

Ministry of Energy, Mines & Petroleum Resources  
Mining & Minerals Division  
BC Geological Survey

Assessment Report  
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: TECHNICAL EXPLORATION WORK GRAVITY & MAGN TOTAL COST: \$4,500.00

AUTHOR(S): Brian Jones, M.Sc SIGNATURE(S): \_\_\_\_\_

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): \_\_\_\_\_ YEAR OF WORK: 2013

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5448577

PROPERTY NAME: West Basin Property

CLAIM NAME(S) (on which the work was done): SEMS RIDGE 01-12, FORS SW, FORS, FORS

COMMODITIES SOUGHT: \_\_\_\_\_

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: \_\_\_\_\_

MINING DIVISION: FORT STEELE NTS/BCGS: \_\_\_\_\_

LATITUDE: 49 ° 23 ' \_\_\_\_\_ " LONGITUDE: 115 ° 55 ' \_\_\_\_\_ " (at centre of work)

OWNER(S):

1) PJX Resources Inc. 2) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

MAILING ADDRESS:

5600 100 King Street West  
Toronto Ontario m5X 1C9

OPERATOR(S) [who paid for the work]:

1) PJX Resources Inc. 2) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

MAILING ADDRESS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: \_\_\_\_\_

\_\_\_\_\_

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
<b>GEOLOGICAL (scale, area)</b>			
Ground, mapping _____			
Photo interpretation _____			
<b>GEOPHYSICAL (line-kilometres)</b>			
<b>Ground</b>			
Magnetic _____			
Electromagnetic _____			
Induced Polarization _____			
Radiometric _____			
Seismic _____			
Other Interpretation _____		992265, 986841, 505849, 505850	\$4,500.00
Airborne _____			
<b>GEOCHEMICAL (number of samples analysed for...)</b>			
Soil _____			
Silt _____			
Rock _____			
Other _____			
<b>DRILLING (total metres; number of holes, size)</b>			
Core _____			
Non-core _____			
<b>RELATED TECHNICAL</b>			
Sampling/assaying _____			
Petrographic _____			
Mineralographic _____			
Metallurgic _____			
<b>PROSPECTING (scale, area) _____</b>			
<b>PREPARATORY / PHYSICAL</b>			
Line/grid (kilometres) _____			
Topographic/Photogrammetric (scale, area) _____			
Legal surveys (scale, area) _____			
Road, local access (kilometres)/trail _____			
Trench (metres) _____			
Underground dev. (metres) _____			
Other _____			
		<b>TOTAL COST:</b>	<b>\$4,500.00</b>

**TECHNICAL REPORT  
WEST BASIN PROPERTY  
Mineral Claim Tenure #'s 992265,  
986841, 505849, 505850, 503798, 1018954 to 1018967.**

**TECHNICAL EXPLORATION WORK  
GRAVITY & MAGNETIC DATA PROCESSING AND INTERPRETATION**

**CRANBROOK MINING DIVISION,  
BRITISH COLUMBIA,  
CANADA**

**NTS 082F/08&09, NTS 082G/05&12 – 1:50,000 Maps**

Centered Near  
**Latitude N49° 23'; Longitude W115° 55'**

Author  
**Brian Jones M.Sc.  
APEGGA # 48925  
APEGBC # 173032**

**BC Geological Survey  
Assessment Report  
34082**

**EXCEL GEOPHYSICS INC.  
Box 5056  
302 Centre Street S  
High River, Alberta, Canada  
T1V 1M3**

**Prepared For**

**PJX Resources Inc.**

**5600 – 100 King Street West  
Toronto, Ontario  
M5X 1C9**

**Date Submitted: June 18, 2013**

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## **1.0 SUMMARY**

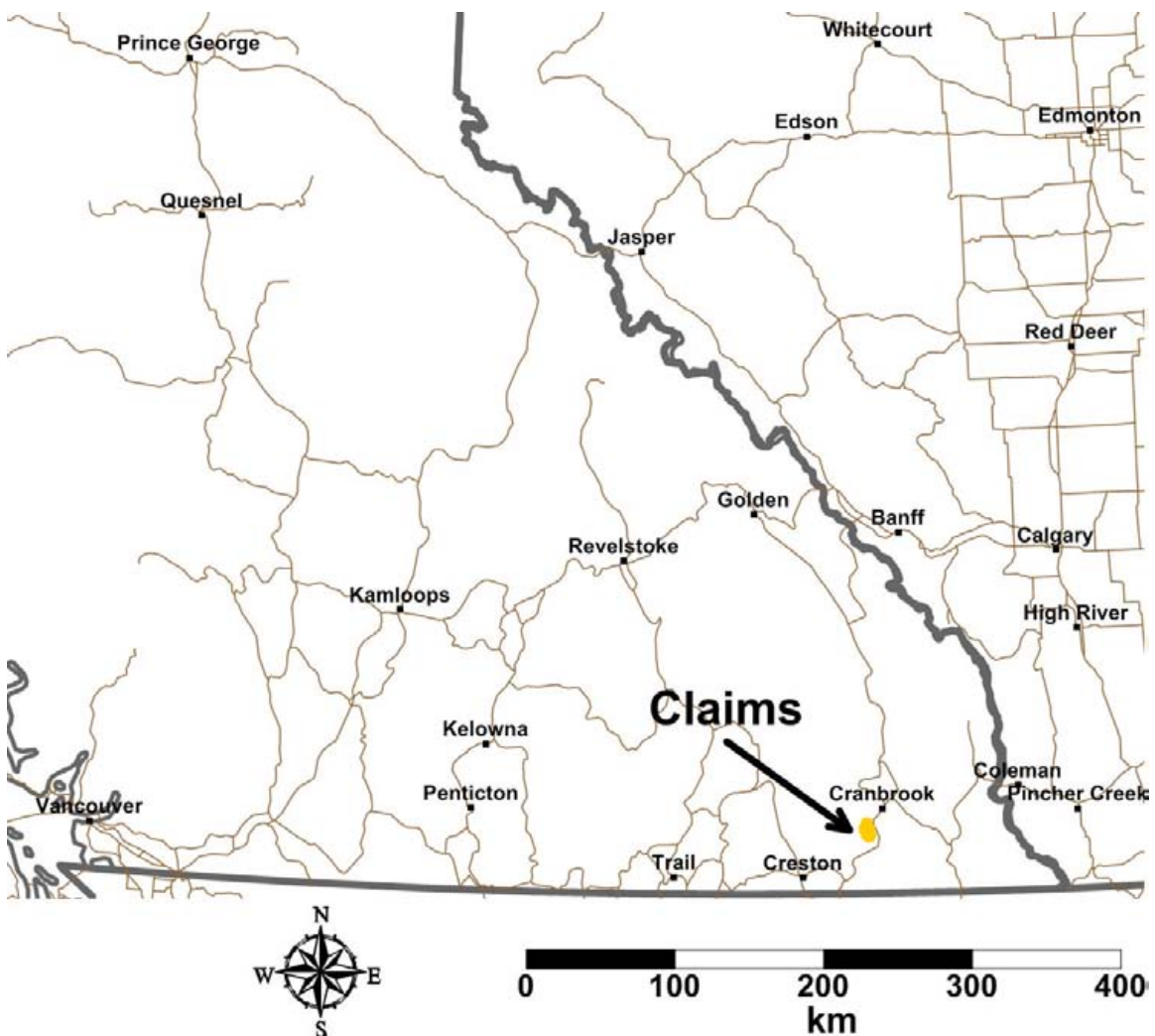
The West Basin property, covering 4374.76 hectares, is located in South Eastern British Columbia. The property is approximately 20 kilometers south west of the city of Cranbrook. The closest community at the north end of the mineral leases is Lumberton which currently has no services. Moyie Lake Provincial Park is situated east of the central part of the claims, also with no services. PJX Resources Inc. holds 100% of the mineral claims on 14 of the leases referred to as the West Basin property and holds options on the remaining five mineral leases.

Excel Geophysics Inc. obtained publically available gravity and GSC magnetic data for the project area. These data were reprocessed using state of the art proprietary software and then interpreted. Gravity data extending to 10 km beyond the lease boundaries were utilized. This large buffer zone is essential to understand the regional gravity field which was then filtered to produce the best residual products over the leases. The interpretation presented in this report suggests a potential mineral deposit, perhaps of the same scope as the historical Sullivan deposit, on the West Basin mineral claims. The objective of the reprocessing was to confirm the presence of gravity and magnetic anomalies of exploration interest and to recommend a future exploration program. The data were processed by Excel Geophysics at its head office in High River, Alberta. Future exploration work is highly recommended to gain detail on the gravity and magnetic anomalies and assign drilling targets.

## 2.0 INTRODUCTION

The purpose of this technical report is to state the results and costs associated with the gravity and magnetic processing and interpretation performed by Excel Geophysics Inc. (*Excel*) on the West Basin claims for PJX Resources Inc (*PJX*).

*PJX* is the owner of 14 adjacent claims (tenure #'s 1018954 to 1018967) and holds options on five tenures in the Moyie Lake area (tenure #'s 992265, 986841, 505849, 505850, 503798). *Excel* conducted the processing and interpretation work from May 1 to 13, 2013. Figure 1 shows a regional location map of the mineral claims.



**Figure 1.** Regional Location Map

### **3.0 PROPERTY DESCRIPTION**

#### **3.1 Location and Access**

The West Basin property, covering approximately 43.75 square kilometers (16.89 square miles), is situated in the Fort Steele Mining Division of British Columbia, Canada. The property is centered near N49° 23' latitude and W115° 55' longitude in 1:50,000 NTS map sheet 093G/05.

