DIAMOND DRILLING AND GEOCHEMISTRY REPORT

on the

RATERIA - WEST VALLEY PROPERTY

Permit Number: MX-4-402, MX-4-559

Event Number: 5485411,

Kamloops Mining Division

British Columbia

BCGS: 092I.036,

Map Sheet: 092I/036, 046

UTM East: 643000

UTM North: 5580000

UTM Zone 10N

Prepared for:

HAPPY CREEK MINERALS LTD.

#460-789 W Pender St

Vancouver, BC, V6C 1H2

By:

Sassan Liaghat, Ph.D

&

David Blann, P.Eng.

Standard Metals Exploration Ltd

February 27, 2014

ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE: Diamond Drilling and Geochemistry Report on the **Rateria-West Valley Property**

TOTAL COST: $101,000

AUTHOR(S): Sassan Liaghat, Ph.D, David Blann, P.Eng

SIGNATURE(S): *"sassan liaghat" "david blann"*

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): (MX-4-402, Approval # 12-1620473-1029, Oct 29, 2012)

STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): 5485411, 2014/Jan/15

YEAR OF WORK: 2013

PROPERTY NAME: Rateria-West Valley

CLAIM NAMES (on which work was done): Rateria: 511809, 954824, 954855, 954819,9548808,954840,95480, West valley: 930050,930037,945669,945670,929369,950872

COMMODITIES SOUGHT: Copper, Molybdenum, Gold, Rhenium

MINFILE NUMBERS: 092iSE062

MINING DIVISION: Kamloops

NTS / BCGS: 092I.036

LATITUDE: 50^0 21" 17' North **LONGITUDE:** 120^0 59" 23' West (at centre of work)

UTM: 643000E; 5580000N Zone 10

OWNER(S): Happy Creek Minerals Ltd. (FMC 203169)

MAILING ADDRESS: #460 – 789 West Pender St.; Vancouver, B.C.; V6C 1H2

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

MAILING ADDRESS: Same as above

REPORT KEYWORDS: the Rateria-West Valley property is underlain by granodiorite, quartz diorite, quartz monzonite, and crowded quartz feldspar porphyry dykes. These lithologies are tentatively assigned to the Bethsaida, Skeena and Chataway phases of the Upper Triassic - Lower Jurassic Guichon Creek batholith which hosts the Valley Copper and Lornex deposits to the northwest. The copper sulphide minerals are comprised predominantly of bornite, chalcocite and minor chalcopyrite within fracture controlled quartz-sericite and locally k-feldspar alteration. Pyrite is generally rare in all alteration assemblages, except in outer, more mafic phases of the batholith.

PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 1829, 1881, 3709, 9211, 10139, 26409, 27785, 28094, 28878, 30067, 30822 -33522,32721

TYPE OF WORK IN THIS REPORT	EXTENTOF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
DRILLING	230.74 metres 1 hole NQ Core stored on site	511809	$ 50,000
Tyler Lake Rock and Soil sampling, geological mapping	9 rock and 3 soil samples	954824,954819,954801,954808, 9548191017470	$25,000
Abbott Rock sampling and geological mapping	9 rock samples	589897,950872, 945670, 929369, 930037,930050	$25,000
		Total Cost	$100,000

Summary

The Rateria-West Valley property is situated within the Highland Valley copper belt, approximately 40 kilometres northwest of Merritt, B.C. The claims are accessible by good gravel roads from Lower Nicola or Merritt, B.C. The property is underlain by multiple phases of the Guichon Batholith that is Upper Triassic-Lower Jurassic in age. The younger phases of the northerly elongated Guichon Batholith are spatially associated with five large copper+/-molybdenum deposits. The oldest rocks are Border phase that are comprised of hornblende rich diorite, gabbro or pyroxenite and occur peripherally to younger phases of the Batholith. The Rateria property covers portions of the younger phases of the Batholith that includes from youngest to oldest, post-Bethsaida, Bethsaida, Skeena, Bethlehem and Chataway-Guichon phases, respectively. These rocks vary from quartz monzonite to granodiorite, and quartz diorite in composition. The West Valley is mostly underlain by older phases of Guichon Batholith, including Chataway-Guichon and Border phases and quartz diorite and diorite in composition. All rocks are cut by syn to post-Bethsaida age dykes consist of fine to medium grained grey to pale green colored quartz feldspar phyric or porphyry, and orange-tan colored fine grained K-feldspar rich aplite.

Rock alteration varies from potassic (biotite, K-feldspar, quartz), propylitic (chlorite, epidote, carbonate), phyllic (quartz, sericite, muscovite) and argillic (kaolinite, montmorillonite, dickite and other clay). Magnetite is variably altered to hematite, specularite or martite. The copper sulphide minerals are comprised predominantly of bornite, chalcocite and minor chalcopyrite. Pyrite is generally rare in all alteration assemblages however, pyrite appears more common in the Border phases.

Exploration in the region dating from the 1950's to present has included prospecting, soil sampling regional geochemical surveys, geological mapping, trenching, geophysical-Lidar surveys, percussion and diamond drilling. Zone 1 and Zone 2 on the Rateria property are new copper zone discoveries in the area that were found by Happy Creek Minerals between 2005 and 2008, respectively. Copper mineralization is located in proximity to the contact between Chataway and/or more felsic units such as Bethsaida, Skeena or Bethlehem phases, where shearing, faults, fracturing and dykes of aplite to feldspar porphyry composition occur. The mineralized zones are comprised of predominantly bornite, chalcocite, chalcopyrite and variable concentrations of molybdenite that are associated with quartz and k-feldspar zones; these are enveloped and in part overprinted by phyllic and propylitic alteration.

In 2013, one NQ size diamond drill hole (R13-01) was completed east of Zone 1 and southwest of Zone 2, on the Rateria property. The drill hole was planned to test a historical prospect called the SKY, where significant chalcocite in an approximately 1.0 metre interval of drill core was returned in 1967, although no assays or other details are known.

Geological logging of the drill core revealed moderate to strong bornite, chalcocite copper mineralization associated with quartz sericite alteration from 89 to 105m and 138.5 to 150metres. Scattered copper mineralization in fracture fillings occur over wider intervals. The copper mineralization in this area appears associated with the geological contact between Chataway and Bethlehem or Skeena Phases, and may indicate a potential continuous trend of mineralization from Zone 2 to the southwest toward the Three Creeks copper prospect area.

The 2013 reconnaissance geology program was performed in the southern portion of West Valley property and includes 9 rock samples collected from copper showing outcrops in the area. The samples returned geochemical values of 5070 ppm Cu from the Pole 383 Showing, 11400 ppm Cu from the Pole 346 Showing, and 5250 ppm Cu and 4.4 ppm Mo from another rock sample taken from the historical N-W Trenches area.

The 2013 prospecting program on the Tyner Lake area includes 9 rock and 3 soil samples. One sample located north-west of an historical Caper adit, returned 0.27% copper and 1.33 ppm moly and is thought to reflect part of a large scale northwest trending fault structure that trends from the Caper to Sho prospects.

Further exploration on the southern West Valley prospects, particularly around Pole 346, 383 and N-W Trenches, and on the north-eastern portion of the Tyner claims are recommended to include geological mapping, stream sediment and soil geochemical surveys, trenching and 3D induced polarization geophysical surveys. Diamond drilling of several prospective targets is thought to be warranted, pending additional field investigations.

A report on the metallurgical and petrographic properties of a Zone 2 composite sample is also included in Appendix 4 of this report.

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1 Location and Access, Physiography

The Rateria-West Valley property is located approximately 40 kilometres northwest of Merritt, British Columbia, and 10 kilometres south of the Teck Resources Ltd's Highland Valley Copper Mine (Figure 1). The property is centred on: 500 21" 17' North latitude, 1200 59" 23' West longitude on BCGS map sheet 092I036. Access to the north of property from Merritt, B.C., is via highway 8 to Lower Nicola, then north along Aberdeen Road to Pimainus Lake Forest Service road. This all-weather logging road and secondary logging roads transect the property near kilometre 34. With relative proximity to the Valley Copper Mine and operating mill, infrastructure in the surrounding area is excellent. Access to the southern portion of the property is via a westward turnoff at kilometer 16, along the Tyner Forest Service Road. There are recent clear-cuts toward the end of the road at the south end of the West Valley property.

The Rateria-West Valley property is situated within an upland plateau area of approximately 1,400 to 1,600 metres elevation. The area is covered by a blanket of multi—stage, complex glacial-fluvial sand, gravel, clay and boulders of variable thickness from less than 1.0 metre to over 50 metres. Small lakes, swamps and seasonal creeks occur throughout the property. Forested areas locally contain fir, birch, poplar and spruce, however lodge pole pine is predominant and a pine beetle infestation is the focus of ongoing logging activity. Characterized by a dry interior climate, the area has burnt and re-grown several times. Temperatures range from maximums of around –30 to +40 degrees Celsius, and 50-100 cm annual precipitation occurs primarily as rain and snow during the winter. Water, in suitable quantities for all stages of exploration, is generally available year round from nearby creeks and lakes. Well trained professional and field personnel as well as heavy equipment are available in Kamloops and Merritt. Most supplies needed for exploration are available in Kamloops.

2 Claim Status

The Rateria-West Valley property comprises 99 contiguous mineral claims (Table 1), total 21366.7 ha including: The Rateria 39 claims totalling 8516.1 hectares, including the Tyner Lake 2013 Option Agreement which entails acquiring a 100% interest in 18 mineral claims that total approximately 22.5 square kilometres. The Rateria and Tyner property along with several fractional mineral claims connects to the company's West Valley property. (Figure 2). The West Valley property comprises 60 contiguous mineral claims including 8 Abbott claims with a total area of approximately 127.8 square kilometres (Figure

2). The claims are in the Kamloops Mining Division. All claims are 100% owned by Happy Creek Minerals Ltd. The claims have not been legally surveyed.

3 History

Between 1968 and 1974, the area which presently covers the Rateria and West Valley property was subject to regional geochemical surveys, soil sampling, geological mapping, induced polarization surveys, bulldozer trenching, road building, and percussion and minor diamond drilling. During 1970, Asarco drilled percussion holes on a 2,000-foot grid pattern to test up to 100 feet of bedrock typically with a total depth of approximately 90-120 feet, and locally to a depth of 200 feet or more (Bayley, 1970; Blann, 2007). Numerous holes did not reach bedrock, leaving large areas untested. Percussion hole 70-D8c returned 0.57% copper in the bottom 30 feet of the hole. This area was later determined to be near the edge of Zone 1, discovered by Happy Creek Minerals in 2006.

From 1956 through 1985 the area of the West Valley property was explored intermittently by several operators. The work conducted has generally been reconnaissance in nature and consisted primarily of soil geochemical surveys, magnetic surveys, induced polarization (IP) surveys and VLF-EM surveys. In addition, minor trenching and shallow diamond drilling was conducted at one or two of the known showings. Much of this work is poorly documented and the locations of work programs are somewhat ambiguous.

During 1972, International Mogul Mines Ltd. drilled four diamond drill holes on the Chataway Exploration Co. property. Drill hole M72-4 was located 45 metres west of 70-D8c and drilled eastward at -45 degrees to a depth of 225 feet (Willars, 1972). The deepest sample contained 0.06% copper and strong oxidation as noted in drill logs, indicating that M72-4 may have stopped short of intersecting the mineralized zone noted in 70-D8c (Willars, 1972; Blann, 2007).

Mineral claims in the Roscoe Lake area lapsed, and in 1976 the Roscoe 1 claim was staked by Highmont Operating Corporation for National Trust Company Ltd., and remains in good standing. Cominco Ltd. carried out reconnaissance induced polarization surveys over the Gump property located north and east of the Three Creeks prospect. Highmont Operating Corporation

performed 123.4 metres of diamond drilling on the Yubet north prospect for National Trust Company (Sanford, 1983). In 1984, Highmont drilled 8 percussion holes, including three holes on the Yubet south prospect, returning 0.40% copper, 0.005% molybdenum, and 4.2 g/t silver over the final 24.4 metres of drill hole RL-84-8 (Tsang, 1985).

In 1992, Hudson Bay Mining under Aucumo resources performed geological mapping, stream sediment sampling and induced polarization survey over a large area. Drilling of 6 holes in 1993 was also conducted that returned locally elevated copper values.

By 1999 a large number of claims in the area had lapsed and Brian Malahoff staked the Rateria property. Cominco Ltd. optioned the Rateria property in 2000 and contracted Scott Geophysics of Vancouver, B.C., to conduct an induced polarization survey on the property. Grid lines were oriented east - west with generally 300 metre spacing. The north (Zone 1) and south (Moss 4) portions of the property were not covered by this survey, however, several strong through-going structural features comprising weakly anomalous chargeability and resistivity values were identified (Bond, 2000).

The Rateria property was optioned to Happy Creek Minerals Ltd. in December of 2004. Silt geochemistry as well as GPS surveying of historical work and features was completed in 2004 and early 2005. During 2005, property work included a 341 metre, two hole, diamond drill program, 13.5 kilometres of line cutting, and a subsequent 3D-IP survey. The two drill holes tested IP anomalies from the 2000 geophysical survey, and consequently DDH05-2 returned 13.8 metres of 0.071% copper and 9.7 metres of 0.063% copper in the area now known as Zone 1. Near this area, the 2005 IP survey identified an anomaly approximately 1.6 kilometres by 600 metres in dimension (Blann, 2006).

During 2006, a 2,400 metre diamond drill program was completed in the area of the 2005 induced polarization anomaly. The 14 diamond drill holes were designed to test the central portion of the IP anomaly from west to east (Blann, 2007). Diamond drill holes R06-08 returned 32.0 metres grading 0.24% copper and R06-14 returned 94 metres grading 0.15% copper.

Locally higher grade intervals include up to 1.0 metre containing 3.88% copper and 126.0 g/t silver. This program is considered the initial discovery of Zone 1.

During 2007, Happy Creek Minerals Ltd., completed 14 diamond drill holes totalling 3,082 metres in Zone 1. From drill hole R07-13, which intersected over 189 metres of 0.22% copper, mineralization was traced north for approximately 600 metres along strike, extending Zone 1. Zone 1 may coincide with large-scale regional structures trending north to northwest.

During the period January to May 2008 Happy Creek Minerals completed a 91 line kilometre 3D-IP survey on the Rateria property. This program expanded upon the 2005 IP grid. The results of this survey were used to guide the 2008 drill program. Later in 2008, a nine hole, 3,072 metre, diamond drill program was conducted. Some highlights include hole R08-01 intersecting 103.25 m of 0.335% Cu and R08-05 intersecting 177.00 m of 0.366% Cu. This program was the discovery of Zone 2.

In 2008, Happy Creek Minerals Ltd. conducted stream sediment and rock geochemical sampling in west valley. In 2009, reconnaissance mapping and prospecting was performed over portions of the property followed by a 3 dimensional induced polarization (3D IP) and magnetic survey covering several new showings (NTP and Nord) located on the south side of Pimainus Lakes, in the north part of the claims. Positive results from the geophysical IP survey and rock sampling resulted in Happy Creek returning to carry out drilling and mapping in 2010. Between July 11 and July 26, 2010, the Company completed 791 metres of drilling in three widely space holes at the Nord and NTP showings located at the northern end of the West Valley property. Results include long intervals of geochemically anomalous copper values within propylitic altered Border phase rocks that are cut by younger more felsic dikes thought to be Bethlehem or younger in age. Also during that period, geological mapping and sampling was performed to the south of the NTP and Nord prospect. Mapping covered several widely spaced historical showings around and including the Fir prospect.

During the period August to December 2009 Happy Creek Minerals conducted an exploration program in Rateria consisting of geological mapping, prospecting and diamond drilling. A nine hole, 2,026 metre, diamond drill program was conducted on the Rateria property. This program was designed to test geophysical targets generated during the 2008 3D-IP program and to follow up 2008 drilling. The drilling program confirmed the presence of copper within the well mineralized area known as Zone 2 (R09-1, 7 and 9) and extended the strike of known mineralization by some 125 m to the north (R09-6). Geology and analytical results suggest a linkage between high - grade copper mineralization and a north trending fault structure.

During 2010, the company conducted 6327.53 metres of drilling in 28 holes; mainly at Zone 1 and Zone 2 targets. Drilling intersected phyllic and propylitic altered granodiorite/quartz monzonite containing dominantly chalcocite. The drill program extended the size of mineralized zones (Zone 1 and Zone 2) and confirmed the presence of copper between some of the widely spaced previous drill holes. Several diamond drill holes returned substantial copper grades. The mineralized zones remain open to the east, north, south and to depth (Liaghat and Blann, 2011).

During 2010, soil, silt and rock sampling was also performed in the area. 566 soil samples covered a 2.8 square km area between Zone 1 and the Moss 4 showing, 56 rock and silt samples collected from south Yubet (Copper Creek), and Sho Showing, returned positive values of copper. Widespread silt sampling in the area returned low to strong values of copper.

In July 2010, a Lidar (laser topographic and photograph) airborne survey was completed at the Rateria property, and covered Zone 1 and Zone 2 areas. The survey was approximately 15.25 square km in area.

During 2011, 41 NQ size diamond drill holes were completed in Rateria. The drilling program was designed to test for depth extension of Zone 1 as well as prospecting drilling in Yubet area (Liaghat and Blann 2012). A few holes were also drilled in Zone 2. 3D-IP and magnetic surveys were performed at the Sho property covering approximately 51 line km between Feb 25 and March 24, 2012. In addition, a GPS collar survey was completed by Meridian Mapping

Ltd. at the Rateria property in 2011. In 2011, geological reconnaissance and wide spread stream sediment and rock sampling were completed in various locations on West Valley property.

Geological mapping, and rock and silt sampling on the West Valley property during 2011 and rock sampling on West Valley and Abbot properties in 2012 were completed. Samples from the Abbott claims have returned up to 15100 ppm (1.51%) copper, 15.7 ppm silver and 0.02 ppm gold (Liaghat and Blann 2012).

On the Abbott claims, exploration activity started around 1959. Subsequently, geological prospecting, sampling, trenching, and geophysical (magnetometer) surveys were completed in various areas of these claims by a number of companies. Several copper anomalies associated with outcrop were delineated. During 2009, Christopher James Gold Corp. compiled existing geological information from historic assessment reports and completed a geochemical and geological survey over the western claims.

In 2012, two NQ size diamond drill holes were completed in Zone 2. The program was designed to define and expand the mineralized zone in this area. Drill results returned elevated to substantial copper, molybdenum, gold, silver and rhenium values within an area approximately 1.0 kilometre by 600 metres in dimension and to a depth of at least 350 metres. Zone 2 remains undefined and open in extent (Liaghat and Blann, 2013).

The 2013 Tyner Lake property adjoins the Company's Rateria and Teck's Highland Valley property to the north and west, respectively. Happy Creek has also acquired by staking, a number of claims that connect the Rateria-Tyner property to the company's West Valley property.

The area of the Tyner property was explored intermittently between 1950 and 1982 and limited in effectiveness due largely to the extensive glacial till cover. Between 2006 and 2008, TNR Gold conducted a more modern induced polarization (IP) survey covering a small portion of the property that mainly focused on historical positive copper values occurring in glacial till. The IP survey returned relatively low chargeability values that were subsequently drill tested, however results are not known and the property was allowed to lapse. Also in 2006 and to the west, Teck

performed a thorough induced polarization geophysical survey covering its SKU claims, and continues to hold the property. An assessment report on the results of the survey is available in B.C. government files, and was reviewed by Happy Creek. The report concludes that there are several areas of considerable size with persistent elevated chargeability values that require further geological investigation. Several of these positive geophysical responses are noted to extend out to the east and west edges of the survey. Two areas of positive geophysical response are about one kilometre in a north-south dimension and remain open in extent to the east onto Happy Creek's Tyner property. Another is approximately 600 metres in a north-south dimension and remains open in extent to the west onto Happy Creek's West Valley property. In these areas, no additional exploration work is known.

4 Regional Geology

The Rateria-West Valley property is underlain by the Upper Triassic - Lower Jurassic Guichon Creek batholith (198 ± 8 my; McMillan, 1976). This multi-phase calc-alkaline intrusion extends over an area of approximately 1,000 square kilometres and is elongated in a north-northwesterly direction (Figure 3). The nearly concentric phases have contacts ranging from gradational to locally sharp or partially brecciated, and are progressively younger and more felsic toward the central core of the batholith. Textural and compositional criteria have been used to characterize the various intrusive phases after Northcote (1969) and McMillan (1976).

The oldest phase of the Guichon Creek batholith is the Border or Hybrid phase, a fine to medium grained, mafic rich diorite to quartz diorite, which locally contains xenoliths of amphibolite and monzonite. The Highland Valley phase consists of Guichon and Chataway varieties. The Guichon variety is a quartz diorite to granodiorite, typically containing 15% mafic minerals of uneven distribution. The Chataway variety is a hornblende granodiorite normally containing 12% evenly distributed mafic minerals. The Bethlehem phase, a fine to medium grained granodiorite with approximately 8% mafic minerals, is characterized by amoeboid quartz crystals and several percent poikilitic hornblende crystals. The Skeena variety of granodiorite is texturally similar to the Bethlehem and in part Bethsaida phase, but is distinguished by its coarser grain size, slightly lower mafic content, and subhedral to anhedral quartz. The youngest intrusive phase of the

Guichon Creek batholith is the Bethsaida, having a biotite ± hornblende quartz monzonite to granodiorite composition, and containing approximately 6% mafic minerals, predominantly coarse-grained euhedral biotite books. The core of the Guichon Creek batholith is within a regional magnetic low.

A porphyry dyke swarm extending northward from Highland Valley cuts Bethlehem granodiorite, and to the south, dykes and small plugs of porphyry cut the Skeena variety. Some of these porphyries appear to be offshoots or derivatives of the Bethsaida phase (McMillan, 1976).

Alkaline and felsic volcanic dykes, flows and tuffs, Eocene to Miocene in age, cut the Guichon Creek batholith rocks. During the last glacial period, portions of the Tertiary and older rocks were eroded, and between one and over 30 metres of till, glaciofluvial and lacustrine cover was deposited following a 165° azimuth.

Rock outcrops comprise less than 5% of the Rateria property and occur in limited exposures such as creek beds, dried-up melt water channels and locally flanks and crests of hills. Although bulldozer trenching was apparently widespread during the 1970's, the seven to 30 metre thickness of glacial deposits limited trenching effectiveness, therefore property geology is largely derived from recent and historical drilling and from scattered outcrops.

The western portion of the property is underlain by quartz rich, mafic poor intrusive rocks of quartz diorite, granodiorite and quartz monzonite composition, likely of the Bethsaida phase. Adjacent to these rocks, along a northerly trending contact to the east, are medium-grained granodiorite and biotite quartz diorite interpreted as the Skeena variety. Further east, a north striking contact occurs between the Skeena variety and medium to coarse grained granodiorite of the Chataway variety. Dykes and small plugs of quartz monzonite, aplite, quartz and feldspar porphyry, and crowded quartz - k-feldspar porphyry occur.

Highland Valley copper ± molybdenum deposits are generally associated with or near the dyke swarm or occur within Bethsaida phase and related dykes. Two phases of copper

mineralization are thought to occur with intrusive phases; syn to post Bethlehem and syn to post Bethsaida phase.

Dominant ore controlling fracture sets at the Valley and Lornex deposits trend north-northwest to northeast and locally east-southeast. The regionally extensive, north trending Lornex Fault cuts the length of the Guichon Creek batholith with a steep to locally moderate west dip and has a dextral sense slip. This fault cuts the Lornex and Valley Copper deposits on the west and east respectively. Sulphide mineralization is strongly associated with veins, fractures, faults and/or breccias.

In the Highland Valley deposits, potassic alteration is variably developed and hydrothermal biotite or k-feldspar occurs as fracture-control flooding and veins. Phyllic alteration is typified by quartz and flakey sericite occurring in fracture-associated zones or as vein envelopes (McMillan, 1976). Phyllic alteration cuts potassic alteration. In argillic zones, which often extend within and extensively beyond the mineralized zones, feldspars and locally mafic minerals are altered to sericite and kaolinite +/- montmorillonite. Sericite, carbonate and clay alteration of feldspars, as well as chlorite-carbonate alteration of mafic minerals is characteristic of propylitic alteration. Calcite and zeolite occur primarily as late stage veins and fracture coatings.

Sulphide zoning is common in the Highland Valley deposits with bornite as the predominant sulphide, followed by chalcopyrite, and then outward to pyrite. Main hypogene copper sulphides include chalcopyrite, bornite and minor digenite. Topographically above hypogene mineralization, oxide-supergene enriched zones may contain limonite, native copper, malachite, chalcocite, and occasionally tenorite. Chalcocite variably replaces bornite locally to depths over 400 metres in the larger fault zones. Pyrite occurs in a propylitic fringe to potassic alteration zone generally in concentrations less than one percent. Distribution and concentration of molybdenite is highly variable throughout the Highland Valley deposits, with economically significant occurrences having similar distribution as that of the copper. The relative abundance and importance of molybdenum in the ore deposits increases from the Valley, Lornex to Highmont.

5 2013 Exploration Activities

During 2013 the company completed diamond drilling of one angled hole in the Three Creeks area (south of Zone 2), and conducted reconnaissance and rock and soil sampling in Abbott Lake and Tyner Lake areas (Fig. 4).

5.1 Diamond Drilling

Between November 10 and 18, 2013, one hole (R13-01) was drilled in Three Creek area. The hole was reconnaissance in nature, to test mineralization reported in several 1967 drillholes on the SKY prospect.. The Zone 2 is located about 6.5 kilometres southeast of Teck's Highmont mine. Approximately 15 to 20 metres of glacial till overlies the bedrock in this area. Drill hole R13-01 was an angled hole (090/-55, degree), NQ in size and cut Chataway Variety granodiorite of the Guichon Creek batholith. Drill hole location and orientation are provided below and shown in Figure 5.

Hole ID	Easting	Northing	Azimuth	Dip	Elevation	Depth
R13-01	647100	5582700	090	-55	1568m	230.74m

Drill site was located close to the Roscoe road and minor clearing was required to prepare the drill site. Drill core was logged by Sassan Liaghat, PhD. Core was picked up from the drill and delivered to the core shack by the drillers. Five locked sea containers are located at the core shack to store core. Core was logged, photographed, and tagged for future sampling. A plan map and cross sections of diamond drill hole are provided in Figures 5 and 6. Drill core logs with three photos of the drill core showing mineralized zone are included in Appendix 1. Geotechnical logs are in Appendix 2.

The R13-01 hole has a -55 degree angle to the east and ended at 230.7metres depth. Most of the rock types from drill holes are tentatively interpreted to be Chataway granodiorite, diorite variety and locally felsic quartz monzonite phases of the Guichon batholith. Dikes of aplite and feldspar porphyry occur and are mostly associated with shear zones. The rock is fine to coarse

grained, equigranular to unequigranular, locally with biotite, amphibole phenocrysts, light green, gray to dark green and mottled in colour due to varying concentration and distribution of chlorite and sericite alteration minerals. In the potassic alteration zone, salmon pink color mixed with pistachio green color of epidote alteration was observed.

Alteration in R13-01 is quite variable, with pervasive, phyllic and propylitic alterations ranging from weak to strong. Locally minor potassic and silica and clay (argillic) alteration are observed. Potassic alteration, where present, is strongly associated with intense fracturing and breccia zones. In potassic zones, vein controlled chlorite, carbonate, epidote (propylitic) is concentrated along fractures and permeates from fracture surfaces into the host rocks forming a halo or selvage of alteration adjacent to the fracture plane. In strong potassic zones, sericite is weak and patchy overall, and occurs along fractures and as pervasive replacement of entire feldspar grains close or adjacent to fracture surfaces. Argillic alteration (kaolinite or other clay) locally is mild to intense along fractures/fault surfaces. Mafic minerals are weakly to strongly replaced with chlorite and locally epidote, mainly close to fractures, veins and faults. Mafic minerals are in part replaced by magnetite and hematite. Sericite-carbonate gouge is locally observed. Silicification is not strong, although in some areas quartz veins and quartz flooding is concentrated in fracture zones. A late overprint of iron oxide (hematite, goethite or jarosite) is concentrated on fracture planes and pervasively stains the core. Sparse fractures, locally intense, are common throughout the drill core, averaging >60° to the core axis, and are mainly filled with sericite, chlorite and epidote.

Bornite mineralization in drill core is locally associated with pervasive pink to pinkish-green potassic alteration, commonly within fractures containing quartz, carbonate, chlorite and epidote. Chalcocite occurs as fine-grained fracture fillings and disseminations having ubiquitous mixing with bornite and alteration minerals sericite, clay +/- hematite. Less frequently bornite generally occurs as blebs within or associated with quartz veins. Late hematite occurs as coatings on fractures and as granular specularite replacing magnetite. Moderate to strong copper grade mineralization was observed between 89 to 105m and 138.5 to 150m core intervals. Observing of copper in this area may indicate the continuation of mineralization from Zone 2 to the southwest,

in proximity to the contact between Chataway and younger Bethlehem or Skeena phases. No drill core sample was taken at this time.

5.2 2013 Abbott Reconnaissance and Sampling

The 2013 field sampling was carried out from May 28 to May 31st in the southern portion of the West Valley property. The West Valley property includes rocks and geological contacts of the Guichon Batholith Intrusive, Nicola Group Volcanic, and Spences Bridge Volcanic Group. Rock samples were collected from both float boulders and outcrop that displayed alteration and or/mineralization. The primary area of interest on the property was a region of historic showings and trenches. The series of trenches located in the northwestern portion of the Abbott represent the most viable target in the area, included in one of the trenches was a 50-cm mineralized fracture, with porphyry-style alteration and copper mineralization.

A total of 9 rock samples were collected from copper showings and outcrops. Rock sample locations, descriptions and summary of geochemical result are provided in Table 2. Sample numbers and their locations are presented in Figure 7. Assay results for Cu, Ag, Au and Mo are presented in Figures 8a to 8d, respectively. The samples were analyzed by AGAT Labs of Vancouver, B.C. Certificates of analyses are presented in Appendix 3.

5.3 2013 Tyner Lake Reconnaissance and Sampling

The 2013 field sampling was also carried out from October 22 to October 28 in the Tyner Lake area located south of the Rateria property. A total of 12 samples were collected, comprising 3 soil and 9 rock samples. Sample locations, type and description by area are provided in Table 2. Sample numbers and their locations are presented in Figure 7. Assay results for Cu, Ag, Au and Mo are presented in Figures 8a to 8d, respectively. The samples were analyzed by AGAT Labs of Vancouver, B.C. Certificates of analyses are presented in Appendix 3.

5.4 Sampling and Analytical Procedures

Rock samples were cleaned to avoid weathered surfaces or organic material to best represent the mineralization and/or alteration for that location. Sample types were recorded in a sample booklet and a field book. The extent of weathering was noted if fresh samples were unavailable. Rock sample size varied depending on whether a float or outcrop sample was taken. On average approximately 4 kilograms of rock was collected from each sample location. Sample bags were labeled with the corresponding sample ID numbers from the sample booklets. The sample ID tag was also inserted into the sample bag prior to sealing. The field sampling site was labeled with the sample ID number. Descriptions of each rock sample were recorded in the sample booklets. Soil samples were collected by hand and gardening trowel with an emphasis on collecting material <2mm (i.e. silt or clay). Samples were not sieved.

The samples sent to AGAT Laboratories Ltd. Samples were dried, crushed and pulverized by AGAT Labs in Vancouver, B.C. Pulp samples were transported by air to AGAT Labs in Ontario where analysis by Aqua Regia Digest - Metals Package, ICP/ICP-MS was performed. The rock samples were crushed in their entirety to 80% passing -10 mesh (2 mm) and the crusher was cleaned with barren rock between samples. From the coarse rejects a sub-sample of 250 grams was pulverized to 85% passing -200 mesh (0.074 millimetres). The pulveriser was cleaned with silica sand between samples. Copper, (in addition to 50 other elements) was determined using an aqua regia solution to digest the sample, followed by ICP-MS analysis. AGAT's quality system is compliant with the International Organization for Standardization's ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories' and the ISO 9000 series of Quality Management standards.

6 Results and Discussion

Diamond drill hole R13-01 is located north of the Three Creeks showing at UTM NAD 83 647100 Easting and 5582700 Northing . The drill hole tested the approximate area where several 1967 drill holes indicated locally massive chalcocite copper mineralization occurs, although the precise location, or if any assays were obtained and other details are not known. Hole R13-01 cut dominantly Chataway type granodiorite and several zones of more felsic phases including aplite that occur in proximity to fault zones. Fault, fractures and veinlets are filled by variable

concentrations of chlorite, epidote, k-feldspar, quartz, sericite and clay minerals, along with variable concentrations of bornite and trace chalcopyrite. Moderate to strong copper grade mineralization was observed between 89 to 105m and 138.5 to 150m core intervals, and larger intervals of generally weak fracture-controlled bornite mineralization occurs. The results of R13-01 suggest there is potential for the copper mineralization in Zone 2 to continue south-southwest along the geological contact between Chataway and younger Bethlehem or Skeena phases of the Guichon Batholith. This favorable corridor is mapped by geophysics, outcrops and drill holes to continue for approximately 7 km through the property.

During the 2013 field season, a total of 9 rock samples were collected throughout the Abbott Lake area (Figs, 6 and 7). The samples (WV13-R01 to WV13-R09) were collected from and close to the mineral showing locations. Four of the samples were collected from the northwest part of the property in vicinity to the trenches zone. Anomalous copper values obtained from trenches were 0.52 & 0.32 % Cu. Maximum grades of silver up to 3.11 ppm and up to 4.4 ppm molybdenum were obtained. Rock Samples from the Pole 383 showing have returned positive copper values (max 0.5% Cu). One grab sample (WV13-R05) from the Pole 346 Showing, returned 11400 ppm Cu (1.1% Cu), 1.11 ppm Ag and 0.02 ppm Au. Another rock sample from “Swamp Cu site” has 1330 ppm Cu and 0.62 ppm Ag. 2013 rock sampling in Abbott Lake area confirmed previous studies assay results for positive grade mineralized samples in this area (Liaghat and Blann, 2013) and led us to focus on the Pole 383 and the N-W Trenches Showings for further focussed exploration.

2013 Reconnaissance survey and surface sampling were completed south of the Rateria in the Tyner Lake areas and 12 surface samples (Rat13-R01 to Rat13-R09; Rat13-S01 to Rat13-S03) were collected, (Figs, 7 and 8). The purpose of the exploration program in this area was to evaluate potential mineralization in these recently added claims (HCM News Resealed Oct 08, 2013). A rock sample returned 4.82% copper that is reported in the 2013 Highland South Claim Group assessment report (Delorme and Delorme, 2012) was taken from a showing north of the Caper Adits. The Caper and further southeast are two other copper prospects called the Vimy and the Aberdeen mine. These appear located along a prominent northwest trending fault structure.

The geological study indicates, the Tyner Lake area is underlain by quartz diorite, granodiorite with minor diorite rocks of the Guichon –Chataway variety of the Guichon Batholith. Few observed outcrops in the area indicate the presence of Guichon Variety rocks; a medium to coarse grained, weakly foliated, biotite- hornblende granodiorite and locally quartz diorite. The rock contains approximately 20% mafics, is about 1: 1, is slightly magnetic with probably 2-5% magnetite. The mafics are medium grained, in small, evenly distributed clusters. Quartz is closed interstitial (wedgey), fine grained and makes up about 10% of the rock. Plagioclase ranges from approximately 50 - 60%. Orthoclase makes up 0 - 8% of the rock, is poikilitic and interstitial to all other minerals. Weak sericite and hematite alteration is common throughout the observed samples. The amphibolite tends to alter more to chlorite and epidote, along and in selvages of fractures. The more mafic phases display more dominant chloritic, epidote and hematitic alteration, some of which is fairly intense. This alteration does not appear to be significant for copper mineralization.

The 2013 surface sample results include collecting one mineralized rock sample (Rat13-R08: 0.27% Cu) from north-west of the Caper showing. The presence of anomalous copper here may indicate a continuation of copper mineralization zone along the Broom Creek fault structure (Fig.3) from Caper Showing toward the Sho Showing. Another mineralized rock (Rat13-R04) was taken from a boulder, located close to the SKU claim on the west side of the property. This sample returned 0.52% Cu, 0.13 ppm Au. In both mineralized cases, minor quantities of bornite and malachite staining were observed. In other collected samples, there were no important assays returned; no gold values above 5ppb, no copper values registered higher than 200 ppm.

