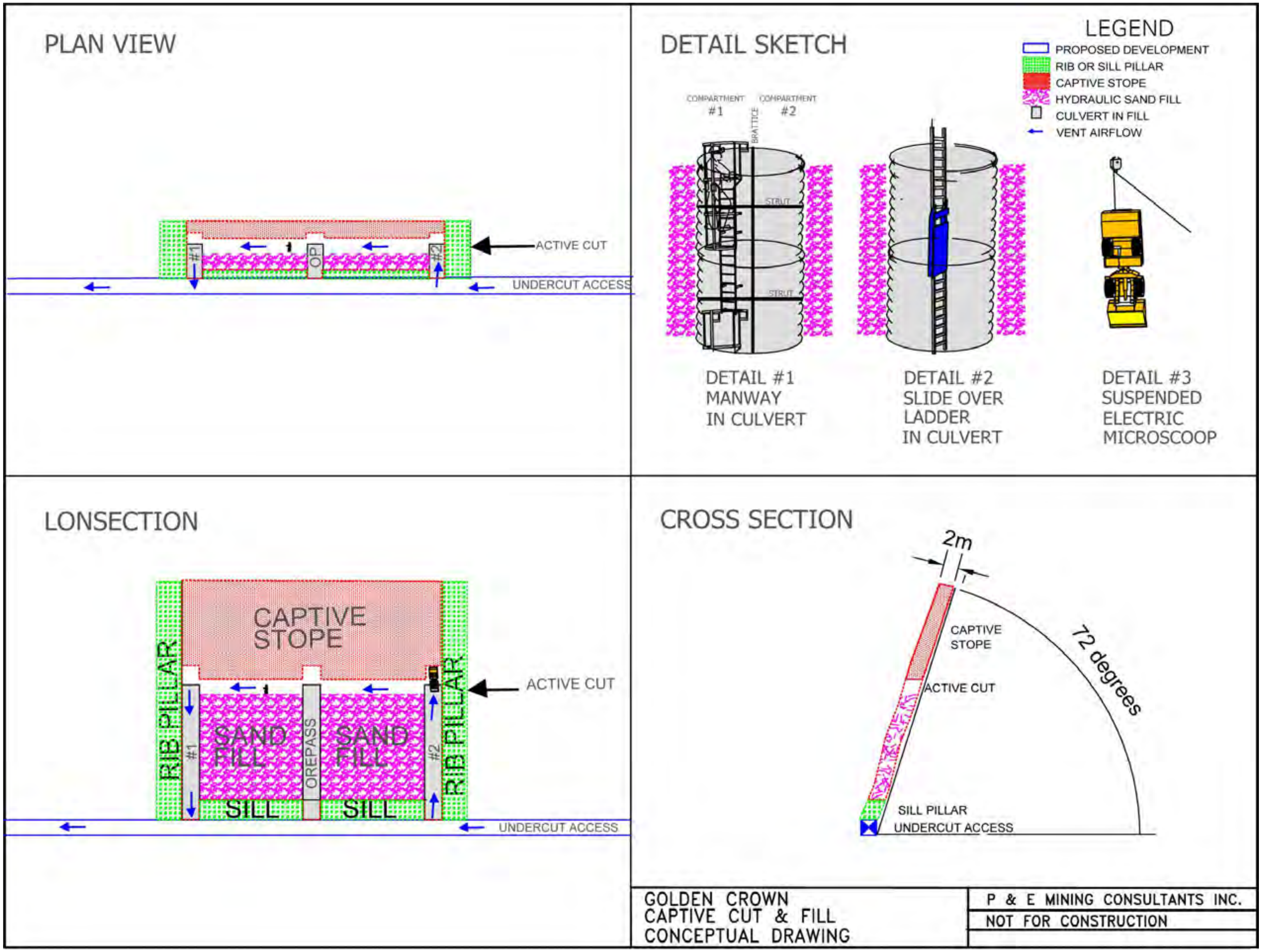


Figure 16.8 Typical Golden Crown Captive Cut-and-Fill Stope



17.0 RECOVERY METHODS

17.1 OPERATING FACILITY AND TREATMENT FLOWSHEET

Mineral processing of the Lexington-Grenoble and Golden Crown mill feed will be performed at the existing Greenwood Mill and concentrator facility, currently on care and maintenance. The facility is accessed to the mines via all-weather gravel roads, 17 km to the Lexington-Grenoble Mine, and 2 km to the Golden Crown. The existing processing facility consists of a concentrating plant and related equipment, including infrastructure and a tailing storage facility (TSF). The construction of the plant began in 2007, with operations starting in April 2008. The operation was shut down in December 2008, for reasons that were reported to be due to low metal prices and lower than expected mill feed head grades due to dilution from mining.

The plant incorporates conventional mineral processing to produce a gold gravity concentrate, and a copper - gold flotation concentrate. Crushing is performed using jaw crushing, followed by secondary cone crushing operating in closed circuit with a vibrating screen. The fine material to be processed is directed to a grinding and flotation circuit at a nominal 8.8 tonnes per hour, although the crushing plant is capable of processing double this throughput.

The crushing equipment was purchased new, from China, as a mobile system. This equipment is fixed to metal framework that is anchored to a concrete pad. The crushing circuit is located outside, and is not under cover. The remaining major processing equipment consists of ball mills, flotation cells, thickeners, a filter and concentrate / tailing handling systems, as well as related high/low pressure air supply, process pumps, piping and conveyors. This portion of the circuit consists of primarily refurbished equipment that is housed in the mill building, which is a steel frame insulated metal clad structure. Grinding is performed by ball milling, with a split of the primary mill recycle delivered to a gravity recovery circuit. Ball mill cyclone overflow is sent to froth flotation to produce a copper - gold concentrate for sale.

In addition, to the outside crushing plant and the mill building, the site has an office /administration trailer, a sample bucking room contained in a metal sea can cargo container, and a Sprung (tensioned fabric) structure for the storage of bagged sulphide float concentrate. There is an assay laboratory in a mobile trailer, which contains an atomic adsorption spectrophotometer and a fire assay furnace. The facility is pictured in Figure 17.1.

Figure 17.1 Mill Building and Site Area

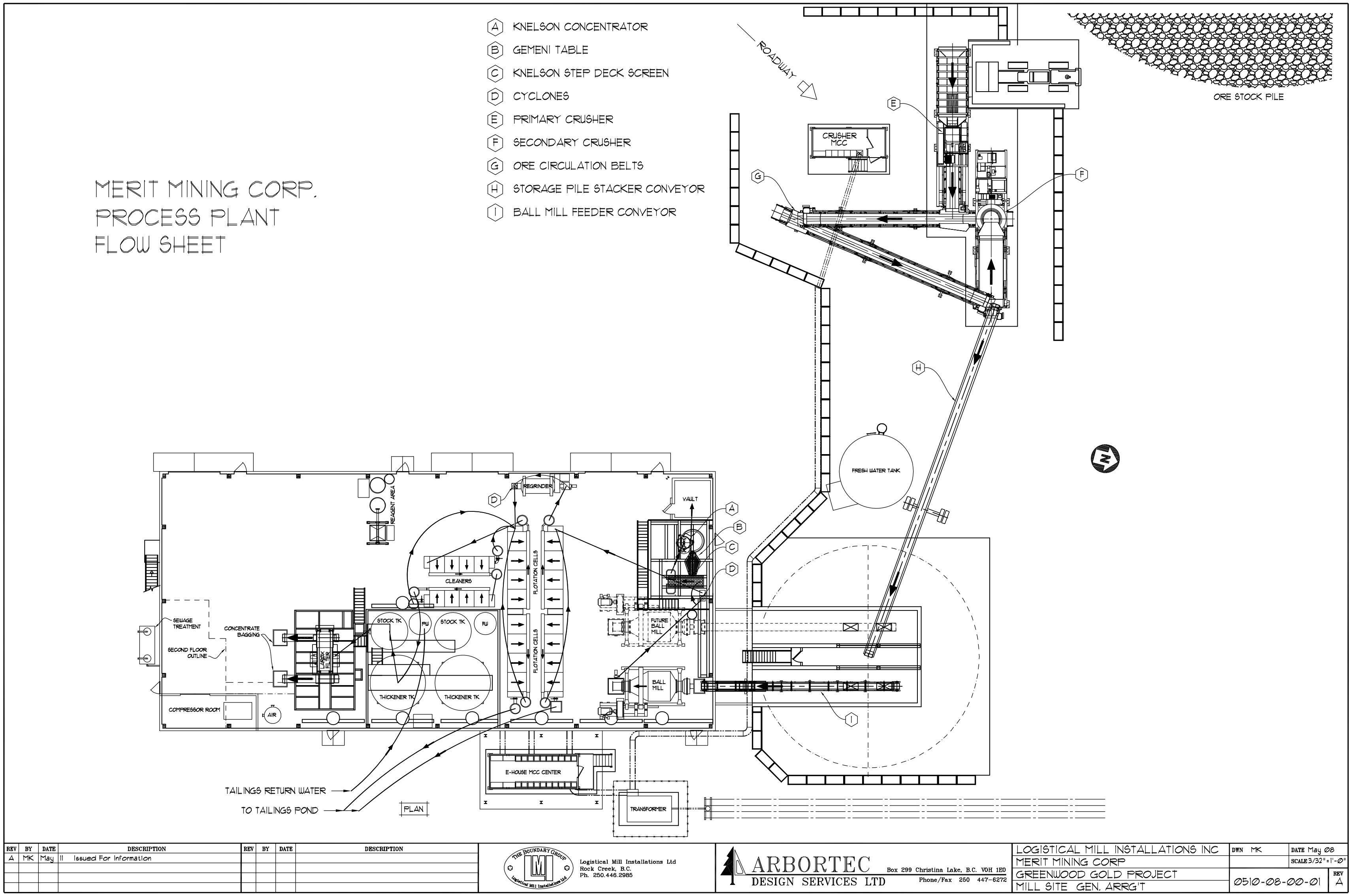
The facility equipment was cleaned out and properly shut down at cessation of operations, although some of this equipment requires refurbishment prior to restarting. Auxiliary items, such as electrical and instrumentation may need alterations or repair. A list of the major existing equipment is outlined in Table 17.1.

TABLE 17.1
MAJOR EXISTING PLANT EQUIPMENT

Item
24" X 36", 100 HP Jaw Crusher
40 HP, Double Deck Vibrating Screen
250 HP Cone Crusher (Symons 4.5 ft., std head equiv.)
200 HP Conical 6' X 8' Koppers Ball Mill
Knelson CD-20 Centrifugal Concentrator
Gemeni Shaking Table
40 HP 4' X 8' Regrind Ball Mill
Denver No. 30 Rougher Float Cells 4 ea., total 40 HP
Denver No. 30 Rougher Scav. Float Cells 4 ea., total 40 HP
Denver No. 30 1st Cl. Float Cells 4 ea., total 40 HP
Denver No. 30 1st. Cl. Scav. Cells 4 ea., total 40 HP
Denver No. 24, 2nd Cleaner Cells 4 ea., total 30 HP
Denver No.24, 3rd Cleaner Cells 4 ea., total 30 HP
20 ft concentrate thickeners c/w rake, 2 ea.
Larox Pressure Filter Model PF3 2B1

A simplified process arrangement of the treatment circuit is provided in Figure 17.2.

Figure 17.2 Greenwood Facility Process Arrangement and Treatment Circuit



A detailed process description relating to Figure 17.2 is provided below in Section 17.3.

17.2 PROCESS DESIGN CRITERIA

The life of mines plan provides for a mill feed consisting of processing 356,000 tonnes from the Lexington-Grenoble Mine, and 191,000 tonnes from the Golden Crown Mine. There are exploration opportunities to add tonnage to both resources, as well as from other mineral properties in the region to potentially extend the life of the operation, but which are not being considered for this study.

The average head grade of mill feed from the Lexington-Grenoble Mine is 5.48 g/t gold, and 0.90% copper, with an overall process recovery of 86% for gold and 87.5% for copper. For Golden Crown the average mill feed grade is 8.67 g/t gold, and 0.48% copper, with an overall recovery of 70% for gold and 82% for copper. Metal recoveries for Lexington-Grenoble are based on laboratory test results and previous operating data. The process response for the Golden Crown Mine has more limited test work information and has been shown to be variable. A significant portion of the gold in Golden Crown mineralization reports with the iron sulphides, which are depressed during cleaner flotation in order to maintain sufficient copper grades in the final concentrate. While this fact provides for a further opportunity to improve gold yield, it is currently assumed as a recovery loss. The response of the Golden Crown material is preliminary and further test work is recommended.

The facility will initially process at a nominal daily throughput of 212 tonnes/day. Assuming 93% plant availability, this provides for an average feed rate of 200 tonnes /day for an annual production rate of approximately 72,000 tonnes. Daily throughput will be doubled to 424 tonnes per day after one year, with the addition of a second primary grinding mill and modifications to the existing rougher flotation circuit. Much of the current remaining equipment including the crushing, regrind mill, scavenger / cleaner flotation cells, and dewatering system were previously designed to handle the expansion.

The process design criteria ("PDC") for the average life of operations combining the data from both mines are summarized in Table 17.2 below.

TABLE 17.2
PROCESS DESIGN CRITERIA

Item	Units	Value	Source*
Mill Feed Description (Average Life of Mines)			
Mill Feed (Crushed) Bulk Density	t/m3	1.7	B
Mill Feed Moisture Content	Wt%	5	A, B
Bond Ball Mill Work Index	kW/h/t	12.5	D
Gold Head Grade	g/t	6.59	B
Copper Head Grade Range	%	0.76	B
Processing Parameters (Crushing Circuit)			
Shifts/Day	#	1	A, B
Hours/Shift (Year 1 / Years 2-5)	hr	8 / 12	A, B
Days/Year (Year 1 / Years 2-5)	d	260 / 365	A, B
Top Size Crusher Feed (ROM)	mm	460	A
Top Size Ball Mill Feed	mm	9.5	A
80% Passing Size Ball Mill Feed	P80 mm	6.4	A, B, D

Table 17.2 Process Design Criteria			
Item	**Units**	**Value**	**Source***
Processing Parameters (Grinding / Flotation)			
Shifts/Day	#	2	A, B
Hours/Shift	hr	12	A, B
Days/Year	d	365	A, B
Nominal Daily Processing Rate (Year 1 / Years 2-5)	t/d (dry)	212 /424	A, B
Overall Plant Availability	%	93	A, B
Grind Particle Size (Ball Mill Cyclone O/F)	P80 µ	105	A ,D
Cleaner Flotation Particle Size	P80 µ	74	A ,D
LOM Average Ratio of Flotation Concentration	mass ratio	35:1	A ,D
Float Gold Concentrate Grade	g/t Au	97	C
Float Copper Concentrate Grade	% Cu	23	C
Float Concentrate Moisture Content	Wt.%	10	A
Metal Recoveries			
Tabled Gold Gravity Recovery	%	38.5	B, D
Gold Recovery to Float Concentrate	%	42.0	A, D
Combined Gold Gravity & Float Recovery	%	80.4	C
Copper Recovery to Float Concentrate	%	85.6	A, D

**Source Code*
A= Obtained from Historical or Operations Reference
B= Design Parameter / Consultant Information
C= Calculation
D= Laboratory Test Data

17.3 PROCESS DESCRIPTION

17.3.1 Mill Feed Delivery and Crushing

Mill feed is delivered seven days a week beginning from the Lexington-Grenoble Mine. This will subsequently be augmented with mill feed from the Golden Crown Mine. The mined material will be minus 460 mm (18”) and delivered in 40 tonne loads, operated by a private contractor. The delivered mined material is dumped into coarse mill feed stockpiles located near the crushing circuit. Coarse mill feed is loaded with a front end loader through a 460 mm grizzly into a receiving hopper. Any oversize mill feed will be broken with a portable rock breaker.

The crushing circuit provides over capacity and was originally sized for over double the throughput to allow for the future mill expansion. Crushing will initially be conducted at 8 hours per day Monday to Friday to ensure mill feed is available over the evening shift, and weekends and with sufficient contingency to allow for scheduled crusher maintenance. Following expansion of the mill the crushing circuit will be operated for 7 days a week at 12 hours per day.

The coarse crushed mill feed is delivered from the receiving hopper via a belt feeder to a 100 HP, 24” by 36” jaw crusher. Primary crushing reduces the rock particle size to a nominal 75 mm (3”), which is conveyed onto secondary crushing in a 250 HP, 4.5’ standard head cone crusher, operated in closed circuit with a 40 HP double deck vibrating screen. See Figure 17.3.

Figure 17.3 Conveyor, Cone Crusher and Vibrating Double Deck Screen

The minus 9.5 mm (3/8”) screened undersize is sent to a fine mill feed stockpile located outside on a concrete pad. Two slots in the pad allow the fine mill feed to flow into feed chutes and onto the ball mill feed conveyor located in a gallery under the stockpile. A belt weightometer records the mill feed rate. A second set of two slots is available to a second gallery to accommodate future expansion of throughput.

17.3.2 Grinding and Gravity Treatment

The mill and concentrator will initially operate at an average throughput of 8.3 tonnes per hour. A second similarly sized grinding mill and additional rougher flotation capacity will be added to double the plant throughput.

Figure 17.4 Primary Ball Mill

Fine mill feed is delivered to the existing 200 HP, 8'X6' Koppers conical ball mill (see Figure 17.4). This mill operates in closed cycle with a dedicated hydrocyclone using a 300% design circulating load. The hydrocyclone overflow targets a product particle size of 80% passing (P_{80}) of 90 microns, that is directed to flotation. The hydrocyclone underflow reports to a 10 mesh vibrating screen. Screen oversize goes back to primary grinding, and undersize is directed to Knelson CD-20, centrifugal concentrator. Knelson backflush times are adjusted manually depending on head grade and the resulting gravity concentrate is stored in a conical bottom discharge storage tank. This Knelson concentrate is typically cleaned once daily, on a Gemini shaking table. The gravity concentrate tank discharge and shaking table are placed in a fenced area below the Knelson. There are no security cameras present, but access to the area is restricted. There is no furnace, so the tabled concentrate will be stored in a safe and delivered elsewhere for smelting to Doré.

There is a 4 foot diameter by X 8 foot, 50 HP ball mill for regrinding rougher flotation concentrate. This mill operates in closed circuit with a hydrocyclone, with overflow reporting to the first cleaner cells at a P_{80} of 74 microns. The existing regrind mill can accommodate the planned increase in plant throughput.

17.3.3 Flotation

The primary ball mill cyclone overflow reports to rougher flotation. The flotation circuit consists of a bulk rougher concentrate cleaned in a regrind mill prior to three stages of cleaning. See Figure 17.5. The roughers and 1st cleaners including respective scavenging cells are of equal volume. The expansion of plant throughput will require additional rougher flotation cell capacity be installed.

Figure 17.5 Rougher and First Cleaner Float Cells

The float reagents consist of methyl isobutyl carbinol (“MIBC”) as frother, with potassium amyl xanthate (“PAX”) and Aerophine A3418 as collector, along with lime for pH control. The lime is delivered in two ton bulk bags and slacked next to the float circuit. The pH is raised primarily in the cleaning circuit with lime to depress pyrite. Tailing is delivered through a 10 HP centrifugal pump to a membrane lined storage pond located at an elevation several tens of meters below the plant.

The following Denver flotation cells make up the circuit;

- Roughing: bank of four cells – each cell 5’X5’X 4’ deep (2 -20 HP motors, one motor for two cells)
- Rougher Scav.: bank of four cells –5’X5’X 4’ deep (2 -20 HP motors)
- 1st Cleaner: bank of four cells –5’X5’X 4’ deep (2 -20 HP motors)
- 1st Cleaner Scav.: bank of four cells –5’X5’X 4’ deep (2 -20 HP motors)
- 2nd Cleaner: bank of four cells – each 4’X4.5’X 3.5’ deep (2 -15 HP motors)
- 3rd Cleaner: bank of four cells – each 4’X4.5’X 3.5’ deep (2 -15 HP motors)

The third cleaner float concentrate is dewatered in one of two thickeners located inside the mill building. Thickener overflow water is to be recycled to the process water tank and the thickener underflow is directed to one of two stock tanks for storage prior to filtration. A Larox pressure filter Model PF3 2B1 dewaters the final concentrate moisture content to approximately 10 wt.%. See Figure 17.6.

Figure 17.6 Larox Pressure Filter

Aerodri 104 can be used as a filtering agent as required. The concentrate is discharged to two operating conveyors and bagged manually. Each bag is separately sampled prior to being moved to covered storage to await transport.

17.3.4 Consumables

The power, and consumable requirements are based on the metallurgical test work and previous operating experience at the plant. The reagent types and dosage are summarized in Table 17.3, below.

Table 17.3 **Reagents**		
Reagents	**Value**	**Units**
MIBC (frother)	25	g/t mill feed
A3418 (speciality collector)	50	g/t mill feed
Potassium amyl xanthate (PAX, collector)	50	g/t mill feed
Flocculent (Aerodri 104 or equiv.)	20	g/t mill feed
Lime	0.70	kg/t mill feed

The flotation reagents are delivered to site as solids in bags or drums. These reagents are solubilized in fresh make-up water per manufacturer specifications and delivered in dedicated reagent distribution systems. Lime is delivered as bulk quick lime and hydrated in process water then pumped to the circuit to meet the specified pH requirements.

Fresh grinding media consists of adding 50 mm (2") diameter alloy steel grinding balls that are hoisted in a bucket to the mill feed chute. The grinding media consumption used is 1.0 kg per tonne of mill feed processed.

18.0 PROJECT INFRASTRUCTURE

The 2,060 hectare Lexington gold-copper property is centred on an area southeast of Greenwood, B.C., 9 km west of Grand Forks, B.C. and 42 km north-northwest of Republic, Washington. The Lexington Property is comprised of a series of contiguous patented Crown-granted, located and reverted Crown-granted mineral claims, and mining lease claims. The claims are located within the western half of the Greenwood Mining Division in south central British Columbia, Canada. The claims are centred on 49° 00’ 35’’ N and 118° 37’ 00’ W.

The Golden Crown Property is composed of 63 contiguous claims totalling 63 units and 1,017 hectares. The claims are located within the Greenwood Mining Division in south central British Columbia, Canada and are centered at 49° 05' 00" N and 118° 35' 30" W. The claims are 4 km east southeast of Greenwood, BC and 1 km south of the Phoenix open pit at an average elevation of 1,370 m.

Infrastructure is available in the immediate area to support mining. A natural gas pipeline and power line run close to the northern limits of the Lexington Property. A power line runs through the Golden Crown Property, passing within 100 m of the portal. In addition, there is a large, skilled workforce of trades and technical professionals as well as equipment suppliers available throughout the region. The closest full-service airports on the British Columbian side of the border are at Penticton and Kelowna. Surface infrastructure will be established near the existing portal, equipped with mine office, dry, shop, compressors, sanitary and environmental control systems.

The Lexington Property is easily accessible by paved provincial highway to the Greenwood area (i.e. Crowsnest Highway No. 3), followed by a choice of four different gravel access roads (McCarren Creek Road, Hartford-Phoenix Road, Phoenix Ski Hill Road and May-Gibbs Creek Road) which link to the Phoenix-Lone Star Haul road. At the 17 km mark on the Haul Road, the City of Paris dirt road runs west about 1.3 km to the Lexington-Grenoble Portal. Surface infrastructure will be established near the existing portals, equipped with mine office, dry, shop, genset, compressors, sanitary and environmental control systems.

The Golden Crown Property is easily accessible by: firstly, a paved provincial highway to Greenwood (i.e. Crowsnest Highway No. 3); followed by a paved/gravel road immediately east of Greenwood accessing the Phoenix open pit and linking to the main Lone Star Haul road. Secondary dirt roads east and west of Hartford Junction provide access across the claims. Alternatively, the main gravel haul road can be accessed from the Highway No. 3 along the Phoenix ski slope road found between Greenwood, BC and Grand Forks, BC.

The Greenwood Process Plant and tailing facility is located 8 km east of the town of Greenwood, British Columbia at an elevation of 1,250 m above sea level. This facility is constructed on the Company’s Golden Crown Property located 1.5 km from the Golden Crown Mine and 9.5 km from the Lexington-Grenoble Mine. Milling uses conventional crushing, grinding, gravity and flotation to produce both doré and a gold-rich copper concentrate. Fifty percent of the gold will be recovered by gravity and the balance in the copper concentrate, for Lexington-Grenoble mill feed. Approximately thirty-five percent of the gold will be recovered by gravity and the balance in the copper concentrate for Golden Crown mill feed. The circuit is designed to accommodate variation in the gold recovery split to maximize gold recovery. The Greenwood Mill is designed to initially process 212 tonnes per day with expansion to 424 tonnes per day, along with a flexible gravity and flotation process and circuit design to handle gold-copper feed with varying metallurgical characteristics and gold and copper grades.

The Greenwood Precious Metals Project will produce approximately 535,000 tonnes of tailings during its mine life which will be deposited in a Tailings Storage Facility ("TSF"). In 2007, a TSF starter dam was constructed to provide an initial tailings storage capacity of approximately 190,000 tonnes and it would be subsequently increased to a final design capacity of 400,000 tonnes. During operations in 2008, approximately 50,000 tonnes of tailings were placed in the TSF which leaves a current capacity of 140,000 tonnes which is sufficient for approximately 1.5 years of production (1st year at 72,000 tonnes capacity and half of 2nd year at 144,000 tonnes capacity). In the second year of operations, the TSF will be raised to its ultimate design capacity of 400,000 tonnes which will provide an additional 210,000 tonnes of storage, enough to last until the end of year three. The last 1.5 years of tailings produced will be dry stack stored on top of the initial 400,000 tonne TSF with the addition of filtration and stacking equipment.

During the Greenwood Mill shutdown since late 2008, grid power supply to the mill site has been maintained and is currently in a ready to go mode. The Lexington-Grenoble and Golden Crown Mines would operate on diesel generated power. A power line runs through the Golden Crown Property, passing within 100 m of the portal, thus providing an opportunity for grid power at that site.

19.0 MARKET STUDIES AND CONTRACTS

19.1 INTRODUCTION

The Greenwood Precious Metals Project would produce tabled gold concentrate from the gravity circuit, and a gold-rich copper concentrate from the flotation circuit.

Prices for gravity gold will be based on the gold prices that prevail at the time of production, minus respective refining charges, either on the spot market or under agreements with refineries

At this time, no market studies have been completed for the sale of the copper concentrate produced on site. The copper concentrate will be trucked to the Vancouver area concentrate storage facility for transport to international smelters.

No contractual arrangements for concentrate trucking, port usage, shipping, smelting or refining exist at this time. There are no contracts in place for the sale of gravity and flotation products. It is assumed that the concentrate produced at the Greenwood Precious Metals Project would be marketed to international smelters in Asia and Europe. No deleterious elements have been identified or considered at this time.

During the 2008 former operations, the gravity gold concentrate was sold to a Vancouver refiner and the copper-gold concentrate to Glencore with no deleterious element issues.

The smelter terms used in the economic analysis are based on recent marketing terms from similar projects. Sales and marketing considerations will require finalization during project execution. It is expected that any sales and refining agreements would be negotiated in line with industry norms.

19.2 METAL PRICES

Base and precious metal prices may vary significantly over time but are set by terminal markets around the world. Base case pricing used in the projected cash flows are:

- Copper : US$2.35/lb;
- Gold: US$1,200/oz

A currency exchange rate of C$1.00 = US$0.76 was used for the projected cash flow tables.

The 3.5 g/t AuEq resource cut-off grade that was used for the mineral resource definition was derived from the approximate Apr 30/17 two year trailing average gold price of US$1,200/oz and a copper price of US$2.35/lb. The US$/C$ exchange rate used was of C$1.00 = US$0.76.

20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 BASELINE INFORMATION

Environmental test work prior to 2008 was conducted on waste rock and tailings samples from Lexington-Grenoble, under the supervision of Mehling Environmental Management Inc. and formed the basis for the handling of Lexington-Grenoble waste rock and design of the Greenwood tailings facilities. Baseline water sampling started in 2003, continues to be conducted on a regular basis from established sampling stations at Lexington-Grenoble and the Greenwood Process Plant and Tailing Facility sites. From March 2006 until July 2011, Merit had measuring flow velocity at the Lexington-Grenoble Mine and the mill site creek's sampling sites. Limited baseline water sampling has been done at Golden Crown. Baseline water sampling needs to be started at Golden Crown to provide information for its future permitting.

Merit install a meteorological station near the Greenwood Process Plant and Tailings Facility site in the spring of 2007 and collected data for an approximate two-year period.

A Reconnaissance Biodiversity Assessment of the Mill and Tailings Impoundment area was conducted by Snowy River Resources Ltd. for Gold City Industries Ltd. (November 2004). Subsequently, in September 2006 a second biodiversity assessment was conducted by Snowy River Resources Ltd, encompassing the proposed tailings facility site and the Lexington-Grenoble and Golden Crown deposit sites.

In November 2007, Gartner Lee Limited prepared for Merit the Application for a Permit Approving the Small Mine Plan and Reclamation Program Pursuant to Section 10 of the British Columbia Mines Act, Lexington-Grenoble Mine. That report included studies related to sampling and assessment of water quality and quantity, surface drainage, climate, hydrology, hydrogeology, wildlife, vegetation, fisheries and biodiversity values, ARD/ML, terrain ecosystem mapping, socioeconomics, socio-community, land use planning and culture and heritage. That report provided a Project Description and included the impacts and benefits of an operating mine at Lexington-Grenoble with processing at the Greenwood Mill and Tailings Impoundment which could provide for as many as 80 full time employment positions. It excluded Golden Crown.

20.2 EXISTING CONDITIONS

20.2.1 Land Capability and Uses

The present land use is mineral exploration, mining, forestry and seasonal cattle grazing. There are three residences in the vicinity of the Golden Crown site; neither residence is situated on the mineral claims or on the haulage route. No residences or other developed sites are in the vicinity of the Lexington-Grenoble Mine or the Greenwood Process Plant and Tailing Facility site.

The project site is not located within any federal or provincial parks, or provincial special management areas. There are no known environmental or archaeological concerns within the project site.

20.2.2 Climate

Historical climate data is available from the immediate surrounding area from Phoenix located approximately 2 km northwest of the Greenwood Process Plant and Tailing Facility site and a meteorological station located at Greenwood, BC, 7 km west of the site and current climate data is also available from an Environment Canada meteorological stations located at Grand Forks, BC, 10 km southeast of the site.

The project area experiences warm summers and cool winters. The mean July temperature is 20° C and the mean January temperature is -8° C. The site is located in an area of relatively low precipitation, with annual average precipitation of 40 to 50 cm (British Columbia Atlas). The summers are hot and dry with most of the precipitation occurring during the winter months in the form of snow (1 to 2 m in the area of the plant site). Snow in the plant area is usually gone by late April and snow starts to accumulate again in early December. At the old Phoenix mine site, located approximately 3 km northwest of the mill and tailings site, the 200-year short duration (one hour) storm rainfall was estimated to be 3.7 cm.

20.2.3 Surface Water

Lexington-Grenoble Mine

There are no creeks, lakes or swamps above or in the immediate area of the two portals, or existing waste dumps.

The drainage area above the current development is small and runoff is minimal due to the vegetation and the small catchment area. A road (bench) was installed above the Lexington-Grenoble portal with re-sloping to ensure a stable hillside and redirect surface water away from the portal.

Goosmus Creek, a small creek about 20 to 40 cm wide and between 1 and 10 cm deep, is located downhill about 200 m away from the Lexington-Grenoble portal area and in excess of 500 m away from the Eastern Portal, and drains from the basin located to the northwest. This stream runs year round.

Water sampling of this creek, above and below the portal area, by Britannia Gold, Gold City, Merit/Huakan, as well as the BC Ministry of Environment, dates back as far as mid-May, 1995. The water quality at the individual sample sites today, behave very similarly to pre-operation times, demonstrating that the Lexington-Grenoble Mine operation is not affecting water quality in the Goosmus drainage. The above-operations site water quality compare well to water quality below-operations, also demonstrating insignificant effects.

Mine water from the Lexington-Grenoble Portal has also been sampled since 1995 and the results are virtually identical to the pH of the water in Goosmus Creek. The mine water from the Eastern Portal which seasonally discharges at a very low rate, and has been tested since 2014, shows slight elevations in sulfate, total dissolved solids, hardness and conductivity compared to the Goosmus Creek values and only slight elevations in metal values exceeding the BC Water Quality Criteria for the protection of aquatic life for aluminum, iron, cadmium and copper.

At reactivation, the Lexington-Grenoble Mine would require a 30 day dewatering discharge. Once in operation, discharge would be at a low rate. Both phases of discharge would require a permit from MOE (application in-progress). Discharge would be through a drip pipe from the second portal at least 500 m from Goosmus Creek which spreads the discharge across a larger area to allow for more evaporation and evapotranspiration effects to minimize any impact to Goosmus Creek. Much of the flow is not expected to reach the creek due to evaporation and evapotranspiration by vegetation and many physical and chemical mechanisms that naturally renovate groundwater quality such as attenuation, dispersion and dilution by native groundwater or surface water.

Due to the run-off water diversions in place around the existing portals, the low precipitation and the very small footprint, run-off water is not expected to be a concern.

A cross pit would be excavated downslope and at the toe of the Eastern Portal waste dump to allow for surface water sample collection during dump residency.

Golden Crown Mine

There are no creeks, lakes or swamps in the vicinity of the Golden Crown Mine. The area is generally drained to the north by Snowshoe Creek and to the south by Skeff Creek both of which drain into July Creek. Snowshoe Creek is sampled for water quality but Steff Creek is not.

During operations berms and ditches will be constructed around the waste dumps to re-direct any natural drainage around the dumps.

Greenwood Process Plant and Tailing Facility

The Greenwood Process Plant and Tailing Facility site is located on the east-facing slope of the July Creek valley. The site lies between two tributaries of the Snowshoe Creek, which only during freshet drains to July Creek which flows south into the Kettle River. The location of the site at the crest of land between the creek tributaries restricts surface flow and catchment area. There is no surface water or evidence of surface flow in the immediate plant site area.

Five sampling locations have been established on Snowshoe Creek upstream and downstream of the Greenwood Process Plant and Tailing Facility site. The receiving water sites have been established as monitoring stations to detect potential influences of the previous workings at the Snowshoe Pit and the project on the adjacent streams. Water quality samples are also collected from the two monitoring well downhill of the impoundment. In 2004 water sampling frequency was increased to monthly. During the 2005 and 2006 spring freshets, sample frequency was temporarily increased to weekly. During the care and maintenance period the company is doing water sampling twice a year. From the available sampling, there are no elevated metals in sites above or below the mill and tailings site, thus demonstrating no impacts of the operations to the receiving environment.

The site has peripheral and internal drainage systems to manage surface run off. The peripheral drainage system directs external uncontaminated plant site run-off away from the process plant site to existing natural receiving waters. The internal plant site drainage system captures site run-off and directs it to the tailings containment system.

20.2.4 Groundwater

Lexington-Grenoble Mine

The catchment area above the Lexington-Grenoble and Eastern Portals and associated mine workings is small and therefore there is little groundwater in this dry climate. There is currently only seasonal slow water discharge from the underground development which is evidence of very little groundwater in the area.

Prior to the 1996 decline development, water discharged naturally from the original portal at the estimated rate of two gallons a minute in the high run-off period of mid May 1995, and percolated through the old mine dump into the subsurface. During and subsequent to the development of the 1996 decline, mine water was also tested. The results showed a slightly alkaline pH and small elevations were seen in levels of magnesium, copper, molybdenum, alkalinity, pH and sulphate compared to the creek water. No discharge occurred from 2009 to 2012 while the workings flooded. Since then the mine water from the Eastern Portal which seasonally discharges at a very low rate, and shows slight elevations in sulfate, total dissolved solids, hardness and conductivity compared to the Goosmus Creek values and only slight elevations in metal values exceeding the BC Water Quality Criteria for the protection of aquatic life for aluminum, iron, cadmium and copper. No direct discharge of mine waters occurs into the nearby drainage of Goosmus Creek.

A cross pit would be excavated downslope and at the toe of the Eastern Portal waste dump, to allow for ground water sample collection during dump residency.

Golden Crown Mine

The Golden Crown adit, driven in 1988, has a natural water drainage rate of approximately 3 gallons per minute. Baseline water samples of the drainage water from the Golden Crown Portal had been collected from 2002 to 2004 and indicated a slightly alkaline pH.

Greenwood Process Plant and Tailing Facility

There is no groundwater evident in the location of the Process Plant and Tailing Facility.

The process plant has sealed containment in all process facilities and the tailing impoundment is lined with a geomembrane.

20.2.5 Fisheries and Aquatic Resources

Goosmus Creek, located near the Lexington-Grenoble and Eastern Portals, is a small stream that flows year round. The gradient is moderate with several small falls. Fish are not known to inhabit this stream. At the Greenwood Process Plant and tailings facility, Snowshoe Creek is characterized as a very small creek with moderate gradient and seasonal intermittent flow. Two waterfalls are located 400 m downstream of the plant site, precluding the presence of fish and aquatic resources in these areas. The Golden Crown Deposit sits in the crest between two small creeks, Snowshoe Creek to its north and Skeff Creek to its south. Skeff Creek was not included in any previous fisheries studies, however it is small with a steep gradient and is not likely to have fish.

20.2.6 Vegetation

The major vegetation in the area consists of hemlock, tamarack, cedar, pine and some deciduous trees. Some of the land has been logged in the recent past. There are local areas of thick underbrush and areas of natural grassland.

Past exploration and prior logging at Lexington-Grenoble had removed most timber in the area expected to be only incrementally disturbed, estimated to be approximately 1.0 hectares to the Eastern Portal dump.

The Greenwood Process Plant site was forested and was cleared on construction. The area of the plant site clearing in 2007 was approximately 3.2 hectares. The tailing site covering an area of approximately 8.0 hectares, had been clear cut by a logging company prior to the impoundment construction.

Past exploration and prior clear-cutting at Golden Crown have removed most timber in the area expected to be disturbed. The King Vein lies in a clear-cut with only isolated trees remaining. No further disturbance of vegetation is anticipated at Golden Crown.

20.2.7 Wildlife

The most common wildlife in the area is deer. There are also occasional sightings of black bear, moose, coyotes, cougar and various small mammals such as squirrels. Bird life includes a variety of small birds plus eagles, hawks, owls and ravens.

A reconnaissance biodiversity assessment report was prepared in October 2004 by Doug Wahl, RPBio, Habitat Biologist and Jenine Mylymok, Habitat Technician of Snowy River Resources Ltd. on the Greenwood Process Plant and Tailing Facility area. The authors carefully evaluated the potential fish and wildlife related impacts of the proposed mill and tailing impoundment by establishing the known or potential species occurrence and the level of risk that the development is likely to have on these values. In accordance with the existing or potential biodiversity values within the study area and its multipurpose uses, it was the opinion of Mr. Wahl that the proposed development was not likely to adversely harm fish or wildlife habitat. Therefore, no specific mitigative actions were deemed necessary.

Subsequently, in September 2006, Snowy River Resources Ltd. conducted a second biodiversity assessment, which encompassed the proposed tailing facility site and the Lexington-Grenoble and Golden Crown deposit sites. Snowy River Resources Ltd.'s second assessment included a field review of the area planned for the tailings impoundment, communication with the CDC regarding the occurrence of rare and endangered species and an overall assessment of any adverse risks that the project may present to fish, wildlife or biodiversity values. On this basis, Snowy River Resources Ltd. determined that the removal/clearing of vegetation for the mill and tailings impoundment will not result in any adverse impacts to fish, wildlife or biodiversity values. The vegetation around the existing portals of the mine sites has been essentially cleared (historical) and additional vegetation clearing will be minor in nature (i.e. 1-2 hectares per site).

Klohn Crippen Berger had determined that the risk of the tailings impoundment failure was extremely low, given that the impoundment will be 'over engineered' and that the design capacity will exceed planned inputs.

20.3 DEVELOPMENT AND OPERATIONS

20.3.1 Stockpiling of Surface Soils

The surface soil was not saved by the previous operators at the Lexington-Grenoble or Golden Crown sites. Soil for any proposed developments will be removed and stockpiled before any new surface development begins at all locations to allow for soil coverage at final reclamation and closure.

20.3.2 Surface Development

Lexington-Grenoble Mine

The site as presently developed is small, 3.5 hectares, and it is not expected that the area of disturbance will increase significantly, <1 hectare. The site will be used to service the mining only, with processing of mill feed to occur at the Greenwood Process Plant. The Lexington-Grenoble Portal site previously had a mechanic's shop, compressor, generator and trailers for an office and a dry. Currently only shells of these structures remaining at the portal, but would require clean-up and possibly reconstruction. Previously installed septic field systems are probably still intact to service the mine dry and office.

The incremental increase in disturbance would be from adding to the Eastern Portal waste dump area. A cross pit will be excavated downslope and at the toe of the waste dump to allow for surface or ground water sample collection during dump residency.

Golden Crown Mine

The current portal and adit at Golden Crown would be slashed larger to permit trackless equipment. The waste rock would incrementally be added to the existing portal dump. The new portal and spiral decline over the deposit would have a small footprint (less than a hectare). A cross pit will be excavated downslope and at the toe of any waste dump to allow for surface or ground water sample collection during dump residency. The site will be used to service the mining only, with processing of mill feed to occur at the Greenwood Process Plant. The portal site will have a mechanic's shop, compressor, generator and trailers for an office and a dry.

A fuel storage tank will be located in a lined, berm enclosed area within 30 m of the portal. A septic field system will be required to service the mine dry.

Greenwood Process Plant and Tailing Facility

The Greenwood Process Plant site will not require any new work except improvements internal to the building, including the plan to increase the throughput capacity. The plant site comprises the crushing plant, process plant and associated lunchroom, offices and assay/metallurgical laboratory building. A sewage tile field was developed in the vicinity of the process plant.

The Tailings facility will require subsequent lifts. The material for the lifts will be found locally, possibly from waste rock from the Golden Crown development nearby.

