

*Teddy*

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

**Assessment Report**  
**Title Page and Summary**

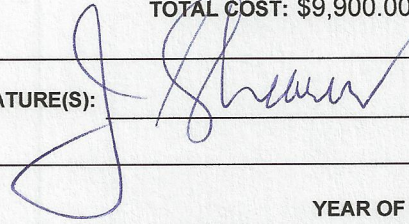
TYPE OF REPORT [type of survey(s)]:

*Geological + Metallurgical*

TOTAL COST: \$9,900.00

AUTHOR(S): J. T. Shearer, M.Sc., P.Ge.

SIGNATURE(S):



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

YEAR OF WORK: 2014

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5508889

PROPERTY NAME: Teddy Glacier

CLAIM NAME(S) (on which the work was done): \_\_\_\_\_

COMMODITIES SOUGHT: Au

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

MINING DIVISION: Revelstoke

NTS/BCGS: 82K/13E (82K082)

LATITUDE: 50 ° 52 ' 05 " LONGITUDE: 117 ° 44 ' 52 " (at centre of work)

OWNER(S):

1) Jazz Resources Inc.

2) \_\_\_\_\_

MAILING ADDRESS:

Unit 5 - 2330 Tyner Street

Port Coquitlam, BC V3C 2Z1

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

1) Same as above

2) \_\_\_\_\_

MAILING ADDRESS:

Same as above

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

High grade poly-metallic vein (Au/Ag/Pb/Zn/Cu) and stockworks on the north end of the Lardeau Mineral Belt contained in

Lower Cambrian to Middle Devonian limestone, phyllite and grit of the Indeex and Jouett Formations

Bulk sample assayed 13.7g/t gold, 301.71 g/t Ag, 12.06% Pb, 13.21% Zn and 2.56% Cu

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

Assessment Reports 546, 17436, 10421



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>			
Ground			
Magnetic	_____	_____	_____
Electromagnetic	_____	_____	_____
Induced Polarization	_____	_____	_____
Radiometric	_____	_____	_____
Seismic	_____	_____	_____
Other	_____	_____	_____
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>\$9,900.00</b>

**GEOLOGICAL and METALLURGICAL REPORT**  
**on the**  
**TEDDY GLACIER PROPERTY**

**North Lardeau Belt, Incomappleux River – Camborne Area**  
**Revelstoke Mining Division**  
**NTS 82K/13E (82K082)**  
**Latitude 50°52'05"N/Longitude 117°44'52"W**  
**Event #5508889**

For

**BC Geological Survey**  
**Assessment Report**  
**34966**

**Jazz Resources Inc.**  
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**June 13, 2014**

**Fieldwork Completed Between September 1, 2013 and June 13, 2014**

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## SUMMARY

Jazz Resources Inc. has acquired a 100% interest in a block of mineral claims covering the Teddy Glacier Property known to contain high grade Au/Ag/Pb/Zn/Cu polymetallic veins and stockworks located north-west of the townsite of Camborne approximately 44km southeast of Revelstoke, BC. The total area covered is about 2,000 ha. The property has a long history of exploration and development.

Jazz Resources Inc.'s focus is on the high grade polymetallic vein mineralization identified by prospecting in the 1920's, underground work in the 1930's and diamond drilling in the 1960's and 1980's. A predecessor company of Jazz Resources Inc. (K-2 Resources Inc.) completed a small bulk sample in 1993. Jazz completed a work program in 2009 of prospecting, road building, bridge building and bulk sampling.

The area forms the northern end of what has been called the Lardeau Mineral Belt, a 50 km long belt of mineral deposits and showings extending from southeast of Trout Lake northwest to the Teddy Glacier area. All of the rocks in the area are believed to be of Lower Cambrian to Middle Devonian or older age, and appear to be isoclinally folded along a steep northwest trending axis. The Teddy Glacier property is underlain by complexly tightly folded and sheared limestones, carbonaceous phyllites and grits of the Index and Jowett Formations, Lardeau Group. These rocks trend northwest (295°-315°), dip 50°-60° northeast and are cut by steeply dipping cross-joints.

Samples of typical mineralization collected by the author on August 28, 2004 assayed up to 1.88 oz./ton gold (64.5 ppm Au) and 22.90 oz./ton silver (785 ppm Ag) associated with pyrite-rich material and high in galena and sphalerite content. A two hundred pound sample used in the metallurgical testing in 1963 (Britton, 1963) assayed 13.71g/tonne Au (0.40 oz/ton Au), 301.71 g/tonne Ag (8.80 oz/ton Ag), 12.06% Pb, 13.21% Zn and 2.56% Cu.

The East Vein (and Big Showing) has measured strike length, with offsets, of about 90m (300 feet). The Big Showing is about 1.83m to 2.44m (6-8 feet) wide. The east vein is about 0.46m to 1.52m (1.5-5 feet) wide. The underground workings demonstrate that the Big Showing continues down strongly for at least 9.14m (30 feet) below the surface exposure.

Seven samples were collected from the ore stockpile above the Stephanney Creek bridge which averaged somewhat higher in gold, 13g vs 9.5, lower in silver, 650g/t vs 372, lower in lead but higher in zinc. The average grade of the seven samples is 13.18 g/mt gold, 372, 47 g/mt silver, 1.27% copper, 18.27% lead and 11.96% zinc.

Airphoto interpretation demonstrates strong northeast-southwest linears reflective of the general strike of the main lithological units and being parallel late faults. Less prominent bedrock structures exhibit a northerly to northeasterly orientation in part spatially associated with the vein systems and stockworks.

Met-Solve Laboratories Inc. was contracted by Jazz Resources Inc. to conduct continued flotation test work on samples from the Teddy Glacier property which the Company has stockpiled over 2,000 tonnes of high grade material (see news releases 2010).

Excellent flotation recoveries were achieved with 96% of the lead recovered to produce a Pb concentrate with 62% Pb during the lead flotation stage. In addition the majority of the precious metals reported to the lead concentrate. , Gold and silver recoveries of 83% and 92% were achieved and reported to the lead concentrate.

The zinc flotation stage managed to recover 85.6% of the zinc to produce a zinc concentrate grading 48.7% Zn. Most of the unrecovered zinc was entrained in the lead concentrate. The addition of more zinc depressant, NaMBS, during the lead rougher flotation stage might reduce the zinc entrainment and increase recovery.

Note that no cleaning stage was required to produce the high lead and zinc concentrate grades, further enhancing the excellent results.

The recovery and grade results of the optimized flotation test are presented in the table below.

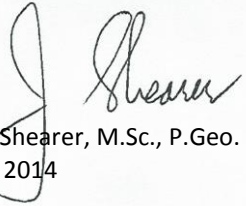
**Optimized Flotation Test**

<b>Optimized Batch Flotation Test Results</b>													
Stage	Wt (%)	Concentrate Grade						Recovery %					
		Au (g/t)	Pb (%)	Zn (%)	Ag (g/t)	Fe (%)	S (%)	Au	Pb	Zn	Ag	Fe	S
Pb Con	37.6	<b>33.0</b>	<b>62.0</b>	1.9	<b>1,344</b>	11.7	22.1	<b>82.8</b>	<b>96.0</b>	11.6	<b>92.2</b>	18.2	24.6
Zn Con	10.7	2.0	2.9	<b>48.7</b>	145	13.0	36.8	1.5	1.3	<b>85.6</b>	2.8	5.8	11.7
Pyrite Con	38.5	3.8	1.0	0.4	58	<b>45.6</b>	<b>53.7</b>	9.7	1.6	2.5	4.1	<b>72.8</b>	<b>61.5</b>
Tails	13.2	6.9	2.1	0.1	34	5.9	5.4	6.1	1.1	0.2	0.8	3.2	2.1

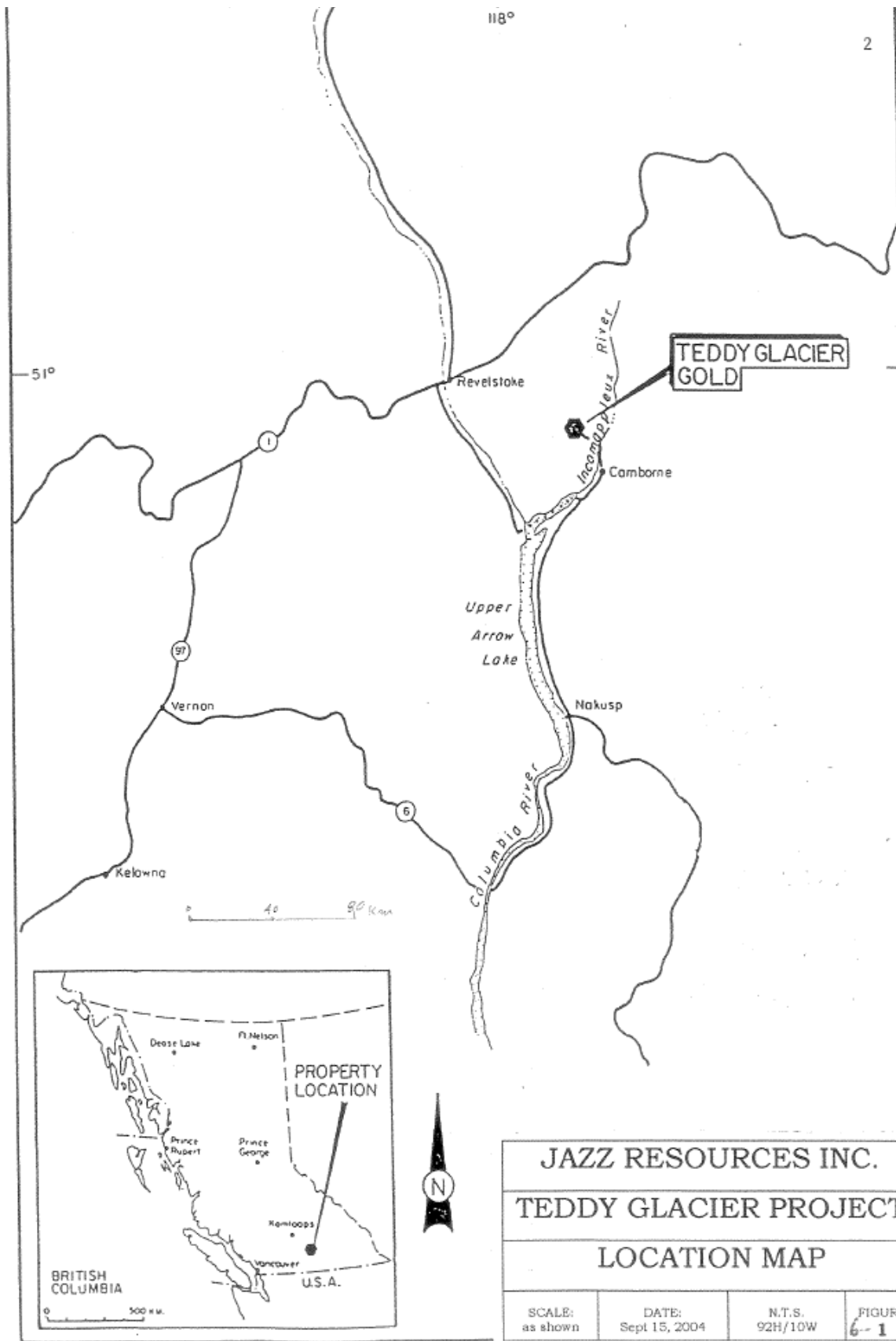
Acid Base Accounting tests determined that the net neutralization potential (NNP) were -1171.7 and -160.2 for the zinc tailings and final float tailings respectively, indicating that both float tailings samples are acid generating. The acid generating potential (AP) was significantly reduced with the addition of a pyrite float stage on the Zn float tailings. The fully permitted tailings storage facility at the Company's private land at Camborne uses the addition of limestone to neutralize the material for permanent storage.

Recommendations are made for a program of the following: diamond drill program of \$300,000.

Respectfully submitted



J. T. (Jo) Shearer, M.Sc., P.Geo.  
June 13, 2014





## INTRODUCTION

Jazz Resources Inc. and predecessor companies, K-2 Resources Inc. and Sunshine Columbia Resources Limited, have acquired by staking 100% interest in several mineral claims – the Teddy Glacier Claims, totalling 80 units, which have been grouped into the Teddy Glacier Property located 40 km southeast of the town of Revelstoke and 11 km northwest of Camborne, in British Columbia. J. T. Shearer, M.Sc., P.Geo. was retained to advise Jazz Resources on the merits of the property and make recommendations for an appropriate exploration program.

The Teddy Glacier Property is known from historical background and exploration of the last 80 years to contain high assays of gold, lead, zinc, copper and silver.

A major source of information has been the numerous historical assessment reports on the area within the B.C. Government Ministry of Mines Minfile database. These reports are readily available from microfiche dating back to 1961 on work conducted for various companies up to 1992. Prior information is contained in the Annual Reports of the Minister of Mines 1926-1964. In addition, Jazz Resources Inc. also has an extensive data file for activities since the 1960's when the principals of the company became active in the area. Some information was lost in a fire at the Company's Spider Mine in the 1960's.

J. T. Shearer, M.Sc., P.Geo. visited the property on August 28, 2004 and June 15 and Sept. 24, 2005 and June 14 & 15 and July 12 & 13, 2006 to examine the surface mineralization, underground workings and general geological conditions. A number of samples were also collected. Field locations were recorded using a Garmin GPS unit. A large field program was completed in 2009. The present program consisted of airphoto interpretation done in September-October 2013.

This report is largely based on personal observations of J. T. Shearer since August 2004 and supervision of the bulk sample program in 2009, examination of airphotos in 2013 and liaison with Met Solve Labs on recent 2014 Metallurgy.

Some aspects of the report, particularly history –are based on prior description or historical reports; reliance has been placed on such information as noted. The only diamond drill results were prepared under the direct guidance of K. Sanders, P.Eng. between 1963 and 1964 and reported on by J. Sullivan, P.Eng. in 1963 as Assessment Report 546.

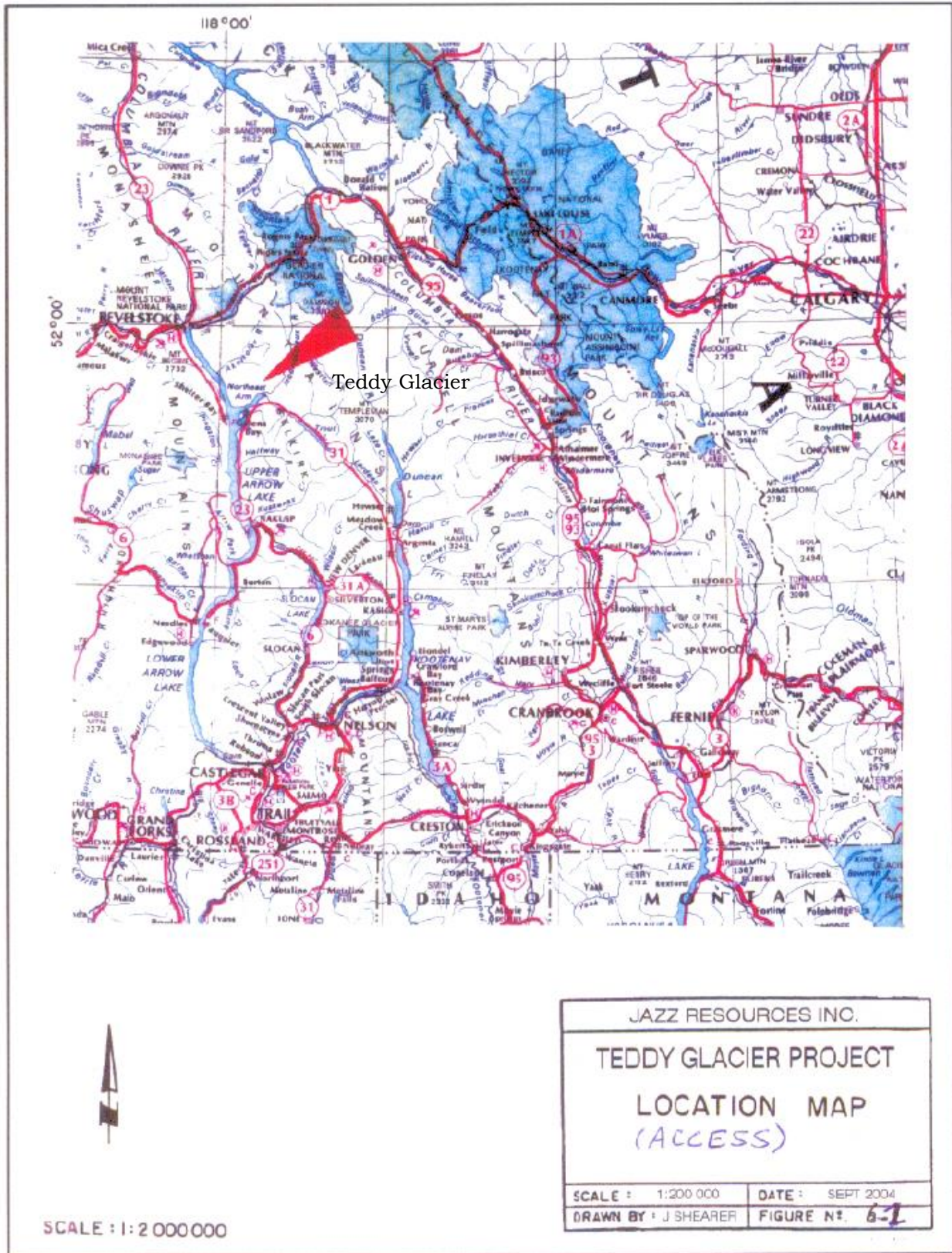


Figure 2 Access Map



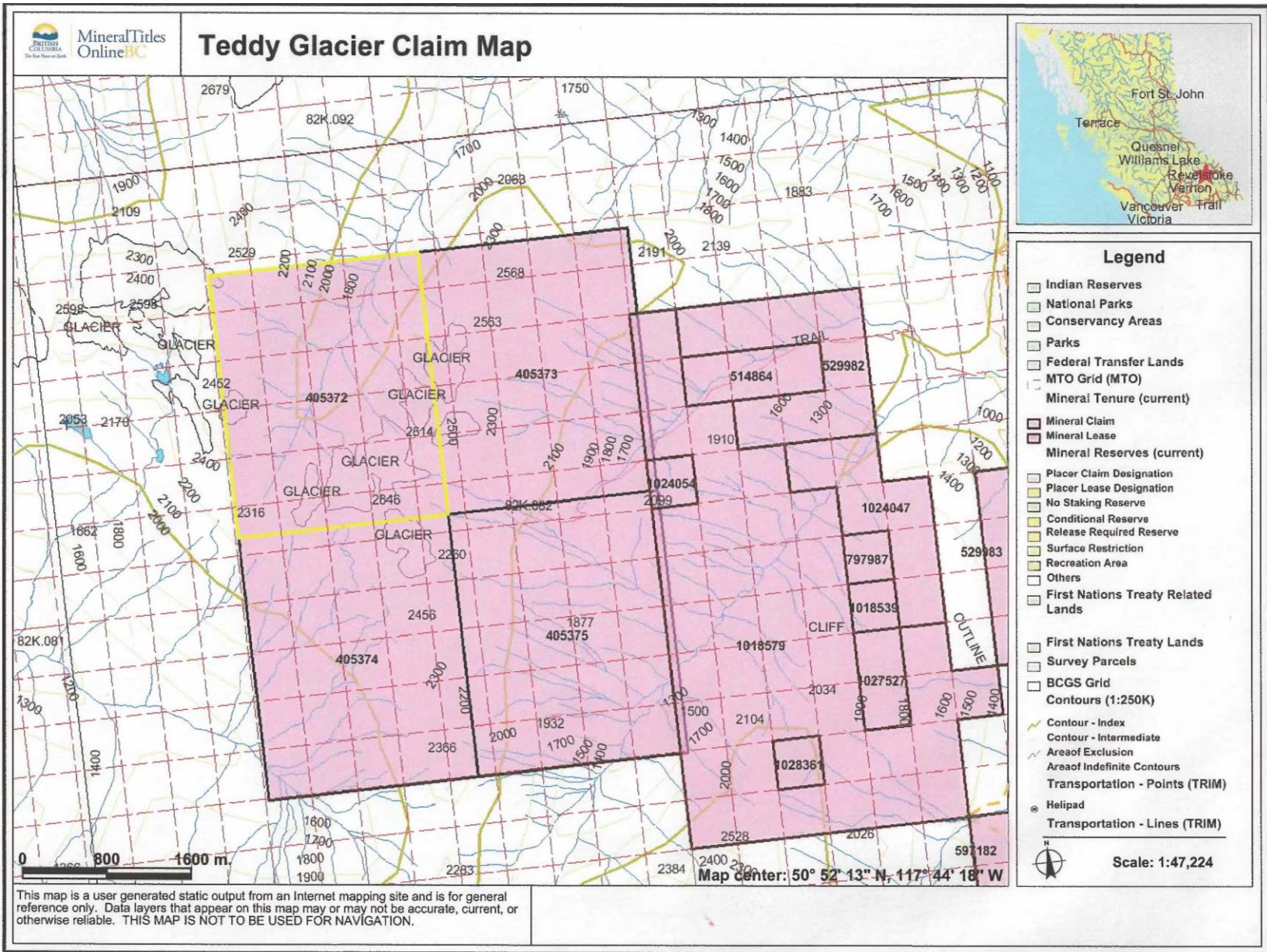


Figure 3 Claim Map



## PROPERTY

### Claim Status

The property consists of the following mineral claims as tabulated in Table 1 and illustrated on Figure 6-2. The claims are all in the Revelstoke Mining Division.