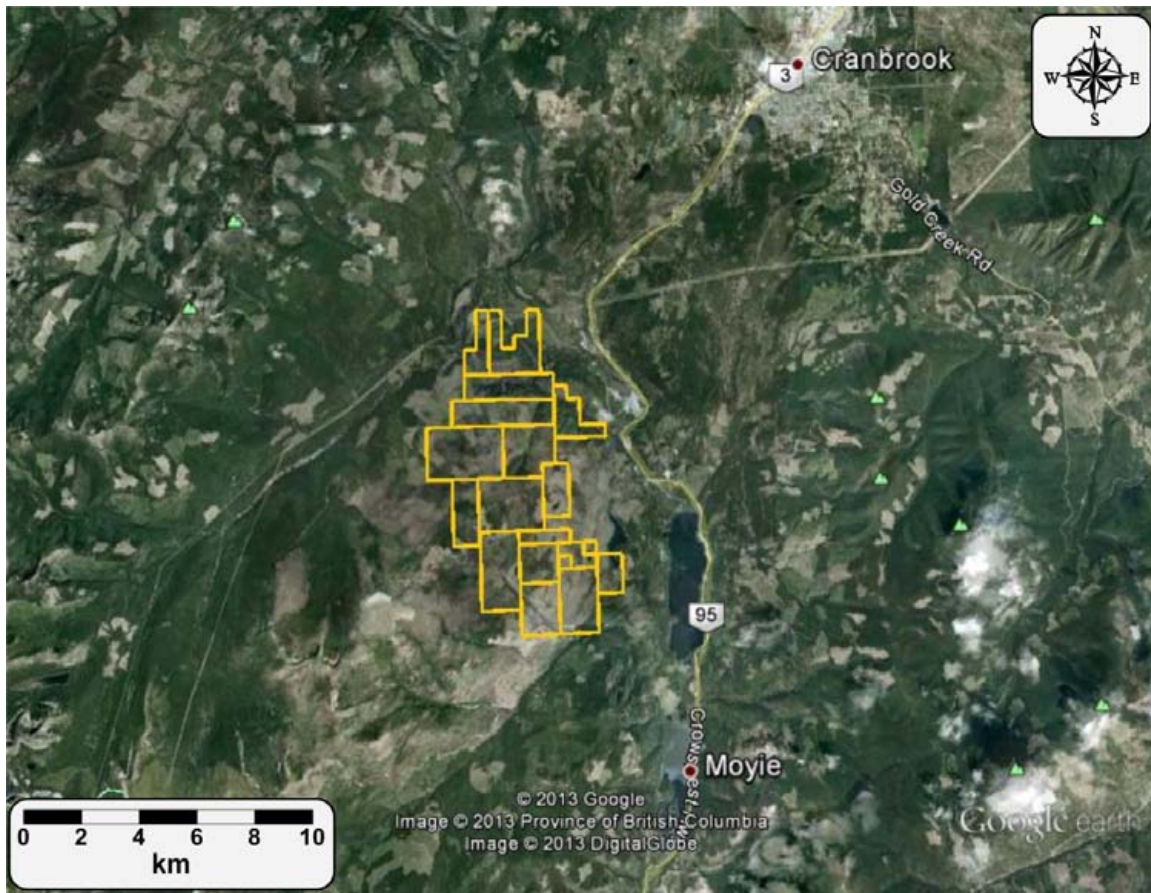
The area can be reached from the city of Cranbrook by driving the Crowsnest Hwy BC 3/95 south west for 22 km to the Moyie Lake Provincial Park. A Google Earth Image map is shown in Figure 2 to illustrate. The gravel roads Monroe Lake Road, Lamb Creek Road and Mineral Lake Road heading west from Moyie Lake provide access to the West Basin property. From these gravel roads logging trails venture further west into the claims. North of Moyie Lake, Lumberton Road allows access to the north part of the claims.

Cranbrook is a city with a population of about 20,000. An additional 70,000 people live nearby and use its services. The Canadian Rockies International Airport is 15 km from Cranbrook and offers scheduled flights via Air Canada to Vancouver, Calgary and Edmonton. Cranbrook has been at the centre of mining for many decades and has all the services that are required for a successful mining operation.

Railroad facilities are provided by Canadian Pacific and both Burlington Northern and Union Pacific Railways serve the US markets.

Moyie Lake campground is open May to October but offers no services. The unincorporated village of Moyie is on the east side of the Moyie Lake. Moyie grew because of the discovery of the St. Eugene Mine (an important silver-lead mine) and is currently a quiet retirement community. North of the claims is the ghost town of Lumberton which was built to support the lumber mill in the area.





**Figure 2.** Access Map from Cranbrook

### **3.2 Physiography and Climate**

The property is situated west of the Rocky Mountain Trench within the Moyie Range of the Purcell Mountains. The immature to mature coniferous forests consists predominantly of pine, spruce, fir and larch which have been actively logged over the past 30 years. A number of clear-cuts are present throughout the property in various stages of regeneration and are visible in Figure 2 Google map. In 2003 a large forest fire completely destroyed areas around Lamb Creek. The burned trees were clear cut and removed in 2004 as salvage.

Relief on the property is quite rugged; with elevations in some areas changing 1000 m over a one km distance along the steep sided stream valleys (Figure 3). Elevations range from 950 m along the Moyie River and Lake to over 2000 m in the central area of the property. The ridges have been glacially rounded.

The area is generally subject to heavy accumulation of snow during the winter months so clear access for exploration should be expected mid-May to late October. That being

said, the ground exploration season can be extended by using 4WD vehicles, snowmobiles and long-line procedures given the reasonably extensive network of logging roads.

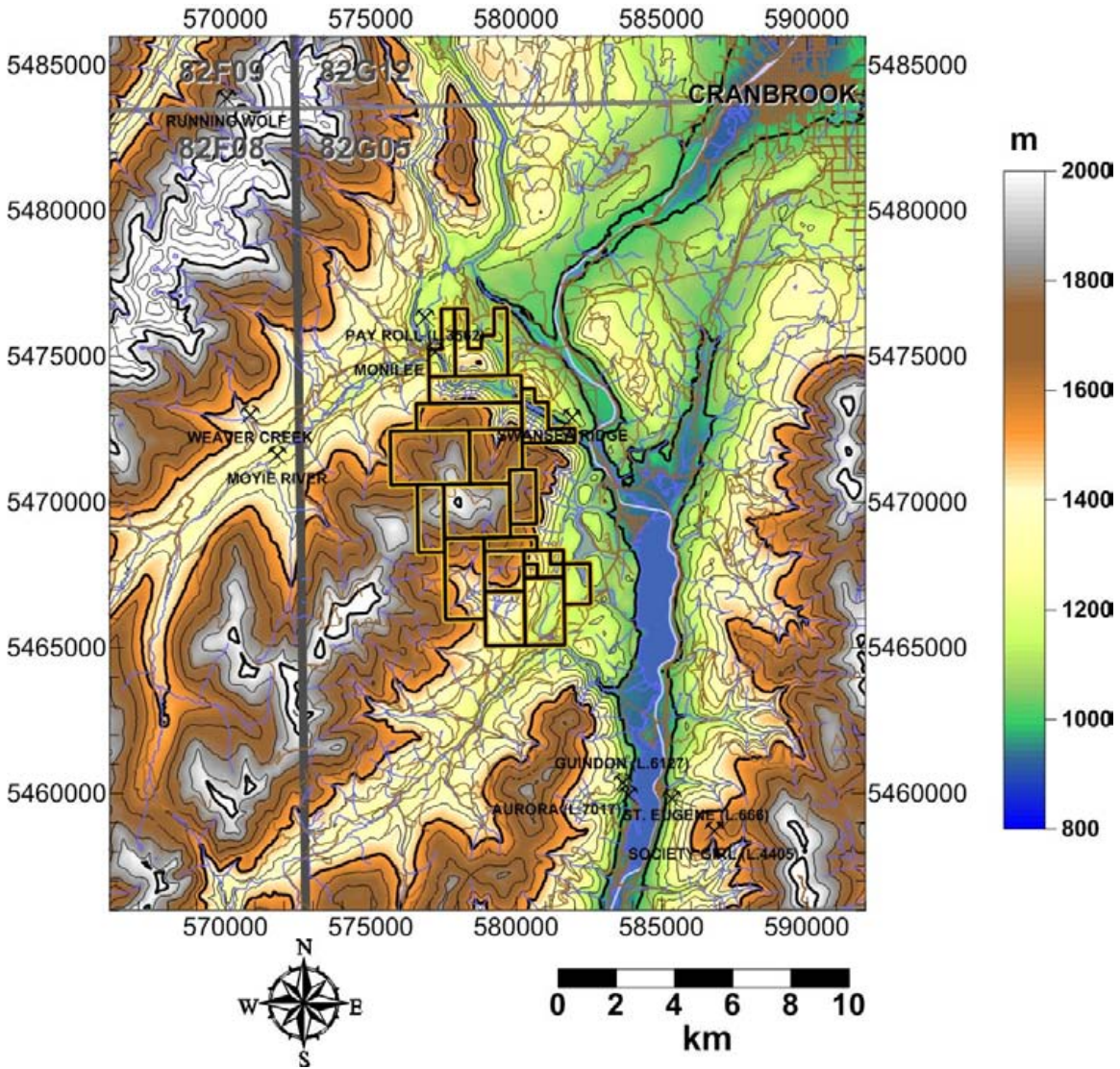


Figure 3. Color Elevation Map

The Moyie River meanders through the north part of the claims and drains into Moyie Lake to the east (Figure 4). The claims end at Lamb Creek to the south which also flows into Moyie Lake. Little Lamb Creek flows south through the southern claims and then merges with Lamb Creek. The brown network of trails in Figure 4 show the extensive access routes into most of the claim area. A close up in Google Earth shows even more trails have been added to this area in recent years.

