

**GEOLOGICAL EXPLORATION SUMMARY  
MOUNT NANSEN PROJECT  
(Peripheral Claims)**

**YUKON TERRITORY**

**For**

**DEPARTMENT OF ENERGY, MINES AND RESOURCES,  
ASSESSMENT AND ABANDONED MINES BRANCH,**

**YTG**

**And**

**PRICEWATERSHOUSECOOPERS INC.**

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## **SUMMARY**

The Mount Nansen Gold Project is in a historic mining camp in Central Yukon. The property is located 65 kilometers west of Carmacks, Yukon accessible by an all-weather road. The claims cover a portion of the Cretaceous aged Mount Nansen Porphyry Complex and surrounding lithologies. There has been intense exploration and development of several deposits in the past. Production of gold-silver proved to be uneconomic during the mining operations primarily due to low metal prices and metallurgical complexities. Gold-silver mineral resources have been reported for several undeveloped deposits.

Exploration expenditures in the past have concentrated on developing resources on the earliest discovered deposits. A large area that has received grass roots exploration using soil geochemistry and basic geophysical surveys has produced preliminary exploration targets. A number of these anomalies have been trenched but few have been drill tested.

The gold-silver metal mineralization on the property is classified as epithermal with characteristics of the high sulfidation type or low-sulfidation polymetallic vein type deposits. The mineralization consists of structurally controlled planar veins with associated clay-rich and bleached alteration zones and pipe-like breccia systems peripheral to the Mount Nansen porphyry complex. The mineralized vein zones range from narrow, simple quartz-sulphide veins to complex, anastomosing and braided systems that crosscut all rock types. The veins tend to occupy fractures in metamorphic rocks (Huestis-Flex-Webber) or invade porphyry dykes that preferentially intrude zones of structural weakness such as faults (Orloff King) or intrusive contacts (Dickson). Several gold-rich mineralized breccia bodies have been identified within the Mount Nansen porphyry complex, in older plutonic rocks (PPBX).

A portion of a large low grade copper-molybdenum porphyry system associated with the Mount Nansen Porphyry Complex has been identified in the northern portion of the property. The area was explored for copper-molybdenum in 1971 – 73.

Exploration potential of the property would be enhanced by completing a compilation of the historic exploration data and applying modern exploration techniques to the field exploration.

## **INTRODUCTION AND TERMS OF REFERENCE**

PricewaterhouseCoopers Inc. is the Receiver for the assets of the bankrupt BYG Natural Resources Inc. The Mount Nansen Gold Project consists of 31 quartz mining leases and 230 quartz mining claims and fractions (approximately 5,700 hectares) in the Whitehorse Mining District. The property has been divided into two components. The Dome Creek claim area (Core) contains the Brown-McDade open pit, the Mill complex and the tailings pond. There are 18 mining leases and 48 quartz claims and fractions within this block. There are certain environmental liabilities related to these leases and claims. The Mount Nansen exploration claim area (Peripheral) covers the remainder of the property and contains the workings related to the Webber, Flex and Huestis deposits. This claim block consists of 13 mining leases and 182 quartz claims and fractions. This claim block is considered to have the best exploration potential and is described in this report.

The Receiver through the Department Energy, Mines and Resources, Assessment and Abandoned Mines requested a report summarizing the geology, work to date, significant intersections and resources related to claims outside of the immediate area disturbed by the 1996-99 mine operations. The operations were primarily confined to the Dome Creek drainage area. The relevant claims covered by this report are attached in Appendix 1.

The report is drawn from reports and exploration data prepared by various operators and developers that have carried out work on the property. In addition, the author was the Vice-President of Exploration for BYG Resources Inc. from 1997 to cessation of operations in 1999 and was therefore involved in the exploration and mining operations during that period.

## **DISCLAIMER**

A title search for the mineral claims was not undertaken as part of this review, and the author has relied on information from the Yukon Mining Recorder for the Whitehorse Mining District. The author accepts no responsibility for this information. Legal opinions were not sought on any aspect of the report.

The exploration to date has been carried out to industry standards of the day. The exploration and reports were prepared prior to the introduction of Regulatory Standards Instrument 43-101. This report is not intended to fulfill NI # 43-101 requirements.

## **PROPERTY DESCRIPTION AND LOCATION**

The Mount Nansen Gold project (peripheral) includes 195 Quartz mining leases and claims (3800 hectares) in the Whitehorse Mining District on NTS claim sheet 115 I 3. The Mining Leases are due to expire in 2019 and are eligible for renewal for an additional 19 years at that time. The quartz mining claims have expiry dates ranging from 2007 to 2012. A complete listing of leases and claims with expiry dates is attached in Appendix 1. The outline of the leases and claims is shown on Figure 2 Property Geology and Mineral occurrences. The leases and claims can be viewed on line at web site <http://www.yukonminingrecorder.ca/PDFs/115/115I03.pdf>.

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

The claims are centered approximately 65 kilometers west of Carmacks, Yukon and are accessible by all weather gravel road. Carmacks is located 170 kilometers north of Whitehorse, Yukon via the North Klondike Highway. Figure 1 Location Map.

The climate is semi-arid with average precipitation of approximately 25 centimeters, most of which falls as rain in the summer months. Late winter snow-pack is normally 30 – 40 centimeters deep. Average monthly temperatures range from -25° C in January to 15° C in July (Melling, 1995).

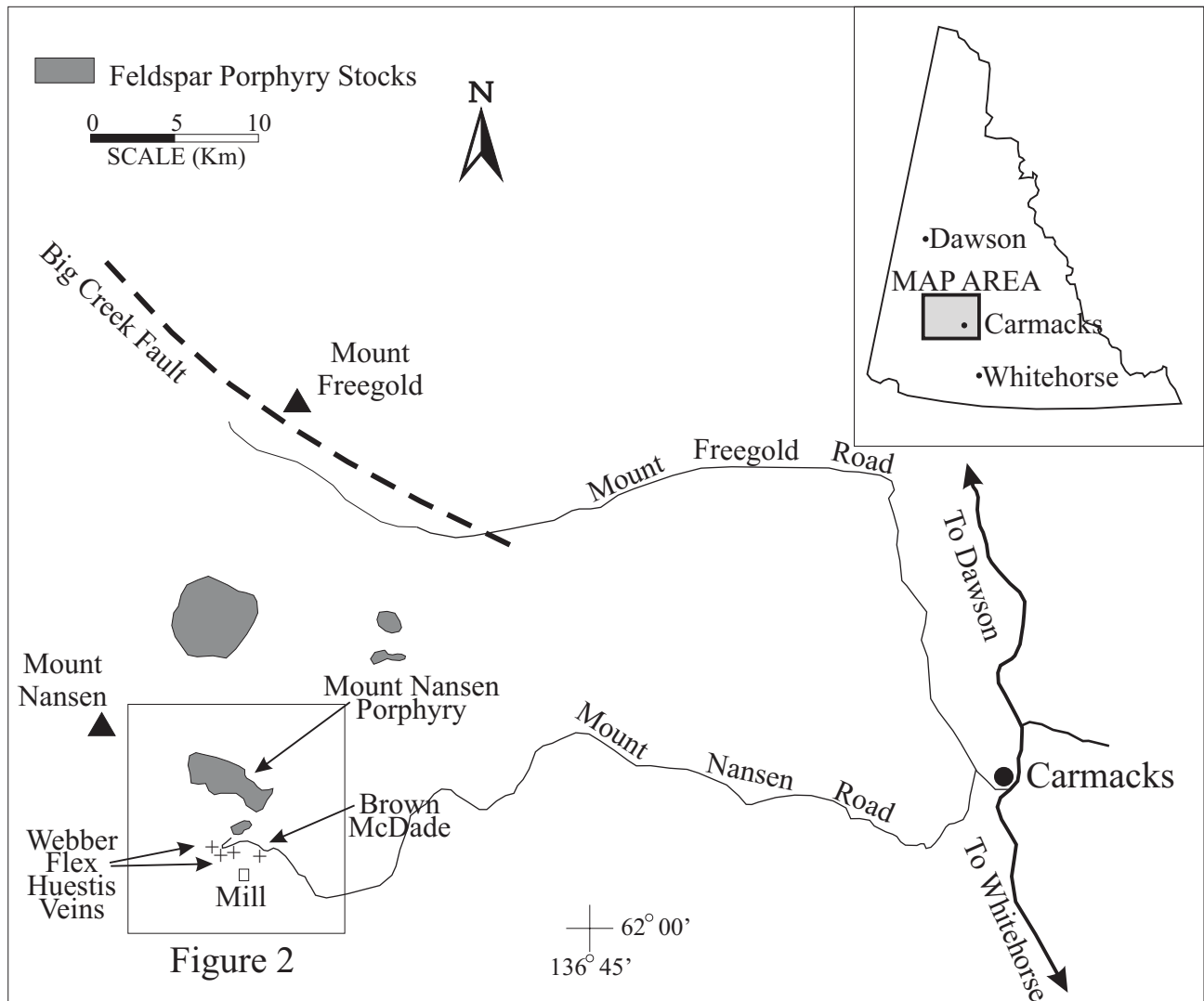
An experienced labor force is available in Carmacks and Whitehorse. The buildings related to the mining and milling operations are not included in this portion of the assets but are currently still in place. The adits constructed on the Huestis and Webber vein systems are partially accessible with some ice build up within the deeper portions of the developments.