The staked claims are recorded as follows:

Table 1  
List of Claims

Claim Name	Tenure No.	Size (ha)	Located Date	Current Expiry Date
Teddy Glacier 1	405372	500.00	September 29, 2013	August 1, 2015
Teddy Glacier 2	405373	500.00	September 29, 2013	August 1, 2015
Teddy Glacier 3	405374	500.00	September 29, 2013	August 1, 2015
Teddy Glacier 4	405375	500.00	September 29, 2013	August 1, 2015
Teddy East	1018579	815.99	April 15, 2013	June 15, 2015

Total ha 2,815.99

The Teddy Glacier claims cover 80 units, which is an approximate 2,000 hectares (ha) as four post modified grid claims. Following revisions to the Mineral Tenures Act on July 1, 2012, claims bear the burden of \$5 per hectare for the initial two years, \$10 per hectare for year three and four, \$15 per hectare for year five and six and \$20 per hectare each year thereafter.

All the claims are owned 100% by Jazz Resources Inc., FMC 113609.

The company included all the 2-post claims and smaller modified grid claims into the Teddy Glacier 1-4 Claims which in late 2004 consist of 80 units covering an area of about 2,000 hectares.

A preliminary site assessment suggests there is minor low pH and probable elevated heavy metal levels in small drainages around the main showings. However, these appear entirely natural in the absence of detailed sampling and analysis. There have been considerable logging activities at much lower elevations in the general area in the past with the associated land disturbance and road building, along the Incomappleux River.

Immediately east of the main showings are considerable thicknesses of limestone intercalated within the slate and greenstone sequence. Overall pH levels for Stephney Creek are to be expected to be close to neutral.

These possible acidic conditions and metal leaching are considered to be controllable. A lined pond, swale or other applications of limestone could be one method of adequate control.

The company and property will be subject to the mine permit regulations of British Columbia. A permit will be required for any bulk sampling and proposed drilling. The property had up to 2006 a Reclamation Permit No. MX-5-265<sup>1</sup> and a reclamation bond of \$1,000 with the Ministry of Mines pertaining to the bulk sample program completed in 1993 and proposed ATV access upgrade to the road. A certain amount of minor clean up and securing the portals would be required to close out this bond<sup>2</sup>, but this requirement would also be part of any reclamation bonding for future exploration programs. Current emphasis by the Ministry of Mines is to characterize the Acid Rock Drainage (ARD) potential, which requires a suite of samples to be analyzed for acid-base accounting.

<sup>1</sup> Mineral Exploration Reclamation Permit, MX-5-265 (Section 10 of the Mines Acts BC 1989) issued August 14, 1992.

<sup>2</sup> as per letter from M. A. Mellor, Inspector of Mines and District Manager, Cranbrook, dated August 14, 1992.

The large net neutralizing potential of the area limestone should be sufficient for control of the ARD expected to be encountered. A Federal-Provincial funded study which investigated ARD issues and other environmental and health risks was completed by Keystone Environmental and the results as expected to be available from the Provincial Ministry in early 2007. Preliminary findings of this study were reported (personal communication) to indicate low risk for all factors.

The Reclamation Permit is currently held by Glen Developments Ltd., the operating entity of the President of Jazz Resources Ltd., Mr Bryan Glen, which has been advised of minor cleanup issues by D. Roach in a letter dated Feb. 23, 2000<sup>3</sup>. A number (116) of small 10 gallon drums dating from the 1930's were observed in the general portal area. These could be easily removed if required during the bulk sample down to the dump in Revelstoke or Nakusp. An approval to widen the ATV road was received in 2005 from Bruce Reid, P.Geo., Mines Inspector without any increase in the Reclamation Bond<sup>4</sup>. A subsequent Mines Act permit was acquired in September 2006 (MX-5-590) to cover additional bulk sampling having a bond of \$5,000 in the name of Jazz Resources Ltd.

The Teddy Glacier Area is within the claimed traditional territory of the Ktunaxa-Kinbasket Tribal Council. The legal requirements for consultation and accommodation of First Nation Rights, Title and Interest are still being debated in the courts. A proactive approach to dealing with issues and resource values which are of a concern to First Nations, and working with First Nations to ensure economic activity provides positive benefits, is an important part of increasing business security throughout British Columbia. There are no obvious impediments to developing the Project in a timely matter related to First Nation issues.

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<sup>3</sup> Letter to Glen Developments Ltd. from D. Roach, Inspector of Mines dated February 23, 2000.

<sup>4</sup> Letter to J. Shearer from Bruce Reid, Mines Inspector dated September 29, 2005.

## ACCESS

The Teddy Glacier claims are ranging between 1200 and 2600 metres elevation, a distance of approximately 44km southeast of the town of Revelstoke, B.C. The main showing is at 2200m (7320ft.) elevation.

Access to the claims is by helicopter from Revelstoke or by rough mining roads up the Incomappleux River Valley, which are presently passable by all terrain vehicles (ATVs) and four wheel drive vehicles. On August 28, 2004 a group of five persons also visited the Portal site by ATV, travelling about 2 hours driving time from Beaton, on the northeast arm of Upper Arrow Lake. Some parts of the access road were reported to require brushing out of the alder trees.

An estimate on opening the Teddy Glacier access road was requested of R. Allen of Galena Contracting at Nakusp, B.C. who made a visit to the lower part of the road on September 8, 2004. Mr. Allen, a very experienced local road builder with a complete fleet of heavy equipment estimates that to re-open the permanently deactivated logging road portion of about 3km to adequately accommodate 30 tonne CAT Wagons would cost approximately \$150,000. Part of this expenditure was made in 2006. Above this portion would require at least a 20m bridge and repairs to the upper reaches of the road. For a simple diamond drill program this estimate could likely be greatly reduced to about the \$40,000 range for light 4x4 truck access and small bulldozers and utilizing ford crossing of Stephaney Creek. A 20m bridge could be rented in the short term.

The general area has an Alpine (above the tree line) dominated climate. Dramatic variations in the Teddy Glacier's climate are caused by a combination of elevation, rainshadow effects, and latitude. Generally winters are long and summers cool and short with only occasional hot spells. Average January highs are -7°C, while July averages to 22°C. These temperatures apply to valley bottoms. At higher elevations temperatures are about 5°C to greater than 7°C cooler. Annual precipitation ranges from less than 380mm at lower elevations to over 1,250mm at higher elevations. The Teddy Glacier area can be worked from July to October most years without handling or plowing snow.

The area of the Teddy Glacier Claims has been heavily affected by Pleistocene to recent glaciation with arêtes, cirques, tarns and hanging valleys common in the area. Steep slopes are often covered by a thin veneer of talus.

The lower levels of the property are heavily forested. Above 1600 metres elevation this forest is replaced by scrubby alpine trees and grass where soil exists. There is adequate water from several creek drainages for mineral exploration on this property.

The property lies 44 km south-southeast from Revelstoke and is easily accessible by helicopter. A mining trail, presently passable by narrow all terrain vehicles and ordinary 4x4 pickup trucks, connects the property to the townsite of Camborne. There are no longer any facilities located in Camborne. The Company owns several land lots in fee simple within the Camborne townsite and could be used to provide a site for a small milling operation if required in the future. Hydropower was generated by previous operators for the company's Spider Mine prior to 1960.

The nearest mill/concentrators are located in Sandon or Ainsworth, about 120 km to the south, which is owned by Klondike Gold. Persons familiar with the mill<sup>5</sup> report that this 125 ton per day concentrating mill was originally built in 1962 to process ore from local mines above Sandon, British Columbia. In the mid-1970's the mill was shut down due to lack of ore and was inoperative. Other mills in the area are located in Rock Creek and Ainsworth.

Discovery Mines recently purchased the Willa Gold Prospect near Slocan and also acquired the Roca Mill in Trout Lake.

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<sup>5</sup> Personal communication with Jon Perrett, President, International Silver Ridge Resources Inc., and International Silver Ridge Resources Inc. website and G. Hawthorn, P.Eng.



Both Discovery Mines and Ainsworth are pleased to offer their modern Mill facilities and the abilities of its fully trained crew of flotation operators, crushermen, millwright, on-site assayer and lab to mining companies in the area for custom milling. Jazz has engaged well known metallurgical consultant, Gary Hawthorn, P.Eng. to conduct tests on the Teddy Glacier Bulk Sample.

Milling the Teddy Glacier ore at the custom mills is estimated to be in the \$130 per tonne<sup>6</sup> range depending on quantity of material and subject to updating the metallurgical test work at a local facility such as Met-Solve Labs.

Alternative milling facilities have been investigated at Sandon, Rock Creek and Ainsworth and in addition Jazz Resources has obtained a permit to construct a pilot mill and tailings facility on the Camborne property to handle the 2009 bulk sample.

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<sup>6</sup> Personal communication, Jon Perret, President, International Silver Ridge Resources Inc.

## PROPERTY HISTORY

The immediate area has a long history of mineral exploration being a relatively short distance northwest of the Northern Lardeau/Camborne lead/zinc/silver camp, which includes the Spider Mine, which was operated in the 1950's by an associated company of Jazz Resources Inc.

### Prior Exploration

#### History

The Teddy Glacier property was staked in 1924 by G. Ritchie and G. Edge. High grade float was distributed for 300 meters downslope and which led these prospectors to the mineral occurrences at the foot of the receding "Teddy" glacier.

Teddy Glacier Mines, Ltd. was incorporated in 1924 by F. R. Blockberger and Associates to acquire the important Rambler-Cariboo, Blackhead, Margaret and Mary Jane Claims staked by Ritchie and Edge. A trail was opened to the property in 1925, and in late 1926 a crosscut adit was begun just below the main showing. The adit was advanced to the vein during 1926 and then work stopped. In 1929 the Bush and McCulloch interests provided funds for extending the crosscut to a second vein. A shipment of 5 tonnes of ore was made at this time yielding 2302 grams of silver, 124 grams of gold, 855 kilograms of lead and 1351 kilograms of zinc. (Reference: Minfile and Gale, 1994)

No further activity was reported until a syndicate, financed by Mines Selection Trust of London, began extensive development work in 1934. A considerable amount of money was spent on equipment, trails and camp buildings. Also, at this time, about 500 metres of drifting and crosscutting was done in the upper adit. The workings trend north-northwest for about 60m where the vein is cut by a west-northwest trending fault zone. Then the workings swing to the west-northwest and cut the Dunbar vein about 60m across the fault. In 1935, a lower adit, begun 55 metres below the upper adit, was driven 18 metres (Gale, 1988).

The claims were allowed to lapse in 1942. The central claims of the group, covering the main showings, were then restaked in 1942 by A. D. Oakley who subsequently sold controlling interest to A. M. Richmond representing American Lead-Silver Mines Ltd. A. M. Richmond did a detailed re-evaluation of the property. In 1950, the pack trail to the property was upgraded to a road but no work was done on the showings, other than mapping and sampling. The property was optioned to Columbia Metals Corporation Ltd. in 1952. However, no activity other than road building was reported and the option was abandoned.

In 1959, the property was acquired under joint ownership by Sunshine Lardeau Mines Ltd. (a predecessor company to Jazz Resources Ltd.)<sup>7</sup>, Maralgo Mines Ltd. and the Magnum Consolidated Mining Co. Ltd. – an indirect interest was secured by Transcontinental Resources Ltd. Work by this consortium during 1963 included geological mapping, sampling of the underground workings and 150 metres of diamond drilling in six holes (K. Sanders). Road construction in 1964 disclosed new showings on the Bell No. 14 claim, located 900 metres southeast of the main workings and was investigated by a drill program totalling 660 metres.

Much of the present knowledge of the Big Showing is based on the data presented in B.C. Department of Mines Assessment Report 546, by J. Sullivan, dated Nov. 30, 1963. The author of the present report took one surface sample from the Big Showing during my visit on August 28, 2004 for Jazz Resources Inc., but I have not examined the underground workings on the deposit.

A 200 lb. sample was collected in 1963 and used for metallurgical tests. Subsequently, metallurgical test work completed by Britton Research Laboratories on underground samples and drill core composites indicated that 60% of the copper, 90% of the lead and 80% of the zinc should be recovered in separate concentrates assaying 20%

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<sup>7</sup> Gale, 1988

copper, 60% lead and 60% zinc respectively. Overall recoveries of metals appear to be high in this initial study but further work is required. A copy of the Britton Report is attached to Assessment Report 546 by J. Sullivan.

### **1970's**

No work is recorded as occurring in the 1970's.

### **1980's**

Ashton's (who did not visit the property) summary geological report is dated January 31, 1980 and short site examination was carried out by R. E. Gale in 1986 and 1987.

The work indicated that; the Big Showing consists of a knob of massive high grade sulfides formed at the junction of 2 quartz-sulfide veins which carry galena, sphalerite and chalcopyrite along with values in gold and silver. The approximate surface and underground dimensions of the Big Showing were reported to be about 12.47m (40 feet) by 4.05m (13 feet). The tunnel into the knob is about 7.79m (25 feet) in elevation below the outcrop. The mineralization continues below the tunnel level and is cut in drillholes. Its ultimate shape and dimensions at greater depths are unknown.

A rough indication of the tenor of the mineralization, taking the grade of six underground samples from Map 8, Report 546, Gale (1988) calculated an average grade of 0.12 oz/ton Au, 5.63 oz/ton Ag, 6.46% Pb and 14.32% Zn for the grade of the Big Showing as sampled in the tunnel. From Map 6 in the same report, Gale (1988) averaged 3 samples taken at surface to get a grade of 0.20 oz/ton Au, 5.50 oz/ton Ag, 17.63% Pb and 2.23% Zn for the surface showing. A third indication of grade is the 200 pound bulk sample taken in 1963, which was used for metallurgical tests. This sample is reported in Report 546 to have an average grade of 0.40 oz/ton Au, 8.80 oz/ton Ag, 12.06% Pb and 13.21% Zn.

Gales (1987) surface sample 0989 across 5 feet on the Big Showing assayed 0.155 oz/ton Au, 24.11 oz/ton Ag, 39.8% Pb, 5.35% Zn and 0.81% Cu. Gale (1988) picked sample of the best looking mineralization from the "New Vein", sample 0992, assayed 0.132 oz/ton Au, 7.78 oz/ton Ag, 11.52% Pb, 22.91% Zn and 0.91% Cu.

According to the report of D. W. Burns, 1981, rebuilding of the road was difficult and drilling had to be restricted to only the Vimy showing. Two short diamond drill holes were drilled in a zone of northeast trending quartz veins cutting sericite schist, but no significant values were found.

An airborne geophysical survey was completed in 1987. The property was held by Jazz Resources Inc. predecessor K-2 Resources Inc. (formerly Sunshine Columbia Resources Limited) in 1987. In October of 1987 White Geophysical Inc. conducted a Crone P.E.M. Survey on K2 Resources Ltd.'s Teddy Glacier Project as follow-up to a 1986 airborne survey by Western Geophysical Aero Data Ltd., and as an aid in tracing structures under the ice of the Teddy Glacier. Ten conductors were mapped, all of very short strike. Conductors A and E are the strongest and are probably sourced in a graphite/sulphide horizon. The other conductors, B, C, D, F, G, H, I are much weaker in nature and difficult to correlate from line to line. These conductors were interpreted to be sourced in graphite, sulphides and/or conductive shears. To properly assess the value of these geophysical survey recommendations were made for a precise correlation between these conductors and the visible geology. Should one of these conductors prove interesting it could be traced out with an HLEM survey with a narrow "a" spacing of 25m on lines with 25m centres. This tight spacing is necessary since the geophysical response is very complicated in this area.



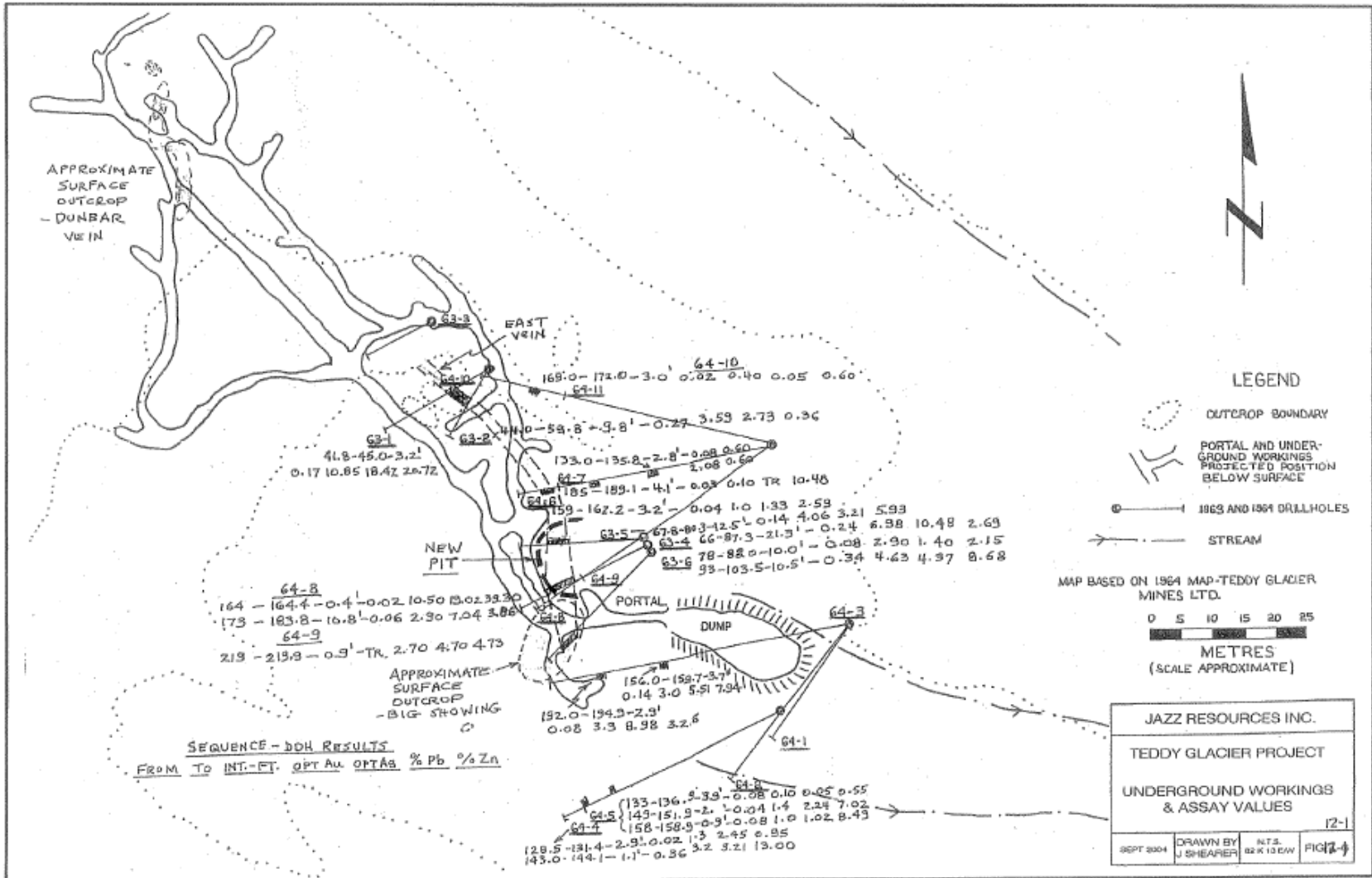


Figure 4 Underground Workings, Drill Intercepts and Assays

## 1990's at the Teddy Glacier Property

Re-opening of the access road and mining a 5 tonne bulk sample to the Trail Smelter was completed by September 21, 1993. Gale (1993 & 1994) records about 100-150 tons of high grade vein material was produced grading 0.425 oz/ton Au, 11.60 oz/ton Ag, 1.20% Cu, 18.4% Pb and 9.6% Zn.

Trench work with backhoe and dozer, seeking extensions to the Main Zone Mineralization began August 24<sup>th</sup>, 1993 and continued through August 30, 1993.

On the Main Zone near the Big Showing, an area approximately 40 feet (12.19m) x 40 feet (12.19m) x 12 feet (3.66m) deep was drilled, blasted and mined out in a small open pit to give bulk sample of the vein mineralization from the north end of the Big Showing and the south end of the East Vein (see Plate 1). The structural relationships and size of the veins was also exposed in the process.

The approximate outline of the New Pit, the location of the outcrop of the Big Showing and the East Vein are shown on Figure 4 map which also shows the underground workings and the locations of the 1963 and 1964 diamond drillholes.

The northern end of the Big Showing and the East Vein down to a depth of 12 feet (3.66m) were mined out in the pit. The West Vein did not fall in the blast area. As much of the vein material as possible was saved during the removal of the blast muck by the backhoe by "hand mining" of the vein fragments as they were uncovered. This method was successful in building 2 stockpiles which probably contain 50-75 tons each (Gale 1993 & 1994). In Gale's (1994) opinion this work indicates that the veins separate well from the schistose country rock and it is quite feasible to mine the veins with little or no dilution in the pit.

As exposed in the pit, the Big Showing, about 6 feet (1.83m) wide is cut by N40° (320°) trending, 60° east dipping fault and the Big Vein then merges into a 2 foot (0.61m) wide N20° striking, vertical East vein which extends 40 feet (12.19m) across the floor of the pit. Several small NE trending mineralized cross veins cut the East vein in the pit floor.