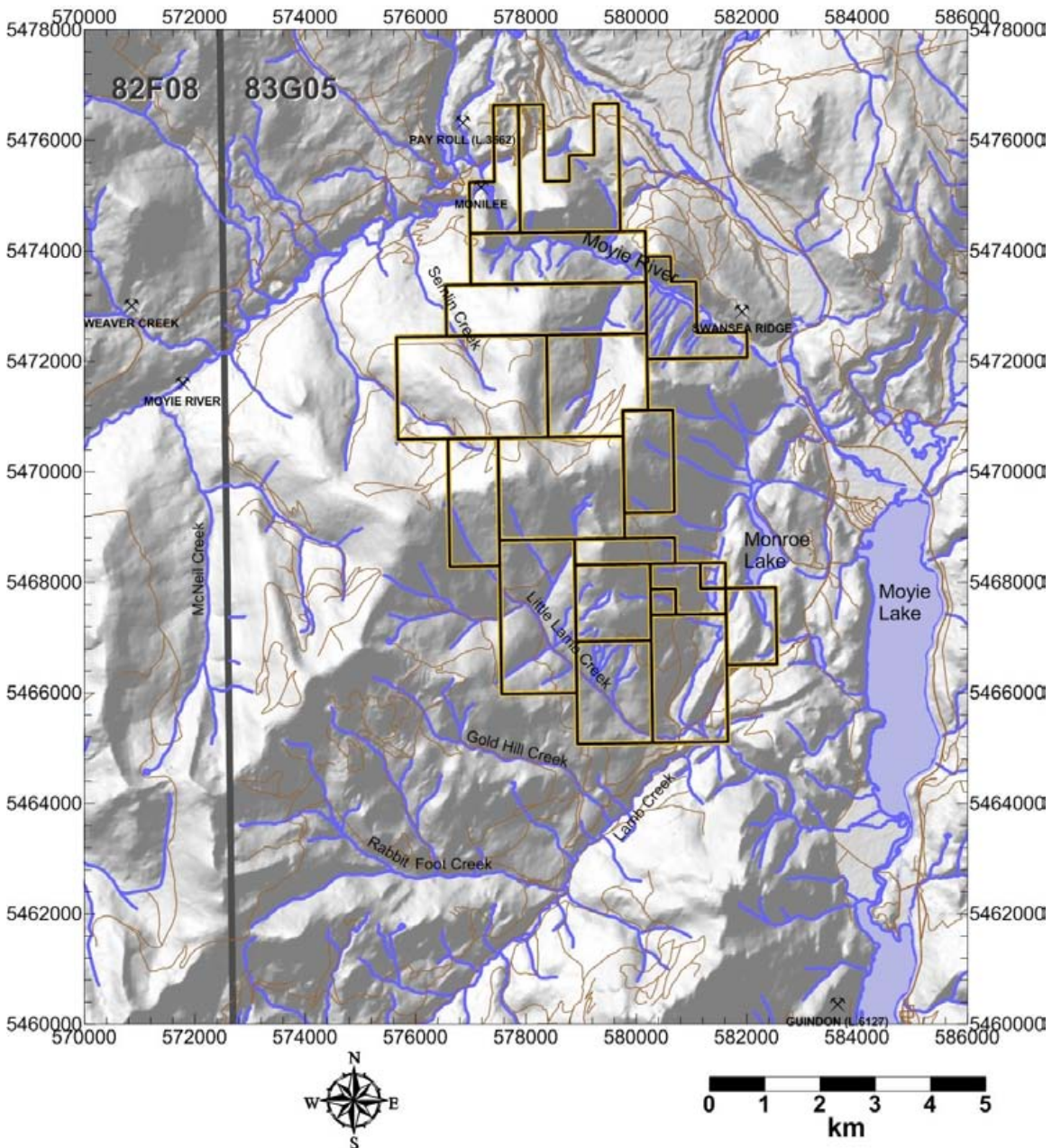


Figure 4. Rivers, Creeks, and Trails

### 3.3 Mineral Tenure and Claim Status

The West Basin property consists of 19 mineral tenures as seen in Figure 5 and documented in Table 1. All claim information was verified using the BC Government's Mineral Titles Online (MTO) website and is current as of the compilation of this report. The property encompasses a total area of 4374.76 ha (43.75 km<sup>2</sup>).

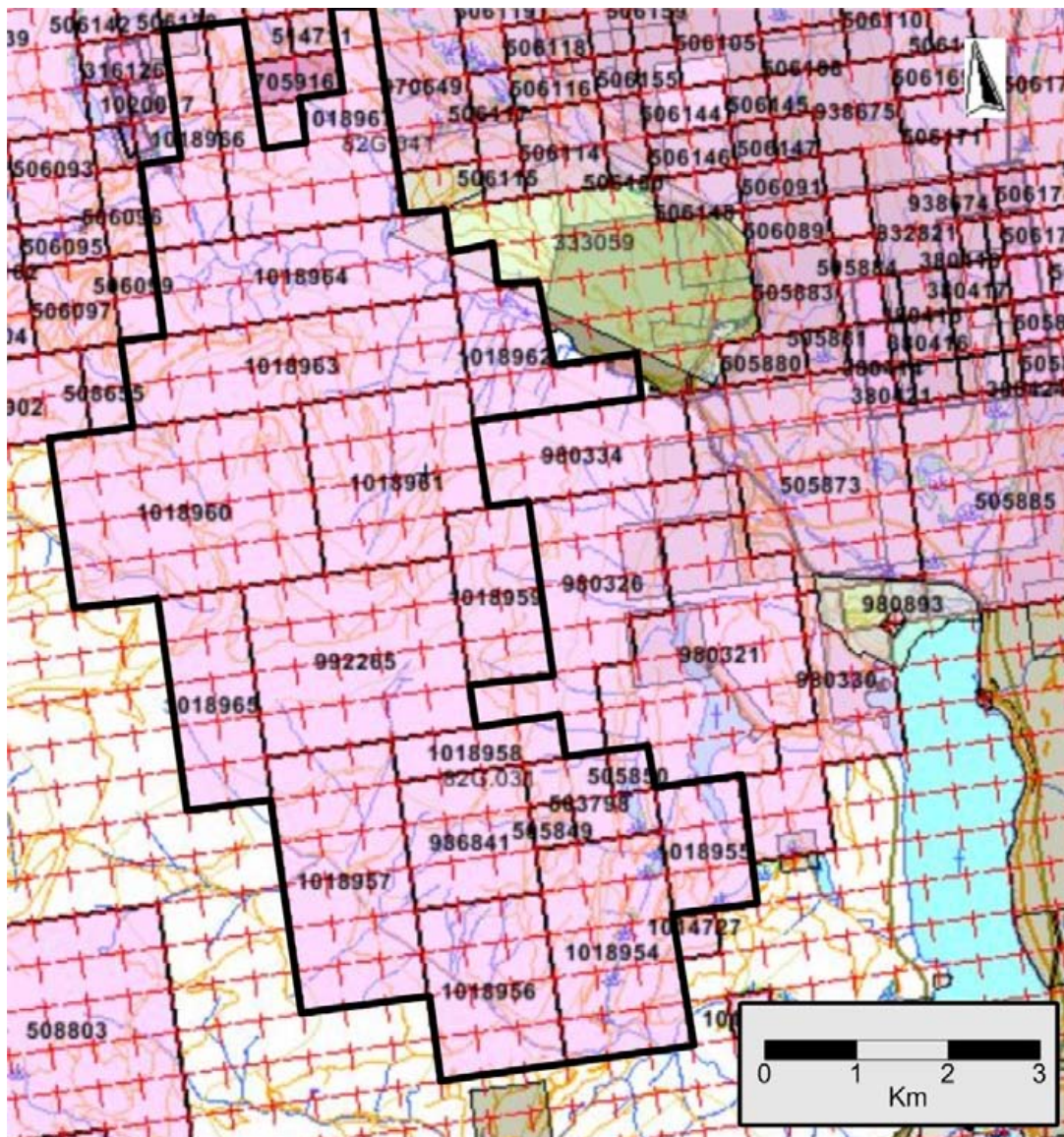


Figure 5. Tenure Claim Map

**Table 1.** Tenure Claims

Tenure								
Number	Claim Number	Owner	Client #	Issue Date	Good To Date	Status	Area (ha)	
	992265	SEMS RIDGE 01-12	Lavoie, Darlene Elizabeth	132094	2012/Jun/01	2014/May/15	Good	420.70
	986841	FORS SW	Klewchuk, Peter	114281	2012/May/16	2014/May/15	Good	189.39
	505849	Fors	Klewchuk, Peter	114281	2005/Feb/04	2014/May/15	Good	21.04
	505850	Fors	Klewchuk, Peter	114281	2005/Feb/04	2014/May/15	Good	21.04
	503798		Klewchuk, Peter	114281	2005/Jan/15	2014/May/15	Good	84.17
	1018954		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	315.73
	1018955		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	126.27
	1018956		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	252.60
	1018957		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	378.79
	1018958		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	84.16
	1018959		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	168.27
	1018960		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	504.67
	1018961		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	315.42
	1018962		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	189.22
	1018963		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	336.37
	1018964		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	294.27
	1018965		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	210.36
	1018966		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	147.09
	1018967		PJX Resources	256589	2013/Apr/30	2014/May/15	Good	315.20

### 3.4 History and Adjacent Properties

Mineral exploration in the Fort Steele Region began with placer gold mining on the Wildhorse River in the mid-1860s. Placer activity has been documented near the West Basin properties on both the Moyie River to the north and on Lamb Creek to the south. Activity focused on placer gold deposits until the late 1800s when lead deposits at St. Eugene and Sullivan were discovered. The region has been actively explored primarily for lead and zinc ever since.

The following historical production data is from the BC MINFILE Production Reports.

The St. Eugene Mine to the south of the West Basin property produced 182,690 grams of silver, 78,846 grams of gold, 113,034 kilograms of lead, and 14,483 kilograms of zinc. There were also three other past producers (Guidon, Aurora and Society Girl) in close proximity to St. Eugene with minor production mentioned. To the north there is Payroll, which recovered in 1907, 715 grams of silver and 187 grams of gold. Monilee is also mentioned as a past producer in the same area as Payroll. Swansea Ridge, located just east of West Basin, was mined for railroad ballest.

Past government assessment reports, ARIS Report #31664 in particular concerning the Munroe property, contain excellent information about the history on the south end of the West Basin claims. Cominco funded a variety of exploration programs from the 1960s to 1980s. When the property was dropped by Cominco, it was acquired by local prospectors who optioned to Placer Dome in 1987 and to Chapleau and Barhor Resources in 1992.

Kokanee Explorations Ltd. (later Consolidated Ramrod Gold Corporation) entered into an agreement for the claims and proceeded to do extensive exploration including ground geophysics and considerable diamond drilling. Between 1992 and 1996 this joint venture drilled 32 holes totaling 13,708 meters. In the fall of 1996, the property was optioned to Citation Resources Inc. who drilled 13,717 meters in 17 holes between 1996 and 1997. Ramrod and Citation drilling targeted a Sullivan style Sedex (sedimentary exhalative) deposit (the Sullivan orebody mineralization is located stratigraphically at the contact between the lower and middle divisions of the Aldridge Formation). Exploration activities focused on areas where there was surface evidence for the presence of “venting” systems with the characteristics that has been identified with the formation of the large Sullivan Mine deposit.