The claims are traversed by an extensive network of gravel and dirt roads. The terrain consists of rounded ridges and shallow valleys, with a light cover of vegetation and small trees. Permafrost is present and is classed as discontinuous. It varies according to the amount of vegetation and slope facing direction. The property has an average elevation of approximately 1300 meters above sea level (asl).

## **HISTORY**

Placer gold has been produced from creeks draining the area of the porphyry complex intermittently since the early twentieth century and carries on today. Underground exploration and mining of lode deposits was carried out on several deposits between 1943 and 1972. The Brown-McDade deposit between Pony and Dome creeks was mined by open pit between 1996 and 1999. The Brown-McDade mining and milling operations produced 37,600 ounces of gold and 142,700 ounces of silver from 350,000 tonnes of ore. Recoveries were highly variable during the operation with mill recoveries averaging an estimated 70 % for gold and 40 % for silver.

The first lode discovery was the Brown-McDade (BMD) deposit in 1943. Initial exploration included trenching, diamond drilling and underground development. The Webber and Huestis veins were discovered and trenched during this period. The Mt. Nansen Exploration Syndicate was formed in 1962



PRICECOOPERWATERHOUSE INC.			
MOUNT NANSEN PROJECT			
LOCATION MAP			
FIGURE:	1	BY:	RS
DATE:	March 2006	BY:	WvR

to explore the properties in the area. This led to the underground development and mill construction by Peso Silver Mines Ltd. in 1967. Approximately 20,000 tonnes of ore material was processed during 1968-69 with average gold recoveries of 65 %. A further 5,500 tonnes of ore was processed from the Huestis deposit in 1975. These operations produce a combined production of approximately 3,900 ounces of gold and 91,500 ounces of silver. Recoveries averaged 60 %.

Area Exploration Ltd. confirmed the existence of porphyry type copper-molybdenum mineralization on the northern portion of the claims during 1971 – 1973. Detailed exploration included ground geochemical and geophysical surveys and 3,480 meters of diamond drilling and 950 meters of percussion drilling.

During 1985 -1988 Chevron Minerals optioned the property from BYG and carried out mapping, 24,100 meters of excavator trenching, 8,002 meters (126 holes) of diamond drilling, and 1,283 meters (17 holes) of reverse circulation drilling. The exploration concentrated on establishing the ore resource on the Brown-McDade deposit and exploring the newly discovered Flex zone.

Between 1994 and 1998 BYG conducted exploration on the property. The exploration consisted of:

- diamond drilling on the BMD and Flex in 1994 (990 meters 12 holes).
- diamond drilling on the Flex and Huestis in 1995 (1,490 meters in 21 holes).
- diamond drilling programs in 1996 consisted of 7 holes (400 meters) on the Webber and Huestis/Flex junction and 10 holes (700 meters) on the BMD hanging wall zone (Vince Vein).
- diamond drilling in 1998 included 30 holes (2,229 m) on the Flex zone, 10 holes (762 m) on the BMD, 12 holes (1009 m) on the BMD trend, 4 holes (402 m) on the PPBX, three holes (308 m) on the Tawa and one hole (123 m) on the Orloff King.

Exploration drilling by BYG (1994-98) discovered new veins and extensions at the Flex Zone, a new mineralized occurrence in a breccia body (PPBX zone), and a 500 meter extension of the Orloff King Zone. The exploration drilling and mining activity at the BMD and stripping of the Flex deposits has added considerably to the geological understanding of the Mount Nansen Project.

## **GEOLOGY**

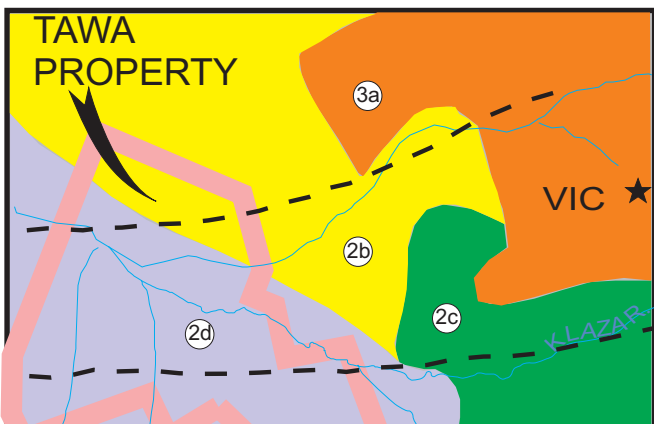
### **REGIONAL GEOLOGY**

The Mount Nansen gold-silver property is located in the Dawson Range of the Yukon Tanana Terrane (YTT). The Dawson Range is underlain by Early Mississippian metamorphic rocks intruded by several plutonic suites (Carlson, 1987).

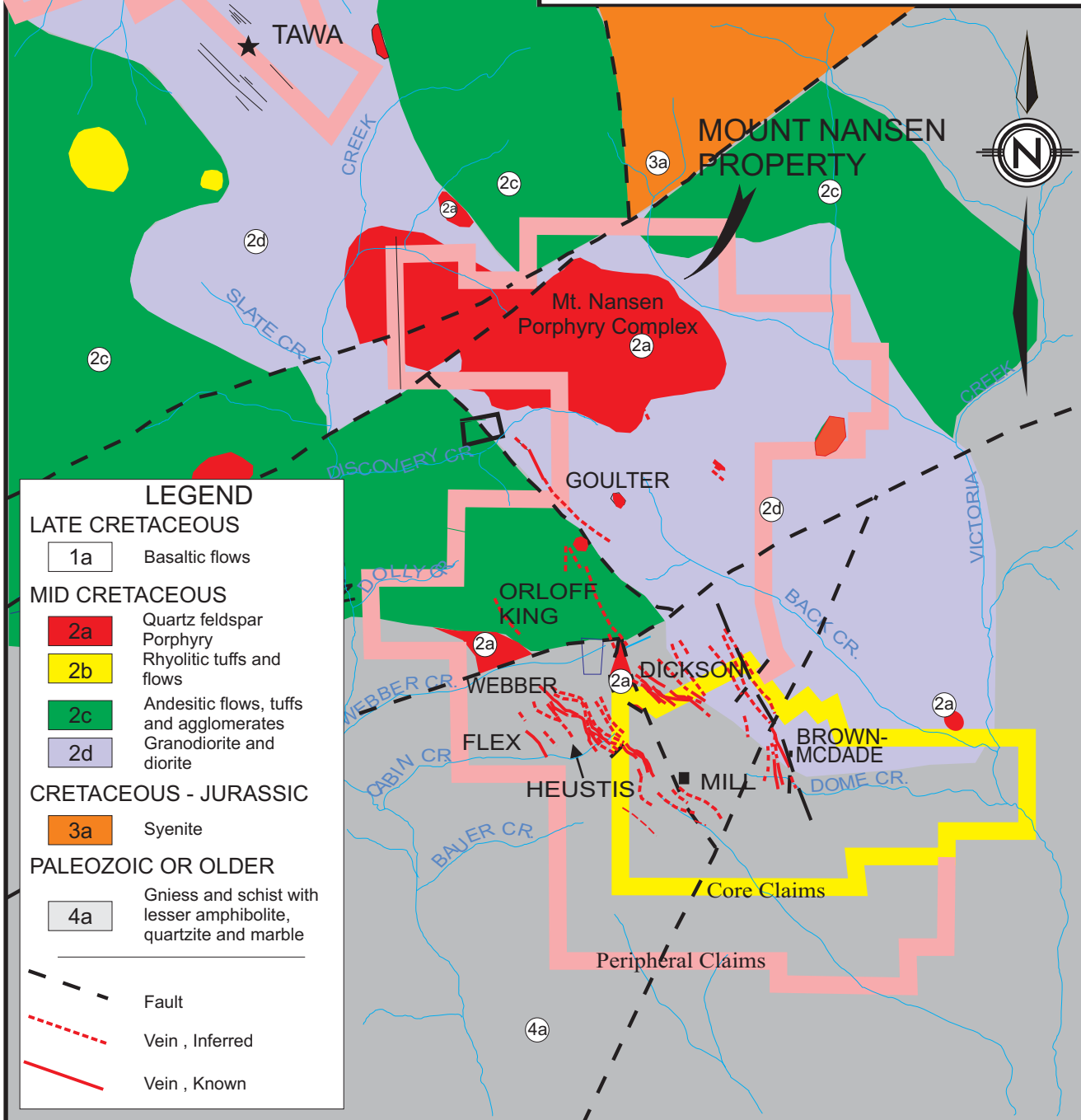
The metamorphic rocks are separated into two suites, meta-sedimentary and meta-igneous. Micaceous quartz-feldspar gneiss, schist, and quartzite of the Nasina assemblage form the meta-sedimentary rock suite. Metamorphosed carbonate rocks have been exposed in the Brown-McDade open pit. The meta-igneous package includes biotite-hornblende feldspar gneiss and coarse-grained granodiorite orthogneiss with lesser amphibolite.