From the north side of the pit, the East vein splits somewhat into northerly and northeasterly branches and in the next 40-50 feet (12.19m-15.24m) comes around to a NW strike – N40° (320°) west dipping 70° NE. As exposed in the 3 cuts blasted on the east vein is 1.5 to 5 feet (0.47m-1.56m) wide with some vein splits separated by country rock.

The Big Showing about 1.87m (6 feet) wide of massive galena, pyrite, chalcopyrite with lesser sphalerite heads southerly from the pit face and widens to about 10 feet (3.05m) about 30 feet (9.14m) back from the pit. A 10 foot long N40° east trending cut was blasted across the southern end of the Big Vein where it trends about N20° west. A one-shot blast was also put into a 3 foot (0.9m) pod of massive quartz-galena-pyrite located about 45 feet (13.72m) southwest of the Big Showing. This pod has the appearance of being a faulted-off segment of the Big Showing and may indicate continuity of the Big Vein to the southwest.

Also in 1993, one day of backhoe and bulldozer work was occupied in trenching 2 areas of mineralized float located about 100 feet (30.48m) SE and 700-800 feet (213.36-343.84m) lower in elevation from the Main Zone. Another day was spent digging a 100 foot (30.48m) long trench right across the favourable zone in an area 300-500 feet (91.44-152.40m) SE and 100-200 feet (30.48-60.96m) lower in elevation from the Main Zone. None of these trenches were successful in locating mineralized veins in the bedrock.

Minor work was completed in 1993 on the Vimy Ridge Zone, located about 3,000 feet (900m) southeast and 1,000 feet (300m) lower from the Main Zone, was originally discovered by K. Sanders for Teddy Glacier Mines Ltd. in 1963-64. In the course of one days work, 3 different showings were located and trenched.

Near the northwest end of the ridge is a 30-40 foot wide zone of northeast striking quartz-sulfide veins up to 1 foot wide. The veins appear to be too widely spaced and narrow to form a mineable zone.

About 800 feet southeast along the ridge from the northwest showing, a 7 foot square pit is excavated on a flat southeast dipping 12 inch thick layer of massive galena-pyrite-chalcopyrite in silicified limestone. The schistose rocks above the altered zone are cut by a network of east to northeast trending quartz-sulfide veinlets which coalesce to form a layer of sulfides along the limestone contact. A sample taken by Sanders across 12 inches assayed 0.3 oz/ton Au, 10.70 oz/ton Ag, 15.2% Pb, 5.55% Zn and 0.75% Cu.

Another 150 feet southeast down along the ridge, a 15x15 foot trench discloses a 3 foot thick flat silicified layer with variable sulfides which dips off to the northeast and southwest at either side of the pit. The mineralization is very similar to that in the pit 150 feet northwest. Sander's sample over 36 inches assayed 0.03 oz/ton Au, 17.00 oz/ton Ag, 26.65% Pb, 4.15% Zn and 0.35% Cu.

One hundred feet further southeast an outcrop of bluish silicified limestone is exposed near the access road. No sulfides are exposed here in this small area, but the alteration is entirely similar to that associated with mineralization in the 2 exposures higher up the hill.

### **Previous (Historic) Resource Estimations at the Teddy Glacier Property**

Jazz Resources has not undertaken any independent investigation of the resource estimates nor has it independently analyzed the results of previous exploration work to verify the classification of the resources and therefore the historical estimates should not be relied upon.

The earliest resource estimation (but not NI43-101 compliant) is by C. Rutherford, P. Eng. (1948) dated November 9, 1948, who estimated from 50 feet (15m) below the upper adit to surface as 16,937 tons averaging 0.20 oz/ton Au, 7.0 oz/ton Ag, 10.40% Pb and 14.1% Zn.

A similar historic estimate, to 15m below the adit level, is contained in the Prospectus for Columinda Metals Corporation Limited by R. A. Halet, Ph.D., P.Eng. dated February 4, 1952 as 19,100 tons averaging 0.225 oz/ton Au, 7.31 oz/ton Ag, 12.80% Pb and 12.75% Zn.

Using the diamond drilling results in 1963 and 1964, an unnamed resource estimate is presented in company reports by Teddy Glacier Mines Ltd. on the Main Vein Zone of an inferred 48,740 tons grading 0.13 oz/ton Au, 7.94% Pb and 6.74% Zn, L. White, Shareholder Report Feb. 28, 1965 and Gale (1988). This interpretation shows the mineralized zones have a length of about 60 metres (195 feet) with a 60° plunge to the south. The rake of the Big Showing is shown as 75° to the north. Gale (1988) concludes that "Not enough drill intersections are available to classify the resources other than as inferred tonnages".

Although these resource estimates are not done to the modern standards of NI 43-101, the author believes that these historical estimates provide a conceptual indication of the potential of the property and are relevant to ongoing exploration.



**TABLE 9-3**  
**SIGNIFICANT RESULTS 1963-64 DRILLING**

HOLE NO.	FROM	TO	INTERCEPT FT.	APPROX. TRUE THICKNESS (ft)	AU. OZ/TON	AG. OZ/TON	% Pb	% Zn	% RECOVERY
63-1	41.8	45.0	3.2	2.7	0.17	10.85	18.42	20.72	94
63-2	44.0	53.8	9.8	4.1	0.27	3.59	2.73	0.36	80
63-4	66.0	87.3	21.3	17.6	0.24	6.98	10.48	2.69	60
63-5	67.8	80.3	12.5	10.3	0.14	4.06	3.21	5.93	73
63-6	78.0	88.0	10.0	Unknown	0.08	2.90	1.40	2.15	NOT RECORDED
	93.0	103.5	10.5	Unknown	0.34	4.63	4.37	8.68	
64-3	149.0	151.1	2.1	1.7	0.20	1.20	1.91	0.77	58
	156.0	159.7	3.7	3.1	0.14	3.00	5.51	7.94	75
	192.0	194.9	2.9	2.4	0.08	3.30	8.98	3.26	67
	194.9	208.7	13.8	11.4	0.02	0.50	0.68	0.64	51
64-4	128.5	131.4	2.9	2.4	0.02	1.30	2.45	0.95	86
	143.0	144.1	1.1	0.9	0.36	3.20	3.21	13.00	88
64-5	133.0	136.9	3.9	3.2	0.08	2.10	0.05	0.55	68
	149.0	151.9	2.9	2.4	0.04	1.40	2.24	7.02	88
	153.4	158.9	5.5	4.5	0.03	0.33	0.59	2.75	75
64-6	159.0	162.2	3.2	2.6	0.04	1.00	1.33	2.59	78
64-7	133.0	135.8	2.8	2.3	0.08	0.60	2.08	0.60	91
	185.0	189.1	4.1	3.4	0.03	0.10	TR.	10.48	92
64-8	164.0	164.4	0.4	Unknown	0.02	10.50	19.02	39.30	46
	173.0	183.8	10.8	Unknown	0.06	2.90	7.04	3.86	25
64-9	118.0	118.9	0.9	Unknown	0.12	8.50	15.26	36.36	76
64-9?	219.9	0.9	TR.	Unknown	2.70	4.70	4.73	55	

## GEOLOGY SETTING

### Regional Geology

Figure 9.1 reproduces the portion of the Geological Survey of Canada's Open File Map #432 which covers the Teddy Glacier property. This map was compiled by P. B. Read in 1976 and is based on geological mapping from J. O. Wheeler, 1965, 1967 and P. B. Read, 1962-1964 and 1971-1976 (Read, 1976).

The area is underlain by phyllites and phyllitic limestones of the Lower Cambrian to Middle Devonian Lardeau Group. Six subgroups of this unit are grits and gritty phyllites exposed in the immediate area of the Teddy Glacier property and to the south, southeast and southwest of it. Above the basement grits is a narrow zone of phyllitic and arenaceous limestone which in turn is overlain to the northeast by the Jowett Formation consisting of green phyllite, limy green phyllite and greenstone. The greenstone is probably in part lava with some associated dykes or irregular feeder intrusions.

The youngest rocks in the area, at the centre of the irregular syncline, are grey and green phyllitic grit and phyllite of the Broadview Formation.

All of the rocks in the area are believed to be of Lower Cambrian to Middle Devonian or older age, and appear to be isoclinally folded along a steep northwest trending axis. The rocks are strongly sheared and faulted along northwest trending axial plane cleavage. Tension related fractures trend north and northeasterly. Mineralized zones on several properties are localized along northwest and northeast trending fault and fractures zones. A narrow band of Permian and/or Triassic age hornblende and pyroxene meta-diorite and meta-andesite is mapped in the northwest corner of the survey area.

The regional structures trend northwest-southeast. A northwesterly trending section of the Finkle Synform axis crosses the northeast corner of the area. There are however, a number of lineations and fold axes mapped with an easterly vergence, particularly in the area immediately south of the mineral showings on Mount McKinnon.

The area forms the northern end of what has been called the Lardeau Mineral Belt, a 50 km long belt of mineral deposits and showings extending from southeast of Trout Lake northwest to the Teddy Glacier area.

On the Windflower property, 8 km southeast of Teddy Glacier, Granges Exploration in the 1980's explored a large zone of northwest trending quartz-pyrite-ankerite veins carrying gold values in altered Broadview phyllitic rocks. The alteration and mineralization is associated with a northwest trending fault zone bordering the southwest contact of a body of Jowett Formation greenstone.

On the Camborne property of Jazz Resources Inc. (formerly K-2 Resources Inc., formerly Sunshine Lardeau Mines Ltd.), 14 km southeast of Teddy Glacier, northerly trending quartz-ankerite-sulfide veins occur in Jowett Formation greenstone. The Spider vein produced 100,000 tons of gold-silver-lead-zinc ore during the 1950's. At depth, this vein changes to pyrite-gold mineralization similar to the Windflower Property.

The Teddy Glacier property lies close to the projected position of the northwest trending fault associated with the Windflower (Independence) showings, but the fault does not outcrop on the Teddy Glacier property, if indeed it is present there. The Teddy Glacier main showing is a northwest trending vein or veins which in part resemble the upper part of the Spider lead-zinc-gold-silver vein at Camborne and in part the Windflower-type pyrite-gold veins.

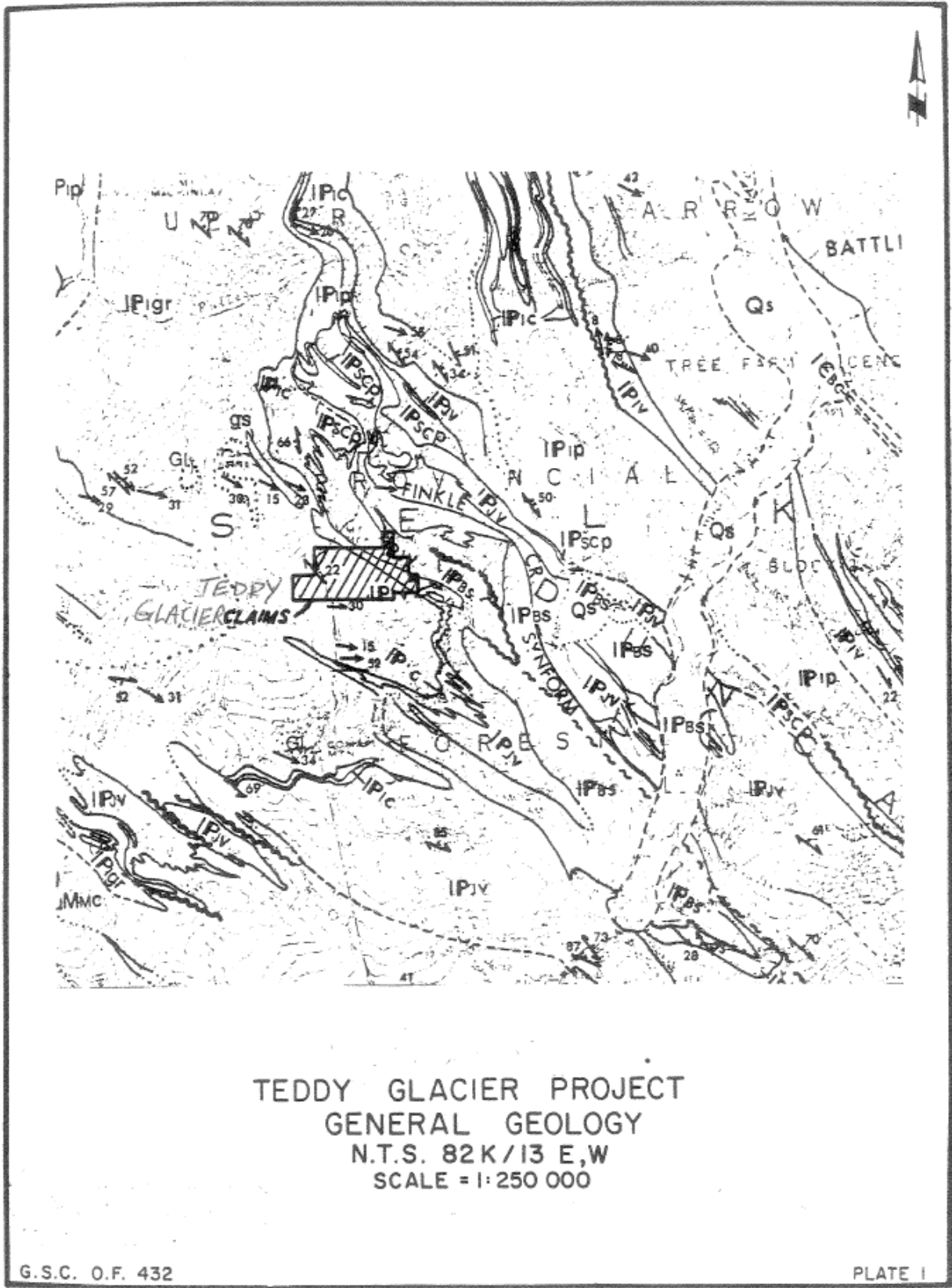


























Figure 5 Regional Geology

## GEOLOGY LEGEND:

PALEOZOIC to MESOZOIC	}	PERMIAN AND/OR TRIASSIC
		 Hornblende and pyroxene meta-diorite and meta-andesite (includes Poplar Creek Greenstone). Pattern used where boundaries are undefined.
		 Serpentinite; minor talc and tremolite schist
		 <b>KASLO GROUP</b> Meta-andesite flows, tuff, breccia; minor meta-dacite; rare tuffaceous phyllite
PALEOZOIC	}	MISSEISSIPPIAN TO PENNSYLVANIAN OR PERMIAN UPPER MISSEISSIPPIAN TO PENNSYLVANIAN OR PERMIAN MILFORD GROUP (uMm1 to uMm6g)
		 Light green to white chert
		 Grey and brown phyllite and meta-sandstone
		 Grey and white limestone, locally fossiliferous
		 Amygdaloidal meta-basalt flows
		 Conglomerate
		DEVONIAN(?) MIDDLE DEVONIAN(?)
		 Biotite-hornblende granodiorite gneiss
		CAMBRIAN TO DEVONIAN OR OLDER LOWER CAMBRIAN TO MIDDLE DEVONIAN OR OLDER LARDEAU GROUP (IPac to IPgr)
		 BROADVIEW FORMATION (IPac, IPas): Limestone, grey phyllitic limestone and grey phyllite
		 Grey and green phyllitic grit and phyllite
		 JOWETT FORMATION: green phyllite, limy green phyllite, greenstone
		 SHARON CREEK FORMATION: dark grey to black siliceous phyllite
		 AJAX FORMATION: massive grey quartzite
		 TRIUNE FORMATION: grey to black siliceous phyllite
		 TRIUNE, AJAX, SHARON CREEK FORMATIONS: undivided
		 INDEX FORMATION (IPiv to IPig): Green phyllite, limy green phyllite, greenstone
		 Phyllitic and arenaceous limestone; minor grey phyllite
		 Grey and light green phyllite; minor phyllitic limestone and quartz grit
		 Quartz grit; minor gritty phyllite
		 Undivided: grey phyllite, siliceous phyllite, gritty phyllite, phyllitic grit, rare quartzite
		 Undivided: green phyllite, limy green phyllite, greenstone
		 Undivided: limestone, phyllitic limestone
		CAMBRIAN LOWER CAMBRIAN
		 BADSHOT FORMATION: Grey and white limestone



## Local Geology

Detail geological mapping at a scale of 1"=20 feet was completed in 1963 and 1964 by K. Sanders, P.Eng. as reported by J. Sullivan, P.Eng. in B.C. Assessment Report 546 and presented in several adjoining sheets. The data file of Jazz Resources also has a tiny photo reduction of a geological compilation dated October 1964 at 1"=20 but the full scale drawing is not currently available. A similar composite was produced by R. Gale dated in 1988 at a scale of 1:500 but only fragments are currently available. All data should be plotted (as a priority item) on an accurate 1:500 or 1:250 basemap with topographic contours. Such a detail map requires either detail photogrammetry or an on ground GPS survey with suitable local control. All outcrops in the vicinity of the vein structures should be mapped and plotted on the accurate basemap.

The 1935 Report of the Minister of Mines describes the property as follows:

"The most important mineralization on the Teddy Glacier is found along two fracture zones. The more easterly strikes roughly north 10 degrees west and has been traced on the surface for over 120 feet and is possibly exposed again 80 feet farther north. It is mineralized with galena, pyrite, sphalerite, and some chalcopryite in a gangue of white quartz and rock inclusions, the width varying from a few inches to 4 feet. The second vein, to the west of the first, strikes north 17° west where exposed and has been traced for about 130 feet, varying in width after the manner of the first and being similar in all respects. In addition, there are numerous other quartz veins on the property which trend in various directions, but most frequently about at right angles to the strike of the formation. Many of them connect with the main veins and die out a short distance away from them. Mineralization in these veins is quite irregular, but some good showings have been uncovered, particularly near their junctions with the main veins. Where the first vein intersects the second one, and north of the latter, is the big showing; it is a large body of quartz some 30 feet long and carrying bodies, up to 5 feet wide, of course sulphides. It follows a somewhat more easterly course than the average strike of the eastern vein. Apparently the nature of the country-rock has had no important effect on the ore deposition, although black carbonaceous schists mineralized with pyrite are most abundant near and west of the big showing. Whether the sulphides have replaced the limestones where these are intersected by the veins is a speculation that should be investigated, as such has been found to be the case in other properties in the Lardeau. The toe of the glacier lies 100 yards east of north from the big showing and in the float at its edge are some boulders of ore, indicating that further disclosures may be made as the ice recedes, which it is doing slowly but surely.

The sulphides, galena, pyrite, sphalerite, and chalcopryite, occur in bunches in the quartz veins or as continuous bands, pinching and swelling along the strike and varying in width from practically nothing to 4 or 5 feet. They are coarse grained or very fine grained and the chalcopryite is generally present in very minor amount. The finer-grained ore is an intimate mixture of the sulphides with grains of quartz and may require rather fine grinding for concentration. Examination under the microscope reveals many minute areas of tetrahedrite in the galena. Some movement has taken place along the veins since their formation, as the galena is in many cases sheared."

The following assays are quoted from the Annual Report, Minister of Mines, British Columbia, 1925:

It is noted that the last assay is unexpectedly high in silver and that similar material assayed for the owners gave: Gold, 0.86 oz.; Silver, 6.4 oz.; lead, 11.5%.

Description of Sample	Au (oz.)	Ag (oz.)	Pb %	Zn %
Coarse crystalline galena from a number of places; a substantial amount of this ore could be sorted out	0.08	39.5	74.6	1.2
Steel-grained galena containing pyrite and quartz, from various places; similar material occurs in quantity	0.04	23.3	53.1	10.3
Average sample across 5.5 feet of ore and	0.29	17.6	31.3	7.2

waste at the northeast extremity of the southern fissure, 78 feet from the big showing			
Fairly clean pyrite selected from various places; this material occurs in abundance	0.28	16.7	1.6

Four rock units are mapped with the age relationships of the different units unknown because of the complex isoclinal folding of the beds. Schistosity trends northwest dipping 50° - 80° northeast

The most common rock is graphitic quartzite which includes interbands of limy argillite. Less common are bands of schistose quartzite which probably represent shear or fault zones with the graphitic quartzite. The strongest shear zones form graphitic schists which in part appear to be associated with the veins in the Main showing.

The main showing at Teddy Glacier is an 80m long quartz-galena-pyrite vein carrying significant gold-silver values. Two northwesterly veins 1m to 2m wide termed the "East" and "West" veins split from the southern vein intersection called the "Big Showing". The Big Showing at the junction of the East and West veins is an easterly to northeasterly trending knob or rib measuring about 5 metres by 5 metres which is 50% massive galena-sphalerite and pyrite carrying good gold and silver values.

### Diamond Drilling and Sampling Results

The location of the Big Showing, the East and West Veins, the portal of the underground workings and location of old and proposed new drillholes are shown in Figure 9-2. The 1963-64 drill sample results are listed in Table 9-3.

R. Gale (1994) suggest that it is apparent that core recovery was very poor in the 1963-64 drilling especially in the critical area of the Big Showing as intersected in holes 64-8 and 64-9. The drilling was done with a small AX drill and in the case of the latter holes, the positioning for the holes tended to parallel rather than crosscut the Big Showing. This proposed new drilling using a larger drill should substantially upgrade the core recovery and thereby upgrade the assay results, especially the all important gold grades.