St. Eugene Mining Corp. acquired the property in 2006 and carried out a limited drilling program focused on the area of known lenses of sulphide mineralization. This drilling consisted of 562.1 meters in 6 holes. The approach taken by St. Eugene was that the sulfide mineralization which had been intersected in a number of drill holes at the Vent Zone was mainly structurally controlled, and more closely fitted the model for the St. Eugene mine 9 km to the south, where the silver/lead/zinc ores are constrained within a steeply dipping vein system, rather than the Sedex model which applied to the Sullivan deposit. The Coeur d’Alene sulphide deposits, 150 km to the south, are to a large extent also vein controlled and confined to the same package of early Proterozoic rocks.

#### **4.0 TERMS OF REFERENCE**

At no point has the author ever visited the West Basin property, nor has the author any firsthand knowledge of the property geology or mineral occurrences that occur upon it.

This assessment report has been prepared by the author using documents and information provided by ARIS Reports publically available from the BC Government. While reasonable care has been taken in the preparation of this report, the author cannot guarantee the accuracy or completeness of all supporting documentation.

5.0 REGIONAL GEOLOGICAL SETTING

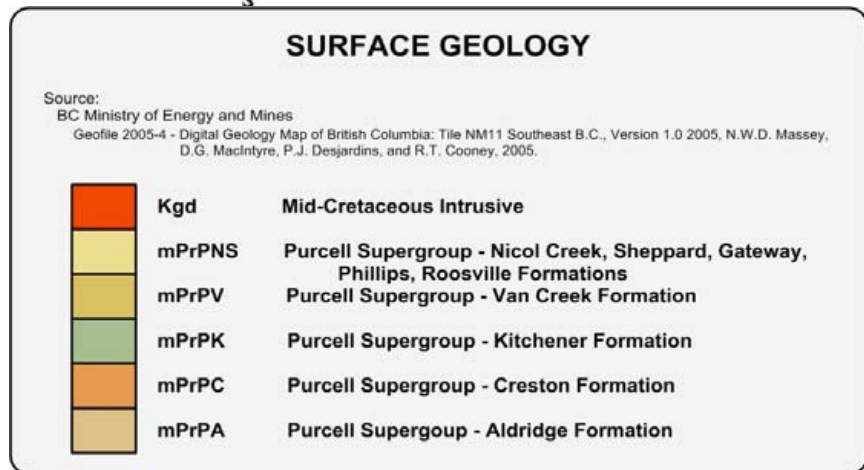
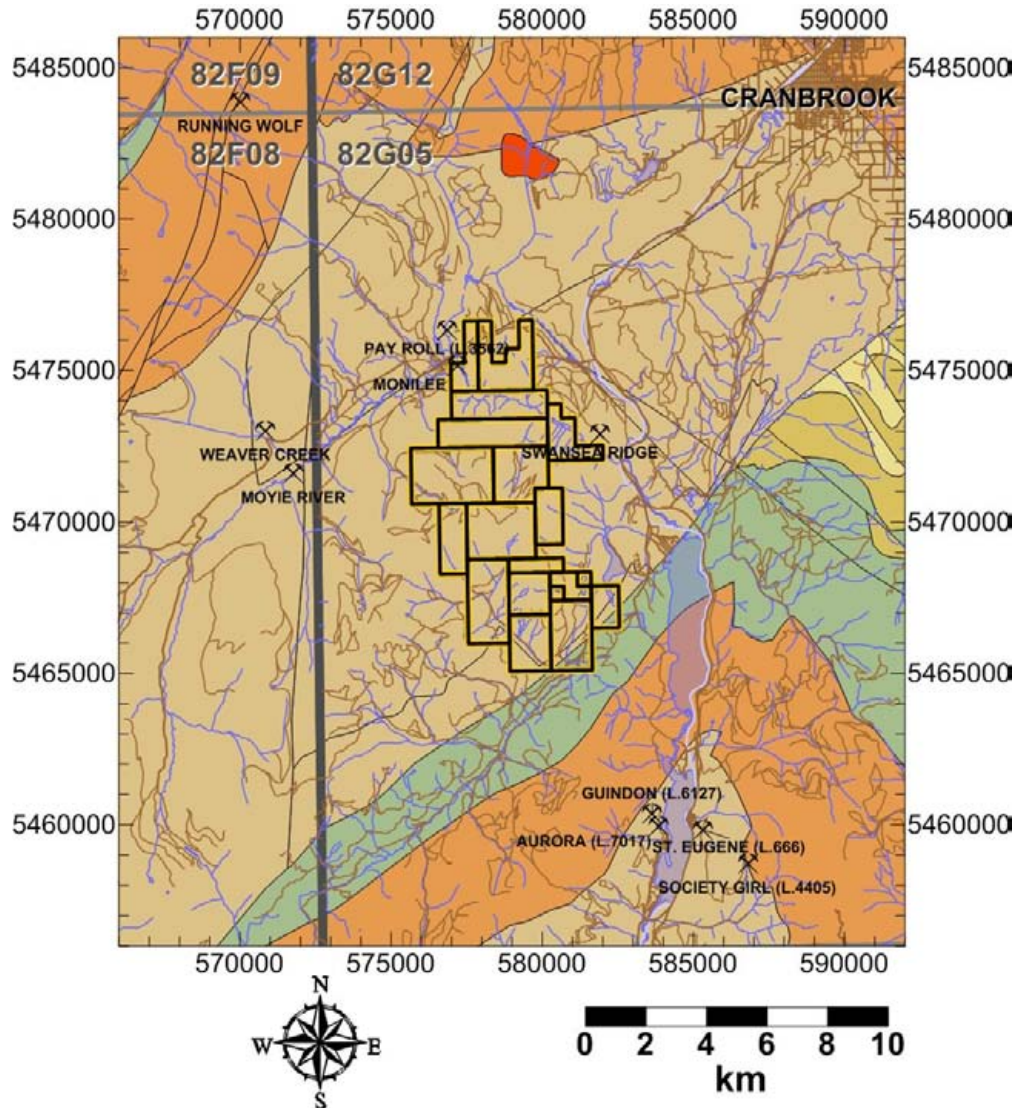


Figure 6. Regional Surface Geology

The regional geology can be seen in Figure 6 and the following descriptions have been taken from Trig Höy and John Lydon.

### **5.1 Proterozoic Purcell Supergroup Stratigraphy**

The Proterozoic Purcell Supergroup, host of the Sullivan Mine, constitutes a thick prism of dominantly clastic sediments exceeding 10,000 metres in thickness, with the base unexposed. The oldest exposed strata is represented by the Fort Steele Formation fluvial/deltaic sequences of quartz arenite, quartz wacke and mudstone, comprising a sequence at least 200 metres thick. Fine-grained clastic beds at the top of the Fort Steele formation grade into very rusty-weathering, fine-grained quartz wacke and mudstone of the Aldridge Formation (1433 Ma +/- 10 Ma), at least 5000 metres thick in the Purcell Mountains. The Aldridge Formation grades upward over 300 metres through a sequence of carbonaceous mudstone with minor beds of grey and green mudstone and fine-grained quartz wacke to the 1800 m thick Creston Formation, composed of grey, green and maroon quartz wacke and mudstone with minor white arenite.

### **5.2 Intrusives - Proterozoic Moyie Sills**

The Moyie Sills (or Intrusives) comprise laterally extensive gabbro (to dioritic) sills which are restricted to the lower Aldridge and the lower part of the middle in the Purcell Mountains. The sills comprise up to 30 percent of the lower to middle Aldridge stratigraphic succession, having an aggregate thickness in excess of 2000 metres, with the abundance decreasing upwards relative to the abundance of thick-bedded turbidites. In the Lamb Creek area west of Moyie Lake, an aggregate thickness of approximately 1300 metres of sills is interlayered with 2800 metres of lower and middle Aldridge sedimentary rock.

Moyie sills form an extensive suite of basaltic rocks that intruded lower and middle Aldridge turbidites and siltstones. Although it has been proposed that Moyie sills are coeval with deposition of upper Aldridge or Creston rocks, or perhaps with the Nicol Creek lavas, contact relationships between sills and Aldridge rocks indicate that some sills were extruded at very shallow depths in unconsolidated, water-saturated sediments. Others with fine-grained chilled margins have contact metamorphosed the country rocks. As these sills are interpreted to be part of a continuous magmatic event, they record an igneous/thermal event of regional extent during deposition of lower and middle Aldridge rocks. Hence, a Middle Proterozoic uranium-lead date of 1445 Ma from zircons in the Lumberton sill west of Cranbrook defines the minimum age of deposition of lower and basal middle Aldridge.

### **5.3 Structure**

Rocks of the Purcell Supergroup have been affected by several separate phases of deformation, ranging from Middle Proterozoic through to Paleocene. The North American craton underwent two phases of extension, a compressional orogeny and



subsequent continental rifting, followed by development of a miogeocline. Thrusting and folding associated with development of the Foreland Fold and Thrust belt took place from Cretaceous to Paleocene time and was followed by Eocene extension.

The earliest deformation was associated with extension in the Middle Proterozoic which resulted in block faulting along the margin of the Purcell Basin, coincident with deposition of the Fort Steele and Aldridge formations. Movement along growth faults is interpreted to have ceased by upper middle to upper Aldridge time.

Two major faults, St. Mary and Moyie, have had a significant role in the structural history and fabric of the region, controlling facies and thickness changes in Proterozoic and Paleozoic strata. Much of the relative lateral movement between different thrust faults was along reactivated transfer faults of the Mesoproterozoic rift.

#### **5.4 Mineralization**

##### **Sullivan Mine Type**

The Sullivan orebody is a conformable iron-lead-zinc sulphide lens enclosed by metasedimentary rocks of the Middle Proterozoic (Helikian) Aldridge Formation, the basal formation of the Purcell Supergroup. The regional metamorphic grade is upper greenschist facies.

The orebody occurs near the top of the Lower Aldridge Formation, at the transition from the Lower to Middle Aldridge Formation (“Lower - Middle Contact or LMC”), and has the shape of an inverted and tilted saucer. The maximum dimensions are approximately 2000 metres north-south and 1600 metres east-west. In general, bedding dips flat to gently east in the western portion of the orebody, moderately east to northeast in the central portion, and gently east to northeast in the eastern portion.