A reconnaissance soil sampling program did not provide encouraging values. Tthe copper values obtained were negligible, as the highest value of 104 ppm Cu belong to sample Rat13-S03. This sample shows gold value of 0.06 ppm. Glacial till in the area is thick, transported and stratified, and complicates soil geochemical interpretation.

7 Conclusions and Recommendations

The Rateria-West valley property is situated in the southeast portion of the Guichon Creek batholith and underlain by granodiorite, quartz diorite, quartz monzonite and dykes and small plugs of crowded quartz feldspar porphyry and aplite. Lithologies encountered in recent drilling are consistent with descriptions of Bethsaida, Skeena, Bethlehem, Highland Valley and Border phases of the composite Guichon Batholith. These are the host rocks for the Valley and Lornex copper deposits found approximately 10 kilometres northwest of Rateria.

The 2013 diamond drill program suggests the mineralization in Zone 2 may continue south-southwest through the Three Creeks area, a distance of several kilometres. The presence of copper mineralization in proximity to a geological contact zone between Chataway and younger Bethlehem and Skeena varieties is thought to be encouraging for a large scale mineral system. It is recommended that further exploration drilling be performed in this area.

Rock samples from the Abbott Lake area have returned high copper values in some samples. It is recommended that further exploration consist of detailed geochemical surveys, geological mapping, and induced polarization geophysics as well as trenching and drilling. Key target areas include the region around Pole 383 and the N-W Trenches. To the north of the N-W trenches, a large magnetic low geophysical target identified in previous work is also recommended for IP surveys as this area is completely covered by glacial till, and lies within the Lornex Fault structure.

Only one outcrop copper mineralized sample was collected on the Tyler Lake area. The sample is along the north-west trend of the Caper Adit and Broom Creek fault, which may indicate a continuation of mineralization from the Caper to Sho prospects. Further sampling and geophysical surveys are recommended to provide enough information to locate drill targets.

Respectfully Submitted,

"Sassan Liaghat" Sassan Liaghat. Ph.D

"David Blann" David Blann, P.Eng.

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9 Statement of Costs

Exploration Work type	Comment	Days				
Personnel (Name)	**Field Days**	**Days**		**Rate**	**Subtotal***	
David Blann P.Eng., QP, Supervision	Oct 22-28, November 10-18 2013	3.00	$	750.0	$	2,250.0
Sassan Liaghat, PhD. Geology	May 18-21, Oct 22-28, November 10-18 2013	20.00	$	600.0	$	12,000.0
Illes Ignath, Core Technician	Oct 22-28, November 10-18 2013	3.00	$	250.0	$	750.0
Mike Jones Prospecting / Geo assistant	May 18-21, Oct 22-28, November 10-18 2013	7.00	$	250.0	$	1,750.0
					$	16,750.0
Office Studies	**List Personnel**					
Database compilation	sassan Liaghat , PhD. Geology	25.00	$	400.0	$	10,000.0
Database compilation	David Blann P.Eng.,	5.00	$	600.0	$	3,000.0
Computer modelling	sassan Liaghat , PhD. Geology	10.00	$	400.0	$	4,000.0
Report preparation	Sassan Liaghat , PhD. Geology	12.00	$	400.0	$	4,800.0
Report preparation	David Blann, P.Eng.	6.00	$	600.0	$	3,600.0
					$	25,400.0
Geochemical Surveying	**Number of Samples**	**No.**	**Rate**		**Subtotal**	
Soil		3.00	$	22.0	$	66.0
Rock		18.00	$	32.0	$	576.0
Petrographic		10.00	$	250.0	$	2,500.0
Metallurgical		1.00	$	10,852.0	$	10,852.0
					$	13,994.0
Drilling	**No. of Holes, Size of Core and Metres**	**No.**	**Rate**		**Subtotal**	
Glens's Drilling Logan Lake	1 hole NQ core	230.7	$	113.4	$	26,159.0
IKAN Industrial- Water Truck		5.00	$	950.0	$	4,750.0
Mobilization-Demob- (Low bed truck transport)					$	2,800.0
					$	33,709.0
Transportation		**No.**	**Rate**		**Subtotal**	
truck rental- Happy Creek Minerals	one 4X4 truck	20.00	$	100.0	$	2,000.0

truck rental Standard Metals	one 4X4 truck	3.00	$	100.0	$	300.0
Mike Jones	one 4X4 truck	7.00	$	100.0	$	700.0
Mike Jones	ATV	7.00	$	65.0	$	455.0
Ambulance First Aid ETV		15.00	$	150.0	$	2,250.0
					$	5,705.0
Accommodation & Food	**Rates per day**					
Hotel		23.00	$	75.0	$	1,725.0
Meals		33.00	$	40.0	$	1,320.0
					$	3,045.0
Miscellaneous						
Satelight phone, VHF radios, Cell phone communications					$	825.0
Other (Specify)	Equipment Insurance				$	597.0
Other (Specify)	batteries/ field supplies/camera				$	1,800.0
					$	3,222.0
TOTAL Expenditures						**$101,824.99**

10 Statement of Qualifications

Sassan Liaghat, M Sc, PhD Coquitlam, British Columbia, do hereby certify that:

- I am a geologist, I graduated from the Universities of McGill and Ecole Polytechnique of Montreal in Master and Ph.D degrees in 1990 and 1994 respectively.
- That I have been actively engaged in the mineral exploration research and industry since 1990.
- I am the author or co-author of several scientific papers and reports, published in international and local journals.
- Since 2006, I have been involved in mineral exploration for base and precious metals in BC.

Dated at Vancouver, BC February 2014.

"*Sassan liaghat*" (Signed)

Sassan Liaghat Ph.D

I, **David E. Blann**, P.Eng., of Squamish, British Columbia, do hereby certify:

- That I am a Professional Engineer registered in the Province of British Columbia since 1990.
- That I am a B.Sc. graduate in Geological Engineering from the Montana College of Mineral Science and Technology, Butte, Montana, 1987.
- That I am a graduate with a Diploma in Mining Engineering Technology from the B.C. Institute of Technology, 1984.
- That I have been actively engaged in the mining and mineral exploration industry since 1984.

Dated in Vancouver, B.C., February 2014

"David Blann" (Signed)

David E Blann, P.Eng (Standard Metals Exploration Ltd.)

Tables

Table 1, Rateria Mineral Tenuers						
	Tenure No	**Claim Name**	**Owner**	**Issue Date**	**Good To Date**	**Area (ha)**
1	511809	NEW RATERIA	203169 (100%)	2005/apr/28	2023/dec/31	144.3
2	513870	RATERIA	203169 (100%)	2005/jun/03	2023/dec/31	1154.2
3	522356	RATERIA NE	203169 (100%)	2005/nov/17	2023/dec/31	494.4
4	528775	MAL	203169 (100%)	2006/feb/23	2023/dec/31	494.4
5	528778	MAL 2	203169 (100%)	2006/feb/23	2023/dec/31	514.9
6	529011	RATERIA NORTH	203169 (100%)	2006/feb/27	2023/dec/31	514.8
7	529013	RATERIA NORTH-2	203169 (100%)	2006/feb/27	2023/dec/31	515.1
8	563796	SHO	203169 (100%)	2007/jul/29	2023/dec/31	989.9
9	571030		203169 (100%)	2007/nov/30	2023/dec/31	20.6
10	571031		203169 (100%)	2007/nov/30	2023/dec/31	82.4
11	572518	SHO 2	203169 (100%)	2007/dec/27	2023/dec/31	20.6
12	572519		203169 (100%)	2007/dec/27	2023/dec/31	20.6
13	572520		203169 (100%)	2007/dec/27	2023/dec/31	20.6
14	573338	COPPER 16	203169 (100%)	2008/jan/09	2023/dec/31	165.0
15	591057	COPPER CONNECTOR	203169 (100%)	2008/sep/08	2023/dec/31	82.6
16	591058	COPPER CONNECTOR 2	203169 (100%)	2008/sep/08	2023/dec/31	41.3
17	954808		203169 (100%)	2012/mar/02	2022/dec/31	144.4
18	954819	SHO SOUTH	203169 (100%)	2012/Mar/02	2022/dec/31	165.0
19	1021006	RATERIA NE3	203169 (100%)	2013/Jul/15	2017/dec/31	61.8
20	954840	BROWN 10	203169 (100%)	2012/Mar/02	2017/dec/31	41.3
21	954801	BROWN 3	203169 (100%)	2012/Mar/02	2017/dec/31	433.4
22	954820	BROWN 6	203169 (100%)	2012/Mar/02	2017/dec/31	227.1
23	955173	BROWN FRAC	203169 (100%)	2012/Mar/03	2017/dec/31	20.6
24	954858	MORE BROWN	203169 (100%)	2012/Mar/02	2017/dec/31	20.6
25	954609	SOUTH CRAIGMONT	203169 (100%)	2012/Mar/02	2017/dec/31	20.7
26	954837	BROWN 9	203169 (100%)	2012/Mar/02	2017/dec/31	62.0
27	954815	BROWN 5	203169 (100%)	2012/Mar/02	2017/dec/31	247.8
28	954796	BROWN 2	203169 (100%)	2012/Mar/02	2017/dec/31	289.0
29	954807	BROWN 4	203169 (100%)	2012/Mar/02	2017/dec/31	123.9
30	954842	BROWN 11	203169 (100%)	2012/Mar/02	2017/dec/31	20.6
31	954832	BROWN 7	203169 (100%)	2012/Mar/02	2017/dec/31	41.3
32	954824	BROWN	203169 (100%)	2012/Mar/02	2017/dec/31	515.8
33	955171	BROWN FRACTION	203169 (100%)	2012/Mar/03	2017/dec/31	20.6
34	954855	BROWN 12	203169 (100%)	2012/Mar/02	2017/dec/31	41.3
35	955170	BROWN FRACTION2	203169 (100%)	2012/Mar/03	2017/dec/31	20.6
36	955169	BROWN FRACTION	203169 (100%)	2012/Mar/03	2017/dec/31	20.6
37	1017470	BROWN	203169 (100%)	2013/Mar/03	2017/dec/31	82.5
38	1022304	RAT-WV CONNECTOR	203169 (100%)	2013/Sep/13	2017/dec/31	433.8
39	1022443	IDANO	203169 (100%)	2013/Sep/18	2017/dec/31	185.8
					Sub total	**8516.1**
West Valley Mineral Tenuers						
1	532667	COPPER 10	203169 (100%)	2006/apr/19	2017/dec/31	82.487
2	544901	COPPER B	203169 (100%)	2006/nov/05	2015/dec/31	20.5935
3	544902	COPPER C	203169 (100%)	2006/nov/05	2015/dec/31	20.5937

	Tenure No	Claim Name	Owner	Issue Date	Good To Date	Area (ha)
4	544903	COPPER D	203169 (100%)	2006/nov/05	2015/dec/31	20.5939
5	544905	COPPER F	203169 (100%)	2006/nov/05	2016/dec/31	20.6067
6	566312	COPPER 8	203169 (100%)	2007/sep/20	2017/dec/31	535.9551
7	568146	NEW COPPER 1	203169 (100%)	2007/oct/17	2017/dec/31	473.7434
8	568147	NEW COPPER 3	203169 (100%)	2007/oct/17	2017/dec/31	494.3451
9	568148	NEW COPPER 3	203169 (100%)	2007/oct/17	2017/dec/31	721.1797
10	568149	NEW COPPER 4	203169 (100%)	2007/oct/17	2017/dec/31	1030.454
11	570358	NEW COPPER 5	203169 (100%)	2007/nov/20	2017/dec/31	20.6252
12	570359	NEW COPPER 6	203169 (100%)	2007/nov/20	2017/dec/31	20.6253
13	570360	NEW COPPER 7	203169 (100%)	2007/nov/20	2017/dec/31	61.8043
14	582066	HIGHLAND VALLEY	203169 (100%)	2008/apr/20	2017/dec/31	433.2434
15	587379	COPPER 11	203169 (100%)	2008/jul/04	2017/dec/31	20.6245
16	587380	COPPER 12	203169 (100%)	2008/jul/04	2017/dec/31	206.24
17	587382		203169 (100%)	2008/jul/04	2017/dec/31	41.2436
18	587383		203169 (100%)	2008/jul/04	2017/dec/31	20.621
19	587384		203169 (100%)	2008/jul/04	2017/dec/31	61.8725
20	587385		203169 (100%)	2008/jul/04	2017/dec/31	61.8723
21	587386		203169 (100%)	2008/jul/04	2017/dec/31	20.6226
22	587387		203169 (100%)	2008/jul/04	2017/dec/31	41.2419
23	587388		203169 (100%)	2008/jul/04	2017/dec/31	82.5083
24	587389		203169 (100%)	2008/jul/04	2017/dec/31	20.6252
25	587390		203169 (100%)	2008/jul/04	2017/dec/31	20.6271
26	589580	COPPER IB	203169 (100%)	2008/aug/06	2017/dec/31	412.7557
27	589581	COPPER IA	203169 (100%)	2008/aug/06	2017/dec/31	392.042
28	589723	COPPER GA	203169 (100%)	2008/aug/09	2017/dec/31	495.1829
29	589725	COPPER GB	203169 (100%)	2008/aug/09	2017/dec/31	268.1685
30	589726	COPPER GC	203169 (100%)	2008/aug/09	2017/dec/31	41.2508
31	589728	COPPER GD	203169 (100%)	2008/aug/09	2017/dec/31	20.6253
32	589892		203169 (100%)	2008/aug/14	2017/dec/31	20.6381
33	589893		203169 (100%)	2008/aug/14	2017/dec/31	247.6054
34	589896		203169 (100%)	2008/aug/14	2017/dec/31	20.6326
35	589897	COPPER H B	203169 (100%)	2008/aug/14	2017/dec/31	330.2502
36	589898		203169 (100%)	2008/aug/14	2017/dec/31	20.6362
37	589900	COPPER H C	203169 (100%)	2008/aug/14	2017/dec/31	144.4705
38	589901		203169 (100%)	2008/aug/14	2017/dec/31	20.6344
39	589902		203169 (100%)	2008/aug/14	2017/dec/31	20.6401
40	590283	COPPER GC	203169 (100%)	2008/aug/22	2017/dec/31	20.6254
41	590284	COPPER GD	203169 (100%)	2008/aug/22	2017/dec/31	41.251
42	590285	COPPER GE	203169 (100%)	2008/aug/22	2017/dec/31	41.2655
43	590286	COPPER HC	203169 (100%)	2008/aug/22	2017/dec/31	41.2763
44	590287	COPPER HD	203169 (100%)	2008/aug/22	2017/dec/31	20.6419
45	590949	COPPER 7A	203169 (100%)	2008/sep/07	2017/dec/31	453.5745
46	590952	COPPER 7B	203169 (100%)	2008/sep/07	2017/dec/31	515.6008
47	590953	COPPER 7C	203169 (100%)	2008/sep/07	2017/dec/31	20.6137
48	664743	NORD WEST	203169 (100%)	2009/nov/04	2014/dec/31	370.8588
49	664864	WV-SW	203169 (100%)	2009/nov/04	2016/dec/31	515.5698

	Tenure No	Claim Name	Owner	Issue Date	Good To Date	Area (ha)
50	665383	WV-SW2	203169 (100%)	2009/nov/05	2014/dec/31	515.5912
51	1020413	WV SOUTH TRIM	203169 (100%)	2013/Jun/19	2017/dec/31	165.26
52	1020414	WV SOUTH TRIM2	203169 (100%)	2013/Jun/19	2017/dec/31	206.65
54	929369	NW TRENCHES	203169 (100%)	2011/nov/16	2017/dec/31	41.2901
55	930037	COPPER TOP	203169 (100%)	2011/nov/21	2017/dec/31	227.0854
56	930050	COPPER TOP 1	203169 (100%)	2011/nov/21	2017/dec/31	433.6851
57	945669	ABBOTT	203169 (100%)	2012/feb/02	2017/dec/31	516.3493
58	945670	ABBOTT 1	203169 (100%)	2012/feb/02	2017/dec/31	495.5674
59	945672	ABBOTT 2	203169 (100%)	2012/feb/02	2017/dec/31	392.2786
60	950869	VIKING	203169 (100%)	2012/feb/20	2017/dec/31	247.7437
61	950872	FIN	203169 (100%)	2012/feb/20	2017/dec/31	557.3399
					Sub total	**12850.6**
					TOTAL	**21366.7**

Table 2 Rock and Soil Sampling and Assay; Rateria-West Valley Property, 2013

Sample ID	Area	Date	Sample type	Location	Easing	Northing	Ag ppm	Au ppm	Cu ppm	Mo ppm	Description
Rat13-R01	Tyner Lake	22-Oct-13	Rock, subcrop	Trench, East of Pamainus rd, km14	647172	5574405	0.01	<0.005	32.3	0.51	Grab subcrop from historical E-W trench, up to 4m depth, east side of road. Med-fine grained GD, probably Chataway variety, whitish, bio and mafic minerals are almost fresh, mild ser, chl alteration in groundmass , epi in fine fractures. No sulfide minerals observed.
Rat13-R02	South of Rateria	22-Oct-13	Rock, boulder	Trench, west of Pamainus rd, km14	647195	5574410	0.04	<0.005	85.2	1	Float boulder from historical E-W trench, up to 4m depth, west side of road. Med grained GD, probably Highland Valley phase, more felsic as above sample, whitish, bio and mafic minerals are fresh, tiny carb-qtz veins cut groundmass epi in selvage, No sulfide minerals observed.
Rat13-S01	South of Rateria	23-Oct-13	Soil	Trench, East of Pamainus rd, km14	647175	5574409	0.01	<0.005	58.3	0.45	From 30cm dig hole in base of the trench, fine grained, dark brown, little rusty.
Rat13-R03	South of Rateria	23-Oct-13	Rock, boulder	South-east of SKU claim	646510	5574512	0.01	<0.005	25.1	0.57	Float boulder, Med- coarse grained GD, probably Chataway variety, whitish, fresh, trace chl-epi in fractures
Rat13-R04	South of Rateria	23-Oct-13	Rock, boulder	border SKU-HCM claim	646399	5575574	0.32	0.129	5250	0.94	Float boulder, fine grained GD, probably Bethlehem -Highland Valley phase, 1-2mm bio and hb minerals, iron oxide staining, small piece of mal-bornite
Rat13-R05	South of Rateria	23-Oct-13	Rock, outcrop	East of SKU showing	646000	5575500	0.09	<0.005	195	0.92	Outcrop. 20x70m, Chataway variety, fresh, several fractures with chl, epi and hem.
Rat13-S02	South of Rateria	23-Oct-13	Soil	Road cut location	647141	5575627	0.04	<0.005	104	1.29	From 20 cm dig hole, fine grained, dark brown, little rusty and argillic altered.
Rat13-S03	South Sho	24-Oct-13	Soil	Road cut location	647800	5575630	0.02	0.058	45.8	0.49	From 20 cm dig hole, fine grained, dark brown- green, little rusty-chloritic and argillic altered.
Rat13-R06	South of Rateria	24-Oct-13	Rock, boulder	South of Sho showing	648543	5576619	<0.01	<0.005	10.6	0.72	Float boulder, Med- coarse grained GD, probably Chataway variety, whitish, fresh, trace chl-epi in fractures.
Rat13-R07	Caper area	24-Oct-13	Rock, outcrop	West of Caper showing	650112	5575582	<0.01	<0.005	40.7	0.62	30m long E-W outcrop, med-coarse grained GD, in general fresh, locally with carb, qtz veins with more intense of chl, ser, epi alteration. No copper mineralization.

Table 2 Rock and Soil Sampling and Assay; Rateria-West Valley Property, 2013

Sample ID	Area	Date	Sample type	Location	Easing	Northing	Ag ppm	Au ppm	Cu ppm	Mo ppm	Description
Rat13-R08	South of Rateria	24-Oct-13	Rock	North-west of Caper showing	650462	5576790	0.15	<0.005	2750	1.33	Med grained GD, probably Highland Valley phase, felsic with low content of mafic minerals, whitish, bio and mafic minerals are fresh. Epi- chl within carb-qtz vein, selvage stained with mal
Rat13-S04	South of Rateria	24-Oct-13	Soil	Road cut location	647316	5575592	0.02	<0.005	46.1	0.57	From 20 cm dig hole, fine grained, yellowish, rusty and argillic altered.
WV13-R01	Abbott	28-May-13	Rock,outcrop	Pole 383 Showing	642294	5573205	2.04	0.007	2400	0.49	Grab sample from powerline pole site, med-coarse Gd-qtz-diorite, mod ser-clay altered, epi-chl in fractures, mal stain is dominant, minor cpy-bor.
WV13-R02	Abbott	28-May-13	Rock,outcrop	Pole 383Showing	642267	5573163	1	0.008	5070	1.35	Grab sample from power line pole site, same as above sample with more car-qtz vein.mal stain is dominant, minor cpy-bor.
WV13-R03	Abbott	29-May-13	Rock,outcrop	Pole 383 Showing, 100m to north	642265	5573260	0.12	<0.005	110	0.55	Grab sample from outcrop close to power line pole. Semi-fresh Gd, without any significant structure, minor staining of mal.
WV13-R04	Abbott	29-May-13	Rock,outcrop	Swamp Cu	641228	5571724	0.62	0.005	1330	0.64	Grab sample from outcrop, fine grained GD, minor alteration with minor mal staining in groundmass.
WV13-R05	Abbott	30-May-13	Rock,outcrop	pole 346 Showing	638659	5571085	1.11	0.018	11400	2.19	Grab sample from power line pole site, GD (border-Chataway) sericite-clay altered. Dark green mafic dike cut through. Cpy, bor and mal in fractures and patchy in groundmass.
WV13-R06	Abbott	30-May-13	Rock,outcrop	Nw Trenche in east	639500	5571900	1.56	0.005	3300	1.27	Grab rock sample from shallow wide trench. Med-coarse grained GD. Bio and amph 40-50%, qtz 10-20%, plag about 30%, with minor ser-chl groundmass alteration, mafic minerals partly altered as well. Minor k-spar alteration in selvage of few qtz-carb -epi veins (few mm wide). Malachite with minor bornite and chalcopyrite in groundmass and within veinlets.

Table 2 Rock and Soil Sampling and Assay; Rateria-West Valley Property, 2013

Sample ID	Area	Date	Sample type	Location	Easing	Northing	Ag ppm	Au ppm	Cu ppm	Mo ppm	Description
WV13-R07	Abbott	30-May-13	Rock,outcrop	Nw Trenche in middle	639440	5572020	3.11	<0.005	5250	4.4	Grab rock sample from 20m long, 2m deep trench (100m west of previous trench). Med sized grain qtz dio-gd (border-Chataway). Moderate ser-k-spar- carb alteration. Qtz-Kspar vein is common, sharp contact, K-spar -ser alteration in selvage. Few short narrow carb veins cut the rock. Malachite with minor cpy and bor.
WV13-R08	Abbott	31-May-13	Rock,outcrop	Nw Trenche in west	638199	5572160	0.58	0.005	3420	1.62	Grab rock from trench to west, coarse grained GD, light green argillic altered, equigranular minerals, bio>hb 1-3mm, chl, epi in fractures. Carb veins are common. Cpy-bo-py in patches and diss in fractures and veins. Mal in fractures and stained.
WV13-R09	Abbott	31-May-13	Rock,outcrop	Nw Trenche in west	638151	5572119	0.18	<0.005	1670	1.93	Grab sample from trench in west side of area. Coarse grained GD, irregular grain size texture with dark green diorite, mafic rich minerals, chl and epi vein in irregular shape with py+cpy and mal mineralization. Specks of py-cpy are common.

Figures


Happy Creek Minerals Ltd.
Highland Valley Project
Figure 1: Location Map
Scale: 1:5,250,000
0 50 100 150 200 250
Kilometers
Projection: BC Albers Datum: Nad83
N
W
E
S
Yukon Territory
Northwest Territories
Alberta
British Columbia
Alaska
Atlin Park
Mount Edziza Park
Spatsizi Plateau Wilderness Park
Kwadacha Wilderness Park
Fort St. John
Dawson Creek
Grande Prairie
Terrace
Prince Rupert
Prince George
Bowron Lake Park
Mount Robson Park
Tweedsmuir Park
Quesnel
Wells Gray Park
Williams Lake
Jasper National Park
Edmonton
St. Albert
Leduc
Wetaskiwin
Red Deer
Airdrie
Calgary
Banff National Park
Yoho National Park
Glacier National Park
Revelstoke
Kootenay National Park
Kamloops
Enderby
Vernon
Merritt
Kelowna
Penticton
Kimberley
Fernie
Cranbrook
Nelson
Castlegar
Trail
Greenwood
Rossland
Chilliwack
Garibaldi Park
Powell River
Courtenay
Parksville
Port Alberni
Vancouver
Burnaby
Richmond
Mission
Abbotsford
Surrey
Duncan
Victoria
Colwood
Pacific Rim National Park Reserve
Washington
Idaho
Montana
Highland Valley Property
see inset map
Inset Map
CREEK
Kamloops
Hefley
R
L
ASHCROFT
KAMLOOPS
THOMPSON
RIVER
NICOLA
092I
LOGAN
LAKE
Highland Valley
Property
MERRITT
RIVER

630000 633000 636000 639000 642000 645000 648000 651000 654000 657000 660000

5585000 5582000 5579000 5576000 5573000 5570000 5567000

N W E S

544901 544902 544903 568146 568147 570360 664743 568148 544905 568149 590953 566312 590949 587382 587380 587387 587383 532667 587386 587385 665383 664864 590952 587379 587384 589728 589726 587389 570358 570359 590283 590284 587390 587388 589725 582066 589893 589896 590285 589723 589901 589581 589898 589580 589900 589892 590286 589902 589897 590287 950872 929369 930037 950869 945672 945670 930050 945669 1020413 1020414 1022304

571030 571031 529011 528778 522356 528775 1021006 529013 513870 511809 563796 572519 572520 591058 572518 573338 954819 955169 955170 954808 954855 955171 954840 954824 954832 591057 954801 1017470 954842 954820 954807 1022443 955173 955858 954796 954837 954815 954609

HAPPY CREEK MINERALS LTD.
DIVERSIFIED METALS EXPLORATION
TSX-VHPT

HAPPY CREEK MINERALS LTD
Highland Valley Project
Rateria-West Valley Property
Mineral Tenure Locations
2013

Projection: UTM10N Datum: Nad83 Mapsheet: 092i05,26,35,36,45
Map Angle: -1.6 Magnetic Declination: 18 00'
Claim Data: MTO - Feb 14, 2010

0 1,000 2,000 4,000 Meters

1:80,000

Legend
- HCM Claim
- WV-RA-Subclaim2013
- Major Road

Fig. 2

HAPPY CREEK MINERALS LTD
Highland Valley Project
Geology Map

HAPPY CREEK MINERALS LTD. TSX-V:HPY
DIVERSIFIED METALS EXPLORATION

South Seas Deposit
Bethlehem Mine
Valley Mine
JA Deposit
Teck Concentrator
Highmont Mine
Lornex Mine
Logan Lake
Vimy Deposit
Aberdeen Mine
Craigmont Mine Property
Rateria
Teck
West Valley
Lornex Fault
Skuhun Creek Fault
BILLY LAKE
ZONE 2
ZONE 1
3 CREEK
MOSS 4
SOUTH YUBET
COPPER CREEK
NORD
PIM
NTP
FRANK
TAM
LL
JAY 2
FIR
SKU
SHO
CAPER
WIZ
POLE 383
POLE 346
TYNER LAKE
15k to Merritt

Fault
Current or past mining activity
Surface and/or underground copper mineralization

0 1,250 2,500 5,000 Meters
1:125,000

Fig. 3

HAPPY CREEK MINERALS LTD
Highland Valley Project
Rateria-West Valley Property
2013 DDH and Sample Locations

Projection: UTM10N Datum: Nad83 Mapsheet: 092i05,26,35,36,45
Map Angle: -1.6 Magnetic Declination: 18 00'
Claim Data: MTO - Feb 14, 2010

HAPPY CREEK MINERALS LTD. TSX-V:HPY
DIVERSIFIED METALS EXPLORATION

630000 633000 636000 639000 642000 645000 648000 651000 654000 657000 660000

5585000 5582000 5579000 5576000 5573000 5570000 5567000

N W E S

NORD
PIM
NTP
TAM
FRANK
LL
JAY2
FIR
Cu_Trench
Pole346
Pole383
Abbott Area
West Valley
Rateria
Zone 2
Yubet
Zone 1
Yubet-s
Moss 4
Sho
Sho-s
Tyner Lake Area
HWY 97C
Pamainus FSR

0 1,000 2,000 4,000 Meters
1:80,000

Legend

- DDH, R13-01
- Rock Sample, 2013
- Soil Sample, 2013
- Ore Showing
- HCM Claim
- WV-RA-Subclaim2013
- Major Road

Fig. 4

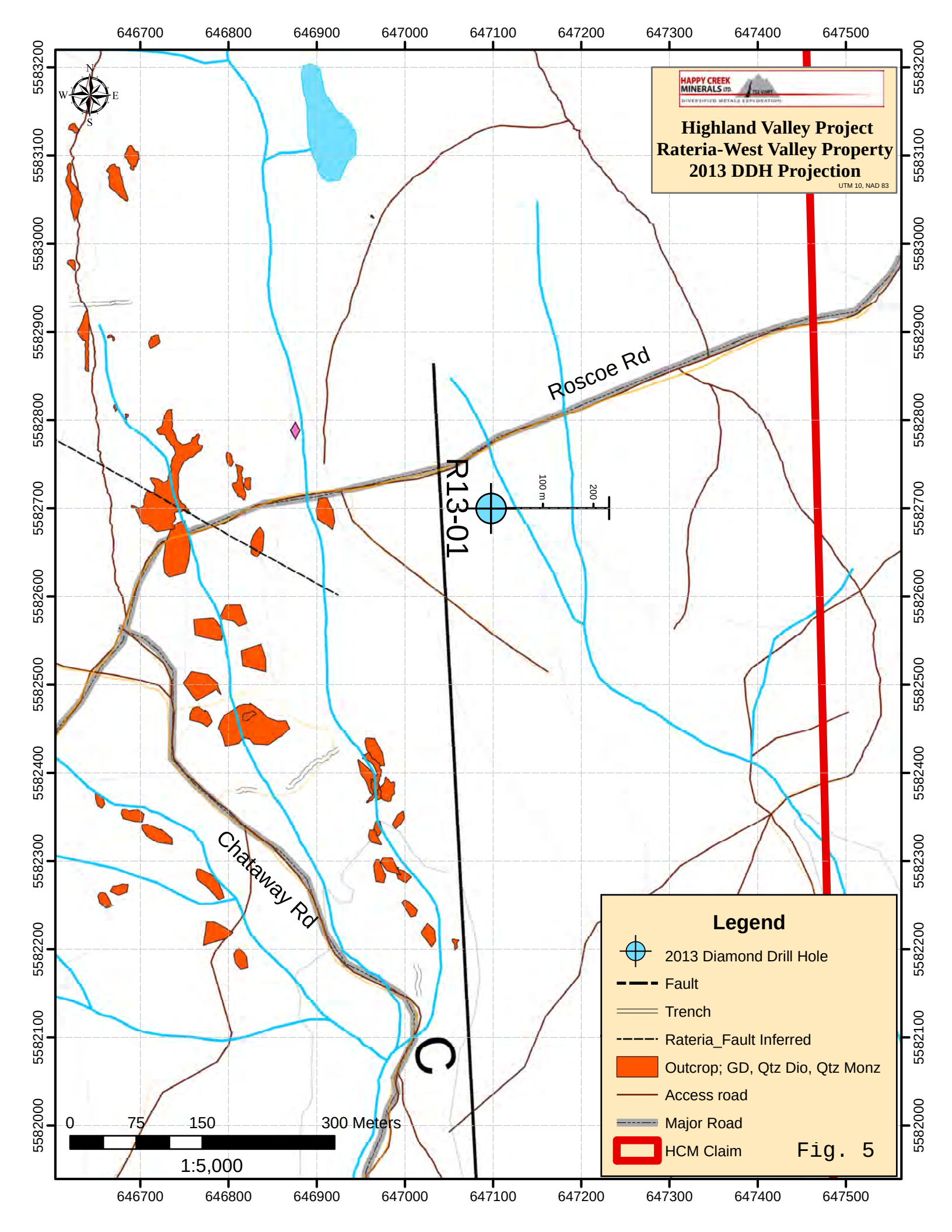
HAPPY CREEK MINERALS ltd.
DIVERSIFIED METALS EXPLORATION
Highland Valley Project
Rateria-West Valley Property
2013 DDH Projection
UTM 10, NAD 83
Roscoe Rd
R13-01
Chataway Rd
100 m
200
Legend
2013 Diamond Drill Hole
Fault
Trench
Rateria_Fault Inferred
Outcrop; GD, Qtz Dio, Qtz Monz
Access road
Major Road
HCM Claim
0 75 150 300 Meters
1:5,000
646700 646800 646900 647000 647100 647200 647300 647400 647500
5583200 5583100 5583000 5582900 5582800 5582700 5582600 5582500 5582400 5582300 5582200 5582100 5582000

Fig. 5

HAPPY CREEK MINERALS LTD.
TSX-V:HPY
DIVERSIFIED METALS EXPLORATION

Highland Valley Project
Rateria-West Valley Property
Hole: R13-01, E-W Section

UTM 10, NAD 83

647080 E | 647100 E | 647120 E | 647140 E | 647160 E | 647180 E | 647200 E | 647220 E | 647240 E

1550 RL | 1500 RL | 1450 RL | 1400 RL | 1350 RL

R13-01

0.00m

Overburden

15.24m

Weak, moderate altered, medium coarse grained GD/Dio, Rock variably and strongly broken

Fine-medium grained Mafic dike, broken contacts

Strong altered, medium - coarse grained, GD/Dio. Variably broken. Short gouge

Weak-moderate altered, Medium - coarse grained, GD, Solid, less altered . Some zones of soft gouge.

87.48m

89.35m

Strong potassic-sericite altered, Medium - coarse grained GD

105.20m

Moderate altered, medium - coarse grained, GD

123.50m

125.00m

Moderate to strong potassic-sericite altered, Medium - coarse grained, GD

138.50m

Weak mod altered, medium - coarse grained, GD

149.80m

Strong chlorite-sericite, silica altered GD, with several gouge and carb-qtz veinlets

155.00m

163.30m

Mod sericite altered, medium - coarse grained, GD, semi broken

182.72m

Unaltered-weak altered, medium to coarse grained GD.

230.74m

CHL

Mineralization: Weak-moderate from 44.10 to 45m and from 75m to 89m.