Results of sampling by Gale (1994) compared to old surface sample results also suggest that gold values in the new bigger blasted samples are on average much better than was indicated by the old moiled samples. The simple unweighted average of gold values in five new samples compared to that of seven old samples in approximately the same part of the East Vein is 14.06 g/tonne Au (0.41 oz/ton Au) compared to 10.63 g/tonne (0.31 oz/tonne Au), an increase of 32% in the average gold value.

The five ton bulk sample shipped to the Trail smelter in September 1993 graded 14.57g/tonne Au (0.425 oz/tonne Au), 397.7g/tonne Ag (11.60 oz/tonne Ag), 1.20% Cu, 18.4% Pb and 9.6% Zn.

**Big Showing** – The Big Showing is the most important zone of mineralization presently known on the property. Gale (1994) considers that it was not properly tested in the 1963-64 drilling program. The Big Showing trends N to N20 degrees east and appears to dip almost vertically. It may represent a vertically plunging pipe occurring at a sharp bend in the East Vein. The best drillhole orientation to test it would be 45° to 60° dipping holes in the direction N45 degrees west rather than the SW45 degree orientation chosen for holes 63-6, 64-8 and 64-9. Possibly the NW orientation was not chosen in 1963-64 because this would mean drilling parallel to the schistosity of the country rocks which would make drilling and control of the hole orientation difficult. However, holes in the SE-NW orientation should be tried in order to get the best cross section of the Big Showing.

**The East Vein** if taken to include the Big Showing has a demonstrated strike length, with offsets of about 300 feet on the surface, and it appears that it may be offset once again 15m to 30m (50 to 100 feet) east and southeast of the Big Showing, as intersected in drillholes 64-3, 64-4 and 64-5. At the latter point, the vein is still open to extension to the south of these diamond drill hole intercepts. The East Vein is also open to extension to the NW at its northern end may be represented by the Dunbar Vein.

**The Dunbar Vein** outcrop has a similar appearance and orientation as the Big Showing. The best result from previous surface sampling is 2.49m (8.0 feet) grading 0.16 oz/ton Au, 17.82 oz/ton Ag, 32.7% Pb and 8.8% Zn. The Dunbar Vein has never been drilled.

**The West Vein** appears to be a thinner, lower grade and less continuous split from the East Vein. The west Vein probably merges with the East Vein to the north of the Big Showing.

The East Vein has a proven depth extent of at least 150 feet and is open to extension at depth. Better gold values comparable to the new surface and bulk sampling results are possible if better core recovery and larger sample size can be obtained by new drilling. There is a good chance that a resource can be proven up with the combined tonnages of the East vein and Big Showing.

**The Vimy Ridge Stratabound Zone** is a lower priority target for drilling on the Teddy Glacier property. It is located about 3,000 feet southeast and 1,000 feet lower in elevation from the East Vein Zone. It was originally discovered by K. Sanders for Teddy Glacier Mines Ltd. in 1963-64.

Near the southeast end of the northwest trending ridge a seven foot square pit is excavated on a flat south dipping 12 inch thick layer of massive galena-pyrite-chalcopyrite in silicified limestone at a schist-limestone contact. The schistose rocks above the altered zone are cut by a network of east to northeast trending quartz-sulphide veinlets which coalesce to form a layer of sulphides along the limestone contact. A sample taken by Sanders across 12 inches assayed 0.03 oz/tonne Au, 10.70 oz/tonne Ag, 16.2% Pb, 5.55% Zn and 0.75% Cu.

Another 150 feet SE down along the ridge, a 15 by 15 foot trench discloses a three foot thick flat silicified layer with variable sulphides which dips off to the NE and SW at either side of the pit. The mineralization is very similar to that in the pit 150 feet NW and probably represents the same layer of mineralization. Sanders sample over 36 inches in the second trench assayed 0.03 oz/ton Au, 17.00 oz/ton Ag, 27.65% Pb, 4.15% Zn and 0.35% Cu.

One hundred feet further SE an outcrop of bluish silicified limestone is exposed near the access road. No sulphides are exposed here in this small area, but the alteration is entirely similar to that associated with mineralization in the two exposures higher up the hill and may represent part of the same altered horizon.

The Vimy Ridge replacement zone appears unusual in comparison to other showings in the Camborne area. Gale (1993) considered it to be a stratabound sulphide deposit associated with silicified limestone along the axis of a NW trending fold. The present showings are small but the mineralization is open to expansion in all directions. This mineralized zone deserves shallow vertical diamond drilling in the immediate area of the pits, with extension outward if the first drilling is successful.

## MINERALIZATION

The variety of mineralization on the Teddy Glacier Property has been well described by previous workers including Gale (1994), Sullivan (1963) as quoted in Section 8.2 and Section 9.3 of this report and various government personnel from the 1930's as documented in the Annual Minister of Mines Reports (listed in the references to this current report).

Samples of typical mineralization were collected by the author on August 28, 2004 (see Section 10 – Assay Certificates starting on page 24) returned assays up to 1.88 oz/ton gold (64.5 ppm Au, sample #2) by Fire assay – gravimetric finish (conversion factor 34.286ppm = 1 oz/ton). This sample was screened for metallics and the +100µm fraction assayed 1235 ppm gold (36.02 oz/ton Au) which suggest there is considerable gold in the coarser fraction. Further metallurgical testing is required to follow up the possibility of coarse gold in pyrite. A polished section was prepared of the reject portion to determine the association of the gold; results were inconclusive, further polished thin sections are recommended. This high gold result is from a grab sample of abundant pyrite on the main dump in front of the Upper Portal. The East Vein and Big Showing mineralization was observed to have a strong mineralogical zoning as follows:

- a) Abundant pyrite on the east side
- b) then galena-rich section
- c) then sphalerite-rich section
- d) then on the west side dominated by sparsely mineralized quartz/siderite.

Overall recoveries in the metallurgical test work performed by J. W. Britton, P. Eng. in 1963 indicated “about 70% of the gold and 85% of the silver could be recovered with the lead and copper concentrates. Even better results should be obtained when treating fresh ore. It may also be possible to recover some of the gold and silver which reports with the pyrite” concentrate. Britton (1963) reported overall recoveries in total rougher and concentrates to be Au – 97.0%, Ag – 99.3%, Cu – 99.7%, Pb – 99.3%, Zn – 99.9% and pyrite 98.0% Tests showed that 70% of the gold and 60% of the silver in the pyrite concentrate could be recovered by cyanidation. In light of the high gold result obtained by the author on the pyrite-rich sample, further metallurgical work on the pyrite fraction of any concentration method is advisable. Two samples from the Big Showing, one being abundant in galena with lesser sphalerite and the other being equal in abundance of sphalerite and galena (Samples #3 and #4) assayed 22.90 oz/ton Ag (785 ppm Ag) and 20.04 oz/ton Ag (687 ppm Ag), respectively. Apparently no polished sections were done by Britton for the 1963 work.

A grab sample at the Vimy Ridge trenches, approximately 1.5 km south east and 300m below in elevation from the Main Showing, assayed 7.23 oz/ton Ag (248 ppm Ag) and 0.082 oz/ton Au (2.8 ppm Au). The mineralization in the Vimy Ridge trenches appeared spotty and discontinuous but more work is justified.

## PREVIOUS WORK in 2009

### Work Program

The 2009 work program confirmed the grade of the Big Showing. Approximately 2,000 tonnes of high grade mineralization was drilled and blasted. This material was stockpiled near the Stephanney Creek Bridge and then moved to Camborne.

The 2,000 tonnes stockpile was sampled by seven traverses across the pile. The author collected the representative sample of this 2000 tonnes. The average grade of the seven samples is 13.18 g/mt gold, 372, 47 g/mt silver, 1.27% copper, 18.27% lead and 11.96% zinc.

There is a substantial difference between previous sampling of the Big Showing, which from a few samples gave results of 18.4% Pb and less than 298 g/t (11.6 oz/t) silver (Gale 1993 & 1994). Preliminary metallurgical indicates high flotation recoveries (>90%) at a head grade of 39.7% Pb, 8.0% Zn, 490.2 g/t Ag and 8.0 g/t Au. (Hawthorne, 2006).

It appears that the previous 30kg sample is approximately twice as abundant in Galena as previous samples with an accompanying increase in silver content. This may be due to a galena rich portion of the Big Showing being sampled or that some unintentional high grading occurred during sample collecting. Future sampling campaigns will need to employ duplicate samples and blending. Mineralogically, the Big Showing is not complicated, since there are essentially only 3 sulphide minerals.

Hawthorne (2007) quotes "The galena, sphalerite and pyrite are very coarse grained, so liberation ought not to be an issue" (Hawthorne 2007); and "The close relationship between the deportment of Pb, Au and Ag will produce a high grade lead concentrate with significant precious metal content".



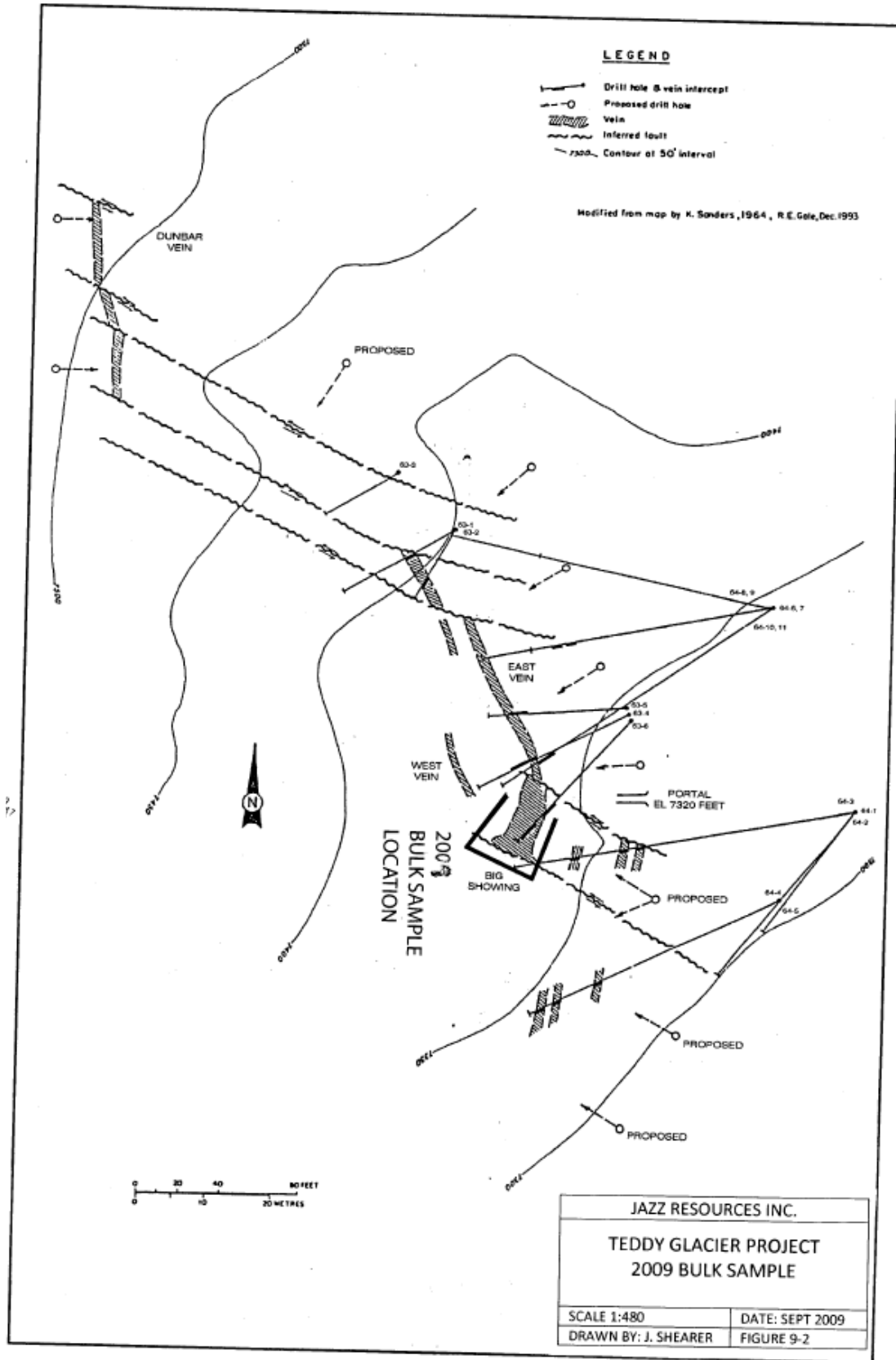


Figure 6 Bulk Sample

## Bulk Sample Considerations

The author has had extensive experience with bulk sample mining in British Columbia.

The following Bulk Sample projects, among others, were under the direct supervision of J. T. Shearer and each project delivered 5,000 or greater tonnes for industrial size trials:

- 1) Monteith Bay Resources, 1995, 10,000 tonnes of high grade silica to the Lehigh Cement Plant from a greenfields site on Vancouver Island that subsequently was put into production in 1998 (and currently still is in production).
- 2) I.G. Machine & Fibers, 1999, 5,500 tonnes of limestone from Slesse Creek area to the IKO Pacific roofing product plant in Sumas, Washington.
- 3) Electra Gold Ltd., 2000-2003, 110,000 tonnes of chalky geyserrite to Ash Grove Cement in Seattle (Property currently in production for the last 3.5 years).
- 4) Sechelt Industrial Minerals Inc., 2005, 5.500 tonnes of high grade magnetite to Ocean Construction Aggregates from Sayward to Mitchell Island, Vancouver for super-heavy concrete.

I am currently consulting to the I.G. Machine & Fiber Granule Plant in Ashcroft (since 2001) in charge of the Mine Plan and all drill/blast/crush functions for a 500,000 tonne per year granule operation. I am also responsible for all mining functions (drill/blast/crush/truck/load/barge) for the Electra Gold Ltd. 120,000 tonne per year chalky geyserrite operation in Port Hardy since 2000.

I am intimately acquainted with current drill/blast/excavate costs (both machine and explosive) in remote locations in British Columbia. I am personally acquainted with numerous drill/blast/crash contractors that could be suitable to be engaged to complete the Bulk Sample program recommended for the Teddy Glacier Project. The Teddy Glacier bulk sample program is envisaged as a narrow slot open-cut, similar to an expanded trenching program, therefore no underground mining is expected. A suitable sized excavator can dig 9m in one pass and can reach up to 12m by simple benching. A general itemization of the \$12.50/tonne mining costs is as follows:

(A) Equipment: Airtrac or equivalent for blast hole drilling and excavator to muck out and stockpile ready for loading Trucks	
(1) Drilling: 6 days at \$1,500/day, 800 ft. of drilling per day	\$9,000.00
(2) Explosives	\$4,000.00
(3) Excavator: CAT225 or equivalent, such an excavator can reach to over 9m	
(a) Site prep, \$1,500/day x 2 days	\$3,000.00
(b) Mucking out & Stockpile, \$1,500/day x 6 days	\$9,000.00
	<hr/>
	\$25,000.00
	/ 2000 tonnes = \$12.50 per tonne

The size of the Big Showing is 1.5 to 2.44m over a strike length of 90m with a depth to the old underground workings of 9m.

A simple volume using 1.5m width x 90m strike x 9m deep = about 1,200 cubic metres minus the 1993 work (12.2m x 2.0m x 3.66m = 90m<sup>3</sup>) = approximately 1100 cubic metres. The Specific Gravity of the raw rock is about 4.0 which approximates 4400 tonnes. This type of calculation is, in my Bulk Sample experience, valid for the purpose of producing 2,000 tonnes. This type of calculation is of course not valid for long term mining purposes or to the CIM standard. Bulk sampling for metallurgical and logistical experience is a valid exploration tool and is not related to ore reserve estimation.

## **MINERAL PROCESSING and METALLURGICAL TESTING 2014**

A 200 lb. sample was collected in 1963 and used for metallurgical tests. Subsequently, metallurgical test work completed by Britton Research Laboratories on underground samples and drill core composites indicated that 60% of the copper, 90% of the lead and 80% of the zinc should be recovered in separate concentrates assaying 20% copper, 60% lead and 60% zinc respectively. Overall recoveries of metals appear to be high in this initial study but further work is required. A copy of the Britton Report is attached to Assessment Report 546 by J. Sullivan.

In current studies for Jazz Resources (Hawthorn, 2007) recoveries of lead, zinc, gold and silver are quite good, additional work needed to be undertaken to improve the separation of the lead and zinc into separate concentrates. Hawthorn performed another flotation test (Hawthorn, 2007b) with a high depressant addition into the Pb roughers and included a zinc cleaning stage. The lead concentrate assayed 75% Pb and the zinc concentrate assayed 56% Zn.

The microscopy report (Lehne, 2007) indicates that mineral locking is not contributing to the 20% of the Zn that reports to the Pb concentrate. That then comes down to the selection of the best sphalerite depressant(s) during Pb roughing as well as the minimum addition that is required to achieve acceptable sphalerite depression.

Mineralogically, this material is not complicated, since there are essentially only 3 sulphide minerals. However, as is typically the case, some portion of the sphalerite is naturally floatable, and it ideally is depressed during the initial Pb rougher flotation.

The sample provided for the 2007 mineral processing study was collected by J. T. Shearer, P. Geo. from three tonnes of representative material brought to Nakusp from the 2006 bulk sample blasted from the Big Showing.

Met-Solve Laboratories Inc. was contracted by Jazz Resources Inc. to conduct continued flotation test work on samples from the Teddy Glacier property which the Company has stockpiled over 2,000 tonnes of high grade material (see news releases 2010).

Excellent flotation recoveries were achieved with 96% of the lead recovered to produce a Pb concentrate with 62% Pb during the lead flotation stage. In addition the majority of the precious metals reported to the lead concentrate. , Gold and silver recoveries of 83% and 92% were achieved and reported to the lead concentrate.

The zinc flotation stage managed to recover 85.6% of the zinc to produce a zinc concentrate grading 48.7% Zn. Most of the unrecovered zinc was entrained in the lead concentrate. The addition of more zinc depressant, NaMBS, during the lead rougher flotation stage might reduce the zinc entrainment and increase recovery.

Note that no cleaning stage was required to produce the high lead and zinc concentrate grades, further enhancing the excellent results.

The recovery and grade results of the optimized flotation test are presented in the table below.

### Optimized Flotation Test

Optimized Batch Flotation Test Results													
Stage	Wt (%)	Concentrate Grade						Recovery %					
		Au (g/t)	Pb (%)	Zn (%)	Ag (g/t)	Fe (%)	S (%)	Au	Pb	Zn	Ag	Fe	S
Pb Con	37.6	<b>33.0</b>	<b>62.0</b>	1.9	<b>1,344</b>	11.7	22.1	<b>82.8</b>	<b>96.0</b>	11.6	<b>92.2</b>	18.2	24.6
Zn Con	10.7	2.0	2.9	<b>48.7</b>	145	13.0	36.8	1.5	1.3	<b>85.6</b>	2.8	5.8	11.7
Pyrite Con	38.5	3.8	1.0	0.4	58	<b>45.6</b>	<b>53.7</b>	9.7	1.6	2.5	4.1	<b>72.8</b>	<b>61.5</b>
Tails	13.2	6.9	2.1	0.1	34	5.9	5.4	6.1	1.1	0.2	0.8	3.2	2.1

Acid Base Accounting tests determined that the net neutralization potential (NNP) were -1171.7 and -160.2 for the zinc tailings and final float tailings respectively, indicating that both float tailings samples are acid generating. The acid generating potential (AP) was significantly reduced with the addition of a pyrite float stage on the Zn float tailings. The fully permitted tailings storage facility at the Company's private land at Camborne uses the addition of limestone to neutralize the material for permanent storage.