The metamorphic rocks have been intruded by foliated Upper Triassic and weakly foliated Jurassic diorite, granodiorite and syenite batholiths.

The igneous and metamorphic rocks are intruded by Mid Cretaceous felsic plutonic rocks of the Coffee Creek Plutonic Suite and capped by the coeval mafic to intermediate volcanic flow and tuff rocks of the Mount Nansen Volcanic suite (Johnston and Mortensen, 1994). Genetically related sub-volcanic feldspar porphyry dikes and plugs intrude all rock types (Sawyer and Dickinson, 1976).



PRICECOOPERWATERHOUSE INC.  
 MOUNT NANSEN PROJECT  
 PROPERTY GEOLOGY  
 FIGURE: 2 BY: PGS  
 DATE: March 2006 BY:



**LEGEND**

**LATE CRETACEOUS**

1a Basaltic flows

**MID CRETACEOUS**

2a Quartz feldspar Porphyry

2b Rhyolitic tuffs and flows

2c Andesitic flows, tuffs and agglomerates

2d Granodiorite and diorite

**CRETACEOUS - JURASSIC**

3a Syenite

**PALEOZOIC OR OLDER**

4a Gniess and schist with lesser amphibolite, quartzite and marble

--- Fault

- - - - - Vein , Inferred

— Vein , Known

The Late Cretaceous Carmacks Volcanic Suite, although lacking in the immediate Mount Nansen area is voluminous in the region where relatively flat lying pyroclastic tuffs and flow units form prominent ridges capping the basement rocks (Carlson, 1987). The Carmacks Volcanic Suite is magmatically related to the Prospector Mountain Plutonic Suite (Johnston and Mortensen, 1994).

## MOUNT NANSEN AREA GEOLOGY

The Mount Nansen Porphyry system in the Mount Nansen mining camp is focused on a multi-phased complex of porphyritic rocks that occur as dykes, small plugs and breccia bodies in a three kilometer long by one and a half kilometer wide area between the upper Nansen and Victoria Creeks. (Figure 2 Property Geology and Mineral Occurrences). The porphyry bodies are composed of up to 50 % phenocrysts of quartz and feldspar in a k-feldspar groundmass. Limited dating of the rocks indicates that the porphyry bodies are approximately 109 million years (Mid-Cretaceous) and coeval with the Mount Nansen volcanics. This age corresponds with the main mineralizing event on the property. The porphyry complex occurs within Early Cretaceous quartz monzonite and granodiorite.

A series of small porphyry plugs outcrop five kilometers south of the complex. The largest stock is known as the Dome or Dickson Stock. The dykes, stocks and plugs intrude along an E-W trend enclosed by metamorphic rocks of the Nasina Assemblage. The distribution of stocks and plugs are shown on Figure 1.

Seven pipe-like breccia bodies have been located on the property. Most of the breccia bodies are located within the felsic porphyry complex and have not been explored. The bodies are generally silicified and locally contain a magnetite-rich (locally) quartz-tourmaline matrix and anomalous gold-silver mineralization.

Geochronological studies indicate that the U-Pb dating gives a time of 109 Ma for porphyry intrusive bodies that are interpreted as coinciding with the main mineralizing event in the district. (V. Meyers, 1997).

The Mount Nansen area was beyond the limit of the most recent continental glaciation although earlier incursions moved up the valley bottoms. Weathering extends to depths of up to 75 meters below surface which is accompanied by leaching and oxidation in the mineralized zones, and sulfides are commonly altering to limonite or other oxides (Melling, 1995).

## STRUCTURAL GEOLOGY

The epithermal veins on the property occur in all rock types. The mineralized veins are associated with strike-slip shear zones and porphyry bodies. The emplacement of the porphyry dykes and veins occur within dilational (extensional) zones flanking doming structures related to the emplacement of the larger porphyry stocks. Other potentially favorable sites for vein/dyke emplacement are along intrusive contacts.

Hydrothermal breccias explored to date occur with the porphyry intrusions or dykes and contain fragments of the host porphyry dykes and stocks and locally fragments of enclosing intrusive rocks. No large scale breccia zones have been discovered in the metamorphic rocks. The matrix of the breccias is generally quartz-rich with silicification of the breccia fragments. Locally dark quartz-tourmaline forms the matrix of bodies and occurrences with sulfides (pyrite, arsenopyrite, sphalerite, galena and sulfosalts) contain economic gold-silver mineralization.

Post-mineralization faults have deformed the known ore bodies and created potential undiscovered offsets of the main deposits. There are three identified fault trends that are post-mineralization. The earliest are multiple NNE trending SE dipping sinistral faults with relatively small offsets (10 - 20 meters) that have produced cumulative offsets of 100 meters or more. The NNE trending faults have been offset by N-trending W-dipping normal faults with a major vertical movement and unknown lateral offset. The Footwall fault at the Brown-McDade and the east bounding fault on the Dome stock are of this fault set.

The Footwall fault has been deformed by local re-activation of the NNE-trending faults. The latest faults are interpreted steeply dipping NE-trending faults such as the Webber Creek and Rusk Creek fault that appear to indicate sinistral displacement of the N-trending faults. Reconstruction of the post-mineralization faults has important implications for further exploration.

## **HYDROTHERMAL ALTERATION**

Five facies of hydrothermal alteration have been documented on the property.

### **Propylitic Alteration**

Propylitic alteration is characterized by chlorite, calcite, epidote, albite and magnetite alteration minerals. Disseminated pyrite is also common in the propylitic alteration zone. The propylitic alteration is most evident in the plutonic rocks surrounding the Mount Nansen Porphyry system and north of Bown-McDade above Back Creeek.

### **Argillic Alteration**

The argillic alteration is characterized by the clay minerals kaolinite, montmorillonite and minor sericite. Sulfide minerals are commonly leached out near surface leaving cavities in the altered rock. The argillic alteration zone is commonly accompanied by white "bleached" zones. The argillic alteration zone forms a relatively wide zone surrounding the phyllic alteration zone of veins and vein breccias in porphyry dykes or around strongly altered core silicic or phyllic zones in the Mount Nansen Porphyry.

### **Phyllic Alteration**

The phyllic alteration is characterized by quartz, sericite, pyrite, kaolinite and the absence of mafic minerals. Disseminated pyrite commonly increases in amount with decreasing silicification in the phyllic alteration zone. Intensely silicified zones commonly form resistant domes in the porphyry complex. Near surface the phyllic altered rocks are very porous with all sulfide minerals oxidized and leached out. The phyllic alteration zone carries ore grade gold-silver values surrounding the central veins or breccias.

### **Silicic Alteration**

The silicic alteration is characterized by intense silicification accompanying fine grained quartz-sulfide veins or in breccia matrix. Silicification of brecciated wallrock adjacent to veins or fragments within the vein or breccia is distinguished by very fine vugs in the rock, yellow weathering color and drusy quartz lining cavities in the breccias. At the pophyry complex quartz-tourmaline alteration is present in the breccia bodies. The fine grained quartz and tourmaline is accompanied by sericite, and minor kaolinite.