Once the tailings facility reached it full design capacity, dry stack tailings would be employed. The location of the dry stack would be in close proximity to the impoundment and within the drainage confines of the internal drainage system to the impoundment area.

20.3.3 Metal Leaching & Acid Rock Drainage Considerations

Due to the short storage time of mill feed and waste, the dry climate and stockpile graded base and run-off collection design, metal leaching and ARD considerations are mitigated throughout the project life.

Lexington-Grenoble Mine

The mined material from the Lexington-Grenoble Mine will be hauled to the Greenwood Process Plant and Tailing Facility. The waste rock created during pre-production development period and during operations will be monitored by on-site XRD equipment for ARD potential and segregated as potentially acid generating or Non-PAG to previous stockpiled on surface. Total waste development at Lexington-Grenoble will be 122,000 tonnes with no tonnage required for backfill during mine operations. As required, potentially acid producing waste will be transported underground and placed in completed stopes.

The existing waste dump at the original Lexington-Grenoble Portal site, Eastern Portal and low grade stockpile are underlain by a 150 - 250 m wide serpentinite unit which provides additional natural buffering for any small quantities of groundwater flowing through the project area. New waste will be added to the Eastern Portal waste dump. Any ground waters from the Eastern portal dump area will have to travel at least 500 ms including 180 m over buffering serpentinite before reaching Goosmus Creek. As a safeguard, a cross pit will be excavated downslope and at the toe of the waste dump to allow for surface or ground water sample collection during dump residency.

Waste rock drainage and Goosmus Creek water quality will be continually monitored during operations.

Golden Crown Mine

Waste rock will be moved to surface in a similar manner and stockpiled. The waste rock is not expected to have acid generating potential because sulphide mineralization does not extend into the wall rock beyond the limits of each vein. Appropriate test work and acid base accounting will be conducted on representative samples of waste prior to the initiation of mining on Golden Crown to ensure appropriate handling of waste rock. As required, waste rock will be placed in underground openings at the completion of mining.

Greenwood Process Plant and Tailing Facility

Run of mine ("ROM") mineralized material will be trucked from the underground Lexington-Grenoble Mine and the Golden Crown Mine and dumped in a ROM stockpile adjacent to the crushing plant. The ROM stockpile will have a capacity of 7 days or 2,100 tonnes. The stockpile area will be graded with a perimeter ditch to collect run-off. Run-off water will be directed to a sump where a pump will be installed to pump run-off back to the process or alternatively to the tailings impoundment via the tailings pipelines. The crushed mill feed will be stored in a fine mill feed bin with a concrete pad located outside of the process plant facility.

Metallurgical test work has defined processes to maximize gold and copper recovery, resulting in sulphide tailings. The total tailings volume will be susceptible to acid generation. The tailings stream will be transported to the tailings impoundment, which is fully lined and has been designed to maintain saturation of the tailings. The tailings impoundment will be covered on closure in order to mitigate the ARD potential.

Monitoring of the Greenwood Mill and Tailing Facility during the operating period will include daily visual inspections of the Tailings Impoundment Area for stability and leakage, plant process leakage, daily monitoring of fresh water intake and quarterly water samples from boreholes downstream of the Tailings Impoundment Area.

20.3.4 Decommissioning and Reclamation Program

Lexington-Grenoble and Golden Crown Mines

The trailers, buildings and constructed developments on surface will be removed upon completion of mining. All explosives, explosives' magazines, fuel and fuel containers will be removed from the site at closure. The top of the existing dump and spur roads will be ripped with a bulldozer to loosen the soil for reseeding. A layer of soil will be added to the top of the existing dump and the dump hydro-seeded. The mine portals and ventilation raise will be gated and locked. The reclaimed area will be stabilized by hydro-seeding of grasses and vegetation, in accordance with recommendations of the BC Guidelines for Mineral Exploration: Environmental, Reclamation and Approved Requirements, 1992.

Greenwood Process Plant and Tailing Facility

At closure the process plant and ancillary structures will be decommissioned and removed from the site. The process plant site and the tailings impoundment will be reclaimed.

The process and ancillary facilities are all portable structures, easily removed from the site at closure. Concrete slabs will be covered.

After removal of the process building and equipment, a soil sampling program will be conducted to determine if there are any contaminates in the immediate vicinity. Any soils that contain sulphides or mill reagents will be placed in the Tailing Facility prior to final reclamation of the tailings impoundments.

Recovery of the disturbed area will consist of filling in the pits with the waste rock, covering with stockpiled topsoil and hydro seeding.

The tailings impoundment will be closed with a saturated rock fill cover. The saturated cover will minimize the oxygen that reaches the tailings, similar to ponded water cover, however, with less maintenance and water management. A minimum 1 metre thickness of rock fill will be spread over the tailings surface with a horizontal final grade. Runoff from catchment will be allowed to drain onto the rock fill cover to maintain saturation. Excess water will be drained through an emergency spillway. The saturated cover can be vegetated with wetlands vegetation.

Reclamation to original contours is not possible at the site due to the construction of the tailings dyke and the storage, however, the final dyke topography allows for reclamation of the area to blend into the mountain setting.

Outside of the reclaimed impoundment, the reclaimed area will be stabilized by hydro-seeding of grasses and vegetation, in accordance with recommendations of the BC Guidelines for Mineral Exploration: Environmental, Reclamation and Approved Requirements, 1992.

Watercourse Reclamation

No watercourses will be physically altered during construction and operation at any of the Greenwood Precious Metals Project sites.

Road and Power Line Corridor Reclamation

Most of the access roads to the Lexington-Grenoble and Golden Crown Mine sites are public roads already in place and do not have any culverts or waterway alterations. It is expected that decommissioning of the main roads will not be required, in order to maintain access for inspection and for other land users (mineral exploration and recreational). The Company will follow the direction of the Mines branch on this matter. The power line corridor reclamation would see wires and poles removed.

20.3.5 Environmental Monitoring and Surveillance Post Closure

Lexington-Grenoble and Golden Crown Mines

The mining sites will be monitored for a two year period post closure, which will include quarterly site visits for visual inspections of stability and erosion of the site and collection of water samples from the discharge of the Lexington-Grenoble and Golden Crown Portals.

Greenwood Process Plant and Tailing Facility

Monitoring of the Greenwood Process Plant site and adjacent Tailing Facility will be accomplished with quarterly site visits by a qualified person for a three year period following closure. The site visits will include a visual inspection of the Greenwood Process Plant site, Tailing Facility, access roads and water sampling from inspection boreholes downstream of the starter dam. The water samples will be tested for pH levels and contaminates. The site visits will include an assessment of the areas for erosion and stability.

Erosion Control and Sediment Retention Plan after Closure

There are no natural water courses running through the Lexington-Grenoble or Golden Crown Mine site or the Greenwood Process Plant and Tailing Facility site. The climate in the region is dry with low annual precipitation. The tailings impoundment will be closed with a saturated rock fill cover. Closure plans for the tailing impoundment include emergency spillway construction for diversion of excess runoff.

20.4 PERMITTING REQUIREMENTS

20.4.1 General

Mining projects may or may not require a review by the British Columbia Environmental Assessment Office ("EAO") pursuant to the British Columbia Environmental Assessment Act ("BCEAA") to determine whether the project can be issued an Environmental Assessment Certificate. A Mines Act Permit, from the BC Ministry of Energy and Mines, and an Environmental Management Permit, from the BC Ministry of Environment is required for commercial production.

The thresholds to determine the triggering of an Environmental Assessment Review of a new metal mine or amending an existing mine are found in the Reviewable Projects Regulations associated with the Environmental Assessment Act. The threshold for triggering an Environmental Assessment Review for a new metal mine facility is when, during operations, it will have a production capacity of > 75,000 tonnes/year of mineralized material. The threshold for triggering an Environmental Assessment Review on an existing facility, or a proposed facility (where they are new facilities in the same category as the existing facility), is when production capacity is > 75,000 tonnes/year of mineralized material, and the modification will result in the disturbance of:

- i) At least 750 hectares of land that was not previously permitted for disturbance, or,
- ii) An area of land that was not previously permitted for disturbance and that is at least 50% of the area of land that was previously permitted for disturbance at the existing facility.

The current approach to permitting amendments to an existing mining project or a new metal mining project in British Columbia follows a prescribed process that has been streamlined by the BC Ministry of Energy and Mines, through the BC Mines Act, should the project not trigger an Environmental Assessment.

Should a new mine or amended existing mine not trigger an Environmental Assessment, proponents approach the regional office of the BC Ministry of Energy and Mines overseeing the project area. The Ministry is there to help and streamline the process of permitting. An initial meeting with the regional director provides the scoping of the required forms and Project Description which the proponent needs to prepare and submit. The Project Description will require within it a number of baseline data studies such as site surface water quality, fish and wildlife studies, chemistries of waste and mineralized rock, hydrology etc. prepared by in-house and/or outside consultants. The depth of each study would be variable but are not as rigorous as for an Environmental Assessment. Some of these studies are season-specific such as nesting birds. The longest timeline is likely a full year of site surface water quality collection.

The Project Description, once adequately prepared would be submitted and presented to the regional office, for the Mine Development Review Committee ("MDRC"), a review committee established by the BC Ministry of Energy and Mines with representatives from various ministries and affected First Nations groups to review the submission. From this point, there is an expected review period by the stakeholders, with potential requests for more information, which could extend the time frame. It is in the best interests of the proponent to be proactive with First Nation and community consultation which should be rigorously documented.

20.4.2 Current Status of Permits

The Lexington-Grenoble Mine falls under mine permit M-234. Under the current care and maintenance status, Golden Dawn continues to monitor the Lexington-Grenoble site periodically for waste rock dump stability and surface water quality and submits an Annual Reclamation Report to the Ministry of Energy and Mines for the mine site. Huakan maintains a $215,000 bond with the government of British Columbia in safekeeping for the costs of reclaiming the mine site and area upon closure which will be replaced by Golden Dawn as part of the permit transfer.

The Greenwood Mill and tailing facility falls under current mill permit M-233. Under the current care and maintenance status, Golden Dawn keeps 24/7 security at the site. Golden Dawn continues to monitor the mill and tailings site weekly for tailings impoundment stability, water management and surface water quality. Huakan submits an Annual Reclamation Report to the BC Ministry of Energy and Mines for the site and submits Annual Dam Safety Inspection Reports. In 2015, Huakan submitted a Dam Safety Review Report, documenting the condition and monitoring of the impoundment. Huakan maintains a $235,000 bond with the government of British Columbia in safekeeping for the costs of reclaiming the mill and tailings facility and area upon closure which will be replaced by Golden Dawn as part of the permit transfer.

Golden Crown Deposit/Mine does not have bulk sample or mine permit currently and would require a permitting process.

Reactivating Lexington-Grenoble Mine and Greenwood Mill and Tailings

Prior to reactivating the operation, one would have to meet and submit a Project Description with plans to the BC Ministry of Energy and Mines for approval. This may or may not require review by the MDRC. Consultation with First Nations is likely required.

Any design variances desired to the current mine and mill permits would require a MDRC review for consideration and approval. The larger the change, the deeper the review. This too may require First Nation Consultation. A water discharge permit would be required from the BC Ministry of Environment. An application for a water discharge permit for the Lexington-Grenoble Mine for initial dewatering of the underground as well as for discharge during mining is currently in progress with the BC Ministry of Environment.

Golden Crown Mine

A two-step permitting process is envisioned for the Golden Crown Mine. Firstly, a Notice of Work application to mine a 10,000 tonne bulk sample from the Golden Crown Mine would be filed through the Cranbrook regional office. Available studies along with additional surface water quality sampling and assessments would be a part of this application.

It is envisioned that the Golden Crown Mine would produce 72,000 tonnes per year, and processed through the existing Greenwood Mill and Tailings Facility. Due to the size and the existence of a process facility, the project is not anticipated to trigger an Environmental Assessment Review, but permitting would be through a Mine Development Review Committee chaired by the Regional Director of BC Ministry of Energy and Mines. Dialogue with the director and MDRC would determine the studies needed in the application. The studies currently on file for the project may be adequate for the application or may require updating and additional studies undertaken. Once the application has been submitted, a process of review, including requests for additional information is envisioned until a Mines permit and discharge permit could be granted. No technical difficulties are anticipated for obtaining these permits. A reclamation bond must be deposited with the government on the issuance of permits.

The mine permit process would concurrently require an application to amend the Greenwood Mill and Tailings Facility M-233 permit approving the processing of the Golden Crown mill feed (including any design changes to the plant flowsheet) and the deposition of the Golden Crown tailings into the existing lined impoundment. No technical difficulties are anticipated for obtaining this amendment as the impoundment is lined.

20.5 CONSIDERATIONS OF SOCIO-COMMUNITY AND SOCIO-ECONOMIC IMPACTS

20.5.1 Regional and Local Economic Development

The reactivation of the project including the construction of the Golden Crown Mine will likely affect the regional and local economy in a positive direction. At present, the geographic distribution of benefits is uncertain. It is known that the total capital costs for upgrading the Plant site and upgrade the Lexington-Grenoble Mine for restart and the subsequent construction of the Golden Crown Mine are estimated to be $34 million. Much of this spending will flow to businesses located within BC and the Kootenay Boundary Regional District (“KBRD”), but due to the nature of the goods, many goods will need to be sourced from companies across the country and some goods may be sourced globally.

During the operations phase, the project is expected to add significantly to the regional and local economy. Total operations cost for the life of the mine is estimated at $80 million. The decommissioning phase will begin to see reductions in investments in the regional and local economy.

20.5.2 Employment

The project will require approximately the same number of employees for the reactivation, operations, construction and maintenance phases. At full production the Lexington-Grenoble and Golden Crown Mines and Greenwood Mill is estimated to employ 50 current local residents, bring 15 new local residents to the area for employment, and have 10 out-of-town employees.

The 75 direct full time equivalents employees are estimated to generate additional indirect and induced jobs. It is estimated that the expected number of local residents to fill positions will be 65 people.

Of the total labour force in the primary study area, there were 10 people in Grand Forks who made up mining, quarrying and oil and gas extraction labour force in 2011. However, this does not necessarily represent the entire labour pool, as skills from one sector are transferable to the mining sector (Source: Statistics Canada, Census 2011).

The unemployment rates for Grand Forks and Greenwood is 8.6% and 12.5%, respectively. This suggests that there may be a proportionately larger experienced labour available in Greenwood than in Grand Forks (Source: Statistics Canada, Census 2011).

There are 1,025 people that make up the natural resources, agriculture and related production occupations of the labour force in the KBRD. The unemployment rate is 9.2% for KBRD, higher than BC as a whole, suggesting that labour may be available in the region (Source: Statistics Canada, Census 2011).

The decommissioning and reclamation phase will employ 20 full time equivalent workers, of whom approximately 80% will be local/aboriginal. Once into post-closure the number of workers will be reduced. Positions will be limited to the monitoring and maintenance of the site's reclamation and monitoring program. Eventually even these jobs will become seasonal in nature.

As the Project's workforce requirements in the post-closure phase are minimal, it is expected that this phase may result in some population out-migration of technically skilled workers. Actual numbers will depend on whether alternative employment opportunities and/or the availability of government social assistance.

20.5.3 Income

Hourly wages paid to workers on the project will range from $25/hr for a labourer to $75/hr for contracted electricians. Based on a 40-hour workweek, this is equivalent to a minimum annual salary of nearly $50,000 (the maximum annual staff salary would be approximately $180,000). These salaries are significantly higher than the RDKB median annual income of just under $27,300. Therefore it is expected that this phase of the Project will have a positive impact on employment and income levels within the study area.

It is expected that the work required to carry out decommissioning will provide a small number of workers with pay and benefits that are comparable to the construction trades.

20.5.4 Education

It is expected that the project will have very little effect on the average level of education of area residents. The high tech nature of mining requires a workforce that is largely composed of people having a post-secondary education, particularly in skilled trades. The closest institution offering training in trades is the Castlegar campus of Selkirk College (approximately 100 km from Grand Forks). The Company is expecting to provide training to locals/aboriginals for various positions such as underground miners and mining equipment operators. The severe shortage of young miners in the industry can only be improved from experiences gained from this operation and transferable to other mine sites in the province.

20.5.5 Demographics

The mine operation is not expected to have a significant impact on the local demographics, as only 15% of the employees are anticipated to be new to the study area.

20.5.6 Housing and Real Estate

Industrial projects can affect the environment and the quality of life of nearby residents which in turn can affect real estate values. Increased demand for housing as a result of a project can also result from the influx of workers or an increase in income. The reactivation and operations of the Lexington-Grenoble Mine and construction of Golden Crown Mine are not expected to have a significant impact on the local housing supply, as only 15% of the employees are anticipated to be new to the study area.

Given the high wages and the relatively affordable cost of housing in the study area, it is expected that a high percentage of workers will opt to purchase their own home. This is not likely to be a challenge, given the availability of the current housing stock.

It is expected that this operations phase will have a neutral effect on real estate values of residences in the primary study area. The Project's mine plan has been designed to limit the mine's expected negative quality of life impacts. Further, mining has a long history in the area and therefore is consistent with people's perceptions of the area.

20.5.7 Infrastructure, Transportation and Road Traffic

The Project areas are easily accessible by paved provincial highway to the Greenwood area (i.e., Crowsnest Highway No. 3), followed by a choice of four different gravel access roads (McCarren Creek Road, Hartford-Phoenix Road, Phoenix Ski Hill Road and May- Gibbs Creek Road) which link to the Phoenix-Lone Star Haul road. At the 17 km mark on the Haul Road, the City of Paris road runs west about 1.3 km to the Lexington-Grenoble Mine.

The Lone Star Haul Road is a government maintained gravel road. During the winter months, it is no longer kept open, however, it is expected that upon reactivation of mine operations, the government would keep the road maintained year round. The Snowshoe Main Road is administered by Ministry of Forests and Range (MOFR).

Transportation of supplies, dam lift construction materials, construction materials, mill equipment, and trucks associated with logging may result in increased traffic during this phase. After the initial 2-3 months of re-start, the transport of materials will be mostly complete.

During operations, an average of 8-10 trucks per day will travel 17 km on the Phoenix Haul Road from the Lexington-Grenoble Mine to the mill site. The mill site is located on the Snowshoe Main Road. To access the mill site from Grand Forks, Greenwood or Midway, trucks will take the Phoenix Ski Hill turnoff from Highway 3, and travel 4.5 km, until reaching the turnoff to the Snowshoe Main Road. The mill site is 2 km down this road.

Based on 200 tonnes processed daily at the mill, 1-2 copper concentrate trucks will leave the operation. The use of the Phoenix Ski Hill Road by concentrate trucks will likely cause a negative effect on traffic, specifically on passenger vehicles traveling to/from the ski hill during winter months.

The Project's water requirements (for both potable and process water) will be met onsite and would therefore have no impact on municipal demand for water.

20.5.8 Crime

It is expected that the operations phase of the Project will have little impact on the crime rate within the study area. As well, evidence has shown that companies which adopt a program of regular screening, zero tolerance and early intervention can greatly reduce the health risks from alcohol and drugs for their workers.

20.5.9 Public Services

The construction and operations phase has the potential to impact public support services due to increased population and, therefore, rising demand. However, this is not anticipated to be significant as a large proportion of mine workers are expected to come from within the study area.

Given that the Project will lead to a small increase in the population it is expected that there will be a corresponding increase in the consumption of health services within the study area. Since the increase is very small, the effect is expected to be small. Also, the mine will have an arrangement with another mine within the province for an emergency response team. Therefore, operation of the Project will have a very minor impact on emergency response services in the study area. Outside support will only be required in those few cases where on-site resources are inadequate for the scale of the emergency. It is expected that the mine will work with local officials to ensure that the Project's emergency response requirements are factored into the surrounding communities' overall response plan.

The post-closure phase of the Project is expected to have a negligible effect on straining public services. Mine closure may increase demand for services to assist with job search and issues related to unemployment, but this is expected to be minimal.

20.5.10 Residual Effects

Operations and Maintenance

The bulk of the construction has already been completed for the project. The residual effects from project operation and maintenance are expected to be minimal to small. The local employment, income, and regional economic activity are expected to be positive in direction and small in magnitude. The increase in traffic will be negative in direction, minimal in magnitude, but completely reversible once the project is complete.

Construction of Golden Crown

The residual effects from project construction are expected to be minimal. The $17 million in expected costs for Golden Crown construction will be positive in direction and moderate in magnitude. The increase in traffic will be negative in direction, low in magnitude and lower during the operations and maintenance phase, but completely reversible once the project is complete.

Decommissioning

The residual effects from project decommissioning are expected to be very minimal. The local employment is expected to be positive in direction and minimal in magnitude. The increase in traffic, though a decrease from construction and operations and maintenance phases, will be negative in direction, and very minimal in magnitude, but completely reversible once the project is complete.

20.5.11 First Nations and Potential Project Effects On First Nations

The project area falls within the traditional territory of the Okanagan Nation. The Osoyoos Indian Band, part of the Okanagan Nation, is the nearest group that assumes caretaker responsibility for this part of the unextinguished territory of the Syilx Okanagan People. The Splatsin First Nation also asserts that this area falls within their traditional territory. Previous operators of the property signed Impacts and Benefits Agreement with the Osoyoos Indian Band in 2008 and 2011. It is anticipated that before operations resume and for subsequent permitting process that First Nation consultation and engagement will be required, potentially culminating in a new Impact Benefits Agreement. Golden Dawn has initiated consultation with the OIB and communications with the Splatsin.

The Osoyoos Indian Band is known for its pro-business approach. Among other successful businesses, the Osoyoos Band operates the Nk'Mip RV Park and Campground and Nk'Mip Corner Gas Station and Convenience, which are located 70 km east of the project.

It is recognized that, in the absence of treaty settlement, First Nations in British Columbia have constitutionally protected rights. It is considered that this Project does not have the capacity to negatively affect or constitute an infringement of Aboriginal interests from the following perspective.

The Project is not near any modern-day or historic Aboriginal settlements.

The Project has been constructed and operations will only incrementally increase from that footprint. Prior to construction, the area was previously extensively disturbed by mining and logging.

The Project does not have the capacity to significantly and permanently affect air quality, water quality, plants, fish or wildlife, and consequently First Nations' health and cultural or sustenance resources.

Preliminary Field Reconnaissance ("PFR") was completed on October 2, 2007, by Joel Kinzie of Golder Associates Ltd. and Robert Hall from the Osoyoos Indian Band. Two high potential areas were identified and investigated. That report concluded that the two high archaeological potential areas will not be impacted by the proposed development and, as such, will not require further archaeological work. The remainder of the development areas examined have low archaeological potential due to steep and rugged terrain and extensive disturbance caused by past and on-going development that have removed cultural bearing sediments. No stands of mature forest were encountered. Observed forest was second growth and signs of past logging were found throughout.

Should any archaeological sites be discovered during the course of development, work will halt while the provisions of prevailing legislation and regulations are followed.

21.0 CAPITAL AND OPERATING COSTS

21.1 CAPITAL COSTS

21.1.1 Preproduction Capital Costs

Gold Purchase Agreement - First and Second Instalment

Initially there is a US$3M CAPEX payment credit to Golen Dawn made from the 'First Installment' of the Gold Purchase Agreement with RIVI Opportunity Fund LP, dated December 22, 2016. This preproduction payment credit equates to USD$3,000,000 (CDN$3,947,400), based on a 0.76 CDN$/US$ exchange rate. There was a 'Second Installment" payment of US$1,000,000 made to Golden Dawn for US$1,000,000 (CDN$1,315,800) for the purpose of purchasing the assets of Kettle River Resources. This 'Second Installment" will not be creditedin the cash flow model and subsequent financial analysis

Gold Purchase Agreement Interest

All preproduction costs will be expensed, including interest on the Gold Purchase Agreement instalment payments. Interest will be paid to RIVI Opportunity Fund LP on the US$4M Gold Purchase Agreement's First and Second Installments made during the preproduction period. This interest payment is estimated to be CDN$526,300 base on one year of interest on US$4M at an interesr rate of 10%, and a CDN$/US$ exchange rate of 0.76.

Preproduction Indirect Site Costs

P&E estimates the preproduction period will last six months during which final permitting will take place, preliminary start-up engineering studies will be completed, the Lexington-Grenoble Mine will be dewatered, existing development that will be utilized in the mine plan will be rehabilitated, the mill will be restarted and refurbished, and initial Lexington-Grenoble capital development will have commenced.

Details of the preproduction indirect costs, for this period, are provided in Table 21.1, below.

TABLE 21.1
SITE INDIRECT PREPRODUCTION CAPITAL COST ESTIMATE

Item	Description	Number	Units	$/yr	$/month
G&A	Corporate Administration	1	Allowance	480,000	40,000
	Misc. and Office Supplies	1	Allowance	18,000	1,500
	Communication	1	Allowance	12,000	1,000
	Surface Vehicle Operating	3	Allowance	150,000	12,500
	Insurance	1	Allowance	200,000	16,667
	Security	1	Allowance	200,000	16,667
	Supplies	1	Allowance	9,000	750
	G&A Subtotal			1,069,000	89,083
Labour	Mine Superintendent	1	man/day	200,000	16,667
	Mill Superintendent	1	man/day	200,000	16,667
	Mine Engineer	1	man/day	125,000	10,417

TABLE 21.1 SITE INDIRECT PREPRODUCTION CAPITAL COST ESTIMATE					
Item	**Description**	**Number**	**Units**	**$/yr**	**$/month**
	Mine Geologist	1	man/day	125,000	10,417
	Mine Clerk	1	man/day	50,000	4,167
	Mine Trainer/H&S Coordinator	1	man/day	100,000	8,333
	Electrician / Electrical (Contracted)	2	men/day	280,000	23,333
	Surface Mechanic	1	man/day	140,000	11,667
	Surface Operator/Labourer	1	man/day	70,000	5,833
	Labour Subtotal			1,290,000	107,500
Grand Total				**2,359,000**	**196,583**

The estimated indirect site capital costs for this six month preproduction period is $1,179,500.

Preproduction Dewatering and Existing Mine Rehabilitation

Dewatering and mine rehabilitation at Lexington-Grenoble is estimated to take 35 days, at the start of the preproduction period. This work is expected to be completed by a contractor using its own equipment, other than the three main dewatering pumps. These dewatering pumps will be purchased by the company. Dewatering and rehabilitation is estimated to cost $500,000, as detailed in Table 21.2, below.

TABLE 21.2 LEXINGTON DEWATERING AND REHABILITATION PREPRODUCTION CAPITAL COST ESTIMATE			
Item	**Description**	**Cost ($)**	**Comments**
Estimate	Overall Pumping Rate	1.0	m^3/min
	Volume	50,000	m^3
	Time	50,000	minutes
		35	days
CAPEX	Grindex Maxi Pump & Accessories	$35,000	each
		$105,000	3 pumps
	Misc Consumables - pipe, ground support, etc.	$45,000	
OPEX	Contractor Labour & Equipment	$10,000	/day
		$350,000	35 days
Total Est. Cost		**$500,000**	**Total**

Preproduction Mill Restart and Refurbishing

Capital cost details of the mill restart and refurbishing during the preproduction period is presented in Table 21.3, below.

TABLE 21.3
CAPITAL COST DETAILS OF THE MILL RESTART AND REFURBISHING

Item	Cost($)
Concentrate filtration area	14,000
Flotation area	1,000
Flotation area	2,500
Small reagent prep building	1,000
Outdoors View	500
Outdoor loading hopper	3,500
Outdoor loading hopper	500
Outdoor belt conveyor	2,000
Outdoor Stacker belt conveyor	4,500
Outdoor view process building	4,500
Furnace door	500
Assay lab	200
Outdoor view process area	3,500
Outdoor view container (Gen offices)	1,000
Secondary mill – Item 1	19,600
Flotation area	2,500
Flotation area	1,000
Screen	1,000
Screen	500
Cake conveyor	11,500
Secondary mill – Item 2	1,000
Separator	10,000
Shaking table	500
Primary ball mill	19,000
Flotation area	500
Thickener	500
Concentrate tower filter	2,000
Piping work	20,000
Miscellaneous work	25,000
Civil works (around plant)	25,000
Electrical	15,000
Instrumentation	15,000
Subtotal Main Equipment Repairs and Upgrades	**208,800**
Heating system	12,000
Lube and grease	8,000
Overall area grading	5,000
Control package	25,000
New office equipment	10,000
Communication package	12,000
Subtotal Miscellaneous	**72,000**
Subtotal Direct Costs	280,800
Engineering/Management	22,500
Training	22,500

TABLE 21.3 CAPITAL COST DETAILS OF THE MILL RESTART AND REFURBISHING	
Item	**Cost($)**
Construction Management	14,000
Subtotal Indirect Costs	59,000
Grand Total	**339,800**

Preproduction Infrastructure and Equipment Replacement/Refurbishing

Capital cost details of the preproduction Lexington-Grenoble infrastructure and equipment replacement requirements is presented in Table 21.4, below. Included in these costs are Lexington-Grenoble Mine dewatering and mine rehabilitation, and mill restart and refurbishing.

TABLE 21.4 PREPRODUCTION INFRASTRUCTURE & EQUIP. REPLACEMENT/REFURBISHING CAPITAL COST		
Item	**Units**	**Est. Cost ($)**
Dewater and Rehabilitation	1	500,000
JDT 413 Rock Trucks (Existing Refurbished)	2	275,000
Wagner ST 3.5 Scooptram (Existing Refurbished)	2	350,000
JCI 2.5 yd Scooptram (Existing Refurbished)	1	100,000
AC Boomer 282 2-Boom E/H Jumbo (Purchase Used)	1	250,000
Jacklegs & Stopers (New)	10	50,000
Bazooka Drill	1	25,000
MCFA Pneumatic Lift Truck s/n 1CM00119	1	25,000
Ingersoll Rand Three Drum Air Operated Slushers	4	40,000
Roof Bolter plus ROPS	1	250,000
Detroit Genset 400kw	1	50,000
Generator, 100Kw Kohler Diesel (refurbished)	1	15,000
Cat 3412 500 KVA, 600 v genset	1	75,000
Main Surface Fan	1	75,000
Auxiliary Fans	5	75,000
Mine Air Heaters	1	100,000
Ambulance	1	10,000
Kubota L3400ST Tractor	2	30,000
1600 CFM 150 PSI Air Compressor (Existing Refurbished)	1	75,000
Pumping, Misc	1	25,000
Fuel Storage Tank	1	13,000
Complete Lab & Equip	1	50,000
Dozer (Existing refurbished)	1	50,000
Wash Trailer (Dry)	1	50,000
Diesel Pick-ups, 4x4 crew cab (repair existing)	3	120,000
Grader w/v plow & wing, 250 hp (renovate existing)	1	100,000
Initial electrical supplies	1	150,000
Initial Road improvements	1	100,000
The Mill Restart & Refurbishing	1	339,800
First Aid Equipment	1	25,000
Additional Float Cells (2)	1	40,000
Mining Equipment, Misc parts	1	75,000
Phone/Internet System - Site	1	20,000
Service Truck (repair existing)	1	25,000
Small Excavator (renovate existing)	1	20,000
First Fills (mill)	1	60,000
Acquisition of Reclamation Bond From Vendor	1	435,000
NSR Royalty to Vendor	1	200,000
Subtotal Preproduction Period		**4,267,800**
Contingency - 15%		544,920
Grand Total Preproduction Period		**4,812,720**

Preproduction Capitalized Development

During the preproduction period, 200 m of drift development in waste at Lexington-Grenoble will be completed. The estimated preproduction capitalized development cost is $600,000.

Preproduction Capital Cost Estimate Summary

Total preproduction capital costs are estimated to be $3.9 million. A summary of these preproduction capital costs is presented in Table 21.5, below.

TABLE 21.5 PREPRODUCTION CAPITAL COSTS	
Item	**Estimated Cost (CDN$)**
Gold Purchase Agreement - First Instalment	-3,947,370
Gold Purchase Agreement Interest	526,320
Preproduction Site Indirect Costs	1,179,500
Permitting	50,000
Preliminary Start-up Engineering Studies	150,000
Dewatering, Infrastructure & Equipment Replacement/Refurbishing	4,812,720
Capitalized Development – Lexington-Grenoble	600,000
Total Preproduction Capital	**3,371,170**

21.1.2 Sustaining Capital Costs

Dry Tailings Disposal Facility

A dry tailings disposal facility will be required in production year 4, at a total estimated cost of $1.4 million. Details of this capital cost is presented in Table 21.6, below.

Sustaining Infrastructure & Equipment Replacement/Refurbishing Capital Cost

The total sustaining infrastructure and equipment replacement/refurbishing capital cost is estimated to be $5.9 million. Details of this Golden Crown infrastructure and equipment replacement requirements sustaining capital cost is presented in Table 21.7 on a yearly basis, below. Included in these costs is the mill dry stack tailings facility.

Table 21.6 Dry Tailings Disposal Facility Capital Cost					
Type	Item	Equipment		Installation Cost ($)	Total Cost ($)
		Qty	Cost ($)		
Direct Costs	Slurry Surge Tank	1	100,375	20,075	120,450
	Slurry Surge Tank Agitator	1	45,000	9,000	54,000
	Filter Feed Pump	2	48,000	9,600	57,600
	Tower Filter	1	234,000	46,800	280,800
	Transfer Conveyor 1	2	45,000	9,000	54,000
	Transfer Conveyor 2	1	96,300	19,260	115,560
	Stockpile Conveyor	1	66,100	13,220	79,320
	Water Tank	1	40,000	8,000	48,000
	Water Transfer Pump	1	12,000	2,400	14,400
	Piping - Allow	1	45,000	9,000	54,000
	Total Mechanical		731,775	146,355	878,130
	Civil works			20%	175,600
	Electrical / Instrument			15%	131,700
	Total Direct Cost				**1,185,430**
Indirect Costs	EPCM			10%	118,500
	Transport			8%	58,500
	Construction			4%	47,400
				Total Indirect Costs	**224,400**
Grand Total Direct and Indirect Costs					**1,409,830**

Table 21.7 Sustaining Infrastructure & Equip. Replacement/Refurbishing Capital Cost ($)					
Item	Units	Year 1	Year 2	Year 3	Year 4
JDT 413 Rock Trucks (Purchased Used)	1		175,000		
Wagner ST 3.5 Scooptram (Existing Refurbished)	1		175,000		
Wagner ST 3.5 Scooptram (Purchased Used)	1		275,000		
JCI 2.5 yd Scooptram (Existing Refurbished)	1		100,000		
Micro Scoops - 0.75 yd	3		300,000		
AC Boomer 282 2-Boom E/H Jumbo (Purchase Used)	1		250,000		
Jacklegs & Stopers (New)	10		50,000		
Bazooka Drill	1		25,000		
Ingersoll Rand Three Drum Air Operated Slushers			40,000		
Auxiliary Fans	5		75,000		
Kubota L3400ST Tractor	1		15,000		
1600 CFM 150 PSI Air Compressor (Used)	1		200,000		
Pumping, Misc	1		25,000		
Fuel Storage Tank	1		13,000		
Tailings Dam Raising			125,000	125,000	
Tailings (Dry Stack)				800,000	609,830
Wash Trailer (Dry)	1		50,000		
Diesel Pick-ups, 4x4 crew cab (repair existing)	3		120,000		
Hydraulic Backfill Distribution System At GC	1		250,000		
First Aid Equipment	1		25,000		
Grinding Circuit (Ball Mill & Gravity Circuit)			703,000		
Mining Equipment, Misc parts	1		75,000		
First Fills (mill)			60,000		

TABLE 21.7 SUSTAINING INFRASTRUCTURE & EQUIP. REPLACEMENT/REFURBISHING CAPITAL COST ($)					
Item	**Units**	**Year 1**	**Year 2**	**Year 3**	**Year 4**
NSR Royalty to Vendor		200,000			
Subtotal		**200,000**	**3,126,000**	**925,000**	**609,830**
Contingency - 15%		0	468,900	138,750	91,475
Grand Total		**200,000**	**3,594,900**	**1,063,750**	**701,305**

Capitalized Sustaining Development

There is an estimated total 2,464 m of sustaining capital development required LOM for the Lexington-Grenoble operation and 3,854 m of sustaining capital development required LOM for the Golden Crown operation for a total 6,317 m required, LOM. The sustaining capital cost for the Lexington-Grenoble and Golden Crown operations are $8.0 and $11.6 million, respectively, for a total estimated sustaining capital cost of $19.6 million, LOM. Details of these costs are presented in Table 21.8, below.

TABLE 21.8 SUSTAINING DEVELOPMENT CAPITAL COST SUMMARY				
Operation	**Item**	**Total (m)**	**Unit $/m**	**Total Cost ($)**
Lexington-Grenoble	Ramp	1,183	3,500	4,140,837
	Drift	1,281	3,000	3,842,193
	Total Lexington-Grenoble	**2,464**		**7,983,030**
Golden Crown	Ramp	2,048	3,500	7,167,846
	Access	1,006	3,000	3,016,983
	Adit Slashing	800	1,800	1,440,000
	Total Golden Crown	**3,854**		**11,624,829**
Grand Total		**6,317**		**19,607,859**

The sustaining development capital cost schedule is presented in Table 21.9, below.

TABLE 21.9 SUSTAINING DEVELOPMENT CAPITAL COST SCHEDULE ($)					
Description/Year	**1**	**2**	**3**	**4**	**Total**
Lexington-Grenoble Development	2,661,010	2,661,010	2,661,010		7,983,030
Golden Crown Development		2,000,000	4,812,414	4,812,415	11,624,829
Total	**2,661,010**	**4,661,010**	**7,473,424**	**4,812,415**	**19,607,859**

21.1.3 Capital Cost Summary

In summary total preproduction capital costs are estimated to be $3.9 million and total production capital costs are estimated to be $23.9 million. Total LOM capital costs are estimated to be $27.8 million. A summary of total capital costs (preproduction and sustaining capital costs) on a yearly basis is presented in Table 21.10, below.

TABLE 21.10 CAPITAL COST SUMMARY AND SCHEDULE ($ 000'S)							
Description / Year	**-1**	**1**	**2**	**3**	**4**	**5**	**Total**
Gold Purchase Agreement - First Instalment	-3,947						-3,947
Gold Purchase Agreement Interest	526						526
Preproduction Site Costs	1,180						1,180
Permitting	50						50
Preliminary Engineering Studies	150						150
Dewatering, Infrastructure & Equipment Replacement	4,813	280	3,875	1,064	701		10,733
Capitalized Development – Lexington-Grenoble	600	2,661	2,661	2,661			8,583
- Golden Crown			2,000	4,812	4,813		11,625
Closure						350	350
Salvage						-2,000	-2,000
Total Capital	**3,371**	**2,941**	**8,536**	**8,537**	**5,514**	**-1,650**	**27,249**

21.2 OPERATING COSTS

21.2.1 Stope Operating Costs

The proposed mining method at the Lexington-Grenoble Mine is pilot-raise-and-slash using jacklegs, stopers and three-drum slushers in the stope, and 2.5 and 3.5 yd scooptrams to load into 13 tonne underground trucks in the haulage areas. The proposed mining method at the Golden Crown Mine is narrow vein captive cut and fill using jacklegs, stopers and 0.75 yd micro-scooptrams in the stopes, and chutes and scooptrams to load into 13 tonne underground trucks on the haulage levels.

All development in mineralization is expensed. A total of 3,812 m of Lexington-Grenoble development in mineralization is estimated to cost $6.8 million or $3.83/t of Lexington-Grenoble mined material. A total of 3,283 m of Golden Crown development in mineralization is estimated to cost $6.6 million or $17.13/t of Lexington-Grenoble mill feed. Details of these cost estimates are presented in Table 21.11.

TABLE 21.11 DETAILS OF COSTS ESTIMATES OF DEVELOPMENT IN MINERALIZATION						
Operation	**Development Heading**	**Size (hxw)**	**Unit $/m**	**Metres (m)**	**Cost ($)**	**Cost ($/t)**
Lexington-Grenoble	Cross-cut	2.75m x 3.2m	2,500	60	150,438	
	Pilot	2.4m x 2.4m	1,500	2,730	4,095,036	
	Drift	2.75m x 3.2m	2,500	1,022	2,554,094	
	Lexington-Grenoble Total			**3,812**	**6,799,568**	**3.83**
Golden Crown	Undercut Drift	2.75m x 3.2m	2,500	518	1,295,843	
	Raise	1.8m x 1.8m	1,500	1,500	2,250,300	
	Sub Drift	1.8m x 1.8m	1,500	64	96,441	
	Overcut Drift	2.75m x 3.2m	2,500	50	123,838	
	Undercut Sill Drift	2.75m x 3.2m	2,500	1,151	2,876,470	
	Golden Crown Total			**3,283**	**6,642,891**	**17.13**

Details of the stoping operating costs for both the Lexington-Grenoble pilot-raise-an-slash mining method and the Golden Crown captive cut and fill mining method at both 200 tpd and 400 tpd is presented in Table 21.12.

Table 21.12 Details of Stope Operating Cost				
Item	Lexington-Grenoble		Golden Crown	
	$/t @ 400 tpd	$/t @ 200 tpd	$/t @ 400 tpd	$/t @ 200 tpd
Direct Stoping Costs (Non-Labour)				
Drill Bits & Steel	$1.45	$1.45	$1.45	$1.45
Explosives & Accessories	$3.25	$3.25	$3.25	$3.25
Miscellaneous @ 10%	$0.47	$0.47	$0.47	$0.47
Ground Support	$1.08	$1.08	$1.08	$1.08
Mucking	$3.35	$3.35	$3.35	$3.35
Haulage to Surface	$3.77	$3.77	$3.77	$3.77
Additional Cost Development in Ore	$3.83	$3.83	17.13	$17.13
Pipe & Accessories	$0.08	$0.08	$0.08	$0.08
Backfill			$10.00	$10.00
Total Direct Stoping Cost (Non-Labour)	**$17.29**	**$17.29**	**$40.58**	**$40.58**
Indirect Costs (Non-Labour)				
Services and Power	17.98	17.82	17.98	17.82
Mine Manpower Costs (Incl. Fringes)				
Mine Staff	$7.67	$15.33	$7.67	$15.33
Stoping Labour	$26.10	$26.10	$26.10	$26.10
Grand Total Stope Mining Cost	**69.03**	**76.54**	**92.33**	**99.84**

21.2.2 Mineral Processing

Operating costs include direct processing costs from receipt of mill feed through to gold production and disposal of residues to tailings, excluding analytical costs which are outsourced. Labour costs are based on estimated current rates and manning levels, and include a 40% payroll burden for staff, and 35% for hourly rated employees. Power unit cost is based on a rate of $0.075/kWh. Reagent prices are based primarily on vendor budget quotations for other projects and include a freight allowance. Maintenance supplies are allowances.