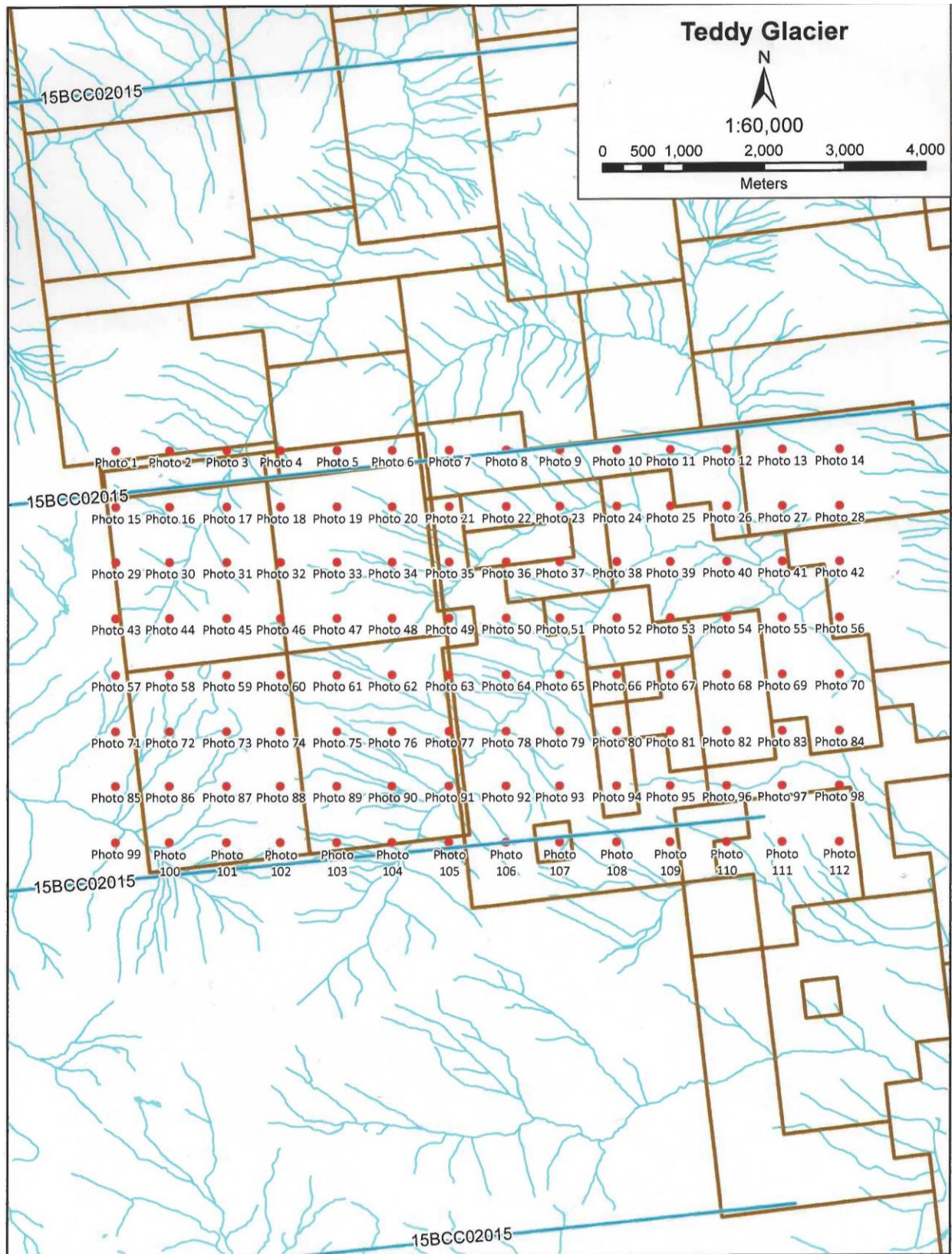


Figure 7 Airphoto Key Map



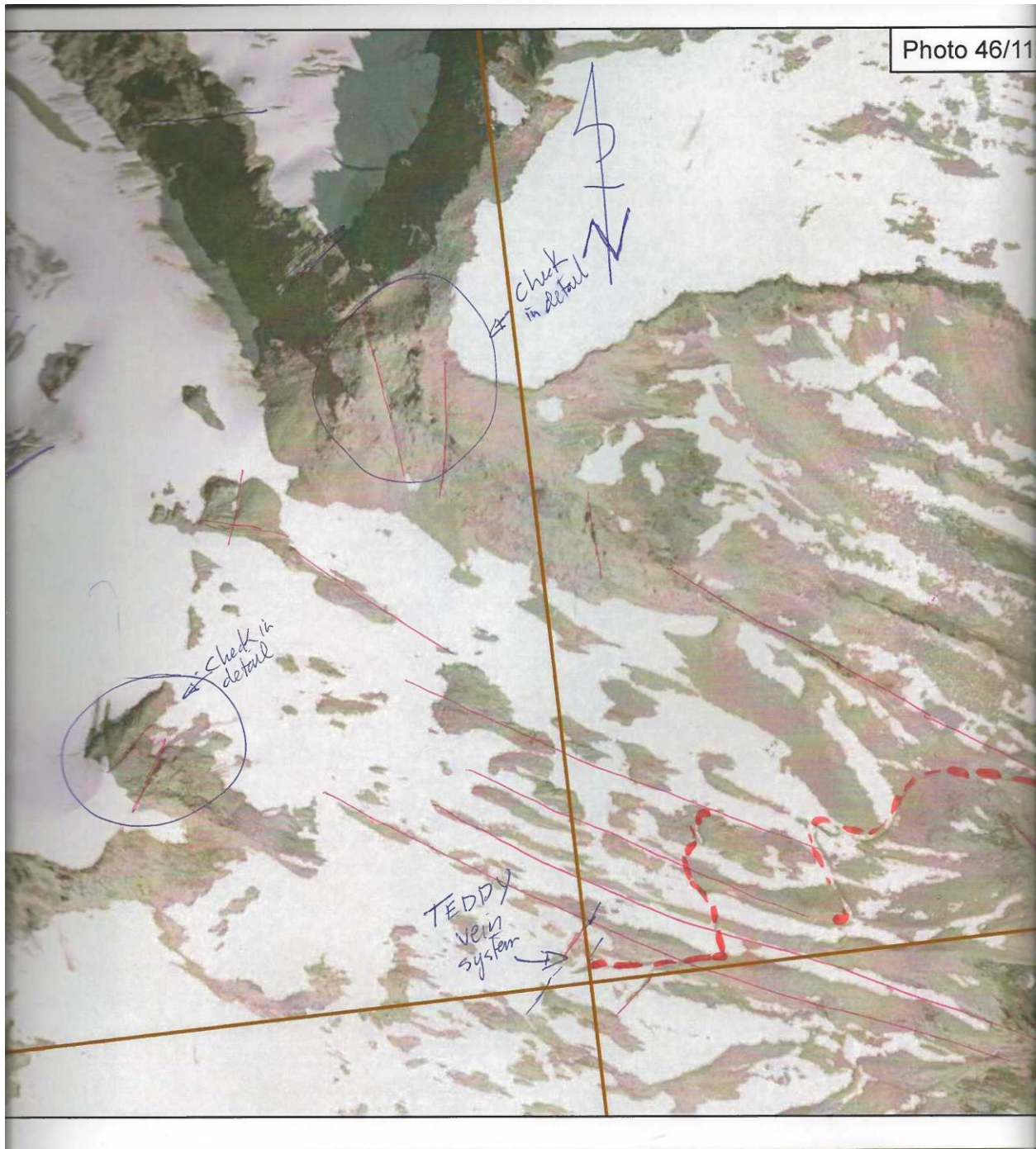


Figure 8 Airphoto # 46/112

## CONCLUSIONS and RECOMMENDATIONS

Based on the evidence in reports, discussions with those noted, secondary data sources, experience and professional geological and marketing judgement, it is my opinion that the Teddy Glacier Project constitutes a property of merit and justifies further work to explore for commercial gold and polymetallic opportunities. Samples of pyritic mineralization collected by the author on August 28, 2004 assayed up to 1.88 oz/ton gold (64.5 ppm Au), which suggest a strong correlation of gold with massive pyrite. This type of mineralization has not been investigated in the past.

A program of Phase I bulk sampling of the Big Showing down to the level of the underground workings was completed in 2009. The average grade of the seven samples is 13.18 g/mt gold, 372, 47 g/mt silver, 1.27% copper, 18.27% lead and 11.96% zinc. This bulk sample provides the hands on experience of small scale mining in this rugged alpine terrane. Key elements in the possible future successful exploitation of the Teddy Glacier Zone are (1) the ability to high-grade the vein material with separation of wall rock; (2) taking a large enough bulk sample to adequately test the access road to stand up to repeated truck traffic; (3) arranging highway transport to a suitable milling facility. Gaining experience with the highway haulage will be important. Identifying and establishing a working relationship with a suitable milling facility is very important in the evaluation of the deposit. Considerable geological information will be gathered during the excavation of the larger bulk sample, such information that will be used to guide the subsequent core drilling program.

A contingent program of diamond drilling of the East Vein-Big Showing is warranted, subject to favourable results from the Phase I Bulk Sample Program, with the expectation that higher gold values might be found with larger, more representative samples. The average grade of the seven samples is 13.18 g/mt gold, 372, 47 g/mt silver, 1.27% copper, 18.27% lead and 11.96% zinc.

Additional diamond drilling is required to test the subsurface extent of the vein structures and continuity to the south and east. The quality of the drill information from 1963 and 1964 has been questioned by Gale (1994). A program of 5,000 feet of diamond drilling recovering "N" size core would give a good measure of the possible extent of the vein system and the possible extensions away from the underground workings. The Big Showing has the potential to support underground mining if it maintains its size and values to depth. The Dunbar Vein resembles the Big Showing in orientation and grade. Although the vein apparently was not found in the underground work beneath the general area of the outcrop, diamond drilling to test depth continuity is required.

The vein intercepts in diamond drill holes 64-3, 64-4 and 64-5 may represent extensions of the East Vein and/or Big Showing to the south. This area and the area to the south of it should be drilled in 2007 to determine the true grade and extent.

The Phase I Bulk Sampling work took 4 months to complete starting in July 2009. The favourable results from the bulk sample indicate that the Phase 2 Drilling Program totalling 1,200m (4,000 ft.) of NQ drilling should be done in early 2010.

The average gold grades in the bulk sample continues to be in the 10.29 to 13.71 g/tonne Au (0.3 to 0.4 oz/ton Au) range and the Teddy Glacier Veins need further detail studies to define a mineable resource. However, there are no current estimates of mineral resources on the property and there is no certainty that the company's subsequent drill programs, if completed will discover mineralization or define any mineral resources. In proceeding with a larger bulk sample testing program, the Company must ensure that the stage of work and any reported results are not subject to misinterpretation and must include appropriate cautionary statements.

Airphoto interpretation demonstrates strong northeast-southwest linears reflective of the general strike of the main lithological units and being parallel late faults. Less prominent bedrock structures exhibit a northerly to northeasterly orientation in art spatially associated with the vein systems and stockworks.

Met-Solve Laboratories Inc. was contracted by Jazz Resources Inc. to conduct continued flotation test work on samples from the Teddy Glacier property which the Company has stockpiled over 2,000 tonnes of high grade material (see news releases 2010).

Excellent flotation recoveries were achieved with 96% of the lead recovered to produce a Pb concentrate with 62% Pb during the lead flotation stage. In addition the majority of the precious metals reported to the lead concentrate. , Gold and silver recoveries of 83% and 92% were achieved and reported to the lead concentrate.

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Note that no cleaning stage was required to produce the high lead and zinc concentrate grades, further enhancing the excellent results.

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An exploration program is recommended as follows:

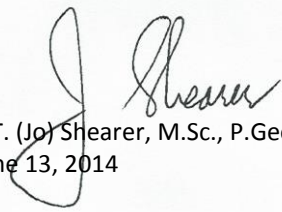
Geological compilation, mapping and all previous work to common scales, establish camp facilities, ATV and limited helicopter support, re-establish grid, continued environmental baseline studies, and Diamond drilling.

**Budget**

Contingent on favourable results from 2009 Bulk Sample		
Geological mapping	10,000.00	
Grid establishment and reconnaissance sampling	12,000.00	
Planning, selection and site confirmation, camp	15,000.00	
Compilation, digitization	6,000.00	
Characterization and studies of minerals	5,000.00	
Consulting, supervision and reports	12,000.00	
	<u>\$60,000.00</u>	\$60,000.00
Diamond Drilling & supervision all in cost,		
4,000 ft. @ \$40	160,000.00	
(includes drill moves and consumables)		
Characterization and studies of mineralization and assaying	12,000.00	
Consulting, supervision and reports	12,000.00	
Access Road Opening & Excavator standby	56,000.00	
	<u>\$240,000.00</u>	\$240,000.00
Grand Total		<u>\$300,000.00</u>

Smelter charges and transport to smelter are not included

Respectfully submitted,



J. T. (Jo) Shearer, M.Sc., P.Ge.  
June 13, 2014



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**APPENDIX I**

**STATEMENT of QUALIFICATIONS**

**June 13, 2014**

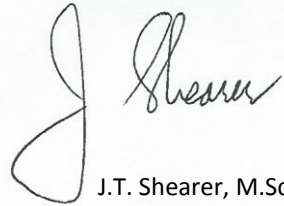


## APPENDIX I STATEMENT OF QUALIFICATIONS

I, Johan T. Shearer of Unit 5 – 2330 Tyner Street, in the City of Port Coquitlam, in the Province of British Columbia, do hereby certify:

1. I graduated in Honours Geology (B.Sc., 1973) from the University of British Columbia and the University of London, Imperial College, (M.Sc. 1977).
2. I have practiced my profession as an Exploration Geologist continuously since graduation and have been employed by such mining companies as McIntyre Mines Ltd., J.C. Stephen Explorations Ltd., Carolin Mines Ltd. and TRM Engineering Ltd. I am presently employed by Homegold Resources Ltd.
3. I am a fellow of the Geological Association of Canada (Fellow No. F439). I am also a member of the Canadian Institute of Mining and Metallurgy, the Geological Society of London and the Mineralogical Association of Canada. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (P.Geo., Member Number 19,279).
4. I am an independent consulting geologist employed since December 1986 by Homegold Resources Ltd. At Unit #5 2330 Tyner Street, Port Coquitlam, British Columbia.
5. I am the author of the report entitled “Geological and Metallurgical Report on the Teddy Glacier Property” dated June 13, 2014.
6. I have visited the property on October 1+2, 2013 and June 1+2, 2014. I have carried out mapping and sample collection and am familiar with the regional geology and geology of nearby properties. I have become familiar with the previous work conducted on the Teddy Glacier Project by examining in detail the available reports and maps and have discussed previous work with persons knowledgeable of the area.

Dated at Port Coquitlam, British Columbia, this 13<sup>th</sup> day of June, 2014.



J.T. Shearer, M.Sc., P. Geo.

**APPENDIX II**

**STATEMENT of COSTS**

**June 13, 2014**

**APPENDIX II  
STATEMENT of COSTS  
TEDDY GLACIER PROJECT 2014**

	Without HST
<b>Wages</b>	
J. T. Shearer, M.Sc., P.Geo., Geologist 2 days @ \$700/day, June 1+2, 2014	\$1,400.00
R. Savelieff, B.Sc., Geologist 2 days @ \$500/day, June 1+2, 2014	1,000.00
Subtotal	\$2,400.00
<b>Expenses</b>	
Truck 1, Rental, fully equipped 4x4, 2 days @ \$120/day	240.00
Fuel, 1,600km	365.00
Metallurgical Testing, MS1524, 2014	6,592.50
ABA Testing	425.24
Hotel, 2 days	216.25
ATV Rental, 2 days @ \$70/day	140.00
Radios + GPS Rentals	100.00
Data Interpretation and Mill Compatibility	700.00
Report Preparation	1,400.00
Word Processing and Reproduction	350.00
Subtotal	\$ 10,528.99
<b>Grand Total</b>	<b>\$ 12,928.99</b>

Event # 5508889  
 Filed: June 13, 2014  
 Work: \$9,900.00  
 PAC: \$4,178.09  
 Total: \$14,078.09

**APPENDIX III**

**METSOLVE METALLURGICAL REPORT**

**June 13, 2014**

## MS1525 Jazz Resources

**Prepared for:**

Bryan Glen  
President & CEO  
Jazz Resources Inc.  
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**Prepared by:**

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**Project Number:**

MS1525

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President  
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28th May 2014

**Note:** This report refers to the samples as received. The information contained in this report is provided 'as is' without warranty of any kind with respect to the interpretation and use of the data by the client.



**1.0 BACKGROUND**

Met-Solve Laboratories Inc. was contracted by Jazz Resources Inc. to conduct gravity concentration and flotation test work on samples from the Teddy Glacier property.

Two buckets of rock samples, weighing 79.8 kg, were delivered on March 4<sup>th</sup>, 2014 by Mr. Jo Shearer. The rocks were visually observed to be well mineralized.

The primary objectives of this test program were to:

- a) Identify the amount of gravity recoverable gold (GRG) present
- b) Determine the base metal recoveries from a two stage differential flotation test aiming at producing separate lead and zinc concentrates
- c) Determine the precious and base metal recoveries from a gravity + flotation process if the initial gravity test was successful

**2.0 RESULTS**

The results are summarized in the Appendices as presented in **Table I**.

**Table I: Appendix List**

Appendices	Description
A	Optimized Flotation Test Results (LV203)
B	Scoping Flotation Test Results (LV201 & 202)
C	Falcon Gravity Test (LV101)
D	Assay Summary
E	ABA Test Results on Flotation Tailings

The Jazz Resources sample was subject to the following preparation and test procedures:

- 1. Crushing and rotary splitting of the received sample
- 2. A 3-Stage, 10 kg, GRG test using a laboratory scale Falcon L40 centrifugal concentrator, at a final grind of 93 microns (P<sub>80</sub>)
- 3. Three ~4 kg flotation tests on the head material at a grind particle size of ~100 microns (P<sub>80</sub>)

## 2.1 HEAD GRADE

The head grades of the sample were obtained by direct assay of the sample, and calculated from the flotation and gravity tests. These are summarized below in **Table II**:

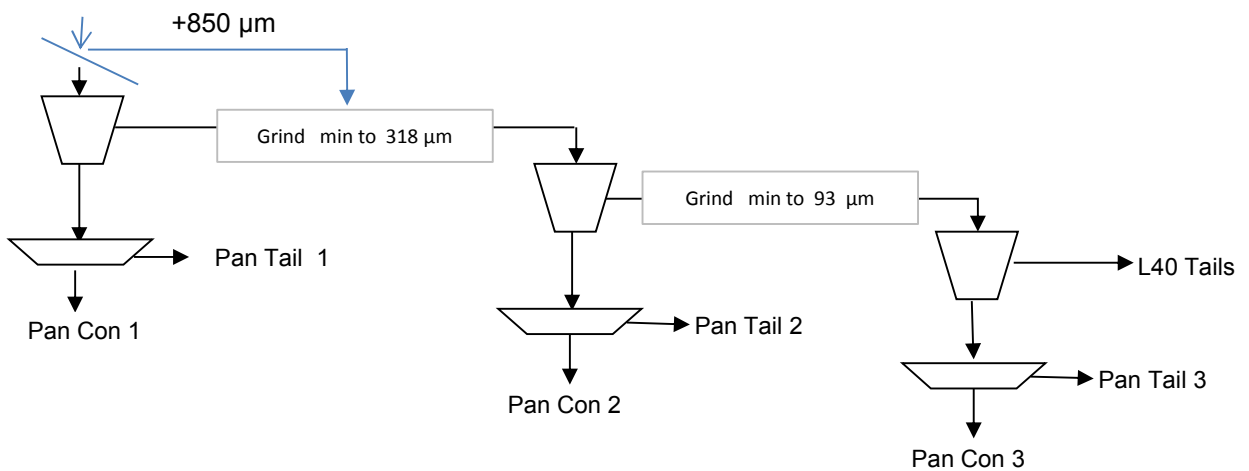
**Table II: Head Grade Summary**

Head Assay								
Test Description	Test Number	Au ppm	Ag ppm	Cu %	Fe %	Pb %	S %	Zn %
Float	LV201	13.00	546	1.4	21.9	22.7	30.0	6.0
Float	LV202	14.97	531	1.4	21.6	22.9	31.1	5.4
Float	LV203	14.98	547	1.3	24.2	24.3	33.6	6.1
Gravity	LV101	14.00	532	-	-	-	-	-
Avg Calculated	-	14.24	539	1.4	22.6	23.3	31.6	5.8
Avg Assayed	-	11.99	519	1.5	22.9	22.9	31.3	5.8

## 2.2 GRAVITY TEST RESULTS

A 10 kg representative sub-sample was screened at 850 microns prior to the gravity concentration test work. The undersize was processed through the Falcon L40 three times with grinding applied after the first and second stages.. After each stage, the concentrates were panned to examine the upgradeability of the material. The flow sheet for the gravity test work is presented in **Figure 1**.

**Figure 1: Flow Sheet Diagram for Gravity Test Work**



The gravity results are presented in **Table III** below.

**Table III: Test LV101 Gravity Test Summary (Final P<sub>80</sub> = 93 microns)**

Products	Weight		Assay (g/t)	Distribution (%)
	(g)	(%)	Au	Au
Pan Concentrate 1	23.7	0.2	28.3	0.5
Pan Tail 1	582.0	5.5	12.5	4.9
<b>L40 Concentrate 1</b>	<b>605.7</b>	<b>5.7</b>	<b>13.1</b>	<b>5.4</b>
Pan Concentrate 2	15.8	0.1	88.0	0.9
Pan Tail 2	256.1	2.4	25.3	4.4
<b>L40 Concentrate 2</b>	<b>271.9</b>	<b>2.6</b>	<b>28.9</b>	<b>5.3</b>
Pan Concentrate 3	28.2	0.3	132.1	2.5
Pan Tail 3	173.3	1.6	34.1	4.0
<b>L40 Concentrate 3</b>	<b>201.5</b>	<b>1.9</b>	<b>47.8</b>	<b>6.5</b>
<b>Total L40 Concentrate</b>	<b>1,079.1</b>	<b>10.2</b>	<b>23.6</b>	<b>17.2</b>
L40 Tails	9,488.9	89.8	12.9	82.8
<b>Calculated Head</b>	<b>10,568.0</b>	<b>100.0</b>	<b>14.0</b>	<b>100.0</b>
<b>Assayed Head</b>			<b>11.0</b>	
<b>Assayed Head (dup)</b>			12.9	

The gravity concentration test achieved a gold recovery of **17.2%**. As the sample did not respond well to centrifugal gravity concentration, no further tests were done on the gravity tailings.

## 2.3 FLOTATION ON HEAD

Three differential flotation tests (Tests LV201-203) were done on the ground head material at ~100  $\mu\text{m}$  ( $P_{80}$ ) using various reagents to determine the overall precious and base metal recovery.

A summary of the results of the flotation tests are presented in **Table IV**. Detailed mass balances can be found in Appendix A and B.