### **Potassic Alteration**

Potassic alteration is a local term used at the Brown-McDade deposit to designate honey-brown to dark brown alteration consisting of biotite, k-feldspar with minor magnetite and epidote in the Dawson Range plutonic rocks. A strong disseminated biotite alteration zone was intersected in the granodiorite batholithic rocks on the Tawa claims northwest of the Mount Nansen Porphyry complex.

## **DEPOSIT TYPE**

The mineralization is typically epithermal with quartz-sulfide veins, vein breccia and breccia pipes enveloped by successive alteration zones. The gold-silver mineralization and felsic dikes post-date the Mount Nansen volcanic rocks overlying the mid Cretaceous plutonic rocks.

The exploration target on the property is the epithermal high sulfidation type gold deposit or low sulfidation polymetallic veins. In the model, circulating hydrothermal fluids deposit gold in the near surface (low pressure and low temperature) environment. These deposits are characterized by zoned alteration formed as a result of progressive cooling and neutralization of the hot acidic fluids by reaction with host rocks and ground waters. The gold ore occurs in thin to large veins, vein stock-work, disseminated and replacement deposits. Common ore textures are open space filling, crustification, colloform banding, coxcomb structure and brecciation. The fluids enter the near surface environment along faults, breccia zones or contact zones.

A large, poorly defined area of low-grade copper-molybdenum porphyry style mineralization occurs with the Mount Nansen Porphyry Complex. The mineralization consists of low-grade copper and molybdenum in altered granodiorite and porphyritic rocks within the Summit Creek and Upper Nansen Creek drainages. Disseminated and fracture filling chalcopyrite and molybdenite mineralization in the porphyry complex is accompanied by low grade precious metal values.

## **MINERALIZATION**

Mineralization at the Mount Nansen property occurs as fault-shear-hosted veins and associated clay-rich and bleached alteration zones in plutonic and metamorphic rocks. The veins are often associated with felsic hypabyssal rocks. The vein zones range from narrow, simple quartz veins to complex, anastomosing and braided systems or breccia pipe-like structures that crosscut all rock types. The veins and associated felsic dykes or faults trend in a variety of directions and are steeply dipping. The structures are interpreted as dilatant fractures peripheral to the Middle Cretaceous porphyry intrusive bodies.

Central to the Mount Nansen mineral camp is a complex porphyry system referred to as the Mount Nansen Porphyry Complex. The complex is exposed within an uplifted block or an erosional remnant that resulted from post depositional faulting. The faulting has produced an apparent northwest trend for the mineralization referred to as the Mount Nansen Trend (Melling, 1995).

There are distinctive mineralogical assemblages associated with the various vein orientations. The most prominent and longest recognized veins are composed of dark grey, very fine grained quartz-sphalerite-galena-arsenopyrite-pyrite-stibnite. The quartz-sulfide veins generally trend northwesterly and are closely associated with fine grained buff weathering feldspar porphyry dykes. The veins yield high-grade gold and proportionately higher silver grades. Gold-rich light grey quartz veins trending east-northeasterly contain only incidental fine grained disseminated pyrite. Silver and base metal values are low. Quartz-pyrite rich breccia zones form irregular pipe-like bodies. The breccia bodies have been under explored.

Gold values in the veins and vein breccias are closely associated with an early phase of pyrite mineralization. The gold occurs as 5 - 50 micron sized inclusion within the pyrite. The gold grains have been exposed to near surface oxidation of the sulfide mineralization as well as by post-mineral cataclasis (Lister, 1986). Silver values appear to be related to galena and sphalerite mineralization.

Mineralogical studies have been carried out on the Huestis-Webber vein ore (Saager and Bianconi, 1971) and Brown-McDade vein and breccia ore (Lister, 1988).

The high-grade gold-silver bearing veins at the Huestis-Flex-Webber (H-F-W) and Dickson zones which occur on either flank of the Dome and associated linear porphyry stocks show an association with antimony in the soils. Stibnite is a common constituent of the veins. The stibnite-rich portions of the

veins do not correspond to high-grade gold and silver values. The (H-F-W) veins appear to be segments of a mineralized shear zone that forms a continuous system over a broad linear trend. There is a relative enrichment in the silver content of the veins from the Huestis mine at the southeastern end of the system and the Webber mine at the northwestern end of the system.

Metal associations have been noted from the multi-element soil geochemistry on the property (See Summary of Geochemical Results). Gold-in-soil anomalies and related mineralization near the porphyry complex have a positive correlation with bismuth in the soils. Bismuth indicates a magmatic source for the mineralization and the proximity of bismuth enrichment to the porphyry complex may suggest that the mineralization on the property is centered on the porphyry complex.

## **SUPERGENE MINERALIZATION**

The depth of potential supergene enrichment is variable and does not exceed 75 metres. The lowest level of the supergene enriched clays is marked by the development of crystalline gypsum in fractures marking the maximum level of ground water penetration. The gypsum stringers occur in distinct muddy brown clay-rich zones. The high-grade supergene ore at the adjacent Brown-McDade deposit occurred with bright orange-red clay zones enveloping the oxidized vein and breccias.

## **DISCUSSION OF POTENTIAL EXPLORATION TARGETS**

In profile, the Brown-McDade deposit exhibits a well-developed near surface oxide gold enrichment zone for both the vein and breccia type bodies. Priority exploration targets are the potentially enriched oxidized zones capping breccia pipes or veins within large feldspar porphyry intrusive rocks. Numerous gold-in-soil anomalies have not been tested in the competent homogeneous rocks north of the Brown-McDade mine. The gold-in-soil anomalies increase in abundance towards the Mount Nansen porphyry complex.

## **HUESTIS DEPOSIT**

The Huestis deposit consists of an anastomosing network of quartz-sulphide veins hosted in shear-controlled structures in metamorphic rocks. Three veins have been explored in drifts on the 1250 meter asl elevation (4100 Level) and the 1310 meter asl elevation (4300 Level). Previous mining operations (1967 – 1976) mined stopes from the No. 12 vein on both levels. Veins No. 11 and No. 13 were explored along the 1310 meter elevation drift. The underground drift development totaled approximately 3400 meters.

There are sixteen ore shoots identified by underground sampling. The shoots average 27 meters in length, 1.0 meters wide with average grades of 19.88 g/t gold and 442 g/t silver. The listing and description of the underground ore shoots are exhibited in Table 1.

The veins have been explored along a north-northwest trend for 2000 meters. A drill hole in 1994 intersected gold-silver vein mineralization at the 950 meter asl elevation. The hole intersected 6.3 meters with an average grade of 3.4 g/t gold and 64 g/t silver that included 1.7 meters with an average grade of 10.0 g/t gold and 101 g/t silver. The deposit is considered to be open to the north and at depth. The veins in the Huestis deposit may be directly linked to the Flex vein system.

Table 1 Vein Ore Shoots Huestis and Webber Deposits  
Mount Nansen

DEPOSIT	VEIN No.	ORE SHOOT	LENGTH (m)	WIDTH (m)	GOLD (gpt)	SILVER (gpt)	OUNCES Au	OUNCES Ag	TONNES/Vert.m.
Huestis/1311	11	628	22.9	0.8	16.80	82.3	28.3	138.3	52
	12	609	10.7	0.9	23.32	332.6	21.9	312.9	29
		609	18.3	1.2	16.46	226.3	35.4	486.6	67
		610	17.8	0.9	14.74	308.6	21.8	456.2	46
		612	24.4	0.9	21.26	480.0	54.7	1032.3	67
		615	33.5	1.5	22.63	802.3	111.5	3953.9	153
		617	30.5	0.9	21.6	377.1	58.1	1013.8	84
		650	30.5	0.9	16.11	401.1	43.3	1078.3	84
		653	42.7	1.0	17.14	205.7	68.8	825.8	125
		657	30.5	0.9	13.71	274.3	36.9	737.3	84
		660	32.0	0.9	20.57	154.3	58.1	435.5	88
		662	47.2	1.0	19.89	596.6	91.1	2734.3	143
	13	645	27.4	1.5	14.74	545.1	59.5	2198.2	125
		H-15	18.3	0.9	9.94	366.9	16.0	591.7	50
	15	H-12	18.3	0.9	24	174.9	38.7	282.0	50
	17	H-12s	18.3	0.9	10.29	264.0	16.6	425.8	50
<b>Totals</b>			<b>423.1</b>	<b>16.1</b>			<b>760.7</b>	<b>16702.9</b>	<b>1297</b>
<b>Averages</b>			<b>26.4</b>	<b>1.0</b>	<b>19.88</b>	<b>441.7</b>			
Webber/1311	1	101	13.7	0.9	8.57	253.7	10.4	306.9	38
		105	30.5	1.2	13.03	332.6	46.7	1192.0	111
		107	30.5	1.8	10.97	462.9	59.0	2488.5	167
		119	32.0	0.9	8.91	476.6	25.2	1345.2	88
		120	21.3	0.6	5.83	384.0	7.3	481.7	39
	120/121		15.2	1.5	8.91	1080.0	20.0	2419.4	70
		122	24.4	0.6	10.63	325.7	15.2	467.0	45
	2	129	33.5	0.9	10.63	925.7	31.4	2737.3	92
		130	30.5	0.9	6.86	1920.0	18.4	5161.3	84
		131	13.7	0.6	12.3	761.14	10.0	613.8	25
		134	15.2	0.6	8.23	452.6	7.4	405.5	28
		136	36.6	1.5	22.97	1491.4	123.5	8018.4	167
		139	6.1	0.9	11.66	984.0	6.3	529.0	17
		146	12.8	1.0	15.09	270.9	19.3	346.6	40
		153	27.4	1.1	8.57	822.9	24.2	2322.6	88
		154	22.9	0.9	15.09	1258.3	30.4	2536.9	63
		157	47.2	0.9	17.83	754.3	74.3	3142.9	130
<b>Totals</b>			<b>413.6</b>	<b>17.0</b>			<b>528.9</b>	<b>34514.9</b>	<b>1292</b>
<b>Averages</b>			<b>24.3</b>	<b>1.0</b>	<b>14.06</b>	<b>917.5</b>			