The orebody attains a maximum thickness of 100 metres approximately 100 metres northwest of its geographic centre, and thins outward in all directions (averaging 21 metres in thickness). To the east, it thins gradually to a sequence of pyrrhotite-laminated mudstone 3 to 5 metres thick that persists laterally for some distance. To the north, the orebody thins less gradually and is truncated by the Kimberley fault. To the west, the orebody thins abruptly and is cut by the foot-wall gabbro. The gabbro (correlated to the Middle Proterozoic Moyie Intrusions) lies beneath the orebody and is typically concordant about 500 metres below its eastern edge. To the west, the gabbro rapidly cuts up-section through the host stratigraphy, transgressing to the footwall of the orebody near its western margin. Farther west, the gabbro cuts back down-section to approximately its original stratigraphic position. To the south, within the limit of economic mineralization, thickness changes are generally irregular and abrupt.

Pyrrhotite and pyrite (average ratio of 7:3) are the most abundant sulphides in the Sullivan orebody. Galena and sphalerite are the principal ore minerals. Minor but economically important minerals include tetrahedrite, pyrargyrite, boulangerite and

arsenopyrite. Cassiterite is an important minor constituent in the western part of the orebody. Minerals constituting less than 1 per cent include chalcopyrite, jamesonite, magnetite and less abundant scheelite and stannite. Principal non-sulphide minerals are quartz and calcite with abundant tourmaline, chlorite, muscovite, albite, pale brown to reddish-brown mica, garnet, tremolite, epidote, actinolite, cordierite and hornblende. Either quartz or calcite may make up 50 to 70 per cent of the non-sulphide suite, chlorite 30 per cent and the other minerals up to about 20%.

## **6.0 TECHNICAL EXPLORATION WORK**

### **6.1 Magnetic Data**

The data source used was the GSC's Canadian Aeromagnetic Data Base; the Residual Total Magnetic Field 200m grid of Canada. This area was digitized from contour maps from the survey titled British Columbia – 82-40 B. The survey was flown by Klondike Helicopters from Sept. 1969 to June 1970. A Proton–Precession magnetometer was used and the survey was flown at 305 m above ground with line spacing of 805 m using a visual navigation system.

Figure 7 shows the Total Magnetic Field. There are a few points of interest listed below:

1. A distinct feature is associated with the Moyie fault running SW to NE. The data would suggest a slight offset in this fault where Moyie Lake intersects the Moyie Thrust fault. This area is largely covered by Quaternary sediments.
2. A large circular positive magnetic anomaly associated with the Kiakho Pluton is just north of the West Basin claims.
3. The Cranbrook Fault at the north end of the map sheet is defined by a distinct change in magnetic pattern to the north. Recent magnetic models from Thomas, Schetselaar and Kemp (2013) have shown the middle Creston member to have a high susceptibility. This can also be noticed at the south end of the map sheet where the Creston formation wraps around the Moyie Anticline.
4. The NS magnetic anomaly to the east of Weaver Creek is associated with the McNeil Fault.

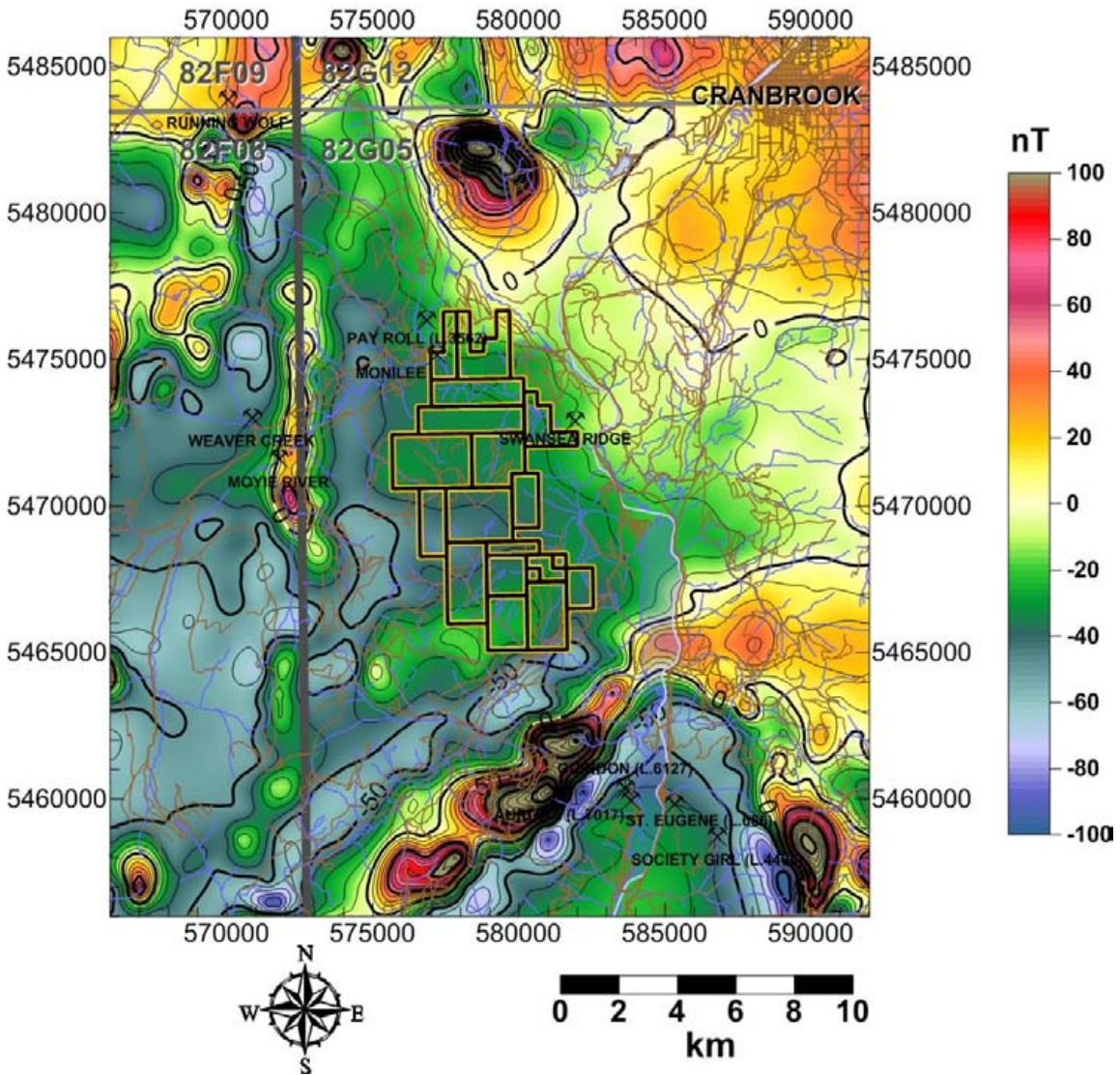


Figure 7. Residual Total Magnetic Field

## 6.2 Gravity Data Reduction

Excel accessed the publicly available ARIS reports and extracted all of the gravity data in the area. These data were reprocessed from observed gravity values using state of the art proprietary software.

LaCoste and Romberg (G-series) and CGS -5 land gravity meters were used for the data acquisition. Routinely the station id, date, time, dial reading, and instrument height were recorded at each land gravity station. A gravity base value is measured at the beginning and end of each day to correctly account for meter drift. Each reading is corrected for

instrument calibration, sun/moon tidal effects, instrument height, and instrument drift to obtain the observed gravity. Excel used 873 observed gravity readings along with their positional survey data for reprocessing from the following list of ARIS Reports.

In 1996 (Assessment Report # 24687) *Excel* acquired VLF and gravity stations for Mr. Kennelly. 309 of the 425 gravity stations collected are used in the current mapping. The Weaver Creek project was west of the current project area.

In 1997 (Assessment Report # 24786) technical work was carried out for Sedex Mining Corp. in the form of field work including a 1247 line km magnetic survey, 405 gravity stations, geochemistry samples from streams, soils and rocks and geological mapping. The actual claim boundaries were to the west of the current West Basin property but 205 of the gravity stations are incorporated into the current project.

In 1998 (Assessment Reports #25526 and 25271) Abitibi Mining Corp. hired Quadra Surveys to acquire gravity stations just south of the town of Cranbrook and north of the town of Yak. 206 of these data are incorporated into the current project.

Also in 1998 (Assessment Report #25395 and #25467) Sedex Mining hired Quadra to acquire gravity stations 18 of which are included in the current work.

In 1998 (Assessment Report #25567) Kennecott Canada Exploration Inc hired Quadra to acquire gravity stations south west of the current project area. 95 of these data were incorporated into the current project.

ARIS Report #	Name	# of stations used
24687	Weaver Creek Claims	309
24786	South Moyie River Area	245
25271	Yahk River Area	005
25395	Lamb Creek Area	015
25467	Lew & Bingo Claims	003
25526	Moyie Lake Area	201
25567	Irishman Creek Option	095
Current	Vine & Eddy Areas	041
GSC Stations	Regional Data Base	053

A total of 967 gravity stations were used in the gridding. After QC of the data 17 stations were edited. The GPS coordinates and elevations are merged with the observed gravity for each station. Intermediate corrections are applied to the observed gravity to yield final Bouguer anomaly values. See Table 2 for the formulae used to determine the intermediate corrections and Bouguer gravity values. The Bouguer gravity has been calculated using a near surface earth model which applies variable density corrections. Density values were assigned to each station by locating each station on the final merged surface geology map (Figure 5).

**Table 2. Gravity Correction Formulae**

<b>Gravity Corrections</b>	<b>Description</b>
<b>Latitude Correction</b>	International Association of Geodesy, World Geodetic System 1984. $= 978032.67714 * (1 + 0.00193185138639 * \sin^2(\text{latitude})) / (1 - 0.00669437999013 * \sin^2(\text{latitude}))^{0.5}$
<b>Free Air Correction</b>	= elevation (m) * 0.3086 mGal/m
<b>Bouguer Correction</b>	= - elevation (m) * density (g/cm <sup>3</sup> ) * (2 * pi * 0.00667384) (note: density values vary depending on surface geology. Values are included in data listing.)
<b>Terrain Corrections</b>	Outer terrain corrections (50 m to 40 km) with variable density.
<b>Final Bouguer Values</b>	= observed gravity – latitude correction + free air correction + Bouguer correction + terrain corrections (inner and outer)

Figure 8 shows the final Bouguer Gravity Map. The Moyie Fault can be noticed trending SW to the NE. The potential offset of the Moyie fault at the north end of Moyie Lake is also suggested in the Bouguer Gravity Map.