MDK

Mineralization: Weak, more intense from 95 to 96.5m. Cc and bor may present in dark green chl and within groundmass

CHL

Mineralization: Weak Cc and bor may present in dark green chl and within groundmass

KSP

Mineralization: Weak Cc and bor may present in dark green chl and fractures groundmass

CHL

Mineralization: Weak

CHL

Mineralization: Moderate, cc+bor in fractures and qtz veins

SER

CHL

Mineralization: Trace

SER

Mineralization: Weak

Mineralization: Not observed

UNA

/// Gouge

== Iron oxide and/or carb-qtz veins

ROCK CODES CODE	PAT	LABEL	DESCRIPTION
		Mafic Dike	Mafic Dike
		Un-Alt GD	Un/Wk Alt
		Chl-Ep Alt GD	Chlorite-Epidote Alt
		Ksp Alt GD	Potassic Alt
		Ser Alt GD	Sericite Alt

POSTED TEXT CODE	L/R	TEXT	ITEMS
	L	-------	All

SECTION SPECS:

REF. PT. E, N	647164 m	5582700 m
EXTENTS	104.6 m	288.3 m
SECTION TOP, BOT	1599 m	1311 m
TOLERANCE +/-	33.8 m	

SCALE

(m)

-5 0 5 10 15 20 25 30

*unknown

AZIMUTH = 90°

N W E S

5582700N SECTION

Fig. 6

HAPPY CREEK MINERALS LTD.
TSX-VHPY
DIVERSIFIED METALS EXPLORATION

Highland Valley Project
Rateria-West Valley Property
Rock and Soil Sample Locations Map
2013

UTM 10, NAD 83

636000 638000 640000 642000 644000 646000 648000 650000

5580000 5578000 5576000 5574000 5572000

Lornex Fault

Moss 4

Chataway Rd

Pimainus Rd

Sho Area

Sho

Sho-s

LL

JAY2

FIR

Rat13-R08

Rat13-R06

Rat13-R07

Rat13-S02 Rat13-S04

Rat13-R05

Rat13-R04 Rat13-S03

Rat13-R03 Rat13-S01

Rat13-R02

Rat13-R01

Abbott Area

Tyner Area

Pole383

WV13-R03

WV13-R02

WV13-R01

Pimainus Rd

WV13-R08 WV13-R09

WV13-R07

Cu_Trench

WV13-R06

WV13-R04

WV13-R05

Pole346

0 500 1,000 2,000 Meters

1:40,000

Legend

- Rock Samples
- Soil Samples
- Ore Showing
- Fault
- Outcrop; GD,Dio
- Major Road
- HCM Claim

Fig. 7

HAPPY CREEK MINERALS LTD.
TSX-VHPY
DIVERSIFIED METALS EXPLORATION

Highland Valley Project
Rateria-West Valley Property
Rock and Soil Samples, Copper Assay
2013

UTM 10, NAD 83

636000 638000 640000 642000 644000 646000 648000 650000

5580000 5578000 5576000 5574000 5572000

Lornex Fault

Moss 4

Chataway Rd

Pimainus Rd

Sho Area

Sho

Sho-s

LL

JAY2

FIR

Abbott Area

Tyner Area

Pole383

110

5070

2400

Cu_Trench

3420

1670

5250

3300

1330

Pole346

11400

2750

10.6

104

45.8

46.1

195

5250

40.7

25.1

58.3

32.3

85.2

0 500 1,000 2,000 Meters

1:40,000

Legend

Rock Samples

Cu_ppm

50
200
1000
5000
11400

Soil Samples

Cu_ppm

50
75
104

HCM Claim
Major Road
Ore Showing
Fault
Outcrop; GD,Dio

Fig. 8a

HAPPY CREEK MINERALS LTD.
TSX-V:HPY
DIVERSIFIED METALS EXPLORATION

Highland Valley Project
Rateria-West Valley Property
Rock and Soil Samples,Silver Assay
2013

UTM 10, NAD 83

636000 638000 640000 642000 644000 646000 648000 650000

5580000 5578000 5576000 5574000 5572000

Lornex Fault

Moss 4

Chataway Rd

Pimainus Rd

Sho Area

Sho

Sho-s

LL

JAY2

FIR

Abbott Area

Pole383

2.04 1 0.12

Cu_Trench

0.58 0.18

3.11 1.56

0.62

Pole346

1.11

Tyner Area

Pimainus Rd

0.15 0.01

0.09 0.32 0.04 0.02 0.02

0.01

0.01 0.01 0.04

0 500 1,000 2,000 Meters

1:40,000

Legend

Rock Samples

Ag_ppm

0.010 - 0.300

0.301 - 1.500

1.501 - 3.110

Soil Samples

Ag_ppm

0.01 - 0.02

0.03 - 0.04

HCM Claim

Major Road

Ore Showing

Fault

Outcrop; GD,Dio

Fig. 8b

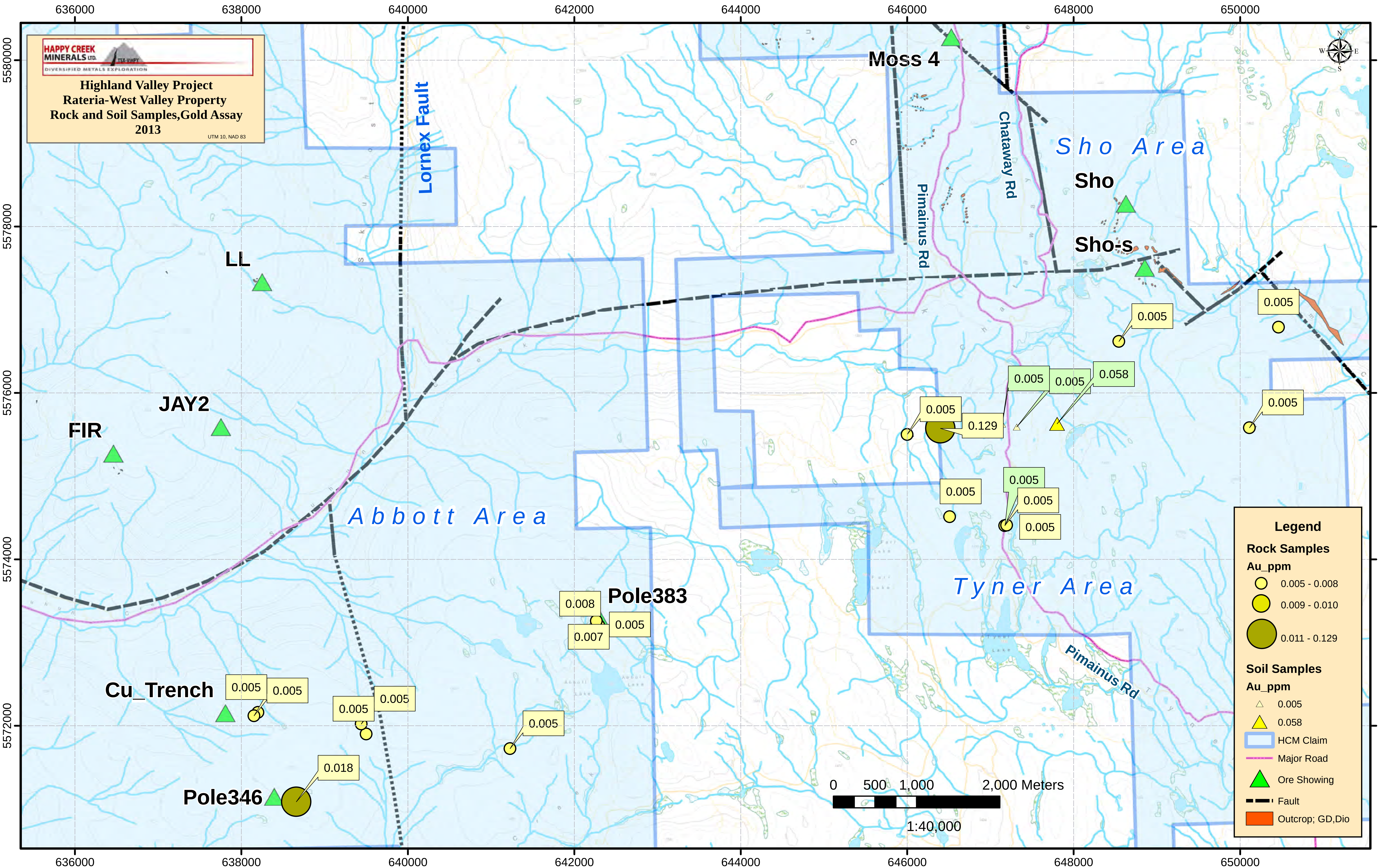
HAPPY CREEK MINERALS LTD.
Highland Valley Project
Rateria-West Valley Property
Rock and Soil Samples,Gold Assay
2013
UTM 10, NAD 83
Lornex Fault
Moss 4
Chataway Rd
Pimainus Rd
Sho Area
Sho
Sho-s
LL
JAY2
FIR
Abbott Area
Tyner Area
Pole383
Cu_Trench
Pole346
Pimainus Rd
0.005
0.129
0.058
0.008
0.007
0.018
Legend
Rock Samples
Au_ppm
0.005 - 0.008
0.009 - 0.010
0.011 - 0.129
Soil Samples
Au_ppm
0.005
0.058
HCM Claim
Major Road
Ore Showing
Fault
Outcrop; GD,Dio
0 500 1,000 2,000 Meters
1:40,000
636000
638000
640000
642000
644000
646000
648000
650000
5580000
5578000
5576000
5574000
5572000

Fig. 8c

HAPPY CREEK MINERALS LTD.
TSX-V:HPY
DIVERSIFIED METALS EXPLORATION

Highland Valley Project
Rateria-West Valley Property
Rock and Soil Samples,Moly Assay
2013

UTM 10, NAD 83

636000 638000 640000 642000 644000 646000 648000 650000

5580000 5578000 5576000 5574000 5572000

Lornex Fault

Moss 4

Pimainus Rd

Chataway Rd

Sho Area

Sho

Sho-s

LL

JAY2

FIR

Abbott Area

Pole383

1.35 0.55 0.49

Cu_Trench

1.62 1.93

4.4 1.27

0.64

Pole346

2.19

Tyner Area

Pimainus Rd

0.72

1.33

1.29 0.57 0.49

0.92 0.94

0.62

0.57

0.45 0.51 1

0 500 1,000 2,000 Meters

1:40,000

Legend

Rock Samples

Mo_ppm

0.5 - 1.0

1.1 - 2.2

2.3 - 4.4

Soil Samples

Mo_ppm

0.5

0.6 - 0.7

0.8 - 1.3

HCM Claim

Major Road

Ore Showing

Fault

Outcrop; GD,Dio

Fig. 8d

Appendix 1

Diamond Drill Hole Log

Hole R13-01(from 88.45m to 105.22m),Locally chalcocite-bornite mineralized

R13-01, Chalcocite + bornite mineralization zone (from 138.5 to 150m).

R13-01, Chalcocite + bornite mineralization zone (from 89 to 105m).

PROPERTY:		**Rateria**		**UTM ZONE: 10**									**DRILLED FOR: Happy Creek Minerals Ltd.**											
MINING DIVISION:		**Kamloops**		**DATUM: NAD83**									**DRILLED BY: Glen's Drilling**											
DDH #		**R13- 01**		**UTM-E: 647100**									**START DATE: Nov. 13, 2013**											
OVERBURDEN:		**15.24m**		**UTM-N: 5582700**									**FINISH DATE: Nov, 17, 2013**											
TOTAL DEPTH: 230.74m				**ELEVATION: 1568**									**LOGGED BY: Sassan Liaghat**											
CORE SIZE:		**NQ**		**AZIMUTH: 90 DIP: -55**																				
INTERVAL (m):		**ROCK TYPE**	**sub TYPE**	**DESCRIPTION**	**QTZ VEINS**	**ALTERATION (1-5)**								**MINERALIZATION (%)**						**STRUCT**				
FROM	TO m				>3mm	K-spar	Ser	Chl	Ep	Kaol	Carb	Silica	Mus	Py	Mag	FeOX	Cpy	Bor	Cc					
15.24	**87.48**	**Wk-Mod GD/Dio**		**Weak, Moderate Altered, Medium Corse Grained GD/Dio** **General Characters:** Coarse to medium grained granodiorite-diorite. Probably Highland Valley Phase- Chataway Variety. In some area grains size gradually change to fine grained diorite. Light to dark green color, locally creamy color. Rock mostly moderate to strongly broken, fractured and locally sheared, gouged and weakly brecciated. Rock moderate solid in several intervals. **Composition**: ~40 to 50% mafics (bio>hb), some biotite-book up to 3mm in dimension. Locally irregular crowded of coarse grained or fine grained mafics, ~30% anhedral to euhedral plagioclase (up to 5mm in size), ~10 % grey subdural quartz (up to 3 mm in size), interstitial k-spar ~5%, magnetite 3-4%. **Alteration:** Chlorite and sericite are major alteration minerals; replacing mafic and feldspar minerals. Dark chlorite also present in some fractures and veins. Sericite is dominant in gouge area with clay, Some intervals characterized by weak potassic alteration and light green sericitization. Locally chlorite gouge is envelopes along fractures. Hematite; light red-fine grain is common in shearing zones and intense fractured, as well as fillings some fractures. In some intervals weak quartz flooding, and undeveloped quartz vein observed, some associated with carbonate and clay. Intense carbonate veins and fracture filling are present in several parts. Short interval of potassic alteration increases to bottom of interval. **Structures**: Rock variably and strongly broken, fractured and some areas sheared. Some locations show short zone of chl-ser-carb-clay gouge. Intense carb veins observe and some parts accompany with hematite. some qtz veins, max 1cm wide present. Some wide shearing fractures observed.		1	2	1		1	1				2	0.2		tr	tr	Rock variably and strongly broken				

PROPERTY:		**Rateria**		**UTM ZONE: 10**									**DRILLED FOR: Happy Creek Minerals Ltd.**									
MINING DIVISION:		**Kamloops**		**DATUM: NAD83**									**DRILLED BY: Glen's Drilling**									
DDH #		**R13- 01**		**UTM-E: 647100**									**START DATE: Nov. 13, 2013**									
OVERBURDEN:		**15.24m**		**UTM-N: 5582700**									**FINISH DATE: Nov, 17, 2013**									
TOTAL DEPTH: 230.74m				**ELEVATION: 1568**									**LOGGED BY: Sassan Liaghat**									
CORE SIZE:		**NQ**		**AZIMUTH: 90**		**DIP: -55**																
INTERVAL (m):		**ROCK TYPE**	**sub TYPE**	**DESCRIPTION**	**QTZ VEINS**	**ALTERATION (1-5)**								**MINERALIZATION (%)**						**STRUCT**		
FROM	TO m				>3mm	K-spar	Ser	Chl	Ep	Kaol	Carb	Silica	Mus	Py	Mag	FeOX	Cpy	Bor	Cc			
				Mineralization: Weak, Weak-Moderate In several locations from 44.10 to 45m and from 75m to end of interval, weak to moderate-weak cc and bor observed in fractures, associated with qtz-carb veins and in chl gouge materials. **Subsections**: -From 15.24 to 24.10 weakly altered, semi solid, -@13.47 for 10 cm, aplite dike, sharp boundary 50 c/a. -From 18.30 to 18.90 chl, hem (rusty) altered, - From 24.10 broken rock, with hem carb, minor breccias, ser alteration is dominate. -From 26 to 31m few short zone of gouge +hem, -@ 32m, close to 4cm wide aplite, minor bor within k-spar-qtz veinlets. -@42.53m, minor cc in short zone of potassic alteration. -From 44.10 to 45m several fracture and dark veins contains bor and cc, qtz vein 20 to c/a has bor. -From 45 to 65.5m potassic alteration is common, cc may present in dark materials in fractures. -From 44.81 to 44.87m cc in fractures, -From 65.5m to 75m several carb veins (parallel to c/a and gouge associated with ser (light green) and clay (whitish). -@78m cc in hem -@75.45m cc in several veinlets in K-spar zone -@82.25m cc and bor in vein of qtz-carb hosted in potassic altered zone, -@82.5 cc in hem zone, -@82.59m cc in fracture, -@ 84.45m cc+bor in fracture (40 to c/a)																			

PROPERTY:		**Rateria**		**UTM ZONE: 10**																											
MINING DIVISION:		**Kamloops**		**DATUM: NAD83**																											
DDH #		**R13- 01**		**UTM-E: 647100**																											
OVERBURDEN:		**15.24m**		**UTM-N: 5582700**																											
TOTAL DEPTH: 230.74m				**ELEVATION: 1568**																											
CORE SIZE:		**NQ**		**AZIMUTH: 90**				**DIP: -55**																							
INTERVAL (m):		**ROCK TYPE**	**sub TYPE**	**DESCRIPTION**	**QTZ VEINS**	**ALTERATION (1-5)**									**MINERALIZATION (%)**						**STRUCT**										
FROM	TO m				>3mm	K-spar	Ser	Chl	Ep	Kaol	Carb	Silica	Mus		Py	Mag	FeOX	Cpy	Bor	Cc											
87.48	**89.35**	**MD**		**Fine-Medium Grained Mafic dike:** Mafic rich, dark color rock with broken contact to upper interval, Lower interval, sharp 60 to c/a. Rock semi solid, thin carb veins are common				2	2		2					5					dike, broken contacts										
89.35	**105.20**	**Strg Altd GD/Dio**		**Strong Altered, Medium - Corse Grained, GD/Dio,** General charters are similar to the first interval. Chataway Variety Alteration: Green sericite alteration ranges from thin coatings on fractures to pervasive replacement of whole feldspar grains adjacent to the fractures. Chl +/- epi vein alteration coats fractures planes form veinlets and replaces mafic minerals. Epidote and less commonly quartz /carb may accompany the chl. A pink selvage of potassic alteration is often developed as an outer rind of chl-epi veinlets/fracture fillings - Potassic alteration is dominant in selvage of fractures. - Chl alteration in groundmass and in fractures. **Mineralization:** Moderate-Strong, cc and bor observed in several fractures and veins entire of interval, more intense from 95 to 96.5m. -@ 91.7m, @91.15m, @92.5m, @93 cc in fractures, locally with bor. -From 95 to 96.5m in potassic zone., cc + bor in fractures, in every 5 to 10cm. -@96.70m, @96.85m, @97.70m, 101.80m cc in fractures, -@104.05 bor in brecciated zone with cc. -@ 104.86, @104.90 cc in zone of K-spr with bor .	2	2	3	2	1	2	2	1			1	1		0.1	0.1	variably broken. Short gouge										

PROPERTY:		**Rateria**		**UTM ZONE: 10**																											
MINING DIVISION:		**Kamloops**		**DATUM: NAD83**																											
DDH #		**R13- 01**		**UTM-E: 647100**																											
OVERBURDEN:		**15.24m**		**UTM-N: 5582700**																											
TOTAL DEPTH: 230.74m				**ELEVATION: 1568**																											
CORE SIZE:		**NQ**		**AZIMUTH: 90**			**DIP: -55**																								
INTERVAL (m):		**ROCK TYPE**	**sub TYPE**	**DESCRIPTION**	**QTZ VEINS**	**ALTERATION (1-5)**								**MINERALIZATION (%)**						**STRUCT**											
FROM	TO m				>3mm	K-spar	Ser	Chl	Ep	Kaol	Carb	Silica	Mus	Py	Mag	FeOX	Cpy	Bor	Cc												
105.20	**123.50**	**Wk-Mod Altd GD**		**Weak-Moderate Altered, Medium - Corse Grained, GD,** General characters are similar to previous GD units. Chataway Variety. Rock is more solid, less altered . Some zone of soft gouge. -@ 116.41, @ 116. 80m @ 121m gouge ser+chl+carb from 10cm to 20 cm. **Mineralization**: Weak Cc and bor may present in dark green chl and within groundmass			1	1		1	1				2				tr	solid, less altered . Some zone of soft gouge.									
123.50	**125.00**	**Strg K - Ser Altd GD**		**Strong Potassic-sericite Altered, Medium - Corse Grained, GD,** General characters are similar to previous GD units. Potassic alteration is often developed as an outer rind of chl-epi veinlets/fracture fillings and in some locations is dominant in selvage of fractures. - Chl alteration in groundmass and in fractures. **Mineralization**: Weak Cc and bor may present in dark green chl in fractures and within groundmass		3	1	1		1	1				2				tr										
125.00	**138.50**	**Mod Altd GD**		**Moderate Altered, Medium - Corse Grained, GD** General characters are similar to previous GD units. Rock is more solid, less altered . Locally potassic alteration in selvage of fractures. **Mineralization:** Weak -Cc in fracture @130m, in potassic zone -Cc and bor may present in dark green chl and within groundmass		1	2	1		1	1				1				tr										

PROPERTY: Rateria	**UTM ZONE:** 10	**DRILLED FOR:** Happy Creek Minerals Ltd.
MINING DIVISION: Kamloops	**DATUM:** NAD83	**DRILLED BY:** Glen's Drilling
DDH # R13- 01	**UTM-E:** 647100	**START DATE:** Nov. 13, 2013
OVERBURDEN: 15.24m	**UTM-N:** 5582700	**FINISH DATE:** Nov, 17, 2013
TOTAL DEPTH: 230.74m	**ELEVATION:** 1568	**LOGGED BY:** Sassan Liaghat
CORE SIZE: NQ	**AZIMUTH:** 90 **DIP:** -55	

INTERVAL (m):		ROCK TYPE	sub TYPE	DESCRIPTION	QTZ VEINS	ALTERATION (1-5)								MINERALIZATION (%)						STRUCT
FROM	TO m				>3mm	K-spar	Ser	Chl	Ep	Kaol	Carb	Silica	Mus	Py	Mag	FeOX	Cpy	Bor	Cc	
138.50	149.80	Mod Stg Altd GD		**Moderate to Strong Potassic-sericite Altered, Medium - Corse Grained, GD** General characters similar to first interval. In upper portion of interval hem in fractures. Some parts are solid and some parts are strongly broken. Interval contains qtz vein and ser gouge, In zone of highly chl-ser altered rock (149 to 149.80m) qtz vein , 30 to c/a from 149.05 to 149.25m, contains bor and cc . epi and carb in contacts. **Mineralization:** Moderate -cc in fractures @ 139.45m 139.50m, -cc and bor in 20 cm qtz vein , 30 to c/a from 149.05 to 149.25m -cc in hem-fracture @ 149.50m -cc and bor may present in dark green chl in fractures and within groundmass	2	2	2	1		1	2				2	0.3		0.1	0.1	Qtz vein
149.80	155.00	Wk Mod Altd GD		**Weak Moderate Altered, Medium - Corse Grained, GD** General characters similar to first interval. Rock is more solid, less altered . Locally potassic alteration in selvage of fractures. **Mineralization:** Trace		1	1	1		1	1				2	0.1			tr	solid
155.00	163.30	Stg Chl-Ser-Silica Altd GD		**Strong Chlorite-Sericite, Silica Altered GD** General characters are similar to previous GD units. Strongly altered, silicification of groundmass, locally breccia. In 156.10m banded of tiny veins of hem, ser, qtz and carb in high angle to c/a. **Mineralization**: Weak - @ 156.10m minor bor in thin qtz vein 90 to c/a -Dark material may contain cc		1	1	3		1	2				2			tr		gouge, veinlets

PROPERTY:		**Rateria**		**UTM ZONE: 10**									**DRILLED FOR: Happy Creek Minerals Ltd.**												
MINING DIVISION:		**Kamloops**		**DATUM: NAD83**									**DRILLED BY: Glen's Drilling**												
DDH #		**R13- 01**		**UTM-E: 647100**									**START DATE: Nov. 13, 2013**												
OVERBURDEN:		**15.24m**		**UTM-N: 5582700**									**FINISH DATE: Nov, 17, 2013**												
TOTAL DEPTH: 230.74m				**ELEVATION: 1568**									**LOGGED BY: Sassan Liaghat**												
CORE SIZE:		**NQ**		**AZIMUTH: 90**		**DIP: -55**																			
INTERVAL (m):		**ROCK TYPE**	**sub TYPE**	**DESCRIPTION**	**QTZ VEINS**	**ALTERATION (1-5)**								**MINERALIZATION (%)**						**STRUCT**					
FROM	TO m				>3mm	K-spar	Ser	Chl	Ep	Kaol	Carb	Silica	Mus	Py	Mag	FeOX	Cpy	Bor	Cc						
163.30	**182.72**	**Mod Ser Altd GD**		**Mod Sericite Altered, Medium - Corse Grained, GD** White color, subhedral to euhedral crystals of mafics, General characters as before. The groundmass moderate ser altered.. Upper portion of interval broken, smashed and locally gouge with chl filled fractures . Groundmass Felds altered to ser, In lower portion of interval texture deformed to micro fold and fine irregular ser-chl veins. **Mineralization:** Not observed		1	2	1		1	1				2					semi-broken					
182.72	**230.74**	**Un-Wk Altd GD**		**Un-Weak Altered Medium to Coarse Grained GD.** Coarse to medium grained granodiorite-diorite. Probably Highland Valley Phase- Chataway Variety. Light to dark green color, locally creamy color. Rock mostly solid to moderate broken in some short sections, rare gouged. **Composition:** ~40% anhydral to euhydral plagioclase (up to 4mm in size), ~20 % grey subhedral quartz (up to 5 mm in size), ~30% mafics (bio=hb), locally biotite euhedral up to 3mm in dimension. Locally irregular carb vein, magnetite 1-2%. **Alteration:** Rock generally is fresh. Weak sericite is replacing groundmass of feldspar. Weak chlorite locally observe, dark chlorite also present in some fractures. Some short intervals characterized by weak altering of salmon pink potassic alteration. Hematite light red, fine grained fillings some fractures, **Structures**: interval rock is solid. Some locations show short zone of ser-carb-clay gouge. Minor carb veins observe and some parts accompany with hematite. No major structure was observed **Mineralization**: No copper mineral observed		1	1	1			1				2					solid, semi fresh					
				End of Hole																					

Appendix 2

Diamond Drill Hole Geotechnical Log

HOLE # R13-01

From	To	Interval	Length of core	Recovery	Length > 10 cm	RQD	# Frac 1-3 mm	Average Core angle	# Frac 3-10 mm	Average Core angle	#Qtz-ser Veins 1-3 mm	Average Core angle	# Qtz-ser Veins 3-10 mm	Average Core angle	Mag Sus Avg	Mag Sus max	Mass Air	Mass Water	SG
15.24	17.37	2.13	121	57%	10	8%	48	80							17.430	21.01			
17.37	20.43	3.06	257	84%	52	20%	>50	82											
20.43	23.47	3.04	267	88%	67	25%	40	70											
23.47	26.52	3.05	310	102%	50	16%	>50	70							14.970	19.06	473	298	2.70
26.52	29.57	3.05	235	77%	40	17%	50	65											
29.57	32.61	3.04	292	96%	64	22%	50	65											
32.61	35.06	2.45	269	110%	20	7%	52	65											
35.06	38.71	3.65	300	82%	54	18%	>50	70											
38.71	41.76	3.05	282	92%	90	32%	>50	70			1				10.930	20.430			
41.76	44.81	3.05	290	95%	210	72%	43	70											
44.81	47.85	3.04	305	100%	200	66%	50	70											
47.85	50.90	3.05	280	92%	197	70%	50	70									345	210	2.56
50.90	53.95	3.05	295	97%	212	72%	50	70											
53.95	57.00	3.05	309	101%	205	66%	50	70			1								
57.00	60.05	3.05	304	100%	198	65%	50	70							12.980	19.35			
60.05	63.09	3.04	300	99%	119	40%	50	75											
63.09	66.14	3.05	303	99%	230	76%	34	75											
66.14	69.19	3.05	298	98%	209	70%	42	75											
69.19	72.24	3.05	297	97%	112	38%	42	65											
72.24	75.29	3.05	290	95%	165	57%	32	65											
75.29	78.33	3.04	300	99%	190	63%	47	65											
78.33	81.38	3.05	295	97%	100	34%	50	65											
81.38	84.43	3.05	297	97%	114	38%	50	65							10.500	18.08			
84.43	87.48	3.05	289	95%	190	66%	40	65									385	241	2.67
87.48	90.53	3.05	291	95%	141	48%	40	55											
90.53	93.57	3.04	288	95%	119	41%	40	55											
93.57	96.62	3.05	300	98%	209	70%	40	55											

HOLE # R13-01

From	To	Interval	Length of core	Recovery	Length > 10 cm	RQD	# Frac 1-3 mm	Average Core angle	# Frac 3-10 mm	Average Core angle	#Qtz-ser Veins 1-3 mm	Average Core angle	# Qtz-ser Veins 3-10 mm	Average Core angle	Mag Sus Avg	Mag Sus max	Mass Air	Mass Water	SG
96.62	99.67	3.05	289	95%	129	45%	40	65							12.30	17.42			
99.67	102.72	3.05	279	91%	180	65%	30	65											
102.72	105.77	3.05	300	98%	112	37%	29	65											
105.77	108.81	3.04	301	99%	206	68%	30	65											
108.81	111.86	3.05	299	98%	180	60%	41	55											
111.86	114.91	3.05	295	97%	198	67%	30	55											
114.91	117.96	3.05	278	91%	211	76%	49	55									278	175	2.70
117.96	121.01	3.05	300	98%	204	68%	30	55							10.880	16.20			
121.01	124.05	3.04	300	99%	240	80%	33	65											
124.05	127.10	3.05	305	100%	222	73%	23	65											
127.10	130.15	3.05	290	95%	250	86%	42	65	1						4.377	18.34			
130.15	133.20	3.05	287	94%	200	70%	23	65											
133.20	136.25	3.05	289	95%	198	69%	19	65			1								
136.25	139.29	3.04	285	94%	80	28%	>50	65							7.214	20.44			
139.29	142.34	3.05	277	91%	190	69%	>51	70	1										
142.34	145.39	3.05	290	95%	210	72%	23	70											
145.39	148.44	3.05	300	98%	250	83%	25	70					1	20					
148.44	151.49	3.05	305	100%	268	88%	32	70											
151.49	154.53	3.04	303	100%	200	66%	32	70											
154.53	157.58	3.05	286	94%	193	67%	41	70									315	200	2.74
157.58	160.63	3.05	266	87%	160	60%	>50	70							3.412	18.47			
160.63	163.68	3.05	300	98%	70	23%	>50	70											
163.68	166.73	3.05	301	99%	96	32%	>50	70											
166.73	169.71	2.98	299	100%	98	33%	>50	65											
169.71	172.82	3.11	287	92%	105	37%	>50	65											
172.82	175.87	3.05	294	96%	137	47%	46	65											
175.87	178.92	3.05	277	91%	112	40%	49	65											

HOLE # R13-01

From	To	Interval	Length of core	Recovery	Length > 10 cm	RQD	# Frac 1-3 mm	Average Core angle	# Frac 3-10 mm	Average Core angle	#Qtz-ser Veins 1-3 mm	Average Core angle	# Qtz-ser Veins 3-10 mm	Average Core angle	Mag Sus Avg	Mag Sus max	Mass Air	Mass Water	SG
178.92	181.97	3.05	278	91%	132	47%	43	65							7.865	20.95			
181.97	185.01	3.04	299	98%	132	44%	>50	65											
185.01	188.06	3.05	287	94%	200	70%	32	60											
188.06	191.11	3.05	295	97%	196	66%	36	60											
191.11	194.16	3.05	300	98%	166	55%	52	60											
194.16	197.21	3.05	288	94%	105	36%	27	60											
197.21	200.25	3.04	269	88%	200	74%	18	60											
200.25	203.30	3.05	295	97%	210	71%	24	65											
203.30	206.35	3.05	303	99%	215	71%	50	65											
206.35	209.40	3.05	300	98%	166	55%	12	65											
209.40	212.45	3.05	301	99%	159	53%	34	60									214	133	2.64
212.45	215.49	3.04	299	98%	136	45%	41	60											
215.49	218.54	3.05	294	96%	189	64%	23	60							6.980	18.86			
218.54	221.59	3.05	288	94%	158	55%	44	60											
221.59	224.64	3.05	285	93%	177	62%	35	70											
224.64	227.69	3.05	300	98%	169	56%	50	65											
227.69	230.74	3.05	277	91%	102	37%	50	60											
	EOH																		

Appendix 3

Certificates of Analyses

5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
FAX (905)501-0589
http://www.agatlabs.com

CLIENT NAME: HAPPY CREEK MINERALS LTD.
SUITE 460-789 WEST PENDER STREET
VANCOUVER, BC V6C1H2
(604) 662-8310

ATTENTION TO: DAVID BLANN

PROJECT NO:

AGAT WORK ORDER: 13V777384

SOLID ANALYSIS REVIEWED BY: Yufei Chen, Analyst

DATE REPORTED: Nov 18, 2013

PAGES (INCLUDING COVER): 10

Should you require any information regarding this analysis please contact your client services representative at (905) 501-9998

*NOTES

All samples are stored at no charge for 90 days. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
FAX (905)501-0589
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 13V777384
PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Oct 31, 2013 | DATE RECEIVED: Oct 30, 2013 | DATE REPORTED: Nov 18, 2013 | SAMPLE TYPE: Rock

Analyte:	Sample Login Weight	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
Unit:	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample ID (AGAT ID) RDL:	0.01	0.01	0.01	0.1	0.005	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5
Rat_R01_2013 (4905852)	0.64	0.01	1.33	1.8	<0.005	<5	48	0.48	0.04	1.31	0.10	12.1	6.9	8.0
Rat_R02_2013 (4905853)	0.91	0.04	0.65	1.0	<0.005	<5	46	0.22	0.06	0.74	0.07	20.0	6.0	9.4
Rat_R03_2013 (4905854)	1.68	0.01	2.19	1.0	<0.005	<5	34	0.71	0.01	1.95	0.06	12.2	9.0	6.6
Rat_R04_2013 (4905855)	0.96	0.32	1.12	1.3	0.129	<5	86	0.33	9.51	0.98	0.07	13.6	6.8	9.9
Rat_R05_2013 (4905856)	1.36	0.09	1.02	1.4	<0.005	<5	43	0.52	0.14	1.17	0.04	22.9	5.8	9.1
Rat_R06_2013 (4905857)	1.04	<0.01	0.99	1.2	<0.005	<5	74	0.39	0.01	0.75	0.03	16.0	8.6	10.2
Rat_R07_2013 (4905858)	1.67	<0.01	0.72	0.9	<0.005	<5	128	0.15	0.03	0.59	0.02	16.5	6.6	10.2
Rat_R08_2013 (4905859)	1.19	0.15	2.23	1.6	<0.005	<5	32	0.27	0.15	1.25	0.04	17.2	21.9	18.4
WV_R01_2013 (4905860)	1.99	2.04	0.85	1.3	0.007	<5	103	0.26	0.17	1.83	0.09	14.3	5.9	5.6
WV_R02_2013 (4905861)	0.65	1.00	2.38	4.1	0.008	<5	39	0.53	0.48	3.69	0.16	9.37	18.6	7.8
WV_R03_2013 (4905862)	0.89	0.12	0.52	1.2	<0.005	<5	40	0.17	0.01	0.38	0.03	9.39	2.3	7.2
WV_R04_2013 (4905863)	0.60	0.62	1.05	1.2	0.005	<5	40	0.23	0.37	1.15	0.06	15.7	8.8	14.8
WV_R05_2013 (4905864)	1.83	1.11	4.01	5.4	0.018	<5	8	0.66	0.28	6.33	0.32	3.22	44.5	10.5
WV_R06_2013 (4905865)	0.89	1.56	2.00	4.1	0.005	5	38	0.35	0.46	2.11	0.10	8.88	22.4	8.5
WV_R07_2013 (4905866)	0.81	3.11	1.88	6.8	<0.005	<5	8	0.34	0.52	1.24	0.23	8.57	12.8	5.3
WV_R08_2013 (4905867)	0.57	0.58	3.78	4.4	0.005	<5	14	0.75	0.25	4.49	0.21	5.27	26.5	10.0
WV_R09_2013 (4905870)	3.97	0.18	3.10	3.1	<0.005	<5	43	0.47	0.17	3.31	0.09	7.77	24.1	14.0

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5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
FAX (905)501-0589
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 13V777384
PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Oct 31, 2013 | DATE RECEIVED: Oct 30, 2013 | DATE REPORTED: Nov 18, 2013 | SAMPLE TYPE: Rock