## WEBBER DEPOSIT

The Webber deposit consists of two vein bearing shear zones cross cutting feldspar porphyry and meta-sedimentary rocks. The gold-silver mineralization occurs in steeply plunging ore shoots that are typically 25 meters long. The mineralization is associated with fine-grained sulfide-quartz mineralogy. The veins have been explored underground with approximately 2500 meters of drifting between 1964 and 1966. The drifts followed the No. 1 (FW) vein and the No. 2 (HW) vein at the 1300 meter asl elevation (4260 Level). A second adit was collared at the 1280 meter asl elevation (4200 Level) but did not reach the deposit veins. Trenching in 1984 exposed the veins over 300 meters at the 1320 meter asl elevation.

Seventeen ore shoots on the two veins defined by underground sampling averaged 25 meters in length, 1.0 meters in width with average grades of 14.06 g/t gold and 917 g/t silver. The listing and description of the underground ore shoots are shown in Table 1.

Drilling between 1985 and 1987 was carried out to test the continuity of the deposit above and below the adit. Drill holes south of the deposit in 1996 intersected veins at 110 meters and 170 meters along the trend. Drill hole 96-177 intersected veining across six (6) meters that averaged 6.7 g/t gold and 213 g/t silver. The Webber Creek fault appears to cut off the deposit to the north. The deposit remains open to the south and to depth.

## FLEX DEPOSIT

The Flex deposit is a multiple vein system hosted by metamorphic rocks and is located over the central portion of a swarm of veins between the Huestis and Webber workings. The gold-silver mineralization occurs in sub-parallel quartz-sulfide veins enclosed in strongly bleached clay zones. Figure 3 Flex Zone Plan Map. High-grade gold-silver values (up to 70.4 g/t and 6173 g/t respectively) occur in quartz-sulfide veins of 0.3 to 1.1 meter widths. Structural deformation has resulted in local thickening of the veins attaining widths of greater than six (6) meters with an average grade of 7.7 g/t gold and 107.6 g/t silver.

Host rocks for the Flex veins are predominantly plagioclase-hornblende to amphibolite gneiss, quartzite and micaceous felsic schist. The dark green mafic rocks are prominent in the central and northern part of the deposit while the light-colored schist is most abundant in the southern half. Feldspar porphyry dikes do not occur within the deposit, although narrow quartz-sulfide veins have been intersected within a large porphyry plug outcropping along the ridge immediately north of the stripped area. The feldspar porphyry extends to the Webber deposit Figure 3.

Two semi-continuous bleached clay-rich zones enclosing intermittent quartz-sulphide veins and vein breccia cross-cut metamorphic rocks. The veins are sub-parallel, trending between 340° and 010° and dip steeply to the west. The two zones, named the Main and Footwall veins are approximately 30 meters apart but converge near section 2+00 N and section 3+75 N. Additional discontinuous veins have been mapped in the hanging wall of the Main vein and in the footwall of the Footwall vein. The Hanging wall vein is poorly exposed near the west side of the stripped area and has been intersected in several drill holes. The East vein occurs from 10-12 meters east of the Footwall vein in the central portion of the deposit.

The veins range from 5 – 110 centimeters thick. Silicification of the wall rock extends ore grade widths up to seven meters. Veins and clay alteration zones, that pinch and swell, have been traced more than 400 meters along strike. Table 2 contains a listing of diamond drill intersections from the 1998 diamond drill holes on the Flex Zone.

The veins have been offset along northeast-trending faults. A prominent fault between section 2+60 N and 3+00 N crosscuts and offsets the veins up to 26 meters left-laterally as indicated by drag-folding.

Vein alteration is primarily patchy silicification and more common in the hanging wall of the vein structures. Pervasive argillic alteration surrounds the sulfide-rich veins and forms hanging wall and footwall haloes up to three meters thick. Manganese oxides are peripheral to the clay zones surrounding



the mineralized veins. The distinctive yellowish-green stain of scorodite accompanies the quartz-sulphide veins and is a visual indicator of high-grade gold values.

Dark grey, sulfide-rich, opaque, vitreous quartz carries the richest values of gold, up to 34 g/t and silver values of up to 1416 g/t. The gold-and silver-rich sulfide consists of pyrite, arsenopyrite, silver sulphosalts, galena, sphalerite and stibnite.

#### ORLOFF KING DEPOSIT

Shallow drilling at widely spaced intervals on the Orloff King structure has intersected altered and mineralized felsic dikes with values of 1 - 4 g/t gold. The Orloff King system can be traced by a strong linear soil anomaly for over a one-kilometer length north of the ore resource defined by trenching and shallow drilling. The system trends southeasterly towards the Dickson vein system. The Dickson veins have been stripped and a large area prepared for further exploration and potential development. The metamorphic-intrusive contact has been exposed in the stripping and explored with a few trenches and one shallow diamond drill hole.

A single drill hole to test a one kilometer long gold-in-soil anomaly along the Orloff King trend intersected veining in a mineralized and altered porphyry dyke. The intersection at the 55-metre depth intersected low grades over 3.6 meters with the best assay returning 1.0 g/t gold and 9.5 g/t silver over 1.8 meters

#### PPBX BRECCIA OCCURRENCE

Drill holes in the upper Pony Creek area along the northern trend of the metamorphic-intrusive contact tested gold-in-soil anomalies underlain by rocks of the metamorphic complex and the foliated diorite batholith. The metamorphic rocks are altered; clay rich and weakly mineralized. The drill holes to the northeast of the Brown-McDade in the foliated diorite batholith intersected quartz-sulphide veins in clay alteration zones. The most northerly drill hole (800 metres north of the pit) intersected strong mineralization consisting of disseminated and stringer pyrite +/- galena-sphalerite in a breccia zone (PPBX). The discovery hole intersected 23.8 metres grading 1.4 g/t gold and 11.1 g/t silver below the 50 meter depth. Shallow holes in the area intersected low-grade gold values over widths of up to 36 meters. Table 3 shows the exploration drilling results for the PPBX, Orloff King and Tawa claims carried out in 1998.

#### OTHER TARGETS

Silicified breccias were mapped within the Mount Nansen Porphyry Complex in 1972. A single drill hole on one of the resistant knolls hosting the breccia bodies intersected low gold values in the upper portion of the drill hole. The other breccias have not been drill tested.

Skarn type alteration has been noted at several localities in limy rock units along road cuts between the Brown-McDade deposit and the Huestis-Flex-Webber vein system. No gold values have been obtained from these occurrences but this type of mineralization was not recognized prior to 1998 on the property.