**Table IV: Flotation Test Result Summary**

LV201 Float (Scoping)												
Stage	Wt (%)	Collector	Frother	Other Reagents	pH (Avg)	ORP(mV) (Avg)	Recovery %					
							Au	Pb	Zn	Ag	Fe	S
Pb Con	82.3	Aerophine 3418a	TF250	NaMBs	4.91	76	90.3	94.8	50.8	97.2	97.5	93.8
Zn Con	12.6	SIPX + SIBX	TF250	CuSO <sub>4</sub>	12.63	-72	2.9	2.2	41.5	2.4	2.2	5.2
Tails	5.1	-	-	-	-	-	6.8	3.0	7.8	0.4	0.3	1.0

LV202 Float (Scoping)												
Stage	Wt (%)	Collector	Frother	Other Reagents	pH (Avg)	ORP(mV) (Avg)	Recovery %					
							Au	Pb	Zn	Ag	Fe	S
Pb Con	24.9	Aerophine 3418a	TF250	NaMBs	10.18	-47	58.4	69.4	8.1	70.0	7.0	14.8
Zn Con	12.2	SIPX + SIBX	TF250	CuSO <sub>4</sub>	11.89	-43	4.1	3.1	42.9	3.8	11.4	12.6
Pyrite Con	48.5	PAX	TF250	H <sub>2</sub> SO <sub>4</sub>	5.92	62	33.5	25.3	45.9	24.1	73.3	66.0
Tails	14.3	-	-	-	-	-	4.1	2.3	3.1	2.1	8.2	6.6

LV203 Float (Optimized)												
Stage	Wt (%)	Collector	Frother	Other Reagents	pH (Avg)	ORP(mV) (Avg)	Recovery %					
							Au	Pb	Zn	Ag	Fe	S
Pb Con	37.6	Aerophine 3418a	TF250	NaMBs	9.36	-6	82.8	96.0	11.6	92.2	18.2	24.6
Zn Con	10.7	SIPX	TF250	CuSO <sub>4</sub>	11.24	-11	1.5	1.3	85.6	2.8	5.8	11.7
Pyrite Con	38.5	SIPX + PAX	TF250	H <sub>2</sub> SO <sub>4</sub>	11.19	24	9.7	1.6	2.5	4.1	72.8	61.5
Tails	13.2	-	-	-	-	-	6.1	1.1	0.2	0.8	3.2	2.1

The results show that pH and oxidation reduction potential control is crucial in successfully producing a lead concentrate. The optimum pH for the lead flotation stage is at pH 9. At higher pH, the additional lime is likely to inhibit precious metal recovery; lower pH will cause the pyrite to float.

The flotation retention time and dosage of SIPX collector have to be carefully controlled during the zinc flotation stage. Excess SIPX dosage will result in the activation of pyrite, even at a high pH. The reagent scheme and dosage information for the optimized float test can be found in Appendix A.

The recovery results of the optimized flotation test (LV203) are presented in **Table V**.

Table V: Flotation Test LV203 Recovery Results on Head

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Au (g/t)	Pb (%)	Zn (%)	Au	Pb	Zn
Pb Con 1	189.3	4.7	36.7	43.5	1.9	11.6	8.5	1.4
Pb Con 2	121.3	3.0	40.8	56.5	2.9	8.2	7.0	1.5
Pb Con 3	825.7	20.6	29.6	77.7	0.9	40.7	66.0	3.2
Pb Con 4	368.3	9.2	36.2	38.1	3.7	22.2	14.4	5.6
<b>Lead Conc</b>	<b>1,504.6</b>	<b>37.6</b>	<b>33.0</b>	<b>62.0</b>	<b>1.9</b>	<b>82.8</b>	<b>96.0</b>	<b>11.6</b>
Zn Con 1	219.2	5.5	1.5	2.5	58.4	0.5	0.6	52.5
Zn Con 2	209.7	5.2	2.7	3.4	38.6	0.9	0.7	33.2
<b>Zinc Conc</b>	<b>428.9</b>	<b>10.7</b>	<b>2.0</b>	<b>2.9</b>	<b>48.7</b>	<b>1.5</b>	<b>1.3</b>	<b>85.6</b>
<b>Zinc Float Tailings</b>	<b>2,073.3</b>	<b>51.7</b>	<b>4.6</b>	<b>1.3</b>	<b>0.3</b>	<b>15.8</b>	<b>2.7</b>	<b>2.7</b>
<b>Calculated Head</b>	<b>4,006.8</b>	<b>100.0</b>	<b>15.0</b>	<b>24.3</b>	<b>6.1</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Head Assay</b>			11.0	23.2	5.9			
<b>Head Assay (dup)</b>			12.9	22.7	5.7			

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Ag (g/t)	Fe (%)	S (%)	Ag	Fe	S
Pb Con 1	189.3	4.7	2795	14.3	26.0	24.1	2.8	3.7
Pb Con 2	121.3	3.0	1741	9.6	21.6	9.6	1.2	1.9
Pb Con 3	825.7	20.6	1183	7.1	16.4	44.5	6.1	10.1
Pb Con 4	368.3	9.2	829	21.5	32.8	13.9	8.2	9.0
<b>Lead Conc</b>	<b>1,504.6</b>	<b>37.6</b>	<b>1344</b>	<b>11.7</b>	<b>22.1</b>	<b>92.2</b>	<b>18.2</b>	<b>24.6</b>
Zn Con 1	219.2	5.5	142	6.2	33.9	1.4	1.4	5.5
Zn Con 2	209.7	5.2	148	20.1	39.8	1.4	4.4	6.2
<b>Zinc Conc</b>	<b>428.9</b>	<b>10.7</b>	<b>145</b>	<b>13.0</b>	<b>36.8</b>	<b>2.8</b>	<b>5.8</b>	<b>11.7</b>
<b>Zinc Float Tailings</b>	<b>2,073.3</b>	<b>51.7</b>	<b>52</b>	<b>35.5</b>	<b>41.4</b>	<b>4.9</b>	<b>76.0</b>	<b>63.7</b>
<b>Calculated Head</b>	<b>4,006.8</b>	<b>100.0</b>	<b>547</b>	<b>24.2</b>	<b>33.6</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Head Assay</b>			525	22.6	31.6			
<b>Head Assay (dup)</b>			514	23.2	31.0			

Excellent flotation recoveries were achieved with 96% of the lead to produce a 62% Pb concentrate grade during the lead float stage. In addition, majority of the precious metals at reported to the lead concentrate, with gold and silver recoveries at 83% and 92% respectively.

The zinc flotation stage managed to recover 85.6% of the zinc to produce a zinc concentrate grade of 48.7% Zn. Most of the unrecovered zinc was entrained in the lead concentrate. Addition of more zinc depressant, NaMBS, during the lead rougher flotation stage might reduce the zinc entrainment.

Note that no cleaning stage was required to produce the high Pb and Zn concentrate grades, further compounding the excellent results.



A pyrite float stage was done to demonstrate the potential reduction the sulfur content of the zinc tailings. The tailings sulfur grade was reduced from 41.4% to 5.4%. The results are presented in **Table VI**. The pyrite concentrate might be upgraded and sold to potential smelters\*.

**Table VI: Flotation Test LV203 Results With Pyrite stage**

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Au (g/t)	Pb (%)	Zn (%)	Au	Pb	Zn
Lead Conc	1,504.6	37.6	33.0	62.0	1.9	82.8	96.0	11.6
Zinc Conc	428.9	10.7	2.0	2.9	48.7	1.5	1.3	85.6
Pyrite Con	1,543.6	38.5	3.8	1.0	0.4	9.7	1.6	2.5
<i>Total Con</i>	<i>3,477.1</i>	<i>86.8</i>	<i>16.2</i>	<i>27.6</i>	<i>7.0</i>	<i>93.9</i>	<i>98.9</i>	<i>99.8</i>
Tails	529.7	13.2	6.9	2.1	0.1	6.1	1.1	0.2
Calculated Head	4,006.8	100.0	15.0	24.3	6.1	100.0	100.0	100.0
Head Assay			11.0	23.2	5.9			
Head Assay (dup)			12.9	22.7	5.7			

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Ag (g/t)	Fe (%)	S (%)	Ag	Fe	S
Lead Conc	1,504.6	37.6	1,344	11.7	22.1	92.2	18.2	24.6
Zinc Conc	428.9	10.7	145	13.0	36.8	2.8	5.8	11.7
Pyrite Con	1,543.6	38.5	58	45.6	53.7	4.1	72.8	61.5
<i>Total Con</i>	<i>3,477.1</i>	<i>86.8</i>	<i>625</i>	<i>26.9</i>	<i>37.9</i>	<i>99.2</i>	<i>96.8</i>	<i>97.9</i>
Tails	529.7	13.2	34	5.9	5.4	0.8	3.2	2.1
Calculated Head	4,006.8	100.0	547	24.2	33.6	100.0	100.0	100.0
Head Assay			525	22.6	31.6			
Head Assay (dup)			514	23.2	31.0			

\*Disclaimer: Met-Solve is unable to comment on the salability of the concentrate products as it is dependent on prevailing market conditions and individual refiner's terms and conditions.

## 2.4 ACID-BASE ACCOUNTING (ABA) TEST ON FLOTATION TAILINGS

Acid-base accounting (ABA) tests were done on the final flotation tailings (with the pyrite float stage) and zinc tailings (without the pyrite float stage) of the optimized float test LV203.

A summary of the acid-base accounting (ABA) test results are presented in **Table VII**. A detailed table of the results is presented in the appendix E.

**Table VII: ABA summary**

Sample Description	Total Sulfur	Paste pH	Max AP	Modified NP	Net NP
	%		kg CaCO <sub>3</sub> /tonne	kg CaCO <sub>3</sub> /tonne	kg CaCO <sub>3</sub> /tonne
LV203, Zinc Float Tailings (without pyrite stage)	45.80	3.1	1163.4	-8.3	-1171.7
LV203, Final Float Tailings (with pyrite float stage)	6.24	5.9	157.8	-2.4	-160.2

**Note:**

AP = Acid potential in tonnes CaCO<sub>3</sub> equivalent per 1000 tonnes of material. AP is determined from the measured sulphide sulphur content.

NP = Neutralization potential in tonnes CaCO<sub>3</sub> equivalent per 1000 tonnes of material.

NET Neutralization Potential (NNP) = Modified NP - AP

The paste pH suggest that leachate from both float tailings is in the slightly acidic range.

The net neutralization potential (NNP) were -1171.7 and -160.2 for the zinc tailings and final float tailings respectively, indicating that both float tailings samples are acid generating\*. With the addition of a pyrite float stage after the zinc float stage, the acid generating potential (AP) of the final tailings was significantly lower, thus reducing the CaCO<sub>3</sub> required for neutralization.

\*Note: For samples with Net NP values greater than +20 kg CaCO<sub>3</sub>/1000 tons of waste (ratio of 3:1), the potential to generate acid is low. For Net NP values less than -20 kg/ton CaCO<sub>3</sub> (ratios between <1), the material is generally accepted as being acid producing. It is important to note that each of these values are generalities and can be affected by the relative availability of surface areas of iron sulfides and calcium-magnesium carbonates.

### 3.0 SUMMARY

The head grades of the Jazz Resources Teddy Glacier sample are summarized below:

Head Assay								
Test Description	Test Number	Au ppm	Ag ppm	Cu %	Fe %	Pb %	S %	Zn %
Float	LV201	13.00	546	1.4	21.9	22.7	30.0	6.0
Float	LV202	14.97	531	1.4	21.6	22.9	31.1	5.4
Float	LV203	14.98	547	1.3	24.2	24.3	33.6	6.1
Gravity	LV101	14.00	532	-	-	-	-	-
Avg Calculated	-	14.24	539	1.4	22.6	23.3	31.6	5.8
Avg Assayed	-	11.99	519	1.5	22.9	22.9	31.3	5.8

The sample did not respond well to centrifugal gravity concentration, with a low gravity recoverable gold (GRG) content of 17.2%. Hence, direct flotation test on the head material was done to investigate its response.

The recovery and grade results of the optimized flotation test are presented in **Table VIII** below.

**Table VIII: Optimized Flotation Test**

LV203 Float (Optimized)													
Stage	Wt (%)	Concentrate Grade						Recovery %					
		Au (g/t)	Pb (%)	Zn (%)	Ag (g/t)	Fe (%)	S (%)	Au	Pb	Zn	Ag	Fe	S
Pb Con	37.6	33.0	62.0	1.9	1,344	11.7	22.1	82.8	96.0	11.6	92.2	18.2	24.6
Zn Con	10.7	2.0	2.9	48.7	145	13.0	36.8	1.5	1.3	85.6	2.8	5.8	11.7
Pyrite Con	38.5	3.8	1.0	0.4	58	45.6	53.7	9.7	1.6	2.5	4.1	72.8	61.5
Tails	13.2	6.9	2.1	0.1	34	5.9	5.4	6.1	1.1	0.2	0.8	3.2	2.1

Flotation achieved a lead recovery of 96% and produced a 62% Pb concentrate grade; and zinc recovery of 85.6% to produce a separate concentrate with a grade of 48.7% Zn.

In addition, the majority of the precious metals reported to the lead concentrate, with gold and silver recoveries at 83% and 92% respectively.

Acid Base Accounting tests determined that the net neutralization potential (NNP) were -1171.7 and -160.2 for the zinc tailings and final float tailings respectively, indicating that both float tailings samples are acid generating. The acid generating potential (AP) was significantly reduced with the addition of a pyrite float stage on the Zn float tailings.

## APPENDICES

## **Appendix A**

### **Optimized Float Results (LV203)**

- 1 Float Results with Pyrite Stage**
- 2 Float Results without Pyrite Stage**
- 3 Reagent Scheme**
- 4 Particle Size Analysis of the Feed**





## FLOTATION TEST REPORT

**Client:** Jazz Resources  
**Test:** LV203  
**Sample:** Teddy Glacier Head  
 p80=99µm

**Date:** 02-Apr-14  
**Project:** MS1525

Pulp Density	34.6%		Float Cell	9 litres			Speed	1,200 RPM	
Products	Weight		Assays			Distribution (%)			
	(g)	(%)	Au (g/t)	Pb (%)	Zn (%)	Au	Pb	Zn	
Pb Con 1	189.3	4.7	36.7	43.5	1.9	11.6	8.5	1.4	
Pb Con 2	121.3	3.0	40.8	56.5	2.9	8.2	7.0	1.5	
Pb Con 3	825.7	20.6	29.6	77.7	0.9	40.7	66.0	3.2	
Pb Con 4	368.3	9.2	36.2	38.1	3.7	22.2	14.4	5.6	
<b>Lead Conc</b>	<b>1,504.6</b>	<b>37.6</b>	<b>33.0</b>	<b>62.0</b>	<b>1.9</b>	<b>82.8</b>	<b>96.0</b>	<b>11.6</b>	
Zn Con 1	219.2	5.5	1.5	2.5	58.4	0.5	0.6	52.5	
Zn Con 2	209.7	5.2	2.7	3.4	38.6	0.9	0.7	33.2	
<b>Zinc Conc</b>	<b>428.9</b>	<b>10.7</b>	<b>2.0</b>	<b>2.9</b>	<b>48.7</b>	<b>1.5</b>	<b>1.3</b>	<b>85.6</b>	
Pyrite con 1	994.2	24.8	3.0	0.7	0.3	4.9	0.7	1.1	
Pyrite con 2	390.9	9.8	4.8	1.2	0.6	3.1	0.5	1.0	
Pyrite con 3	103.2	2.6	6.3	2.0	0.6	1.1	0.2	0.3	
Pyrite con 4	55.3	1.4	6.2	3.5	0.5	0.6	0.2	0.1	
<b>Pyrite Con</b>	<b>1,543.6</b>	<b>38.5</b>	<b>3.8</b>	<b>1.0</b>	<b>0.4</b>	<b>9.7</b>	<b>1.6</b>	<b>2.5</b>	
<i>Total Con &amp; Scav</i>	<i>3,477.1</i>	<i>86.8</i>	<i>16.2</i>	<i>27.6</i>	<i>7.0</i>	<i>93.9</i>	<i>98.9</i>	<i>99.8</i>	
Tails	529.7	13.2	6.9	2.1	0.1	6.1	1.1	0.2	
<b>Calculated Head</b>	<b>4,006.8</b>	<b>100.0</b>	<b>15.0</b>	<b>24.3</b>	<b>6.1</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	
Head Assay			11.0	23.2	5.9				
Head Assay (dup)			12.9	22.7	5.7				

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Ag (g/t)	Fe (%)	S (%)	Ag	Fe	S
Pb Con 1	189.3	4.7	2,795	14.3	26.0	24.1	2.8	3.7
Pb Con 2	121.3	3.0	1,741	9.6	21.6	9.6	1.2	1.9
Pb Con 3	825.7	20.6	1,183	7.1	16.4	44.5	6.1	10.1
Pb Con 4	368.3	9.2	829	21.5	32.8	13.9	8.2	9.0
<b>Lead Conc</b>	<b>1,504.6</b>	<b>37.6</b>	<b>1,344</b>	<b>11.7</b>	<b>22.1</b>	<b>92.2</b>	<b>18.2</b>	<b>24.6</b>
Zn Con 1	219.2	5.5	142	6.2	33.9	1.4	1.4	5.5
Zn Con 2	209.7	5.2	148	20.1	39.8	1.4	4.4	6.2
<b>Zinc Conc</b>	<b>428.9</b>	<b>10.7</b>	<b>145</b>	<b>13.0</b>	<b>36.8</b>	<b>2.8</b>	<b>5.8</b>	<b>11.7</b>
Pyrite con 1	994.2	24.8	46	46.6	53.8	2.1	47.8	39.7
Pyrite con 2	390.9	9.8	74	44.6	54.7	1.3	18.0	15.9
Pyrite con 3	103.2	2.6	85	43.0	52.3	0.4	4.6	4.0
Pyrite con 4	55.3	1.4	121	41.1	48.7	0.3	2.3	2.0
<b>Pyrite Con</b>	<b>1,543.6</b>	<b>38.5</b>	<b>58</b>	<b>45.6</b>	<b>53.7</b>	<b>4.1</b>	<b>72.8</b>	<b>61.5</b>
<i>Total Con</i>	<i>3,477.1</i>	<i>86.8</i>	<i>625</i>	<i>26.9</i>	<i>37.9</i>	<i>99.2</i>	<i>96.8</i>	<i>97.9</i>
Tails	529.7	13.2	34	5.9	5.4	0.8	3.2	2.1
<b>Calculated Head</b>	<b>4,006.8</b>	<b>100.0</b>	<b>547</b>	<b>24.2</b>	<b>33.6</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Head Assay			525	22.6	31.6			
Head Assay (dup)			514	23.2	31.0			



## FLOTATION TEST REPORT

**Client:** Jazz Resources  
**Test:** LV203 without pyrite float stage  
**Sample:** Teddy Glacier Head  
 p80=99µm

**Date:** 02-Apr-14  
**Project:** MS1525

Pulp Density	34.6%		Float Cell	9 litres			Speed	1,200 RPM	
Products	Weight		Assays			Distribution (%)			
	(g)	(%)	Au (g/t)	Pb (%)	Zn (%)	Au	Pb	Zn	
Pb Con 1	189.3	4.7	36.7	43.5	1.9	11.6	8.5	1.4	
Pb Con 2	121.3	3.0	40.8	56.5	2.9	8.2	7.0	1.5	
Pb Con 3	825.7	20.6	29.6	77.7	0.9	40.7	66.0	3.2	
Pb Con 4	368.3	9.2	36.2	38.1	3.7	22.2	14.4	5.6	
<b>Lead Conc</b>	<b>1,504.6</b>	<b>37.6</b>	<b>33.0</b>	<b>62.0</b>	<b>1.9</b>	<b>82.8</b>	<b>96.0</b>	<b>11.6</b>	
Zn Con 1	219.2	5.5	1.5	2.5	58.4	0.5	0.6	52.5	
Zn Con 2	209.7	5.2	2.7	3.4	38.6	0.9	0.7	33.2	
<b>Zinc Conc</b>	<b>428.9</b>	<b>10.7</b>	<b>2.0</b>	<b>2.9</b>	<b>48.7</b>	<b>1.5</b>	<b>1.3</b>	<b>85.6</b>	
<b>Zinc Float Tailings</b>	<b>2,073.3</b>	<b>51.7</b>	<b>4.6</b>	<b>1.3</b>	<b>0.3</b>	<b>15.8</b>	<b>2.7</b>	<b>2.7</b>	
<b>Calculated Head</b>	<b>4,006.8</b>	<b>100.0</b>	<b>15.0</b>	<b>24.3</b>	<b>6.1</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	
Head Assay			11.0	23.2	5.9				
Head Assay (dup)			12.9	22.7	5.7				

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Ag (g/t)	Fe (%)	S (%)	Ag	Fe	S
Pb Con 1	189.3	4.7	2795	14.3	26.0	24.1	2.8	3.7
Pb Con 2	121.3	3.0	1741	9.6	21.6	9.6	1.2	1.9
Pb Con 3	825.7	20.6	1183	7.1	16.4	44.5	6.1	10.1
Pb Con 4	368.3	9.2	829	21.5	32.8	13.9	8.2	9.0
<b>Lead Conc</b>	<b>1,504.6</b>	<b>37.6</b>	<b>1344</b>	<b>11.7</b>	<b>22.1</b>	<b>92.2</b>	<b>18.2</b>	<b>24.6</b>
Zn Con 1	219.2	5.5	142	6.2	33.9	1.4	1.4	5.5
Zn Con 2	209.7	5.2	148	20.1	39.8	1.4	4.4	6.2
<b>Zinc Conc</b>	<b>428.9</b>	<b>10.7</b>	<b>145</b>	<b>13.0</b>	<b>36.8</b>	<b>2.8</b>	<b>5.8</b>	<b>11.7</b>
<b>Zinc Float Tailings</b>	<b>2,073.3</b>	<b>51.7</b>	<b>52</b>	<b>35.5</b>	<b>41.4</b>	<b>4.9</b>	<b>76.0</b>	<b>63.7</b>
<b>Calculated Head</b>	<b>4,006.8</b>	<b>100.0</b>	<b>547</b>	<b>24.2</b>	<b>33.6</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Head Assay			525	22.6	31.6			
Head Assay (dup)			514	23.2	31.0			



FLOTATION REAGENT SCHEME

Client: Jazz Resources

Date: 02-Apr-14

Test: LV203

Project: LV203

Sample: Teddy Glacier Head  
p80=99µm

Grind: As received      **4,006.8 g**

Float Cell Volume: 9.0 liters

Pulp Density: 34.6% by weight

Conditions:

(based on wet weight)

Stage	Reagents added, grams per tonne								Cond.	Float	pH	Elapsed Time (min)
	SIPX	NaMBS	3418A	CuSO4	PAX	H2SO4	Lime	TF250				
Initial												0
Grind							624					0
Conditoner		225					372		4		8.69	4
Pb Con 1		225	17				539	11	5	6	9.26	15
Pb Con 2		85					232		1	11	10.02	27
Pb Con 3			17						2	4	10.01	33
Pb Con 4		75	11				170	5	2	8	9.32	43
Zn Con 1	40			399			187	0	12	4	11.38	59
Zn Con 2	40						27	5	2	6	11.09	67
<b>Toal Pb &amp; Zn Float</b>	<b>80</b>	<b>609</b>	<b>44</b>	<b>399</b>	<b>0</b>	<b>0</b>	<b>1,527</b>	<b>21</b>	<b>28</b>	<b>39</b>		<b>67</b>
FeS Con 1	80							0	2	4.5	11.70	73
FeS Con 2								0	0	7	10.78	80
FeS Con 3				399	20	509		5	12	5	7.89	97
FeS Con 4					40			11	2.5	4		104
<i>Total</i>	160	609	44	799	60	509	1,527	38	45	59		
Comments:	For Pb Stage, NaMBS is added as required to maintain the ORP at < 0mV Excess SIPX added will cause the pyrite to float.											