Analyte:	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
Unit:	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
Sample ID (AGAT ID) RDL:	0.05	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05
Rat_R01_2013 (4905852)	0.25	32.3	1.92	6.35	0.11	0.16	<0.01	0.013	0.12	6.3	14.7	0.67	289	0.51
Rat_R02_2013 (4905853)	0.21	85.2	2.06	4.09	0.12	0.27	<0.01	0.009	0.11	9.3	6.5	0.37	213	1.00
Rat_R03_2013 (4905854)	0.09	25.1	1.75	8.61	0.09	0.16	<0.01	0.011	0.10	6.2	15.3	0.96	436	0.57
Rat_R04_2013 (4905855)	0.35	5250	1.90	5.74	0.12	0.19	0.01	0.010	0.18	7.0	12.2	0.63	296	0.94
Rat_R05_2013 (4905856)	0.20	195	1.89	5.82	0.13	0.26	<0.01	0.014	0.13	10.1	7.7	0.47	246	0.92
Rat_R06_2013 (4905857)	0.36	10.6	2.08	5.46	0.11	0.26	<0.01	0.010	0.12	8.2	14.2	0.63	465	0.72
Rat_R07_2013 (4905858)	0.48	40.7	2.08	4.07	0.12	0.25	<0.01	0.012	0.27	7.3	11.9	0.55	268	0.62
Rat_R08_2013 (4905859)	0.40	2750	3.86	9.35	0.11	0.06	0.01	0.031	0.13	7.7	14.2	2.14	563	1.33
WV_R01_2013 (4905860)	0.61	2400	0.98	2.91	0.09	0.09	0.01	0.007	0.17	6.0	8.3	0.49	532	0.49
WV_R02_2013 (4905861)	0.38	5070	3.11	7.05	0.11	0.17	0.01	0.034	0.15	3.9	9.9	0.88	445	1.35
WV_R03_2013 (4905862)	0.08	110	0.62	2.83	0.09	0.20	0.03	<0.005	0.10	5.3	3.6	0.22	120	0.55
WV_R04_2013 (4905863)	0.32	1330	2.50	5.61	0.11	0.19	<0.01	0.021	0.10	7.1	11.9	0.87	402	0.64
WV_R05_2013 (4905864)	<0.05	>10000	5.80	10.6	0.17	0.15	0.01	0.049	<0.01	0.5	16.6	1.69	583	2.19
WV_R06_2013 (4905865)	0.32	3300	3.57	6.60	0.12	0.18	0.01	0.020	0.12	3.5	12.5	0.91	459	1.27
WV_R07_2013 (4905866)	0.12	5250	2.78	6.63	0.14	0.29	<0.01	0.083	0.02	3.8	10.8	1.34	624	4.40
WV_R08_2013 (4905867)	0.17	3420	5.23	11.8	0.14	0.16	0.02	0.029	0.05	1.5	17.3	1.68	510	1.62
WV_R09_2013 (4905870)	0.20	1670	6.36	9.89	0.17	0.21	<0.01	0.050	0.07	2.3	18.1	1.60	610	1.93

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5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
FAX (905)501-0589
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 13V777384
PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Oct 31, 2013 | DATE RECEIVED: Oct 30, 2013 | DATE REPORTED: Nov 18, 2013 | SAMPLE TYPE: Rock

Analyte:	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta
Unit:	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
Sample ID (AGAT ID) RDL:	0.01	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01
Rat_R01_2013 (4905852)	0.06	0.26	6.5	610	3.1	6.1	<0.001	0.019	0.14	2.5	<0.2	0.3	60.1	<0.01
Rat_R02_2013 (4905853)	0.07	0.66	5.9	639	2.6	6.5	<0.001	0.012	0.08	1.8	<0.2	0.5	22.3	<0.01
Rat_R03_2013 (4905854)	0.04	0.26	8.3	721	2.5	4.6	<0.001	0.028	0.05	2.3	<0.2	0.3	134	<0.01
Rat_R04_2013 (4905855)	0.06	0.32	7.3	672	2.3	11.7	<0.001	0.021	0.25	1.7	<0.2	0.3	88.5	<0.01
Rat_R05_2013 (4905856)	0.06	0.66	5.4	602	3.4	7.6	<0.001	0.017	0.13	2.7	<0.2	0.5	25.2	<0.01
Rat_R06_2013 (4905857)	0.06	0.47	7.3	677	1.8	6.7	<0.001	0.011	0.09	2.3	<0.2	0.4	31.9	<0.01
Rat_R07_2013 (4905858)	0.09	0.52	7.8	707	0.9	16.5	<0.001	0.007	0.06	2.3	<0.2	0.3	22.2	<0.01
Rat_R08_2013 (4905859)	0.04	0.10	19.7	984	4.2	6.1	<0.001	0.081	0.08	8.2	<0.2	0.4	35.9	<0.01
WV_R01_2013 (4905860)	0.01	0.27	5.1	353	5.9	7.5	<0.001	0.055	0.80	1.4	<0.2	<0.2	107	<0.01
WV_R02_2013 (4905861)	<0.01	0.26	11.1	1560	5.6	6.0	0.001	0.320	1.45	5.2	6.3	0.4	179	<0.01
WV_R03_2013 (4905862)	0.05	0.53	1.6	194	5.5	3.1	<0.001	0.005	0.24	1.4	<0.2	<0.2	52.7	0.01
WV_R04_2013 (4905863)	0.05	0.21	9.6	678	2.6	4.1	<0.001	0.046	0.20	4.5	0.3	0.4	41.4	<0.01
WV_R05_2013 (4905864)	<0.01	0.25	18.1	2760	5.1	0.2	0.002	0.744	0.33	8.7	14.8	0.4	110	<0.01
WV_R06_2013 (4905865)	<0.01	0.29	12.2	1400	7.8	4.9	0.001	0.063	1.18	5.1	1.7	0.5	185	<0.01
WV_R07_2013 (4905866)	0.03	0.31	4.3	906	4.5	1.0	<0.001	0.051	0.27	4.0	0.8	0.4	127	<0.01
WV_R08_2013 (4905867)	<0.01	0.23	17.9	1720	13.0	2.3	0.002	0.262	0.60	9.7	4.9	0.6	93.1	<0.01
WV_R09_2013 (4905870)	0.09	0.25	17.2	2300	2.4	2.6	0.002	0.122	0.21	15.6	2.4	0.8	53.8	<0.01

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5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
FAX (905)501-0589
http://www.agatlabs.com

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AGAT WORK ORDER: 13V777384
PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Oct 31, 2013 | DATE RECEIVED: Oct 30, 2013 | DATE REPORTED: Nov 18, 2013 | SAMPLE TYPE: Rock

Analyte:	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr	Cu-OL
Unit:	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
Sample ID (AGAT ID) RDL:	0.01	0.1	0.005	0.01	0.05	0.5	0.05	0.05	0.5	0.5	0.01
Rat_R01_2013 (4905852)	<0.01	3.3	0.158	0.02	1.22	76.2	0.07	5.29	36.1	2.3	
Rat_R02_2013 (4905853)	<0.01	7.6	0.159	0.02	2.99	83.7	0.08	8.11	22.2	3.2	
Rat_R03_2013 (4905854)	<0.01	3.1	0.125	0.01	1.29	64.8	<0.05	4.30	45.5	2.3	
Rat_R04_2013 (4905855)	0.52	3.2	0.161	0.04	1.75	74.2	0.14	5.40	34.1	2.4	
Rat_R05_2013 (4905856)	0.02	7.9	0.154	0.02	2.67	79.0	0.10	11.4	23.5	3.3	
Rat_R06_2013 (4905857)	<0.01	3.8	0.160	0.03	1.52	90.1	0.05	6.75	30.1	3.3	
Rat_R07_2013 (4905858)	<0.01	5.2	0.174	0.06	1.79	92.3	0.06	6.09	24.8	3.0	
Rat_R08_2013 (4905859)	0.04	2.7	0.060	0.02	0.83	127	0.17	8.70	73.5	0.8	
WV_R01_2013 (4905860)	<0.01	3.3	0.059	0.03	1.40	19.7	0.06	5.69	86.4	1.2	
WV_R02_2013 (4905861)	0.13	1.9	0.243	0.02	0.66	104	0.50	11.0	60.6	4.8	
WV_R03_2013 (4905862)	<0.01	13.0	0.053	0.01	2.00	13.9	0.11	2.99	12.7	4.8	
WV_R04_2013 (4905863)	0.02	5.5	0.145	0.01	1.92	95.0	<0.05	8.22	44.5	2.7	
WV_R05_2013 (4905864)	0.22	0.4	0.276	<0.01	0.36	186	0.93	14.5	43.9	5.3	1.14
WV_R06_2013 (4905865)	0.05	1.8	0.262	0.02	0.95	104	0.18	13.5	87.4	4.0	
WV_R07_2013 (4905866)	0.07	1.8	0.265	<0.01	2.54	82.7	0.33	7.19	69.6	7.0	
WV_R08_2013 (4905867)	0.08	0.8	0.315	<0.01	0.41	187	0.37	15.5	53.1	4.6	
WV_R09_2013 (4905870)	0.03	0.4	0.363	0.01	0.29	236	0.28	26.5	47.1	4.4	

Comments: RDL - Reported Detection Limit

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5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
FAX (905)501-0589
http://www.agatlabs.com

Quality Assurance - Replicate

AGAT WORK ORDER: 13V777384
PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

	REPLICATE #1				REPLICATE #2													
Parameter	Sample ID	Original	Replicate	RPD	Sample ID	Original	Replicate	RPD										
Ag	4905852	0.01	0.01	0.0%	4905870	0.18	0.17	5.7%										
Al	4905852	1.33	1.38	3.7%	4905870	3.10	3.33	7.2%										
As	4905852	1.77	1.71	3.4%	4905870	3.1	3.1	0.0%										
Au	4905852	< 0.005	< 0.005	0.0%	4905870	< 0.005	< 0.005	0.0%										
B	4905852	< 5	< 5	0.0%	4905870	< 5	< 5	0.0%										
Ba	4905852	48	48	0.0%	4905870	43	45	4.5%										
Be	4905852	0.477	0.496	3.9%	4905870	0.472	0.478	1.3%										
Bi	4905852	0.04	0.04	0.0%	4905870	0.17	0.18	5.7%										
Ca	4905852	1.31	1.34	2.3%	4905870	3.31	3.51	5.9%										
Cd	4905852	0.10	0.10	0.0%	4905870	0.09	0.09	0.0%										
Ce	4905852	12.1	12.8	5.6%	4905870	7.77	8.34	7.1%										
Co	4905852	6.89	6.95	0.9%	4905870	24.1	24.6	2.1%										
Cr	4905852	8.04	8.56	6.3%	4905870	14.0	14.1	0.7%										
Cs	4905852	0.247	0.255	3.2%	4905870	0.195	0.194	0.5%										
Cu	4905852	32.3	32.9	1.8%	4905870	1670	1760	5.2%										
Fe	4905852	1.92	1.97	2.6%	4905870	6.36	6.67	4.8%										
Ga	4905852	6.35	6.44	1.4%	4905870	9.89	10.4	5.0%										
Ge	4905852	0.11	0.11	0.0%	4905870	0.17	0.17	0.0%										
Hf	4905852	0.165	0.175	5.9%	4905870	0.21	0.21	0.0%										
Hg	4905852	< 0.01	< 0.01	0.0%	4905870	< 0.01	< 0.01	0.0%										
In	4905852	0.013	0.013	0.0%	4905870	0.050	0.051	2.0%										
K	4905852	0.125	0.128	2.4%	4905870	0.07	0.07	0.0%										
La	4905852	6.3	6.6	4.7%	4905870	2.33	2.52	7.8%										
Li	4905852	14.7	15.3	4.0%	4905870	18.1	19.1	5.4%										
Mg	4905852	0.670	0.687	2.5%	4905870	1.60	1.69	5.5%										
Mn	4905852	289	297	2.7%	4905870	610	644	5.4%										
Mo	4905852	0.514	0.555	7.7%	4905870	1.93	1.95	1.0%										
Na	4905852	0.06	0.06	0.0%	4905870	0.088	0.095	7.7%										
Nb	4905852	0.26	0.28	7.4%	4905870	0.25	0.31	21.4%										
Ni	4905852	6.53	6.62	1.4%	4905870	17.2	16.6	3.6%										
P	4905852	610	627	2.7%	4905870	2300	2200	4.4%										

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5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
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Quality Assurance - Replicate

AGAT WORK ORDER: 13V777384

PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Pb	4905852	3.1	3.1	0.0%	4905870	2.4	2.4	0.0%								
Rb	4905852	6.1	6.3	3.2%	4905870	2.6	2.6	0.0%								
Re	4905852	< 0.001	< 0.001	0.0%	4905870	0.002	0.002	0.0%								
S	4905852	0.019	0.019	0.0%	4905870	0.122	0.127	4.0%								
Sb	4905852	0.14	0.15	6.9%	4905870	0.21	0.22	4.7%								
Sc	4905852	2.52	2.62	3.9%	4905870	15.6	16.4	5.0%								
Se	4905852	< 0.2	< 0.2	0.0%	4905870	2.37	2.33	1.7%								
Sn	4905852	0.3	0.3	0.0%	4905870	0.85	0.88	3.5%								
Sr	4905852	60.1	63.7	5.8%	4905870	53.8	57.4	6.5%								
Ta	4905852	< 0.01	< 0.01	0.0%	4905870	< 0.01	< 0.01	0.0%								
Te	4905852	< 0.01	< 0.01	0.0%	4905870	0.03	0.03	0.0%								
Th	4905852	3.34	3.82	13.4%	4905870	0.4	0.4	0.0%								
Ti	4905852	0.158	0.161	1.9%	4905870	0.363	0.382	5.1%								
Tl	4905852	0.02	0.02	0.0%	4905870	0.01	0.01	0.0%								
U	4905852	1.22	1.31	7.1%	4905870	0.286	0.295	3.1%								
V	4905852	76.2	78.6	3.1%	4905870	236	235	0.4%								
W	4905852	0.069	0.076	9.7%	4905870	0.28	0.28	0.0%								
Y	4905852	5.29	5.52	4.3%	4905870	26.5	27.2	2.6%								
Zn	4905852	36.1	37.5	3.8%	4905870	47.1	49.2	4.4%								
Zr	4905852	2.3	2.4	4.3%	4905870	4.45	4.46	0.2%								

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
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Quality Assurance - Certified Reference materials

AGAT WORK ORDER: 13V777384

PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

	CRM #1 (CFRM-100)															
Parameter	Expect	Actual	Recovery	Limits												
Co	180	167	92%	90% - 110%												
Cu	3494	3314	95%	90% - 110%												
Ni	2985	2690	90%	90% - 110%												

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
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Method Summary

CLIENT NAME: HAPPY CREEK MINERALS LTD.

AGAT WORK ORDER: 13V777384

PROJECT NO:

ATTENTION TO: DAVID BLANN

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Solid Analysis			
Sample Login Weight	MIN-12009		BALANCE
Ag	MIN-200-12017		ICP-MS
Al	MIN-200-12017		ICP/OES
As	MIN-200-12017		ICP-MS
Au	MIN-200-12017		ICP-MS
B	MIN-200-12017		ICP/OES
Ba	MIN-200-12017		ICP-MS
Be	MIN-200-12017		ICP-MS
Bi	MIN-200-12017		ICP-MS
Ca	MIN-200-12017		ICP/OES
Cd	MIN-200-12017		ICP-MS
Ce	MIN-200-12017		ICP-MS
Co	MIN-200-12017		ICP-MS
Cr	MIN-200-12017		ICP/OES
Cs	MIN-200-12017		ICP-MS
Cu	MIN-200-12017		ICP-MS
Fe	MIN-200-12017		ICP/OES
Ga	MIN-200-12017		ICP-MS
Ge	MIN-200-12017		ICP-MS
Hf	MIN-200-12017		ICP-MS
Hg	MIN-200-12017		ICP-MS
In	MIN-200-12017		ICP-MS
K	MIN-200-12017		ICP/OES
La	MIN-200-12017		ICP-MS
Li	MIN-200-12017		ICP-MS
Mg	MIN-200-12017		ICP/OES
Mn	MIN-200-12017		ICP/OES
Mo	MIN-200-12017		ICP-MS
Na	MIN-200-12017		ICP/OES
Nb	MIN-200-12017		ICP-MS
Ni	MIN-200-12017		ICP-MS
P	MIN-200-12017		ICP/OES
Pb	MIN-200-12017		ICP-MS
Rb	MIN-200-12017		ICP-MS
Re	MIN-200-12017		ICP-MS
S	MIN-200-12017		ICP/OES
Sb	MIN-200-12017		ICP-MS
Sc	MIN-200-12017		ICP-MS
Se	MIN-200-12017		ICP-MS
Sn	MIN-200-12017		ICP-MS
Sr	MIN-200-12017		ICP-MS
Ta	MIN-200-12017		ICP-MS
Te	MIN-200-12017		ICP-MS
Th	MIN-200-12017		ICP-MS
Ti	MIN-200-12017		ICP/OES
Tl	MIN-200-12017		ICP-MS
U	MIN-200-12017		ICP-MS
V	MIN-200-12017		ICP/OES
W	MIN-200-12017		ICP-MS

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
FAX (905)501-0589
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Method Summary

CLIENT NAME: HAPPY CREEK MINERALS LTD.

AGAT WORK ORDER: 13V777384

PROJECT NO:

ATTENTION TO: DAVID BLANN

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Y	MIN-200-12017		ICP-MS
Zn	MIN-200-12017		ICP-MS
Zr	MIN-200-12017		ICP-MS
Cu-OL	MIN-200-12002/12020		ICP/OES

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
FAX (905)501-0589
http://www.agatlabs.com

CLIENT NAME: HAPPY CREEK MINERALS LTD.
SUITE 460-789 WEST PENDER STREET
VANCOUVER, BC V6C1H2
(604) 662-8310

ATTENTION TO: DAVID BLANN

PROJECT NO:

AGAT WORK ORDER: 13V777491

SOLID ANALYSIS REVIEWED BY: Yufei Chen, Analyst

DATE REPORTED: Nov 12, 2013

PAGES (INCLUDING COVER): 7

Should you require any information regarding this analysis please contact your client services representative at (905) 501-9998

*NOTES

All samples are stored at no charge for 90 days. Please contact the lab if you require additional sample storage time.

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
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FAX (905)501-0589
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 13V777491
PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Oct 31, 2013 | DATE RECEIVED: Oct 30, 2013 | DATE REPORTED: Nov 12, 2013 | SAMPLE TYPE: Soil

Analyte:	Sample Login Weight	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
Unit:	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample ID (AGAT ID) RDL:	0.01	0.01	0.01	0.1	0.005	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5
Rat_S01_2013 (4906639)	0.76	0.01	1.62	1.3	<0.005	<5	122	0.23	0.03	0.50	0.02	13.4	7.4	11.3
Rat_S02_2013 (4906640)	0.57	0.04	1.05	1.4	<0.005	<5	66	0.18	0.07	0.64	0.02	18.3	7.3	23.9
Rat_S03_2013 (4906641)	1.03	0.02	1.26	1.3	0.058	<5	99	0.19	0.05	0.41	0.02	13.3	5.2	11.7
Rat_S04_2013 (4906642)	0.73	0.02	1.32	1.5	<0.005	<5	96	0.20	0.06	0.36	0.03	13.8	4.7	15.5

Analyte:	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
Unit:	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
Sample ID (AGAT ID) RDL:	0.05	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05
Rat_S01_2013 (4906639)	0.29	58.3	2.71	6.24	0.12	0.06	<0.01	0.010	0.06	6.7	5.2	0.60	276	0.45
Rat_S02_2013 (4906640)	0.34	104	4.60	5.20	0.15	0.08	<0.01	0.008	0.05	9.6	3.8	0.35	200	1.29
Rat_S03_2013 (4906641)	0.34	45.8	2.20	4.55	0.11	0.15	<0.01	0.009	0.04	6.5	3.5	0.30	193	0.49
Rat_S04_2013 (4906642)	0.42	46.1	2.24	4.59	0.11	0.13	<0.01	0.011	0.04	6.4	3.7	0.23	230	0.57

Analyte:	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta
Unit:	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
Sample ID (AGAT ID) RDL:	0.01	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01
Rat_S01_2013 (4906639)	<0.01	0.50	9.1	589	2.0	7.7	<0.001	0.011	0.20	2.0	<0.2	0.5	68.1	<0.01
Rat_S02_2013 (4906640)	0.01	0.58	11.2	928	1.5	6.1	<0.001	0.013	0.09	2.1	0.2	0.3	38.8	<0.01
Rat_S03_2013 (4906641)	0.01	0.57	7.6	739	2.0	4.7	<0.001	0.009	0.11	1.8	<0.2	0.3	42.4	<0.01
Rat_S04_2013 (4906642)	0.01	0.97	8.6	609	2.7	5.8	<0.001	0.009	0.13	1.8	<0.2	0.3	29.2	<0.01

Analyte:	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Unit:	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample ID (AGAT ID) RDL:	0.01	0.1	0.005	0.01	0.05	0.5	0.05	0.05	0.5	0.5
Rat_S01_2013 (4906639)	0.04	3.1	0.121	0.01	1.17	95.3	0.21	3.98	38.0	1.6
Rat_S02_2013 (4906640)	0.02	4.6	0.103	0.02	2.82	182	0.12	5.67	22.9	2.2
Rat_S03_2013 (4906641)	0.02	2.3	0.107	0.02	0.96	83.4	0.13	4.09	27.7	5.2
Rat_S04_2013 (4906642)	0.02	2.4	0.108	0.03	0.81	84.2	0.18	3.84	33.5	5.1

Comments: RDL - Reported Detection Limit

Certified By:

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
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FAX (905)501-0589
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Quality Assurance - Replicate

AGAT WORK ORDER: 13V777491

PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

	REPLICATE #1															
Parameter	Sample ID	Original	Replicate	RPD												
Ag	4906639	0.01	0.06													
Al	4906639	1.62	1.54	5.1%												
As	4906639	1.3	1.3	0.0%												
Au	4906639	< 0.005	< 0.005	0.0%												
B	4906639	< 5	< 5	0.0%												
Ba	4906639	122	119	2.5%												
Be	4906639	0.228	0.221	3.1%												
Bi	4906639	0.03	0.04	28.6%												
Ca	4906639	0.500	0.475	5.1%												
Cd	4906639	0.02	0.07													
Ce	4906639	13.4	12.4	7.8%												
Co	4906639	7.4	7.3	1.4%												
Cr	4906639	11.3	11.0	2.7%												
Cs	4906639	0.29	0.29	0.0%												
Cu	4906639	58.3	56.2	3.7%												
Fe	4906639	2.71	2.60	4.1%												
Ga	4906639	6.24	6.08	2.6%												
Ge	4906639	0.123	0.132	7.1%												
Hf	4906639	0.06	0.06	0.0%												
Hg	4906639	< 0.01	< 0.01	0.0%												
In	4906639	0.010	0.015													
K	4906639	0.06	0.06	0.0%												
La	4906639	6.68	6.11	8.9%												
Li	4906639	5.2	4.8	8.0%												
Mg	4906639	0.597	0.573	4.1%												
Mn	4906639	276	265	4.1%												
Mo	4906639	0.455	0.489	7.2%												
Na	4906639	< 0.01	< 0.01	0.0%												
Nb	4906639	0.50	0.47	6.2%												
Ni	4906639	9.14	9.05	1.0%												
P	4906639	589	584	0.9%												

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Quality Assurance - Replicate

AGAT WORK ORDER: 13V777491

PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Pb	4906639	2.0	2.5	22.2%												
Rb	4906639	7.7	7.4	4.0%												
Re	4906639	< 0.001	< 0.001	0.0%												
S	4906639	0.011	0.011	0.0%												
Sb	4906639	0.20	0.20	0.0%												
Sc	4906639	2.00	1.91	4.6%												
Se	4906639	< 0.2	< 0.2	0.0%												
Sn	4906639	0.5	0.5	0.0%												
Sr	4906639	68.1	66.0	3.1%												
Ta	4906639	< 0.01	< 0.01	0.0%												
Te	4906639	0.04	0.04	0.0%												
Th	4906639	3.1	4.1	27.8%												
Ti	4906639	0.121	0.115	5.1%												
Tl	4906639	0.015	0.015	0.0%												
U	4906639	1.17	1.48	23.4%												
V	4906639	95.3	92.7	2.8%												
W	4906639	0.21	0.18	15.4%												
Y	4906639	3.98	3.94	1.0%												
Zn	4906639	38.0	37.4	1.6%												
Zr	4906639	1.63	1.75	7.1%												

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FAX (905)501-0589
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Quality Assurance - Certified Reference materials

AGAT WORK ORDER: 13V777491

PROJECT NO:

CLIENT NAME: HAPPY CREEK MINERALS LTD.

ATTENTION TO: DAVID BLANN

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

	CRM #1 (CDN-ME-1101)															
Parameter	Expect	Actual	Recovery	Limits												
Ag	68.2	62	90%	90% - 110%												
Cu	6630	7100	107%	90% - 110%												

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
FAX (905)501-0589
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Method Summary

CLIENT NAME: HAPPY CREEK MINERALS LTD.

AGAT WORK ORDER: 13V777491

PROJECT NO:

ATTENTION TO: DAVID BLANN

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Solid Analysis			
Sample Login Weight	MIN-12009		BALANCE
Ag	MIN-200-12017		ICP-MS
Al	MIN-200-12017		ICP/OES
As	MIN-200-12017		ICP-MS
Au	MIN-200-12017		ICP-MS
B	MIN-200-12017		ICP/OES
Ba	MIN-200-12017		ICP-MS
Be	MIN-200-12017		ICP-MS
Bi	MIN-200-12017		ICP-MS
Ca	MIN-200-12017		ICP/OES
Cd	MIN-200-12017		ICP-MS
Ce	MIN-200-12017		ICP-MS
Co	MIN-200-12017		ICP-MS
Cr	MIN-200-12017		ICP/OES
Cs	MIN-200-12017		ICP-MS
Cu	MIN-200-12017		ICP-MS
Fe	MIN-200-12017		ICP/OES
Ga	MIN-200-12017		ICP-MS
Ge	MIN-200-12017		ICP-MS
Hf	MIN-200-12017		ICP-MS
Hg	MIN-200-12017		ICP-MS
In	MIN-200-12017		ICP-MS
K	MIN-200-12017		ICP/OES
La	MIN-200-12017		ICP-MS
Li	MIN-200-12017		ICP-MS
Mg	MIN-200-12017		ICP/OES
Mn	MIN-200-12017		ICP/OES
Mo	MIN-200-12017		ICP-MS
Na	MIN-200-12017		ICP/OES
Nb	MIN-200-12017		ICP-MS
Ni	MIN-200-12017		ICP-MS
P	MIN-200-12017		ICP/OES
Pb	MIN-200-12017		ICP-MS
Rb	MIN-200-12017		ICP-MS
Re	MIN-200-12017		ICP-MS
S	MIN-200-12017		ICP/OES
Sb	MIN-200-12017		ICP-MS
Sc	MIN-200-12017		ICP-MS
Se	MIN-200-12017		ICP-MS
Sn	MIN-200-12017		ICP-MS
Sr	MIN-200-12017		ICP-MS
Ta	MIN-200-12017		ICP-MS
Te	MIN-200-12017		ICP-MS
Th	MIN-200-12017		ICP-MS
Ti	MIN-200-12017		ICP/OES
Tl	MIN-200-12017		ICP-MS
U	MIN-200-12017		ICP-MS
V	MIN-200-12017		ICP/OES
W	MIN-200-12017		ICP-MS

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL (905)501-9998
FAX (905)501-0589
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Method Summary

CLIENT NAME: HAPPY CREEK MINERALS LTD.

AGAT WORK ORDER: 13V777491

PROJECT NO:

ATTENTION TO: DAVID BLANN

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Y	MIN-200-12017		ICP-MS
Zn	MIN-200-12017		ICP-MS
Zr	MIN-200-12017		ICP-MS

Appendix 3
Metallurgy and TIMA petrographic Analyses of Zone 2

June 27, 2013

David Blann
President, CEO, Director
Happy Creek Minerals
Suite #460 789 West Pender Street
Vancouver, BC, Canada V6C 1H2
Tel: (604) 662-8310
Fax: (604) 681-9570
smxgold@telus.net

Dear Mr. Blann,

This is a summary of the work completed to date on the Happy Creek Rateria program, MS1445. The objective of this program is to produce high grade molybdenum and rhenium concentrate and a separate copper concentrate using flotation. The ore was believed to be similar to the ore used in the test programs MS1380 and MS1420, but contain higher molybdenum and rhenium.

The test results are presented in the Appendices as listed in Table I.

Table I: Appendix List

Appendix	Content
A	Float IS603, rougher-cleaner, 10 kg
B	Float IS602, rougher-cleaner, 3 kg
C	Float IS601, rougher-cleaner, 3 kg
D	Float IS502, rougher-cleaner, 10 kg
E	Float IS501, rougher-cleaner, 10 kg
F	Float IS403, rougher, 10 kg
G	Float IS402, rougher, 10 kg
H	Float IS401, rougher, 10 kg
I	Float IS302, rougher, 2 kg
J	Float IS301, rougher, 2 kg
K	Assays
L	Mineralogy Report

The first five floats, IS301 to IS403 were rougher floats done with the objective of maximizing molybdenum and rhenium recovery. The PAX reagent scheme used previously was adjusted to include pine oil and diesel oil. The results of the rougher tests are presented in Table II.

Table II: Rougher Float Recoveries and Grades

Test	Size	Mass	Rougher Recovery (%)			Primary Con Grade (ppm)		
No.	(kg)	Yield (%)	Cu	Mo	Re	Cu (%)	Mo	Re
IS301	2	6.32	94.4	72.0	84.1	6.87	823	11
IS302	2	3.15	94.4	67.7	80.5	14.12	1,535	19
IS401	10	7.75	96.7	77.1	85.6	6.06	807	10
IS402	10	16.8	97.0	79.1	86.9	2.21	324	4
IS403	10	10.26	97.6	82.8	89.6	4.31	753	7
IS603 *	10	7.04	94.6	75.0	79.8	4.84	967	8

* Subsamples of rougher concentrates were assayed.

The results presented in Table II show that all three target elements were readily recovered. An examination of the reagent scheme found no evidence that diesel oil improved recovery. The results suggest a combination of PAX and pine oil used as a collector was the preferred method for the rougher float. See the last page of Appendices F to J for reagent scheme.

Differential floats were included in the last 5 floats (IS501 to IS603) with the objective of depressing the copper and floating the molybdenum and rhenium from the copper concentrate. The copper was depressed using high pH (via lime addition) and NaHS (added as 36% solution). The results of the rougher-differential floats are presented in Table III. Note that 1% = 10,000 ppm (Mo in Table II was reported in ppm due much lower grades).

Table III: Rougher-Differential Float Recoveries and Grades

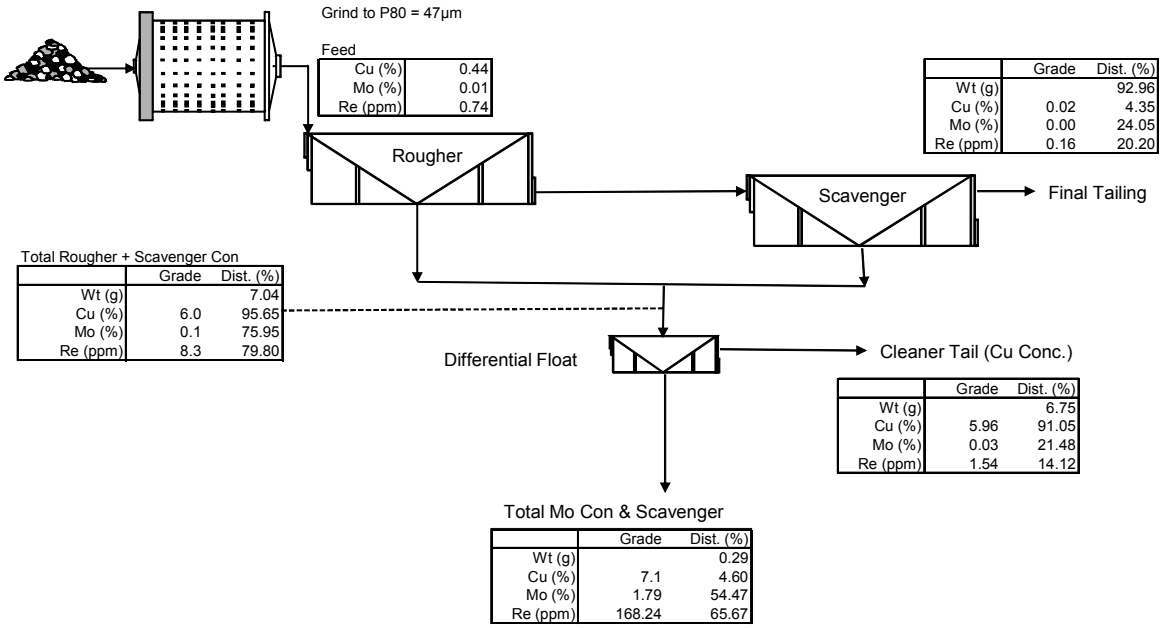
Test No.	Mo-Re Con Recovery (%)				Differential Tail Recovery (%)			
	Mass	Cu	Mo	Re	Mass	Cu	Mo	Re
IS501	1.46	32.6	60.3	67.1	4.95	66.5	17.2	21.2
IS502	2.33	95.4	75.4	84.5	2.65	0.8	4.5	4.7
IS601	0.34	25.8	52.3	52.9	2.43	65.7	13.1	16.0
IS602	0.39	7.8	45.0	57.7	3.08	86.4	28.0	25.3
IS603	0.29	4.6	54.5	65.7	6.75	91.0	21.5	14.1

Test No.	Primary Mo-Re Con Grade (%)				Differential Tails Grade (%)			
	Mass	Cu	Mo	Re (ppm)	Mass	Cu	Mo	Re (ppm)
IS501	1.46	31.50	0.40	40	4.95	15.05	0.03	3.28
IS502	2.33	18.68	0.27	33	2.65	0.15	0.02	1.61
IS601	0.34	37.30	3.44	288	2.43	11.00	0.05	5.15
IS602	0.39	9.01	1.47	204	3.08	12.00	0.09	9.30
IS603	0.29	9.20	7.66	627	6.75	5.96	0.03	1.54

The top section of Table II presents the recoveries and the lower section presents the grades. The left section presents the differential float concentrate (Mo-Re concentrate) results and the right section presents the differential tails (Cu product). Note that the objective is to maximize the Mo and Re in the concentrate and maximize the Cu in the differential float tails; the copper needs to be rejected from the Mo-Re concentrate.

The first three differential floats were unsuccessful as the copper was not sufficiently depressed. The rougher concentrates needed to be de-watered and washed prior to the cleaner float (done in the last two cleaner floats), which used NaHS and lime to depress the copper. For the last differential float, nitrogen was used instead of air to sparge the cell to reduce NaHS breakdown.

From all the optimization, the last float, IS603 was successful as 54.5% of the molybdenum and 65% of rhenium was recovered into a 0.29% mass concentrate. The corresponding grades were 1.79% Mo and 168 ppm Re, but the primary cleaner concentrate had 7.7% Mo and 627 ppm Re suggesting higher upgrading is possible with larger test samples. The upgrading was limited by the small size (<30 grams Mo-Re concentrate and <3 grams of primary Mo-Re concentrate) of the test product. The cleaner tails contains 91% of the Cu in 6.8% mass. The flowsheet is presented in the following figure and in detail in Appendix A.



Mineralogy

Mineralogical analysis found that the copper is mainly present as chalcocite and bornite with trace amounts of chalcopyrite and covellite. The lack of other sulphide minerals and the absence of silicate minerals suggest that a high grade copper product could be produced by flotation. The full mineralogy report is presented in Appendix L.

Current Status and Recommendations

At the request of the client, the project was put on hold on May 3, 2013.

As the preferred reagent scheme and procedure for recovering molybdenum and rhenium has been developed, it is recommended that the bulk float test work to produce a Mo-Re concentrate proceed. The bulk test will involve ten times as much material.