Table 2.  
Summary Diamond Drill Hole Assays  
Flex Zone 1998

DDH No.	From (m)	To (m)	Width (m)	Au (gpt)	Ag (gpt)
98-183	12.5	16.5	4.0	3.0	44.0
	14.7	15.2	0.5	8.7	98.8
98-184	37.0	38.0	1.0	4.7	295.8
98-185	20.1	21.0	0.9	12.3	134.6
98-186	6.4	7.9	1.5	4.4	52.7
	73.8	76.8	3.0	3.0	2.9
98-188	54.6	65.3	10.7	2.1	97.5
incl.	54.6	55.6	1.0	5.4	282.7
and	61.0	62.0	1.0	8.0	92.5
	91.2	94.2	3.0	19.0	802.8
98-189	36.7	37.6	0.9	1.5	7.1
	45.8	46.8	1.0	1.4	24.9
98-190	15.5	36.9	21.4	1.9	61.7
98-190	19.5	20.2	0.7	11.8	298.8
	36.5	36.9	0.4	13.7	1035.5
	47.2	48.0	0.8	5.9	243.5
98-191	31.3	51.8	20.5	2.0	143.4
incl.	32.2	32.9	0.7	31.5	4206.5
and	44.6	45.6	1.0	8.5	58.2
98-192	46.3	47.4	1.1	3.0	155.6
98-193	56.1	67.7	11.6	6.2	260.9
incl.	60.2	61.1	0.9	14.5	78.4
and	65.0	67.7	2.7	13.4	45.1
	86.2	86.9	0.7	17.5	362.0
98-194	64.0	69.6	5.6	5.0	80.8
	80.0	84.3	4.3	7.1	95.3
98-195	74.9	75.8	0.9	7.3	382.1
98-196	93.8	94.3	0.5	2.7	112.5
98-223	58.0	58.7	0.7	1.3	37.7
98-226	24.7	25.7	1.0	1.1	7.3
98-227	10.0	11.1	1.1	20.8	83.9
98-228	23.6	24.3	0.7	3.6	33.9
98-229	72.8	73.3	0.5	4.3	46.4
	90.0	90.5	0.5	9.1	89.0
98-230	33.5	38.2	4.7	1.2	45.7
98-231	9.8	20.3	10.5	5.0	76.1
incl.	14.7	15.0	0.4	31.9	443.4
and	17.7	18.4	0.7	25.0	302.7
and	18.9	19.3	0.4	21.8	436.2
	51.5	52.5	1.0	12.8	874.4
98-234	49.7	57.9	8.2	3.0	12.9
98-234	49.7	50.2	0.5	9.9	43.5
and	54.2	55.1	0.9	6.7	38.3
98-235	31.8	39.9	8.1	2.6	33.7
incl.	33.0	34.0	1.0	9.3	4.7
98-236	30.0	31.0	1.0	1.8	4.6
98-237	8.8	10.4	1.5	0.7	9.0
98-238	26.0	27.0	1.0	2.1	169.8
	51.3	52.5	1.2	2.4	120.8
98-239	19.8	20.6	0.8	8.0	401.9
incl.	19.8	20.1	0.3	17.3	1019.1
	39.6	40.6	1.0	8.6	40.2
	47.0	48.0	1.0	9.4	541.1

Table 3.

## Summary of Exploration Results Diamond Drilling 1998

DDH No.	SECTION	FROM (m)	TO (m)	WIDTH (m)	Au (g/t)	Ag (g/t)	COMMENTS
98-198	1684 N	78.00	101.80	23.80	1.40	11.1	PPBX
98-199	1655 N	21.35	22.00	0.65	1.75	53.0	PPBX
98-200	1420 N	11.20	12.20	1.00	46.60	262.0	PPBX
		15.44	16.20	0.76	9.19	160.5	PPBX
		25.15	26.20	1.05	0.76	52.5	PPBX
98-219	1632 N	32.50	33.00	0.50	0.34	6.9	PPBX
		53.00	54.00	1.00	4.87	1.90	PPBX
		96.45	97.10	0.65	0.34	0.8	PPBX
		104.25	106.85	2.60	0.18	0.8	PPBX
		107.90	109.80	1.90	0.29	2.4	PPBX
		120.00	121.50	1.50	0.21	1.4	PPBX
98-220	1684 N	8.10	26.50	18.40	0.62	4.5	PPBX
		42.50	44.90	2.40	0.57	11.4	PPBX
		58.90	65.00	3.50	0.26	1.5	PPBX
		109.75	110.33	0.58	0.58	1.1	PPBX
98-221	1690 N	50.50	51.30	0.80	0.55	2.2	PPBX
		67.20	74.70	7.50	0.41	1.3	PPBX
		78.33	79.85	1.52	0.31	0.7	PPBX
98-222	1677 N	4.50	6.00	1.50	0.65	1.1	PPBX
		27.00	27.70	0.70	0.86	3.8	PPBX
		45.00	46.00	1.00	3.98	3.9	PPBX
		56.50	57.50	1.00	0.51	1.0	PPBX
		77.10	78.00	0.90	0.41	1.7	PPBX
98-225		55.50	57.30	1.80	1.02	9.5	Orloff King
T-98-8		40.50	41.50	1.00	1.04	254.7	Tawa/Klaza

## SUMMARY OF GEOCHEMICAL RESULTS

Exploration drilling in the Upper Pony and Back Creek areas is recommended to test a number of gold-in-soil and VLF-EM anomalies especially in the Back Creek area proximal to the Mount Nansen Porphyry Complex. The target selection will be based on areas with geochemical and geophysical definition following field examination. Drill hole spacing in the most prospective breccia targets will allow for more than one hole as breccias in the porphyry complex are up to 180 meters across.

The results of the multi-element soil geochemical sampling carried out in 1985 have been compiled in the Gemcom Mount Nansen Database. The analytical results have been plotted on individual 1: 20,000 scale plan maps that cover 75 % of the Mount Nansen property. All the known occurrences were covered in the survey. Figure 4 show a summary of the multi-element anomalies from the soil sample surveys.

Elements that provide an indication of sample quality are iron, manganese, calcium, strontium and aluminium. These elements all meet the parameters that indicate the survey results are of a good quality.

Eleven gold anomalies have been identified and compare to each plot of all other elements. The results of the evaluation are presented Table 4.

Elements are directly related to the mineralization (Au, Ag, As, Sb, Bi, Pb, Cu, Zn, Cd and Fe), related to the mineralizing environment i.e. alteration (Na, Ca, Mg, Sr, Mn and P) or are indicative of the geological environment (Al, K, Mg, Ca, Ti, V, Ni and Co).

The peak value in each anomaly for the ore elements is recorded in the table with the presence of a lead-zinc anomaly noted. Mineralogical associations are recorded as high if there is a good coincidence of high values within the anomalies.

The vein occurrences surrounding the Dickson Stock show a strong association of gold with silver, lead, zinc, cadmium, arsenic and antimony.

The Mount Nansen Porphyry Complex exhibits an elemental association with or without gold or copper, molybdenum, bismuth, potassium, strontium, magnesium and sodium. There is a pronounced depletion of calcium and manganese. The presence of bismuth is an indicator of a probable magmatic source. The survey results suggest that the Mount Nansen Porphyry Complex is central to the hydrothermal system on the property.