Operating costs have been estimated for daily mill throughputs of 200 tpd, 72,000 tonnes per year and 400 tpd, 144,000 tonnes per year. Table 21.13 summarizes estimated process operating costs for an average mill throughput of 72,000 tonnes per year.

TABLE 21.13 PROCESS COST ESTIMATE @ 72,000 T/YR.		
Item	**$/t**	**$/Year**
Operating Labour	19.34	1,392,500
Power	7.88	567,400
Reagents	1.93	139,000
Operating Supplies	1.51	108,700
Maintenance Labour	6.66	479,500
Maintenance Supplies	4.88	351,400
Subtotal	**42.20**	**3,038,500**
Contingency, at 5%	2.11	151,900
Total cost	**44.31**	**3,190,400**

Table 21.14 summarizes estimated process operating costs for an average mill throughput of 144,000 tonnes per year.

TABLE 21.14 PROCESS COST ESTIMATE @ 144,000 T/YR.		
Item	**$/t**	**$/Year**
Operating Labour	11.7	1,684,800
Power	5.37	773,300
Reagents	1.93	277,900
Operating Supplies	1.51	217,400
Maintenance Labour	3.33	479,500
Maintenance Supplies	2.44	351,400
Subtotal	**26.27**	**3,784,300**
Contingency, at 5%	1.31	188,600
Total cost	**27.59**	**3,972,900**

21.2.3 Sustaining Development

A total of 1,902 m of Lexington-Grenoble sustaining development cross-cutting in waste, and 1,347 m of Golden Crown sustaining development undercut drift, raise and overcut drift, in waste, will be expensed, for a total of 3,249 m of development expensed. The estimated cost of this sustaining development is $4.8 million or $13.37/ Lexington-Grenoble tonne mined and $3.0 million or $15.66/ Golden Crown tonne mined. Details of these estimates are presented in Table 21.15.

TABLE 21.15 DETAILS OF EXPENSED (OPEX) SUSTAINING DEVELOPMENT						
Operation	**Development Item**	**Size (hxw)**	**Unit $/m**	**Metres (m)**	**Cost ($)**	**Cost ($/t)**
Lexington-Grenoble	Cross-cut	2.75m x 3.2m	2,500	1,902	4,753,852	**13.37**
Golden Crown	Undercut Drift	2.75m x 3.2m	2,500	594	1,485,623	
	Raise	1.8m x 1.8m	1,500	376	564,495	
	Overcut Drift	2.75m x 3.2m	2,500	376	941,178	
	Subtotal Golden Crown			1,347	2,991,295	**15.66**
	Total			**3,249**	**7,745,147**	**14.17**

21.2.4 Mined Material Haulage

Mine material will have to be hauled to the mineral process plant located 1.5 km from the Golden Crown Mine and 17 km from the Lexington-Grenoble Mine. It is estimated it will cost $0.50/t to re-handle the mined material at the mine locations and $0.18/t km to haul the mine material for a total cost of $0.68/t from the Golden Crown Mine and $2.50/t from the Lexington-Grenoble Mine.

21.2.5 General and Administrative (G&A)

Yearly G&A OPEX costs are estimated to be $2.3 million per year. At 200 and 400 tpd production rates G&A costs are estimated to be $31.39 and $15.69/t, respectively. Details of the estimated G&A unit costs are presented in Table 21.16.

TABLE 21.16 DETAILS OF G&A OPERATING COSTS					
Item	**Number**	**Units**	**$/Year**	**$/tonne**	
				200 tpd	**400 tpd**
Corporate Administration	1	Allowance	480,000	6.67	3.33
Misc. and Office Supplies	1	Allowance	18,000	0.25	0.13
Road Maintenance / Snow removal	1	Allowance	50,000	0.69	0.35
Consultants	1	Allowance	300,000	4.17	2.08
Communication	1	Allowance	12,000	0.17	0.08
Water Supply	1	Allowance	50,000	0.69	0.35
Water Treatment / Environment	1	Allowance	100,000	1.39	0.69
Surface Vehicle Operating	3	Allowance	150,000	2.08	1.04
Insurance		Allowance	200,000	2.78	1.39
Security		Allowance	200,000	2.78	1.39
Other Services					
Electrician / Electrical (Contracted)	2	men/day	280,000	3.89	1.94
Surface Mechanic / Drill Doctor	1	man/day	140,000	1.94	0.97
Surface Operator/Labourer	2	men/day	140,000	1.94	0.97
Surface Lab Personnel	1	man/day	70,000	0.97	0.49
Misc. Mine Supplies	1	Allowance	36,000	0.50	0.25
Shop Supplies	1	Allowance	9,000	0.13	0.06
Compressor Maintenance			25,000	0.35	0.17
Total			**2,260,000**	**31.39**	**15.69**

21.2.6 Operating Cost Summary

In summary, total OPEX costs are estimated to be $79.6 million, averaging $145.70/t milled. A summary of total operating costs on a yearly basis is presented in Table 21.17.

TABLE 21.17
OPERATING COST SUMMARY AND SCHEDULE

Description	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total
Stope Operating Costs ($ 000's)						
Stope Operating Costs - Lexington-Grenoble	5,511	5,241	4,970	4,970	4,661	25,353
- Golden Crown	0	3,459	6,648	6,648	1,018	17,773
Sustaining Development	1,020	1,530	2,041	2,041	1,113	7,745
Mined Material Haulage	180	204	229	229	176	1,018
Mineral Processing	3,190	3,883	3,973	3,973	2,167	17,186
G&A	2,260	2,543	2,260	2,260	1,233	10,555
Total Stope Operating Costs	**12,162**	**16,860**	**20,120**	**20,120**	**10,368**	**79,630**
Stope Operating Cost Per Tonne Milled ($/t)						
Stope Operating Costs - Lexington-Grenoble	76.54	48.53	34.52	34.52	59.34	46.39
- Golden Crown		32.03	46.16	46.16	12.96	32.52
Sustaining Development	14.17	14.17	14.17	14.17	14.17	14.17
Mined Material Haulage	2.50	1.89	1.59	1.59	2.24	1.86
Mineral Processing	44.31	35.95	27.59	27.59	27.59	31.44
G&A	31.39	23.54	15.69	15.69	15.69	19.31
Total Stope Operating Costs/t	**168.91**	**156.11**	**139.73**	**139.73**	**132.00**	**145.70**

22.0 ECONOMIC ANALYSIS

22.1 INTRODUCTION

This Report is considered by P&E Mining Consultants Inc. to meet the requirements of a Technical Report as defined in Canadian NI 43-101 guidelines for a Preliminary Economic Analysis. There is no guarantee that the Greenwood Precious Metals Project will be placed into production as this will be contingent on successfully obtaining all of the requisite consents, permits or approvals, regulatory or otherwise.

A post-tax cash flow model has been developed for the Greenwood Precious Metals Project. All costs are in first quarter 2017 Canadian dollars with no allowance for inflation or escalation. Net present value ("NPV"), internal rate of return ("IRR") and payback period have been calculated, post-tax.

22.2 ECONOMIC CRITERIA

Mine life:

- Pre-production — 6 months
- Production Mining/Milling — Year 1 to 5 for a total of 4.6 years
- Decommissioning — 6 months in Year 5.

Mine Production rate — First 18 months - 200 tonnes per day
Beyond 18 months - 400 tonnes per day

Total production:

- Total mined production — 546,500t @ 6.6g/t Au & 0.76% Cu

Metallurgical parameters (average):

- Au Process recovery — 80.4%
- Cu Process recovery — 85.6%
- Concentration ratio — 35:1
- Concentrate grade — 97 g/t Au, 23% Cu
- Concentrate moisture content — 10%

Total payable metal:

- Gold — 100,100 Oz of AuEq.

22.1 REVENUE

A C$1.00 = US$0.76 exchange rate has been assumed.

The Base Case 'Market Price of Gold' is estimated to be US$1,200/oz. The Base Case 'Market Price of Copper' is estimated to be US$2.35/lb.

The 'Fixed Price of Gold' is US$400/oz. To estimate EqAu ounces of copper metal the 'Fixed Price of Copper' is estimated to be US$1.09/lb.

'Blended Metal Prices' were estimated, based on a ratio of 86.5% Market Metal Prices and 13.5% Fixed Metal Prices, for NSR calculation estimates. This resulted in the following blended price estimates: a 'Blended Price of Gold' of US$1,092/oz, and to estimate EqAu ounces of copper metal, a 'Blended Price of Copper' of US$2.18/lb.

22.1.1 Lexington-Grenoble NSR Calculations

Basic concentrate Net Smelter Return ("NSR") assumptions for the Lexington-Grenoble Mine are presented in Table 22.1.

TABLE 22.1
BASIC LEXINGTON-GRENOBLE NSR ASSUMPTIONS

Element	Metal Price (US$)	Concentrate Recovery	Smelter Payable	Refining Chg. (US)
Au Gravity Concentrate	$1,092/oz	43%	99.0%	$5.00/oz
Au in Concentrate	$1,092/oz	43%	95.5%	$5.00/oz
Cu in Concentrate	$2.18/lb	87.5%	95.0%	$0.05/lb

Details of the parameters used to calculate yearly Lexington-Grenoble NSR is presented in Table 22.2.

TABLE 22.2
LEXINGTON-GRENOBLE YEARLY NSR CALCULATIONS

Year	1	2	3	4	5	LOM
Concentration Ratio	30	30	30	30	30	30
Smelter Treatment Charge ($US/dmt)	$80	$80	$80	$80	$80	$80
Concentrate Shipping ($US/wmt)	$100	$100	$100	$100	$100	$100
Concentrate Moisture Content (%)	10	10	10	10	10	10
Au Head Grade (g/t)	5.28	5.51	4.89	5.76	5.96	5.48
Cu Head Grade (%)	0.87	0.88	0.84	1.01	0.92	0.90
AuEq Head grade (g/t)	6.71	6.96	6.28	7.43	7.47	6.96
Element	**Payable Metal (US$/t)**	**Payable Metal (US$/t)**	**Payable Metal (US$/t)**	**Payable Metal (US$/t)**	**Payable Metal (US$/t)**	**Payable Metal (US$/t)**
Au Dore	$78.60	$81.97	$72.69	$85.74	$88.70	$81.45
Au to concentrate	$75.82	$79.08	$70.12	$82.70	$85.56	$78.57
Cu to concentrate	$33.83	$34.28	$32.97	$39.42	$35.76	$35.24
Subtotal	**$188.25**	**$195.33**	**$175.78**	**$207.86**	**$210.02**	**$195.26**
Less Smelter Treatment Charge (US$/rock t)	$2.67	$2.67	$2.67	$2.67	$2.67	$2.67
Less Concentrate Shipping (US$/rock t)	$3.67	$3.67	$3.67	$3.67	$3.67	$3.67
NSR (US$/rock t)	$181.92	$188.99	$169.45	$201.53	$203.69	$188.93
SR (C$/rock t)	**$239.37**	**$248.68**	**$222.96**	**$265.16**	**$268.01**	**$248.59**

22.1.2 Golden Crown NSR Calculations

Basic concentrate NSR assumptions for the Golden Crown Mine are presented in Table 22.3.

TABLE 22.3 BASIC GOLDEN CROWN NSR ASSUMPTIONS				
Element	**Metal Price (US$)**	**Concentrate Recovery**	**Smelter Payable**	**Refining Chg. (US$/oz. or lb)**
Au Gravity Concentrate	$1,092/oz	25.0%	99.0%	$5.00/oz
Au in Concentrate	$1,092/oz	45.0%	95.5%	$5.00/oz
Cu in Concentrate	$2.18/lb	82.0%	95.0%	$0.05/lb

Details of the parameters used to calculate yearly Golden Crown NSR's is presented in Table 22.4.

TABLE 22.4 GOLDEN CROWN YEARLY NSR CALCULATIONS					
Year	**2**	**3**	**4**	**5**	**LOM**
Concentration Ratio	58	58	58	58	58
Smelter Treatment Charge ($US/dmt)	$80	$80	$80	$80	$80
Concentrate Shipping ($US/wmt)	$100	$100	$100	$100	$100
Concentrate Moisture Content (%)	10	10	10	10	10
Au Head Grade (g/t)	9.23	9.01	7.51	12.16	8.67
Cu Head Grade (%)	0.38	0.51	0.56	0.18	0.48
Au Head Grade (g/t)	9.86	9.84	8.44	12.46	9.46
Element	**Payable Metal (US$/t)**	**Payable Metal (US$/t)**	**Payable Metal (US$/t)**	**Payable Metal (US$/t)**	**Payable Metal (US$/t)**
Au Dore	$79.81	$77.89	$64.98	$105.17	$74.96
Au to concentrate	$138.59	$135.25	$112.83	$182.61	$130.16
Cu to concentrate	$13.96	$18.47	$20.49	$6.63	$17.70
Subtotal	**$232.36**	**$231.61**	**$198.31**	**$294.42**	**$222.83**
Less Smelter Treatment Charge (US$/rock t)	$0.89	$0.89	$0.89	$0.89	$0.89
Less Concentrate Shipping (US$/rock t)	$1.22	$1.22	$1.22	$1.22	$1.22
NSR (US$/rock t)	$230.24	$229.50	$196.20	$292.31	$220.72
NSR (CS/rock t)	**$302.95**	**$301.98**	**$258.16**	**$384.61**	**$290.42**

22.4 GREENWOOD PRECIOUS METALS PROJECT CASH FLOW

An after-tax cash flow ("CF") model has been developed for the Greenwood Precious Metals Project. The model does not take into account the following components:

- Financing cost, other than interest included in capital lease rates
- Insurance

Taxes are estimated to be 28% of pre-tax positive cash flow. A cash flow summary is presented in Table 22.5. All costs are in 1st quarter 2017 Canadian dollars with no allowance for inflation.

Total NSR revenue is $143.9 million. An estimated total (LOM) 100,100 equivalent ounces of gold will be recovered. Total LOM OPEX is estimated to be $79.6 million, averaging $145.70 per tonne processed. Preproduction, sustaining and total (LOM) CAPEX is estimated to be $3.4, $23.9 and $27.3 million, respectively.

Cumulative pre and post-tax cash flow is estimated to be $37.0 and $26.6M, respectively. Pre-tax IRR, and NPV at a 6% discount rate, are estimated to be 118.4% and $27.4 million, respectively. Post-tax IRR, and NPV at a 6% discount rate, are estimated to be 103.4% and $19.7 million, respectively.

TABLE 22.5
GREENWOOD PRECIOUS METALS PROJECT CASH FLOW SUMMARY

Description	Discount/ Tax Rate	Units/Yr.	Value	-1	1	2	3	4	5	Total
Production										
Lexington-Grenoble		tonnes (000's)			72.0	72.0	72.0	72.0	67.5	355.5
		Au (g/t)			5.28	5.51	4.89	5.76	5.96	5.47
		Cu (%)			0.87	0.88	0.84	1.01	0.92	0.90
		AuEq (g/t)			6.71	6.96	6.28	7.43	7.47	6.96
Golden Crown		tonnes (000's)			0.0	36.0	72.0	72.0	11.0	191.0
		Au (g/t)			0.0	9.23	9.01	7.51	12.16	8.67
		Cu (%)			0.0	0.38	0.50	0.56	0.18	0.48
		AuEq (g/t)			0.0	9.86	9.84	8.44	12.46	9.46
Total		**tonnes (000's)**			**72.0**	**108.0**	**144.0**	**144.0**	**78.5**	**546.5**
		Au (g/t)			**5.28**	**6.75**	**6.95**	**6.64**	**6.83**	**6.59**
		Cu (%)			**0.87**	**0.71**	**0.67**	**0.78**	**0.81**	**0.76**
		AuEq (g/t)			**6.71**	**7.92**	**8.06**	**7.93**	**8.17**	**7.84**
Revenue										
Lexington-Grenoble		$(M)			17.2	17.9	16.1	19.1	18.1	**88.4**
Golden Crown		$(M)			0.0	10.9	21.7	18.6	4.2	**55.5**
Total		$(M)			17.2	28.8	37.8	37.7	22.3	**143.9**
AuEq Oz		(000's)			12.0	20.1	26.3	26.2	15.5	**100.1**
Operating Cost		$(M)			12.2	16.9	20.1	20.1	10.4	**79.6**
		$/t			168.91	156.11	139.73	139.73	132.00	**145.70**
Capital Cost		$(M)		3.4	2.9	8.5	8.5	5.5	-1.7	**27.2**
Pre-tax CF		$(M)		-3.4	2.1	3.4	9.1	12.0	13.6	**37.0**
Cum Pre-tax CF		$(M)		-3.4	-1.2	2.2	11.3	23.4	37.0	
Pre-tax IRR		(%)	**118.4%**							
Pre-tax NPV @	6%	$(M)	**27.4**							
Post-tax CF @	28% Tax Rate	$(M)		-3.4	2.1	3.4	6.0	8.7	9.8	**26.6**
Cum Post-tax CF		$(M)		-3.4	-1.2	2.2	8.1	16.8	26.6	
Post-tax IRR		(%)	**103.4%**							
Post-tax NPV @	6%	$(M)	**19.7**							

This Preliminary Economic Assessment is preliminary in nature and includes Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. The quantity and grade of reported Inferred mineral resources in this Preliminary Economic Assessment are uncertain in nature and there has been insufficient exploration to define these Inferred mineral resources as an Indicated or Measured mineral resource and it is uncertain if further exploration will allow conversion to the Measured and Indicated categories or that the Measured and Indicated mineral resources will be converted to the Proven or Probable mineral reserves. There is no certainty that this Preliminary Economic Assessment will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability; the estimate of mineral resources in this Preliminary Economic Assessment may be materially affected by higher operating costs, lower metal prices, lower process recoveries, environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

22.5 CASH FLOW ANALYSIS

The following after tax cash flow analysis was completed:

- Net Present Value NPV (at 0%, 5% 7% and 10% discount rate)
- Internal Rate of Return IRR
- Payback period

The summary of the results of the cash flow analysis is presented in Table 22.6.

TABLE 22.6
CASH FLOW ANALYSIS

Description	Discount Rate	Units	Value
Non Discounted After Tax CF		$(M)	26.6
Internal Rate of Return		%	103.4%
NPV at	0%	$(M)	26.6
	5%	$(M)	20.7
	7%	$(M)	18.8
	10%	$(M)	16.3
Project Payback Period in Years		Years	1.4

22.3 SUSTAINING CASH COSTS

A summary of Greenwood Precious Metals Project's sustaining cash costs, on a LOM and yearly basis, is presented in Table 22.7. Total sustaining opex and capex cash costs average US$786, or C$1,034 per AuEq ounce produced.

TABLE 22.7
GREENWOOD PRECIOUS METALS PROJECT SUSTAINING CASH COSTS SUMMARY

Description / Year	LOM	1	2	3	4	5
$ Cash Cost / AuEq oz. - OPEX Only	$795	$1,014	$841	$765	$767	$667
$ Cash Cost / AuEq oz. - OPEX & CAPEX	$1,034	$1,259	$1,267	$1,089	$978	$561

Table 22.7 Greenwood Precious Metals Project Sustaining Cash Costs Summary						
Description / Year	**LOM**	**1**	**2**	**3**	**4**	**5**
US$ Cash Cost / AuEq oz. - OPEX Only	$604	$771	$639	$581	$583	$507
US$ Cash Cost / AuEq oz. OPEX & CAPEX	$786	$957	$963	$828	$743	$426

22.4 GREENWOOD PRECIOUS METALS PROJECT SENSITIVITY ANALYSIS

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities to:

- C$/US$ exchange rate
- Gold metal price
- Copper metal price
- Gold head grade
- Gold metallurgical recovery
- Operating costs, and
- Capital costs

To determine what this project is most sensitive to, each of the sensitivity items were adjusted up and down by 10% and 20% to see what effect it would have on the NPV at a 6% discount rate. The value of each sensitivity item, at 80%, 90%, 100% (base), 110% and 120%, is presented in Table 22.8. Included at the bottom of Table 22.8 are the calculated values of each sensitivity item at 80%, 90%, 100% (base), 110% and 120%.

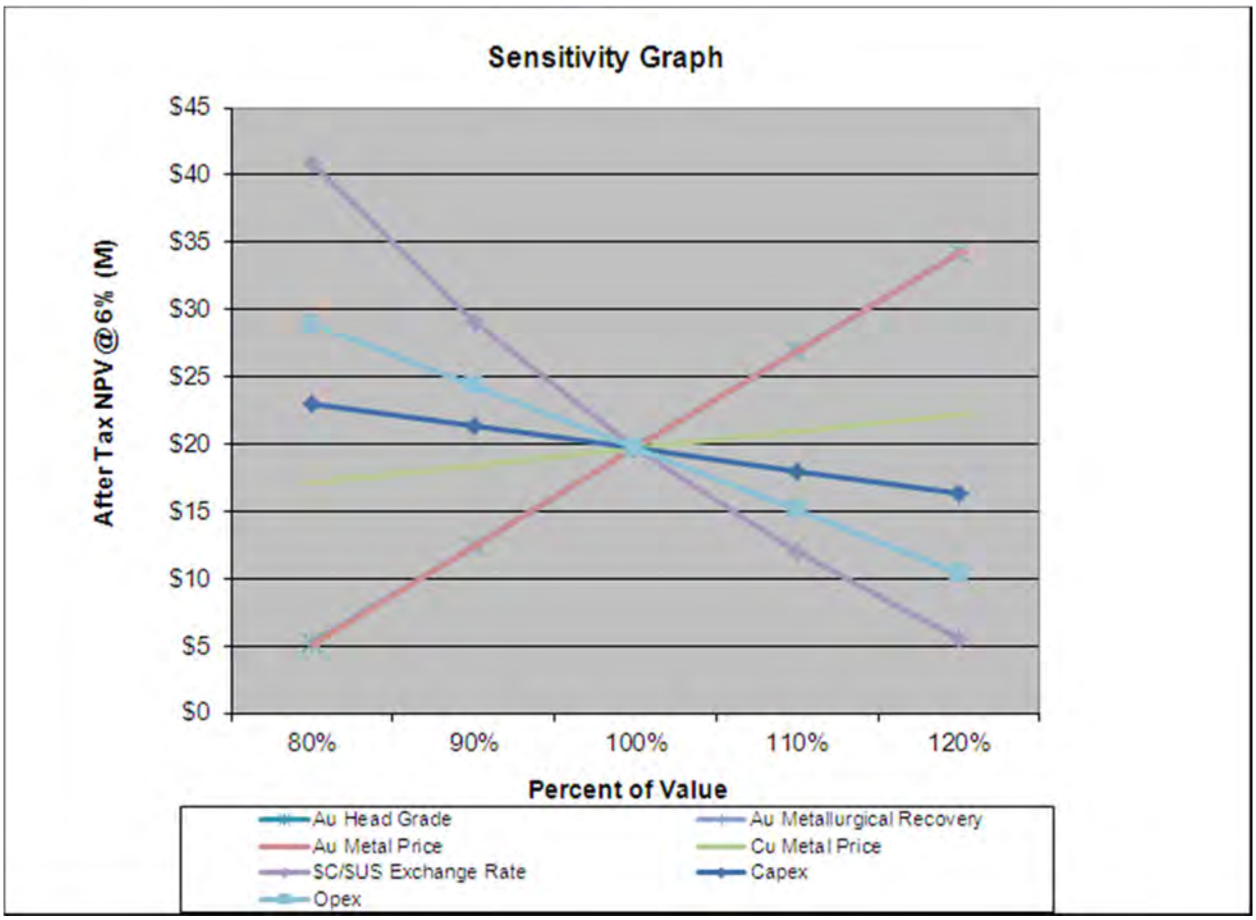
Table 22.8 Greenwood Precious Metals Project Post-tax NPV Sensitivity Analysis					
Item / Percent of Post-tax NPV Value	**Post-tax NPV @ 6%**				
	80%	**90%**	**100%**	**110%**	**120%**
Au Head Grade	5.2	12.5	19.7	27.0	34.2
Au Metallurgical Rec.	5.2	12.5	19.7	27.0	34.2
Au Metal Price	5.1	12.4	19.7	27.0	34.3
Cu Metal Price	17.2	18.5	19.7	20.9	22.2
$C/$US Exchange Rate	40.9	29.1	19.7	12.0	5.5
Opex	28.9	24.3	19.7	15.1	10.5
Capex	23.0	21.4	19.7	18.0	16.4
	Sensitivity Item Values (to derive above NPV values)				
Au Head Grade (g/t)	5.27	5.93	6.59	7.25	7.91
Au Metallurgical Recovery (%)	63%	71%	79%	87%	94%
Au Metal Price (US$/oz.)	874	983	1,092	1,201	1,310
Cu Metal Price (US$/lb)	1.74	1.96	2.18	2.40	2.62
$C/$US Exchange Rate	0.61	0.68	0.76	0.84	0.91
Opex - $ Millions (C$M)	63.7	71.7	79.6	87.6	95.6
Capex - $ Millions(C$M)	21.8	24.5	27.2	30.0	32.7

In addition, P&E completed a 'gold price' sensitivity analysis on post-tax IRR and NPV @ 6% at US$1,100 and US$1,300 per ounce gold prices. The results of that analysis are presented in Table 22.9.

TABLE 22.9 GOLD PRICE SENSITIVITY			
Gold Price US$/oz.	$1,100	$1,200	$1,300
After-Tax IRR	63.6%	103.4%	136.7%
After-Tax NPV $(M)	$12.5	$19.7	$25.4

The resultant after-tax NPV @ 6% value of each of the sensitivity items at 80% to 120% is presented in Table 22.8 and Figure 22.1. This after-tax NPV @ 6% is most sensitive to $C/$US exchange rate followed by Au metal prices, Au head grade and metallurgical recovery, OPEX, CAPEX and Cu metal prices.

Figure 22.1 Sensitivity Graph



Note: *The Au metal prices, head grades and metallurgical recoveries sensiti*

23.0 ADJACENT PROPERTIES

23.1 LONE STAR PROPERTY

The Lone Star Property adjoins the Lexington Property to the south at the US border. The two properties share common geology; rock types, structures and a 3 km long trend of gold-copper mineralization. There are three mineralized zones on the Lone Star property: the Lone Star mine/ Pit Zone, the Northwest Zone 400 m northwest of the Lone Star mine and the Southwest Zone 400 m southwest of the Lone Star mine. The Lone Star/ Pit Zone and Northwest Zone both contain significant copper and gold mineralization. The Southwest Zone has locally high-grade gold mineralization. The Lone Star/Pit Zone lies 1.1 km south of the Lexington-Grenoble Deposit.

Lone Star Property received 250 diamond and percussion drill holes between 1970 and 2006 in 10 campaigns, and underground and open pit copper-gold production in the order of 460,000 tons from the Lone Star deposit. In late 2006 Merit conducted an 834 m diamond drill program in 11 holes. In November 2007, P&E Mining Consultants Inc. prepared a NI 43-101 report for Merit Mining Inc. on the Lone Star drilling and produced a resource estimate, "Technical Report and Resource Estimate on the Lone Star Deposit, Ferry County, Washington, USA" authored by P. Cowley and E. Puritch. As the two authors of the 2007 Lone Star technical report are also authors of this current report, they can verify the information from the 2007 report.

The Lone Star Deposit is interpreted as a series of eight shallow to moderately dipping en echelon overlapping zones hosted within a dacitic and minor serpentinite unit. Zones are composed of sheeted and stockwork pyrite-chalcopyrite veins, veinlets and disseminations carrying gold. With the current knowledge, the multiple zones are confined to an area 330 m from north to south, 260 m from east to west and 140 m vertically.

At a cut-off grade of 1.5% copper equivalent ("CuEq") or 5.0 g AuEq, the currently defined resource for the Lone Star deposit is:

TABLE 23.1
LONE STAR DEPOSIT RESOURCE ESTIMATE @ 1.5% CU EQUIVALENT CUT-OFF GRADE

Classification	Tonnes	Cu%	Au g/t	CuEq% %t	Au oz	Cu million lb. lbs.
Indicated	63,000	2.30	1.28	2.69	2,600	3.19
Inferred	682,000	2.00	1.46	2.44	32,000	30.07

(1) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
(2) The quantity and grade of reported inferred resources in this estimation are conceptual in nature.

It should be noted that the mineral resources in this estimate were calculated using the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council December 11, 2005.

There is potential for additional resources at Lone Star, as many zones in the deposit remain open and untested to fully define their extent, particularly on the south and eastern sectors of the property.

Golden Dawn may not obtain similar results from the Lexington or Golden Crown Properties.

23.1.1 Northwest and Richmond Zones

Between the Lexington-Grenoble and Lone Star Deposits lies mineralization of the Northwest Zone in Washington and the Richmond Zone in BC. The aerial extent of the Northwest/Richmond Zone is approximately 180 m long in the north-south direction and approximately 80 m wide in the east-west direction. The west side of this zone is also eroded away by the North Fork of Big Goosmus Creek. The mineralization at the Northwest/Richmond Zone is focused within the upper portion of the Lower Serpentinite which locally appears to be thrust related. Magnetite is common. An example intercept from the Northwest Zone is 9.14 m grading 4.54 % Cu and 6.9 g/t Au from Azure Resources hole 85-1 at a depth of 79-88 m. An example intersect from the Richmond area on the New St. Maria/Orphan claims (on the Lexington Property) resulted in 9.1 m of 1.67 % Cu and 5.1 g/t Au from percussion hole R-18 at a depth of 42-51 m.

23.1.2 Southwest Zone

Approximately 400 m southwest of the Lone Star mine and on the western side of Goosmus Creek, is the Southwest Zone. The area has a number of old caved adits and shafts, including the Imperial Tunnel, a 250 m long adit driven west from the creek valley. Outcrop is scarce, however, it seems that exploration was focused on the contact between the Lower Serpentinite and the overlying Dacite near the Bacon Creek Fault. Copper mineralization is evident in the dumps. In 1981, Azure Resources reported a 6.1 m intercept of 24.33 g/t Au, followed by 9.1 m of 3.4 g/t Au and 3.92 % Cu in percussion drill hole LP81-14 starting at a depth of 76.2 m. The location of this target coincides closely with the Bacon Creek Fault which is the western limit of the Republic Graben. The same structural setting hosts the K2 and Emmanuel Creek epithermal gold deposits.

23.2 COPPER MOUNTAIN PROPERTY

The Copper Mountain Property, owned by Grizzly Discoveries Inc., adjoins the Tam O'Shanter Property to the west. The Copper Mountain property covers the northern portion of the Toroda Graben, within which the downward shift has largely preserved Eocene volcanic, sediments, and associated intrusives. Local exposures of Pre-Eocene rock are interpreted as the result of faulting, or topographic highs on which sedimentation did not occur. The Triassic Brooklyn Formation contains sediments and volcanics which host the majority of significant mineralization on the property, which generally occur as volcanogenic massive sulphide deposits or as skarn (Caron, 2006c).

23.2.1 Princess Property

The Princess Property, within the western part of the Copper Mountain property, covers the Prince of Whales and Mabel-Jenny Minfile occurrences (082ESE255 and 082ESE203). Several areas of hornfels, auriferous massive pyrite-pyrrhotite (±arsenopyrite) veins and pods, and narrow auriferous quartz-pyrite-arsenopyrite veins occur within Knob Hill Complex sediments and volcanics that are intruded by a small granodiorite plug.

23.2.2 Bud Property

The Bud property is situated northeast of the Tam O'Shanter Property. The Morrison showing (Minfile 082ESE052) is the main zone of known mineralization on the Bud property. Auriferous massive pyrite-pyrrhotite-chalcopyrite mineralization occurs near the contact of limestone with highly altered volcanics or tuffs. Saville Resources recently re-opened the historic Morrison adit to allow access to underground workings. Saville also completed excavator trenching and diamond drill programs on the property, as detailed in a NI 43-101 compliant technical report by Caron (2005a).

23.2.3 Kinross Gold Corporation's Properties in Northern Washington

Kinross Gold Corporation's Buckhorn Mountain gold deposit in Washington, USA is located about 40 km southwest of the Greenwood Precious Metals Project, and displays a similar style of mineralization to that found associated with some of the mineralization identified on Golden Dawn's Property. This deposit occurs along the southern margin of the Jurassic/Cretaceous Buckhorn Mountain pluton, and is hosted in a large calcic skarn associated with gently dipping metasediments potentially belonging to the Permian Attwood Group (Robertson, 2003). The primary zone of gold-mineralized skarn occurs in the southern part of the property and is known as the Southwest Zone. The skarn deposit is associated with marble belonging to the upper Buckhorn Mountain Sequence, and gold occurs within the skarn along the upper contact of this marble unit. Pyrrhotite composes the majority of the sulphide mineralization. A second tabular skarn body occurs along the lower contact of the marble unit, which hosts subordinate gold mineralization (Robertson, 2003).

Kinross' Kettle, K2, and Emanuel Creek deposits exhibit epithermal Au-Ag mineralization. Located in Washington, these epithermal quartz veins grade into stockwork zones capped by silicified breccias associated with low grade gold and locally disseminated pyrite. These epithermal type deposits showed potential for bulk tonnage gold targets. Gold-sulphide mineralization is also associated with both high and low angle Tertiary faults. The Emanuel Creek vein, under an average 1,250 feet of post-mineral cover, exhibited grades up to 1.3 oz/t Au over widths in excess of 100 feet. Kinross completed mining the Emanuel Creek deposit in 2005. Production on the K2 epithermal deposit began in January 1997 and the deposit was mined at a rate of 800 tons per day until mid-2002, when it was mined out (Fifarek et al., 1996; Gelber, 2000).

24.0 OTHER RELEVANT DATA AND INFORMATION

P&E is not aware of any other data or information that is relevant to the Greenwood Precious Metals Project.

25.0 INTERPRETATION AND CONCLUSIONS

25.1 INTRODUCTION

The Greenwood Precious Metals Project is composed of the production stage Lexington-Grenoble Mine, the intermediate stage Golden Crown Deposit and the Greenwood Mill and tailings facility built in 2007/2008, the Boundary Falls Property with the May Mac Mine, processing plant and tailings facility, and the Tam O'Shanter and the Phoenix exploration stage Properties.

25.2 MINERAL RESOURCE ESTIMATE

The Mineral Resources referred to as Lexington-Grenoble and Golden Crown Deposits in this report have been confirmed and incorporated from the Mineral Resource Estimates contained in the P&E April 8, 2016 Technical Report And Updated Mineral Resource Estimate for the Greenwood Gold Project British Columbia, Canada ("the April 2016 P&E Report"), prepared for Huakan and Golden Dawn. The Mineral Resource Estimate referred to in this report for the Deadwood Deposit is updated from a previous Mineral Resource Estimate contained in the Apex Geoscience Ltd. January 25, 2013 Technical Report titled "Technical Report on the Updated Resource for the Wild Rose – Tam O'Shanter Property, Greenwood Area, South Central British Columbia, Canada ("the January 2013 Apex Report"), prepared for Golden Dawn.

All Mineral Resources have been estimated in compliance with the Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves, Definitions and Guidelines, as prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council and NI 43-101.

Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration. It is uncertain that the Measured and Indicated Mineral Resources will be converted to the Proven or Probable Mineral Reserves. There is no certainty that this Preliminary Economic Assessment will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability; the estimate of Mineral Resources in this Preliminary Economic Assessment may be materially affected by higher operating costs, lower metal prices, lower process recoveries, environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

25.2.1 Golden Crown Deposit Mineral Resource Estimate

TABLE 25.1
GOLDEN CROWN DEPOSIT MINERAL RESOURCE ESTIMATE

Golden Crown Mineral Resource (3.5 g/t AuEq cut-off)					
Class	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq ozs**
Indicated	163,000	11.09	0.56	11.93	62,500
Inferred	42,000	9.04	0.43	9.68	13,100

25.2.2 Lexington-Grenoble Deposit Mineral Resource Estimate

Table 25.2 Lexington-Grenoble Deposit Mineral Resource Estimate					
Lexington Mineral Resource (3.5 g/t AuEq cut-off)					
Class	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq ozs**
Measured	58,000	6.98	1.10	8.63	16,100
Indicated	314,000	6.38	1.04	7.94	80,200
Meas & Ind	372,000	6.47	1.05	8.05	96,300
Inferred	12,000	4.42	1.03	5.96	2,300

Table 25.3 Deadwood Deposit Pit Constrained Mineral Resource Estimate Cut-Off 0.4 g/t Au					
Classification	**Tonnes**	**Au g/t**	**Cu %**	**AuEq g/t**	**AuEq oz**
Inferred	874,000	0.66	Nil	0.66	18,500

(1) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues. It is noted that no specific issues have been identified as yet.

(2) The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

(3) The mineral resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council

The Mineral Resource Estimates have been classified with respect to CIM Standards as Measured, Indicated and Inferred, according to the geological confidence and sample spacing that currently define the deposits.

Based on the character of the mineralizing system on the Lexington, Golden Crown, Tam O'Shanter, Phoenix and Boundary Falls Properties, there is excellent potential to find addition gold-copper resources.

25.3 PROPOSED MINING PLAN

25.3.1 Lexington-Grenoble

The Lexington-Grenoble potential mill feed estimates were based on a 3.5g/t AuEq cut-off grade for 31 Lexington-Grenoble LOM stopes considered. Initially 86%, or 377,000 tonnes grading 6.25 g/t Au, 1.03% Cu and 7.95 g/t AuEq, of the total Measured, Indicated and Inferred resources were considered for the financial evaluation. This material was diluted by 18% with 1.50 g/t AuEq material and extracted 80% based on the Lexington-Grenoble mine plan and mining method. This resulted in 356,000 tonnes grading 5.47 g/t Au, 0.90% Cu and 6.96 g/t AuEq (diluted and extracted).

The Lexington-Grenoble mining operation is envisaged as a mechanized ramp access, pilot and slash, mining operation that would be expanded on the existing development in the mine. The mine will have access to surface through a decline, several air raises, three surface portals and related lateral development.

The mining method proposed herein would employ industry standard jackleg and slusher equipment working in stoping panels oriented along the slope of the mineralized zones.

The mine will be serviced by surface support services located near the portals.

Mill feed from the mining operation would be hauled to surface using 13 tonne trucks. The maximum Lexington-Grenoble forecast mill feed production rate is 200 tonnes per day, which equates to 6,000 tonnes per month, 72,000 tonnes per year.

25.3.2 Golden Crown

Golden Crown's potential mill feed estimates were based on a 3.5g/t Au equivalent (AuEq) cut-off grade for 23 Golden Crown LOM stopes considered. Initially, 90%, or 195,000 tonnes grading 9.76 g/t Au, 0.54% Cu and 10.66 g/t AuEq, of the total Measured, Indicated and Inferred resources were considered for the financial evaluation. This material was diluted by 15% with 1.50 g/t AuEq material and extracted 85%, based on the Golden Crown mine plan and mining method. This resulted in 191,000 tonnes grading 8.67 g/t Au, 0.48% Cu and 9.46 g/t AuEq (diluted and extracted).

The Golden Crown Mine is envisaged as a narrow vein captive cut and fill mining operation, with ramp accesses to mining stopes developed from an existing portal and access drift. The mine currently as some sublevel development completed, several air raises and related lateral development.

The mining method would employ industry standard captive cut and fill mining practices with hydraulic tailing as fill. The dip of the mineralization is approximately 72 degrees.

The mine will be serviced by surface support services located near the portal.

Mill feed from the mining operation would be hauled to surface using 13 tonne trucks. The maximum Golden Crown forecast mill feed production rate is 200 tonnes per day, which equates to 6,000 tonnes per month, 72,000 tonnes per year.

25.4 MINERAL PROCESSING

Mineral processing of the Lexington-Grenoble and Golden Crown Mine product will be performed at the existing Greenwood Mill and concentrator facility, currently on care and maintenance. The facility is accessed to the mines via all-weather gravel roads, 17 km to the Lexington-Grenoble Mine, and 2 km to the Golden Crown Mine. The existing processing facility consists of a concentrating plant and related equipment, including infrastructure and a tailing storage facility (TSF).

The plant incorporates conventional mineral processing to produce a gold gravity concentrate, and a copper - gold flotation concentrate. Crushing is performed using jaw crushers, followed by secondary cone crushing operating in closed circuit with a vibrating screen. The fine mill feed is directed to a grinding and flotation circuit that can process a nominal 8.8 tonnes per hour of feed, although the crushing plant is capable of processing double this throughput.

In addition, to the outside crushing plant and the mill building, the site has an office /administration trailer, a sample bucking room contained in a metal sea can cargo container, and a Sprung (tensioned fabric) structure for the storage of bagged sulphide float concentrate. There is an assay laboratory in a mobile trailer, which contains an atomic adsorption spectrophotometer and a fire assay furnace.

The average head grade of mill feed from the Lexington-Grenoble Mine is 5.48 g/t gold, and 0.90% copper, with an overall process recovery of 86% for gold and 87.5% for copper. For Golden Crown the average mill feed grade is 8.67 g/t gold, and 0.48% copper, with an overall recovery of 70% for gold and 82% for copper. Metal recoveries for Lexington-Grenoble are based on laboratory test results and previous operating data.

The facility will initially process at a nominal daily throughput of 212 tonnes/day. Assuming 93% plant availability, this provides for an annual production rate of 72,000 tonnes. Daily throughput will be doubled to 424 tonnes per day after one year, with the addition of a second primary grinding mill and modifications to the existing rougher flotation circuit. Much of the current remaining equipment including the crushing, regrind mill, scavenger / cleaner flotation cells, and dewatering system were previously designed to handle the expansion.