## PARTICLE SIZE ANALYSIS

**Client:** Jazz Resources  
**Test:** LV203      Ground  
**Sample:** Teddy Glacier Flotation Feed

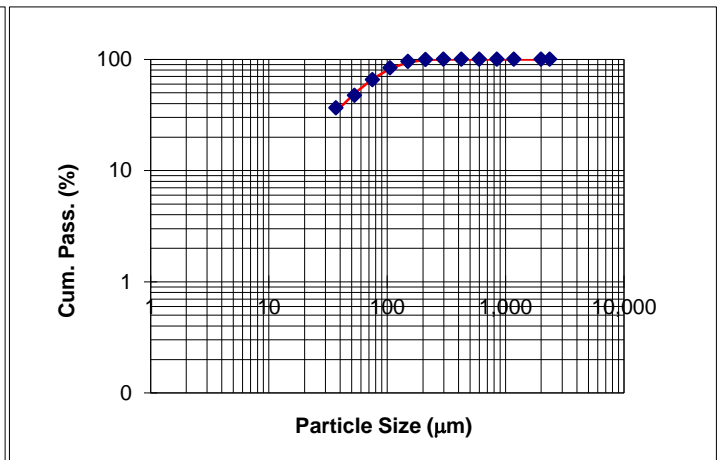
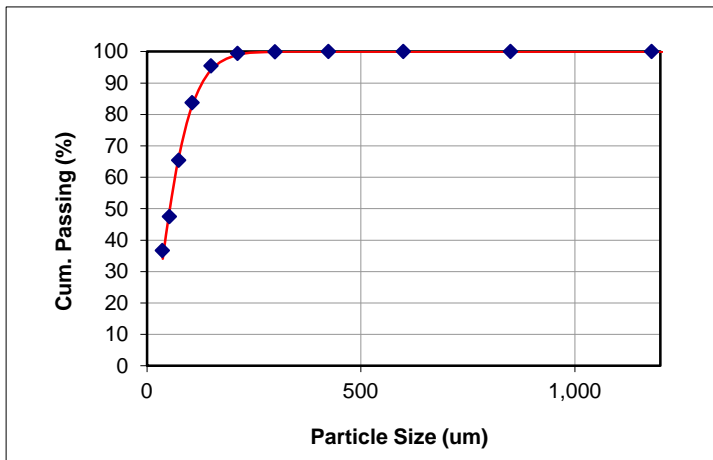
**Date:** 02-Apr-14  
**Project:** MS1525

Grind Time:                      11 minutes

Sieve Size		Weight		Cummulative (%)	
US Mesh	Microns	(g)	(%)	Retained	Passing
8	2,360	0.0			
10	2,000	0.0			
16	1,180	0.0			
20	850	0.0			
30	600	0.0			
40	425	0.0			
50	300	0.3	0.08	0.08	99.92
70	212	2.3	0.58	0.66	99.34
100	150	15.4	3.90	4.56	95.44
140	106	46.2	11.71	16.27	83.73
200	75	72.5	18.38	34.65	65.35
270	53	70.7	17.92	52.57	47.43
400	37	42.5	10.77	63.35	36.65
Undersize	-37	144.6	36.65	100.00	
<b>TOTAL:</b>		394.5	100.0		

Rosin-Rammler Model	
Size (um)	Passing P (%)
99	80
54	50

Linear Interpolation	
Size (um)	Passing P (%)
100	80
56	50



## **Appendix B**

### **Scoping Float Results**

- 1 Scoping Float Test 1 (LV201)**
- 2 Scoping Float Test 2 (LV202)**





## FLOTATION TEST REPORT

**Client:** Jazz Resources  
**Test:** LV201  
**Sample:** Teddy Glacier Head  
 P80=100µm

**Date:** 12-Mar-14  
**Project:** MS1525

Pulp Density	35.2%		Float Cell	9 litres			Speed	1,200 RPM		
Products	Weight		Assays			Distribution (%)				
	(g)	(%)	Au (g/t)	Pb (%)	Zn (%)	Au	Pb	Zn		
Con1	390.2	9.6	11.85	33.28	1.83	8.7	13.7	2.9		
Con2	2,956.0	72.7	14.61	26.07	3.97	81.6	81.1	47.8		
<b>Pb Con</b>	<b>3,346.2</b>	<b>82.3</b>	<b>14.29</b>	<b>26.91</b>	<b>3.72</b>	<b>90.3</b>	<b>94.8</b>	<b>50.8</b>		
Con3	16.4	0.4	5.15	22.17	10.90	0.2	0.4	0.7		
Con4	217.2	5.3	3.05	5.48	24.54	1.3	1.3	21.7		
Con5	278.3	6.8	2.85	1.97	16.76	1.5	0.6	19.0		
<b>Zn Con</b>	<b>511.9</b>	<b>12.6</b>	<b>3.01</b>	<b>4.11</b>	<b>19.87</b>	<b>2.9</b>	<b>2.2</b>	<b>41.5</b>		
<i>Total Con &amp; Scav</i>	<i>3,858.1</i>	<i>94.9</i>	<i>12.79</i>	<i>23.88</i>	<i>5.86</i>	<i>93.2</i>	<i>97.0</i>	<i>92.2</i>		
Tails	205.4	5.1	17.45	13.89	9.27	6.8	3.0	7.8		
<b>Calculated Head</b>	<b>4,063.5</b>	<b>100.0</b>	<b>13.03</b>	<b>23.38</b>	<b>6.04</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>		
<b>Head Assay</b>			11.05	23.21	5.89					
<b>Head Assay (dup)</b>			12.94	22.67	5.73					

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Ag (g/t)	Fe (%)	S (%)	Ag	Fe	S
Con1	390.2	9.6	1,574	20.1	29.2	27.7	8.8	9.4
Con2	2,956.0	72.7	521	26.7	34.8	69.5	88.7	84.5
<b>Pb Con</b>	<b>3,346.2</b>	<b>82.3</b>	<b>644</b>	<b>25.9</b>	<b>34.1</b>	<b>97.2</b>	<b>97.5</b>	<b>93.8</b>
Con3	16.4	0.4	592	14.8	21.4	0.4	0.3	0.3
Con4	217.2	5.3	127	5.2	15.6	1.2	1.3	2.8
Con5	278.3	6.8	57	2.0	9.3	0.7	0.6	2.1
<b>Zn Con</b>	<b>511.9</b>	<b>12.6</b>	<b>104</b>	<b>3.8</b>	<b>12.4</b>	<b>2.4</b>	<b>2.2</b>	<b>5.2</b>
<i>Total Con &amp; Scav</i>	<i>3,858.1</i>	<i>94.9</i>	<i>572</i>	<i>23.0</i>	<i>31.3</i>	<i>99.6</i>	<i>99.7</i>	<i>99.0</i>
Tails	205.4	5.1	46	1.5	5.8	0.4	0.3	1.0
<b>Calculated Head</b>	<b>4,063.5</b>	<b>182.3</b>	<b>546</b>	<b>21.9</b>	<b>30.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Head Assay</b>			525	22.6	31.6			
<b>Head Assay (dup)</b>			514	23.2	31.0			



## FLOTATION TEST REPORT

**Client:** Jazz Resources  
**Test:** LV202  
**Sample:** Teddy Glacier Head  
 p80=99µm

**Date:** 12-Mar-14  
**Project:** MS1525

<b>Pulp Density</b>	34.6%		<b>Float Cell</b>	9 litres		<b>Speed</b>	1,200 RPM	
Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Au (g/t)	Pb (%)	Zn (%)	Au	Pb	Zn
Con1	128.6	3.1	15.5	41.9	5.00	3.2	5.7	2.9
Con2	569.4	13.8	12.9	68.0	0.72	11.9	41.1	1.8
Con3	329.1	8.0	81.1	64.5	2.33	43.3	22.5	3.4
<b>Lead Conc</b>	<b>1,027.1</b>	<b>24.9</b>	<b>35.0</b>	<b>63.6</b>	<b>1.77</b>	<b>58.4</b>	<b>69.4</b>	<b>8.1</b>
Con4	144.9	3.5	2.80	11.6	19.55	0.7	1.8	12.7
Con5	359.1	8.7	5.86	3.4	18.80	3.4	1.3	30.2
<b>Zinc Conc</b>	<b>504.0</b>	<b>12.2</b>	<b>4.98</b>	<b>5.7</b>	<b>19.02</b>	<b>4.1</b>	<b>3.1</b>	<b>42.9</b>
Pyrite Conc	1,998.2	48.5	10.3	11.9	5.13	33.5	25.3	45.9
<b>Total Con &amp; Scav</b>	<b>3,529.3</b>	<b>85.7</b>	<b>16.8</b>	<b>26.1</b>	<b>6.14</b>	<b>95.9</b>	<b>97.7</b>	<b>96.9</b>
Tails	588.6	14.3	4.25	3.6	1.18	4.1	2.3	3.1
<b>Calculated Head</b>	<b>4,117.9</b>	<b>100.0</b>	<b>14.97</b>	<b>22.9</b>	<b>5.43</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Head Assay</b>			11.05	23.2	5.89			
<b>Head Assay (dup)</b>			12.94	22.7	5.73			

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Ag (g/t)	S (%)	Fe (%)	Ag	S	Fe
Con1	128.6	3.12	1,699	26.1	13.3	10.0	9.6	1.9
Con2	569.4	13.83	1,556	17.3	4.6	40.6	39.4	2.9
Con3	329.1	7.99	1,284	17.4	5.9	19.4	9.4	2.2
<b>Lead Conc</b>	<b>1,027.1</b>	<b>24.94</b>	<b>1,487</b>	<b>18.4</b>	<b>6.1</b>	<b>70.0</b>	<b>58.3</b>	<b>7.0</b>
Con4	144.9	3.52	331	30.5	18.4	2.2	2.2	3.0
Con5	359.1	8.72	96	32.6	20.9	1.6	1.9	8.4
<b>Zinc Conc</b>	<b>504.0</b>	<b>12.24</b>	<b>164</b>	<b>32.0</b>	<b>20.2</b>	<b>3.8</b>	<b>34.7</b>	<b>84.8</b>
Pyrite Conc	1,998.2	48.52	264	42.2	32.7	24.1	30.6	73.3
<b>Total Con &amp; Scav</b>	<b>1,531.1</b>	<b>85.71</b>	<b>605</b>	<b>33.8</b>	<b>23.2</b>	<b>73.8</b>	<b>62.4</b>	<b>18.5</b>
Tails	588.6	14.29	77	14.4	12.4	2.1	7.0	8.2
<b>Calculated Head</b>	<b>4,117.9</b>	<b>100.00</b>	<b>530</b>	<b>31.1</b>	<b>21.6</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Head Assay</b>			525	31.6	22.6			
<b>Head Assay (dup)</b>			514	31.0	23.2			

## **Appendix C**

### **Falcon Gravity Concentration Results**

- 1 Gravity Results (LV101)**
- 2 Particle Size Analysis, ground after 1st stage**
- 3 Particle Size Analysis, ground after 2nd stage**



## GRAVITY CONCENTRATION TEST REPORT

**Client:** Jazz Resources

**Date:** 10-Apr-14

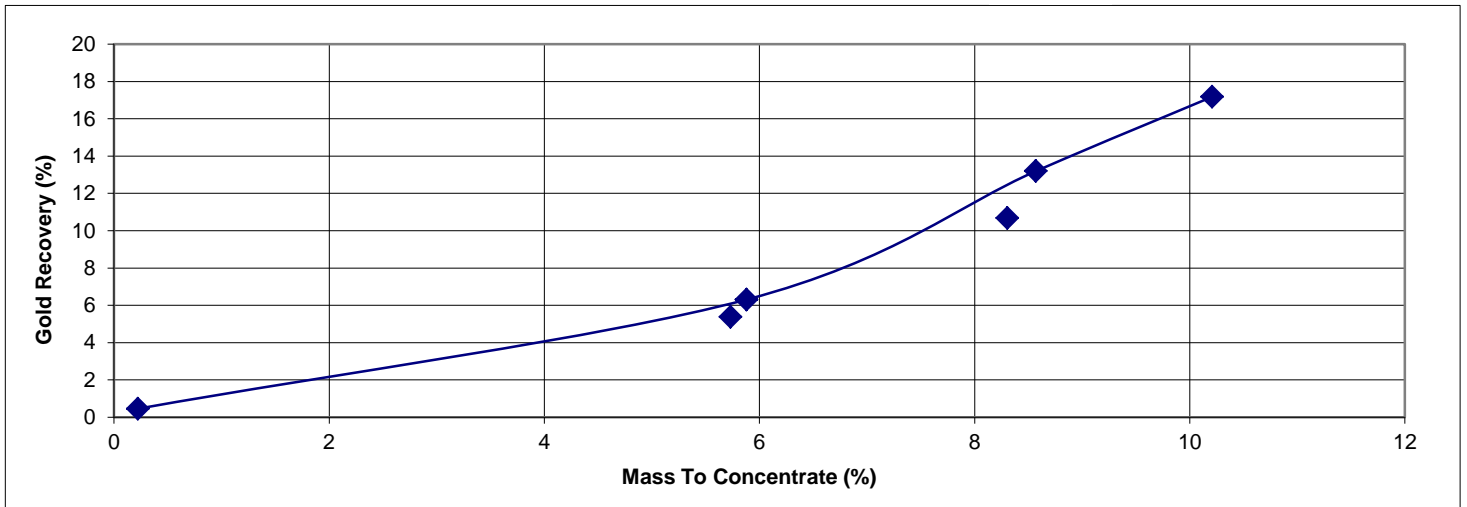
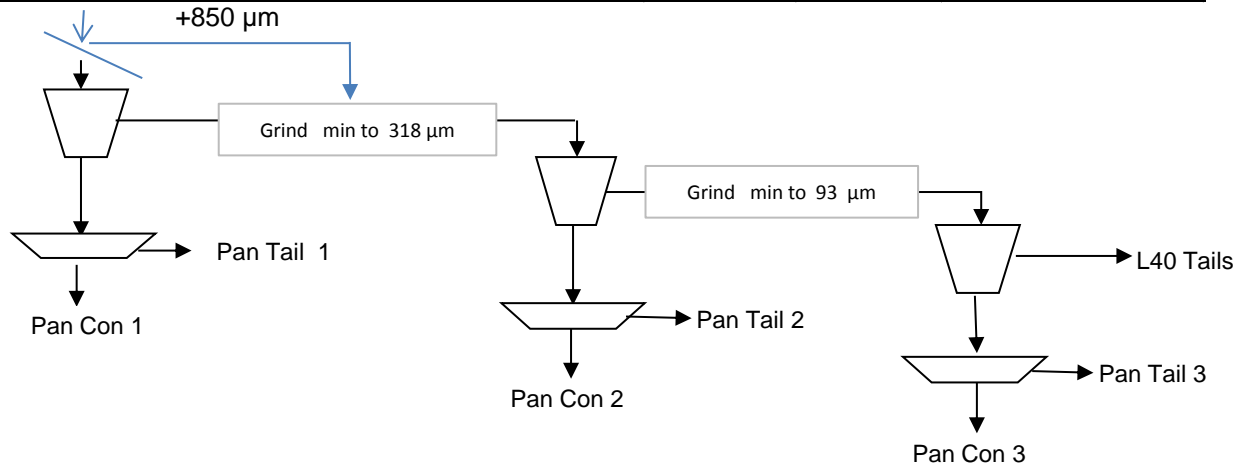
**Test:** LV101a

**Project:** MS1525

**Sample:** Teddy Glacier

**Objective:** To determine the gravity recovery of Au

Products	Weight		Assay (g/t)		Distribution (%)	
	(g)	(%)	Au	Ag	Au	Ag
Pan Concentrate 1	23.7	0.2	28.3	1,088	0.5	0.5
Pan Tail 1	582.0	5.5	12.5	658	4.9	6.8
<b>L40 Concentrate 1</b>	<b>605.7</b>	<b>5.7</b>	<b>13.1</b>	<b>675</b>	<b>5.4</b>	<b>7.3</b>
Pan Concentrate 2	15.8	0.1	88.0	972	0.9	0.3
Pan Tail 2	256.1	2.4	25.3	475	4.4	2.2
<b>L40 Concentrate 2</b>	<b>271.9</b>	<b>2.6</b>	<b>28.9</b>	<b>504</b>	<b>5.3</b>	<b>2.4</b>
Pan Concentrate 3	28.2	0.3	132.1	670	2.5	0.3
Pan Tail 3	173.3	1.6	34.1	488	4.0	1.5
<b>L40 Concentrate 3</b>	<b>201.5</b>	<b>1.9</b>	<b>47.8</b>	<b>514</b>	<b>6.5</b>	<b>1.8</b>
<b>Total L40 Concentrate</b>	<b>1,079.1</b>	<b>10.2</b>	<b>23.6</b>	<b>602</b>	<b>17.2</b>	<b>11.6</b>
L40 Tails	9,488.9	89.8	12.9	524	82.8	88.4
<b>Calculated Head</b>	<b>10,568.0</b>	<b>100.0</b>	<b>14.0</b>	<b>532</b>	<b>100.0</b>	<b>100.0</b>
<b>Assayed Head</b>			<b>11.0</b>	<b>525</b>		
<b>Assayed Head (dup)</b>			12.9	514		





## PARTICLE SIZE ANALYSIS

**Client:** Jazz Resources  
**Test:** LV1011a  
**Sample:** Teddy Glacier received

**Date:** 10-Mar-14  
**Project:** MS1525

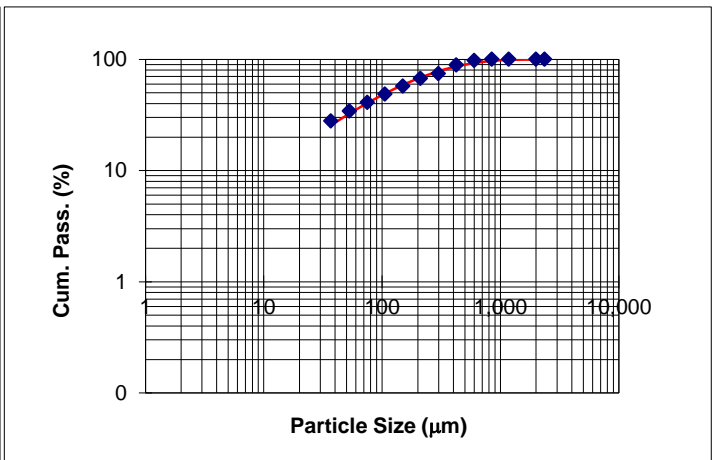
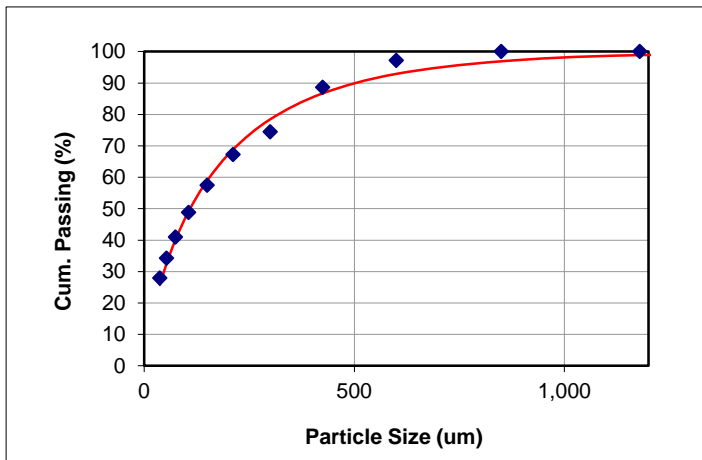
**Objective:** To determine the particle size distribution of the 2nd stage feed