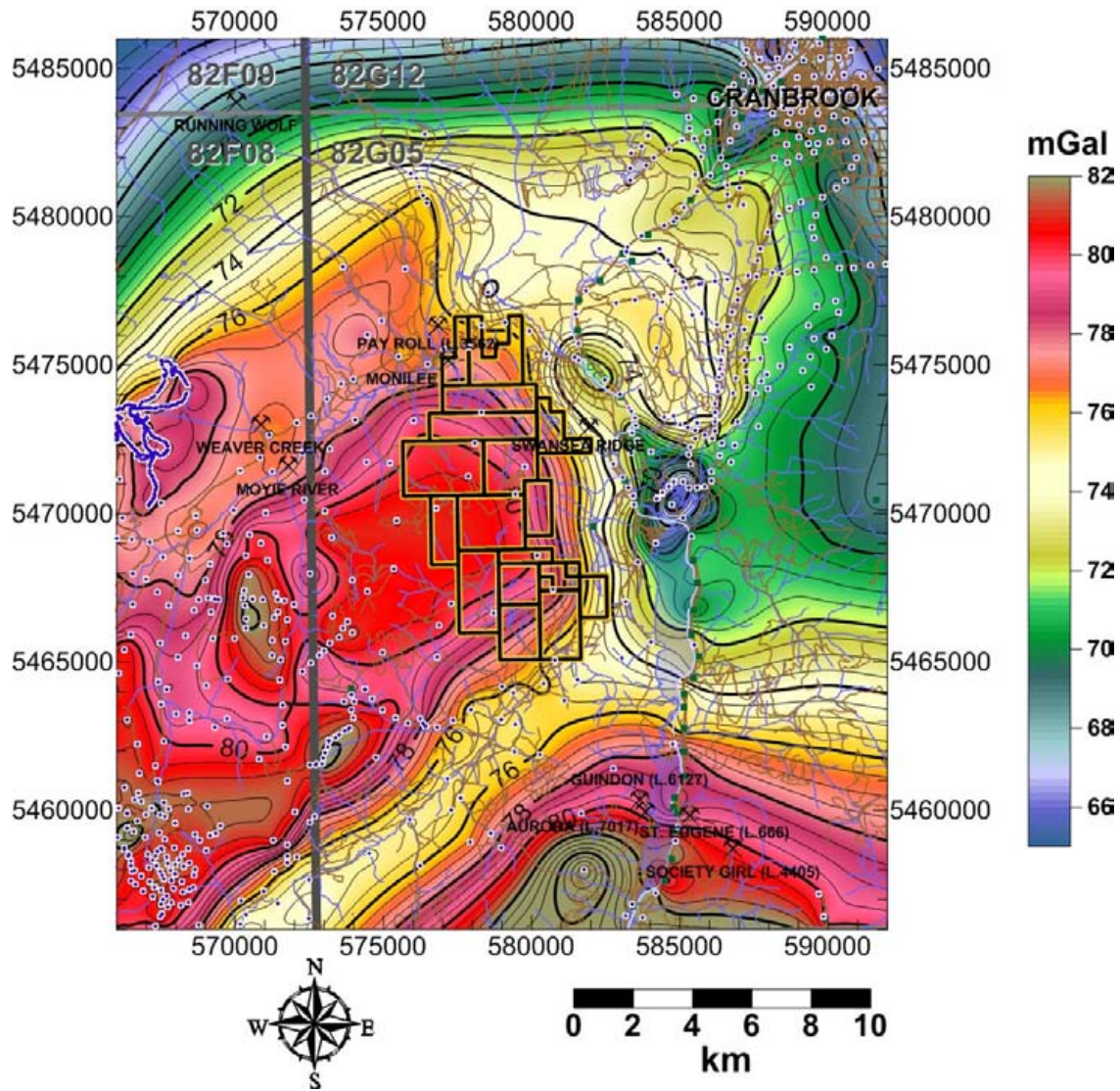


Figure 8. Bouguer Gravity

### 6.3 Residual Maps

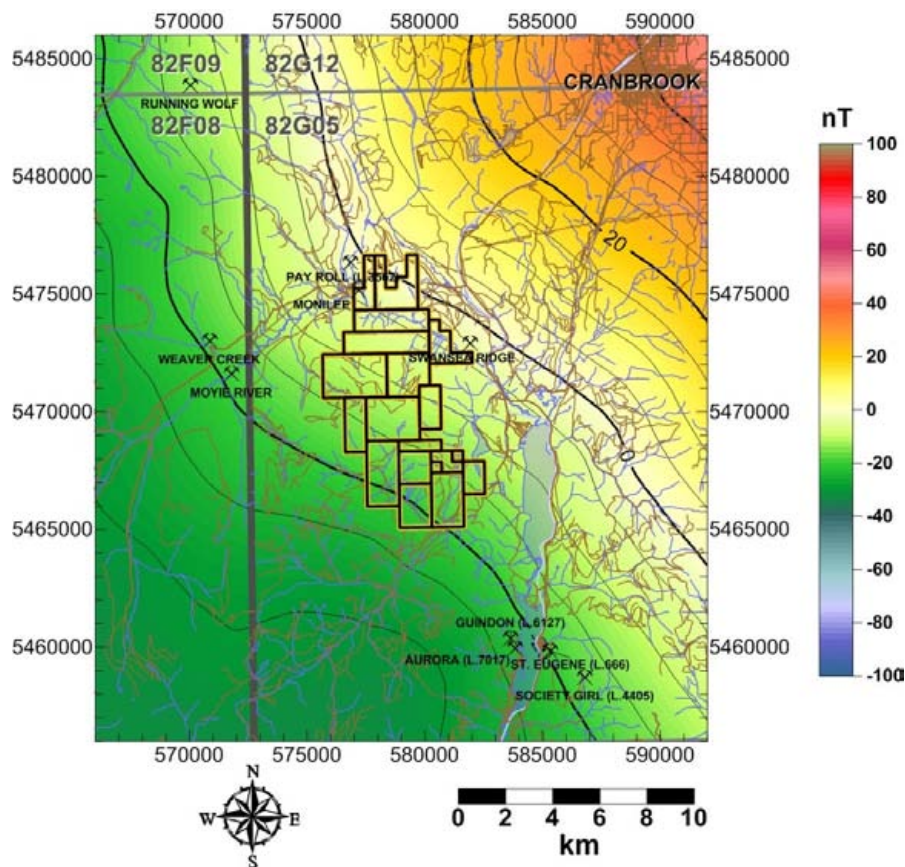
The main priority of this project was to generate residuals from the gridded data, using filters with appropriate techniques to isolate the gravity and magnetic anomalies of exploration interest. Excel uses proprietary software for all of our processing streams. This software has been developed over many decades and is continuously being upgraded and modified.

One of the most useful procedures in understanding the implications of the gravity signature is to separate the gravity signal into the response from different depths. The shape (or spectral property) of a gravity anomaly is depth dependent, which allows the Bouguer gravity map to be separated into a series of maps relating to the anomaly sources at varying depths. The change in the shape of gravity anomalies with changes in source

depth is simply the result of geometric factors in the formulae for gravity, and is hence reliable and predictable. Numerous procedures have been developed over the past century to accomplish this separation.

For this study, the Bouguer gravity map is filtered using equivalent mass modeling. Equivalent mass modeling is computationally intensive; this method provides a focused result, with detailed mass distribution maps that are very reliable for mass edge definition. Median filters were applied to the magnetic data.

Figures 9 and 10 show the deep regional that has been taken out of both the gravity and magnetic data. These anomalies are deep and regional and only shown for project completeness. The balance of this report focuses on shallow residual products that highlight features of exploration interest.



**Figure 9.** 20 km Regional Magnetic

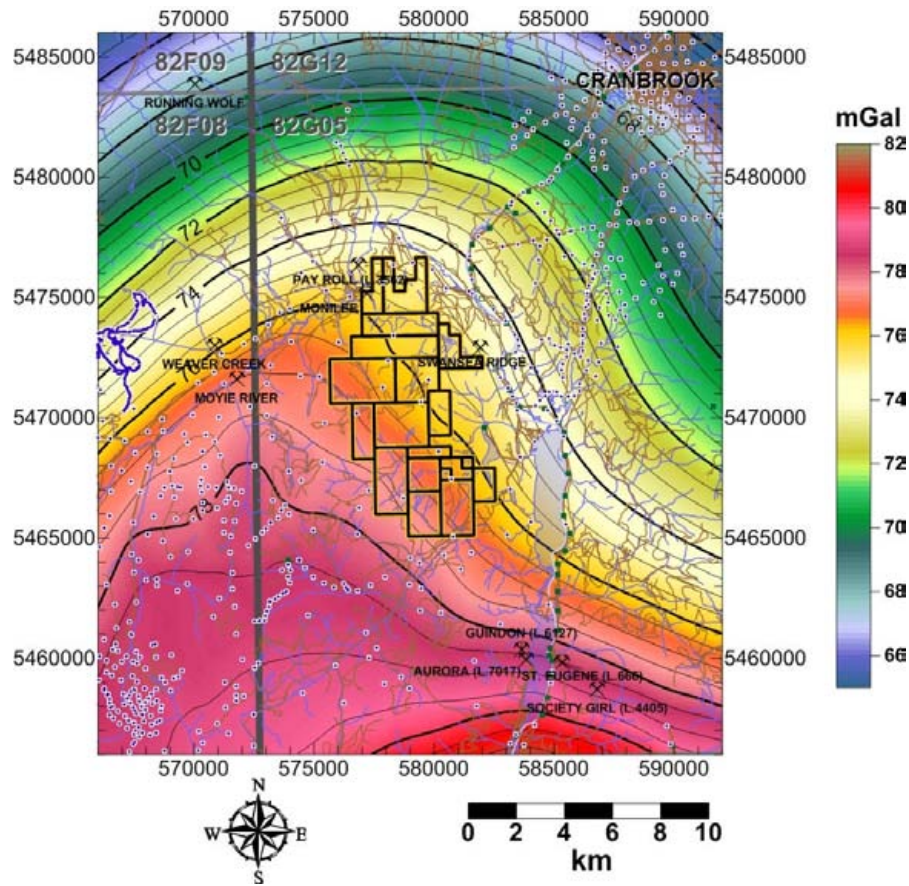


Figure 10. 12 km Regional Gravity



### 6.4 Results of Survey and Interpretation Gravity

The prominent gravity positive shown on the 3 km residual (Figure 11) has an amplitude greater than 1 mGal. The station spacing is too large for an accurate depth determination, but a coarse estimate is about 1 km deep. The anomaly amplitude is most likely too large to be sourced solely by a sulphide deposit and significant gabbro may be involved. (The Sullivan sulphide deposit is floored by gabbro sills).