25.5 ENVIRONMENTAL CONSIDERATIONS

The present land use is mineral exploration, mining, forestry and seasonal cattle grazing. The Project site is not located within any federal or provincial parks, or provincial special management areas. There are no known environmental or archaeological concerns within the Project site. The drainage area above the current Lexington-Grenoble Mine and Greenwood Mill and tailings facility are small and runoff is minimal. Water quality sampling of Goosmus Creek at Lexington and Snowshoe Creek at the mill site demonstrate that the current operation does not affect downstream water quality. Fisheries studies on these creeks have precluded the presence of fish and aquatic resources in these areas. The mines and tailings site were previously logged. From studies in 2004 and 2006 of the existing or potential biodiversity values within the mineralized area and its multipurpose uses, it was opined that the proposed development was not likely to adversely harm fish or wildlife habitat.

The Lexington-Grenoble Mine site as presently developed is small, 3.5 hectares, and it is not expected that the area of disturbance upon reactivation will increase significantly, < 1 hectare by adding to the Eastern Portal waste dump area. The Greenwood Process Plant site will not require any new disturbance or work except improvements internal to the building, including the plan to increase the throughput capacity. The Tailings facility will require one or more subsequent lifts with materials sourced locally. Once the tailings facility reaches its full design capacity, dry stack tailings on top of the hydraulic tailings would be employed. At Golden Crown, existing and new underground infrastructure would generate a small footprint (< 1 hectare).

Due to the short storage time of mineralization and waste, the dry climate and stockpile graded base and run-off collection design, metal leaching and acid rock drainage ("ARD") considerations are mitigated throughout the project life. The total tailings volume will be susceptible to acid generation. The tailings stream will be transported to the tailings impoundment, which is fully lined.

On closure the tailings impoundment will be covered with a saturated rock fill cover in order to mitigate the ARD potential. Underground workings will be properly blocked, all buildings and operations materials for all three sites will be removed and disturbed areas and inactive roads will be reclaimed under the direction of the Ministry of Energy and Mines. The mining and milling sites will be monitored for a two year period post closure.

The Lexington-Grenoble Mine and Greenwood Mill and tailing facility fall under active mine permits with a collective $450,000 in reclamation bonds placed with the BC government. To reactivate the mine and mill site, as is, will likely require a short permitting process through the Cranbrook regional office of the BC Ministry of Energy and Mines. Any design variances desired to the current mine and mill permits would require a Mine Development Review Committee review for consideration and approval and First Nation consultation. The extent of the change will determine the depth of the review. A two-step permitting process is envisioned for the Golden Crown Mine for a 10,000 tonne bulk sample, followed by a mine permit application both through the Regional office of the BC Ministry of Energy and Mines. Various baseline studies have been completed and are available to support past and future permitting of the Project.

The reactivation of the Project including the construction of the Golden Crown Mine will likely affect the regional and local economy in a positive direction, in employment, relative incomes and real estate. Areas of insignificant impact would be in the areas of infrastructure, demographics, crime, education and local public services.

The project area falls within the traditional territory of the Okanagan Nation. The Osoyoos Indian Band, part of the Okanagan Nation, is the nearest group that assumes caretaker responsibility for this part of the unextinguished territory of the Syilx Okanagan People. The Splatsin First Nation also asserts that this area falls within their traditional territory. Previous operators of the property signed Impacts and Benefits Agreement with the Osoyoos Indian Band in 2008 and 2011. It is anticipated that before operations resume and for subsequent permitting process that First Nation consultation and engagement will be required, potentially culminating in a new Impact Benefits Agreement. Golden Dawn has initiated consultation with the OIB and communications with the Splatsin.

25.6 CAPITAL AND OPERATING COSTS

25.6.1 Capital Costs

In summary, the total preproduction capital costs are estimated to be $3.4 million and total production capital costs are estimated to be $23.8 million. Total LOM capital costs are estimated to be $27.2 million. A summary of total capital costs (preproduction and sustaining capital costs) on a yearly basis is presented in Table 25.4, below.

TABLE 25.4 **CAPITAL COST SUMMARY AND SCHEDULE ($ 000'S)**							
Description / Year	**-1**	**1**	**2**	**3**	**4**	**5**	**Total**
Gold Purchase Agreement - First Instalment	-3,947						-3,947
Gold Purchase Agreement Interest	526						526
Preproduction Site Costs	1,180						1,179
Permitting	50						50
Preliminary Engineering Studies	150						150
Dewatering, Infrastructure & Equipment Replacement	4,813	280	3,875	1,064	701		10,733
Capitalized Development – Lexington-Grenoble	600	2,661	2,661	2,661			8,583
- Golden Crown			2,000	4,812	4,813		11,625
Closure						350	350
Salvage						-2,000	-2,000
Total Capital	**3,371**	**2,941**	**8,536**	**8,537**	**5,514**	**-1,650**	**27,249**

25.6.2 Operating Costs

In summary, total OPEX costs are estimated to be $79.6 million, averaging $145.70/t milled. A summary of total operating costs on a yearly basis is presented in Table 25.5.

TABLE 25.5 **OPERATING COST SUMMARY AND SCHEDULE**						
Description	**Yr 1**	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Total**
Stope Operating Costs ($000's)						
Stope Operating Costs – Lexington-Grenoble	5,511	5,241	4,970	4,970	4,661	25,353
- Golden Crown	0	3,459	6,648	6,648	1,018	17,773
Sustaining Development	1,020	1,530	2,041	2,041	1,113	7,745
Mined Material Haulage	180	204	229	229	176	1,018
Mineral Processing	3,190	3,883	3,973	3,973	2,167	17,186
G&A	2,260	2,543	2,260	2,260	1,233	10,555
Total Operating Costs	12,162	16,860	20,120	20,120	10,368	79,630
Stope Operating Cost Per Tonne Milled ($/t)						
Stope Operating Costs – Lexington-Grenoble	76.54	48.53	34.52	34.52	59.34	46.39
- Golden Crown		32.03	46.16	46.16	12.96	32.52
Sustaining Development	14.17	14.17	14.17	14.17	14.17	14.17
Mined Material Haulage	2.50	1.89	1.59	1.59	2.24	1.86
Mineral Processing	44.31	35.95	27.59	27.59	27.59	31.44
G&A	31.39	23.54	15.69	15.69	15.69	19.31
Total Operating Costs/t	**168.91**	**156.11**	**139.73**	**139.73**	**132.00**	**145.70**

25.7 FINANCIAL EVALUATION

A projected after-tax cash flow model has been developed for the conceptualized Greenwood Gold Mining and Processing Operation. All costs are in first quarter 2017 Canadian dollars with no allowance for inflation or escalation. The summary of the results of the cash flow analysis is presented in Table 25.6.

TABLE 25.6 CASH FLOW ANALYSIS			
Description	**Discount Rate**	**Units**	**Value**
Non Discounted After Tax CF		$(M)	26.6
Internal Rate of Return		%	103.4%
NPV at	0%	$(M)	26.6
	5%	$(M)	20.7
	7%	$(M)	18.8
	10%	$(M)	16.3
Project Payback Period in Years		Years	1.4

An estimated total of 100,100 equivalent ounces of gold is expected to be recovered over the life of mine. Total mill feed production during the first 18 months of the life of mine will be 200 tonnes per day. For the remainder of the life of mine, the mill feed production rate will be at 400 tonnes per day and would employ on the order of 80 full time personnel.

A CDN$1.00 = US$0.76 exchange rate has been assumed in this assessment.

Cumulative pre-tax and post-tax cash flows are estimated to be $37.0 and $26.6, million respectively. Post-tax IRR, and NPV at a 6% discount rate, are estimated to be 103.4% and $19.7 million, respectively.

The economic analysis is most sensitive to changes in the US$/CDN$ currency exchange rates and to gold prices and less sensitive to changes in capital and operating costs

This Preliminary Economic Assessment is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration. It is uncertain that the Measured and Indicated Mineral Resources will be converted to the Proven or Probable Mineral Reserves. There is no certainty that this Preliminary Economic Assessment will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability; the estimate of Mineral Resources in this Preliminary Economic Assessment may be materially affected by higher operating costs, lower metal prices, lower process recoveries, environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

26.0 RECOMMENDATIONS

The Base Case of this PEA shows that the Project has economic potential for producing gold doré bars and a gold rich copper concentrate.

Note: This PEA is preliminary in nature and its potentially economic tonnage includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves and there is no certainty that the preliminary assessment will be realized. Mineral Resources that are not mineral reserves do not have demonstrated economic viability.

Based on positive results of the Preliminary Economic Analysis, P&E recommends that Golden Dawn advance the Greenwood Precious Metals Project.

Specifically, it is recommended that Golden Dawn take the following actions to develop the project:

Lexington-Grenoble Mine Pre-Production Work

The Lexington-Grenoble underground gold-copper mine consists of two portals and declines with interconnected workings. The mine is currently flooded and should be pumped out and rehabilitated to provide safe access. The main access is through the Eastern Portal, completed only days before the mine shutdown, is by a 500 m long, 5 m x 5 m profile decline that connects to the 1210 level, as well as to the bottom of the 1997 decline. This portal is currently gated, preventing access into the workings; however, the timbers of this portal appear in good shape. Four main development levels (1210, 1187, 1175, 1166) have been driven into the stope areas, with the development in place providing ready access for stope development. Pre-production work including dewatering and rehabilitation of the underground workings, underground mine development within resource blocks, bulk sampling/trial mining, and possibly infill drilling from underground is recommended to prepare the mine for full scale production.

Greenwood Mill Facility Refurbishment

One of the key aspects of this project is the existing infrastructure, including a permitted modern crushing-grinding-gravity-flotation facility with a mill rated at 212 tonnes per day capacity, assay laboratory and tailing facilities, currently under care and maintenance. The associated lined tailings facility remains stable. The equipment inside the mill building all appear in good condition and the crushing and conveyor belts outside the mill building appear in reasonable condition. This mill is proven as functional since it processed material from the Lexington-Grenoble Mine from May 2008 until the end of December 2008. Refurbishment of the mill facility and crusher equipment is recommended to prepare for processing gold-copper material from the Lexington-Grenoble and Golden Crown Mines.

Golden Crown Resource Definition

- Infill drilling in areas of low data density to potentially upgrade Inferred resources to Indicated category, particularly at the Golden Crown Property.
- Collect additional bulk density measurements within the lenses which have limited data;
- Include arsenic data in the Golden Crown resource model;

- Make improvements on the QA/QC procedures previously used by Merit for drill core assays, including the following:
  - Produce a document which outlines pass/ fail criteria for Standards and Blanks;
  - Plot QA/QC results when received and request re-runs of batches that contain failed Standard or Blanks;
  - Undertake inter-laboratory checks;
  - Insert the blanks adjacent to anticipated high grade intersections;
  - Incorporate a system to examine the repeatability of assay results;
  - Continue to check fire assays with screen fire assays;

Golden Crown Mine Rehabilitation and Bulk Sampling

The Golden Crown underground gold-copper mine consists of a 2.4 m x 2.4 m profile trackless 1,070 m long exploration adit that was developed in 1985 to access the vein system, as well as a number of historic stopes. The portal is still intact although it is locked to prevent entry. There is flow-through ventilation with the connection to a short shaft at the back end. The workings remain generally intact for the full length. In addition to in-fill diamond drilling from surface, underground rehabilitation and further mine development, followed by bulk sampling and trial mining, is recommended to prepare this deposit for full scale production.

Permitting & Environmental

In order to carry out the activities described above, it is recommended that permitting activities be commenced as soon as possible, including completion of the transfer of Mines permits from Huakan to Golden Dawn and replacement of the required reclamation security deposits. Preliminary meetings to review the project plan of operations with regulatory authorities and assess requirements for operational permitting is also recommended. Golden Dawn should consider proactively commencing studies that are likely to be required or that may require an extended time to complete, and work with stakeholders to ensure that all related concerns are addressed.

The Lexington-Grenoble Mine and Greenwood Mill achieved full production levels in the months of October and November of 2008, after a start-up phase of 5 months when numerous changes and improvements were implemented at both the mine and the mill. This production history demonstrates the technical viability of the project. Nevertheless, additional technical studies, particularly in alternative mine planning, metallurgical, geotechnical and environmental matters could be done to evaluate potential cost savings and/or productivity improvements.

Metallurgical Design

- Additional testing should be conducted to quantify and confirm the anticipated metallurgical efficiencies and to finalize design criteria for the expanded mill circuit. Testing should be conducted on representative samples of anticipated mill feed, including the Golden Crown Deposit and the southeast extension of the Lexington-Grenoble Deposit. The key areas of investigation recommended are as follows:
- Primary grinding and regrinding power requirements;
- Flotation reagent and retention time optimization;

- Quantifying the use of cyanide as a pyrite depressant and testing of an alternative pyrite depressant;
- Quantifying the impact of the chalcopyrite/pyrite ratio on metallurgical efficiencies;
- Testing of any expected variation in copper-gold head grades and gangue (talc) content;
- Testing any variation in expected arsenic content for the Golden Crown, especially with respect to potential smelter penalty issues for float concentrates produced;
- Evaluation of pre-concentration procedures including the use of X-ray and dense media separation;
- Improvements in gold and copper recovery by producing copper concentrates with lower copper grades;
- Locked cycle testing to confirm metallurgical efficiencies observed in open cycle testing.

Investigate Potential Cost-Saving Initiatives

- Investigate and negotiate preliminary commercial parameters of key project components such as power supply, fuel and grinding media and key reagents;
- Evaluate alternate development scenarios that would be used to enhance
- Productivity and improve the grade delivered to the mill. These studies should include pre-concentration, contract mining, controlled long hole mining, mine equipment leasing, and resource expansion;

Mineral Resource Expansion

Lexington-Grenoble Deposit

- It is understood that the remains open along strike and may contain parallel zones. This high-potential area should be investigated by surface and underground drilling;
- Drill-test the areas of gold soil anomalies outside and nearby the Golden Crown deposit;

Tam O'Shanter Property

- Complete airborne magnetic-electromagnetic geophysical coverage over the entire project area and specifically the Tam O'Shanter mineral claims,
- Complete follow-up IP and/or Titan 24 surveys in areas where the 2005 airborne survey identified EM anomalies that have not been followed up,
- Conduct soil sampling surveys over a number of prospective covered ground and/or airborne EM conductors that have not been followed up,
- Further resource drilling to expand the current Inferred Mineral Resource immediately along strike northwest and southeast of the Deadwood Zone, at depth below the Deadwood Zone and further to the north up stratigraphic section in order to see if further parallel zones are present in the vicinity of a

magnetic anomaly that is likely indicative of a buried diorite, including 20 holes in the Mineral Resource area for a total of about 4,000 m,

- Exploration drilling including a) testing a number of Au-Cu soil anomalies at the north end of the property spatially associated with a diorite intrusive, and b) testing old workings at the Gold Fleece and Bengal showings that are spatially associated with an IP chargeability anomaly, including 10 holes for a total of 1,000 m,
- Conduct follow-up metallurgical and mineralogical test work in order to assess the vat and heap leachability of the Deadwood low grade bulk tonnage material,
- Baseline environmental work in support of future potential studies.

May Mac, Sylvester K and Phoenix Properties

- It is recommended that exploration targets at the May Mac, Sylvester K and Phoenix Tailings be evaluated to determine if mineral resources can be defined. Metallurgical testwork on these targets is also recommended;

- It is recommended that other exploration targets in the area continue to be identified and investigated to provide supplemental mill feed in the future.

A two phase budget is proposed for the Greenwood Precious Metals Project. The Phase 1 budget presented in Table 26.1 consists of pre-production work aimed at test mining, as well as resource expansion exploration drilling. Each element of Phase 1 would culminate in a decision point.

TABLE 26.1
PHASE 1 BUDGET

LEXINGTON MINE	Costs		
Dewatering and Rehab			
Capex - pumps and consumables	$150,000		
Opex - labour and equipment	$350,000		
Mill refurbishment	$340,000		
Indirect site capital (3 months)	$590,000		
Preliminary Start-up Engineering Studie:	$150,000		
Permitting	$50,000		
Pre-concentration Testing	$65,000		
Test Mining	$385,000		
subtotal	**$2,080,000**		
Lexington-Grenoble Resource Expansion Drill Program			
	Costs	Metres	Holes
Up & Down Dip Targets			
Underground Drilling	$70,000	500	14
South Extension Target			
Surface Drilling	$310,000	2,200	12
Sub parallel Targets			
Surface Drilling	$280,000	2,000	10
Underground Drilling	$140,000	1,000	18
Drilling subtotal	**$800,000**	**5700**	**54**
Lexington Subtotal	**2,880,000**		
GOLDEN CROWN MINE			
Baseline Studies	$ 80,000		
Permit Preparation	$ 50,000		
Permitting Expenses	$ 80,000		
Metallurgical Testwork	$ 40,000		
Golden Crown Subtotal	**$ 250,000**		
PHASE 1 TOTAL	**$3,130,000**		

A Phase 2 budget is presented in Table 26.2. Advancing to Phase 2 is contingent on positive results from Phase 1. Each element of Phase 2 would culminate in a decision point. Additional mine development expenditures will be required if the Lexington project proceeds towards full-scale production.

TABLE 26.2
PHASE 2 BUDGET

LEXINGTON MINE			
Lexington-Grenoble Resource Expansion Drill Program			
	Costs	Metres	Holes
South Extension Target			
Surface Drilling	$215,000	1,500	8
Sub parallel Targets			
Underground Drilling	$285,000	2,000	30
Drilling Subtotal	**$500,000**	3,500	38
Lexington Subtotal	**$500,000**		
GOLDEN CROWN MINE			
UG Rehab			
Capex - pumps and consumables	$100,000		
Opex - labour and equipment	$250,000		
Subtotal	**$350,000**		
Resource Definition Drill Program			
	Costs	Metres	Holes
Surface Drilling	$70,000	500	5
Underground Drilling	$430,000	3,000	30
Golden Crown Subtotal	**$850,000**	**3,500**	**35**
TAM O'SHANTER			
Resource Definition & Exploration Program			
	Costs	Metres	Holes
Resource Drilling	$560,000	4000	20
Exploration Drilling	$140,000	1,000	10
Drilling Subtotal	**$700,000**	**5,000**	**30**
Geophysics Surveys and Mapping	$300,000		
Metallurgical Testwork and Pit Studies	$150,000		
Tam O'Shanter Subtotal	**$1,150,000**	**3,500**	**35**
PHASE 2 TOTAL	**$2,500,000**		

27.0 REFERENCES

Annual Report of the Minister of Mines for the Province of British Columbia.

Arnold, R.R., 1989a: Induced Polarization Report of the Tam O'Shanter Property, Greenwood Mining Division, for Houston Metals Corp., January 15, 1989. Assessment Report 18,917.

Arnold, R.R., 1989b: Diamond Drilling Report on the Tam O'Shanter Property, Greenwood Mining Division, for Houston Metals Corp, March 15, 1989. Assessment Report 18,798.

Ash, W., 1995: Property Evaluation Report on the Wild Rose Gold Property, Greenwood, B.C., for First Gold Resources Corp., November 10, 1995.

Ash, W., 2011: National Instrument 43-101 Technical Report on the May Mac mine property within the Boundary Falls mineral property, Boundary District, B.C., NTS 82E/2. Unpublished Report, August 29, 2011.

Bancroft, H., 1914: The Ore Deposits of Northeastern Washington, including a section on The Republic Mining District (by Waldemar Lindgren and Howland Bancroft), USGS Bulletin 550.

Ball, M., 2016. Technical Report on the Boundary Falls Property, Greenwood Mining Division, British Columbia, Canada, NTS 82/E2, for Golden Dawn Minerals Inc., June 2016.

Ball, M., 2017: Technical Report on the Greenwood Area Property, Greenwood Mining Division, British Columbia, Canada, for Golden Dawn Minerals Inc., Kettle River Resources Ltd. and New Nadina Explorations Limited, January 26, 2017.

Bancroft, H., 1914: The Ore Deposits of Northeastern Washington, including a section on the Republic Mining District (by Waldemar Lingren and Howland Bancroft), USGS Bulletin 550.

BCMEM, 2016: Metallogeny of the Greenwood Mining Camp, British Columbia Ministry of Energy and Mines website.

Beattie, M., 1990: Metallurgical Testwork on Samples from the Golden Crown Deposit, for Attwood Gold Corp, October 1, 1990, by Bacon Donaldson and Associates Ltd.

Blower, S.J., 1993: Assessment Report on the 1992 Diamond Drilling Program, Wild 92 Group, by Minnova Inc. for Randsburg Gold Corp., January 1993.

Broughton, L., 1988: Metallurgical Scoping Testwork Report #1, Golden Crown Project for Inlet Metals and Machining Co. Ltd., May 30, 1988, by Coastech Research Inc.

Burns, N. and Cowley, P., 2004a: Technical Report, Grenoble Deposit, Lexington Property, Greenwood, BC, for Gold City Industries Ltd., June 21, 2004, by Snowden Mining Industry Consultants.

Burns, N. and Cowley, P., 2004b: Technical Report, Golden Crown Property, Greenwood, BC, for Gold City Industries Ltd., June 22, 2004, by Snowden Mining Industry Consultants.

Burns, N., and Cowley, P. 2005: Technical Report, Grenoble Deposit, Lexington Property, Greenwood, British Columbia, Canada, Snowden Mining Industry Consultants, May 13, 2005.

Burns, P.J., 1988: Diamond Drilling Report on the Bluebell Project, Greenwood Mining Division for Skylark Resources, March 1, 1988.

Burton, A., 1992: Report on the Wild Rose Gold Property, Greenwood Mining Division, for Randsburg Gold Corporation. Report dated November 19, 1991, amended June 30, 1992, amended August 20, 1992.

Caron, L., 1992a: Diamond Drilling Report for the Snowshoe Group of Claims. Phoenix Property, for Battle Mountain Inc., February 1992.

Caron, L., 1992b: Diamond Drilling Report for the Knob Hill, and Ironside Group of Claims, Phoenix Property for Battle Mountain (Canada) Inc., November 1992, Assessment Report # 22653. Note: Assessment Reports are available on-line at http://aris.empr.gov.bc.ca/

Caron, L., 1995: 1995 Spring Diamond Drill Report on the Tam O'Shanter Property for Kettle River Resources Ltd., June 1995, Assessment Report # 24042.

Caron, L., 1996: Assessment Report on the Soil and Rock Sampling Program-Rockland Grid (Bell and Eye1 claims) and Oro Denoro October 1996 for Kettle River Resources, October 1996, Assessment Report # 24666.

Caron, L., 1997: Assessment Report on 1997 Summer Drill Program. Phoenix (Sylvester K) Property, for Kettle River Resources Ltd. September 1997. Assessment Report 25,302.

Caron, L., 1998a: Wildrose Project - Program Summary, Underground Drifting, February - April 1998, for First Gold Resources Inc.

Caron, L., 1998b: Wildrose Property - Summary Report, for Donald Rippon, October 1998.

Caron, L., 1999a: June-July 1999 Trenching Program Summary, Golden Crown Property, for Century Gold Corporation.

Caron, L., 1999b: Summary Technical Report and Recommended 1999 Work Program, Golden Crown Property, for Century Gold Corporation, March 22.

Caron, L., (2000): Bow Mines Property, Summary Report. Unpublished report, June 23, 2000.

Caron, L., 2002a: Geology, Geochemistry and Trenching on the Sappho Property, for Gold City Industries Ltd., May 2002. Assessment Report 26,884.

Caron, L., 2002b: Geological Report on the Boundary Project for Gold City Ind., May 13 2002.

Caron, L., 2002c: Assessment Report - Geology and Geochemistry, Midway Property, for Gold City Industries Ltd., July 10, 2002. Assessment Report 26,910.

Caron, L., 2002d: Bow Mines Property, Summary of June 2002 Fieldwork Prospecting and Rock Sampling. Unpublished report, July 4, 2002.

Caron, L., 2003: Assessment Report - April 2003 Trenching Program, Midway Property, for Gold City Industries Ltd., May 18, 2003. Assessment Report 27,158.

Caron, L., 2004: Assessment Report on the Athelstan - Jackpot Property, Geological Mapping, Rock Sampling, Linecutting & Surveying, for M. & T. Hallauer, August 30, 2004. Assessment Report 27,510.

Caron, L, 2005a: Technical Report - 2005 Drill Program, on the Bud Property, for Saville Resources Inc., June 17, 2005.

Caron, L., 2005b: Technical Report on the Greenwood Area Properties - Phoenix, Phoenix Tailings, Bluebell, Niagara, Rads, Tam O'Shanter, Haas Creek, Arcadia - Boundary District, for Kettle River Resources Ltd., September 30, 2005.

Caron, L., 2005c: Technical Report on the Snowshoe Property April-June 2005 Work Program, Diamond Drilling for Kingsman Resources Inc., June 27 2005.

Caron, L., 2006a: National Instrument 43-101 Technical Report on the Wild Rose Property, Boundary District, for 730821 B.C. Ltd. March 28, 2006.

Caron, L., 2006b: National Instrument 43-101 Technical Report on the Boundary Falls Property, Boundary District, for 730821 B.C. Ltd. March 29, 2006.

Caron, L., 2006c. National Instrument 43-101 Technical Report on the Copper Mountain Property, Boundary District, for 730821 B.C. Ltd. March 29, 2006.

Caron, L., 2006d: Assessment Report on the 2005 Helicopter-Borne AeroTEM II Electromagnetic and Magnetic Survey Wild Rose Gold Property, Boundary District, NTS 82E, Greenwood Mining Division, British Columbia, Canada, Unpublished report prepared for 730821B.C.Ltd. March 29, 2006.

Caron,L., 2007. Assessment Report, 2007Work Program–Geology, Soil and Rock Geochemistry, Grid Work, Geophysics and Trenching on the Phoenix and Bluebell Properties, Boundary District, for Kettle River Resources Ltd.,December19, 2007. Assessment Report 29626.

Caron, L., 2012a: National Instrument 43-101 Technical Report on the Phoenix and Bluebell Properties, Boundary District NTS 82/E2, Greenwood Mining Division, British Columbia, Canada, for Kettle River Resources Ltd., July 18, 2012.

Caron, L., 2012b: National Instrument 43-101 Technical Report on the Phoenix Tailings Property, Boundary District NTS 82/E2, Greenwood Mining Division, British Columbia, Canada, for Kettle River Resources Ltd., July 9, 2012.

Caron, L. and Austin, J.B., 2012: NI 43-101, Technical Report on the Phoenix Tailings Property, Boundary District, British Columbia, for Kettle River Resources Ltd., August 1, 2012.

Cheney, E.S. and M.G. Rasmussen, 1996: Regional Geology of the Republic Area, in Washington Geology, vol.24, no. 2, June 1996.

Church, B. N., 1976: Geology in the Vicinity of the Oro Denoro (82E/2E), in "Geology in BC", http://www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/ExplorationinBC/Pages/GeologyinBC1976.aspx

Church, B.N., (1985): 1977 – Geology of the Skomac Mine and Boundary Falls Area (82E/2), in Geology in British Columbia 1977-1981: British Columbia Geological Survey, p. 1-12.

Church, B.N., 1986: Geology and Mineralization in the Mount Attwood - Phoenix Area, Greenwood B.C.; B.C. Ministry of Energy Mines and Petroleum Resources, Paper 1986-2, 65 pages.

Church, B.N., 1995: Mineral Potential of the Okanagan – Similkameen – Boundary Area (82E, 82L/SE, SW, 92 H/SE, NE, In Geological Fieldwork 1994, British Columbia Geological Survey Branch, Paper 1995-1.

Church, B.N., 1996: Geological Setting and Mineralization in the Mount Attwood-Phoenix area of the Greenwood Mining Camp, BCDM Paper 1986-2.

Church, B.N., 1997: Metallogeny of the Greenwood Mining Camp, for CIM presentation, Vancouver, Spring 1997.

Clayton, C.J., 1991: Tam O'Shanter – Wild Rose geology map, 1:2500 scale (August 1991), Tam O'Shanter & Wild Rose Properties, 1991 Drilling & Chargeability Plan, and Tam 91 Grid Geology and Soil Geochemistry, page sized plan maps (1:20,000 scale), plus drill logs, miscellaneous memos, sketches, for Minnova Inc.

Clayton, C.J., 1992a: Assessment Report on 1991 Drilling on the Tam 91 Group near Greenwood, B.C., for Minnova Inc., January 1992. Assessment Report 22,170.

Clayton, C.J., 1992b: Assessment Report on 1991 Drilling on the Wild Rose Group near Greenwood, B.C., for Minnova Inc., October 1992. Assessment Report 22,600.

CIM, 2004: CIM Definition Standards on Mineral Resources and Mineral Reserves.

CIM, 2000: CIM Standards on Mineral Resources and Reserves. Definitions and Guidelines. Prepared by the CIM Standing Committee on Reserve Definitions.

Cochrane, D.R., J. Cerne, and G. White, 1969: Assessment Report on Aeromagnetic Survey over the Deadwood Camp, for Silver Dome and Crown Silver Mines Ltd. Assessment Report 1,878.

Cowley, P.S., 2002a: Geological Report, Lexington-Lone Star Property, September 16, 2002.

Cowley, P.S., 2002b: Geological Report, Winnipeg-Golden Crown Property, September 17.

Cowley, P., Puritch, E., Brown, F., Burgag, E., Haydon, A., and Pearson, J., 2016: Preliminary Economic Assessment on the Greenwood Precious Metals Project, Greenwood, British Columbia, Canada, for Goplden Dawn Minerals Inc., June 20, 2016.

Dickinson, R.A. and J.G. Simpson, 1973: A Report on the 1973 Geology and Percussion Drilling, Greenwood Property - Project 441, for Mapletree Exploration Corp., June 1, 1973. (KRR Report 29).

DiSpirito, F. and W. Lumley, 1988: Report on the Wild Rose Claim Group, Greenwood Mining Division, for Wild Rose Resources Ltd., January 8, 1988. Assessment Report 17,270.

Dolmage, Campbell and Associates, 1968: Oro Denoro Reserve Calculation., May 10 1968. Kettle River Resource Report number 633.

Dufresne, M., S. Nicholls and A. Turner, 2011: Technical Report on the Wild Rose – Tam O'Shanter Property, Greenwood Area, South Central British Columbia, Canada, May 31, 2011, 243p.

Dufresne, M., S. Nicholls, 2013: Technical Report on the Updated Resource for the Wild Rose – Tam O'Shanter Property, Greenwood Area, South Central British Columbia, Canada, January 25, 2013.

Dufresne, M., 2012: NTS 082E02, BCGS 082E007 and 017 Assessment Report for the Greenwood Precious Metal Project, south-central British Columbia, Canada, Unpublished report prepared by APEX Geoscience Ltd.

Ebisch, J.F., 1990: Geology and Mineralization at the Lone Star Property, Ferry County, Washington and Greenwood Camp, B.C. for Kennecott Exploration Company, February.

Ebisch, J.F., 1991a: Geology of the Lone Star Property, Ferry County, Washington, for Northwest Washington Geological Society Meeting, July.

Ebisch, J.F., 1991b: Lone Star Project Report, Ferry County, Washington, January.

Fifarek, R.H., Devlin, B.D., and Tschauder, Jr. R.J., 1996: Au-Ag mineralization at the Golden Promise deposits, Republic district, Washington—Relation to graben development and hot spring processes, in Coyner, A.R. and Fahey, P.L., (eds.), Geology and Ore Deposits of the American Cordillera: Geological Society of Nevada Symposium Proceedings, Reno, Nevada, April 1995, p. 1063-1088.

Ford, G., 1990: Golden Crown Project: Mineral Reserve Estimate, for Attwood Gold Corporation, October 9.

Fox, K.F., 1994: Geology of Metamorphic Core Complexes and Associated Extensional Structures in North-Central Washington. Washington Division of Geology and Earth Sciences, Bulletin 80, pp 21-47.

Fyles, J.T., 1989: Sylvester K-Snowshoe Gold Trend, Stemwinder Section for Kettle River Resources Ltd., September 20 1989. Kettle River Resources Report #416

Fyles, J.T., 1990: Geology of the Greenwood-Grand Forks Area, British Columbia, NTS 82E/1, 2: British Columbia Geological Survey, Open File 1990-25.

Fraser, S., 1987: Report on the Tam O'Shanter Property, Greenwood Area, for Echo Bay Mines, November 27, 1987. (KRR Report 388).

Fyles, J.T., 1984: Geological Setting of the Rossland Mining Camp, BCDM Bulletin 74.

Fyles, J.T., 1985a: Notes on the Geology of the Mother Lode - Tam O'Shanter Area, for Bulkley Silver Resources, January 20, 1985. (KRR Report 251)

Fyles, J.T., 1985b: Notes on the Structure and Stratigraphy of the Phoenix Basin, for Kettle River Resources Ltd., August 15, 1985. (KRR Report 257).

Fyles, J.T., 1990: Geology of the Greenwood-Grand Forks Area, British Columbia, NTS 82E/1,2. B.C. Geological Survey Branch Open File 1990-25.

Gelber, C.A., 2000: An Overview of the K-2 Mine, Ferry County, Washington. Abstract for Republic Symposium 2000, Northwest Mining Association, Dec 4-5, 2000.

Geology, Exploration and Mining in British Columbia http://www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/ExplorationinBC/Pages/default.aspx

Golden Dawn Minerals Inc., 2010: News Release, Golden Dawn Minerals Expands Gold-Copper Exploration Holdings, Historic Greenwood Mining District, British Columbia, Canada, Retrieved May 27, 2011, from http://wp.goldendawnminerals.com/2010/11/golden-dawn-minerals-expands-gold-copper-exploration-holdings-historic-greenwood-mining-distric-british-columbia-canada/

Golden Dawn Minerals Inc., 2011: News Release, Golden Dawn Receives Initial Mineral Resource Estimate for the Greenwood Project in B.C., Canada, Retrieved May 27, 2011, from http://wp.goldendawnminerals.com/2011/05/golden-dawn-receives-initial-mineral-resource-estimate-for-the-greenwood-project-in-b-c-canada/

Groves, D.I., Goldfarb, R.J., Gebre-Mariam, M., Hagemann, S.G., and Robert, F., (1998): Orogenic gold deposits: a proposed classification in the context of their crustal distribution and relationship to other gold deposit types. Ore Geol. Rev. 13, 7–27.

Heberlein, D., 1993: Assessment Report on the 1992 Diamond Drilling Program, Tam 93 Group, Greenwood Mining Division, for Minnova Inc., May 31,1993. Assessment Report 22,914. (KRR Report 720).

Heberlein, D., 1993a: Tam O'Shanter Property Geology Map, 1:5,000 scale (March 1993), various drill logs, rock sample results, for Minnova Inc.

Heberlein, D., 1993b: Assessment Report on the 1992 Diamond Drilling Program, Tam 93 Group, Greenwood Mining Division, for Minnova Inc., May 1993. Assessment Report 22,914.

Heberlein, D. and M. McDowell, 1992: Assessment Report on the 1992 Diamond Drilling Program on the Tam A and Tam B Groups, for Minnova Inc., September 30, 1992. Assessment Report 22,529. (KRR Report 715).

Hickey, R.J., 1992: The Buckhorn Mountain (Crown Jewel) Gold Skarn Deposit, Okanogan County, Washington. Economic Geology v. 87, p. 125 - 141.

Hodges, L.K. (Ed). (1897): Mining in the Pacific Northwest. https://openlibrary.org/books/OL23711155M/Mining_in_the_Pacific_Northwest

Höy, T. and K. Dunne, 1997. Early Jurassic Rossland Group, Southern British Columbia, Part I – Stratigraphy and Tectonics. Ministry of Energy and Mines Bulletin 102.

Hoy, T., and Dunne, K., 1997: Metallogeny and Mineral Deposits of the Nelson-Rossland Map-Area, Ministry of Energy and Mines, Bulletin 109.

Höy, T. and K. Dunne, 2001: Metallogeny and Mineral deposits of the Nelson-Rossland Map Area: Part II: The Early Jurassic Rossland Group, Southeastern British Columbia. Ministry of Energy and Mines Bulletin 109.

Höy, T. and W. Jackaman, 2005: Geology and Mineral Potential of the Grand Forks Map Sheet (082E/01), Southeastern British Columbia, in Geological Fieldwork 2004, Ministry of Energy and Mines Paper 2005-1, p.225-230.

Hutter, J.M., 2004: Report on the January 2004 Diamond Drill Program, Tam O'Shanter Property, Greenwood Mining District, for Kettle River Resources Ltd., June 1, 2004. Assessment Report 27,451. (KRR Report 1088).

InfoMine, 2011: Golden Crown – Greenwood Property News, Merit Mining news release, Retrieved May 27, 2011, from http://www.infomine.com/index/properties/Golden_Crown_-_Greenwood.html

Keating, J., 1984: Assessment Report on Drilling at Phoenix 1 Group (Tailings) Greenwood Mining Division August 1985. Kettle River Resource Report #359.

Keating, J., 1985: Report on Drill Testing of the Tremblay Tailings, Noranda Exploration. 1985.

Kim, H., 1988a: Progress Report on Golden Crown Exploration Programme, for Period Ending April 21, 1988, for Consolidated Boundary Exploration Ltd. and Grand Forks Mines Ltd., April 22.

Kim, H., 1988b: Results of Phase I Exploration & Recommended Phase II Exploration Program, Golden Crown Project, for Consolidated Boundary Exploration Ltd. and Grand Forks Mines Ltd., April 30.

Kim, H., 1988c: Final Progress Report on Phase I Underground Drilling, Golden Crown Project, for Consolidated Boundary Exploration Ltd. and Grand Forks Mines Ltd., June 23.

Kim, H., 1988d: Results of Phase I Underground Drilling, Golden Crown Project, for Consolidated Boundary Exploration Ltd. and Grand Forks Mines Ltd., July 7.

Kim, H., 1988e: Exploration Results of Underground Drilling, Phase I, Golden Crown Project, for Consolidated Boundary Exploration Ltd. and Grand Forks Mines Ltd., July 27.

Kim, H., 1989a: Interim Progress Report, Golden Crown Project – Phase II Exploration Programme, January 5.

Kim, H., 1989b: Results of Phase I & Phase II Exploration Programs and Recommended Phase III Exploration Program, Golden Crown Project, for Attwood Gold Corporation., June 12.

Klein, B., (Bacon Donaldson and Associates) 1991: Letter Communication on the Initial Results of the Metallurgical Test Results on Tremblay Tailings with George Stewart. May 1991

Kruzick, J., 1974: Diamond Drilling Report on the Skylark Claim Twin Creek, Greenwood Area for Herb Shear. Assessment Report #5181

Kyba, B.W., 1990: Summary Report and Recommendations for Exploration on the Bluebell Property, Battle Mountain.

Lasmanis, R., 1996: A Historical Perspective on Ore Formation Concepts, Republic Mining District, Ferry County, Washington, in Washington Geology, Vol.24, No.2, June 1996.

Lee, L., 1990a: Geology, Geochemistry and Geophysical Report on the Tam 90 Group, for Minnova Inc., November 16, 1990. Assessment Report 20,588. (KRR Report 612).

Lee, L., 1990b: Geochemical Report on the Min, Horn, Hide and Tam Claims, for Minnova Inc., November 30, 1990. Assessment Report 21,077.

Lefebure, D.V. and Church, B.N. (1996): Polymetallic Veins Ag-Pb-Zn+/-Au, in Selected British Columbia Mineral Deposit Profiles, Volume 2 - Metallic Deposits, Lefebure, D.V. and Hõy, T., Editors, British Columbia Ministry of Employment and Investment, Open File 1996-13, pages 67-70.

Little, H.W., 1957: Geology - Kettle River (East Half), GSC Map 6-1957, scale 1:253,440.

Little, H.W., 1961: Geology - Kettle River (West Half), GSC Map 15-1961, scale 1:253,440.

Little, H.W., 1983: Geology of the Greenwood Map area, British Columbia. GSC paper 79-29.

Makepeace, D., 2001: Geological Report, Boundary Project, for Gold City Industries Ltd., April.

Mark, D.G., 2011: Geochemistry Report on an MMI Soil Sampling Survey on the Wild Rose Property, Greenwood Area, Greenwood MD, BC. An unpublished internal report prepared on behalf of Golden Dawn Minerals Inc., 61 p.

Massey, N.W.D., 2006: Boundary Project: Reassessment of Paleozoic Rock Units of the Greenwood Area (NTS 82E/02), Southern British Columbia, in Geological Fieldwork 2005, Ministry of Energy and Mines Paper 2006-1, p.99-107.

Macdonald, A. and H. Klassen, 2004: Report on GPS Survey of claims within the Greenwood Area, for Kettle River Resources Ltd., by KLAM Ventures Inc., July 26, 2004. (KRR Report 1098).

McDougall, J.J., 1988: Report on Richmond - Lone Star, Greenwood Mining Division and Ferry County for Kassan Resources Inc., January 14.

McDougall, J.J., 1993: Report on Lone Star Copper-Gold Property, Ferry County, Washington for Britannia Gold Corp., March 10.

Miller, R.E., 1994: Phoenix Gold Resources Ltd. Summary Report on Phoenix Gold Claims, for Sookochoff Consultants Inc., August 31.

MINFILE: B.C. Ministry of Energy and Mines, Mineral Occurrence Database:

Mining in B.C. 1975-80. 1983. Mining in B.C. 1975-80 - Volume I Mine Production.

Minister of Mines Annual Reports for the Province of B.C. 1896: p.577; 1897 p.587; 1898 p.1125; 1899 p.849; 1901 p.1230; 1902 p.180, 304, 306; 1906 p.253; 1907 p.111; 1921 p.186; 1933 p.161, 1967 p.225-6.

Monger, J.W.H., 1967: Early Tertiary Stratified Rocks, Greenwood Map-Area (82 E/2) British Columbia. Geological Survey of Canada Paper 67-42.

Muessig, S., 1967: Geology of the Republic Quadrangle and a Part of the Aeneas Quadrangle, Ferry County, Washington, USGS Bulletin 1216.