Best regards,

Alex Lum, P.Eng.
Senior Metallurgist

Appendix A

Float IS603

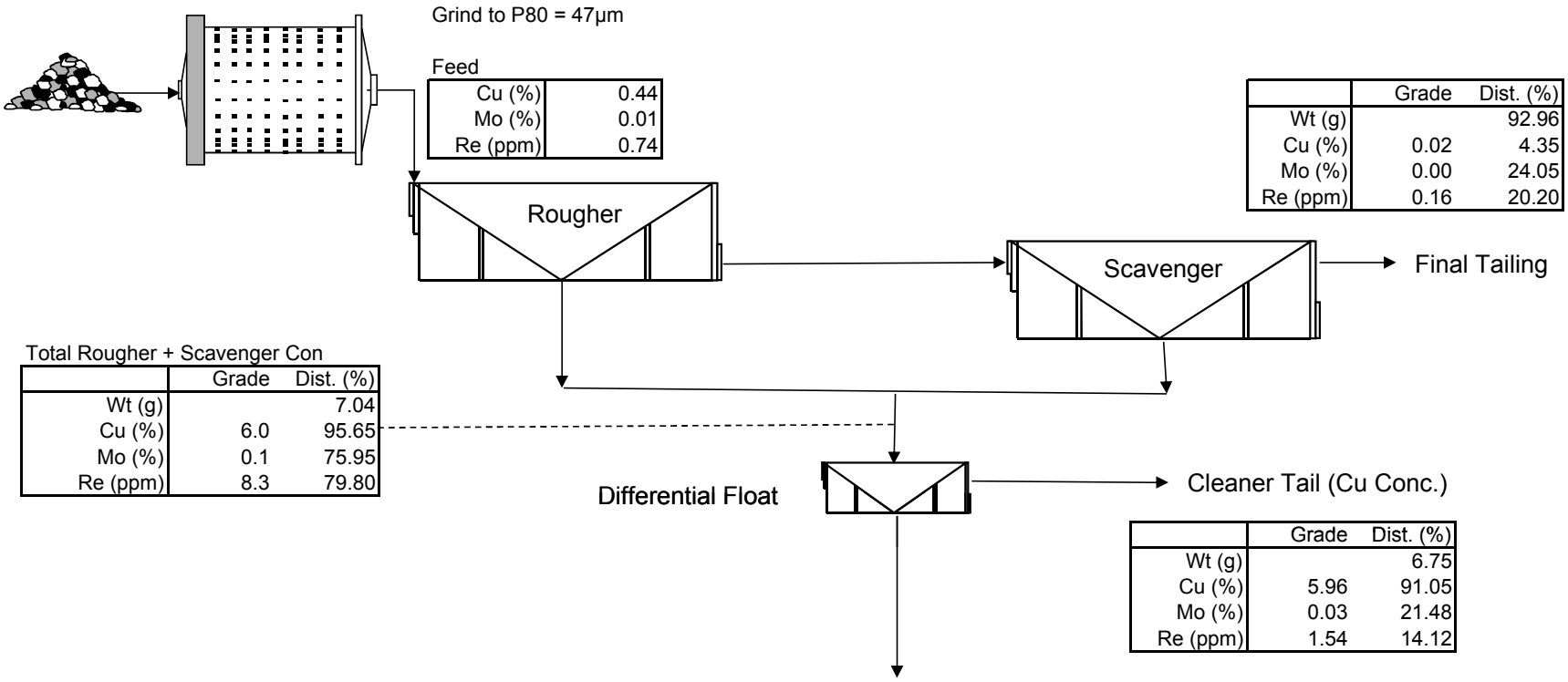
Rougher-Cleaner Float Results

Happy Creek Rateria Composite from Jan 14 & Feb 13 Samples

1 Flowsheet (Cu, Mo, Re)
2 Mass Balance (Cu, Mo, Re)
3 Flowsheet (Au, Ag, S)
4 Mass Balance (Au, Ag, S)
5 Reagent Scheme
6 Rougher Recovery (Cu, Mo, Re)
7 Rougher Recovery (Au, Ag, S)

IS603 Rougher-Cleaner Flowsheet

Happy Creek Rateria



MET-SOLVE LABORATORIES INC.

Mo-Re-Cu Cleaner Flotation Report

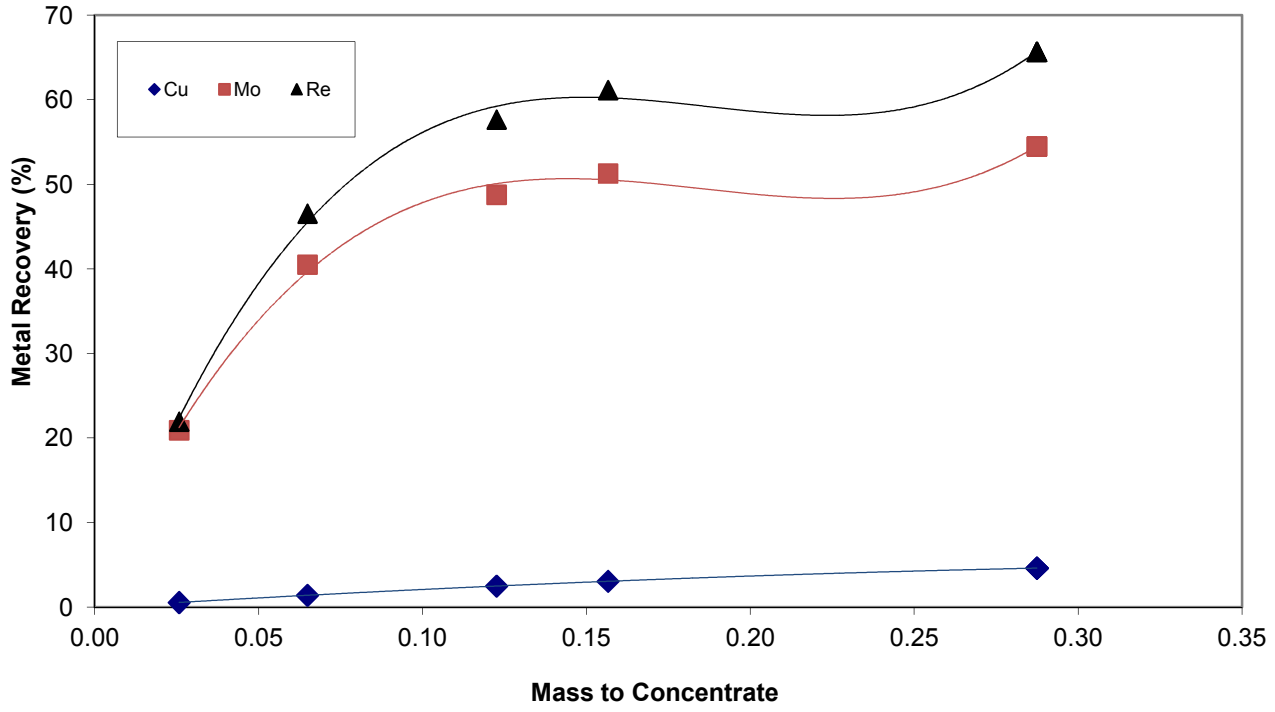
Client: Happy Creek Rateria
Test: IS603 Sparged with nitrogen for cleaner float
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 60 minutes to 47 µm

Date: 2-May-13
Project: MS1445

Cleaner Pulp Density	13.9%	Cleaner Cell	4.6 litres		
Rougher Pulp Density	32.8%	Rougher Cell	24.0 litres	**Speed**	1,350 RPM

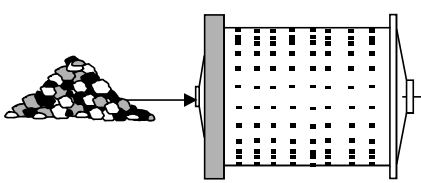
Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Cu (%)	Mo (%)	Re (ppm)	Cu	Mo	Re
Cleaner Con 1	2.6	0.03	9.20	7.660	627.00	0.5	20.9	21.9
Cleaner Con 2	3.9	0.04	9.62	4.720	463.00	0.9	19.6	24.6
Cleaner Con 1 & 2	*6.5*	*0.06*	*9.45*	*5.887*	*528.08*	*1.4*	*40.5*	*46.5*
Cleaner Con 3	5.8	0.06	8.39	1.350	142.00	1.1	8.3	11.1
Cleaner Con 1 to 3	*12.2*	*0.12*	*8.95*	*3.752*	*346.39*	*2.5*	*48.8*	*57.7*
Cleaner Con 4	3.4	0.03	7.18	0.700	75.10	0.6	2.5	3.5
Total Con.1 to 4	*15.6*	*0.16*	*8.57*	*3.089*	*287.50*	*3.0*	*51.3*	*61.1*
Cleaner Con 5	13.1	0.13	*5.28*	*0.230*	*25.50*	1.6	3.2	4.5
Total Cleaner Con.& Scav	*28.7*	*0.29*	*7.07*	*1.788*	*168.24*	*4.6*	*54.5*	*65.7*
Cleaner Tails	673.9	6.75	5.96	0.030	1.54	91.0	21.5	14.1
Total Rougher+Scav Con	*702.6*	*7.04*	*6.01*	*0.102*	*8.35*	*95.6*	*76.0*	*79.8*
Final Tails	9,277.8	92.96	0.02	0.002	0.16	4.4	24.0	20.2
Calculated Head	**9,980.4**	**100.0**	**0.44**	**0.009**	**0.74**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	0.008	0.83			

Note: product weights normalized to account for weight of rougher samples



IS603 Rougher-Cleaner Flowsheet

Happy Creek Rateria



Grind to P80 = 47µm

Feed

Au (g/t)	0.06
Ag (g/t)	2.89
S (%)	0.15

Rougher

	Grade	Dist. (%)
Wt (g)		92.96
Au (g/t)	0.01	15.11
Ag (g/t)	0.24	7.56
S (%)	0.01	6.40

Scavenger

Final Tailing

Total Rougher + Scavenger Con

	Grade	Dist. (%)
Wt (g)		7.04
Au (g/t)	0.7	84.89
Ag (g/t)	38.0	92.44
S (%)	1.9	93.60

Differential Float

Cleaner Tail (Cu Conc.)

	Grade	Dist. (%)
Wt (g)		6.75
Au (g/t)	0.66	71.88
Ag (g/t)	35.35	82.57
S (%)	1.86	86.26

Total Mo Con & Scavenger

	Grade	Dist. (%)
Wt (g)		0.29
Au (g/t)	2.8	13.02
Ag (g/t)	99.28	9.87
S (%)	3.71	7.34

MET-SOLVE LABORATORIES INC.

FLOTATION TEST REPORT

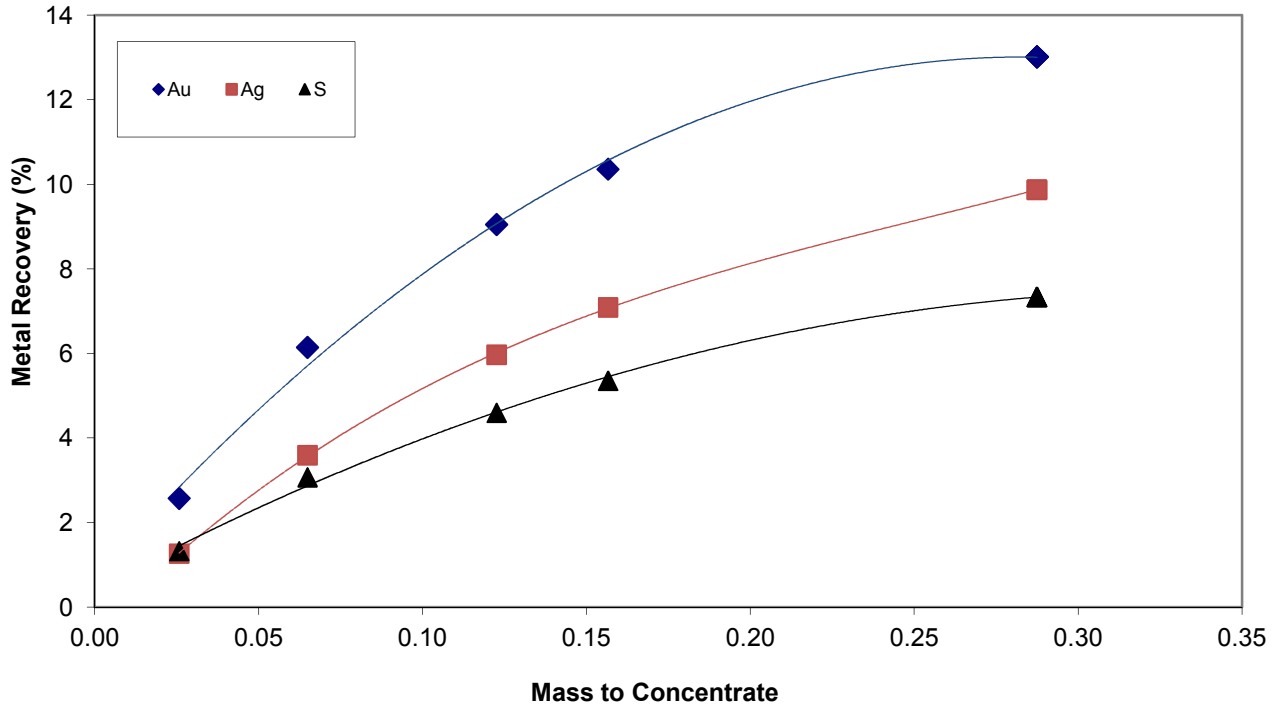
Client: Happy Creek Rateria
Test: IS603 Sparged with nitrogen for cleaner float
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 60 minutes to 47 µm

Date: 2-May-13
Project: MS1445

Cleaner Pulp Density	13.9%	Cleaner Cell	4.6 litres		
Rougher Pulp Density	32.8%	Rougher Cell	24.0 litres	**Speed**	1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Cleaner Con 1	2.6	0.03	6.15	142.0	7.47	2.6	1.3	1.3
Cleaner Con 2	3.9	0.04	5.61	172.0	6.48	3.6	2.3	1.7
Cleaner Con 1 & 2	*6.5*	*0.06*	*5.82*	*160.1*	*6.87*	*6.1*	*3.6*	*3.1*
Cleaner Con 3	5.8	0.06	3.10	119.0	3.84	2.9	2.4	1.5
Cleaner Con 1 to 3	*12.2*	*0.12*	*4.54*	*140.8*	*5.45*	*9.0*	*6.0*	*4.6*
Cleaner Con 4	3.4	0.03	2.37	95.5	3.23	1.3	1.1	0.8
Total Con.1 to 4	*15.6*	*0.16*	*4.07*	*130.9*	*4.96*	*10.4*	*7.1*	*5.4*
Cleaner Con 5	13.1	0.13	*1.25*	*61.4*	*2.20*	2.7	2.8	2.0
Total Cleaner Con.& Scav	*28.7*	*0.29*	*2.79*	*99.3*	*3.71*	*13.0*	*9.9*	*7.3*
Cleaner Tails	673.9	6.75	0.66	35.4	1.86	71.9	82.6	86.3
Total Rougher+Scav Con	*702.6*	*7.04*	*0.74*	*38.0*	*1.93*	*84.9*	*92.4*	*93.6*
Final Tails	9,277.8	92.96	0.01	0.2	0.01	15.1	7.6	6.4
Calculated Head	**9,980.4**	**100.0**	**0.06**	**2.9**	**0.15**	**100.0**	**100.0**	**100.0**
Assayed Head			0.08	2.5	0.10			

Note: product weights normalized to account for weight of rougher samples



MET-SOLVE LABORATORIES INC.

FLOTATION REAGENT SCHEME

Client: Happy Creek Rateria
Test: IS603
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 60 minutes to 47 µm

Date: 2-May-13
Project: MS1445

Cleaner Reagent Scheme Float Wt: 702.6 g Pulp Density: 13.9%

Stage	Time (min)	Reagents added, grams per tonne Rougher Con.					Time (minutes)		pH
		NaHS (36%)	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Initial	0								
Conditoner	0								
Cleaner Con 1	5	42,224					4.0	1.0	12.1
Cleaner Con 2	7	0					0.0	2.0	12.1
Cleaner Con 3	10	0				16	0.0	3.0	12.1
Cleaner Con 4	13	0				11	0.0	3.0	12.1
Cleaner Con 5	17	0				11	0.0	4.0	12.1
Total	**17**	**42,224**	**0**	**0**	**0**	**37**	**4.0**	**13.0**	

Rougher Reagent Scheme Float Wt: 9,980.4 g Pulp Density: 32.8%

Stage	Time (min)	Reagents added, grams per tonne Feed					Time (minutes)		pH
		PAX	Pine Oil	Lime	MIBC	TF250	Cond.	Float	
Initial	0								9.5
Conditoner	0								
Rougher 1	0		5						9.5
Rougher 2	5	2			3		2.0	3.0	9.4
Rougher 3	13	2	5		4		3.0	5.0	9.4
Rougher 4	17	2	5		4		2.0	2.0	9.3
Rougher 5	23	2	5		5		3.0	3.0	9.3
Rougher 6	27	2	5			1	2.0	2.0	9.2
Rougher 7	32	2	5			1	2.0	3.0	9.2
Rougher 8	37	2	5			1	2.0	3.0	9.1
Rougher 10	50	4	10			1	2.0	6.0	9.0
Total	**50**	**21**	**53**	**0**	**17**	**6**	**20.0**	**30.0**	

MET-SOLVE LABORATORIES INC.

ROUGHER FLOTATION TEST REPORT

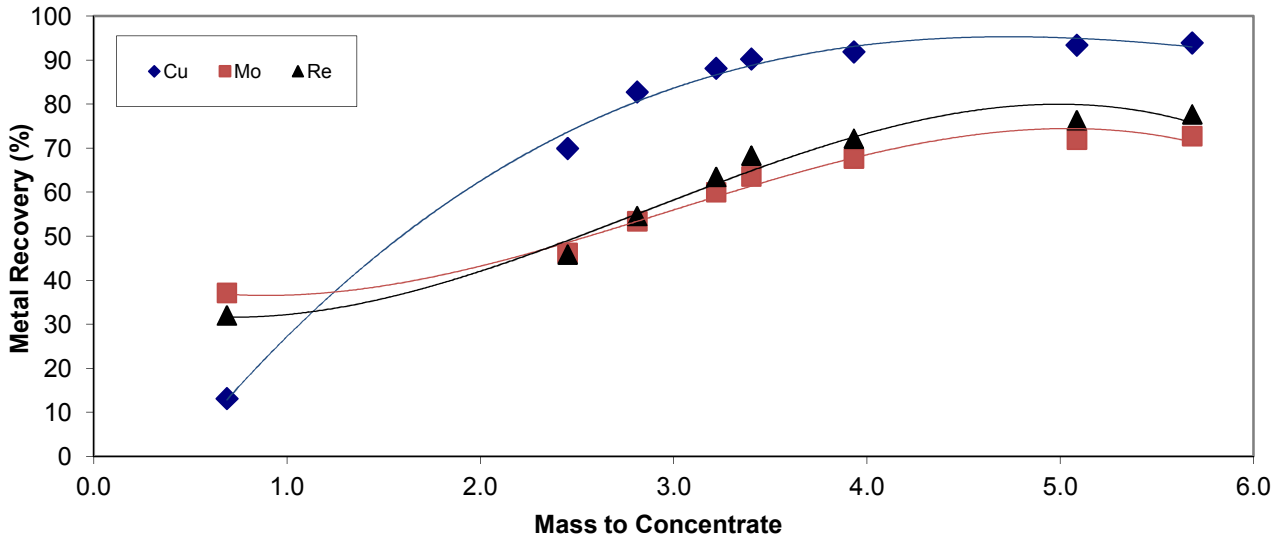
Client: Happy Creek Rateria
Test: IS603
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 60 minutes to 47 µm

Date: 2-May-13
Project: MS1445

Rougher Pulp Density 32.8% Rougher Cell 24.0 litres **Speed** 1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Cu (%)	Mo (ppm)	Re (ppm)	Cu	Mo	Re
Rougher Conc. 1	68.7	0.69	6.85	4,890.0	34.20	13.1	37.1	32.0
Rougher Conc. 2	175.9	1.76	11.60	469.0	5.78	56.8	9.1	13.8
Rougher Con 1 & 2	*244.6*	*2.45*	*10.27*	*1,711.4*	*13.77*	*70.0*	*46.2*	*45.9*
Rougher Conc. 3	35.9	0.36	12.80	1,810.0	17.90	12.8	7.2	8.8
Rougher Con 1 to 3	*280.5*	*2.81*	*10.59*	*1,724.0*	*14.30*	*82.8*	*53.4*	*54.6*
Rougher Conc. 4	40.8	0.41	4.74	1,470.0	16.00	5.4	6.6	8.9
Rougherl Con.1 to 4	*321.3*	*3.22*	*9.85*	*1,691.8*	*14.51*	*88.1*	*60.0*	*63.5*
Rougher Conc. 5	18.2	0.18	*4.15*	*1,780.0*	*19.60*	2.1	3.6	4.9
Rougher Con 1 to 5	*339.5*	*3.40*	*9.54*	*1,696.5*	*14.78*	*90.2*	*63.6*	*68.3*
Rougher Conc. 6	52.9	0.53	*1.12*	*702.0*	*5.31*	1.7	4.1	3.8
Rougher Con.1 to 6	*392.4*	*3.93*	*8.41*	*1,562.4*	*13.51*	*91.9*	*67.7*	*72.2*
Rougher Conc. 7 & 8	115.1	1.15	0.48	333.0	2.68	1.5	4.2	4.2
Rougher Con 1 to 8	*507.5*	*5.09*	*6.61*	*1,283.5*	*11.05*	*93.4*	*71.9*	*76.4*
Rougher Conc. 9	59.5	0.60	0.30	129.0	1.65	0.5	0.8	1.3
Rougher Con 1-9	*567.1*	*5.68*	*5.95*	*1,162.3*	*10.06*	*93.9*	*72.8*	*77.7*
Rougher Conc. 10	135.5	1.36	0.19	150.0	1.13	0.7	2.2	2.1
Total Rougher Conc	*702.6*	*7.04*	*4.84*	*967.0*	*8.34*	*94.6*	*75.0*	*79.8*
Final Tails	9,277.8	92.96	0.02	24.4	0.16	5.4	25.0	20.2
Calculated Head	**9,980.4**	**100.0**	**0.36**	**90.8**	**0.74**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	83.0	0.83			

Note: concentrate weights normalized to match total weight of cleaner products



MET-SOLVE LABORATORIES INC.

ROUGHER FLOTATION TEST REPORT

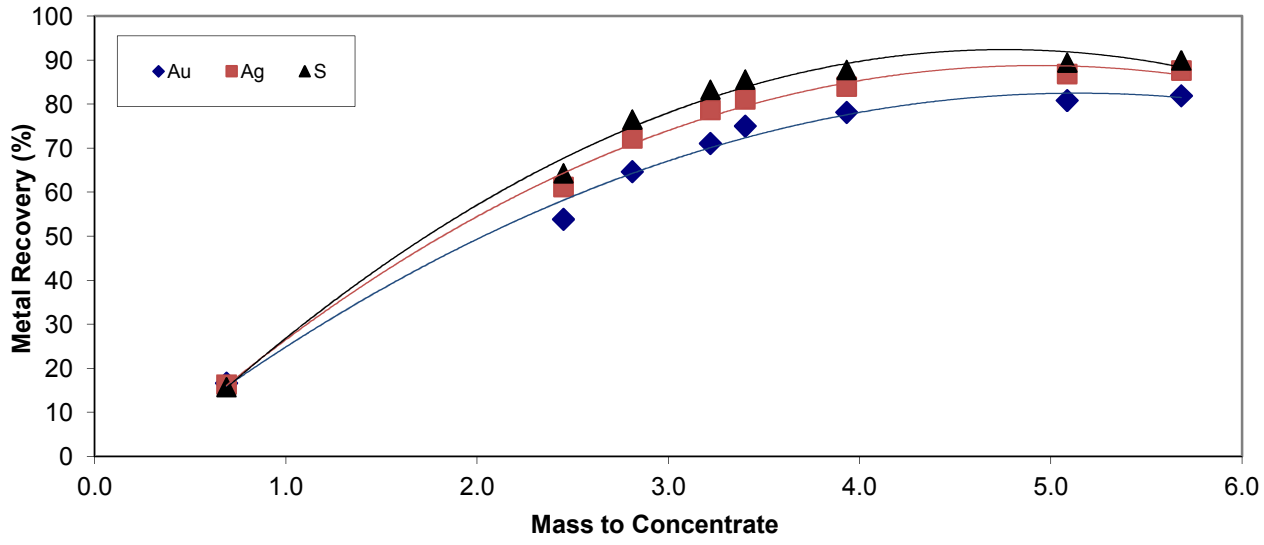
Client: Happy Creek Rateria
Test: IS603
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 60 minutes to 47 µm

Date: 2-May-13
Project: MS1445

Rougher Pulp Density 32.8% Rougher Cell 24.0 litres **Speed** 1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Rougher Conc. 1	68.7	0.69	1.35	47.5	2.36	16.6	16.3	15.7
Rougher Conc. 2	175.9	1.76	1.18	51.1	2.85	37.2	44.9	48.6
Rougher Con 1 & 2	*244.6*	*2.45*	*1.23*	*50.1*	*2.71*	*53.8*	*61.2*	*64.3*
Rougher Conc. 3	35.9	0.36	1.68	61.3	3.51	10.8	11.0	12.2
Rougher Con 1 to 3	*280.5*	*2.81*	*1.29*	*51.5*	*2.81*	*64.7*	*72.2*	*76.5*
Rougher Conc. 4	40.8	0.41	0.88	31.8	1.71	6.4	6.5	6.8
Rougherl Con.1 to 4	*321.3*	*3.22*	*1.23*	*49.0*	*2.67*	*71.1*	*78.7*	*83.3*
Rougher Conc. 5	18.2	0.18	*1.21*	*27.0*	*1.32*	3.9	2.5	2.3
Rougher Con 1 to 5	*339.5*	*3.40*	*1.23*	*47.8*	*2.60*	*75.0*	*81.1*	*85.6*
Rougher Conc. 6	52.9	0.53	*0.33*	*10.8*	*0.43*	3.1	2.9	2.2
Rougher Con.1 to 6	*392.4*	*3.93*	*1.11*	*42.8*	*2.31*	*78.2*	*84.0*	*87.8*
Rougher Conc. 7 & 8	115.1	1.15	0.13	5.0	0.15	2.7	2.9	1.7
Rougher Con 1 to 8	*507.5*	*5.09*	*0.89*	*34.3*	*1.82*	*80.8*	*86.9*	*89.5*
Rougher Conc. 9	59.5	0.60	0.10	2.6	0.08	1.1	0.8	0.5
Rougher Con 1-9	*567.1*	*5.68*	*0.81*	*30.9*	*1.64*	*81.9*	*87.7*	*90.0*
Rougher Conc. 10	135.5	1.36	0.06	2.1	0.08	1.5	1.4	1.1
Total Rougher Conc	*702.6*	*7.04*	*0.66*	*25.4*	*1.34*	*83.4*	*89.1*	*91.0*
Final Tails	9,277.8	92.96	0.01	0.2	0.01	16.6	10.9	9.0
Calculated Head	**9,980.4**	**100.0**	**0.06**	**2.0**	**0.10**	**100.0**	**100.0**	**100.0**
Assayed Head			0.08	2.5	0.10			

Note: concentrate weights normalized to match total weight of cleaner products



MET-SOLVE LABORATORIES INC.

Appendix B

Float IS602

Rougher-Cleaner Float Results

Happy Creek Rateria Composite from Jan 14 & Feb 13 Samples

1 Flowsheet (Cu, Mo, Re)
2 Mass Balance (Cu, Mo, Re)
3 Flowsheet (Ag, S)
4 Mass Balance (Ag, S)
5 Reagent Scheme

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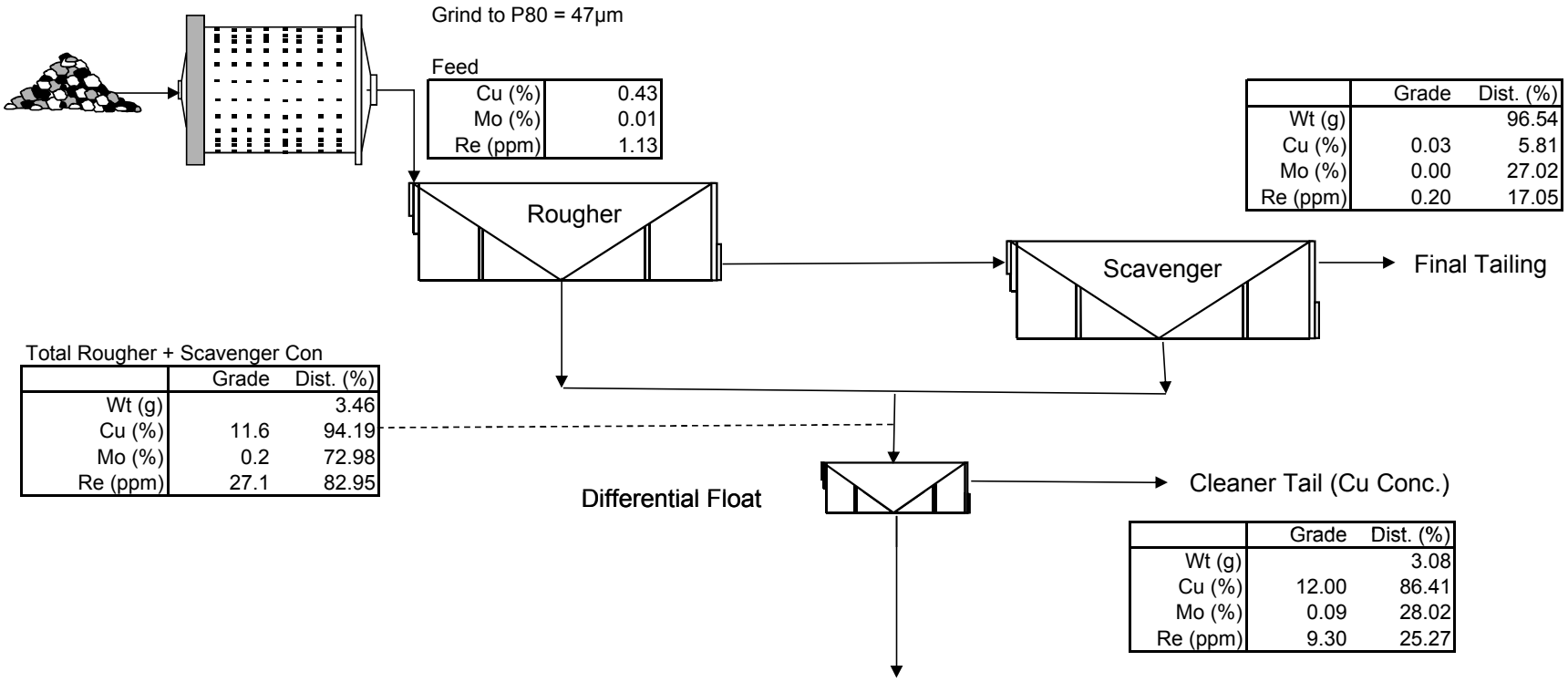
IS602 Rougher-Cleaner Flowsheet

Happy Creek Rateria



	Grade	Dist. (%)
Wt (g)		96.54
Cu (%)	0.03	5.81
Mo (%)	0.00	27.02
Re (ppm)	0.20	17.05

	Grade	Dist. (%)
Wt (g)		3.46
Cu (%)	11.6	94.19
Mo (%)	0.2	72.98
Re (ppm)	27.1	82.95

	Grade	Dist. (%)
Wt (g)		3.08
Cu (%)	12.00	86.41
Mo (%)	0.09	28.02
Re (ppm)	9.30	25.27

	Grade	Dist. (%)
Wt (g)		0.39
Cu (%)	8.6	7.78
Mo (%)	1.20	44.96
Re (ppm)	168.70	57.69

MET-SOLVE LABORATORIES INC.

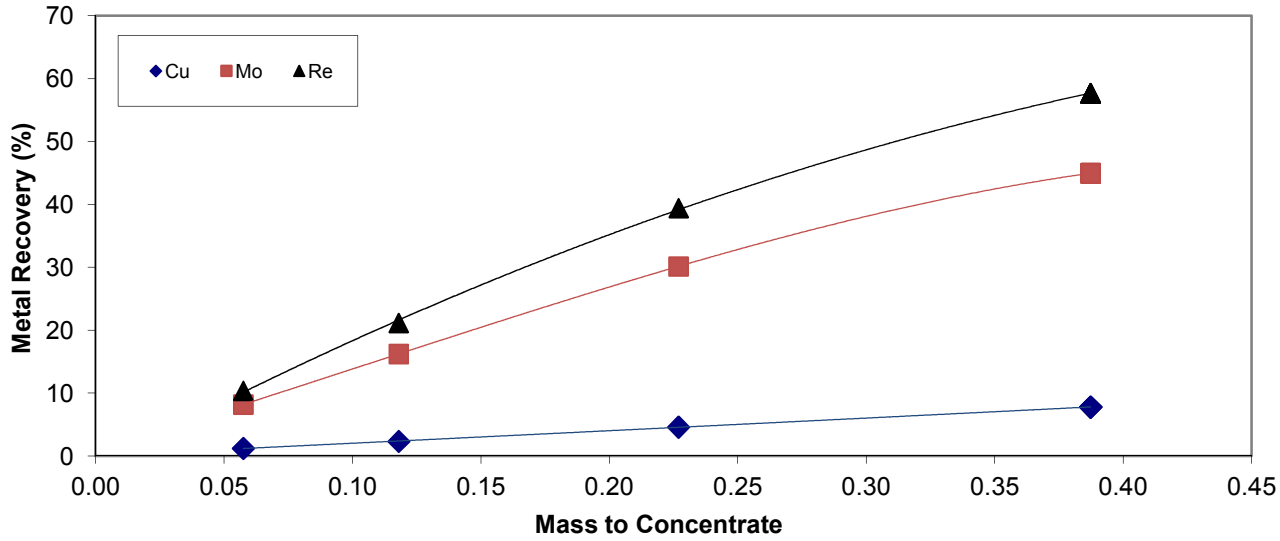
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS602
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 60 minutes to 47 µm

Date: 21-Apr-13
Project: MS1445

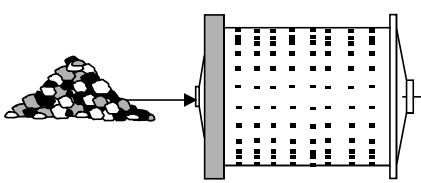
Cleaner Pulp Density	9.8%	Cleaner Cell	1.1 litres		
Rougher Pulp Density	29.7%	Rougher Cell	9.0 litres	**Speed**	1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Cu (%)	Mo (%)	Re (ppm)	Cu	Mo	Re
Cleaner Con 1	1.9	0.06	9.01	1.470	204.00	1.2	8.2	10.4
Cleaner Con 2	2.0	0.06	7.71	1.370	202.00	1.1	8.0	10.8
Cleaner Con 1 & 2	*3.9*	*0.12*	*8.34*	*1.419*	*202.97*	*2.3*	*16.2*	*21.1*
Cleaner Con 3	3.6	0.11	8.96	1.320	190.00	2.3	13.9	18.3
Cleaner Con 1 to 3	*7.5*	*0.23*	*8.64*	*1.371*	*196.75*	*4.6*	*30.1*	*39.4*
Cleaner Con 4	5.3	0.16	8.51	0.954	129.00	3.2	14.8	18.3
Total Cleaner Con.& Scav	*12.8*	*0.39*	*8.59*	*1.199*	*168.70*	*7.8*	*45.0*	*57.7*
Cleaner Tails	101.7	3.08	12.00	0.094	9.30	86.4	28.0	25.3
Total Rougher+Scav Con	*114.5*	*3.46*	*11.62*	*0.217*	*27.12*	*94.2*	*73.0*	*83.0*
Final Tails	3,190.5	96.54	0.03	0.003	0.20	5.8	27.0	17.0
Calculated Head	**3,305.0**	**100.0**	**0.43**	**0.010**	**1.13**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	0.008	0.83			



IS602 Rougher-Cleaner Flowsheet

Happy Creek Rateria



Grind to P80 = 47µm

Feed

Ag (g/t)	2.00
S (%)	0.15

Rougher

	Grade	Dist. (%)
Wt (g)		96.54
Ag (g/t)	0.37	17.89
S (%)	0.01	6.42

Scavenger

Final Tailing

Total Rougher + Scavenger Con

	Grade	Dist. (%)
Wt (g)		3.46
Ag (g/t)	47.3	82.11
S (%)	4.1	93.58

Differential Float

Cleaner Tail (Cu Conc.)

	Grade	Dist. (%)
Wt (g)		3.08
Ag (g/t)	47.70	73.54
S (%)	4.09	83.71

Total Mo Con & Scavenger

	Grade	Dist. (%)
Wt (g)		0.39
Ag (g/t)	44.15	8.57
S (%)	3.83	9.87

MET-SOLVE LABORATORIES INC.