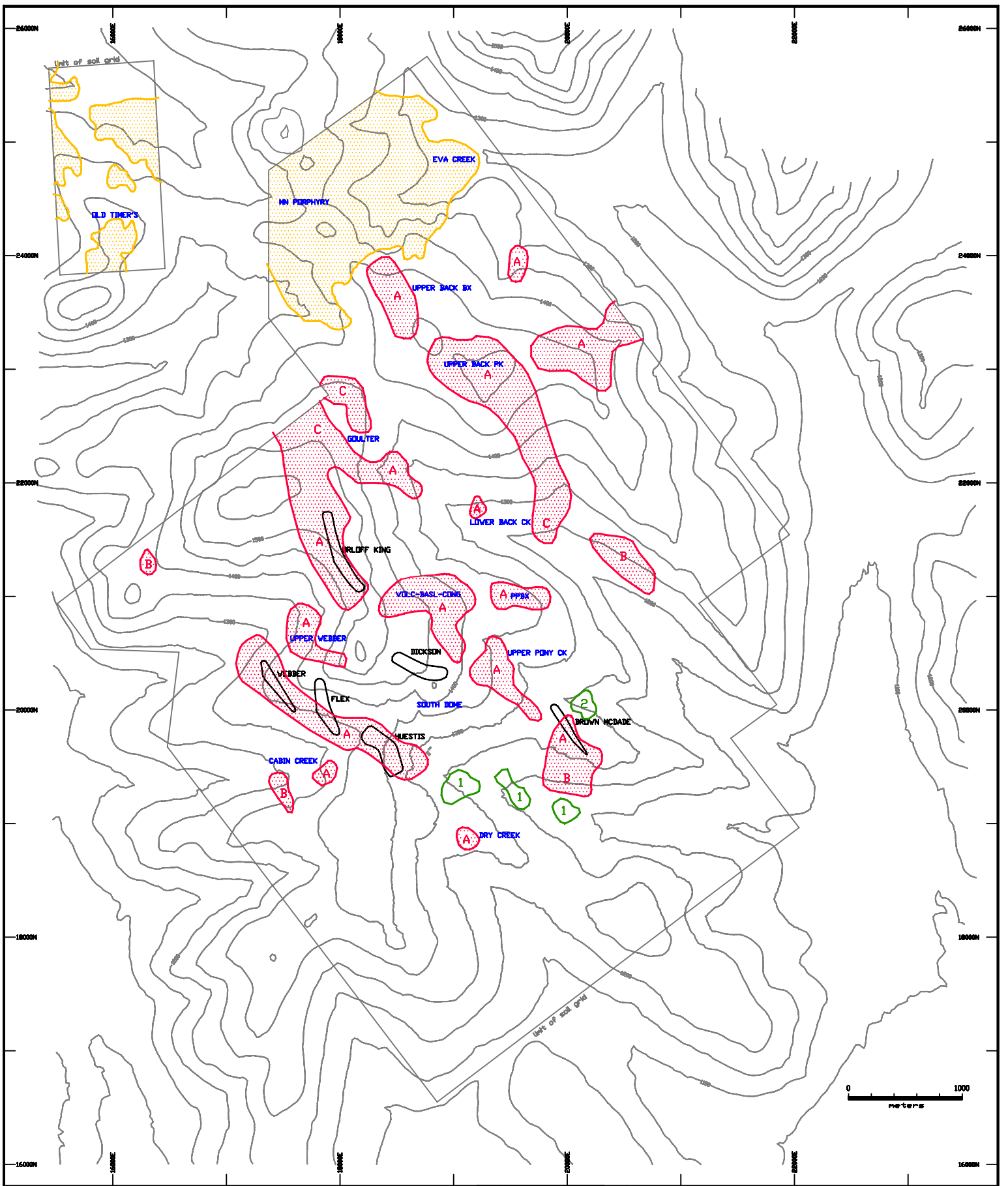
The plutonic-hosted breccia (PPBX) shows elemental associations similar to both the vein and porphyry occurrences.

A depletion of sodium in soils has been shown to occur with other deposits in the Dawson Range and therefore, sodium depletion in soils with the gold-in-soil anomalies may be an important indicator of economic potential.

Phosphorous is often associated with gold and gold-copper deposits. It is an important indicator of ore potential.

Calcium may reflect propylitic alteration or underlying calcareous bedrock. Calcium has a high correlation with what may be interpreted as high-level occurrences i.e. Orloff King or in areas underlain by Nasina Assemblage rocks that locally contain calcareous units i.e. South Dome, Dry Creek. Magnesium can indicate chlorite alteration that also occurs in the propylitic alteration zone.

Manganese and iron are closely associated with the weathered portion of the known occurrences. The presence of iron and manganese with a gold-in-soil anomaly is a favorable indicator of potential ore mineralization.



<b>ANOMALOUS VALUES</b> Au (100 ppb)      Mo (3 ppm) Ag (7 ppm)        Pb (100 ppm) As (250 ppm)      Sb (15 ppm) Bi (5 ppm)        Zn (200 ppm) Cu (75 ppm)       Cd (2 ppm)		<b>multi-element anomaly</b> <b>A</b> Au, Pb, Zn, ± Sb, As, Cd, Bi, Cu, Mo, Ag <b>B</b> Pb, Zn, Cd ± As <b>C</b> Pb, Zn, Bi, Cu, Mo ± Cd, Sb  <b>Cu, Mo, Bi anomaly</b>  <b>anomaly due to contamination</b> <b>1</b> contamination from mill <b>2</b> contamination from Brown McDeade edit	SCALE : 1:20000 DATE : March 1999 DRAWN : CHECKED : APPROVED :	<b>MOUNT NANSEN PROJECT</b>  <b>FIGURE 4</b> <b>SOIL GEOCHEMISTRY</b> <b>MULTI-ELEMENT ANOMALIES</b>  DRAWING NUMBER: gchen_anomaly.dwg
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Table 4.

## SUMMARY OF MULTI-ELEMENT GEOCHEMICAL ANOMALIES

MOUNT NANSEN PROJECT

ANOMALY	DESCRIPTION	Peak Values						Mineralogical Associations							
		Au/ppb	Ag/ppm	Pb-Zn	As/ppm	Sb/ppm	Bi/ppm	P	K	Na	Al	Mg	Ca	Fe	Mn
<b>Known Occurrences - diamond drilling - reserves/resources</b>															
Brown-Mcdade	Spotty anomalies - strong downslope dispersion w/ metals Sodic depletion in soils Geol - Qfp dyke, altered diorite, diorite, Nasina	360	3.4	Yes	320	20	2	Yes	Wk	Depleted	Moderate	Low	Low	Erratic	High
Huestis-Flex-Webber	Extensive - strong and nearly continuous anomalous zone Sodic depletion in soils Multiple shear zones discontinuously mineralized w/ high-grade vns Geol - Nasina, Qfp dykes	4380	44.0	Yes	2440	230	28	Yes	Yes - Web	Locally depleted	Local high	Low	Low	Locally high	High
Dickson	Scattered anomalies - strong downslope dispersion Geol - Nasina, Qfp dykes, diorite	247	12.0	Pb	820	20	NA	Yes - wk	Yes	Depleted	High	Low	Low	Moderate	Moderate
Orloff King	Strong linear trend - NNW - Widespread dispersion Geol - MN volcanics, Qfp dykes	1520	12.6	Yes	1140	760	12	Yes	Yes	Enriched	High	High	High	High	High
PPBX	Stong one line anomaly - detected in downslope dispersion Geol - Breccia (diorite - Qfp dyke)	527	2.4	Yes	220	120	12	Yes	Yes	Enriched	High	High	High	High	High
<b>Untested Anomalies</b>															
Old Timer's	Drill intersection on Aurchem boundary - ole workings Within Mount Nansen Porphyry system Sodic depletion in soils downslope of metal anomaly Geol - MN porphyry - breccia - Qfp - granodiorite	416	3.0	No	60	60	56	Yes -	Yes	Enriched downslope	High	High	Low/erratic	High	Depleted
Upper Back Ck	Widely dispersed gold anomalies - peak and downslope - trend Strong associated metal anomalies 1987 trenching - only four samples - anomalous alteration zone Sodic depletion in soils Geol - granodiorite, Qfp	1150	14.4	Yes	1880	50	8	Tr	Yes	Depleted	Low	Low	Low	High	High
Upper Back Bx	Dispersed gold anomalies - associated Bi - edge of porphyry comp 1986 trench - 20 metre porphyry dyke - anomalous gold in alteration Sodic depletion in soils Geol - granodiorite, Qfp	3840	7.4	Yes	480	30	22	Yes wk	Yes	Depleted	High	Low	Low	High	High
Lower Back Ck	Discrete anomalous zone Lower than Upper Back trend near creek Geol - granodiorite	969	5.6	Yes	260	10	6	Yes	Erratic	Depleted	High	Low	Moderate	High	Moderate
Volc-Basl-Cong	Strong multi-element anomaly dispersed downslope NE-facing slope - no surface exploration - trenches no bedrock Sodic depletion in soils Geol - Nasina, granodiorite	348	5.4	Yes	1150	20	NA	Yes - wk	Erratic	Depleted erratic	Erratic	Low	Low	Moderate	Mod/High
Dry Creek	Broad anomalous zone - downslope dispersion Sodic depletion in soils Geol - Nasina	278	17.4	Yes - wk	4010	40	NA	Yes	Yes outside	Depleted	Moderate	Moderate	Weak	Moderate	High
Cabin Creek	Numerous scattered anomalous values - west of H-F-W system Sodic depletion in soils Geol - Nasina, Qfp dykes	579	3.6	Yes	820	70	2	Yes	Yes	Depleted	Locally high	Erratic	Low	High	High
South Dome/	Scattered - spotty multi-element anomalies	120	3.2	Pb	410	20	4	Yes	Yes	Depleted	Locally high	Erratic/low	High	Erratic	High
Stave tank	Nasina assemblage rocks - skarn in road cuts Ca anomalous zone - possible carbonate bearing rocks Geol - Nasina														
Upper Pony Ck	Clay rich altered zone - scattered anomalous drill intersections Hanging wall of FW fault Footwall of NNE deformation faults Geol - Altered foliated diorite, Qfp dykes	222	3.6	Pb - wk	410	10	2	Yes	No	NA	Locally	Low	High	Low	Moderate
Upper Webber	Scattered spotty anomalous values North slope of Dickson stock Geol - Dickson Qfp stock, Nasina	794	6.2	Yes	570	760	2	Yes	Yes	Locally depleted	High	Erratic/Low	High	Moderate	High
Goulter	Trenched - mineralized veins in altered zone - extension Willow Ck. Geol - MN volcanics, Qfp dyke	119	8.2	Yes	560	40	18	No	Yes	Depleted	Locally	Moderate	Moderate	High	Moderate
Eva Creek	Rare erratic gold-in-soils - porphyry complex w/ Cu-Mo anomalies Sodic depleted zone Northeast facing slope Geol - MN porphyry complex - granodiorite, Qfp	103	3.4	Yes	50	20	4	Yes	Yes	Depleted	Spotty	Erratic	Depleted	Moderate	Depleted
MN Porphyry	Partially covered by soil survey - breccia pipes Anomalous Cu-Mo in soils Rare isolated gold-in-soil anomalous values - Bi w/breccias Geol - MN porphyry complex - granodiorite, Qfp, breccia	172	2.4	depleted	50	150/wk	50	Erratic	Yes	Mixed	Mixed	Mixed	Depleted	Mixed	Depleted