Net Resources International, 2011: Buckhorn Gold Mine, Buckhorn Mountain, Washington State, USA, Retrieved May 26, 2011, from http://www.mining-technology.com/projects/kinross-buckhorn/

Nixon, G., 2002: Alkaline-hosted Cu-PGE Mineralization: the Sappho Alkaline Plutonic Complex, South-central British Columbia. BCMEM Open File 2002-7.

Nixon, G. and D. Archibald, 2002: Age of Platinum-Group-Element Mineralization in the Sappho Alkaline Complex, South-Central British Columbia. In BCMEM Paper 2002-1, Geological Fieldwork 2001, p. 171-176.

Parker, R.L. and J.A. Calkins, 1964: Geology of the Curlew Quadrangle, Ferry County, Washington. USGS Bulletin 1169.

Paxton J., 1986a: Geological Report on the Wild Rose Property, Greenwood Mining Division, British Columbia, for Wild Rose Resources Ltd., July 21, 1986.

Paxton, J., 1986b: The 1986 Wild Rose Exploration Program for Wild Rose Resources Ltd., December 1986.

Paxton, J., 1986c: Geological Report with Recommended Program and Associated Cost Estimates on the Robert Mines Property, Greenwood, B.C. for Empire Gold Resources Ltd. Unpublished report.

Paxton. J., 1987: Results of the 1987 Work Program on the Robert Mine Property: Empire Gold Resources Ltd. Unpublished report.

Paxton, J., 1994: Proposed Mine Development and Exploration on the Wild Rose Property, Greenwood B.C., for 593749 Alberta Limited, December 20, 1994.

Paxton, J., 1994: Geological Report on the Bow Mines Limited Property, Greenwood M.D. For 593749 Alberta Limited. Unpublished report, October 1, 1994.

Peatfield, G.R., 1978: Geologic History and Metallogeny of the 'Boundary District', Southern British Columbia and Northern Washington. PhD Thesis, Queen's University.

Puritch, E., and Cowley, P., 2006a: Technical Report, Lexington-Grenoble Deposit, Lexington Property, Greenwood, British Columbia, Canada, June 19.

Puritch, E., and Cowley, P., 2006b: Technical Report, Golden Crown Deposit, Golden Crown Property, Greenwood, British Columbia, Canada, October 20.

Puritch, E., and Cowley, P., 2007: Technical Report and Resource Estimate on the Lone Star Deposit, Ferry County, Washington, USA, November 9.

Puritch, E., Roxburgh, J., Cowley, P. and Collins, J., 2007: Technical Report and Preliminary Economic Assessment on the Greenwood Precious Metals Project, Greenwood, British Columbia, Canada, May 22.

Puritch, E., Cowley, P. and Brown, F., 2016: Technical Report and Updated Mineral Resource Estimate of the gold and copper mineralization on the Greenwood Precious Metals Project, including the Lexington-Grenoble and Golden Crown Deposits located near Greenwood, BC., April 8, 2016.

Rasmussen, M., 1993: The Geology and Origin of the Overlook Gold deposit Ferry County Washington, PhD Thesis University of Washington.

Rasmussen, M., 1997: Greenwood Project Third Quarter Report July 1-Septamber 30 1997, Echo Bay Mines to Kettle River Resources December 1997

Rasmussen, M., 2000:The Lamefoot Gold Deposit, Ferry County Washington. Abstract for Republic Symposium 2000, Northwest Mining Association, December 4-5, 2000.

Rasmussen, M., 2002: Reconnaissance Report, Bow Mines Property, Greenwood, B.C.: Echo Bay Minerals Co. Unpublished memo report, 2 pages.

Rayner, G., 1982: Geological Report on the Tam O'Shanter Claim Group, Greenwood Mining Division, for New Frontier Petroleum, May 24, 1980. (KRR Report 132).

Robb, W., 1990: Assessment Report of the 1990 Diamond Drill Program on the Golden Crown Group, for Attwood Gold Corp., October 29, 1990. Assessment Report 20,431.

Rudd, J., 2006: Report on a Helicopter-Borne AeroTEM II Electromagnetic and Magnetic Survey, Aeroquest Limited, Wild Rose Project and Copper Camp Project, for 730821 B.C. Ltd., January 2006.

Schroeter, T.G, C. Lund and G. Carter, 1989: Gold Production and Reserves in British Columbia. Ministry of Energy, Mines and Petroleum Resources, Open File 1989-22.

Seguin, J., 1989: Second and third Quarter Progress Report for Skylark Resources Inc. August 2 1989, August 4 1989.

Seraphim, R.H., 1989: Golden Crown Project, for Attwood Gold Corp., May 17.

Seraphim, R., B.N. Church and J.T. Shearer, 1995: The Lexington-Lone Star copper-gold porphyry: An Early Jurassic cratonic linear system, southern British Columbia, in Porphyry Deposits of the Northwestern Cordillera of North America, CIM Special Volume 46.

Shear, H.H., 1964: Geophysical and Geochemical Report on Magnetometer and Geochemical Survey - Copper Coin Group, for Silver Dome Mines, April 1, 1964. Assessment Report 562.

Shear, H.H., 1974a: Percussion Drill Logs on the Program Completed May-June 1974 on the San Jacinto and Gotcha Groups, Deadwood Camp, Greenwood Mining Division, for Mascot Mines and Petroleum Ltd., Oct 1, 1974. Assessment Report 5,023. (KRR Report 162).

Shear, H.H., 1974b: Report of Work on the Gotcha Mineral Claim Group, Greenwood, B.C., 1973/74, for Mascot Mines & Petroleums Limited, September 1974. (KRR Report 159).

Shear, H.H., 1984: Report on the Tam O'Shanter Property, Greenwood Mining Division, for Bulkley Silver Resources Inc., March 13, 1984. (KRR Report 144)

Smitheringale, W.G., 1983: Geological Report on the Wild Rose Property, Greenwood Mining Division, British Columbia, for Silver Hoarde Resources Inc., June 3, 1983.

Stewart, G.O.M, 1980: Drilling Assessment Report on the Tam O'Shanter property, Shanter Claim, Greenwood Mining Division, for Oneida Resources, Sept. 15, 1980. Assessment Report 8,795. (KRR Report 180).

Sookochoff, L., 1980: 1980 Assessment Report – Diamond Drilling, Crown Group, for Consolidated Boundary Exploration Ltd., November 12, 1980. Assessment Report 8482.

Sookochoff, L., 1984a: 1983 Assessment Report – Diamond Drilling, Crown Group, for Consolidated Boundary Exploration Ltd., March 27, 1984. Assessment Report 12,131.

Sookochoff, L., 1984b: 1983 Assessment Report – Geological, Geochemical and Physical, for Consolidated Boundary Exploration Ltd., April 10, 1984. Assessment Report 12,373.

Sookochoff, L., 1986: 1985 Diamond Drill and Compilation Report, for Consolidated Boundary Exploration Ltd., January 9, 1986. Assessment Report 14,641.

Tschauder, R., 1986: The Golden Promise: A Recent Discovery in the Republic Mining District, Ferry County, Washington, a paper presented at the Northwest Mining Association Convention, December 1986.

Tschauder, R., 1989: Gold Deposits in Northern Ferry County, Washington, in Geologic guidebook for Washington and adjacent areas, Washington Division of Geology and Earth Resources Information Circular 86.

Tully, D., 1978: Report on the Boundary Falls Claim group: Amigo Silver Mines Ltd. Unpublished report.

Tully, D., 1976: Report on a Self-potential Geophysical Survey and a Diamond Drilling Programme on the Boundary Falls Claim group 36730K, 36745K, M.L. 431, 36254N, 36255N,36256N, 36257N, 37441M, 37442M, ACE 1-41-6 Greenwood Mining Division Greenwood, British Columbia, N.L. 49°-03' W.L. 118°-42, Assessment Report 6067.

Tully, D., 1975: Report on a VLF-Electromagnetic Survey on the Boundary Falls Claim group 36730K, 36745K, M.L. 431, 36254N, 36255N,36256N, 36257N, 37441M, 37442M, Greenwood Mining Division Greenwood, British Columbia, N.L. 49°-03' W.L. 118°-42, Assessment Report 5618.

Wares, R., 1985: Report on the Golden Crown and Winnipeg Property, for Grand Forks Mines Ltd., September 15.

Wong, R.H., 1986: Tam O'Shanter core logs, Holes 79-1 to 79-3, for B.P. Selco, November 18, 1986. (KRR Report 371).

Wright, F., 2004: Process Research Associates Ltd. for Gold City Industries Ltd., April 2004.

Wright, F., 2011: Wildrose Gold Project Summary of Preliminary Metallurgical Response, for Golden Dawn Minerals Inc., June 16, 2011.

28.0 CERTIFICATES

CERTIFICATE OF QUALIFIED PERSON

EUGENE J. PURITCH, P.ENG., FEC

I, Eugene J. Puritch, P. Eng., residing at 44 Turtlecreek Blvd., Brampton, Ontario, L6W 3X7, do hereby certify that:

1. I am an independent mining consultant and President of P&E Mining Consultants Inc.
2. This certificate applies to the technical report titled "Updated Preliminary Economic Assessment on the Greenwood Precious Metals Project, Greenwood, British Columbia, Canada", (the "Technical Report") with an effective date of May 5, 2017.
3. I am a graduate of The Haileybury School of Mines, with a Technologist Diploma in Mining, as well as obtaining an additional year of undergraduate education in Mine Engineering at Queen's University. In addition I have also met the Professional Engineers of Ontario Academic Requirement Committee's Examination requirement for Bachelor's Degree in Engineering Equivalency. I am a mining consultant currently licensed by Professional Engineers and Geoscientists New Brunswick (License No. 4778), Professional Engineers, Geoscientists Newfoundland & Labrador (License No. 5998), Association of Professional Engineers and Geoscientists Saskatchewan (License No. 16216), Ontario Association of Certified Engineering Technicians and Technologists (License No. 45252) the Professional Engineers of Ontario (License No. 100014010) and Association of Professional Engineers and Geoscientists of British Columbia (License No. 192893). I am also a member of the National Canadian Institute of Mining and Metallurgy.

   I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

   I have practiced my profession continuously since 1978. My summarized career experience is as follows:
   - Mining Technologist - H.B.M.& S. and Inco Ltd.,... 1978-1980
   - Open Pit Mine Engineer – Cassiar Asbestos/Brinco Ltd.,.. 1981-1983
   - Pit Engineer/Drill & Blast Supervisor – Detour Lake Mine,.. 1984-1986
   - Self-Employed Mining Consultant – Timmins Area,.. 1987-1988
   - Mine Designer/Resource Estimator – Dynatec/CMD/Bharti,.. 1989-1995
   - Self-Employed Mining Consultant/Resource-Reserve Estimator,... 1995-2004
   - President – P&E Mining Consultants Inc,..2004-Present
4. I have visited the Property that is the subject of this report on April 24-25, 2006 and January 17, 2013.
5. I am responsible for authoring Sections 15, 19 and 24 and co-authoring Sections 1, 12, 14, 16, 18, 21, 22, 25 and 26 of the Technical Report.
6. I am independent of the Issuer and Vendor applying the test in Section 1.5 of NI 43-101.
7. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
8. I have had prior involvement with the project that is the subject of this Technical Report. The nature of my involvement was as co-author of several Technical Reports titled "Technical Report Golden Crown Property, Greenwood, British Columbia, Canada" dated October 20, 2006; "Technical Report Lexington-Grenoble Deposit, Lexington Property, Greenwood, British Columbia, Canada" dated October 20, 2006, "Technical Report and Preliminary Economic Assessment on the Greenwood Precious Metals Project" dated May 22, 2007 and "Technical Report and Updated Mineral Resource Estimate for the Greenwood Gold Project, Greenwood, British Columbia Canada" dated April 8, 2016, and "Preliminary Economic Assessment on the Greenwood Precious Gold Project, Greenwood, British Columbia Canada" dated June 20, 2016.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 5, 2017
Signing Date: June 2, 2017

{SIGNED AND SEALED}
[Eugene J. Puritch]

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Eugene J. Puritch, P.Eng., FEC

CERTIFICATE OF QUALIFIED PERSON

FRED H. BROWN, P.GEO.

I, Fred H. Brown, of 114 East Magnolia St, Suite 400-127, Bellingham WA 98255 USA, do hereby certify that:

1. I am an independent geological consultant and have worked as a geologist continuously since my graduation from university in 1987.
2. This certificate applies to the technical report titled "Updated Preliminary Economic Assessment on the Greenwood Precious Metals Project, Greenwood, British Columbia, Canada", (the "Technical Report") with an effective date of May 5, 2017.
3. I graduated with a Bachelor of Science degree in Geology from New Mexico State University in 1987. I obtained a Graduate Diploma in Engineering (Mining) in 1997 from the University of the Witwatersrand and a Master of Science in Engineering (Civil) from the University of the Witwatersrand in 2005. I am registered with the South African Council for Natural Scientific Professions as a Professional Geological Scientist (registration number 400008/04), the Association of Professional Engineers and Geoscientists of British Columbia as a Professional Geoscientist (171602) and the Society for Mining, Metallurgy and Exploration as a Registered Member (#4152172).

   I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101

   My relevant experience for the purpose of the Technical Report is:

   - Resident Geologist, Venetia Mine, De Beers 1997-2000
   - Chief Geologist, De Beers Consolidated Mines 2000-2004
   - Consulting Geologist 2004-2008
   - P&E Mining Consultants Inc. – Sr. Associate Geologist 2008-Present
4. I visited the Property that is the subject of this Technical Report on August 18, 2011.
5. I am responsible for co-authoring Section 1, 14, 25 and 26 of this Technical Report.
6. I am independent of the Issuer and Vendor applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the project that is the subject of this Technical Report. The nature of my involvement was as co-author of two Technical Reports titled "Technical Report and Updated Mineral Resource Estimate for the Greenwood Gold Project, Greenwood, British Columbia Canada" dated April 8, 2016, and "Preliminary Economic Assessment on the Greenwood Precious Gold Project, Greenwood, British Columbia Canada" dated June 20, 2016.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 5, 2017
Signing Date: June 2, 2017

{SIGNED AND SEALED
[Fred H. Brown]

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Fred H. Brown, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

PAUL S. COWLEY, P.GEO.

I, Paul S. Cowley, P.Geo. of West Vancouver, Canada, do hereby certify that:

1. I am currently an Independent Consultant residing at 5765 Westport Road, West Vancouver, B.C. V7W 2X7, Telephone: 604-926-6440, Email: cowleypgeo@gmail.com
2. This certificate applies to the technical report titled "Updated Economic Assessment on the Greenwood Precious Metals Project, Greenwood, British Columbia, Canada", (the "Technical Report") with an effective date of May 5, 2017.
3. I graduated with Honours with a Bachelor of Science degree in Geology, from University of British Columbia, Canada, in 1979. I am a registered Professional Geoscientist with the association of Professional Engineers and Geoscientists of the Province of British Columbia, Canada, Registration Number 24350, since June 1999. My relevant experience includes 36 years of experience in exploration, including 12 years involvement in field working and management of the Greenwood Precious Metals Project properties while consulting for Gold City Industries Ltd., Merit Mining Inc. and Huakan International Mining Inc. between 2003 and May 2014 that are the subject of the Technical Report.

   I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, past relevant work experience and affiliation with a professional association (as defined in NI 43-101), I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
4. I visited various parts of the Lexington and Golden Crown Properties numerous times while being consultant and the Vice President of Exploration with Gold City Industries Ltd., Merit Mining Inc. and Huakan International Mining Inc. between 2003 and May 2014. My most recent visit to the Lexington Property was September 21, 2015. My most recent visit to the Golden Crown Property was April 23, 2017. My most recent visit to the Phoenix Property was April 24, 2017. My most recent visit to the Boundary Falls Property was April 23, 2017.
5. I am responsible for authoring Sections 2-11, 20, 23 and 27 and co-authoring Section 1, 12, 25 and 26 of this Technical Report.
6. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.
7. I have had prior involvement with the project that is the subject of this Technical Report. The nature of my involvement was as co-author of several Technical Reports titled "Technical Report Golden Crown Property, Greenwood, British Columbia, Canada" dated October 20, 2006; "Technical Report Lexington-Grenoble Deposit, Lexington Property, Greenwood, British Columbia, Canada" dated October 20, 2006, "Technical Report and Preliminary Economic Assessment on the Greenwood Precious Metals Project" dated May 22, 2007 and "Technical Report and Updated Mineral Resource Estimate for the Greenwood Gold Project, Greenwood, British Columbia Canada" dated April 8, 2016, and "Preliminary Economic Assessment on the Greenwood Precious Gold Project, Greenwood, British Columbia Canada" dated June 20, 2016.
8. I am independent of the Issuer and Vendor applying all of the tests in section 1.5 of NI 43-101. I do not own directly or indirectly any shares in Golden Dawn Minerals Inc. nor do I expect to receive any. I do not hold directly or indirectly an interest in the properties that are the subject of this technical report or in adjacent properties. I do not hold an employee, insider or director position with Golden Dawn.
9. I have read NI 43-101, and the portions of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.

Effective Date: May 5, 2017
Signing Date June 2, 2017

{SIGNED AND SEALED}
[Paul S. Cowley]

____
Paul S. Cowley, P.Geo.

JAMES L. PEARSON, P.ENG.

CERTIFICATE OF AUTHOR

I, James L. Pearson, P.Eng., residing at 105 Stornwood Court, Brampton, Ontario. Canada, L6W 4H6, do hereby certify that:

1. I am an independent Mining Engineering Consultant, contracted by P& E Mining Consultants Inc.
2. This certificate applies to the technical report titled "Updated Economic Assessment on the Greenwood Precious Metals Project, Greenwood, British Columbia, Canada", (the "Technical Report") with an effective date of May 5, 2017.
3. I am a graduate of Queen's University, Kingston, Ontario, Canada, in 1973 with a Bachelor of Science degree in Mining Engineering. I am registered as a Professional Engineer in the Province of Ontario (Reg. No. 36043016). I have worked as a mining engineer for a total of 43 years since my graduation.

   I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. My relevant experience for the purpose of the Technical Report is:

   - Review and report as a consultant on numerous exploration and mining projects around the world for due diligence and regulatory requirements;
   - Project Manager and Superintendent of Engineering and Projects at several underground operations in South America;
   - Senior Mining Engineer with a large Canadian mining company responsible for development of engineering concepts, mine design and maintenance;
   - Mining analyst at several Canadian brokerage firms

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for co-authoring Sections 1, 16, 18, 21, 22, 25 and 26 of the Technical Report.
6. I am independent of the Issuer and Vendor applying all of the tests in Section 1.5 of NI 43-101.
7. I have had prior involvement with the project that is the subject of this Technical Report. The nature of my involvement was as co-author of the Technical Reports titled "Preliminary Economic Assessment on the Greenwood Precious Gold Project, Greenwood, British Columbia Canada" dated June 20, 2016.
8. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that Instrument and Form.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 5, 2017
Signing Date: June 2, 2017

{SIGNED AND SEALED}
[James L. Pearson]

James L. Pearson, P. Eng.

CERTIFICATE OF QUALIFIED PERSON

ALFRED S. HAYDEN, P. ENG.

I, Alfred S. Hayden, P. Eng., residing at 284 Rushbrook Drive, Ontario, L3X 2C9, do hereby certify that:

1. I am currently President of:
   EHA Engineering Ltd.,
   Consulting Metallurgical Engineers
   Box 2711, Postal Stn. B.
   Richmond Hill, Ontario, L4E 1A7
2. This certificate certificate applies to the technical report titled "Updated Economic Assessment on the Greenwood Precious Metals Project, Greenwood, British Columbia, Canada", (the "Technical Report") with an effective date of May 5, 2017.
3. I graduated from the University of British Columbia, Vancouver, B.C. in 1967 with a Bachelor of Applied Science in Metallurgical Engineering. I am a member of the Canadian Institute of Mining, Metallurgy and Petroleum and a Professional Engineer and Designated Consulting Engineer registered with Professional Engineers Ontario. I have worked as a metallurgical engineer for over 40 years since my graduation from university.

   I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
4. I have not visited the Property that is the subject of this report.
5. I am responsible for authoring Sections 13 and 17 and co-authoring portions of Sections 1, 21, 25 and 26 of the Technical Report.
6. I am independent of the Issuer and Vendor applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the project that is the subject of this Technical Report. The nature of my involvement was as co-author of the Technical Reports titled "Preliminary Economic Assessment on the Greenwood Precious Gold Project, Greenwood, British Columbia Canada" dated June 20, 2016.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 5, 2017
Signing Date: June 2, 2017

{SIGNED AND SEALED}
[Alfred Hayden]

____
Alfred S. Hayden, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

ERNEST BURGA, P. ENG.

I, Ernest Burga, P. Eng., residing at 3385 Aubrey Rd., Mississauga, Ontario, L5L 5E3, do hereby certify that:

1. I am an Associate Mechanical Engineer and President of Andeburg Consulting Services Inc.
2. This This certificate certificate applies to the technical report titled "Updated Economic Assessment on the Greenwood Precious Metals Project, Greenwood, British Columbia, Canada", (the "Technical Report") with an effective date of May 5, 2017.
3. I am a graduate of the National University of Engineering located in Lima, Peru at which I earned my Bachelor Degree in Mechanical Engineering (B.Eng. 1965). I have practiced my profession continuously since graduation and in Canada since 1975. I am licensed by the Professional Engineers of Ontario (License No. 6067011).

   I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. My summarized career experience is as follows:

   - Maintenance Engineer – Backus and Johnston Brewery of Peru. 1966-1975
   - Design Mechanical Engineer – Cambrian Engineering Group...1975-1978
   - Design Mechanical Engineer – Reid Crowther Bendy...1979-1981
   - Lead Mechanical Engineer – Cambrian Engineering Group..1981-1987
   - Project Engineer – HG. Engineering...1988-2003
   - Lead Mechanical Engineer – AMEC Americas 2003-2005
   - Sr. Mechanical Engineer – SNC Lavalin Ltd. 2005-2009
   - President – Andeburg Consulting Services Inc. ....2004 to present
   - Contracted Mechanical Engineer – P&E Mining Consultants Inc. ....2009 to present

4. I have not visited Property that is the subject of this report.
5. I am responsible for co-authoring a portion of Sections 1, 21, 25 and 26 of the Technical Report.
6. I am independent of the Issuer and Vendor applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the project that is the subject of this Technical Report. The nature of my involvement was as co-author of the Technical Reports titled "Preliminary Economic Assessment on the Greenwood Precious Gold Project, Greenwood, British Columbia Canada" dated June 20, 2016.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 5, 2017
Signing Date: June 2, 2017

{SIGNED AND SEALED}
[Ernest Burga]

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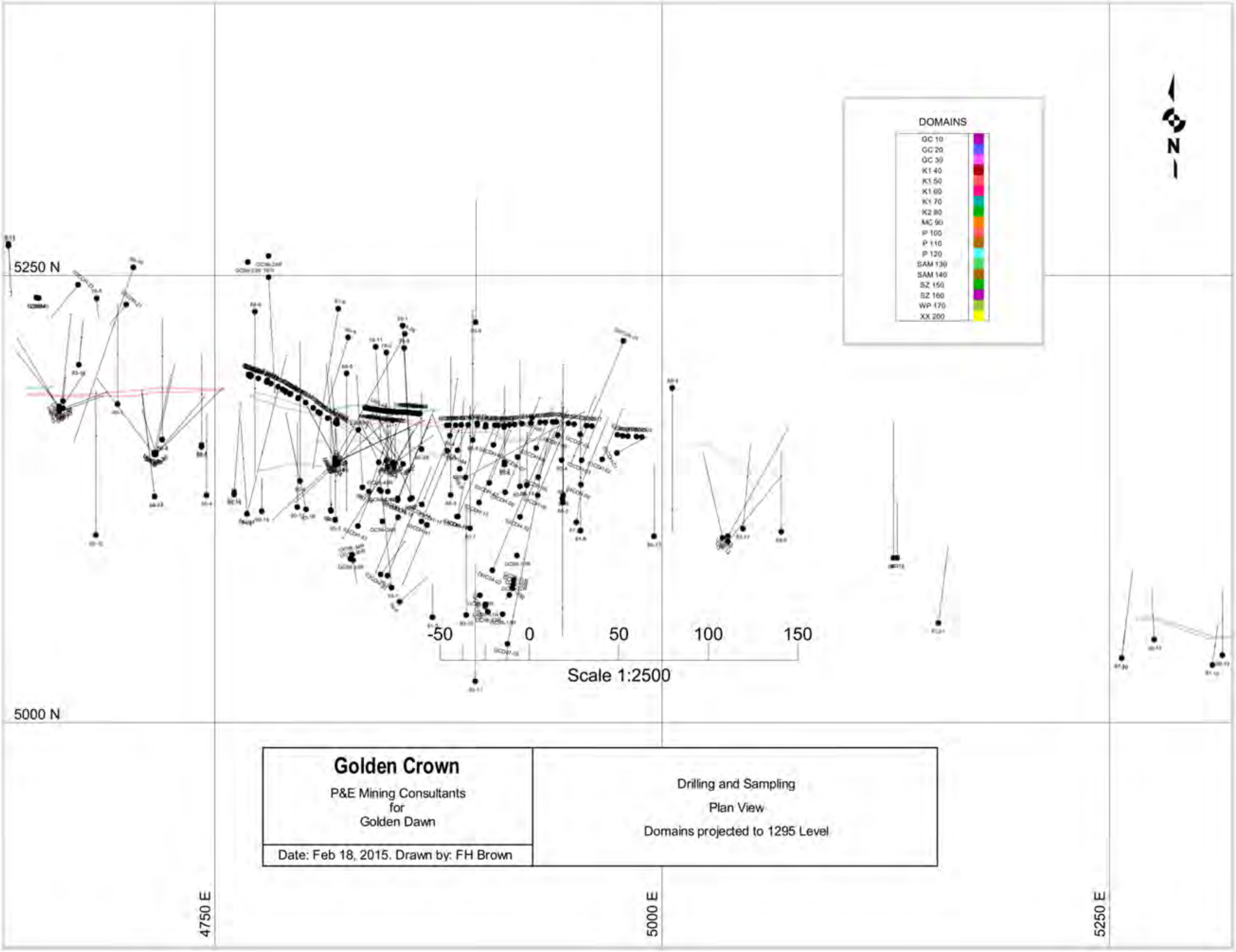
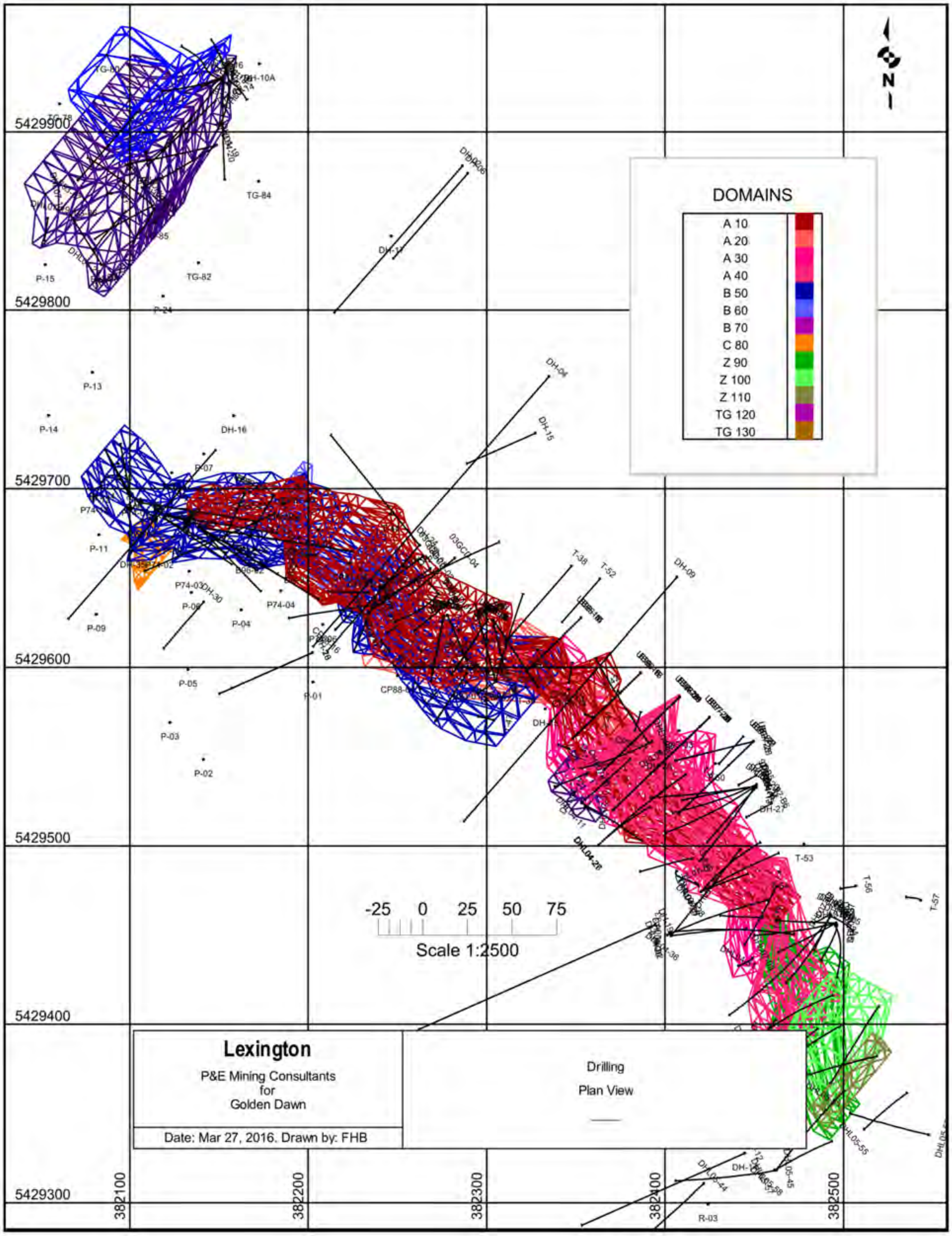
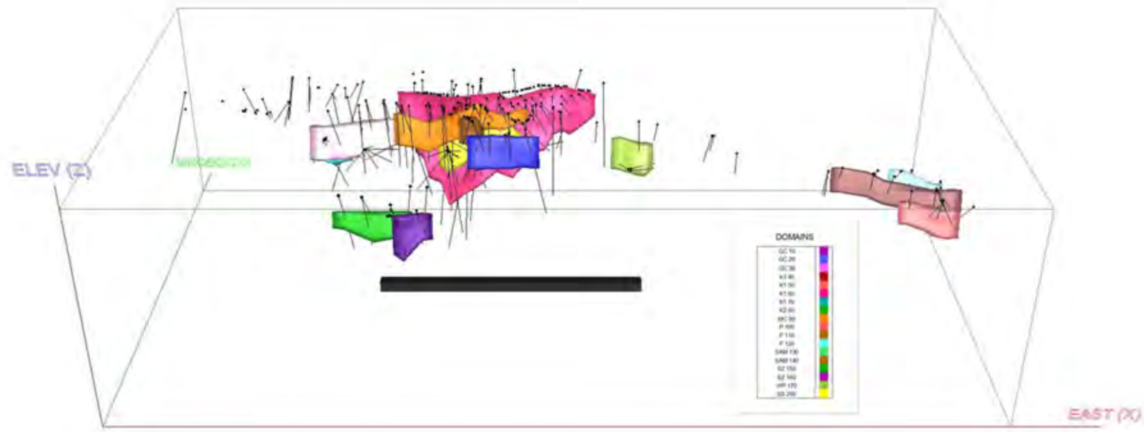
Ernest Burga, P. Eng.

APPENDIX I. SURFACE DRILL HOLE PLANS

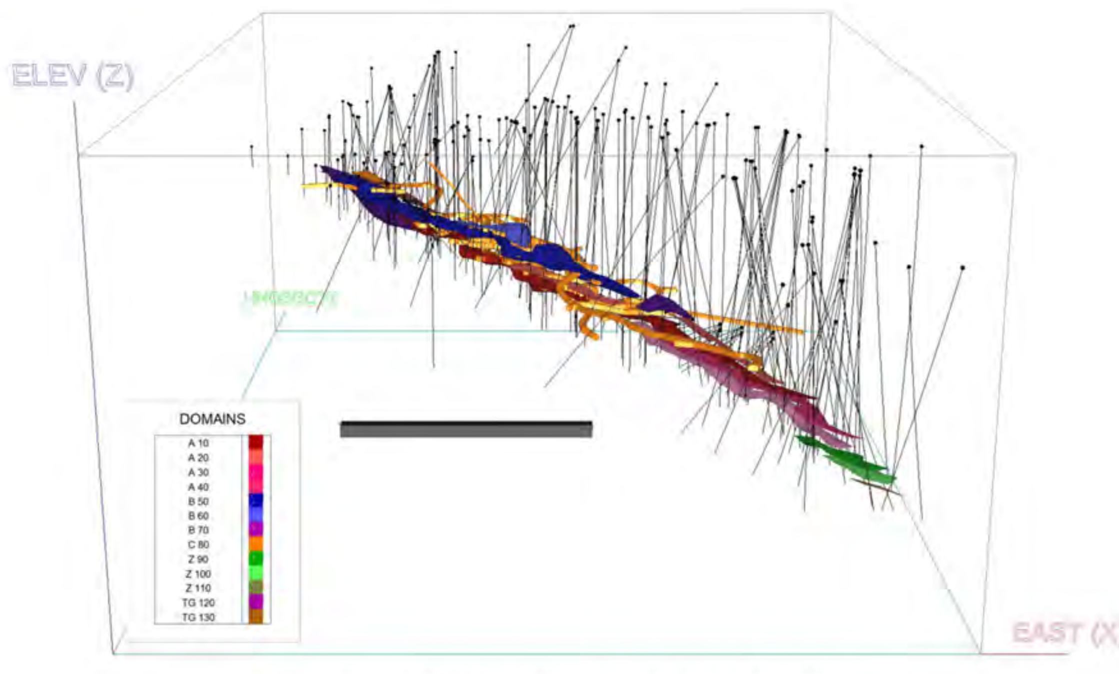

DOMAINS
GC 10
GC 20
GC 30
K1 40
K1 50
K1 60
K1 70
K2 80
MC 90
P 100
P 110
P 120
SAM 130
SAM 140
SZ 150
SZ 160
WP 170
XX 200
N
5250 N
5000 N
4750 E
5000 E
5250 E
-50
0
50
100
150
Scale 1:2500
Golden Crown
P&E Mining Consultants
for
Golden Dawn
Date: Feb 18, 2015. Drawn by: FH Brown
Drilling and Sampling
Plan View
Domains projected to 1295 Level


DOMAINS
A 10
A 20
A 30
A 40
B 50
B 60
B 70
C 80
Z 90
Z 100
Z 110
TG 120
TG 130
N
-25 0 25 50 75
Scale 1:2500
5429900
5429800
5429700
5429600
5429500
5429400
5429300
382100
382200
382300
382400
382500
Lexington
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016. Drawn by: FHB
Drilling
Plan View

APPENDIX II. 3D DOMAINS

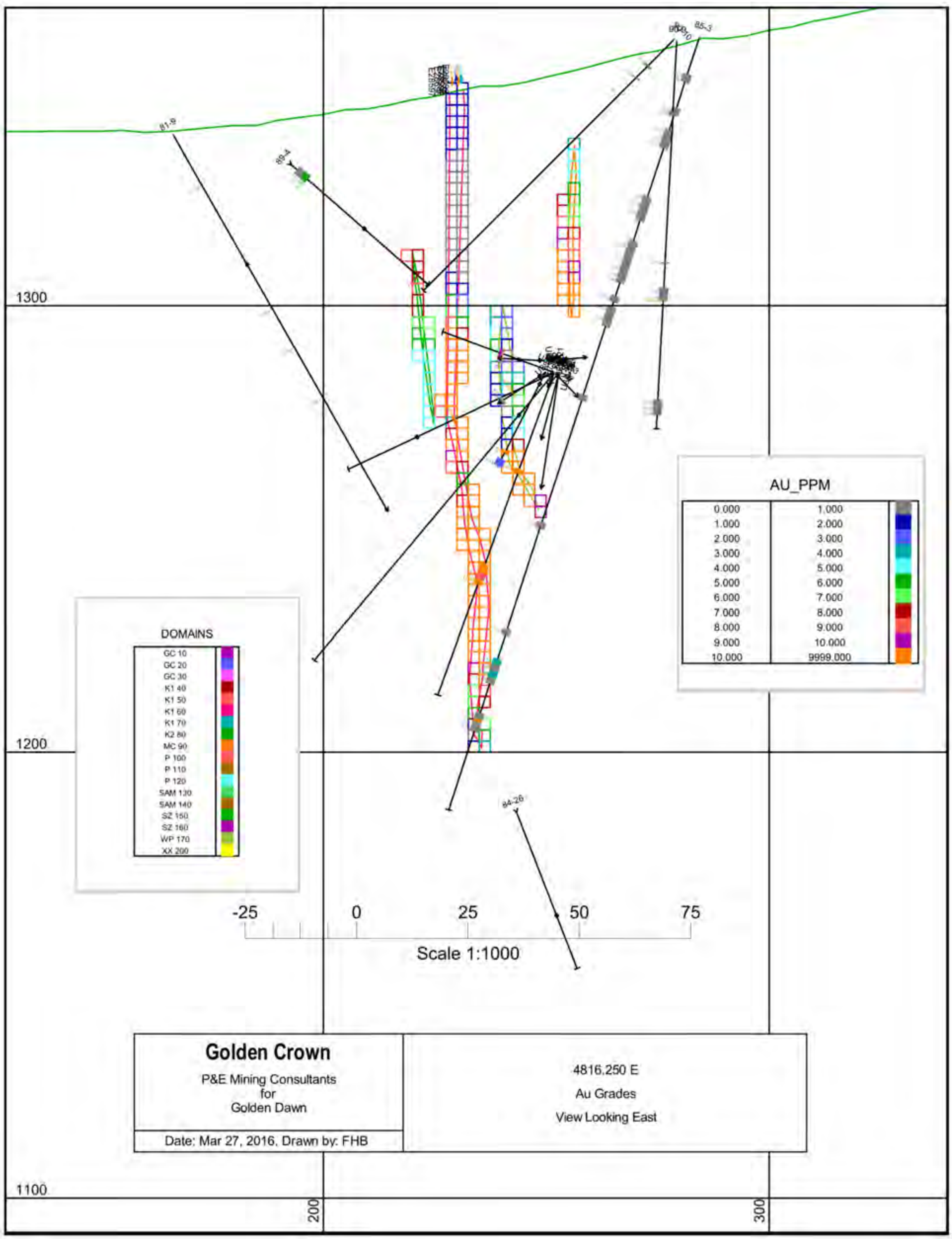


Golden Crown modeled domains. View looking North. Scale bar = 250 m.



Lexington modeled domains. View looking North. Scale Bar = 200 m.