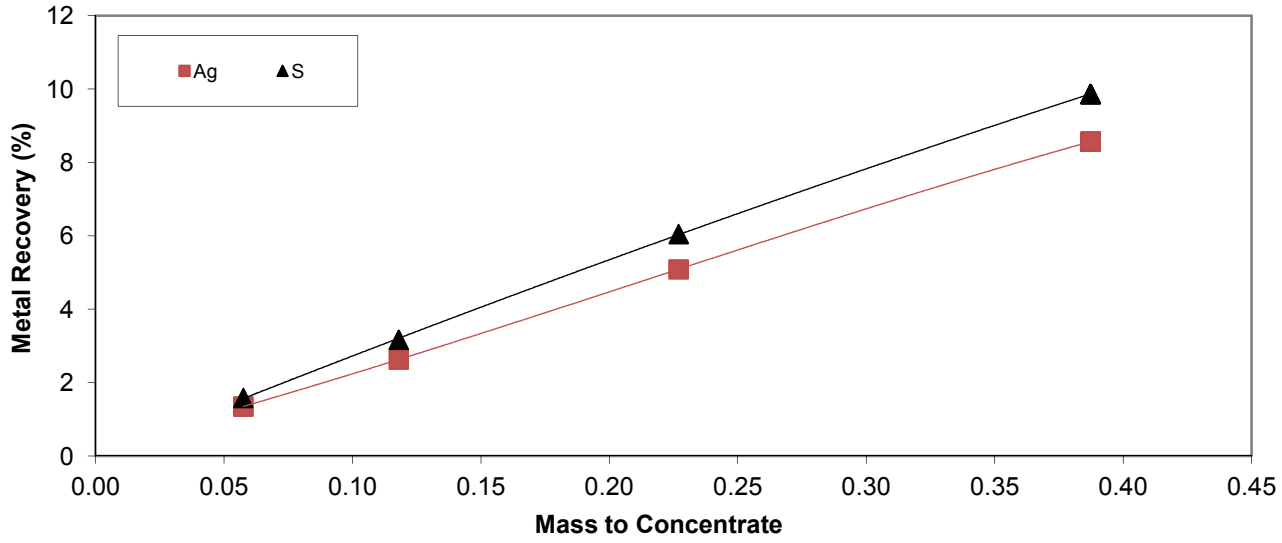
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS602
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 60 minutes to 47 µm

Date: 21-Apr-13
Project: MS1445

Cleaner Pulp Density	9.8%	Cleaner Cell	1.1 litres		
Rougher Pulp Density	29.7%	Rougher Cell	9.0 litres	**Speed**	1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Cleaner Con 1	1.9	0.06		46.80	4.14		1.3	1.6
Cleaner Con 2	2.0	0.06		42.20	3.94		1.3	1.6
Cleaner Con 1 & 2	*3.9*	*0.12*		*44.44*	*4.04*		*2.6*	*3.2*
Cleaner Con 3	3.6	0.11		45.10	3.98		2.5	2.9
Cleaner Con 1 to 3	*7.5*	*0.23*		*44.76*	*4.01*		*5.1*	*6.1*
Cleaner Con 4	5.3	0.16		43.30	3.58		3.5	3.8
Total Cleaner Con.& Scav	*12.8*	*0.39*		*44.15*	*3.83*		*8.6*	*9.9*
Cleaner Tails	101.7	3.08		47.70	4.09		73.5	83.7
Total Rougher+Scav Con	*114.5*	*3.46*		*47.30*	*4.06*		*82.1*	*93.6*
Final Tails	3,190.5	96.54		0.37	0.01		17.9	6.4
Calculated Head	**3,305.0**	**100.0**		**2.00**	**0.15**		**100.0**	**100.0**
Assayed Head				2.52	0.10			



MET-SOLVE LABORATORIES INC.

FLOTATION REAGENT SCHEME

Client: Happy Creek Rateria
Test: IS602
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 60 minutes to 47 µm

Date: 21-Apr-13
Project: MS1445

Cleaner Reagent Scheme Float Wt: 114.5 g Pulp Density: 9.8%

Stage	Time (min)	Reagents added, grams per tonne Rougher Con.					Time (minutes)		pH
		Lime	NaHS (36%)		MIBC	TF250	Cond.	Float	
Initial	0								
Conditoner	0	8,210							11.0
Cleaner Con 1	1		4,615			65		1.0	11.7
Cleaner Con 2	2		1,138					0.5	11.8
Cleaner Con 3	2		474					0.5	11.4
Cleaner Con 4	3		948					0.5	11.9
Total	**3**	**8,210**	**7,175**	**0**	**0**	**65**	**0.0**	**2.5**	

Rougher Reagent Scheme Float Wt: 3,305.0 g Pulp Density: 29.7%

Stage	Time (min)	Reagents added, grams per tonne Feed					Time (minutes)		pH
		PAX	Pine Oil		MIBC	TF250	Cond.	Float	
Initial	0								8.8
Conditoner	0								
Rougher 1	2		7		1		1.0	1.0	8.7
Rougher 2	6	2			3		2.0	2.0	8.7
Rougher 3	10	2	7		3		2.0	2.0	8.6
Rougher 4	14	2	7		2		2.0	2.0	
Rougher 5	18	3	7		3		2.0	2.0	8.6
Total	**18**	**10**	**27**		**13**		**9.0**	**9.0**	

Appendix C

Float IS601

Rougher-Cleaner Float Results

Happy Creek Rateria Composite from Jan 14 & Feb 13 Samples

1 Flowsheet (Cu, Mo, Re)
2 Mass Balance (Cu, Mo, Re)
3 Flowsheet (Ag, S)
4 Mass Balance (Ag, S)
5 Reagent Scheme

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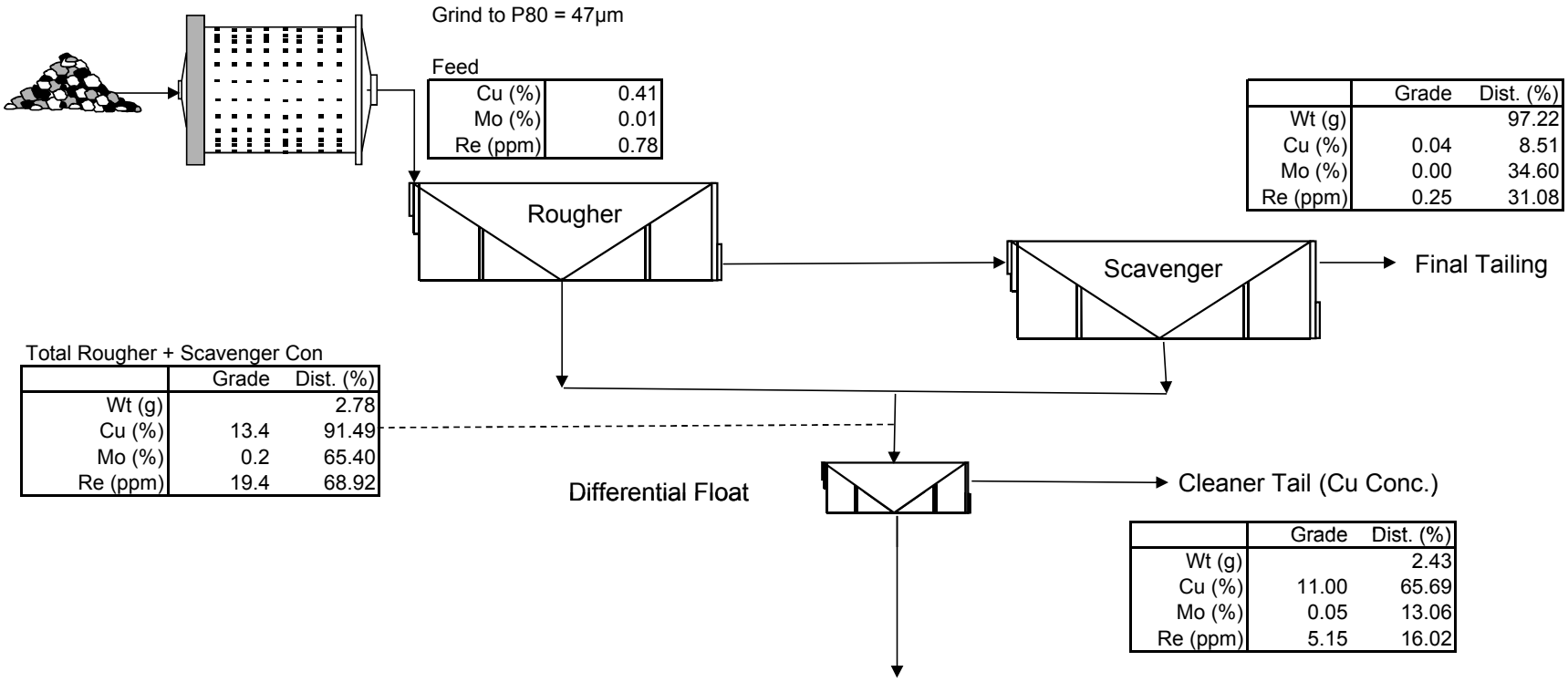
IS601 Rougher-Cleaner Flowsheet

Happy Creek Rateria



	Grade	Dist. (%)
Wt (g)		97.22
Cu (%)	0.04	8.51
Mo (%)	0.00	34.60
Re (ppm)	0.25	31.08

	Grade	Dist. (%)
Wt (g)		2.78
Cu (%)	13.4	91.49
Mo (%)	0.2	65.40
Re (ppm)	19.4	68.92

	Grade	Dist. (%)
Wt (g)		2.43
Cu (%)	11.00	65.69
Mo (%)	0.05	13.06
Re (ppm)	5.15	16.02

	Grade	Dist. (%)
Wt (g)		0.34
Cu (%)	30.5	25.81
Mo (%)	1.31	52.34
Re (ppm)	120.15	52.90

MET-SOLVE LABORATORIES INC.

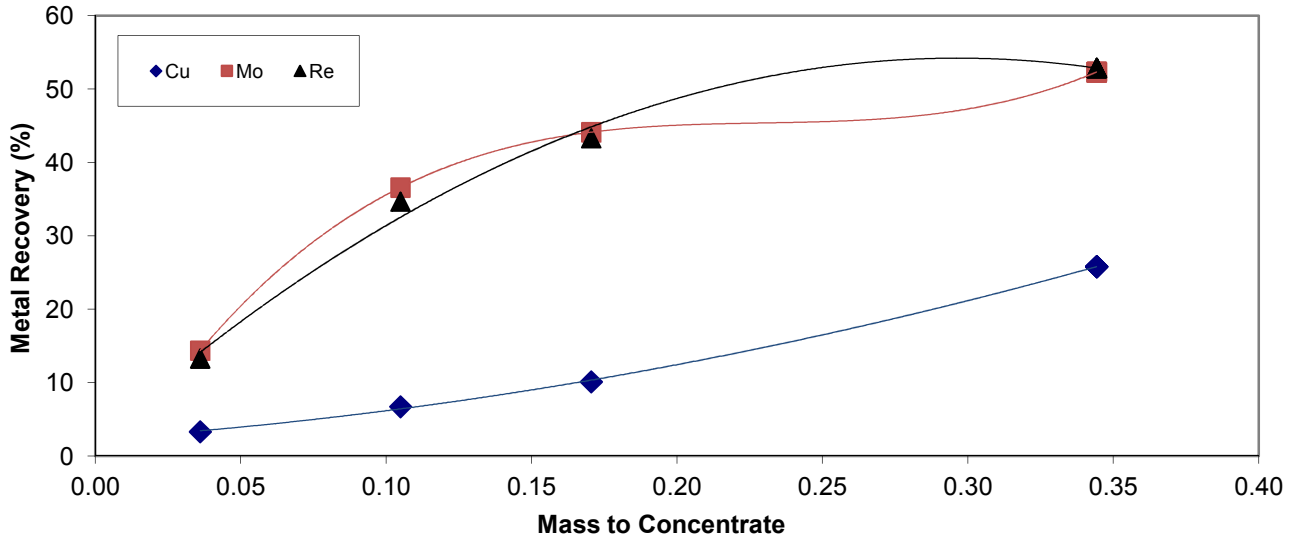
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS601
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 70 minutes to 47 µm

Date: 17-Apr-13
Project: MS1445

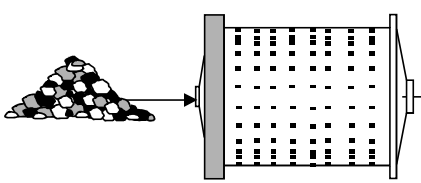
Cleaner Pulp Density	7.3%	Cleaner Cell	1.1 litres		
Rougher Pulp Density	27.8%	Rougher Cell	9.0 litres	**Speed**	1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Cu (%)	Mo (%)	Re (ppm)	Cu	Mo	Re
Cleaner Con 1	1.1	0.04	37.30	3.440	288.00	3.3	14.4	13.3
Cleaner Con 2	2.1	0.07	20.20	2.790	243.00	3.4	22.2	21.4
Cleaner Con 1 & 2	*3.2*	*0.10*	*26.08*	*3.013*	*258.47*	*6.7*	*36.6*	*34.7*
Cleaner Con 3	2.0	0.07	21.10	0.994	103.00	3.4	7.5	8.6
Cleaner Con 1 to 3	*5.2*	*0.17*	*24.16*	*2.237*	*198.67*	*10.1*	*44.1*	*43.3*
Cleaner Con 4	5.3	0.17	36.80	0.408	43.10	15.7	8.2	9.6
Total Cleaner Con.& Scav	*10.5*	*0.34*	*30.54*	*1.314*	*120.15*	*25.8*	*52.3*	*52.9*
Cleaner Tails	74.2	2.43	11.00	0.046	5.15	65.7	13.1	16.0
Total Rougher+Scav Con	*84.7*	*2.78*	*13.42*	*0.204*	*19.41*	*91.5*	*65.4*	*68.9*
Final Tails	2,965.0	97.22	0.04	0.003	0.25	8.5	34.6	31.1
Calculated Head	**3,049.7**	**100.0**	**0.41**	**0.009**	**0.78**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	0.008	0.83			



IS601 Rougher-Cleaner Flowsheet

Happy Creek Rateria



Grind to P80 = 47µm

Feed

Au (g/t)	0.00
Ag (g/t)	2.10
S (%)	0.12

Rougher

	Grade	Dist. (%)
Wt (g)		97.22
Ag (g/t)	0.32	14.84
S (%)	0.01	8.11

Scavenger

Final Tailing

Total Rougher + Scavenger Con

	Grade	Dist. (%)
Wt (g)		2.78
Ag (g/t)	64.3	85.16
S (%)	4.0	91.89

Differential Float

Cleaner Tail (Cu Conc.)

	Grade	Dist. (%)
Wt (g)		2.43
Ag (g/t)	57.70	66.95
S (%)	3.26	66.20

Total Mo Con & Scavenger

	Grade	Dist. (%)
Wt (g)		0.34
Ag (g/t)	110.89	18.21
S (%)	8.94	25.68

MET-SOLVE LABORATORIES INC.

FLOTATION TEST REPORT

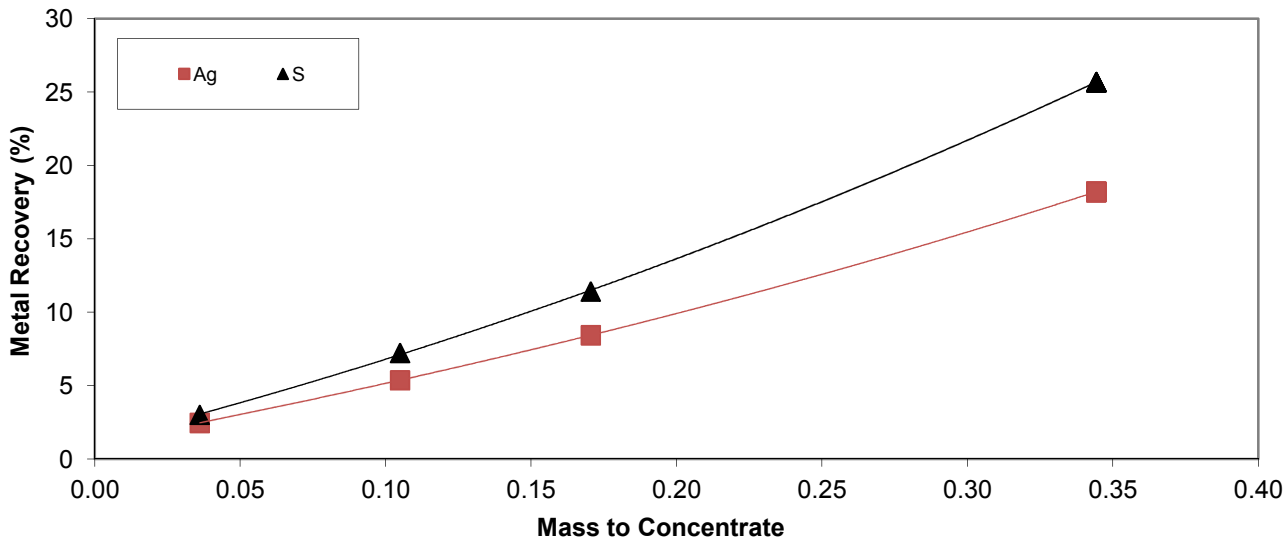
Client: Happy Creek Rateria
Test: IS601
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 70 minutes to 47 µm

Date: 17-Apr-13
Project: MS1445

Cleaner Pulp Density	7.3%	Cleaner Cell	1.1 litres		
Rougher Pulp Density	27.8%	Rougher Cell	9.0 litres	**Speed**	1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Cleaner Con 1 *	1.1	0.04		143.00	10.00		2.5	3.0
Cleaner Con 2	2.1	0.07		88.50	7.33		2.9	4.2
Cleaner Con 1 & 2	*3.2*	*0.10*		*107.23*	*8.25*		*5.4*	*7.2*
Cleaner Con 3	2.0	0.07		97.90	7.65		3.1	4.2
Cleaner Con 1 to 3	*5.2*	*0.17*		*103.64*	*8.02*		*8.4*	*11.4*
Cleaner Con 4	5.3	0.17		118.00	9.84		9.8	14.3
Total Cleaner Con.& Scav	*10.5*	*0.34*		*110.89*	*8.94*		*18.2*	*25.7*
Cleaner Tails	74.2	2.43		57.70	3.26		67.0	66.2
Total Rougher+Scav Con	*84.7*	*2.78*		*64.29*	*3.96*		*85.2*	*91.9*
Final Tails **	2,965.0	97.22		0.32	0.01		14.8	8.1
Calculated Head	**3,049.7**	**100.0**		**2.10**	**0.12**		**100.0**	**100.0**
Assayed Head				2.52	0.10			

* Con 1 assayed >10% S; used 10% for calculations. ** Tails assayed <0.01% S; used 0.01% for calculations



MET-SOLVE LABORATORIES INC.

FLOTATION REAGENT SCHEME

Client: Happy Creek Rateria
Test: IS601
Sample: Composite from Jan 14 & Feb 13 Samples
Ground 70 minutes to 47 µm

Date: 17-Apr-13
Project: MS1445

Cleaner Reagent Scheme Float Wt: 84.7 g Pulp Density: 7.3%

Stage	Time (min)	Reagents added, grams per tonne Rougher Con.					Time (minutes)		pH
		Lime	NaHS (36%)	Diesel Oil	MIBC	TF250	Cond.	Float	
Initial	0	1,653							10.6
Conditoner	14		5,170				14.0		10.7
Cleaner Con 1	16				84	88	1.0	1.0	10.9
Cleaner Con 2	20		1,496			44	1.0	3.0	11.0
Cleaner Con 3	23		897			88		3.0	11.0
Cleaner Con 4	28		1,282	1,420			2.0	2.5	11.0
Total	**28**	**1,653**	**8,845**	**1,420**	**84**	**220**	**18.0**	**9.0**	

Rougher Reagent Scheme Float Wt: 3,049.7 g Pulp Density: 27.8%

Stage	Time (min)	Reagents added, grams per tonne Feed					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Initial	0								8.9
Conditoner	2	4					2.0		8.9
Rougher 1	4				5			2.0	8.9
Rougher 2	6		7		2			2.0	8.8
Rougher 3	8			1	2			2.0	8.8
Rougher 4	9				2			1.0	8.8
Rougher 5	11	3			5			2.0	8.8
Total	**11**	**7**	**7**	**1**	**16**	**0**	**2.0**	**9.0**	

MET-SOLVE LABORATORIES INC.

Appendix D

Float IS502

Rougher-Cleaner Float Results

Happy Creek Rateria Composite from Agat

1 Flowsheet (Cu Mo, Re)
2 Mass Balance (Cu, Mo, Re)
3 Flowsheet (Au, Ag, S)
4 Mass Balance (Au, Ag, S)
5 Reagent Scheme

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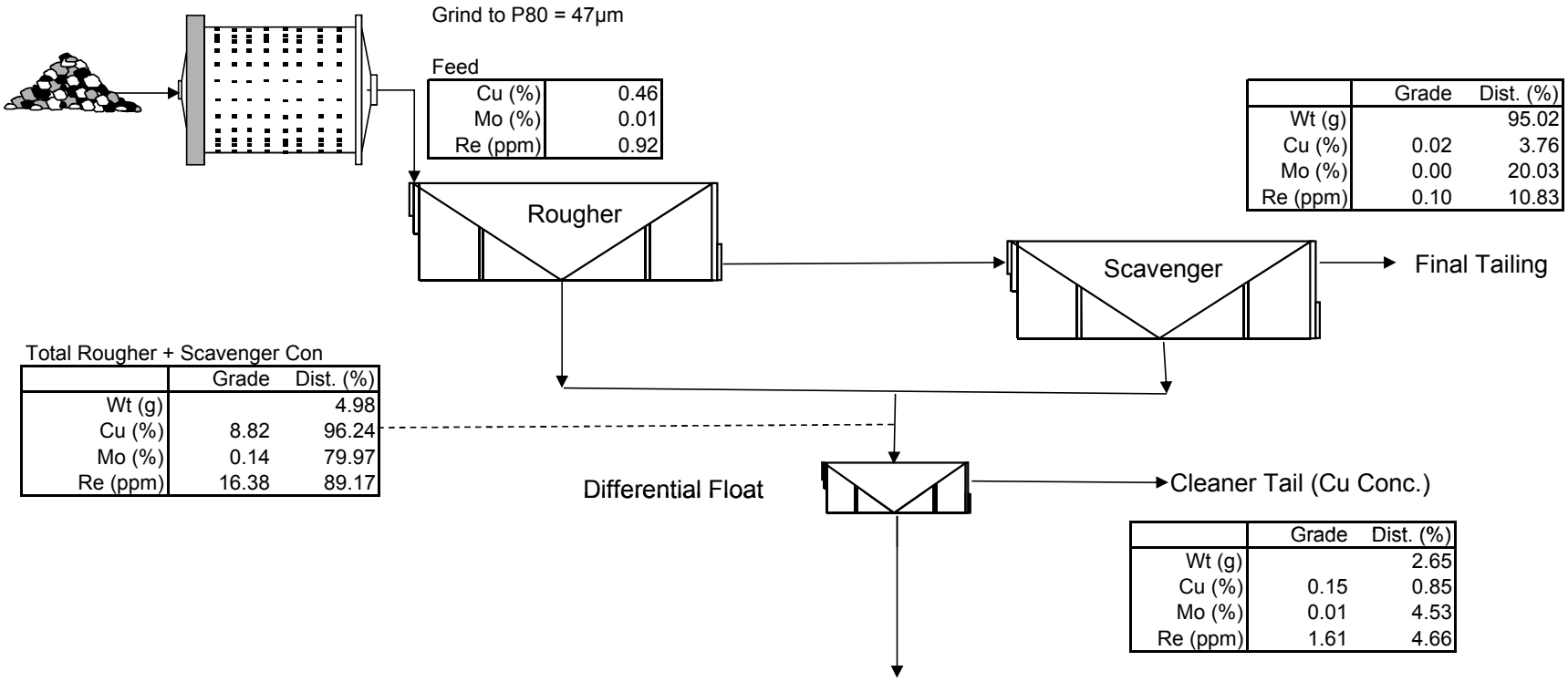
IS502 Rougher-Cleaner Flowsheet

Happy Creek Rateria



	Grade	Dist. (%)
Wt (g)		95.02
Cu (%)	0.02	3.76
Mo (%)	0.00	20.03
Re (ppm)	0.10	10.83

MET-SOLVE LABORATORIES INC.

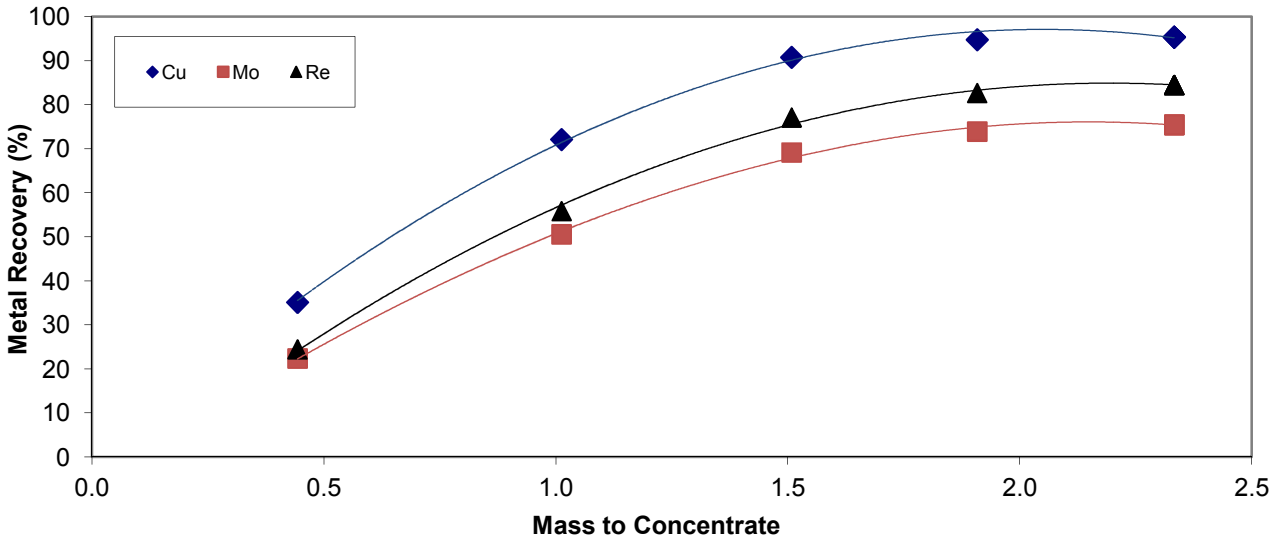
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS502
Sample: Composite from Agat
Ground 70 minutes to 47 µm

Date: 9-Apr-13
Project: MS1445

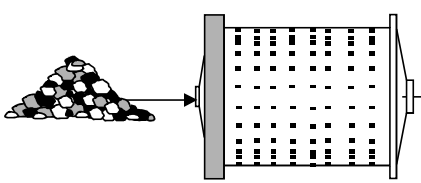
Cleaner Pulp Density	9.4%	Cleaner Cell	4.6 litres		
Rougher Pulp Density	31.0%	Rougher Cell	24.0 litres	**Speed**	1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Cu (%)	Mo (%)	Re (ppm)	Cu	Mo	Re
Cleaner Con 1	41.1	0.44	36.20	0.428	50.50	35.1	22.4	24.4
Cleaner Con 2	52.8	0.57	29.70	0.420	50.50	37.0	28.2	31.4
Cleaner Con 1 & 2	*93.9*	*1.01*	*32.55*	*0.424*	*50.50*	*72.1*	*50.6*	*55.8*
Cleaner Con 3	46.0	0.50	17.20	0.318	39.30	18.7	18.6	21.3
Cleaner Con 1 to 3	*139.9*	*1.51*	*27.50*	*0.389*	*46.82*	*90.8*	*69.2*	*77.1*
Cleaner Con 4	37.1	0.40	4.56	0.101	12.70	4.0	4.8	5.5
Total Con.1 to 4	*177.0*	*1.91*	*22.69*	*0.328*	*39.67*	*94.8*	*73.9*	*82.7*
Cleaner Con 5	39.4	0.42	*0.65*	*0.030*	*3.93*	0.6	1.5	1.8
Total Cleaner Con.& Scav	*216.4*	*2.33*	*18.68*	*0.274*	*33.16*	*95.4*	*75.4*	*84.5*
Cleaner Tails	245.8	2.65	0.15	0.015	1.61	0.8	4.5	4.7
Total Rougher+Scav Con	*462.2*	*4.98*	*8.82*	*0.136*	*16.38*	*96.2*	*80.0*	*89.2*
Final Tails	8,815.0	95.02	0.02	0.002	0.10	3.8	20.0	10.8
Calculated Head	**9,277.2**	**100.0**	**0.46**	**0.008**	**0.92**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	0.008	0.83			



IS502 Rougher-Cleaner Flowsheet

Happy Creek Rateria



Grind to P80 = 47µm

Feed

Au (g/t)	0.10
Ag (g/t)	2.58
S (%)	0.14

Rougher

	Grade	Dist. (%)
Wt (g)		95.02
Au (g/t)	0.01	9.48
Ag (g/t)	0.25	9.20
S (%)	0.01	7.78

Scavenger

Final Tailing

Total Rougher + Scavenger Con

	Grade	Dist. (%)
Wt (g)		4.98
Au (g/t)	1.82	90.52
Ag (g/t)	47.05	90.80
S (%)	2.64	92.22

Differential Float

Cleaner Tail (Cu Conc.)

	Grade	Dist. (%)
Wt (g)		2.65
Au (g/t)	0.10	2.51
Ag (g/t)	1.28	1.31
S (%)	0.07	1.21

Total Mo Con & Scavenger

	Grade	Dist. (%)
Wt (g)		2.33
Au (g/t)	3.8	88.00
Ag (g/t)	99.03	89.48
S (%)	5.56	91.01

MET-SOLVE LABORATORIES INC.

FLOTATION TEST REPORT

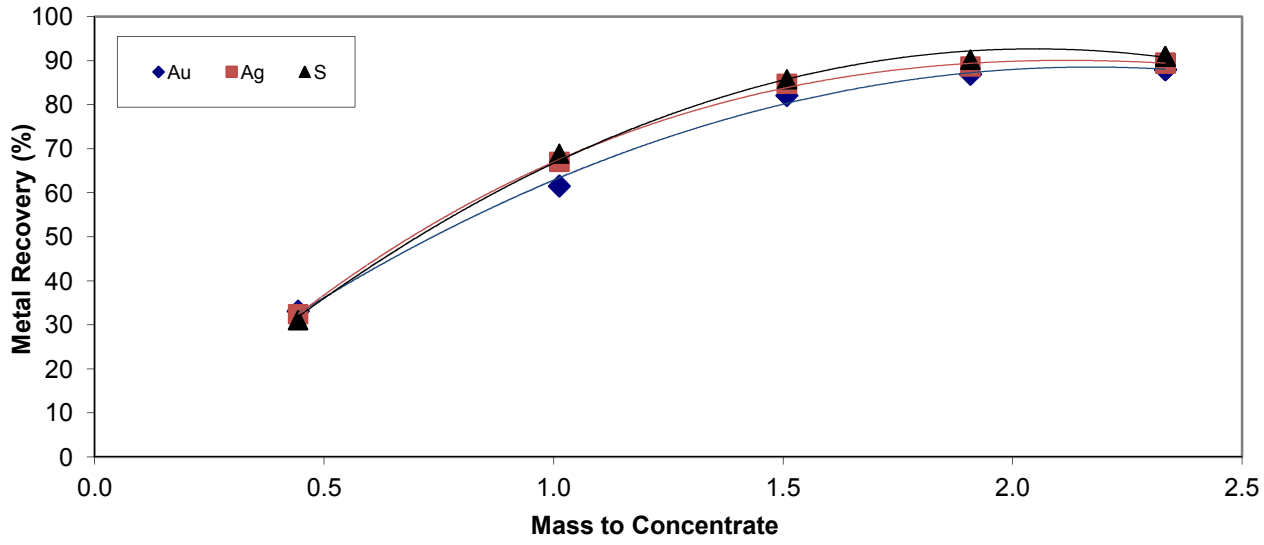
Client: Happy Creek Rateria
Test: IS502
Sample: Composite from Agat
Ground 70 minutes to 47 µm

Date: 9-Apr-13
Project: MS1445

Cleaner Pulp Density	9.4%	Cleaner Cell	4.6 litres		
Rougher Pulp Density	31.0%	Rougher Cell	24.0 litres	**Speed**	1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Cleaner Con 1 *	41.1	0.44	7.49	189.00	10.00	33.1	32.4	31.1
Cleaner Con 2	52.8	0.57	5.00	157.00	9.47	28.4	34.6	37.8
Cleaner Con 1 & 2	*93.9*	*1.01*	*6.09*	*171.01*	*9.70*	*61.5*	*67.1*	*68.9*
Cleaner Con 3	46.0	0.50	4.16	92.30	4.85	20.6	17.7	16.9
Cleaner Con 1 to 3	*139.9*	*1.51*	*5.46*	*145.13*	*8.11*	*82.1*	*84.8*	*85.8*
Cleaner Con 4	37.1	0.40	1.21	25.40	1.59	4.8	3.9	4.5
Total Con.1 to 4	*177.0*	*1.91*	*4.57*	*120.03*	*6.74*	*86.9*	*88.7*	*90.3*
Cleaner Con 5	39.4	0.42	*0.25*	*4.68*	*0.25*	1.1	0.8	0.7
Total Cleaner Con.& Scav	*216.4*	*2.33*	*3.78*	*99.03*	*5.56*	*88.0*	*89.5*	*91.0*
Cleaner Tails	245.8	2.65	0.10	1.28	0.07	2.5	1.3	1.2
Total Rougher+Scav Con	*462.2*	*4.98*	*1.82*	*47.05*	*2.64*	*90.5*	*90.8*	*92.2*
Final Tails	8,815.0	95.02	0.01	0.25	0.01	9.5	9.2	7.8
Calculated Head	**9,277.2**	**100.0**	**0.10**	**2.58**	**0.14**	**100.0**	**100.0**	**100.0**
Assayed Head			0.08	2.52	0.10			

* Sulfur assayed as >10%; used 10% for calculations



MET-SOLVE LABORATORIES INC.