Potassium is an excellent indicator of felsic intrusive rocks and K-feldspar alteration associated with porphyry systems. The potassium-in-soil distribution correlates well with the airborne radiometric survey and is strong near the Mount Nansen Porphyry Complex and known quartz-feldspar porphyry stocks and dikes. Aluminium is useful for identifying clay alteration zones associated with argillic altered and mineralized porphyry dikes and stocks.

The Nasina Assemblage is relatively rich in ferromagnesium-rich rocks that are reflected by the high background levels of nickel, magnesium, titanium, cobalt and vanadium in the soils.

The Mount Nansen andesite rocks also have high background levels in calcium, magnesium, vanadium, sodium, titanium, manganese and nickel.

There are abundant elemental indicators that occur with the known mineralization on the property and the untested gold-in-soil anomalies. The anomalies have not been drill tested. Several have been explored with trenching and several have not been investigated in the field.

## **EXPLORATION STATUS**

All drill holes on the property and the north adjoining Aurchem property, formerly held by BYG under option, completed since 1984 are entered in the Gemcom database. All drill hole assays have been entered but lithologies from the drill holes are only partially entered in the database. The 1972 drill holes by Cyprus on the porphyry system are included in the database but need to be located in the field and surveyed in the mine grid location co-ordinates for confirmation in the database. Trenches from the Flex, Dickson, and Orloff King zones are also compiled in Gemcom from survey data. Entry of lithological mapping from the trenches has been started but remains to be completed. Webber and Huestis vein trenching information has only partially been entered into the database. The data can be reported as text files for utilization in other software programs.

Geological compilations of original mapping in 1972 have resulted in a loss of detail and erroneous rock unit identification. The original geological map has been digitized and the compilation of exploration data would provide detailed geologic information to update the map to be used as a guide to future exploration.

Geophysical survey coverage of the property is limited. Although most geophysical methods cannot detect an individual deposit they are useful for delineating the porphyry/epithermal environment favorable for hosting economic precious metal deposits as well as fault structures offsetting ore bodies. The GSC carried wide spaced (500 meters between flight lines) airborne magnetic and radiometric surveys on the Mount Nansen map sheet in 1995. The wide spacing does not allow a detailed interpretation of the results but the magnetic survey has outlined areas of the Mount Nansen volcanic rocks and the potassium survey results indicate centers of felsic plutonic rocks (Mount Nansen Porphyry Complex and the Dome stock). The airborne survey results are confirmed by the distribution of potassium in the soils. IP surveys have been carried out on the Porphyry complex in 1971 (results not available).

Modern gravity surveys can be used to delineate intrusive bodies and major regional structures. Magnetic surveys measure the magnetic susceptibility of the underlying bedrock and are useful in detecting magnetite alteration, changes in lithology and indicate large scale structures. Radiometric surveys are useful for outlining felsic plutonic rocks, potassium-rich alteration and clay enrichment in bedrock under the thin cover of the area. Resistivity surveys are useful to identify resistive siliceous zones and clay filled faults or shear zones. IP surveys measure the resistivity and chargeability of the underlying bedrock. This is useful to locate resistive silicified bodies and disseminated/stock-work sulfide mineralization. Infa-red spectroscopy is useful for mapping alteration mineralogy and identifying individual clay minerals.

## MINERAL RESOURCES

Mineral Resources have been reported for some of the deposits based on underground development and diamond drill data. Strathcona Mineral Services Limited examined the resources for the Flex, Webber and Huestis deposits in 2000 although they raised some concerns about the data and economics of the narrow underground veins. The resource calculations were completed prior to NI 43-101 and do not comply with the instrument. The historic resources are presented here for disclosure purposes only. The author has not verified the estimated resources. The author has no opinion on the reliability of these resources.

The Strathcona review presented the following summary of Geological Resources for the Flex, Webber and Huestis deposits.

Table 5. Summary of Geological Resources

Zone	Indicated			Inferred		
	Tonnes	Au (g/t)	Ag (g/t)	Tonnes	Au (g/t)	Ag (g/t)
Flex				40,900	4.9	158
Webber	58,500	10.5	600	26,900	7.0	472
Huestis	84,000	14.0	288	38,100	14.3	309
<b>Total</b>	<b>142,500</b>	<b>12.6</b>	<b>416</b>	<b>105,900</b>	<b>8.8</b>	<b>292</b>

***These calculations are not NI 43-101 compliant and should not be relied on. They are presented for disclosure purposes only.***

A resource of 84,500 tonnes grading 2.1 g/t gold and 52 g/t silver has been reported for the Orloff King deposit that was not audited or reported by Strathcona Mineral Services Limited in their review of the project. The resource is described as being shallow and amenable to open pit mining.

***These calculations are not NI 43-101 compliant and should not be relied on. They are presented for disclosure purposes only.***

## CONCLUSIONS AND RECCOMENDATIONS

The Peripheral claims of the Mount Nansen Gold Project have exploration potential for additional mineral resources through extension to the known resources or for new discoveries. Completion of the compilation of the historic exploration data is recommended for the project.

The mineralization is likely genetically related to the Mont Nansen Porphyry complex located in the center of the Mount Nansen district. Gold has been mined from placer deposits flanking the porphyry system, and low-grade precious metal values occur within silicified breccia zones within the copper-molybdenum porphyry system.

In profile, the Brown-McDade deposit exhibits a well developed near-surface oxide gold enrichment zone for both the vein- and breccia-type bodies. Priority exploration targets are the potentially enriched oxidized zones capping breccia pipes or veins within large feldspar porphyry intrusions. Numerous gold-in-soil anomalies have been untested in the competent homogeneous rocks in the upper Pony and Back Creeks area.

The narrow vein systems hosted by the metamorphic rocks are potentially economic because of the high gold-silver values if the density of veining can produce significant volumes for bulk mining. The Webber-Huestis-Flex vein swarm covers a large area with very little investigation of the intermediate areas between the known veins, to depth and along strike. The narrow vein systems hosted by the metamorphic rocks are potentially economic because of the high gold-silver values. The density of

veining is critical to produce significant volumes for bulk mining. Fill-in drilling is required within the currently defined vein system as well as any potential extensions discovered in step-out drilling.

Field examination and possible geophysical surveys are recommended to evaluate the reported under-explored veins, breccia zones and gold-in-soil geochemical anomalies. Definition by drilling of the Orloff King, Dickson and PPBX zones is recommended.

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Claim Name	Claim #	Grant #	Expiry Date	Lease	Comments
Rose		4241	09/10/2019	Y	
Golden Eagle		4278	09/10/2019	Y	
War Eagle		4279	09/10/2019	Y	
Shamrock		4354	09/10/2019	Y	
Spot		4361	09/10/2019	Y	
Arelp		4368	09/10/2019	Y	?
Phyllis		4369	09/10/2019	Y	
Rub		55633	23/10/2019	Y	Fraction
Pub		55663	09/10/2019	Y	Fraction
Sun Dog		55665	09/10/2019	Y	Fraction
Cub		55666	09/10/2019	Y	Fraction
Jam		55890	09/10/2019	Y	?
Pam		55892	09/10/2019	Y	
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