APPENDIX III. AU BLOCK MODEL CROSS SECTIONS AND PLANS



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300
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85-3
84-26
DOMAINS
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GC 30
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K1 50
K1 60
K1 70
K2 80
MC 90
P 100
P 110
P 120
SAM 130
SAM 140
SZ 150
SZ 160
WP 170
XX 200
AU_PPM
0.000 1.000
1.000 2.000
2.000 3.000
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4.000 5.000
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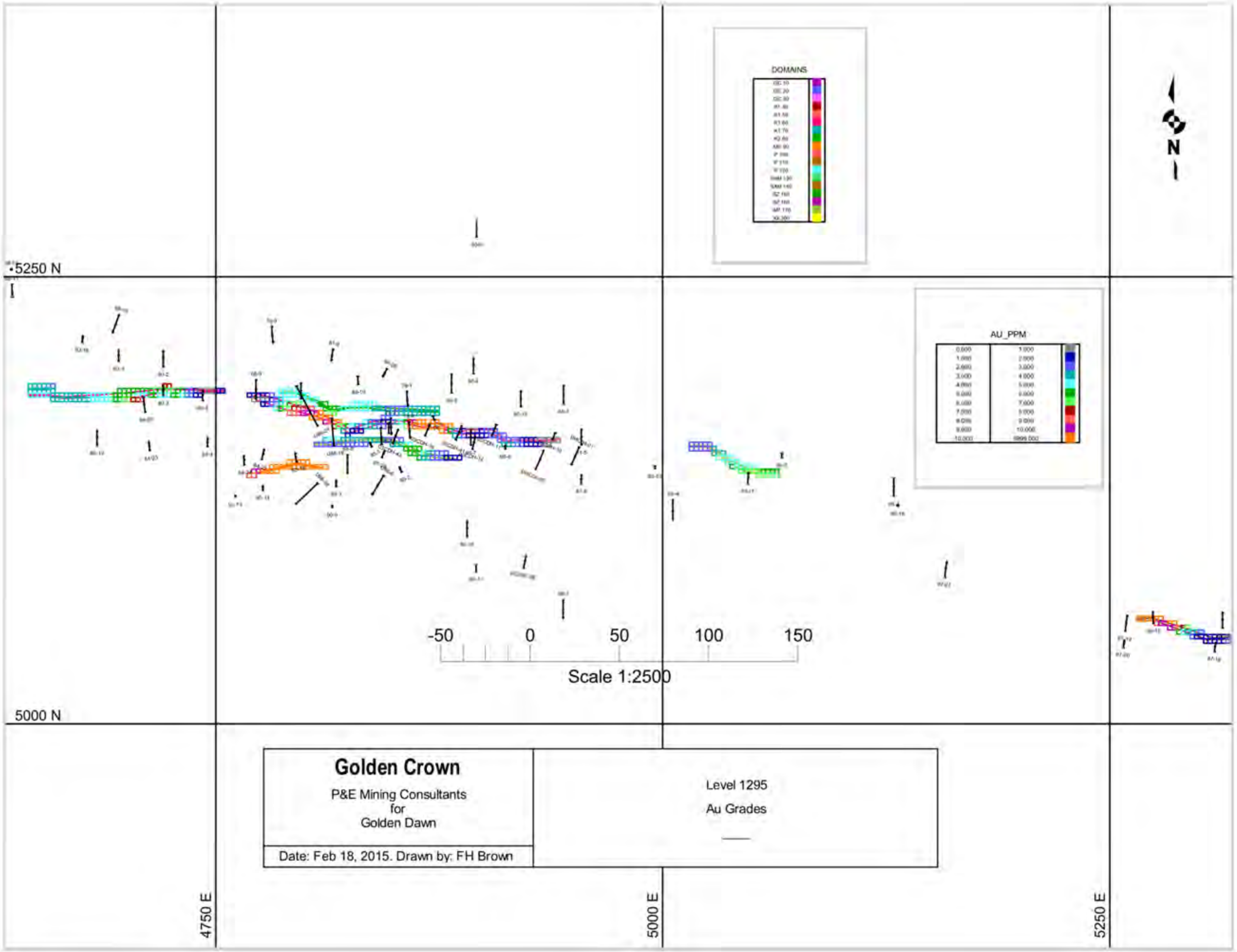
-25 0 25 50 75
Scale 1:1000
Golden Crown
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016, Drawn by: FHB
4816,250 E
Au Grades
View Looking East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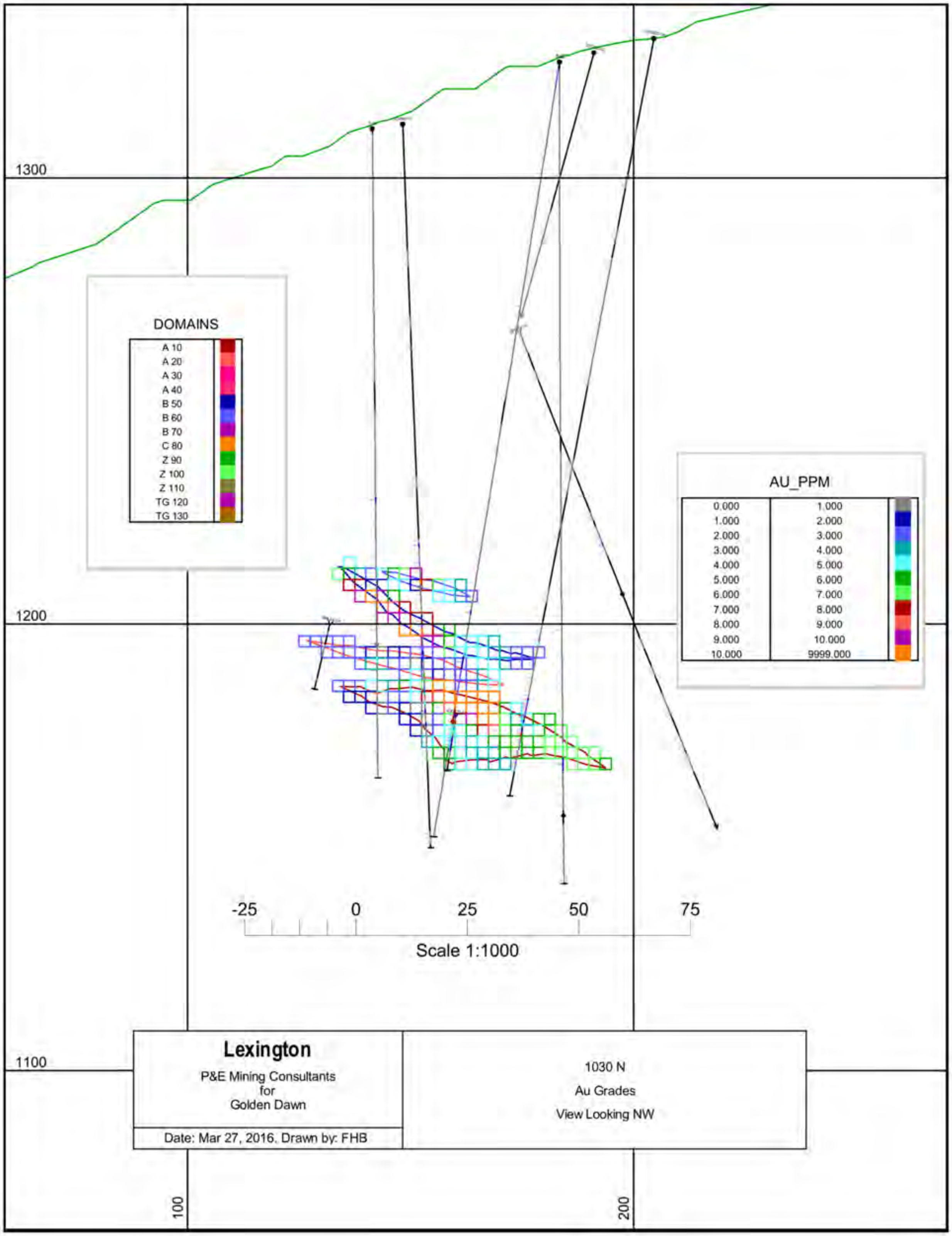
Golden Crown
P&E Mining Consultants
for
Golden Dawn
Date: Feb 18, 2015. Drawn by: FH Brown
Level 1295
Au Grades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TG 130
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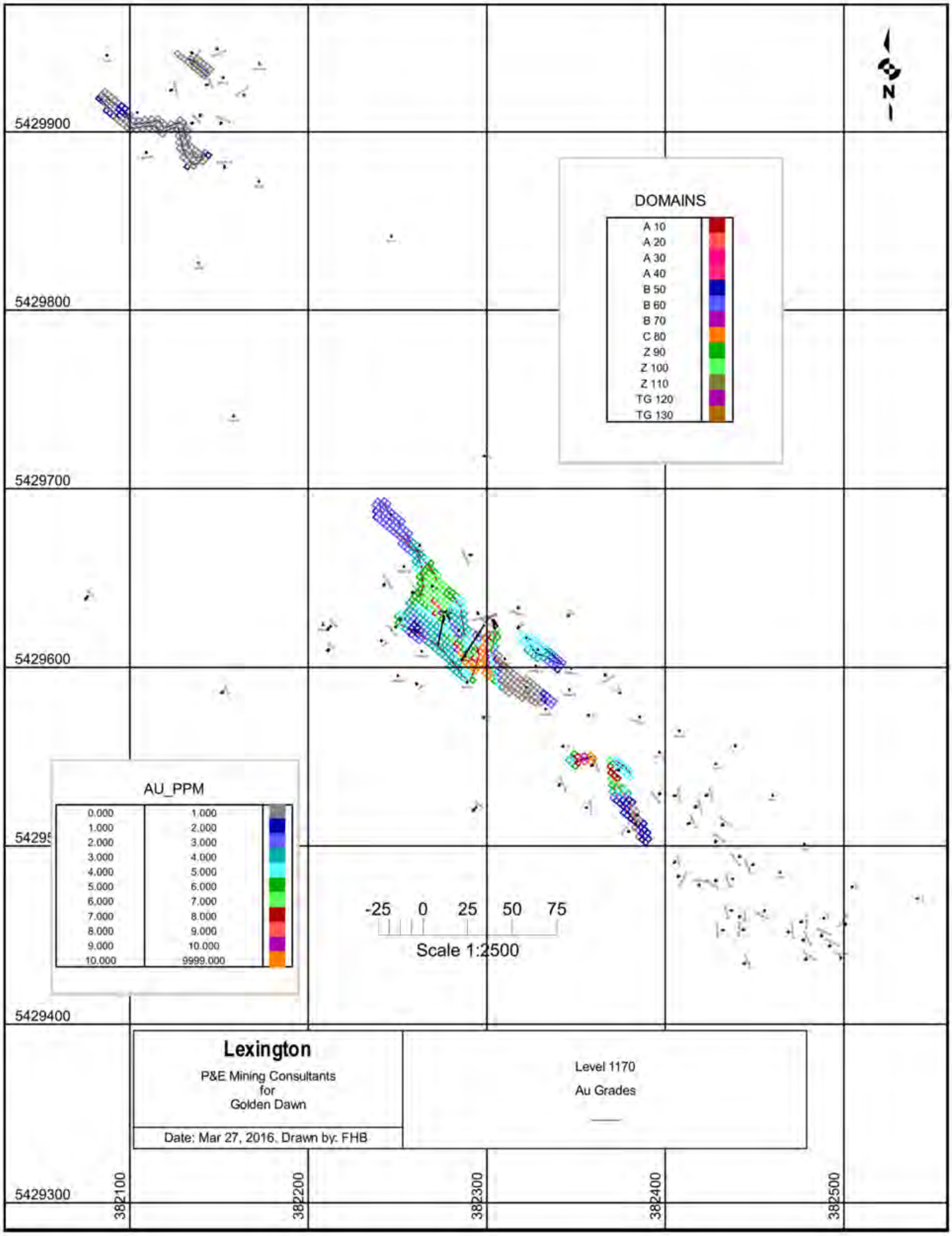
Lexington
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016. Drawn by: FHB
1030 N
Au Grades
View Looking NW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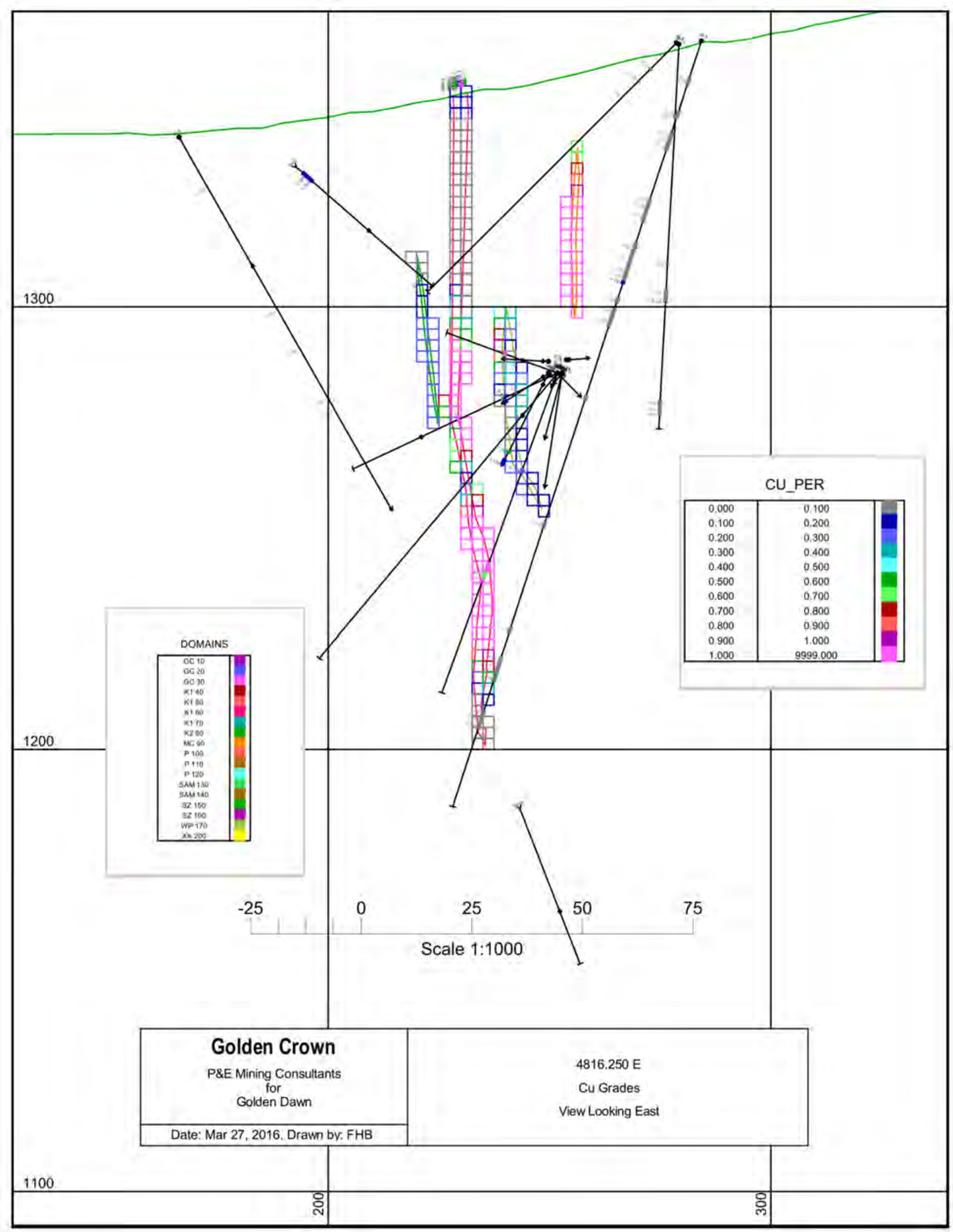
Scale 1:2500
Lexington
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016. Drawn by: FHB
Level 1170
Au Grades

APPENDIX IV. CU BLOCK MODEL CROSS SECTIONS AND PLANS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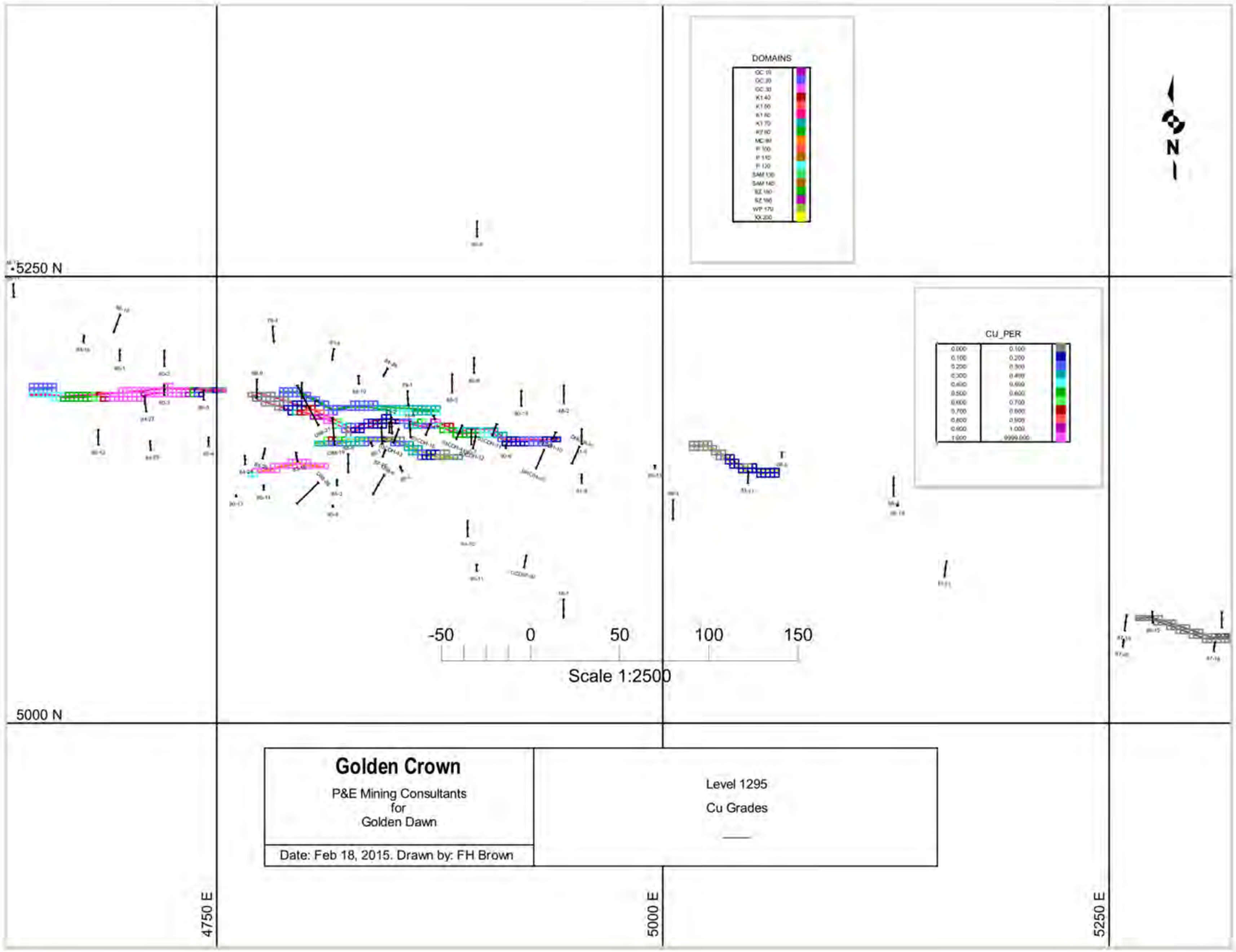
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016. Drawn by: FHB
4816.250 E
Cu Grades
View Looking East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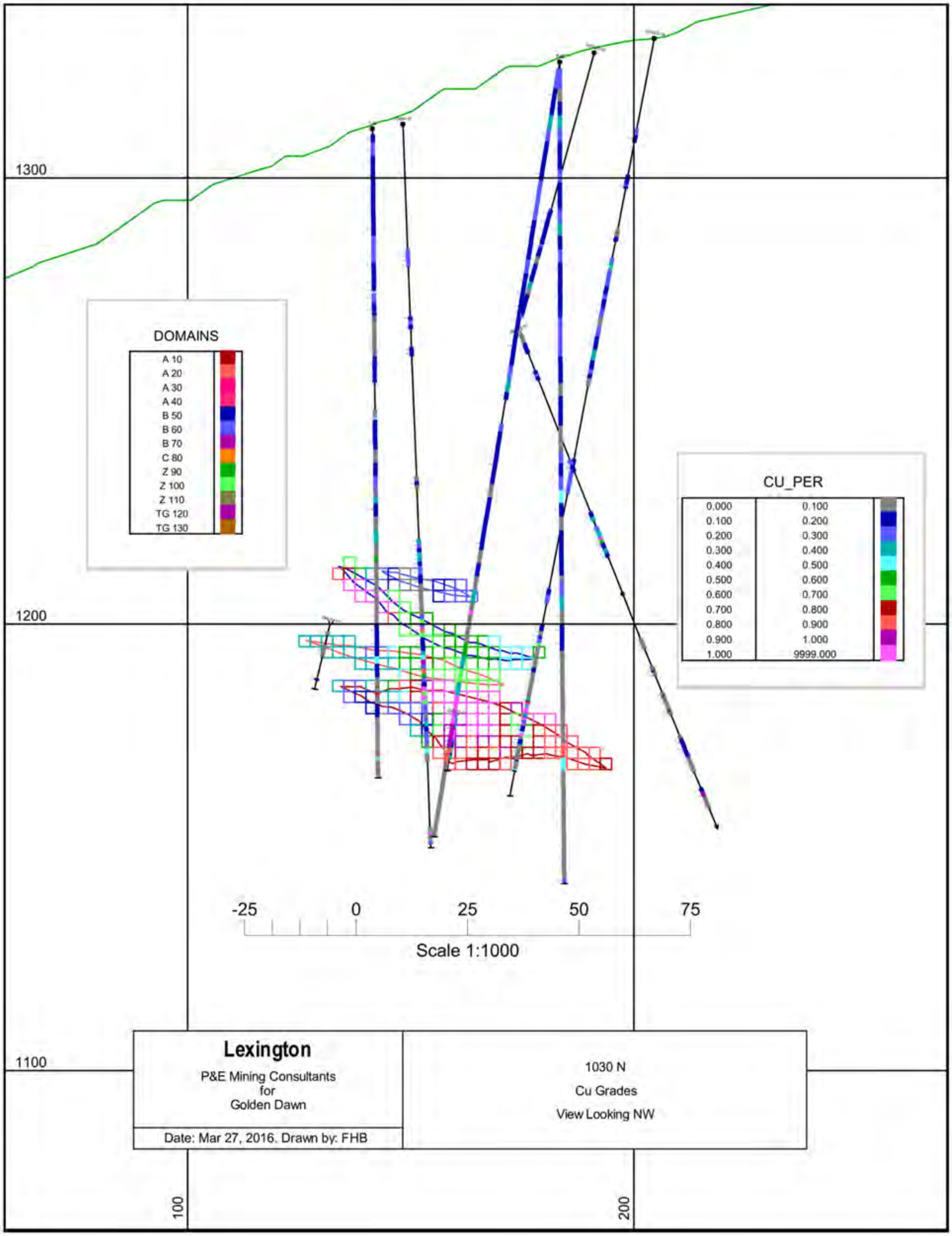
Golden Crown
P&E Mining Consultants
for
Golden Dawn
Date: Feb 18, 2015. Drawn by: FH Brown
Level 1295
Cu Grades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Z 110
TG 120
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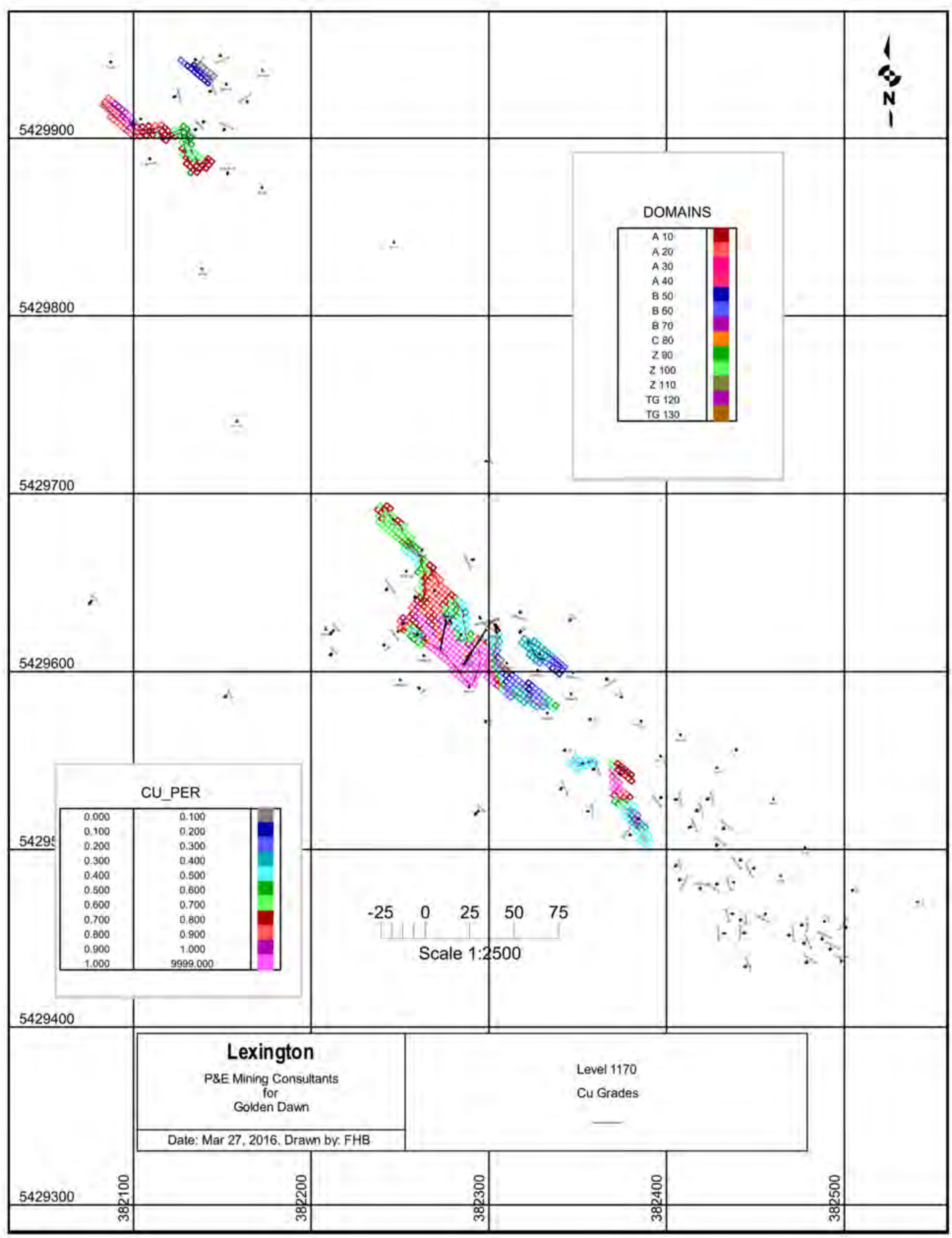
Lexington
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016. Drawn by: FHB
1030 N
Cu Grades
View Looking NW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Z 100
Z 110
TG 120
TG 130
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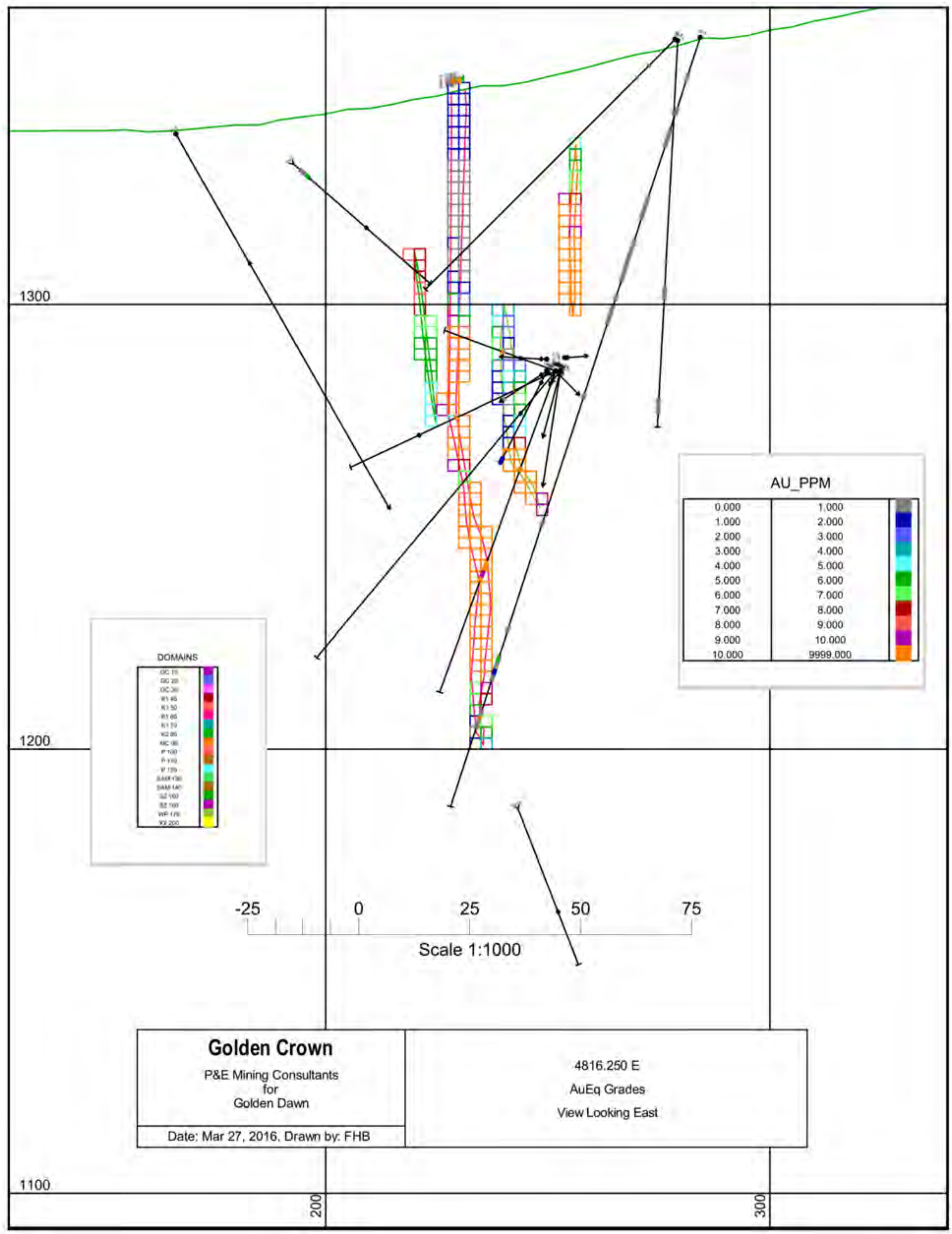
Scale 1:2500
Lexington
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016, Drawn by: FHB
Level 1170
Cu Grades

APPENDIX V. AUEQ BLOCK MODEL CROSS SECTIONS AND PLANS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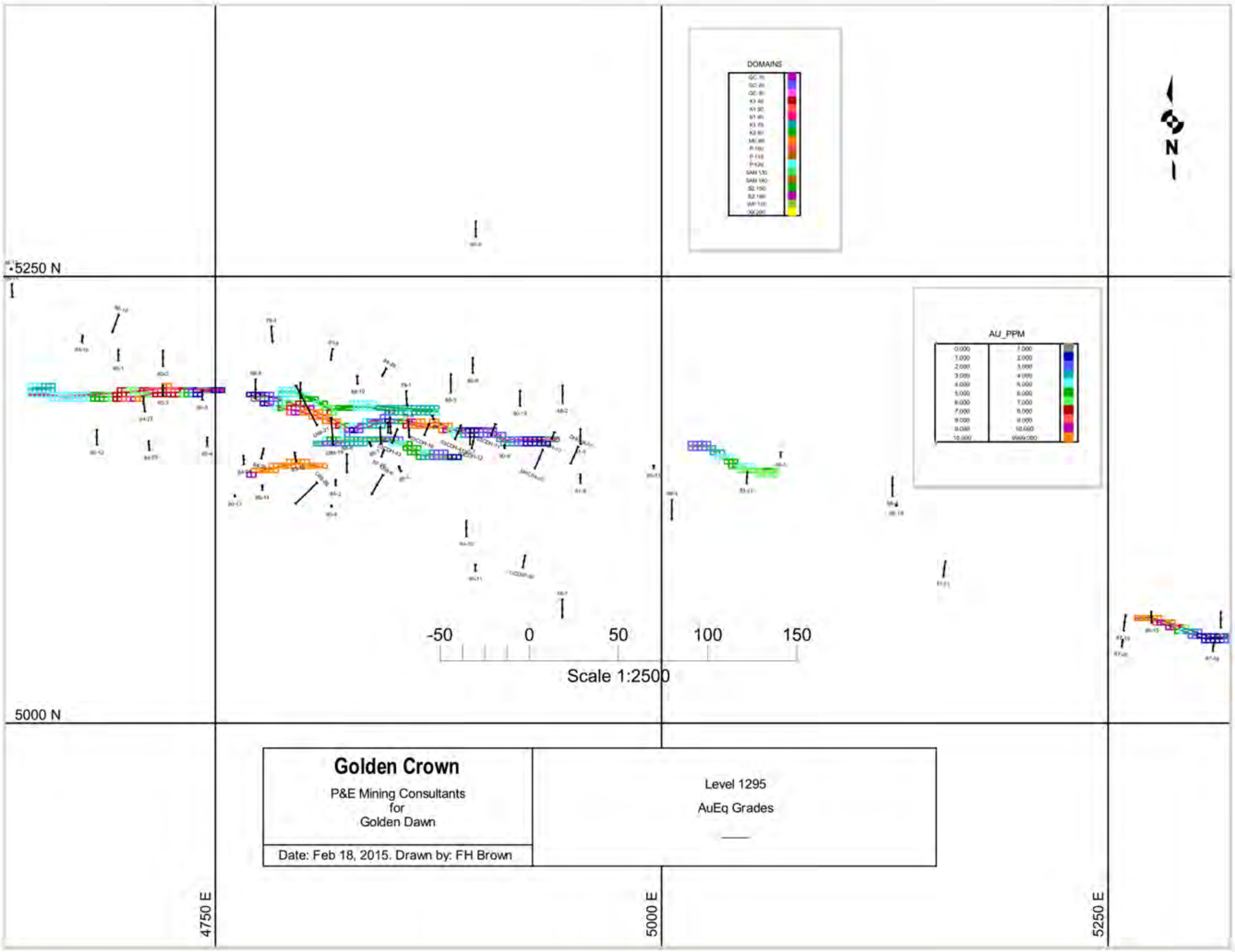
Golden Crown
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016, Drawn by: FHB
4816.250 E
AuEq Grades
View Looking East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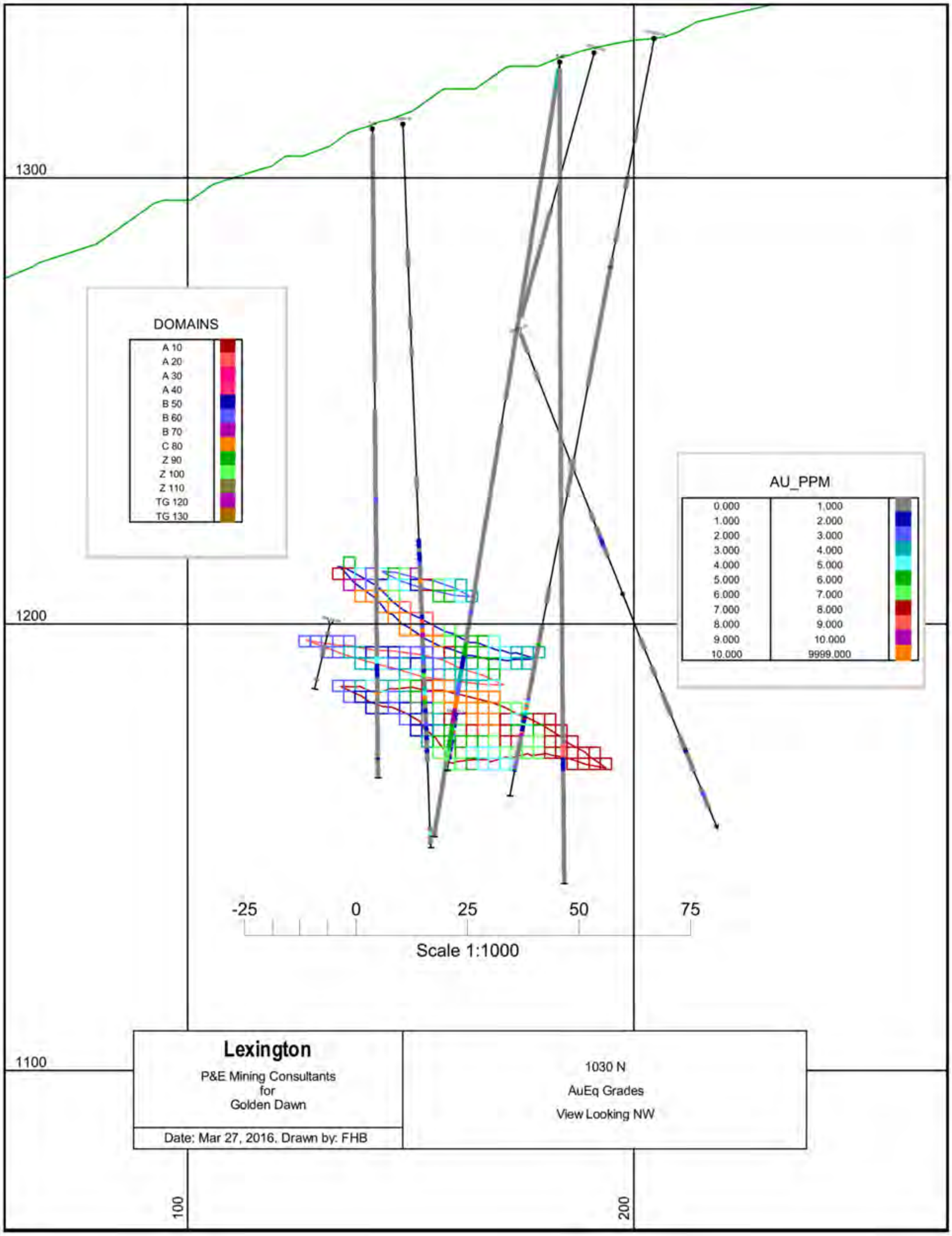
Golden Crown
P&E Mining Consultants
for
Golden Dawn
Date: Feb 18, 2015. Drawn by: FH Brown
Level 1295
AuEq Grades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TG 120
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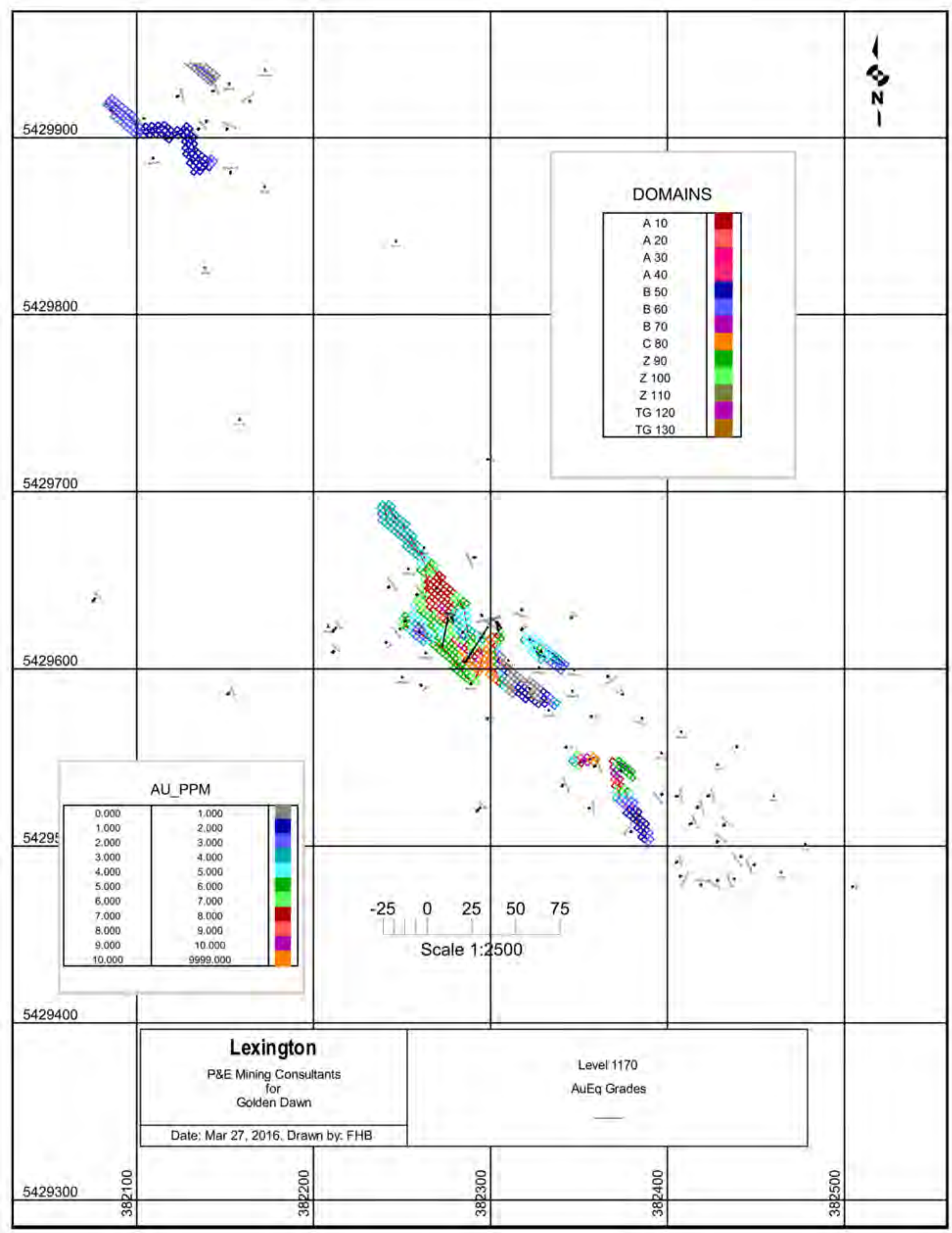
Lexington
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016. Drawn by: FHB
1030 N
AuEq Grades
View Looking NW



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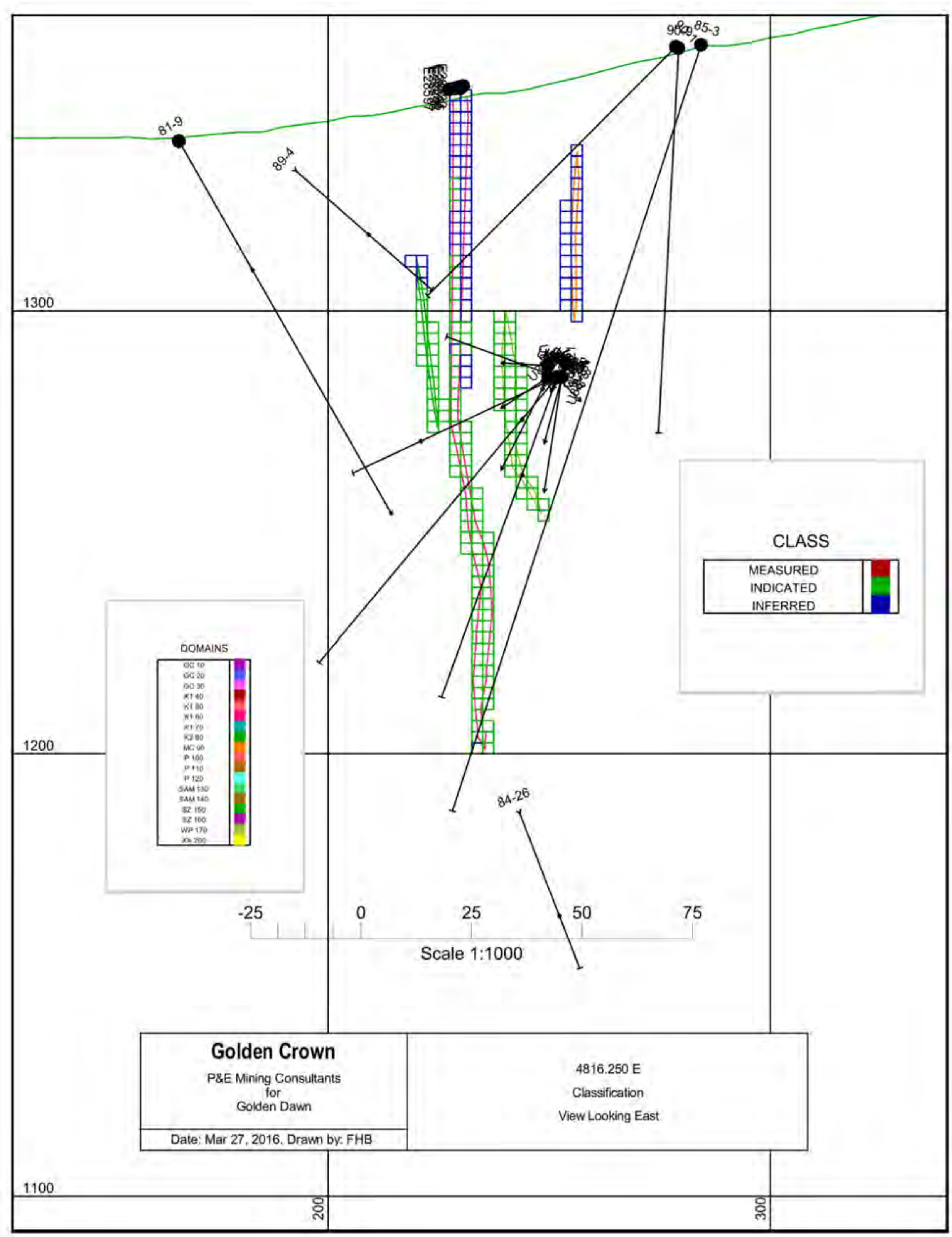
Scale 1:2500
Lexington
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016, Drawn by: FHB
Level 1170
AuEq Grades