FLOTATION REAGENT SCHEME

Client: Happy Creek Rateria
Test: IS502
Sample: Composite from Agat
Ground 70 minutes to 47 µm

Date: 9-Apr-13
Project: MS1445

Cleaner Reagent Scheme Float Wt: 462.2 g Pulp Density: 9.4%

Stage	Time (min)	Reagents added, grams per tonne Rougher Con.					Time (minutes)		pH
		Lime	NaHS (36%)	Pine Oil	MIBC	TF250	Cond.	Float	
Initial	0								8.4
Conditoner	5	5,495					5.0		11.7
Cleaner Con 1	20		34				12.0	3.0	12.0
Cleaner Con 2	25							5.0	12.0
Cleaner Con 3	33							8.0	12.0
Cleaner Con 4	41							8.0	12.0
Cleaner Con 5	48							7.0	12.0
Cleaner Con 6	48								11.8
Total	**48**	**5,495**	**34**	**0**	**0**	**0**	**17.0**	**31.0**	

Rougher Reagent Scheme Float Wt: 9,277.2 g Pulp Density: 31.0%

Stage	Time (min)	Reagents added, grams per tonne Feed					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Initial	0								
Conditoner	0								
Rougher 1	5	23	22		1		2.0	3.0	9.1
Rougher 2	11	23	22		11		2.0	4.0	9.1
Rougher 3	17	23	22		6		2.0	4.0	9.1
Rougher 4	22	23	22		5		2.0	3.0	9.0
Rougher 5	27	23	22		3		2.0	3.0	8.9
Rougher 6	31	8	7		1		2.0	2.0	9.0
Rougher 7	36	15	7		1		2.0	3.0	9.0
Total	**36**	**136**	**122**	**0**	**28**	**0**	**14.0**	**22.0**	

Appendix E

Float IS501

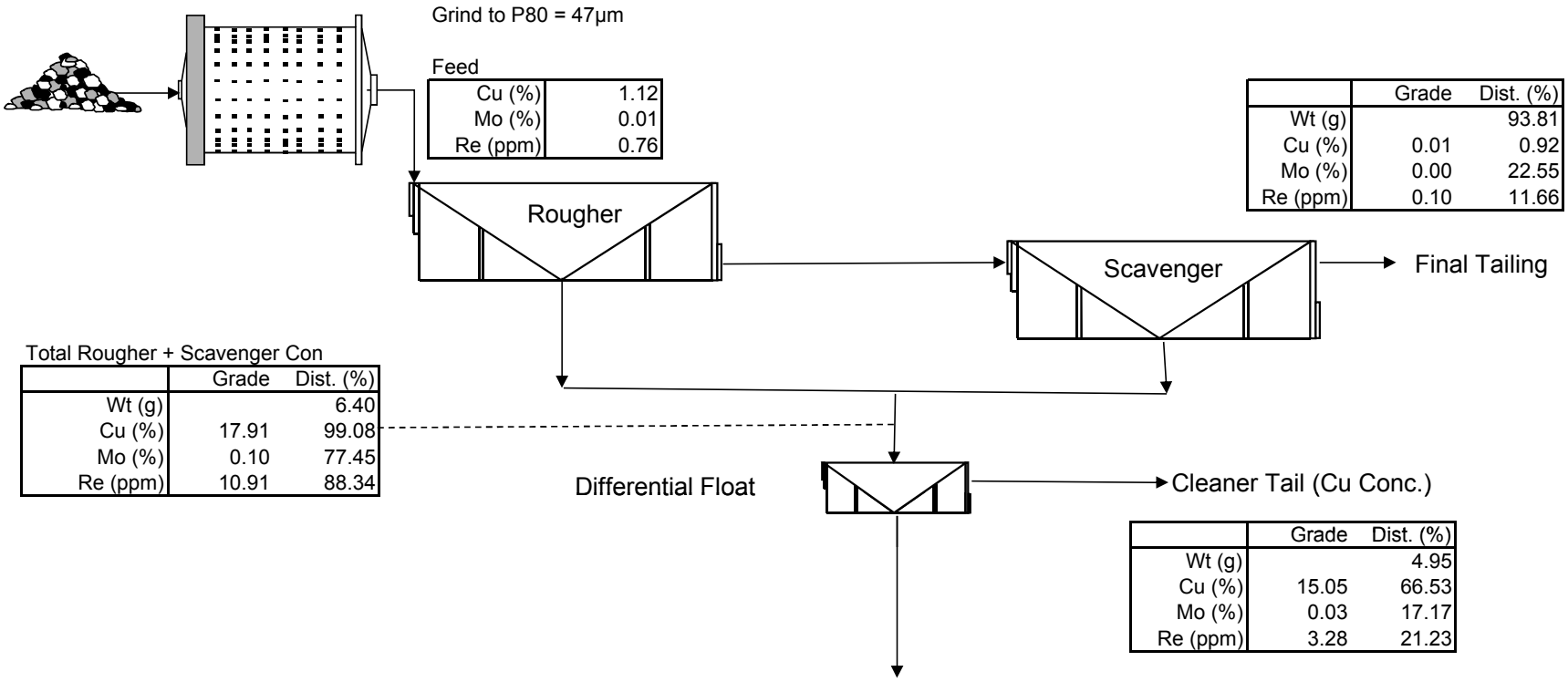
Rougher-Cleaner Float Results

Happy Creek RateriaComposite from Agat

1 Flowsheet (Cu, Mo, Re)
2 Mass Balance (Cu, Mo, Re)
3 Flowsheet (Au, Ag, S)
4 Mass Balance (Au, Ag, S)
5 Reagent Scheme

IS501 Rougher-Cleaner Flowsheet

Happy Creek Rateria



	Grade	Dist. (%)
Wt (g)		93.81
Cu (%)	0.01	0.92
Mo (%)	0.00	22.55
Re (ppm)	0.10	11.66

	Grade	Dist. (%)
Wt (g)		6.40
Cu (%)	17.91	99.08
Mo (%)	0.10	77.45
Re (ppm)	10.91	88.34

	Grade	Dist. (%)
Wt (g)		4.95
Cu (%)	15.05	66.53
Mo (%)	0.03	17.17
Re (ppm)	3.28	21.23

	Grade	Dist. (%)
Wt (g)		1.46
Cu (%)	29.3	32.55
Mo (%)	0.39	60.28
Re (ppm)	41.22	67.11

MET-SOLVE LABORATORIES INC.

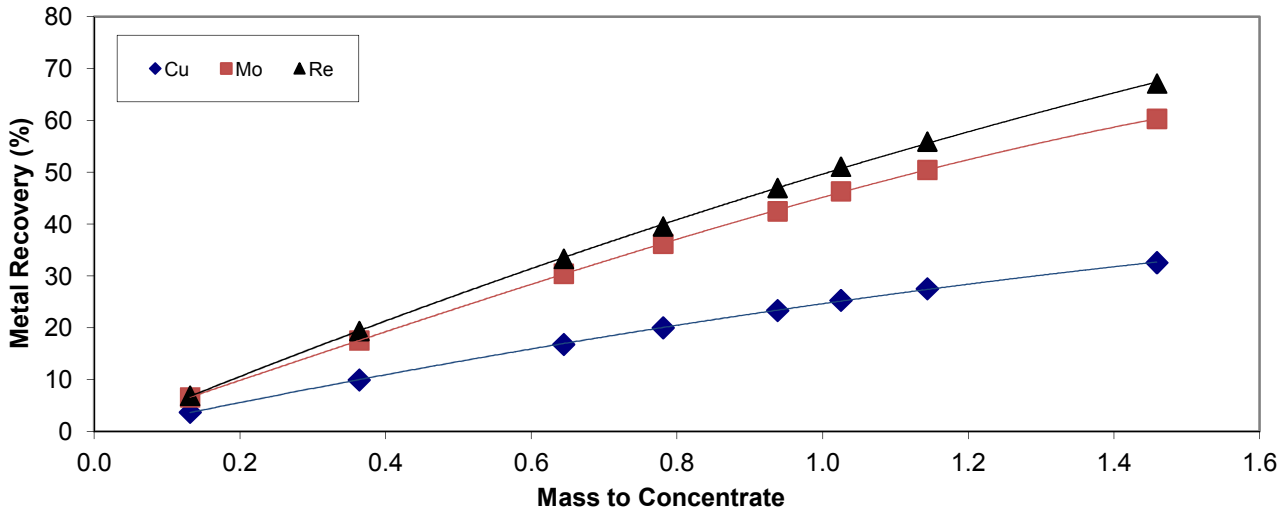
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS501
Sample: Composite from Agat
Ground 70 minutes to 47 µm

Date: 5-Apr-13
Project: MS1445

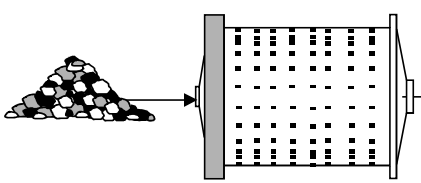
Cleaner Pulp Density	12.9%	Cleaner Cell	4.6 litres		
Rougher Pulp Density	33.2%	Rougher Cell	24.0 litres	**Speed**	1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Cu (%)	Mo (%)	Re (ppm)	Cu	Mo	Re
Cleaner Con 1	13.3	0.13	31.50	0.399	40.10	3.7	6.6	6.9
Cleaner Con 2	23.5	0.23	30.10	0.376	41.10	6.2	11.0	12.5
Cleaner Con 1 & 2	*36.8*	*0.36*	*30.61*	*0.384*	*40.74*	*9.9*	*17.5*	*19.4*
Cleaner Con 3	28.4	0.28	27.30	0.365	37.90	6.8	12.9	13.9
Cleaner Con 1 to 3	*65.2*	*0.64*	*29.17*	*0.376*	*39.50*	*16.8*	*30.4*	*33.3*
Cleaner Con 4	13.8	0.14	26.30	0.338	35.00	3.2	5.8	6.2
Total Con.1 to 4	*79.0*	*0.78*	*28.67*	*0.369*	*38.72*	*20.0*	*36.2*	*39.6*
Cleaner Con 5	15.9	0.16	*23.70*	*0.318*	*36.00*	3.3	6.3	7.4
Cleaner Con 1 to 5	*94.9*	*0.94*	*27.83*	*0.361*	*38.26*	*23.3*	*42.5*	*47.0*
Cleaner Con 6	8.8	0.09	*25.10*	*0.352*	*36.20*	2.0	3.8	4.1
Total Con.1 to 6	*103.7*	*1.02*	*27.60*	*0.360*	*38.09*	*25.3*	*46.3*	*51.1*
Cleaner Con 7	12.0	0.12	21.00	0.277	31.10	2.2	4.1	4.8
Cleaner Con 1 to 7	*115.7*	*1.14*	*26.92*	*0.351*	*37.36*	*27.5*	*50.4*	*55.9*
Cleaner Con 8	10.2	0.10	21.50	0.299	30.30	1.9	3.8	4.0
Cleaner Con 1 to 8	*125.9*	*1.24*	*26.48*	*0.347*	*36.79*	*29.4*	*54.2*	*59.9*
Cleaner Con 9	21.7	0.21	16.20	0.225	25.70	3.1	6.1	7.2
Total Cleaner Con.& Scav	*125.9*	*1.46*	*29.27*	*0.386*	*41.22*	*32.6*	*60.3*	*67.1*
Cleaner Tails	500.4	4.95	15.05	0.028	3.28	66.5	17.2	21.2
Total Rougher+Scav Con	*626.3*	*6.40*	*17.91*	*0.100*	*10.91*	*99.1*	*77.4*	*88.3*
Final Tails	9,490.8	93.81	0.01	0.002	0.10	0.9	22.6	11.7
Calculated Head	**10,117.1**	**100.2**	**1.12**	**0.008**	**0.76**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	0.008	0.83			



IS501 Rougher-Cleaner Flowsheet

Happy Creek Rateria



Grind to P80 = 47µm

Feed

Au (g/t)	0.09
Ag (g/t)	2.38
S (%)	0.24

Rougher

	Grade	Dist. (%)
Wt (g)		93.81
Au (g/t)	0.01	10.86
Ag (g/t)	0.27	10.66
S (%)	0.00	0.39

Scavenger

Final Tailing

Total Rougher + Scavenger Con

	Grade	Dist. (%)
Wt (g)		6.40
Au (g/t)	1.24	89.14
Ag (g/t)	34.28	89.34
S (%)	3.86	99.61

Differential Float

Cleaner Tail (Cu Conc.)

	Grade	Dist. (%)
Wt (g)		4.95
Au (g/t)	0.33	18.90
Ag (g/t)	7.55	15.72
S (%)	3.28	67.58

Total Mo Con & Scavenger

	Grade	Dist. (%)
Wt (g)		1.46
Au (g/t)	4.9	70.23
Ag (g/t)	140.52	73.62
S (%)	6.18	32.03

MET-SOLVE LABORATORIES INC.

FLOTATION TEST REPORT

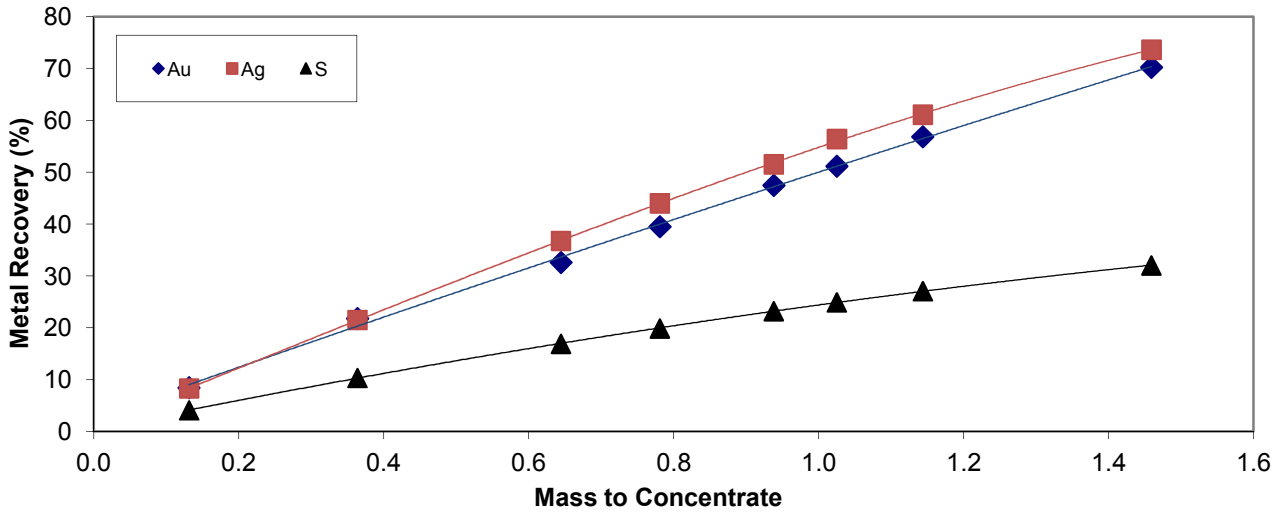
Client: Happy Creek Rateria
Test: IS501
Sample: Composite from Agat
Ground 70 minutes to 47 µm

Date: 5-Apr-13
Project: MS1445

Cleaner Pulp Density	12.9%	Cleaner Cell	4.6 litres		
Rougher Pulp Density	33.2%	Rougher Cell	24.0 litres	**Speed**	1,350 RPM

Products	Weight		Assay			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Cleaner Con 1	13.3	0.13	5.54	150.00	7.49	8.4	8.3	4.1
Cleaner Con 2	23.5	0.23	4.96	135.00	6.44	13.3	13.2	6.2
Cleaner Con 1 & 2	*36.8*	*0.36*	*5.17*	*140.42*	*6.82*	*21.8*	*21.5*	*10.3*
Cleaner Con 3	28.4	0.28	3.33	129.00	5.64	10.8	15.2	6.6
Cleaner Con 1 to 3	*65.2*	*0.64*	*4.37*	*135.45*	*6.31*	*32.6*	*36.7*	*16.9*
Cleaner Con 4	13.8	0.14	4.37	126.00	5.18	6.9	7.2	2.9
Total Con.1 to 4	*79.0*	*0.78*	*4.37*	*133.80*	*6.11*	*39.5*	*44.0*	*19.9*
Cleaner Con 5	15.9	0.16	*4.36*	*114.00*	*5.08*	7.9	7.5	3.3
Cleaner Con 1 to 5	*94.9*	*0.94*	*4.37*	*130.48*	*5.94*	*47.4*	*51.5*	*23.2*
Cleaner Con 6	8.8	0.09	*3.70*	*133.00*	*4.72*	3.7	4.9	1.7
Total Con.1 to 6	*103.7*	*1.02*	*4.31*	*130.69*	*5.83*	*51.2*	*56.4*	*24.9*
Cleaner Con 7	12.0	0.12	4.12	94.40	4.38	5.7	4.7	2.2
Cleaner Con 1 to 7	*115.7*	*1.14*	*4.29*	*126.93*	*5.68*	*56.8*	*61.1*	*27.1*
Cleaner Con 8	10.2	0.10	5.50	107.00	4.62	6.4	4.5	1.9
Cleaner Con 1 to 8	*125.9*	*1.24*	*4.39*	*125.31*	*5.60*	*63.3*	*65.7*	*29.0*
Cleaner Con 9	21.7	0.21	2.81	88.20	3.38	7.0	8.0	3.0
Total Cleaner Con.& Scav	*125.9*	*1.46*	*4.87*	*140.52*	*6.18*	*70.2*	*73.6*	*32.0*
Cleaner Tails	500.4	4.95	0.33	7.55	3.28	18.9	15.7	67.6
Total Rougher+Scav Con	*626.3*	*6.40*	*1.24*	*34.28*	*3.86*	*89.1*	*89.3*	*99.6*
Final Tails *	9,490.8	93.81	0.01	0.27	0.00	10.9	10.7	0.4
Calculated Head	**10,117.1**	**100.2**	**0.09**	**2.38**	**0.24**	**100.0**	**100.0**	**100.0**
Assayed Head			0.08	2.52	0.10			

* Sulfur assayed as <0.01%; used 0.001% for calculations



MET-SOLVE LABORATORIES INC.

FLOTATION REAGENT SCHEME

Client: Happy Creek Rateria
Test: IS501
Sample: Composite from Agat
Ground 70 minutes to 47 µm

Date: 5-Apr-13
Project: MS1445

Cleaner Reagent Scheme Float Wt: 648.0 g Pulp Density: 12.9%

Stage	Time (min)	Reagents added, grams per tonne Rougher Con.					Time (minutes)		pH
		Lime	NaHS (36%)	Pine Oil	MIBC	TF250	Cond.	Float	
Initial	0								9.6
Conditoner	0	1,698							11.5
Cleaner Con 1	7		2		27	12	5.0	2.0	11.4
Cleaner Con 2	9				0	12	0.0	2.0	11.4
Cleaner Con 3	11				0	12	0.0	2.0	11.3
Cleaner Con 4	12				0	6	0.0	1.0	11.3
Cleaner Con 5	14				0	12	0.0	2.0	11.3
Cleaner Con 6	16				0	12	0.0	2.0	11.2
Cleaner Con 7	18				0	12	0.0	2.0	11.2
Cleaner Con 8	20				0	12	0.0	2.0	11.2
Cleaner Con 9	23				0	17	0.0	3.0	11.1
Total	**23**	**1,698**	**2**	**0**	**27**	**104**	**5.0**	**29.0**	

Rougher Reagent Scheme Float Wt: 10,138.8 g Pulp Density: 33.2%

Stage	Time (min)	Reagents added, grams per tonne Feed					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Initial	0								9.6
Conditoner	0								
Rougher 1	5	20	18				2.0	3.0	9.6
Rougher 2	11	20	18		10		2.0	4.0	9.6
Rougher 3	17	20	18		5		2.0	4.0	9.6
Rougher 4	22	20	18		5		2.0	3.0	9.5
Rougher 5	27	20	18		5		2.0	3.0	9.4
Rougher 6	31	20	18		3		2.0	2.0	9.3
Rougher 7	36	20	18		3		2.0	3.0	9.2
Rougher 8	40	20	18		0		2.0	2.0	9.2
Rougher 10	49	20	18		0		2.0	3.0	9.0
Rougher 11	51	20	22		2		2.0		9.0
Rougher 12	51								
Total	**51**	**217**	**204**	**0**	**33**	**0**	**22.0**	**29.0**	

Appendix F

Float IS403

Rougher Float Results

1 Mass Balance (Cu, Mo, Re)
2 Mass Balance (Au, Ag, S)

101B - 9850 - 201 Street, Langley, British Columbia
tel: 604-888-7604 · fax: 604-888-7611 · www.met-solvelabs.com

MET-SOLVE LABORATORIES INC.

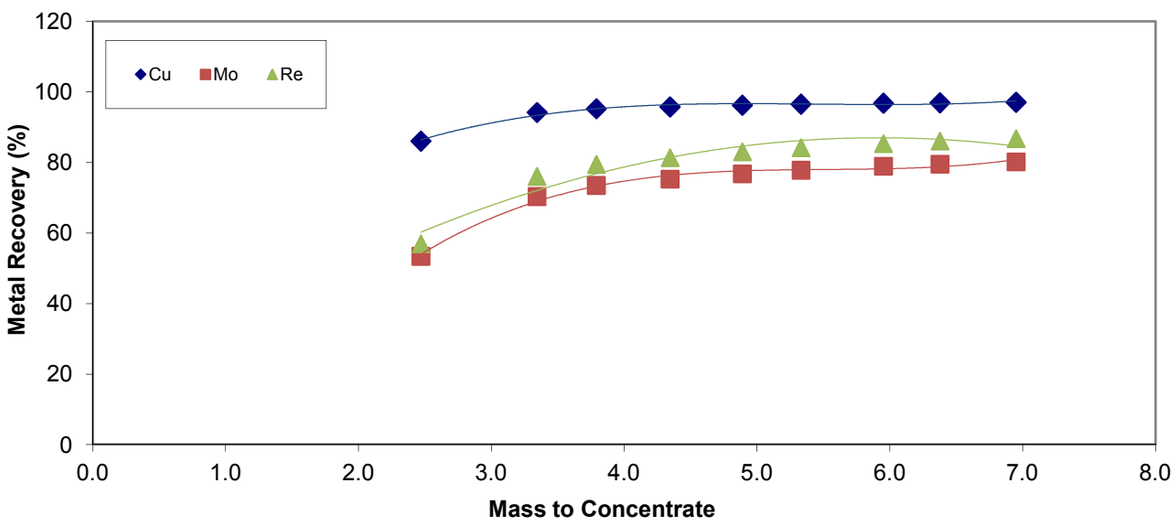
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS403
Sample: Composite from Agat
Ground to 47 µm

Date: 20-Mar-13
Project: MS1445

Pulp Density 31.1% **Float Cell** 24 litres **Speed** 1,200 RPM

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Cu (%)	Mo (ppm)	Re (ppm)	Cu	Mo	Re
Con1	249.5	2.47	15.80	2,020.00	18.90	86.1	53.4	57.0
Con2	88.3	0.87	4.21	1,810.00	17.90	8.1	16.9	19.1
Con3	45.1	0.45	1.05	665.00	6.24	1.0	3.2	3.4
Con4	56.1	0.56	0.44	300.00	2.86	0.5	1.8	1.9
Con5	55.0	0.54	0.38	254.00	2.49	0.5	1.5	1.7
Con6	44.6	0.44	0.32	219.00	2.12	0.3	1.0	1.1
Con7	62.7	0.62	0.19	172.00	1.56	0.3	1.1	1.2
Con8	43.0	0.43	0.15	128.00	1.35	0.1	0.6	0.7
Con 9	57.9	0.57	0.12	105.00	1.04	0.1	0.6	0.7
Con 10	56.9	0.56	0.11	106.00	1.03	0.1	0.6	0.7
Con 11	86.6	0.86	0.07	73.10	0.69	0.1	0.7	0.7
Con 12	87.0	0.86	0.06	64.10	0.62	0.1	0.6	0.7
Con 13	103.8	1.03	0.06	59.00	0.54	0.1	0.6	0.7
Total Con & Scav	*1,036.5*	*10.26*	*4.31*	*753.31*	*7.15*	*97.6*	*82.8*	*89.6*
Tails	9,067.3	89.74	0.01	17.95	0.10	2.4	17.2	10.4
Calculated Head	**10,103.8**	**100.00**	**0.45**	**93.39**	**0.82**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	82.95	0.83			



Stage	Time (min)	Reagents added, grams per tonne					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Conditoner	0	21	20						
Con1	5	21	20				2.0	3.0	10.1
Con2	11	21	20		11		2.0	4.0	10.0
Con3	17	21	20		5		2.0	4.0	9.9
Con4	22	21	20		5		2.0	3.0	9.8
Con5	27	21	20		5		3.0	2.0	9.6
Con6	31	21	20		4		2.0	2.0	9.5
Con7	36	21	20		4		2.0	3.0	9.5
Con8	40	21	20		0		2.0	2.0	9.3
Con 9	44	21	20		0		2.0	2.0	9.3
Con 10	49	21	20		0		2.0	3.0	9.3
Con 11	54	32	20	214	2		2.0	3.0	9.2
Con 12	59	21	20		2		2.0	3.0	9.1
Con 13	65	21	20		2		2.0	4.0	9.1
Total	**65**	**310**	**277**	**214**	**40**	**0**	**21.0**	**28.0**	

MET-SOLVE LABORATORIES INC.

FLOTATION TEST REPORT

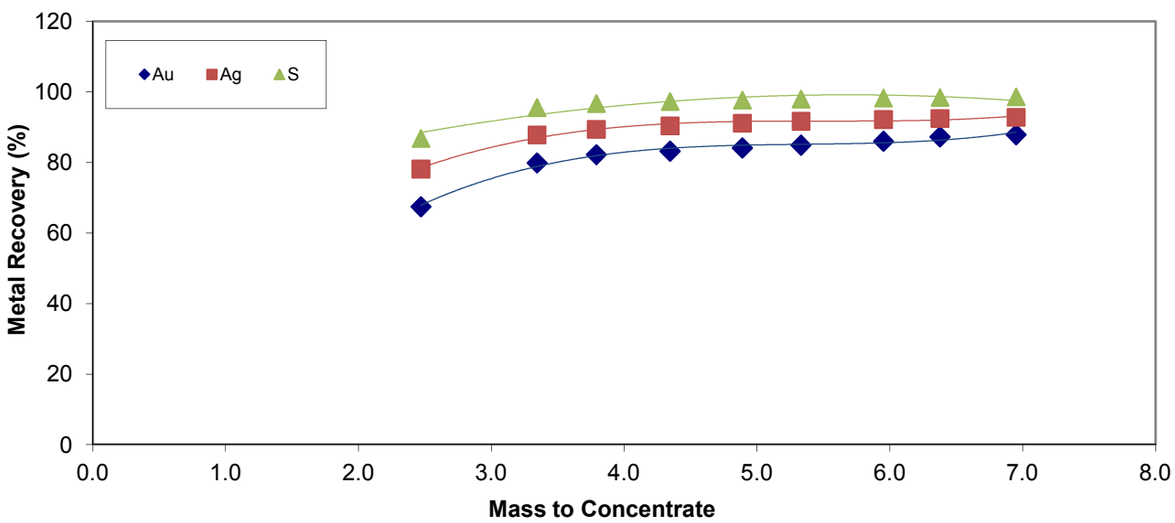
Client: Happy Creek Rateria
Test: IS403
Sample: Composite from Agat
Ground to 47 µm

Date: 20-Mar-13
Project: MS1445

Pulp Density 31.1% **Float Cell** 24 litres **Speed** 1,200 RPM

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Con1	249.5	2.47	2.31	60.70	4.53	67.5	78.2	86.8
Con2	88.3	0.87	1.20	21.20	1.29	12.4	9.7	8.8
Con3	45.1	0.45	0.45	6.89	0.33	2.4	1.6	1.1
Con4	56.1	0.56	0.15	3.34	0.13	1.0	1.0	0.6
Con5	55.0	0.54	0.14	2.69	0.10	0.9	0.8	0.4
Con6	44.6	0.44	0.15	2.32	0.09	0.8	0.5	0.3
Con7	62.7	0.62	0.15	1.56	0.06	1.1	0.5	0.3
Con8	43.0	0.43	0.25	1.33	0.04	1.3	0.3	0.1
Con 9	57.9	0.57	0.09	1.05	0.04	0.6	0.3	0.2
Con 10	56.9	0.56	0.06	1.02	0.04	0.4	0.3	0.2
Con 11	86.6	0.86	0.04	0.63	0.03	0.4	0.3	0.2
Con 12	87.0	0.86	0.03	0.53	0.02	0.3	0.2	0.1
Con 13	103.8	1.03	0.03	0.53	0.02	0.4	0.3	0.2
Total Con & Scav	*1,036.5*	*10.26*	*0.74*	*17.55*	*1.25*	*89.4*	*93.9*	*99.3*
Tails	9,067.3	89.74	0.01	0.13	0.00	10.6	6.1	0.7
Calculated Head	**10,103.8**	**100.00**	**0.08**	**1.92**	**0.13**	**100.0**	**100.0**	**100.0**
Assayed Head			0.08	2.52	0.10			

* Sulfur assayed as <0.01%; used 0.001% for calculations



Stage	Time (min)	Reagents added, grams per tonne					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Conditoner	0	21	20						
Con1	5	21	20				2.0	3.0	10.1
Con2	11	21	20		11		2.0	4.0	10.0
Con3	17	21	20		5		2.0	4.0	9.9
Con4	22	21	20		5		2.0	3.0	9.8
Con5	27	21	20		5		3.0	2.0	9.6
Con6	31	21	20		4		2.0	2.0	9.5
Con7	36	21	20		4		2.0	3.0	9.5
Con8	40	21	20		0		2.0	2.0	9.3
Con 9	44	21	20		0		2.0	2.0	9.3
Con 10	49	21	20		0		2.0	3.0	9.3
Con 11	54	32	20	214	2		2.0	3.0	9.2
Con 12	59	21	20		2		2.0	3.0	9.1
Con 13	65	21	20		2		2.0	4.0	9.1
Total	**65**	**310**	**277**	**214**	**40**	**0**	**21.0**	**28.0**	

Appendix G

Float IS402

Rougher Float Results

1 Mass Balance (Cu, Mo, Re)
2 Mass Balance (Au, Ag, S)

101B - 9850 - 201 Street, Langley, British Columbia
tel: 604-888-7604 · fax: 604-888-7611 · www.met-solvelabs.com

MET-SOLVE LABORATORIES INC.

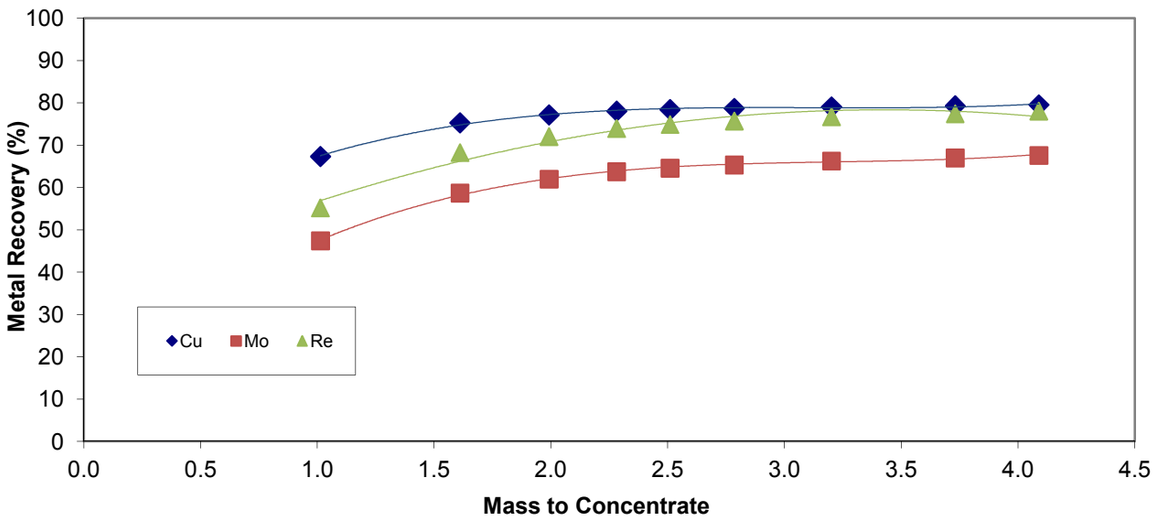
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS402
Sample: Composite from Agat
Ground to 47 µm

Date: 13-Mar-13
Project: MS1445

Pulp Density 35.9% **Float Cell** 24 litres **Speed** 1,200 RPM

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Cu (%)	Mo (ppm)	Re (ppm)	Cu	Mo	Re
Con1	113.4	1.01	25.50	3,220.00	39.90	67.4	47.4	55.2
Con2	66.9	0.60	5.10	1,300.00	16.00	7.9	11.3	13.1
Con3	42.7	0.38	1.90	590.00	7.28	1.9	3.3	3.8
Con4	32.4	0.29	1.14	417.00	4.81	0.9	1.8	1.9
Con5	25.6	0.23	0.62	257.00	3.05	0.4	0.9	1.0
Con6	30.8	0.28	0.43	184.00	2.14	0.3	0.7	0.8
Con7	46.6	0.42	0.32	157.00	1.79	0.3	1.0	1.0
Con8	59.3	0.53	0.18	94.40	0.99	0.2	0.7	0.7
Con 9	40.1	0.36	0.27	113.00	1.28	0.3	0.6	0.6
Con 10	109.2	0.98	0.14	74.30	0.76	0.4	1.1	1.0
Con 11	71.0	0.63	0.13	78.00	0.80	0.2	0.7	0.7
Trapped Material	1,243.0	11.10	0.58	60.40	0.47	16.8	9.8	7.1
Total Con & Scav	*1,881.0*	*16.80*	*2.21*	*323.89*	*3.79*	*97.0*	*79.1*	*86.9*
Tails	9,314.8	83.20	0.01	17.25	0.12	3.0	20.9	13.1
Calculated Head	**11,195.8**	**100.00**	**0.38**	**68.77**	**0.73**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	82.95	0.83			



Stage	Time (min)	Reagents added, grams per tonne					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Conditoner	0	18	17						
Con1	5	18	17				2.0	3.0	9.9
Con2	11	18	17		9		2.0	4.0	9.9
Con3	17	18	17		4		2.0	4.0	9.8
Con4	22	18	17		4		2.0	3.0	9.7
Con5	26	18	17		4		2.0	2.0	9.6
Con6	30	18	17		3		2.0	2.0	9.6
Con7	35	18	17		3		2.0	3.0	9.5
Con8	39	18	17		0		2.0	2.0	9.5
Con 9	43	18	17		0		2.0	2.0	9.4
Con 10	48	18	17		0		2.0	3.0	9.3
Con 11	50	27	17	179	2		2.0		9.2
Total	**50**	**223**	**198**	**179**	**30**	**0**	**20.0**	**28.0**	

MET-SOLVE LABORATORIES INC.

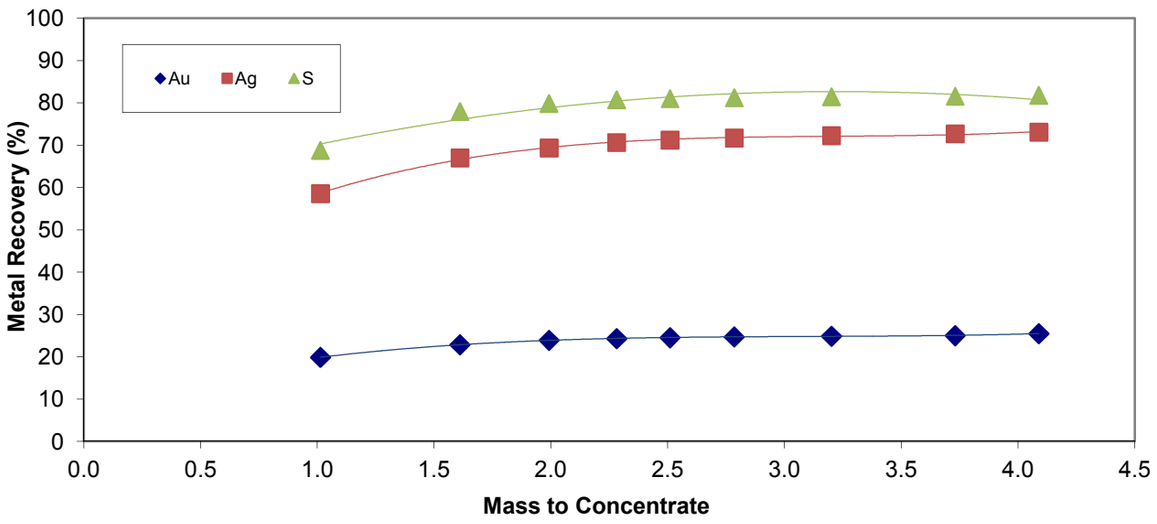
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS402
Sample: Composite from Agat
Ground to 47 µm

Date: 13-Mar-13
Project: MS1445

Pulp Density 35.9% **Float Cell** 24 litres **Speed** 1,200 RPM

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Con1	113.4	1.01	4.44	93.60	7.10	19.9	58.6	68.8
Con2	66.9	0.60	1.12	22.90	1.60	3.0	8.5	9.2
Con3	42.7	0.38	0.64	9.93	0.52	1.1	2.3	1.9
Con4	32.4	0.29	0.31	7.24	0.32	0.4	1.3	0.9
Con5	25.6	0.23	0.22	4.02	0.12	0.2	0.6	0.3
Con6	30.8	0.28	0.13	2.87	0.08	0.2	0.5	0.2
Con7	46.6	0.42	0.10	2.15	0.06	0.2	0.6	0.2
Con8	59.3	0.53	0.06	1.35	0.03	0.1	0.4	0.2
Con 9	40.1	0.36	0.30	1.72	0.05	0.5	0.4	0.2
Con 10	109.2	0.98	0.08	1.05	0.03	0.3	0.6	0.3
Con 11	71.0	0.63	0.04	1.14	0.02	0.1	0.4	0.1
Trapped Material	1,243.0	11.10	1.50	2.53	0.16	73.7	17.4	17.0
Total Con & Scav	*1,881.0*	*16.80*	*1.34*	*8.82*	*0.62*	*99.6*	*91.5*	*99.2*
Tails	9,314.8	83.20	0.00	0.17	0.00	0.4	8.5	0.8
Calculated Head	**11,195.8**	**100.00**	**0.23**	**1.62**	**0.10**	**100.0**	**100.0**	**100.0**
Assayed Head			0.08	2.52	0.10			



Stage	Time (min)	Reagents added, grams per tonne					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Conditoner	0	18	17						
Con1	5	18	17				2.0	3.0	9.9
Con2	11	18	17		9		2.0	4.0	9.9
Con3	17	18	17		4		2.0	4.0	9.8
Con4	22	18	17		4		2.0	3.0	9.7
Con5	26	18	17		4		2.0	2.0	9.6
Con6	30	18	17		3		2.0	2.0	9.6
Con7	35	18	17		3		2.0	3.0	9.5
Con8	39	18	17		0		2.0	2.0	9.5
Con 9	43	18	17		0		2.0	2.0	9.4
Con 10	48	18	17		0		2.0	3.0	9.3
Con 11	50	27	17	179	2		2.0		9.2
Total	**50**	**223**	**198**	**179**	**30**	**0**	**20.0**	**28.0**	

Appendix H

Float IS401

Rougher Float Results

1 Mass Balance (Cu, Mo, Re)
2 Mass Balance (Au, Ag, S)

101B - 9850 - 201 Street, Langley, British Columbia
tel: 604-888-7604 · fax: 604-888-7611 · www.met-solvelabs.com

MET-SOLVE LABORATORIES INC.