Grind Time: 10 minutes

Sieve Size		Weight		Cumulative (%)	
US Mesh	Microns	(g)	(%)	Retained	Passing
8	2,360	0.0			
10	2,000	0.0			
16	1,180	0.0			
20	850	0.0			
30	600	9.6	2.82	2.82	97.18
40	425	29.3	8.59	11.41	88.59
50	300	48.2	14.14	25.55	74.45
70	212	24.8	7.27	32.82	67.18
100	150	33.4	9.80	42.62	57.38
140	106	29.4	8.62	51.25	48.75
200	75	26.8	7.86	59.11	40.89
270	53	22.7	6.66	65.77	34.23
400	37	21.7	6.37	72.13	27.87
Undersize	-37	95.0	27.87	100.00	
<b>TOTAL:</b>		340.9	100.0		

Rosin-Rammler Model	
Size (um)	Passing P (%)
318	80
109	50

Linear Interpolation	
Size (um)	Passing P (%)
349	80
112	50





## PARTICLE SIZE ANALYSIS

**Client:** Jazz Resources  
**Test:** LV1011b      Ground  
**Sample:** Teddy Glacier received

**Date:** Mar.10/14  
**Project:** MS1525

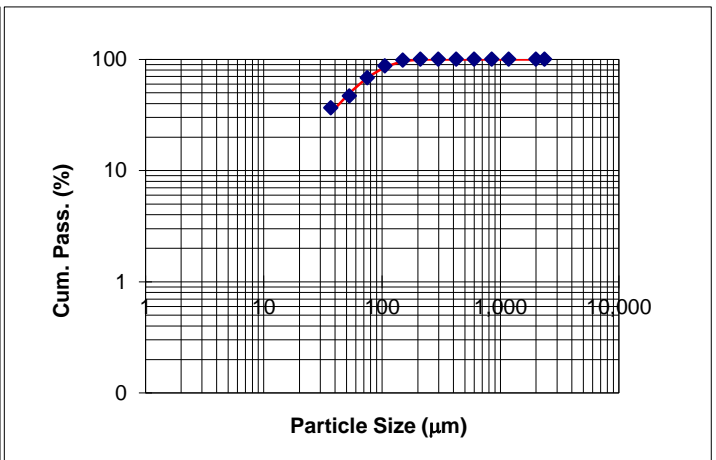
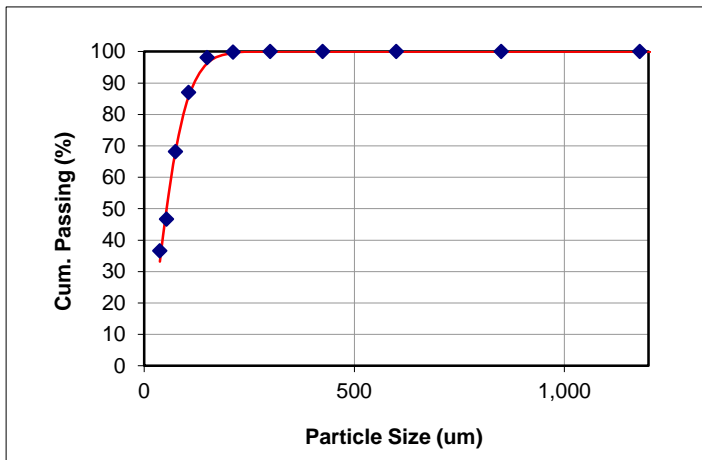
**Objective:** To determine the particle size distribution of the 3rd stage feed and gravity tailings

Grind Time:                      30 minutes

Sieve Size		Weight		Cummulative (%)	
US Mesh	Microns	(g)	(%)	Retained	Passing
8	2,360	0.0			
10	2,000	0.0			
16	1,180	0.0			
20	850	0.0			
30	600	0.0			
40	425	0.0			
50	300	0.0			
70	212	0.4	0.16	0.16	99.84
100	150	4.4	1.79	1.95	98.05
140	106	27.4	11.13	13.08	86.92
200	75	46.4	18.85	31.93	68.07
270	53	52.9	21.49	53.41	46.59
400	37	24.6	9.99	63.40	36.60
Undersize	-37	90.1	36.60	100.00	
<b>TOTAL:</b>		246.2	100.0		

Rosin-Rammler Model	
Size (um)	Passing P (%)
93	80
53	50

Linear Interpolation	
Size (um)	Passing P (%)
95	80
56	50





## **Appendix D**

### **Assay Summary**

- 1) Calculated and Assayed head Comparison**
- 2) Head Assay and Optimized Float products (LV203)**
- 3) Scoping Float Test products (LV201 & LV202)**
- 4) Gravity Tails Products (LV101)**

## MS1525: Calculated Head Summary

---

Head Assay								
Test Description	Test Number	Au ppm	Ag ppm	Cu %	Fe %	Pb %	S %	Zn %
Float	LV201	13.00	546	1.4	21.9	22.7	30.0	6.0
Float	LV202	14.97	531	1.4	21.6	22.9	31.1	5.4
Float	LV203	14.98	547	1.3	24.2	24.3	33.6	6.1
Gravity	LV101	14.00	532	-	-	-	-	-
Avg Calculated	-	14.24	539	1.4	22.6	23.3	31.6	5.8
Avg Assayed	-	11.99	519	1.5	22.9	22.9	31.3	5.8



## MS1525: Jazz Resources Head & LV203 Float Assays

Head Assay																			
Description	Sample Number	Au ppm	Ag ppm	Al %	As %	Ca %	Co %	Cr %	Cu %	Fe %	K %	Mg %	Mn %	Ni %	Pb %	S %	Si %	Ti %	Zn %
Head	99797	11.05	525	0.26	0.06	<0.05	0.01	0.02	1.48	22.63	<0.1	<0.01	0.03	0.01	23.21	31.62	5.14	<0.01	5.89
Head (dup)	99797	12.94	514	0.26	0.05	<0.05	0.01	0.02	1.45	23.17	<0.1	<0.01	0.03	0.01	22.67	31.00	5.18	<0.01	5.73
Average	-	11.99	519	0.26	0.05	<0.05	0.01	0.02	1.47	22.90	<0.1	<0.01	0.03	0.01	22.94	31.31	5.16	<0.01	5.81
Calculated	-	14.24	539	0.33	0.05	<0.05	0.01	0.04	1.40	22.55	<0.1	<0.01	0.02	0.03	23.29	31.55	5.15	<0.01	5.85

LV203 Float																			
Description	Sample Number	Au ppm	Ag ppm	Al %	As %	Ca %	Co %	Cr %	Cu %	Fe %	K %	Mg %	Mn %	Ni %	Pb %	S %	Si %	Ti %	Zn %
Pb Con 1	99978	36.74	2,795	0.24	0.01	<0.05	<0.002	0.02	11.17	14.25	<0.1	<0.01	<0.01	0.01	43.54	25.99	0.50	<0.01	1.85
Pb Con 2	99979	40.77	1,741	0.26	0.01	0.22	0.00	0.04	3.93	9.56	<0.1	0.02	<0.01	0.02	56.50	21.59	1.00	0.01	2.92
Pb Con 3	99980	29.60	1,183	0.39	<0.01	<0.05	<0.002	0.01	0.83	7.11	<0.1	0.03	<0.01	<0.005	77.70	16.44	0.30	<0.01	0.94
Pb Con 4	99981	36.17	829	0.26	0.04	<0.05	0.01	0.02	2.25	21.53	<0.1	<0.01	<0.01	0.02	38.10	32.83	0.80	<0.01	3.69
Zn Con 1	99982	1.46	142	0.23	<0.01	<0.05	<0.002	0.02	0.41	6.15	<0.1	<0.01	<0.01	0.01	2.50	33.89	0.40	<0.01	58.36
Zn Con 2	99983	2.65	148	0.49	0.04	0.45	0.01	0.05	0.58	20.13	0.20	<0.01	<0.01	0.03	3.41	39.79	0.80	<0.01	38.58
Pyrite Con 1	99984	2.95	46	0.36	0.11	<0.05	0.02	0.01	0.23	46.58	<0.1	<0.01	<0.01	0.04	0.69	53.81	0.30	<0.01	0.28
Pyrite Con 2	99985	4.80	74	0.22	0.11	<0.05	0.02	0.02	0.46	44.60	<0.1	<0.01	<0.01	0.04	1.22	54.65	0.50	<0.01	0.64
Pyrite Con 3	99986	6.30	85	0.24	0.12	<0.05	0.02	0.05	0.76	43.00	<0.1	<0.01	<0.01	0.05	2.00	52.31	1.30	<0.01	0.61
Pyrite Con 4	99987	6.19	121	0.39	0.10	<0.05	0.02	0.13	1.34	41.06	<0.1	<0.01	0.01	0.09	3.51	48.70	3.00	0.01	0.51
Tails	99988	6.93	34	0.46	0.01	0.09	0.00	0.17	0.97	5.87	0.20	<0.05	0.02	0.08	2.09	5.37	35.50	<0.01	0.08



## MS1525: LV201 & LV202 Float Assays

LV201 Float																			
Description	Sample Number	Au ppm	Ag ppm	Al %	As %	Ca %	Co %	Cr %	Cu %	Fe %	K %	Mg %	Mn %	Ni %	Pb %	S %	Si %	Ti %	Zn %
Pb Con 1	99839	11.85	1,574	0.35	0.03	<0.05	0.01	<0.01	11.36	20.10	<0.1	<0.01	0.03	0.01	33.28	29.21	0.22	<0.01	1.83
Pb Con 2	99840	14.61	521	0.26	0.06	<0.05	0.01	0.02	0.44	26.65	<0.1	<0.01	0.03	0.02	26.07	34.80	0.71	<0.01	3.97
Zn Con 1	99841	5.15	592	0.66	0.04	0.13	0.01	0.28	1.28	14.80	0.23	0.01	0.05	0.13	22.17	21.35	7.62	0.03	10.90
Zn Con 2	99842	2.58	127	0.46	<0.01	0.09	0.00	0.30	0.29	5.21	0.18	<0.01	0.04	0.13	5.48	15.65	19.73	0.02	24.54
Zn Con 3	99843	2.85	57	0.46	<0.01	<0.05	<0.002	0.10	0.11	1.98	0.15	<0.01	0.01	0.04	1.97	9.30	31.71	0.01	16.76
Tails	99844	17.45	46	0.52	<0.01	0.10	0.00	0.01	0.01	1.49	0.25	<0.05	0.01	0.03	1.40	5.80	27.00	<0.05	9.27

LV202 Float																			
Description	Sample Number	Au ppm	Ag ppm	Al %	As %	Ca %	Co %	Cr %	Cu %	Fe %	K %	Mg %	Mn %	Ni %	Pb %	S %	Si %	Ti %	Zn %
Pb Con 1	99862	15.47	1,699	0.39	0.03	0.27	0.01	0.10	4.32	13.31	0.13	0.01	0.03	0.05	41.95	26.13	1.90	0.03	5.00
Pb Con 2	99863	12.86	1,556	0.38	<0.01	<0.05	<0.002	<0.01	3.99	4.58	<0.1	<0.01	<0.01	<0.005	67.96	17.29	0.12	<0.01	0.72
Pb Con 3	99864	81.06	1,284	0.33	0.01	0.08	0.00	0.04	1.65	5.93	<0.1	<0.01	0.01	0.02	64.46	17.36	0.64	<0.01	2.33
Zn Con 1	99865	2.80	349	0.42	0.04	0.35	0.01	0.24	0.88	18.45	0.15	0.02	0.05	0.11	11.60	30.46	4.52	0.02	19.55
Zn Con 2	99866	5.86	96	0.33	0.05	0.07	0.01	0.15	0.30	20.87	<0.1	<0.01	0.04	0.07	3.35	32.64	6.05	<0.01	18.80
Pyrite Con	99867	10.33	264	0.33	0.08	<0.05	0.01	<0.01	0.88	32.69	<0.1	<0.01	0.04	0.02	11.92	42.21	0.28	<0.01	5.13
Tails	99869	4.25	77	0.39	0.03	0.10	0.01	0.10	0.68	12.41	0.15	<0.05	0.03	0.05	3.65	14.40	29.50	<0.05	1.18



## MS1525: LV101 Gravity Tail Assay

Description	Sample Number	Au ppm	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu %	Fe %	K %	La ppm	Mg %
Gravity Tails	99860	<b>11.84</b>	<b>545</b>	0.12	501	<50	<10	129.9	<0.05	319	106	492	<b>1.57</b>	22.4	<0.1	<50	<0.05
Gravity Tails(dup)	99861	<b>13.99</b>	<b>502</b>	0.09	536	<50	<10	101.4	<0.05	316	115	464	<b>1.44</b>	23.8	<0.1	<50	<0.05
<b>Gravity Tails(Avg)</b>	-	<b>12.91</b>	<b>524</b>	0.10	518	<50	<10	115.6	<0.05	317	110	478	<b>1.50</b>	23.1	<0.1	<50	<0.05

Description	Sample Number	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb %	S %	Sb ppm	Sr ppm	Ti %	Tl ppm	V ppm	W ppm	Zn %	Zr ppm
Gravity Tails	99860	57.7	<10	<0.05	384	<50	<b>25.10</b>	>10	369	<10	<0.05	<50	<10	<50	<b>6.56</b>	<50
Gravity Tails(dup)	99861	50.4	<10	<0.05	350	<50	<b>22.74</b>	>10	382	<10	<0.05	<50	<10	<50	<b>6.43</b>	<50
<b>Gravity Tails(Avg)</b>	-	54.0	<10	<0.05	367	<50	<b>23.92</b>	>10	375	<10	<0.05	<50	<10	<50	<b>6.49</b>	<50

## **Appendix E**

### **ABA Test**

- 1) On Zn Float Tailings (without pyrite float stage)**
- 2) On Float Tailings with pyrite float stage**




CLIENT INFORMATION	
<b>Client:</b>	Met-Solve Laboratories Inc.
<b>Consulting Client:</b>	N/A
<b>Project Manager:</b>	Jonathan Tan Process Metallurgist
<b>Mailing Address</b>	101B - 9850 - 201 Street, Langley, BC, Canada V1M 4A3.
<b>Attention To:</b>	Jonathan Tan
<b>E-mail Address:</b>	Jonathan.Tan@met-solve.com
<b>Contact No:</b>	(604) 888-7604
<b>Fax No:</b>	(604) 888-5521

PROJECT INFORMATION	
<b>Client Project Name:</b>	N/A
<b>Client Project Number:</b>	MS1525

RESULTS	
<b>Reported To:</b>	1 Jonthan Tan (Jonathan.Tan@met-solve.com)
	2 Alex Lum (alex@met-solve.com)
	3
	4
<b>Date Reported:</b>	May 28, 2014 (Wednesday)

INVOICE	
<b>Submitted To:</b>	1 Jonthan Tan (Jonathan.Tan@met-solve.com)
	2 Alex Lum (alex@met-solve.com)
	3
<b>cc:</b>	1 N/A
	2
<b>Date Submitted:</b>	May 28, 2014 (Wednesday)

COMPANY INFORMATION	
<b>Legal Name:</b>	Global ARD Testing Services Inc.
<b>Mailing Address:</b>	6891 Antrim Avenue, Burnaby, BC, Canada, V5J 4M5.
<b>Contact No:</b>	Main: (604) 428-2730 Ivy Rajan (Cell): (604) 319-7707 Prab Bhatia (Cell): (604) 603-1359
<b>Fax No:</b>	(604) 428-2731

REPORT INFORMATION	
<b>Global Project No:</b>	1416
<b>Report Version:</b>	1
<b>Pages (Including Cover):</b>	3
<b>Analysis Reviewed By:</b>	Ivy Rajan (IRajan@GlobalARDTesting.com)
<b>Position:</b>	Acid Rock Drainage (ARD) Lab & Project Manager
<b>Report Certified By:</b>	Ivy Rajan
<b>Signature:</b>	

NOTES	
All samples are stored at no charge for 90 days except on-going HCT head client samples.	
Please contact the lab if you require additional sample storage time.	
Storage charges will apply.	



**CERTIFICATE OF ANALYSIS - SAMPLE DETAILS**

PAGE: 2 of 3

GLOBAL PROJECT NO: ARD 1416

CLIENT: Met-Solve Analytical Laboratories Inc.

CLIENT PROJECT NAME / NO: NA / MS1525

REPORT VERSION: 1

S. No.	Client Sample ID	Sample Type	Condition (Wet/Dry)	Wt. of Sample Rec'd (g)	Global Notes
1	100161	Tails	Dry	250.2	Zn Tails
2	100162	Tails	Dry	250.0	Float Tails

SAMPLE RECEIPT INFO:	
Date Samples Received:	May 5, 2014 (Monday)
No. of Samples Received:	1
Samples Received By:	Prab Bhatia

ANALYTICAL INSTRUCTIONS:	
From:	Jonthan Tan
Date:	May 5, 2014 (Monday)

**CERTIFICATE OF ANALYSIS - ABA RESULTS**

PAGE: 3 of 3  
 GLOBAL PROJECT NO: ARD 1416  
 CLIENT: Met-Solve Analytical Laboratories Inc.  
 CLIENT PROJECT NAME / NO: NA / MS1525  
 REPORT VERSION: 1

S. No.	Client Sample ID	Paste pH	Fizz Rating	TIC	CaCO <sub>3</sub> Equivalents <sup>*1</sup>	Total Sulphur	Modified ASTM D2492-02 Method			AP <sup>*3</sup>	Mod. ABA NP	NNP <sup>*4</sup>	NPR <sup>*5</sup>
							Sulphate Sulphur	Sulphide Sulphur	Non-Extractable Sulphur <sup>*2</sup>				
		Units: pH Units		wt %	kg CaCO <sub>3</sub> /tonne	wt %	wt %	wt %	wt %	kg CaCO <sub>3</sub> /tonne			
		<b>Reported Detection Limit:</b>	<b>0.01</b>	<b>0.02</b>	<b>1.7</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.3</b>			
1	100161	3.1	None	0.02	1.7	45.80	0.35	37.23	8.22	1163.4	-8.3	-1171.7	0.0
2	100162	5.9	None	0.03	2.5	6.24	0.31	5.05	0.88	157.8	-2.4	-160.2	0.0

QUALITY ASSURANCE / QUALITY CONTROL													
<b>Replicate Analysis:</b>													
2	100162	5.9	None				0.31	5.05					
2 R	100162 (Rep)	5.9	None				0.33	5.12					
<b>Certified Reference Material (CRM) Analysis:</b>													
Certified Reference Material		KZK-1		KZK-1		KZK-1	RTS-1	KZK-1			KZK-1 Slight		
<b>CRM True Value</b>		<b>8.80</b>		<b>0.84</b>		<b>0.80</b>	<b>1.26</b>	0.37			<b>58.9</b>		
Reference Material Results / % Recovery		8.80		89%		88%	1.23	0.34			54.1		
<b>Tolerance (+/-)</b>		<b>0.09</b>		<b>0.14</b>		<b>0.04</b>	<b>0.05</b>	<b>N/A</b>			<b>1.1</b>		
<b>Method Blank Analysis:</b>													
Method Blank Results				<0.02		<0.01	<0.01	<0.01					
<b>GLOBAL SOP NO:</b>		ARD-004	ARD-007	Combustion IR	Calc.	Combustion IR	ARD-013		Calc.	Calc.	ARD-005	Calc.	Calc.

**NOTES:**

Date of Analysis: May 26/27, 2014.  
 pH of DI water used: 5.61  
 EC of DI water used: 0.58 µS/cm

**METHODS:**

Total sulphur & Total Inorganic Carbon done at AGAT Laboratories (WO 14V840918).

**ABBREVIATIONS:**

R = Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)  
 D = Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a split of the original client sample received. A duplicate (pulp) sample for ABA is prepared only at client request)  
 NP = Neutralization Potential  
 Calc. = Calculation

**CALCULATIONS:**

- \*1 CaCO<sub>3</sub> Equivalents: based on TIC or CO<sub>2</sub>
- \*2 Non-Extractable Sulphur: Total sulphur - (sulphate sulphur + sulphide sulphur)
- \*3 AP (Acid Potential Acidity): is based on HNO<sub>3</sub> extractable sulphide sulphur
- \*4 NNP (Net Neutralization Potential): NP - MPA
- \*5 NPR (Neutralization Potential Ratio): NP/MPA

**REFERENCES:**

**Sample Preparation:** ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)  
**ABA:** Air-dried, split by riffing and pulverized to 85% passing 200 mesh (75 µm).  
**Modified ABA (Sobek) NP:** MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.  
**Paste pH / Fizz Rating:** Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).  
**Sulphur Speciation:** Modified MEND/ASTM D2492-02 Method. The S extracted is determined by analysing the extract for SO<sub>4</sub> using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).