APPENDIX VI. CLASSIFICATION BLOCK MODEL CROSS SECTIONS AND PLANS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INDICATED
INFERRED
DOMAINS
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50
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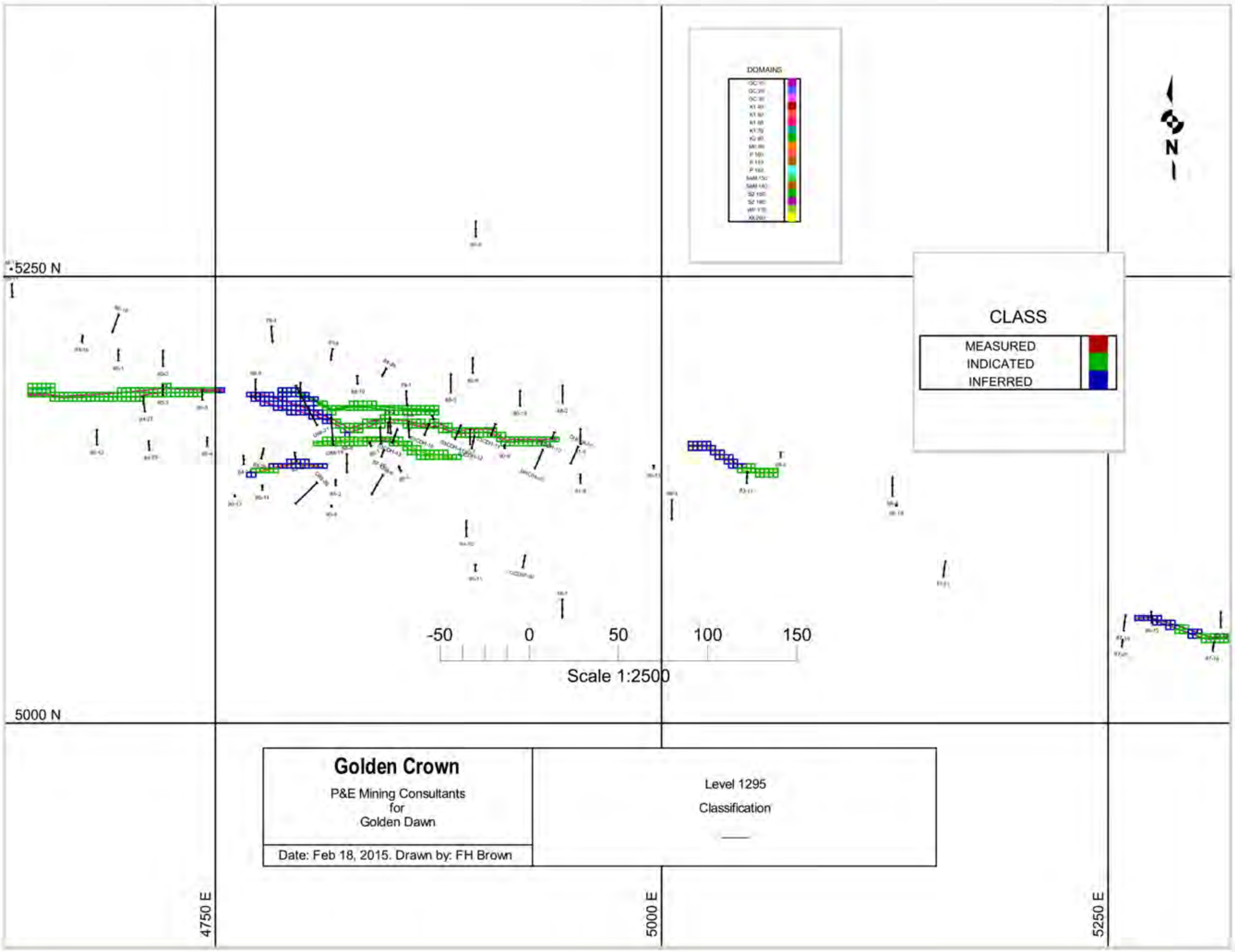
Golden Crown
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016. Drawn by: FHB
4816.250 E
Classification
View Looking East



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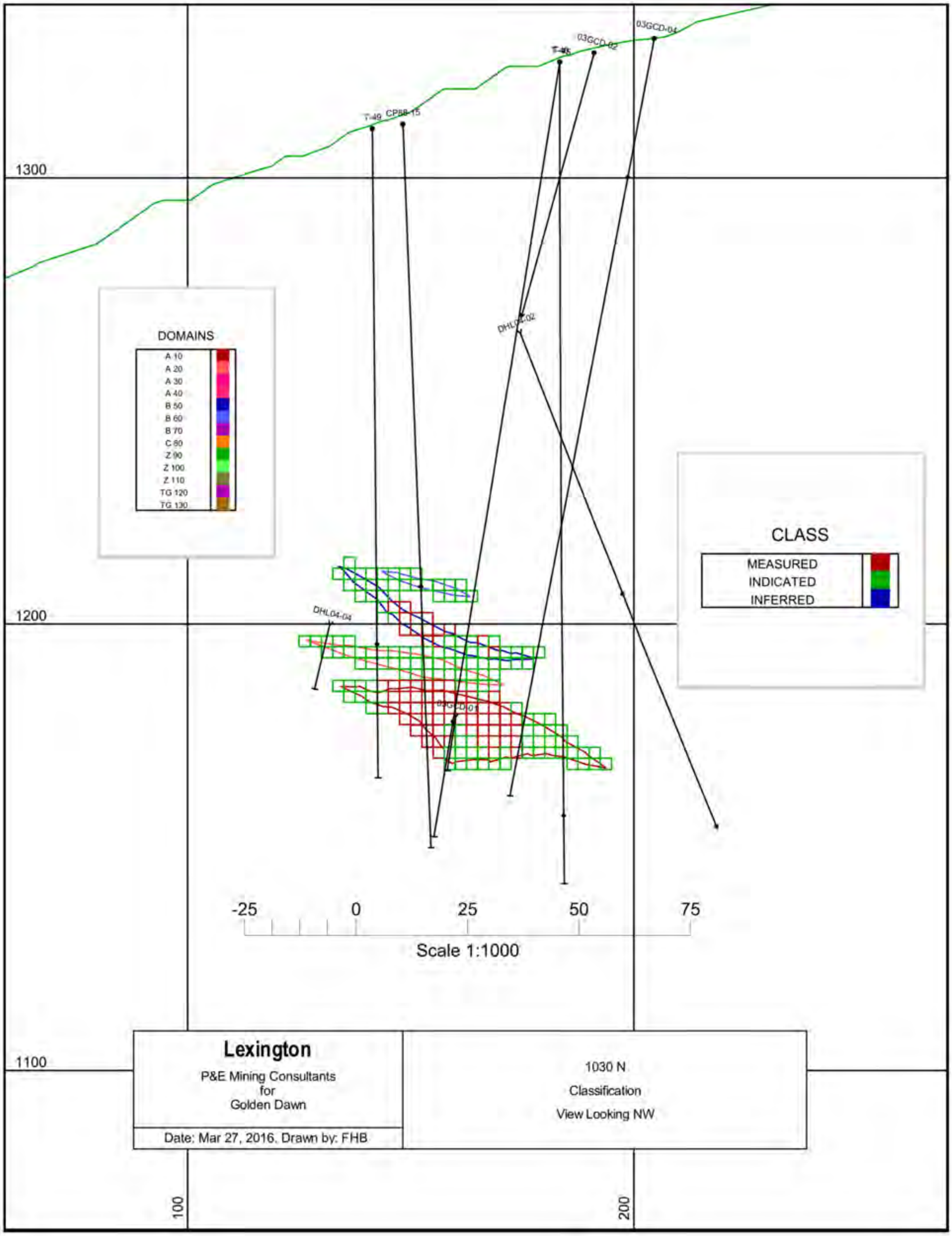
Golden Crown
P&E Mining Consultants
for
Golden Dawn
Date: Feb 18, 2015. Drawn by: FH Brown
Level 1295
Classification



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B 70
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Z 110
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TG 130
CLASS
MEASURED
INDICATED
INFERRED
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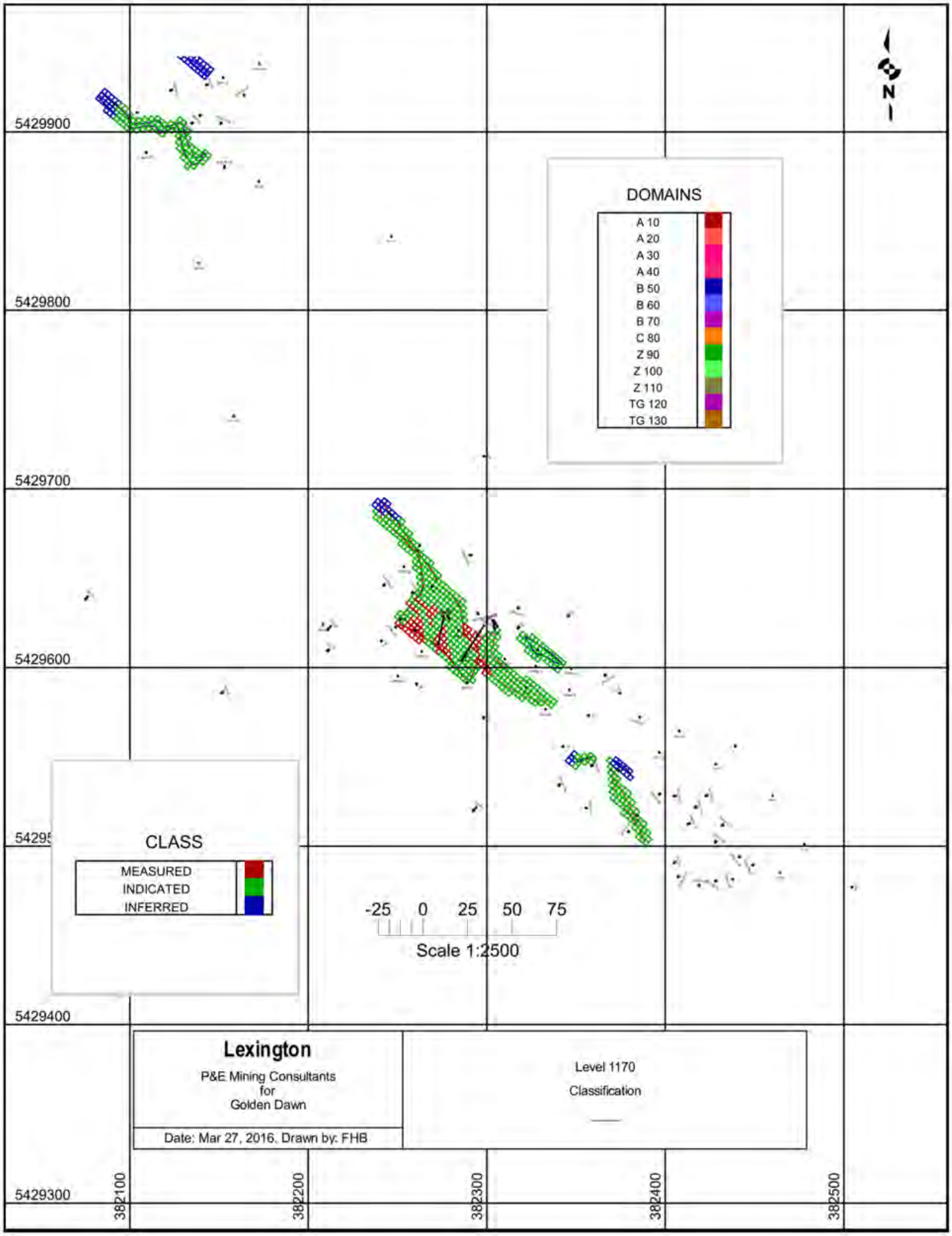
Lexington
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016. Drawn by: FHB
1030 N
Classification
View Looking NW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B 70
C 80
Z 90
Z 100
Z 110
TG 120
TG 130
CLASS
MEASURED
INDICATED
INFERRED
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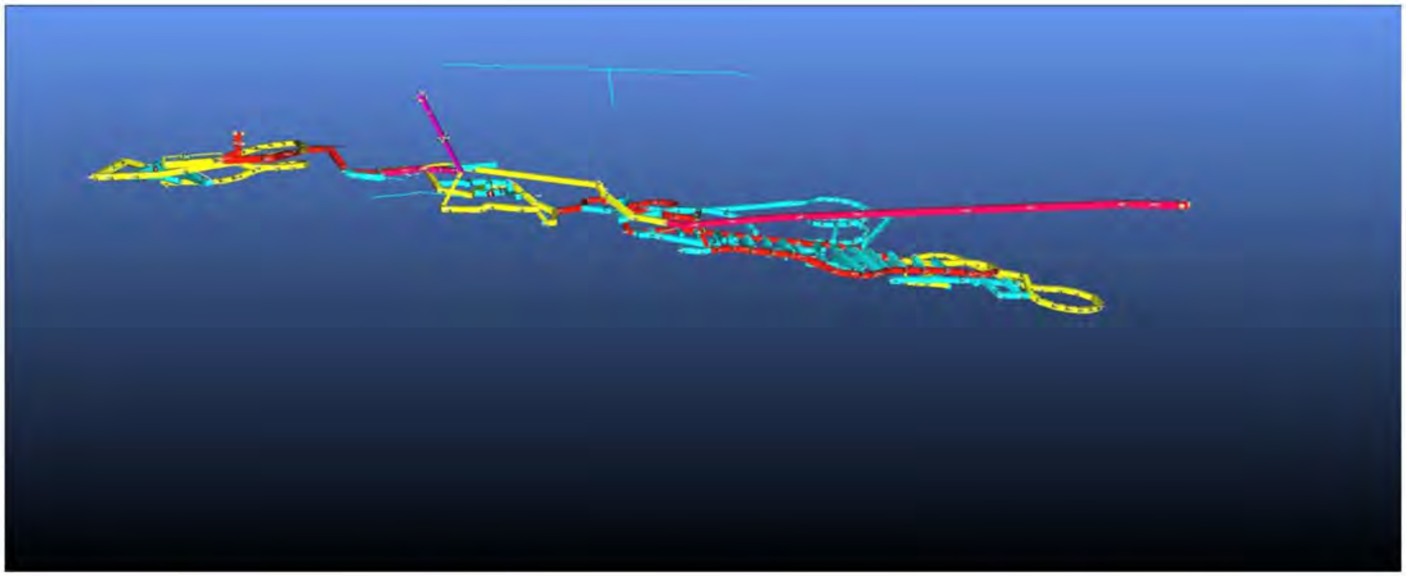
Scale 1:2500
Lexington
P&E Mining Consultants
for
Golden Dawn
Date: Mar 27, 2016, Drawn by: FHB
Level 1170
Classification

APPENDIX VII. VENTILATION SIMULATION FOR LEXINGTON MINE

VENTILATION SIMULATION FOR LEXINGTON MINE

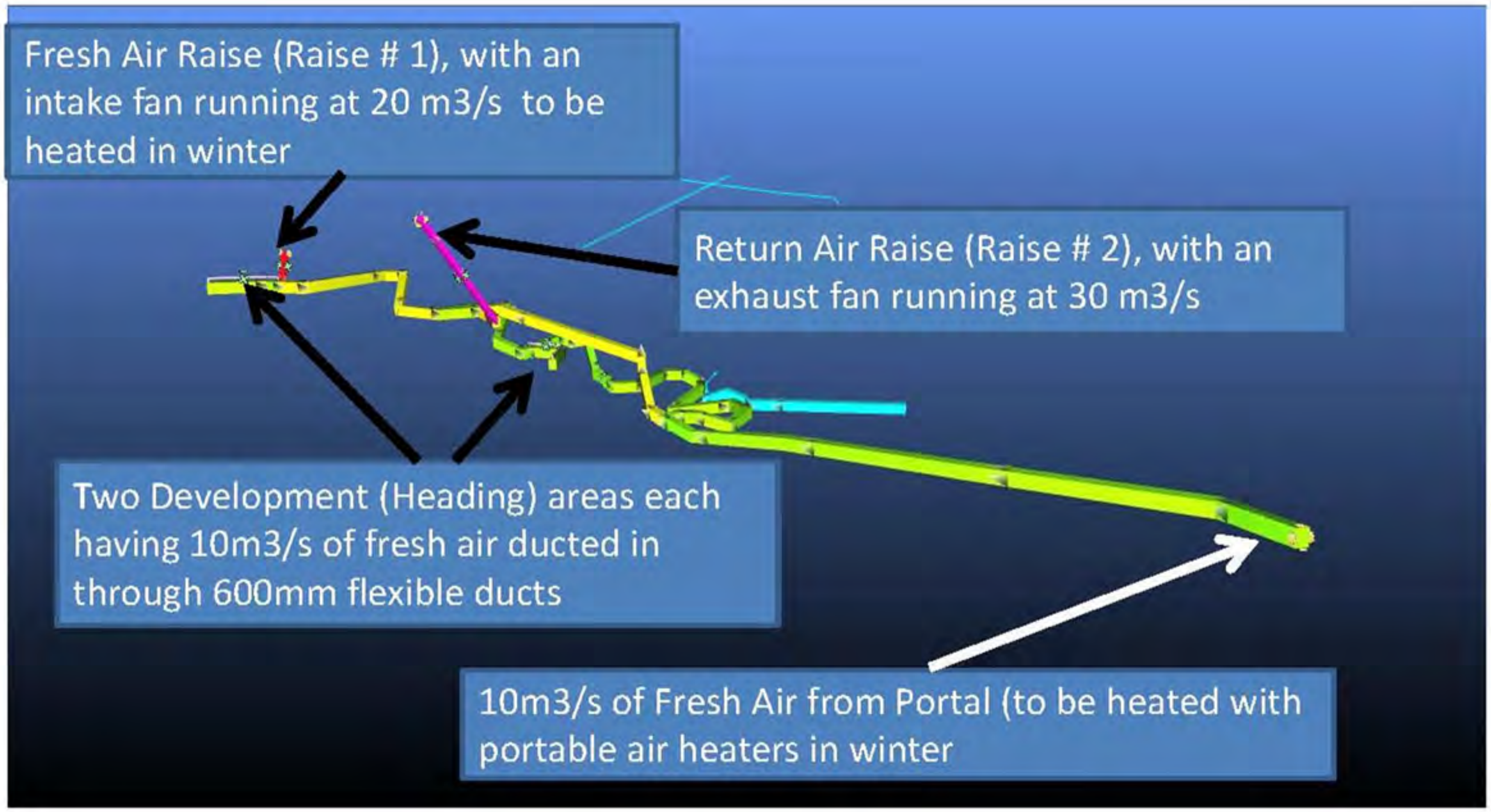


P&E Mining Consultants Inc., Brampton, ON, Canada
April 29, 2016

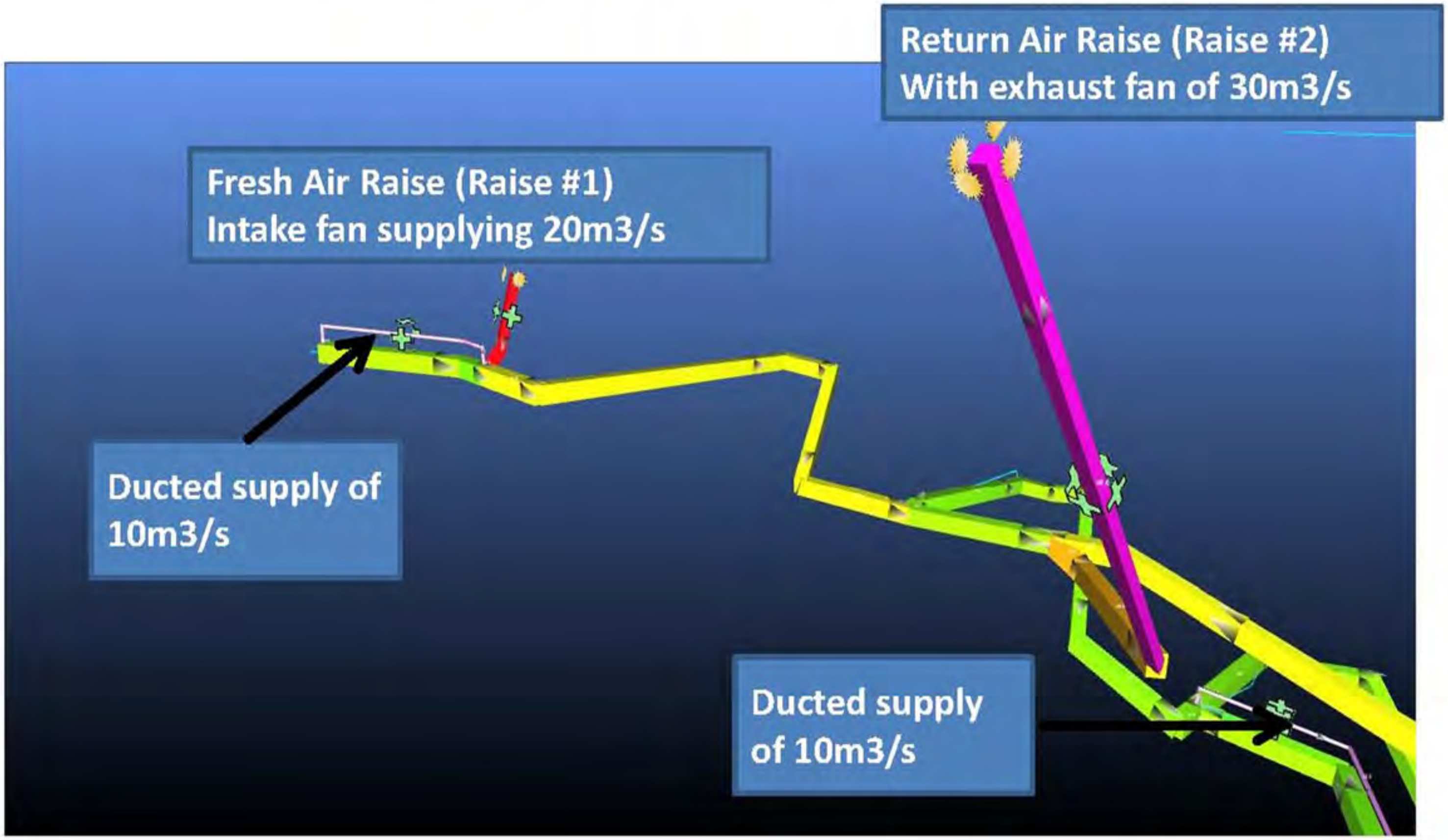
ASSUMPTIONS & GENERAL SUMMARY

- Drifts are 2.75m (w) x 3.2m (h)
- Ramps are 3.0m (w) x 3.5m (h)
- Raises are 1.8m x 1.8m
- **Start of Mining:**
  - Two working areas ventilated by auxiliary fan (10m3/s) and flexible ducting of 600mm dia.
  - Return Air Raise (Raise #2) exhaust fan is assumed to be running at 30m3/s, allowing 10 m3/s of fresh air through the portal
  - The Fresh Air Raise (Raise #1) to have a 20 m3/s intake fan, operating at 30 Pa, and fan shaft power of 1.0 kW (assuming 80% efficiency)
- **Life of Mine condition simulation**
  - Total 3 working areas requiring 10m3/s assumed as shown in the slides
  - The RAR Exhaust Fan then needs to operate at 50 M3/S, and required power input is 50kW (assuming 80% efficiency

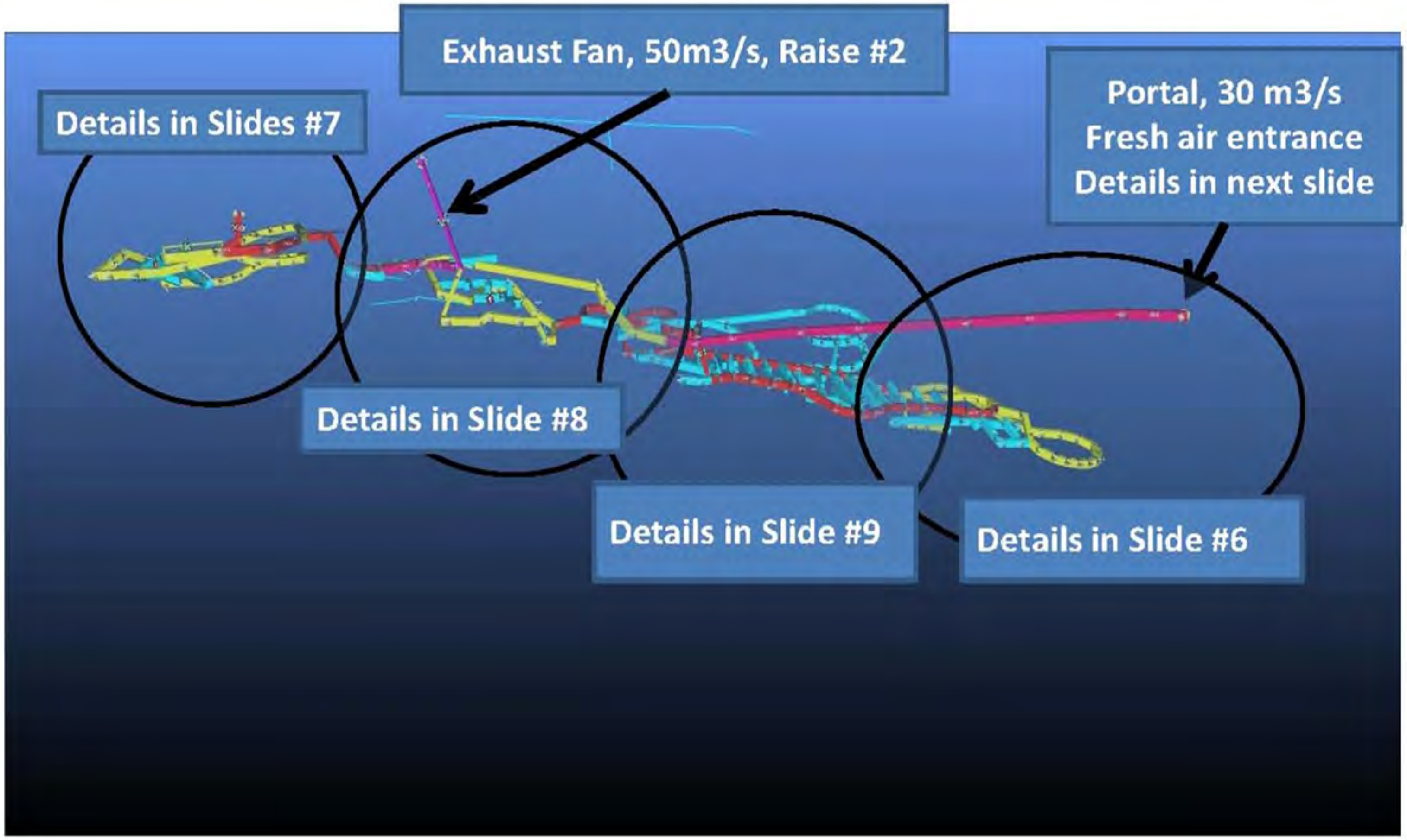
As-Built Condition Simulation



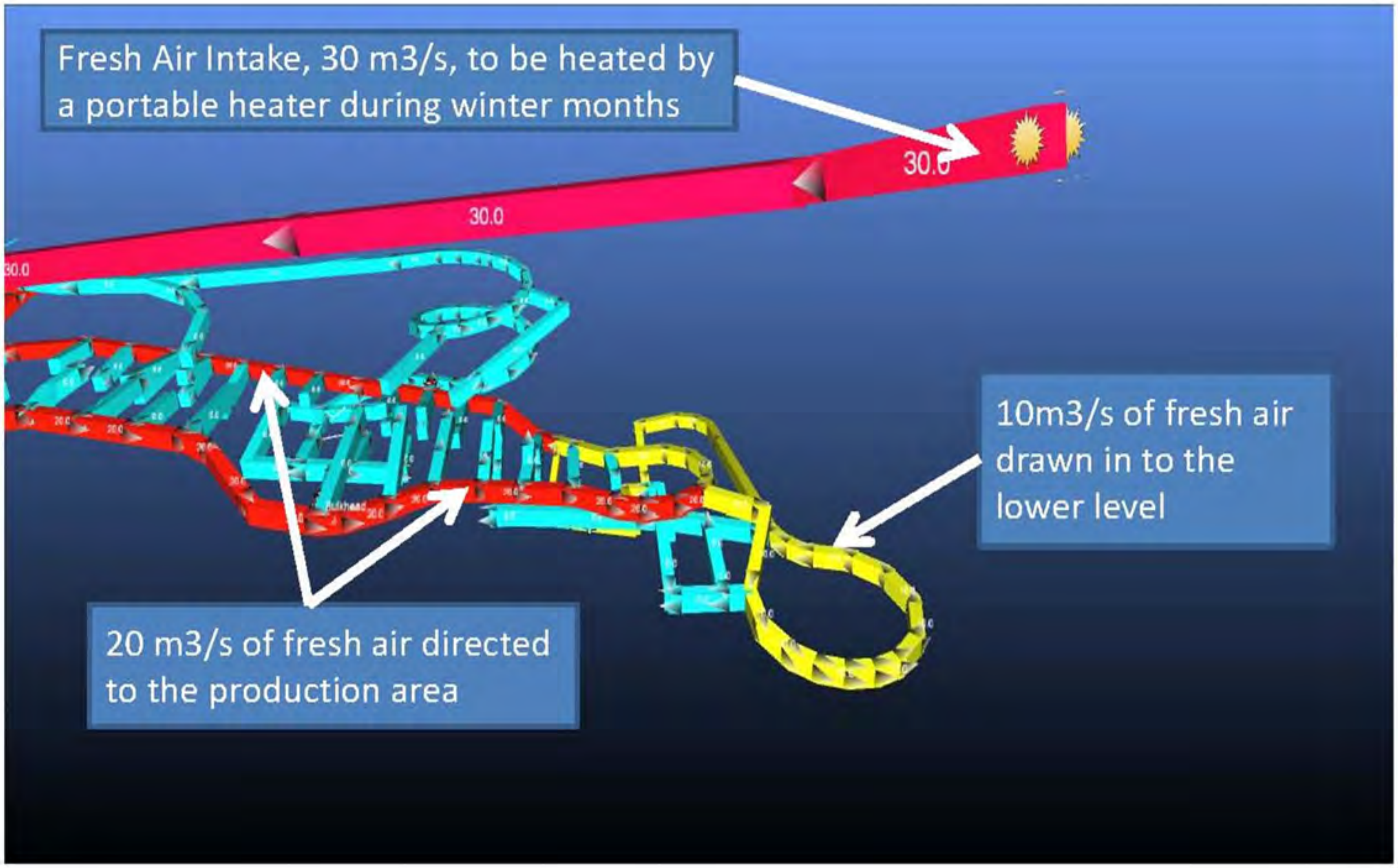
FRESH AIR RAISE #1
& TWO(2) HEADINGS



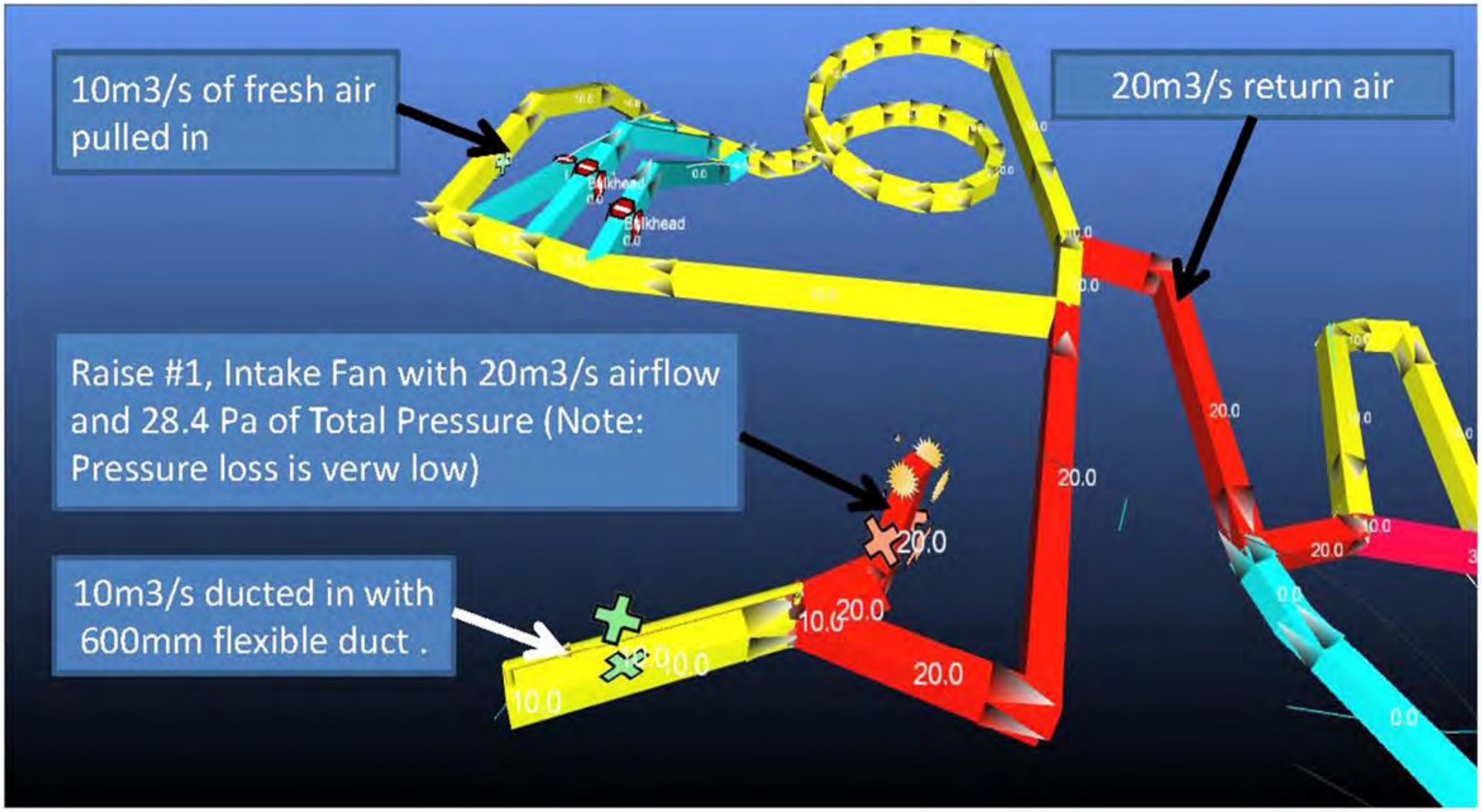
LIFE OF MINE VENTILATION PLAN



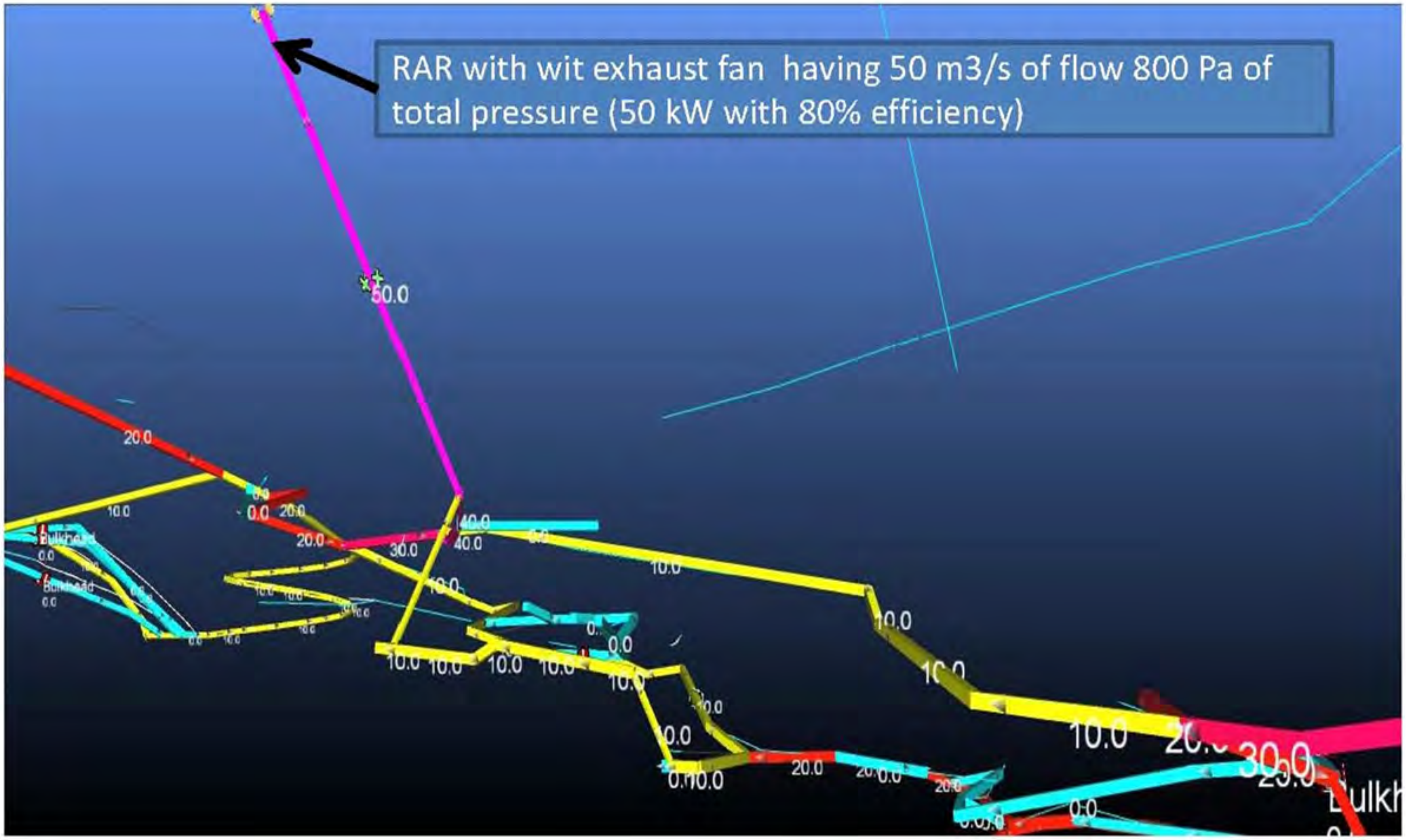
Portal Area Plan



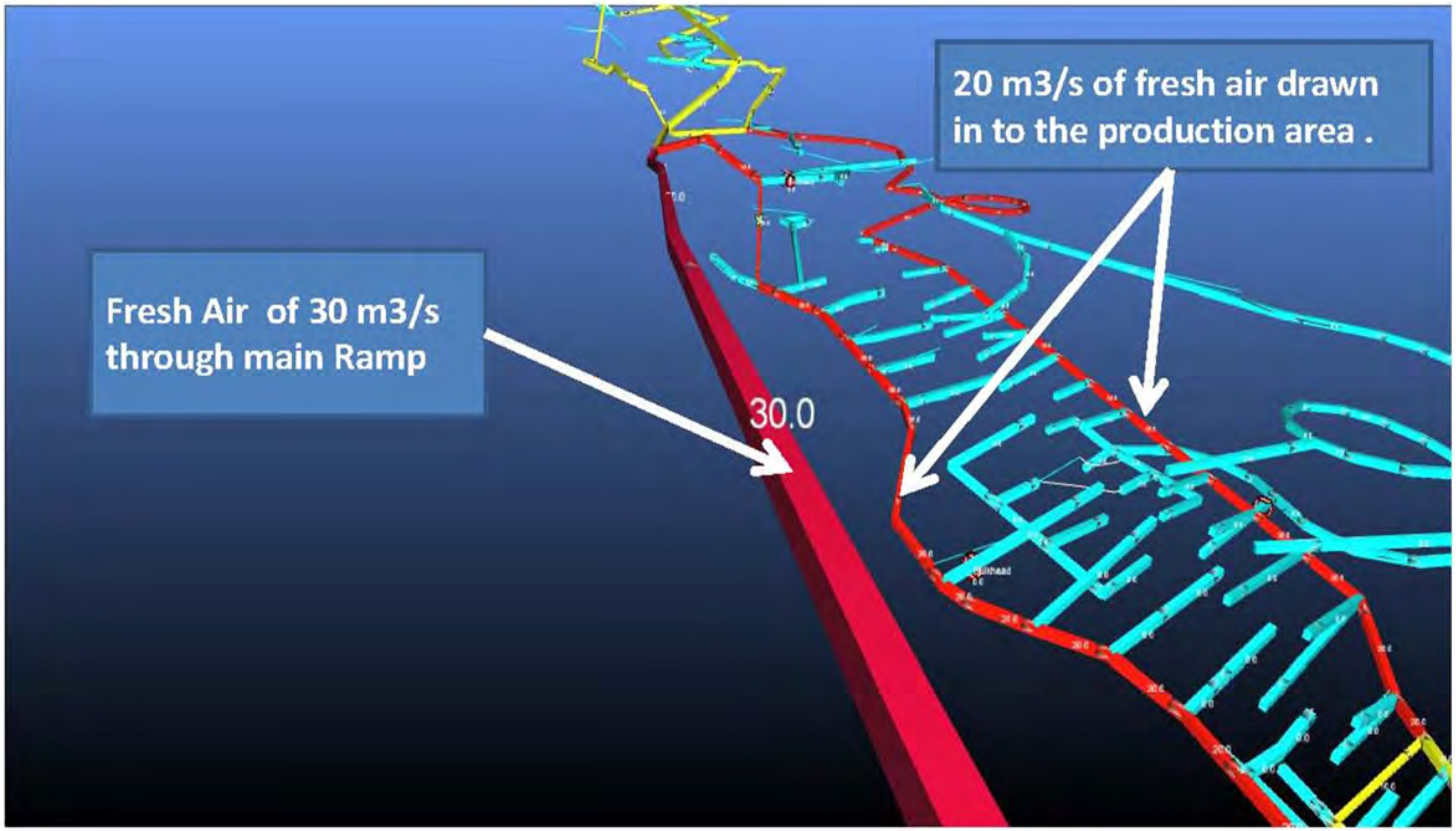
WEST AREA:
Raise #1 (FAR) with Intake Fan