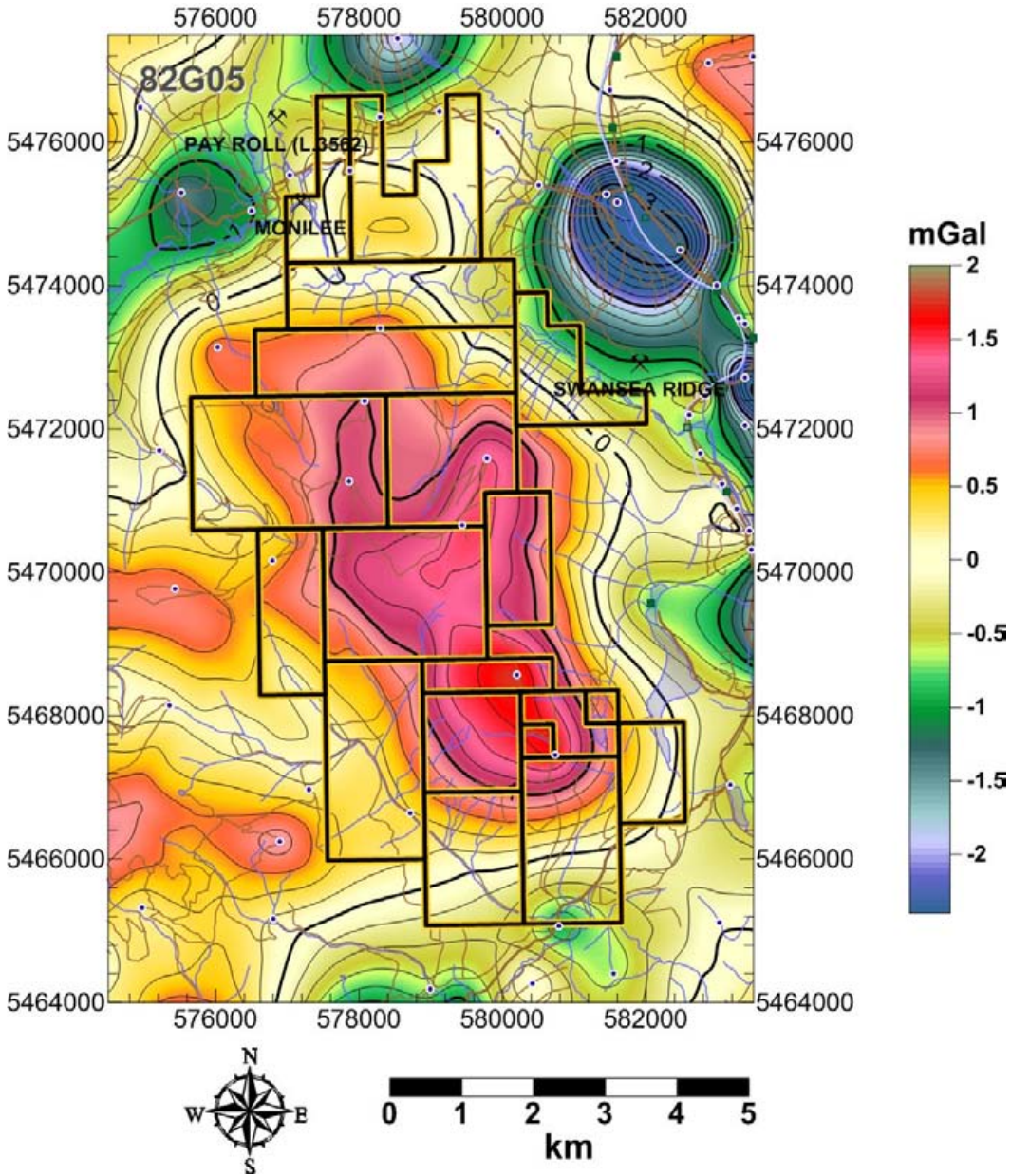


Figure 11. 3 km Residual Gravity

The 1 km residual gravity map (Figure 12), locates a trend of positive anomalies on the east side of the Fors fault. The Fors fault trends NW-SE as defined on the surface geology map compiled by D.A. Brown and displayed here in Figure 13. Two parallel faults also cross the West Basin leases. To the west is the Little Lamb Creek fault. The fault to the east is unnamed. There is no apparent trend of anomalies along the Little Lamb Creek fault. The fault to the east is mapped as a normal fault downthrown to the east. A positive gravity anomaly may exist to the west of this fault, but data coverage is too sparse to support any conclusion

A large number of mineral occurrences have been filed in MINFILE centering over the largest gravity anomaly in the southeast of the block against the Fors fault. The anomaly has an amplitude of about 0.25 mGal which is compatible with a Sullivan like deposit. This area, termed the Vent Zone, has been detailed in ARIS Report #31664. Work to date has indicated a potentially economic vein deposit estimated at between 50,000 and 100,000 tonnes with attractive zinc/lead values.

Several prominent positive gravity features are excellent candidates for Sedex style anomalies at depth. These anomalies have dimensions and amplitudes compatible with a Sedex target. There may be no surface or shallow geophysical (EM) anomalies associated with these targets. The 1 km residual map (Figure 12) is at the limits of the data resolution and is highly aliased. A high resolution gravity survey will refine these potential exploration targets and help resolve the possibility of a Sedex deposit associated with the confirmed steeply dipping vein system.

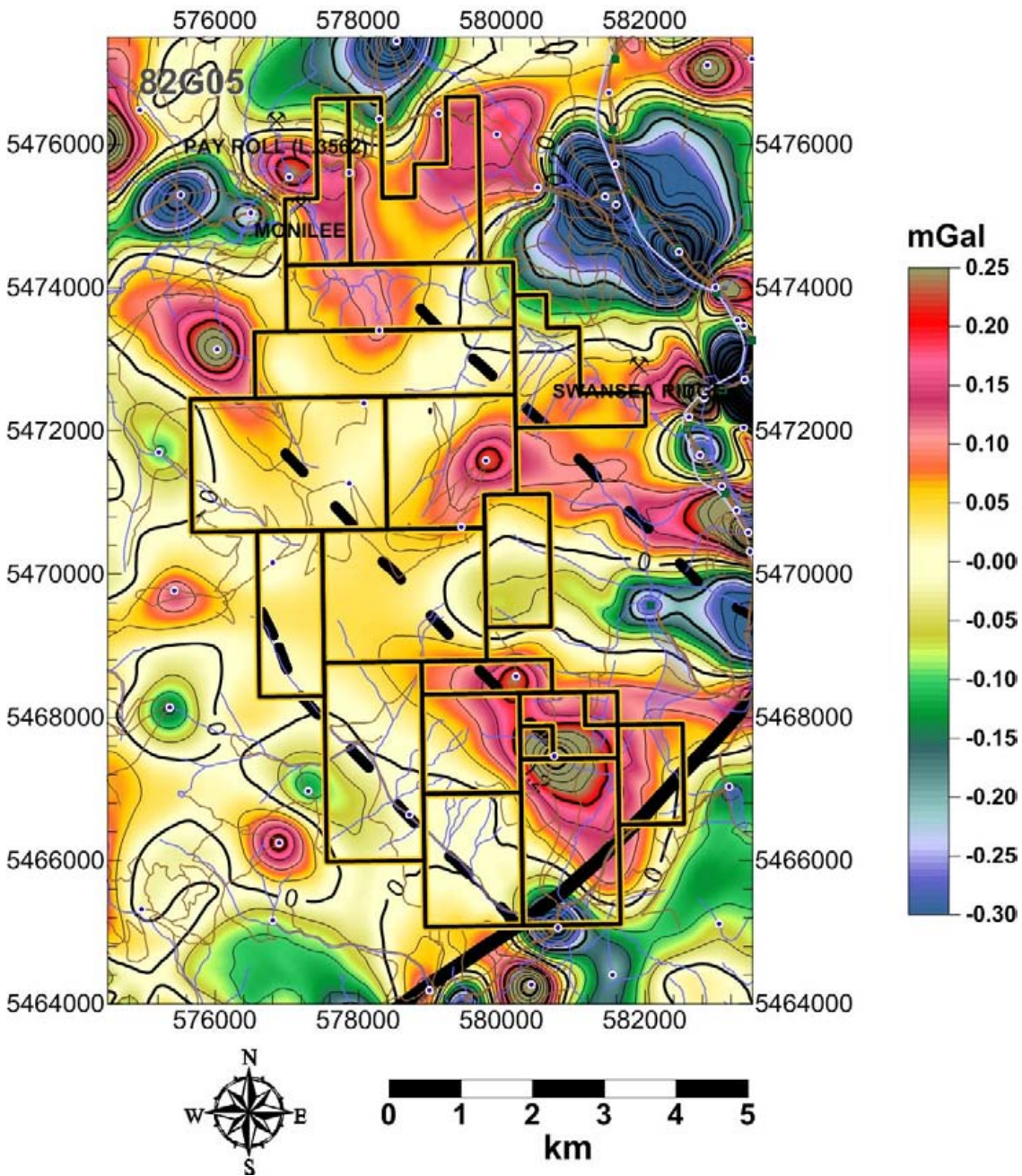


Figure 12. 1 km Residual Gravity

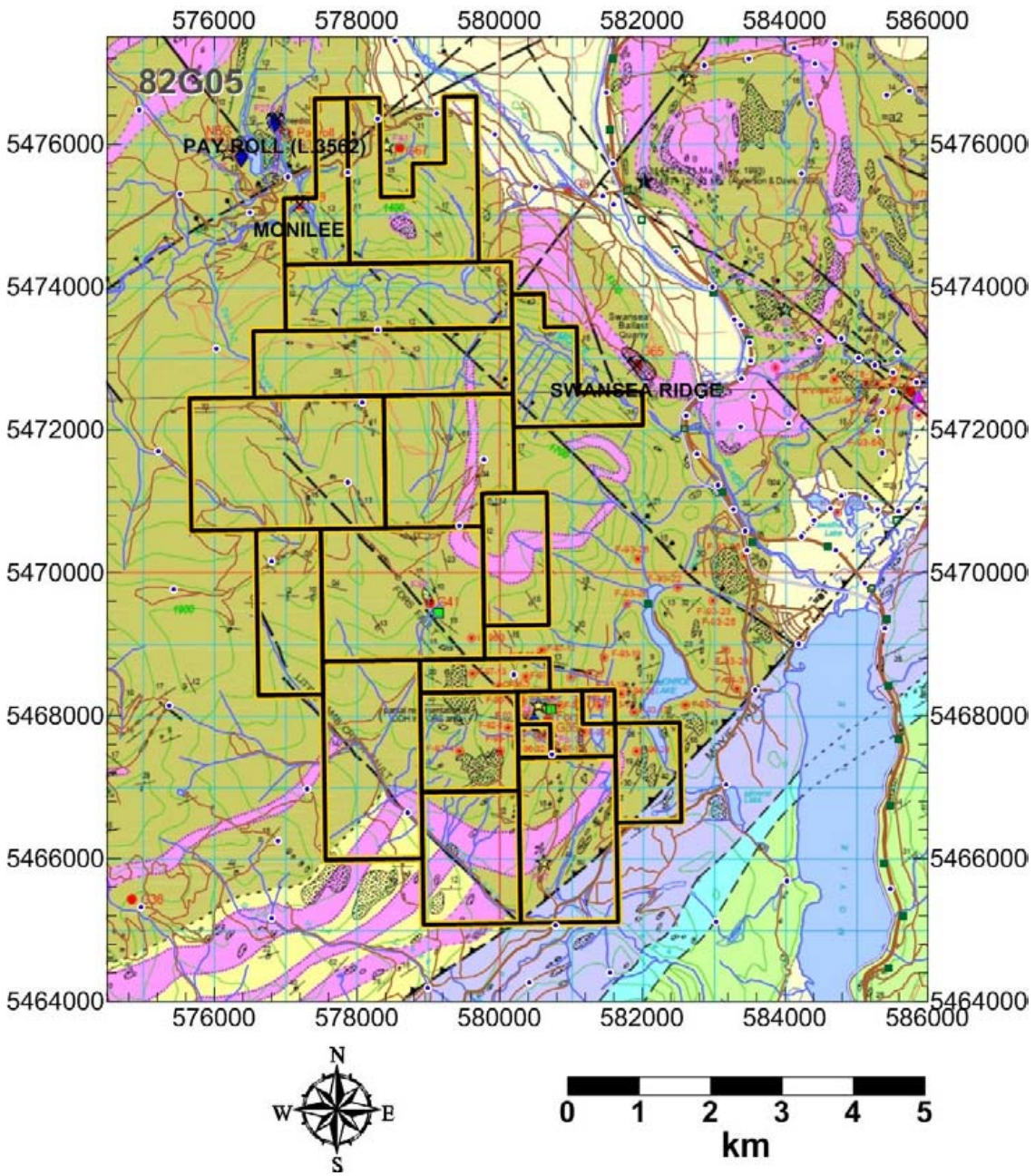


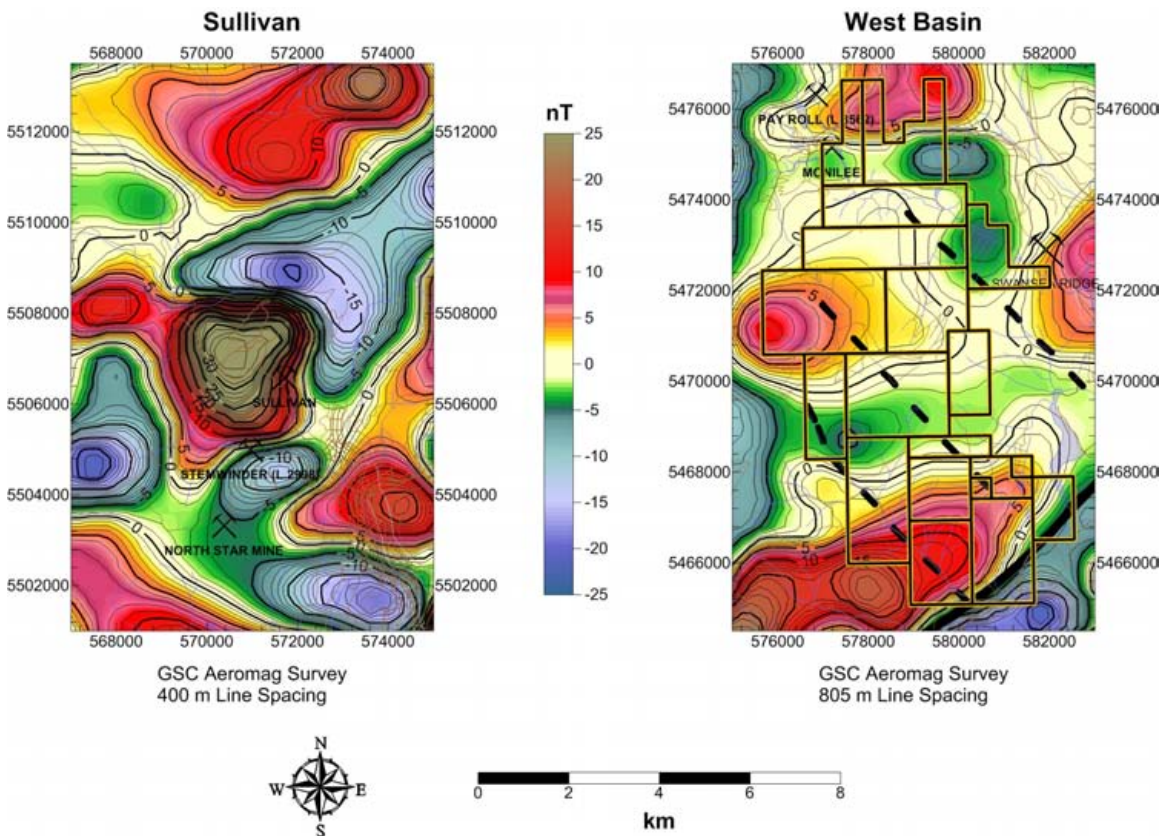
Figure 13. Detailed Surface Geology

**Magnetics**

Figure 14 shows a comparison between the residual magnetic anomalies associated with the Sullivan deposit and the West Basin Claims. In the region, there has been no noticeable correlation between gabbro and magnetic responses. The subtle magnetic anomalies at Sullivan are generated by extensive pyrrhotite (which has about half the susceptibility of magnetite). The modest amplitude of mag anomalies over the West Basin claims are compatible with a pyrrhotite source. Sullivan magnetic response is shown for comparison with similar magnetic amplitudes (5 to 30 nT). These are low amplitude magnetic anomalies.

Noticeable offsets in the residual Magnetics over the West Basin claims are correlating with the fault traces of the Little Lamb, Fors and unnamed faults in the area.

In 2006, AeroQuest Surveys acquired (on behalf of St. Eugene Mining) an airborne MAG/EM survey (ARIS Report # 28450). The survey was over a limited area in the SE of the West Basin claims. Some trends correlate to the GSC data presented in this report. Differences are due to the drape nature of the ARIS data and the tighter line spacing of 100m.



**Figure 14.** 600 m Magnetic Residuals for Sullivan and the West Basin

## **6.5 Conclusions and Recommendations**

Lead Zinc deposits are not magnetic. Magnetic surveys respond to the associated pyrrhotite mineralization. The exploration value of the magnetic data depends on the distribution of pyrrhotite and the target sulphides.

Electrical techniques are problematic as galena is conductive, sphalerite is nonconductive and minor graphite is highly conductive.

Gravity responds to the high density of both galena and sphalerite, economic deposits generate mappable anomaly patterns. Drilling without a significant positive gravity anomaly guarantees failure. Significant gabbros are mapped in the project area. Gabbros can also generate positive residual gravity anomalies. This fact is the significant exploration risk.

A detailed gravity survey will locate possible geometries and depths of an undiscovered Sedex deposit. Along with locating its position the gravity can give estimates of tonnage. A detailed survey will also potentially track the vein systems in the area.

**7.0 COST STATEMENT**

The technical work on the West Basin claims was filed on May 14, 2013. It was recorded as work done in the name of PJX Resources Inc. and also as event number 5448577. The costs for this survey are outlined in the following table (Table 2) based on the invoice from Excel Geophysics Inc. Excel conducted the data processing and interpretation.

**Table 2.** Cost Statement

<b>Item</b>	<b>Contractor</b>	<b>Dates</b>	<b># of Days</b>	<b>Cost Per Day</b>	<b>Total Cost</b>
<b>Processing and Interpretation 1 Geophysicist and 2 processors (Including all software &amp; computers)</b>	Excel Geophysics Inc.	May 1 to May 13	2.5	\$1500.00	\$3,750.00
<b>Final Report Writing &amp; Preparation</b>	Excel Geophysics Inc.	June 6	1	\$ 750.00	\$ 750.00
<b>Total Value of Work</b>					<b>\$ 4,500.00</b>

## **8.0 REFERENCES**

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## **9.0 DATE AND SIGNATURE PAGE**

### **STATEMENT OF QUALIFICATIONS**

#### **BRIAN ALEXANDER JONES**

I, Brian A. Jones, do hereby certify that:

1. I am a consulting geophysicist of Excel Geophysics Inc., with an office at 302 Centre Street S, High River, Alberta, T1V 1M3.
2. I am a graduate of the University of Toronto with the following degrees:  
  
B.A.Sc. (1971) – Engineering Science, Geophysics option  
  
M.Sc. (1973) – Department of Physics, Geophysics division  
*Thesis: A Gravity Survey and Interpretation in Northwestern Ontario*
3. I have actively practiced my profession of exploration geophysics throughout Canada for the past thirty-nine years.
4. I am registered as a Professional Geophysicist with Alberta - APEGGA #48925 and British Columbia - APEGBC #173032.
5. I am an active member of the Canadian Society of Exploration Geophysicists and the Society of Exploration Geophysicists.

#### Statement of Qualifications

I, Brian Jones, of the Town of High River, Alberta do hereby state:

1. I am a member of APEGBC # 173032
2. This report is based on information obtained by myself during the work exploration program.



Brian Jones M.Sc.  
June 18, 2013