RAR AND TO RETURN AIR FLOW TO EXHAUST



MAIN PRODUCTION AREA VENTILATION

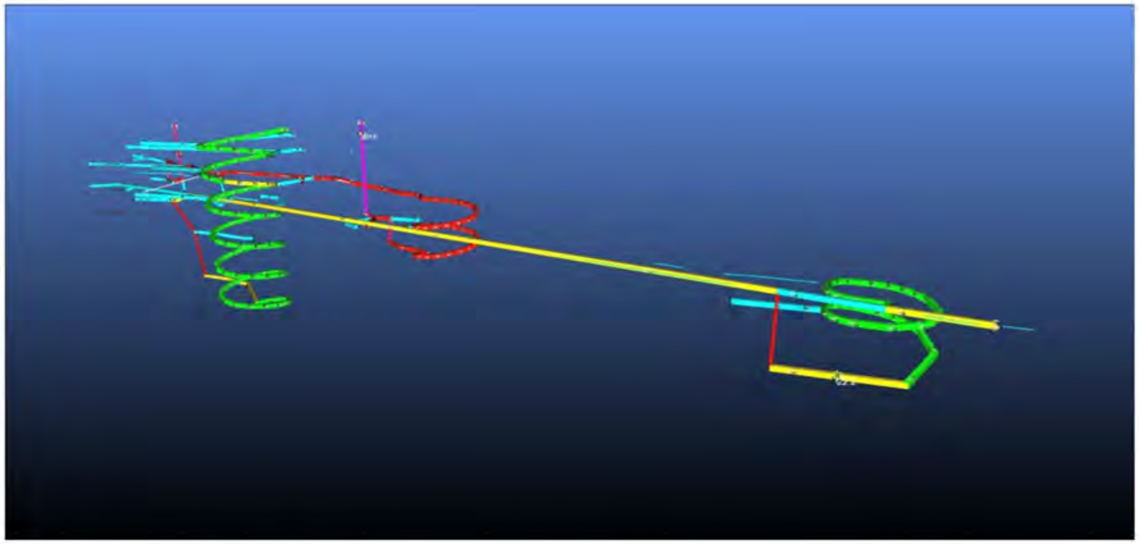


CONCLUSIONS

- Airflow requirements:
  - Start of mine: 30m3/s
  - Life of Mine: 50 m3/s
- Fans and Accessories Required:
  - At Raise #1, Fresh Air Intake Fan with operating point of 20 m3/s and 30 Pa, (Power requirement is low approximately 1 kW), a similar fan to Golden Crown with 5kW motor could be used
  - Air Heaters at Raise #1, and at Portal (for both Start of Mine and LOM conditions
  - At Raise #2, Exhaust Fan with operating point of 50 m3/s and 800 Pa, with 50kW motor
    - to be equipped with VFD, so same fan could be used during start up and also for LOM operation.
  - Three (3) 10m3/s, 30kW auxiliary fans for LOM condition and 2 such fans during start of mine condition
  - Flexible Ducting – 600mm dia, Length to be firmed up

APPENDIX VIII. VENTILATION SIMULATION FOR GOLDEN CROWN MINE

VENTILATION SIMULATION FOR GOLDEN CROWN MINE

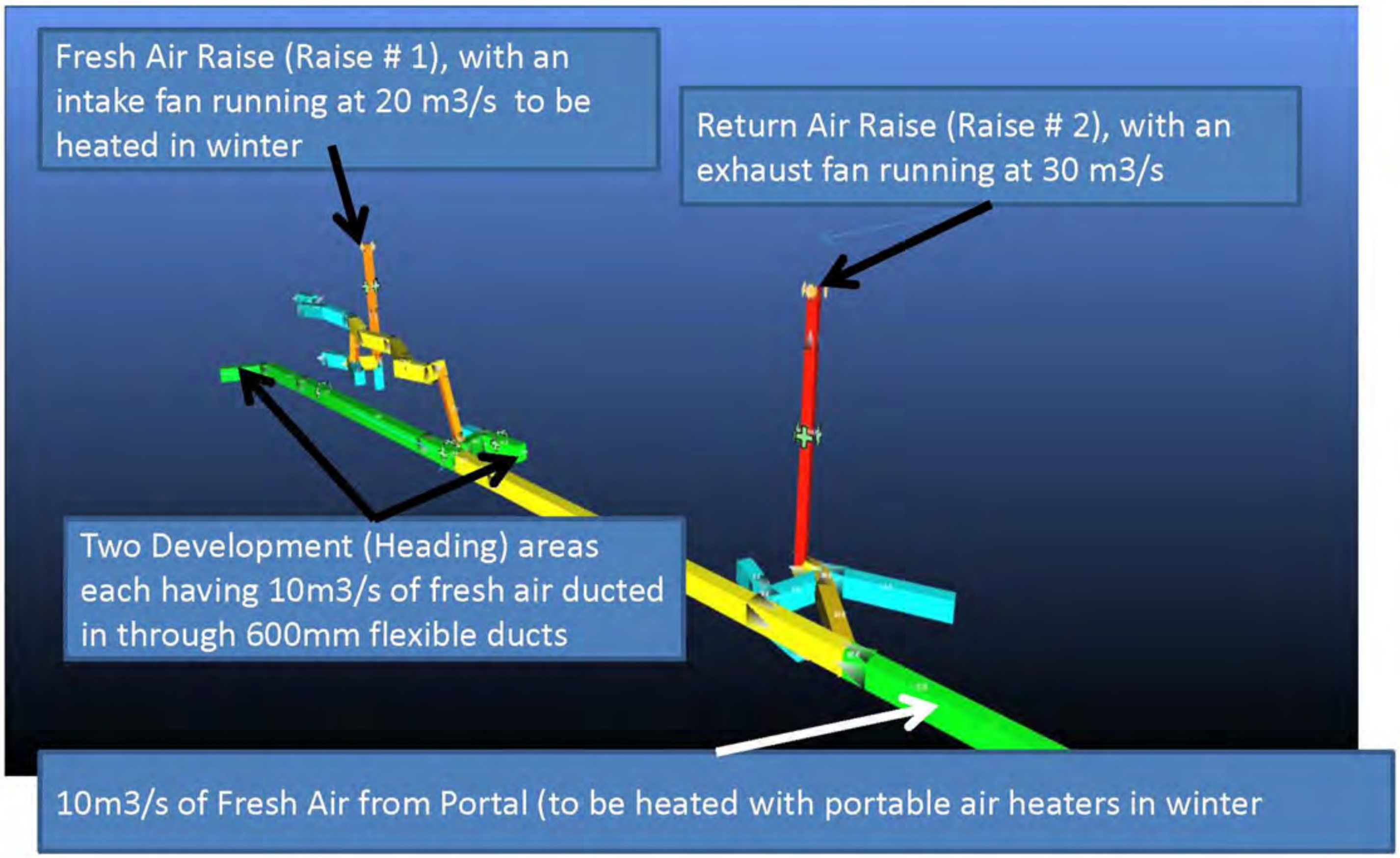


P&E Mining Consultants Inc., Brampton, ON, Canada
April 28, 2016

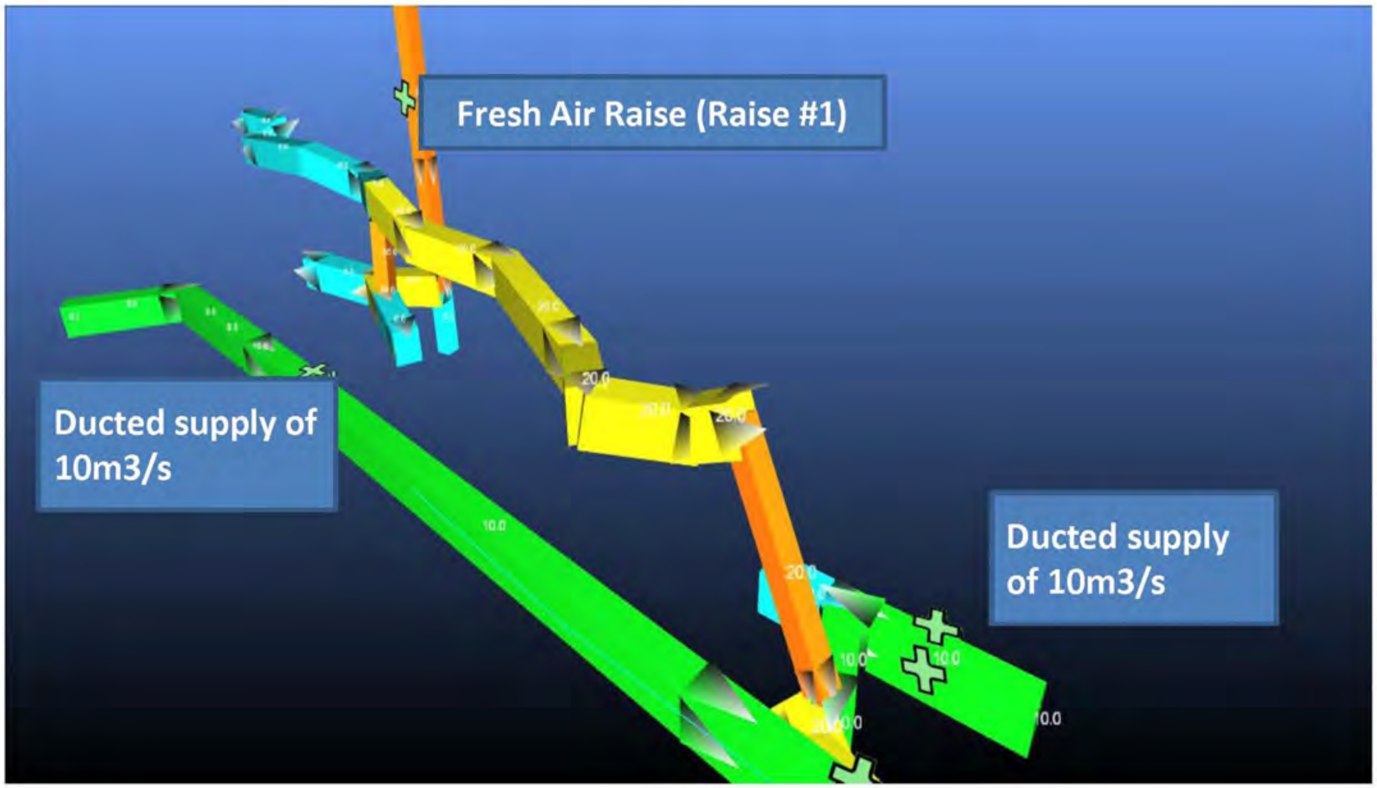
ASSUMPTIONS & GENERAL SUMMARY

- Drifts are 2.7m (w) x 3.2m (h)
- Ramps are 3.0m (w) x 3.5m (h)
- Raises are 1.8m x 1.8m
- **Start of Mining:**
  - Two working areas ventilated by auxiliary fan (10m3/s) and flexible ducting of 600mm dia.
  - Return Air Raise (Raise #2) exhaust fan is assumed to be running at 30m3/s, allowing 10 m3/s of fresh air through the portal
  - The Fresh Air Raise (Raise #1) to have a 20 m3/s intake fan, operating at 142 Pa, and fan shaft power of 3.75 kW (assuming 80% efficiency)
- **Life of Mine condition simulation**
  - Total 3 working areas requiring 10m3/s assumed as shown in the slides
  - The RAR Exhaust Fan then needs to operate at 40 M3/S, and required power input is 21.3kW (assuming 80% efficiency

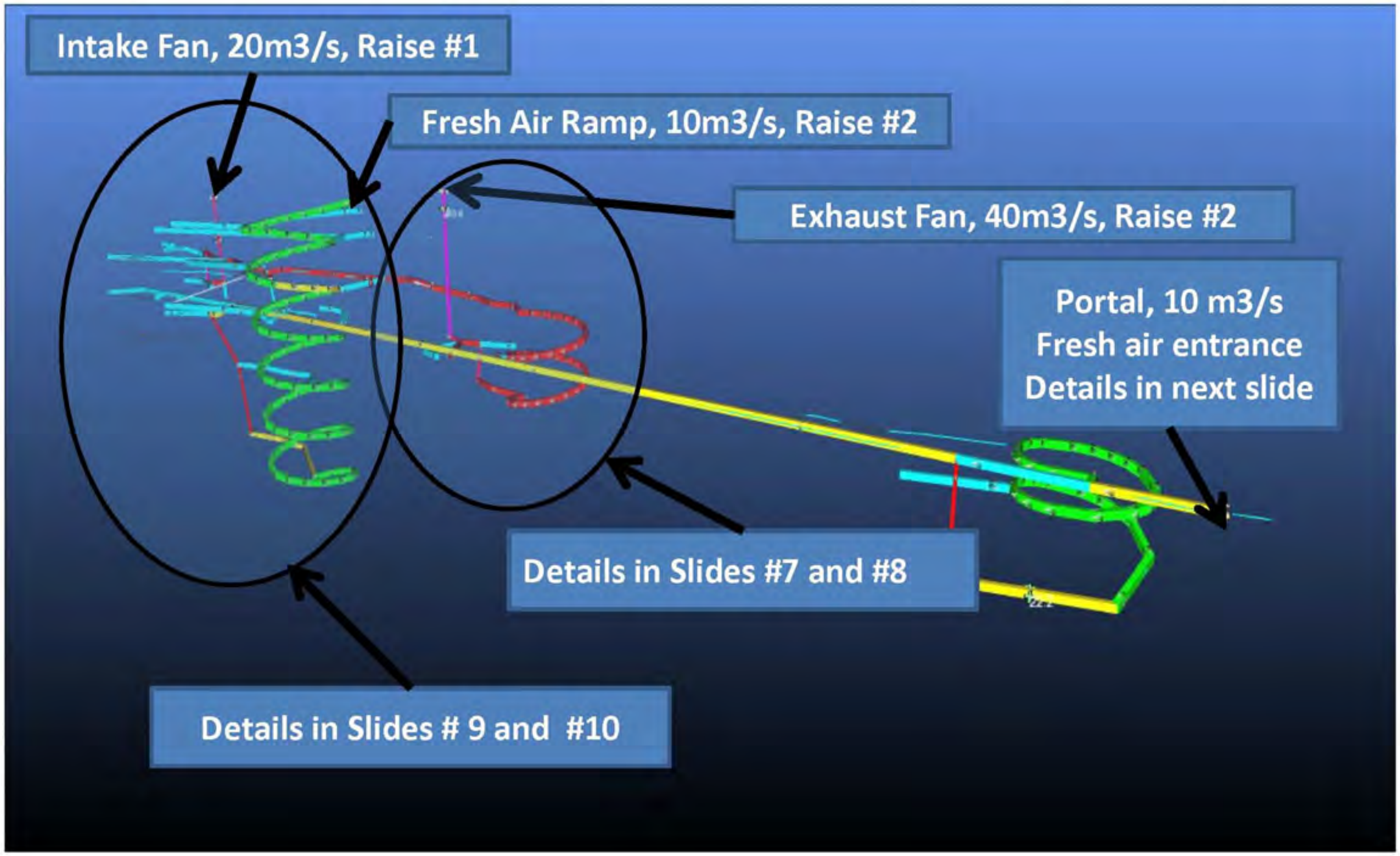
As-Built Condition Simulation



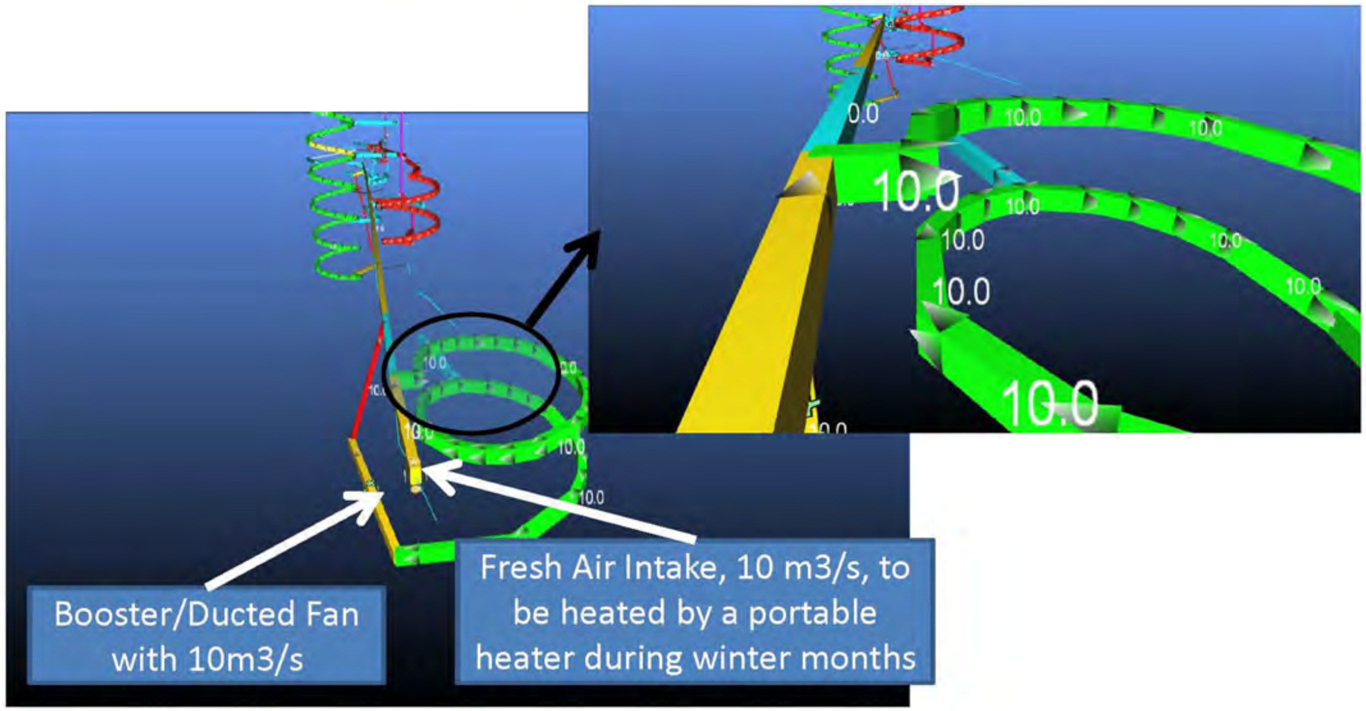
FRESH AIR RAISE #1
& TWO(2) HEADINGS



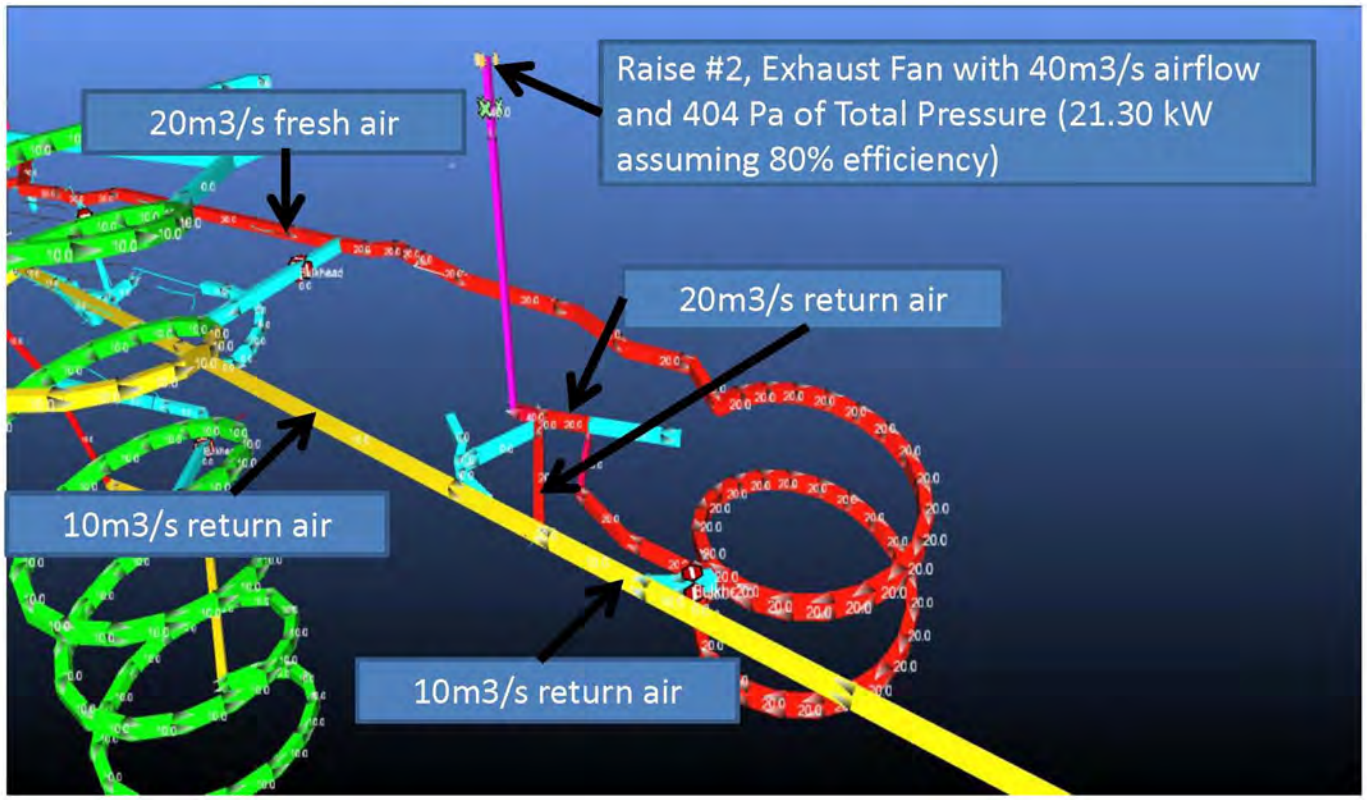
LIFE OF MINE VENTILATION PLAN



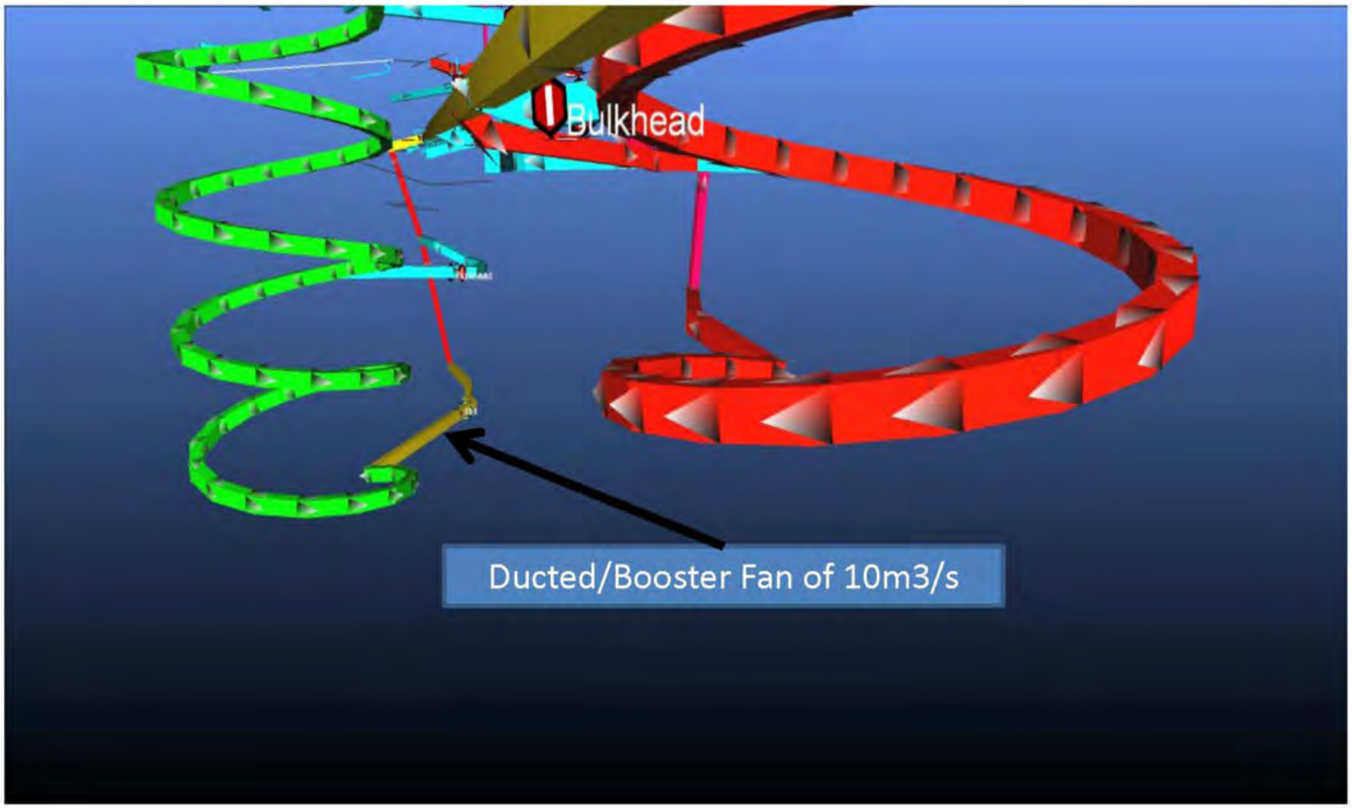
Portal Area Plan



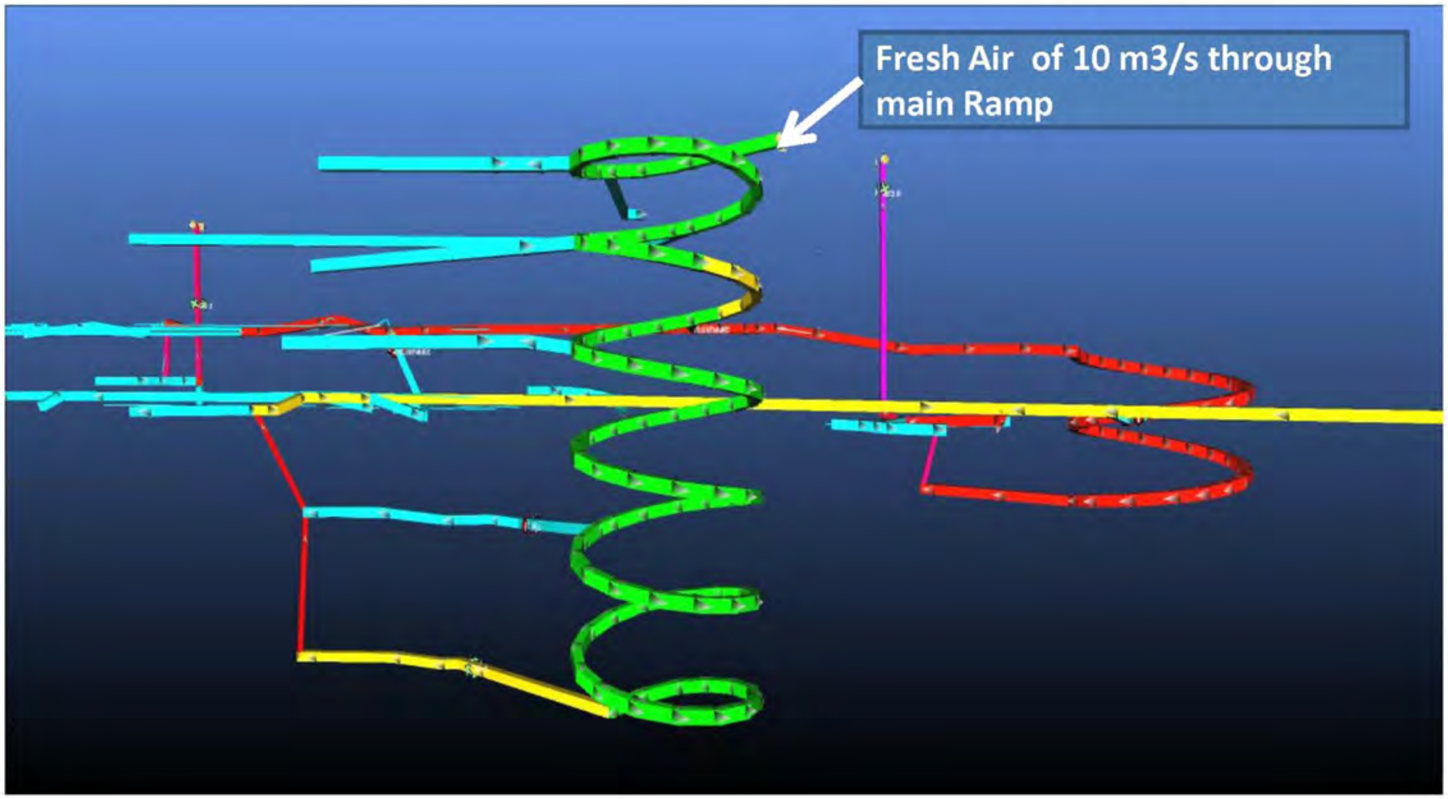
CENTRAL AREA:
Raise #2 with Exhaust Fan



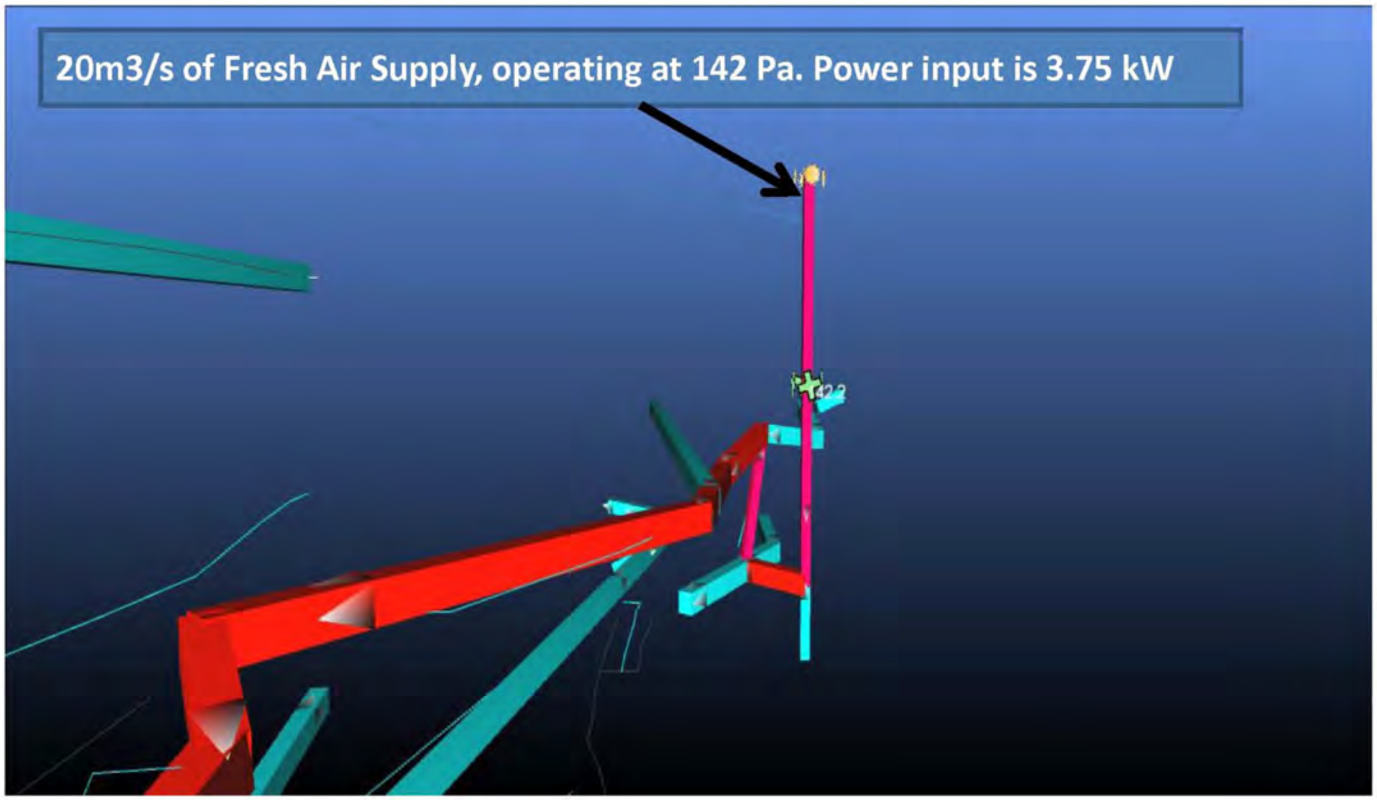
RAMP CONNECTIONS TO RETURN AREA



MAIN RAMP AREA



RAISE #1 AREA
(Supply of 20m3/s Fresh Air)



CONCLUSIONS

- Airflow requirements:
  - Start of mine: 30m3/s
  - Life of Mine: 40 m3/s
- Fans and Accessories Required:
  - At Raise #1, Fresh Air Intake Fan with operating point of 20 m3/s and 150 Pa, with 5kW motor
  - Air Heaters at Raise #1, Fresh Air Ramp (LOM), and at Portal (for both Start of Mine and LOM conditions
  - At Raise #2, Exhaust Fan with operating point of 40 m3/s and 404 Pa, with 25kW motor
    - to be equiped with VFD, so same fan could be used during start up and also for LOM operation.
  - Three (3) 10m3/s, 30kW auxiliary fans for LOM condition and 2 such fans during start of mine condition
  - Flexible Ducting – 600mm dia, Length to be firmed up

APPENDIX IX. LIST OF DRILL HOLES

Boundary Falls Drilling by Golden Dawn							
Hole No.	Azimuth	Dip	Length (m)	Easting (m)	Northing (m)	Elevation (m)	Vein Target
BF15-01	236	-45	67	375501	5435615	871	Lower Skomac
BF15-02	260	-60	64	375501	5435615	871	Lower Skomac
BF15-03	210	-60	49	375501	5435615	871	Lower Skomac
BF15-04	252	-50	63	375410	5435622	907	Upper Skomac
BF15-05	240	-45	61	375236	5435607	963	West Vein
BF15-06	57	-45	339	375206	5435686	985	Upper Skomac
BF15-07	232	-70	92	375206	5435686	985	West Vein
BF15-08	338	-75	137	375253	5435718	1012.2	Upper Skomac
BF15-09	7	-65	149	375253	5435718	1012.2	Upper Skomac
BF16-01	272.1	-51	97	375529	5435573	812	Lower Skomac
BF16-02	15	-45	85	375512	5435562	805	Lower Skomac
BF16-03	15.5	-57	97	375501	5435615	871	Lower Skomac
BF16-04	326	-62	94	375501	5435615	871	Lower Skomac
BF16-05	260	-51	103	375133	5435466	919.7	?
BF16-06	15.5	-51	121	375266	5435614	972	West Vein
BF16-07	210	-64	58	375118	5435748	1015	Upper Skomac
BF16-08	45.6	-45	70	375118	5435736	1009	Upper Skomac
BF16-09	295	-45	40.0	375537.2	5434363	818.73	No. 1 vein
BF16-10	295	-60	68.0	375537.2	5434363	818.73	No. 1 vein
BF16-11	290	-45	23	375530.1	5434348	818.02	No. 1 vein
BF16-12	290	-60	21.5	375530.1	5434348	818.02	No. 1 vein
BF16-13	320	-45	80	375530.1	5434348	818.02	No. 1 vein
BF16-14	255	-50	21.5	375530.1	5434348	818.02	No. 1 vein
BF16-15	270	-45	64	375555.9	5434384	818.602	No. 1 vein
BF16-16	270	-60	68	375555.9	5434384	818.602	No. 1 vein
BF16-17	290	-50	107	375550.5	5434343	810.438	No. 1 vein
BF16-18	290	-50	93	375600.6	5434409	816.772	No. 1 vein
BF16-19	80	-45	50	375259	5434571	872.315	Glory Hole
BF16-20	80	-55	50	375259	5434571	872.315	Glory Hole
BF16-21	80	-45	44.0	375266.7	5434598	874.829	Glory Hole
BF16-22	80	-55	50	375266.7	5434598	874.829	Glory Hole
BF16-23	75	-45	50	375260.3	5434626	878.318	Glory Hole
BF16-24	40	-60	74	375260.3	5434626	878.318	Glory Hole
BF16-25	0	-59	119	375097.2	5435792	1030.65	Upper Skomac
BF16-26	50	-55	200	375097.2	5435792	1030.65	Upper Skomac
BF16-27	32	-55	230	375097.2	5435792	1030.65	Upper Skomac
BF16-28	50	-57	26	375097.2	5435792	1030.65	Upper Skomac
MU16-001	355	0	93.88	375231.7	5435775	897.711	Upper Skomac
MU16-002	50	0	90.83	375237.7	5435741	898.35	Upper Skomac
MU16-003	50	30	71.02	375237.5	5435740	899.45	Upper Skomac
MU16-004	50	60	54.56	375236.7	5435740	900.38	Upper Skomac
MU16-005	50	-20	87.78	375237.8	5435741	897.95	Upper Skomac
MU16-006	57	-38	209.7	375237.9	5435740	897.68	Upper Skomac
MU16-007	75	0	66.75	375238.1	5435740	898.34	Upper Skomac
MU16-008	75	-20	65.23	375238.2	5435740	897.95	Upper Skomac
MU16-009	25	-20	65.23	375237.4	5435742	897.77	Upper Skomac
MU17-001	10	0	67.06	375237	5435743	898.31	Upper Skomac
MU17-002	10	-20	91.74	375237	5435743	897.32	Upper Skomac
MU17-003	10	-30	117.35	375236.6	5435742	898.028	Upper Skomac
MU17-004	0	60	38.1	375236.5	5435740	900.37	Upper Skomac
MU17-005	330	40	47.85	375235.6	5435741	900.37	Upper Skomac
MU17-006	65	-43	263.04	375238.1	5435740	897.44	Upper Skomac
MU17-007	20	-29	92.35	375237.4	5435742	897.34	Upper Skomac
MU17-008	40	-30	82.3	375237.8	5435741	897.55	Upper Skomac
MU17-009	50	-45	258.47	375237.9	5435741	897.23	Upper Skomac
MU17-010	20	-43	304.5	375237.3	5435741	898.316	Upper Skomac
MU17-011	30	-41	223.42	375237.6	5435742	897.08	Upper Skomac
MU17-012	130	50	52.73	375237.2	5435739	900.39	Upper Skomac
MU17-013	255	0	316.08	375234.2	5435738	898	West
MU17-014	57	-43	316.99	375285.9	5435684	897.189	Upper Skomac
MU17-015	50	0	78.94	375285.7	5435685	897.189	Upper Skomac
MU17-016	50	-20	85.04	375285.7	5435685	897.189	Upper Skomac
MU17-017	50	-33	127.71	375285.7	5435685	897.189	Upper Skomac
MU17-018	50	60	48.46	375285.7	5435685	897.189	Upper Skomac
MU17-019	10	0	79.86	375284.6	5435686	897.189	Upper Skomac
MU17-020	10	-15	73.76	375284.6	5435686	897.189	Upper Skomac
MU17-021	25	-23	96.93	375285.2	5435685	898	Upper Skomac
MU17-022	35	-43	166.12	375285.4	5435685	898	Upper Skomac

Tam O'Shanter Drilling by Golden Dawn

Hole ID	Azimuth	Dip	Total Depth (m)	Easting N83Z11	Northing N83Z11	Elevation (m)	Target
10WR07	224	-60	181.97	373539	5437528	1334	Deadwood
11WR08	223	-55	163.68	373602	5437499	1339	Deadwood
11WR09	220	-50	147.22	373670	5437440	1360	Deadwood
11WR10	220	-50	175.57	373810	5437395	1360	Deadwood
11WR11	220	-50	303.58	373930	5437410	1350	Deadwood
11WR13	220	-60	335	373870	5437530	1356	Deadwood
11WR14	220	-45	368	373857	5437540	1358	Deadwood
11WR15	220	-45	401	373767	5437694	1358	Deadwood
11WR19	220	-45	317	374129	5437641	1310	Reconnaissance
11WR20	220	-45	251	373902	5438494	1165	Reconnaissance
11WR21	220	-45	299	374173	5438520	1151	Reconnaissance
11WR22	220	-45	137	374264	5438449	1147	Reconnaissance
11WR23	220	-45	299	374257	5438457	1157	Reconnaissance
11WR24	220	-55	389	373610	5437714	1350	Deadwood