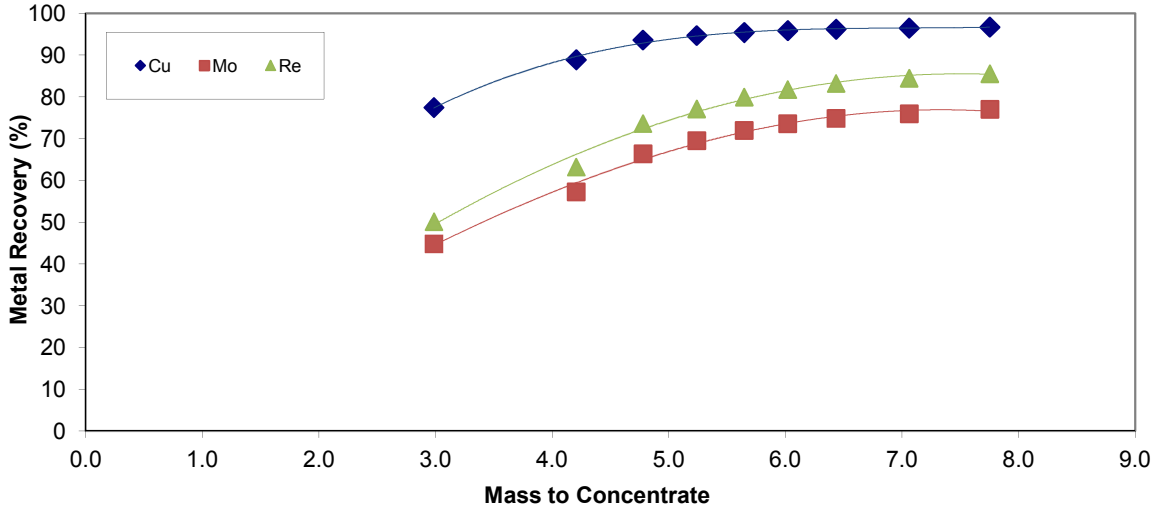
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS401
Sample: Composite from Agat
As received; scrubbed

Date: 13-Mar-13
Project: MS1445

Pulp Density 32.2% **Float Cell** 24 litres **Speed** 1,200 RPM

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Cu (ppm)	Mo (ppm)	Re (ppm)	Cu	Mo	Re
Con1	290.5	2.99	12.60	1,220.00	14.50	77.5	44.8	50.2
Con2	118.7	1.22	4.56	830.00	9.23	11.5	12.5	13.0
Con3	55.7	0.57	4.00	1,290.00	15.70	4.7	9.1	10.4
Con4	44.9	0.46	1.13	550.00	6.57	1.1	3.1	3.5
Con5	39.6	0.41	0.89	496.00	6.01	0.7	2.5	2.8
Con6	36.3	0.37	0.56	343.00	4.15	0.4	1.6	1.8
Con7	40.4	0.42	0.39	252.00	3.09	0.3	1.3	1.5
Con8	61.0	0.63	0.21	144.00	1.70	0.3	1.1	1.2
Con 9	67.3	0.69	0.18	128.00	1.34	0.3	1.1	1.1
Total Con & Scav	*754.4*	*7.75*	*6.06*	*807.46*	*9.52*	*96.7*	*77.1*	*85.6*
Tails	8,976.4	92.25	0.02	20.20	0.14	3.3	22.9	14.4
Calculated Head	**9,730.8**	**100.00**	**0.49**	**81.23**	**0.86**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	82.95	0.83			



Stage	Time (min)	Reagents added, grams per tonne					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Con1	7	41			4		2.0	5.0	9.8
Con2	12	41			4		2.0	3.0	9.7
Con3	17	41	19		4		2.0	3.0	9.6
Con4	22	41	7	195	4		2.0	3.0	9.6
Con5	26		10	206	5		2.0	2.0	9.6
Con6	30	41	10	606	4		2.0	2.0	9.5
Con7	35	41	11	617	3		3.0	2.0	9.5
Con8	39	82	15	606	4		2.0	2.0	9.4
Con 9	41	80	19	1,233	7		2.0		
Total	**41**	**408**	**92**	**3,463**	**40**	**0**	**19.0**	**22.0**	

MET-SOLVE LABORATORIES INC.

FLOTATION TEST REPORT

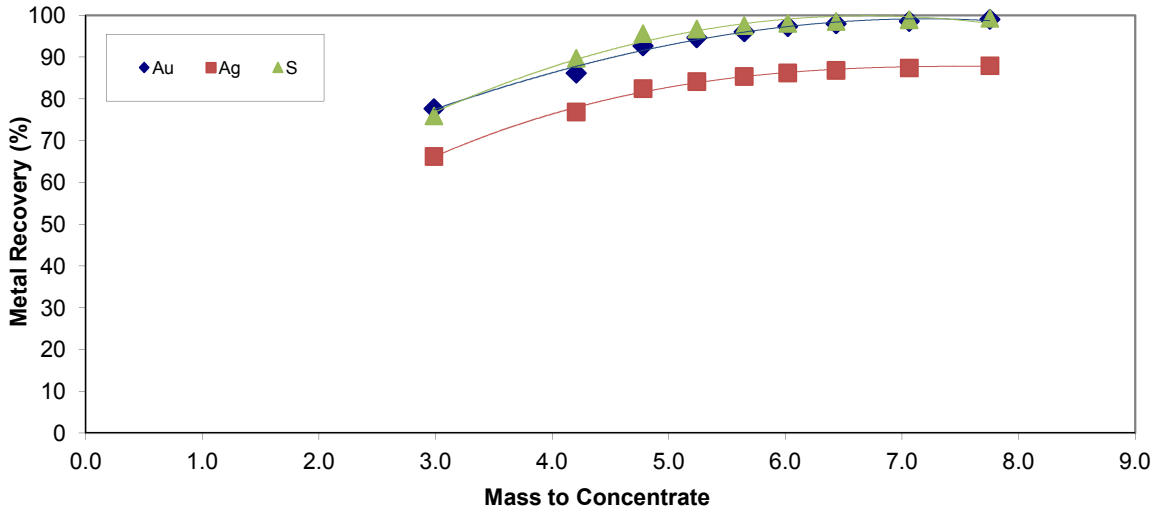
Client: Happy Creek Rateria
Test: IS401
Sample: Composite from Agat
As received; scrubbed

Date: 13-Mar-13
Project: MS1445

Pulp Density 32.2% **Float Cell** 24 litres **Speed** 1,200 RPM

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Con1	290.5	2.99	2.58	40.80	3.32	77.7	66.3	75.9
Con2	118.7	1.22	0.69	16.00	1.48	8.5	10.6	13.8
Con3	55.7	0.57	1.13	18.00	1.34	6.5	5.6	5.9
Con4	44.9	0.46	0.42	6.65	0.31	2.0	1.7	1.1
Con5	39.6	0.41	0.35	5.70	0.27	1.4	1.3	0.8
Con6	36.3	0.37	0.33	3.94	0.18	1.2	0.8	0.5
Con7	40.4	0.42	0.16	2.87	0.14	0.7	0.6	0.4
Con8	61.0	0.63	0.09	1.64	0.09	0.6	0.6	0.4
Con 9	67.3	0.69	0.07	1.42	0.06	0.5	0.5	0.3
Total Con & Scav	*754.4*	*7.75*	*1.27*	*20.86*	*1.67*	*99.1*	*88.0*	*99.3*
Tails *	8,976.4	92.25	0.00	0.24	0.00	0.9	12.0	0.7
Calculated Head	**9,730.8**	**100.00**	**0.10**	**1.84**	**0.13**	**100.0**	**100.0**	**100.0**
Assayed Head			0.08	2.52	0.10			

* Tails assayed as <0.01 g/t Au and <0.01 ppm S; used 0.001 in both calculations



Stage	Time (min)	Reagents added, grams per tonne					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Con1	7	41			4		2.0	5.0	9.8
Con2	12	41			4		2.0	3.0	9.7
Con3	17	41	19		4		2.0	3.0	9.6
Con4	22	41	7	195	4		2.0	3.0	9.6
Con5	26		10	206	5		2.0	2.0	9.6
Con6	30	41	10	606	4		2.0	2.0	9.5
Con7	35	41	11	617	3		3.0	2.0	9.5
Con8	39	82	15	606	4		2.0	2.0	9.4
Con 9	41	80	19	1,233	7		2.0		
Total	**41**	**408**	**92**	**3,463**	**40**	**0**	**19.0**	**22.0**	

Appendix I

Float IS302

Rougher Float Results

1 Mass Balance (Cu, Mo, Re)
2 Mass Balance (Au, Ag, S)

101B - 9850 - 201 Street, Langley, British Columbia
tel: 604-888-7604 · fax: 604-888-7611 · www.met-solvelabs.com

MET-SOLVE LABORATORIES INC.

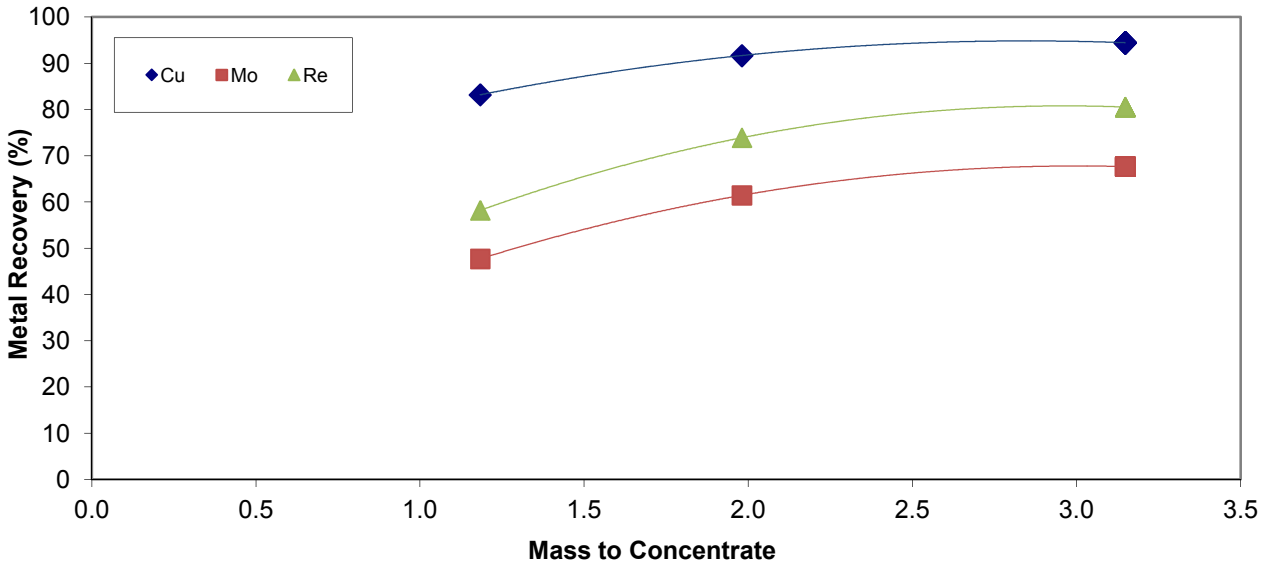
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS302
Sample: Ratera Composite
Ground to 47 µm

Date: 7-Mar-13
Project: MS1443

Pulp Density 33.6% **Float Cell** 4.6 litres **Speed** 1,200 RPM

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Cu (%)	Mo (ppm)	Re (ppm)	Cu	Mo	Re
Con1	23.3	1.18	33.10	2,880.00	36.70	83.2	47.7	58.2
Con2	15.7	0.80	5.01	1,230.00	14.70	8.5	13.7	15.7
Con3	23.0	1.17	1.12	380.00	4.24	2.8	6.2	6.6
Total Con & Scav	*62.0*	*3.15*	*14.12*	*1,534.76*	*19.09*	*94.4*	*67.7*	*80.5*
Tails	1,907.2	96.85	0.03	23.85	0.15	5.6	32.3	19.5
Calculated Head	**1,969.2**	**100.00**	**0.47**	**71.42**	**0.75**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	82.95	0.83			



Stage	Time (min)	Reagents added, grams per tonne					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Initial	0								9.1
Con1	5	20	19				3.0	2.0	9.3
Con2	10	20	19	203	9		3.0	2.0	9.2
Con3	17	20	6	203	5		4.0	3.0	9.0
Total	**17**	**61**	**43**	**406**	**14**	**0**	**10.0**	**7.0**	

MET-SOLVE LABORATORIES INC.

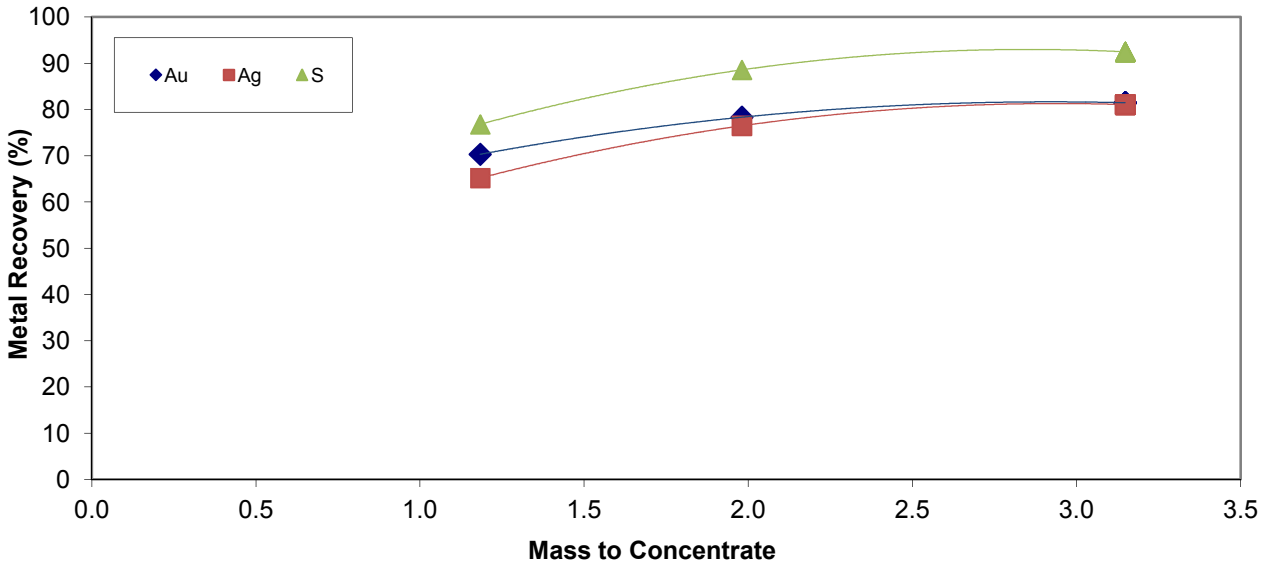
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS302
Sample: Ratera Composite
Ground to 47 µm

Date: 7-Mar-13
Project: MS1443

Pulp Density 33.6% **Float Cell** 4.6 litres **Speed** 1,200 RPM

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Con1	23.3	1.18	6.21	81.70	8.35	70.3	65.2	76.8
Con2	15.7	0.80	1.05	21.00	1.90	8.0	11.3	11.8
Con3	23.0	1.17	0.28	5.82	0.43	3.1	4.6	3.9
Total Con & Scav	*62.0*	*3.15*	*2.70*	*38.18*	*3.78*	*81.5*	*81.1*	*92.5*
Tails	1,907.2	96.85	0.02	0.29	0.01	18.5	18.9	7.5
Calculated Head	**1,969.2**	**100.00**	**0.10**	**1.48**	**0.13**	**100.0**	**100.0**	**100.0**
Assayed Head			0.08	2.52	0.10			



Stage	Time (min)	Reagents added, grams per tonne					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Initial	0								9.1
Con1	5	20	19				3.0	2.0	9.3
Con2	10	20	19	203	9		3.0	2.0	9.2
Con3	17	20	6	203	5		4.0	3.0	9.0
Total	**17**	**61**	**43**	**406**	**14**	**0**	**10.0**	**7.0**	

Appendix J

Float IS301

Rougher Float Results

1 Mass Balance (Cu, Mo, Re)
2 Mass Balance (Au, Ag, S)

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MET-SOLVE LABORATORIES INC.

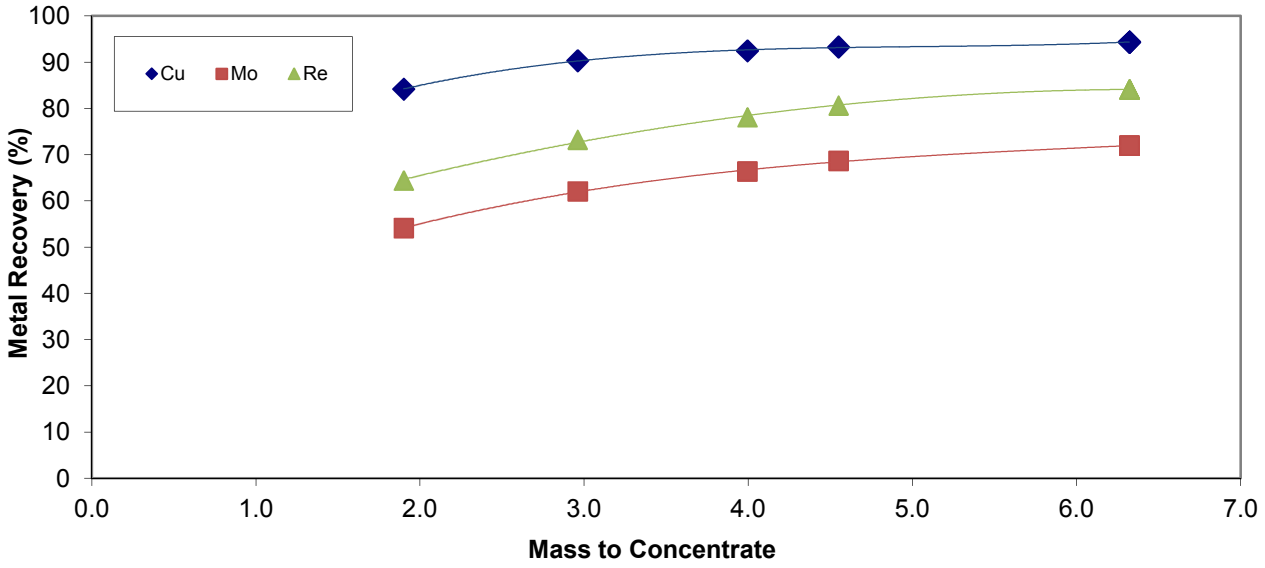
FLOTATION TEST REPORT

Client: Happy Creek Rateria
Test: IS301
Sample: Composite of Jan 14 & Feb 13 Samples Ground to 47 µm

Date: 27-Feb-13
Project: MS1445

Pulp Density 33.5% **Float Cell** 4.6 litres **Speed** 1,200 RPM

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Cu (%)	Mo (ppm)	Re (ppm)	Cu	Mo	Re
Con 1	37.3	1.90	20.40	2,060	27.00	84.2	54.1	64.4
Con 2	20.8	1.06	2.67	542	6.64	6.1	7.9	8.8
Con 3	20.3	1.03	0.95	302	3.74	2.1	4.3	4.9
Con 4-5	10.9	0.56	0.67	296	3.65	0.8	2.3	2.5
Con 6	34.8	1.77	0.28	134	1.56	1.1	3.3	3.5
Total Con & Scav	*124.1*	*6.32*	*6.87*	*823*	*10.60*	*94.4*	*72.0*	*84.1*
Tails	1,838.6	93.68	0.03	22	0.14	5.6	28.0	15.9
Calculated Head	**1,962.7**	**100.00**	**0.46**	**72**	**0.80**	**100.0**	**100.0**	**100.0**
Assayed Head			0.48	83	0.83			



Stage	Time (min)	Reagents added, grams per tonne					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Con 1	7	41			16		2.0	5.0	9.8
Con 2	11	41			5		2.0	2.0	9.4
Con 3	15	41	11		4		2.0	2.0	9.2
Con 4-5	18		4	459	4		2.0	1.0	
Con 6	21		6	459	4		2.0	1.0	9.1
Con6	29	41	6	1,478	4		2.0	6.0	8.9
Total	**29**	**163**	**26**	**2,395**	**36**	**0**	**12.0**	**17.0**	

MET-SOLVE LABORATORIES INC.

FLOTATION TEST REPORT

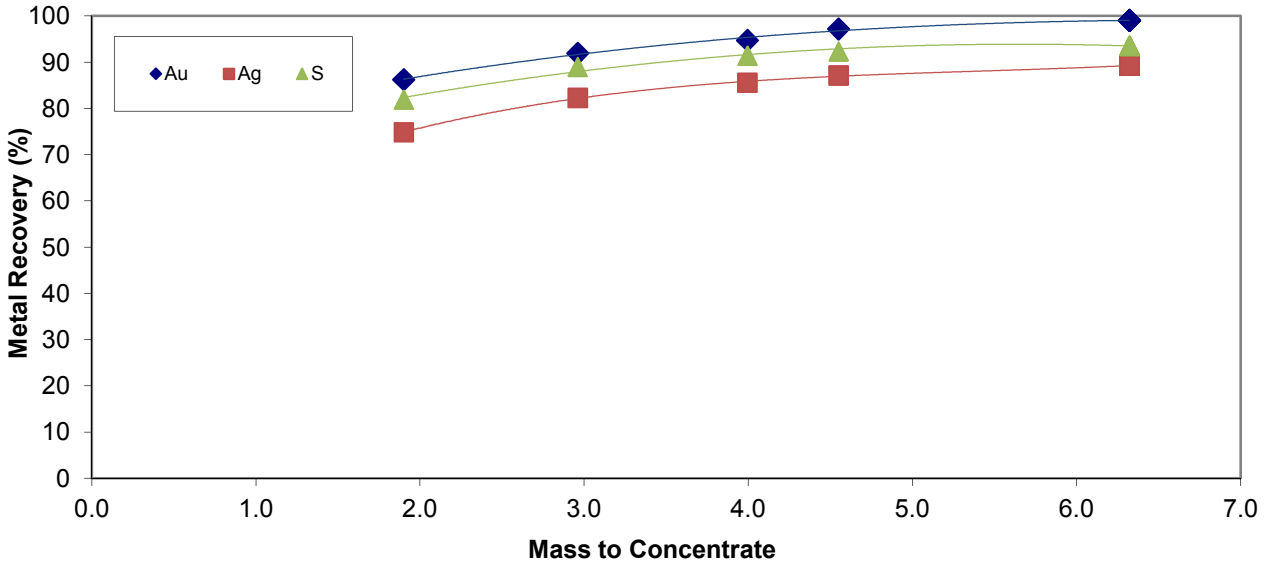
Client: Happy Creek Rateria
Test: IS301
Sample: Composite of Jan 14 & Feb 13 Samples Ground to 47 µm

Date: 27-Feb-13
Project: MS1445

Pulp Density 33.5% **Float Cell** 4.6 litres **Speed** 1,200 RPM

Products	Weight		Assays			Distribution (%)		
	(g)	(%)	Au (g/t)	Ag (g/t)	S (%)	Au	Ag	S
Con 1	37.3	1.90	4.39	60.10	6.26	86.3	74.9	81.9
Con 2	20.8	1.06	0.52	10.70	0.97	5.7	7.4	7.1
Con 3	20.3	1.03	0.26	4.86	0.34	2.8	3.3	2.4
Con 4-5	10.9	0.56	0.43	4.29	0.24	2.5	1.6	0.9
Con 6	34.8	1.77	0.10	1.82	0.10	1.8	2.1	1.2
Total Con & Scav	*124.1*	*6.32*	*1.51*	*21.54*	*2.15*	*99.0*	*89.3*	*93.6*
Tails *	1,838.6	93.68	0.00	0.18	0.01	1.0	10.7	6.4
Calculated Head	**1,962.7**	**100.00**	**0.10**	**1.53**	**0.15**	**100.0**	**100.0**	**100.0**
Assayed Head			0.08	2.52	0.10			

* gold in tails assayed <0.01 g/t, used 0.001 g/t for calculations



Stage	Time (min)	Reagents added, grams per tonne					Time (minutes)		pH
		PAX	Pine Oil	Diesel Oil	MIBC	TF250	Cond.	Float	
Con 1	7	41			16		2.0	5.0	9.8
Con 2	11	41			5		2.0	2.0	9.4
Con 3	15	41	11		4		2.0	2.0	9.2
Con 4-5	18		4	459	4		2.0	1.0	
Con 6	21		6	459	4		2.0	1.0	9.1
Con6	29	41	6	1,478	4		2.0	6.0	8.9
Total	**29**	**163**	**26**	**2,395**	**36**	**0**	**12.0**	**17.0**	

Appendix K

Assays

1 Head Assay
2 Float IS301
3 Float IS302
4 Float IS401
5 Float IS402
6 Float IS403
7 Float IS501
8 Float IS502
9 Float IS601
10 Float IS602
11 Float IS603 (cleaner)
12 Float IS603 (rougher)

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: Head Assay

Sample Name	Sample Description	**F.A. Au g/t**	**ICP Ag ppm**	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	**ICP Cu ppm**	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	**ICP Mo ppm**
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	**ICP Re ppm**	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8.1	568	3.8	59	**0.829**	0.1	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.62	86.1	2.3	14.3	30.3	12.2
93473	Head, cut 2	2.78	4.1	8.4	588	3.7	62	**0.832**	0.1	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.05	82.1	2.7	15.2	30.2	10.1

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS301 Scope Float 1 (2 kg)

Sample Name	Sample Description	**F.A. Au g/t**	**ICP Ag ppm**	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	**ICP Cu ppm**	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	**ICP Mo ppm**
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
93577	Float Con 1	**4.39**	**60.10**	3.95	8.2	393	0.55	65.4	2.32	4.23	24.5	19.3	1730	0.96	**204,000**	4.50	11	0.81	0.5	0.08	1.53	12.4	4.4	0.78	334	**2,060.0**
93578	Float Con 2	**0.52**	**10.70**	5.76	4.7	681	0.91	14.4	3.44	1.11	32.8	32.2	3270	1.10	**26,700**	4.18	19	0.49	0.7	0.10	2.03	16.5	7.3	1.07	669	**542.0**
93579	Float Con 3	**0.26**	**4.86**	6.43	2.9	721	1.00	6.98	3.53	0.66	32.9	33.6	3610	1.34	**9,480**	3.99	19	0.90	0.7	0.09	2.18	16.8	7.5	1.15	685	**302.0**
93580	Float Con 4-5	**0.43**	**4.29**	5.45	1.8	687	0.92	2.99	3.12	0.65	32.6	28.3	3060	1.28	**6,650**	3.51	19	1.23	0.6	0.08	2.02	16.6	7.3	1.06	617	**296.0**
93581	Float Con 6	**0.10**	**1.82**	5.35	1.6	723	0.93	1.4	2.97	0.37	31.9	26.1	2530	1.17	**2,830**	3.18	19	0.39	0.6	0.08	2.18	16.0	7.5	1.08	600	**134.0**
93582	Float Tail Cut 1	**<0.01**	**0.22**	5.86	1.1	730	0.80	0.19	2.49	0.06	32.7	17.1	1190	1.11	**290**	3.01	17	0.64	0.6	0.05	2.09	16.2	6.7	1.12	454	**22.6**
93583	Float Tail Cut 2	**<0.01**	**0.13**	6.75	1.1	746	0.72	0.18	2.54	0.07	32.5	17.1	1200	1.21	**264**	3.11	17	0.33	0.6	0.05	2.14	16.9	6.2	1.16	448	**20.7**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	**ICP Re ppm**	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14.3	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15.2	30	10
93577	Float Con 1	1.98	2.4	690	423	21.4	35	**27.00**	6.26	1.2	5.5	2.6	2.9	340	0.20	12.90	5.8	0.23	0.2	10.0	75.1	12.7	9.4	69	6
93578	Float Con 2	2.73	4.1	1,380	590	9.8	57	**6.64**	0.97	1.1	9.6	0.9	5.8	572	0.28	2.00	10.7	0.30	0.2	12.6	104.0	16.3	15.5	16	9
93579	Float Con 3	2.83	4.4	1,560	590	8.5	62	**3.74**	0.34	1.0	9.7	0.6	7.1	563	0.31	1.01	10.1	0.32	0.2	11.5	105.0	15.8	15.5	14	10
93580	Float Con 4-5	2.72	4.1	1,170	594	8.1	62	**3.65**	0.24	0.9	9.5	0.6	4.9	527	0.28	0.91	9.3	0.29	0.2	9.4	96.1	15.8	15.0	21	10
93581	Float Con 6	2.81	4.1	1,040	594	5.4	62	**1.56**	0.1	0.7	9.9	0.6	4.5	542	0.29	0.45	9.0	0.29	0.2	7.5	88.0	10.5	14.8	22	10
93582	Float Tail Cut 1	3.06	3.8	485	634	3.5	60	**0.14**	0.01	0.5	7.9	<0.5	2.3	507	0.28	0.09	6.7	0.27	0.2	3.3	91.7	7.7	14.5	26	9
93583	Float Tail Cut 2	3.07	3.6	475	642	3.5	59	**0.13**	0.01	0.5	7.6	0.5	2.2	475	0.27	0.07	6.5	0.27	0.2	3.5	86.0	6.8	14.6	23	10

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS302 Scope Float 2 (2 kg)

Sample Name	Sample Description	**F.A. Au g/t**	**ICP Ag ppm**	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	**ICP Cu ppm**	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	**ICP Mo ppm**
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
93641	Float Con 1	**6.21**	**81.70**	3.28	9.6	331	0.32	99.3	1.85	6.19	21.3	16.6	1420	0.69	**331,000**	4.55	8	0.81	0.4	0.08	1.05	9.3	3.1	0.51	238	**2,880.0**
93642	Float Con 2	**1.05**	**21.00**	6.05	7.3	614	0.72	26.1	3.19	2.41	30.1	35.9	3640	0.84	**50,100**	4.39	18	0.75	0.7	0.11	1.80	14.8	7.4	0.86	657	**1,230.0**
93643	Float Con 3	**0.28**	**5.82**	6.66	4.9	695	0.81	6.42	3.42	0.77	32.1	35.1	4110	0.90	**11,200**	4.02	19	0.52	0.7	0.10	2.05	15.8	7.2	0.92	766	**380.0**
93644	Float Tail Cut 1	**0.02**	**0.33**	7.22	2.5	745	0.71	0.19	2.83	0.08	34	18.3	1240	0.97	**274**	3.15	19	0.43	0.6	0.06	2.22	16.7	7.5	1.10	503	**24.0**
93645	Float Tail Cut 2	**0.02**	**0.25**	6.69	5.4	667	0.70	0.18	2.49	0.13	33.1	18.2	1100	1.01	**266**	2.80	19	0.60	0.6	0.05	1.95	16.6	7.2	1.00	493	**23.7**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	**ICP Re ppm**	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14.3	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15.2	30	10
93641	Float Con 1	1.27	1.8	574	324	32	28	**36.70**	8.35	1.3	4.0	3.4	2.3	299	0.17	20.10	5.0	0.17	0.2	11.7	61.2	10.5	6.4	77	6
93642	Float Con 2	2.29	4.3	1,520	595	17.3	51	**14.70**	1.90	1.3	8.6	1.3	6.6	591	0.27	3.85	10.1	0.27	0.2	14.5	99.5	17.1	13.5	14	10
93643	Float Con 3	2.59	4.9	1,790	654	8.8	59	**4.24**	0.43	1.1	9.4	0.8	7.8	641	0.27	1.18	11.5	0.29	0.2	11.4	103.0	12.7	14.8	<0.5	12
93644	Float Tail Cut 1	3.05	4	504	666	5.6	60	**0.15**	0.01	0.6	8.5	<0.5	2.4	553	0.29	0.09	7.0	0.28	0.2	3.6	93.4	7.3	14.2	22	10
93645	Float Tail Cut 2	2.71	4.1	462	646	3.7	62	**0.15**	0.01	0.5	8.4	<0.5	2.4	550	0.28	0.08	7.3	0.25	0.2	3.6	88.5	7.2	14.2	23	10

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS401 Scope Float 3 (10 kg)

Sample Name	Sample Description	**F.A. Au g/t**	**ICP Ag ppm**	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	**ICP Cu ppm**	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	**ICP Mo ppm**
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
93833	Float Con 1	**2.58**	**40.80**	4.11	3.6	478	1.01	39.8	2.24	3.46	30	15.1	896	0.95	**126,000**	3.30	15	0.30	0.5	0.06	1.84	14.1	6.6	0.91	401	**1,220.0**
93834	Float Con 2	**0.69**	**16.00**	5.36	3.2	646	0.91	20.9	2.66	1.83	34.3	20.5	1220	1.24	**45,600**	3.24	20	0.22	0.7	0.07	2.03	16.6	9.0	1.03	505	**830.0**
93835	Float Con 3	**1.13**	**18.00**	5.75	6.7	642	1.24	18.7	3.51	2.96	36.9	29.2	1850	1.06	**40,000**	3.68	24	0.44	0.8	0.16	1.96	17.5	11.7	1.10	622	**1,290.0**
93836	Float Con 4	**0.42**	**6.65**	5.44	5.7	660	1.11	5.4	3.10	1.27	32.2	26.2	1860	1.02	**11,300**	3.06	22	0.47	0.8	0.11	2.04	15.3	10.8	1.07	622	**550.0**
93837	Float Con 5	**0.35**	**5.70**	5.57	3.6	696	1.13	4.35	3.31	1.33	33.5	26.7	2130	1.04	**8,850**	3.10	23	0.50	0.8	0.11	2.15	16.0	11.1	1.12	653	**496.0**
93838	Float Con 6	**0.33**	**3.94**	4.52	4.0	681	1.11	3.03	3.06	1.15	30.9	25.2	2120	1.05	**5,550**	2.93	22	0.90	0.8	0.10	2.07	14.9	10.7	1.03	615	**343.0**
93839	Float Con 7	**0.16**	**2.87**	5.73	2.0	698	1.28	2.81	3.08	1.05	32.5	24.4	1830	1.04	**3,900**	2.85	22	0.34	0.7	0.10	2.15	15.3	10.7	1.09	637	**252.0**
93840	Float Con 8	**0.09**	**1.64**	6.40	1.3	724	1.03	1.36	2.95	0.53	34.3	22.8	1520	1.25	**2,120**	2.78	21	0.23	0.7	0.08	2.19	16.6	10.0	1.13	605	**144.0**
93841	Float Con 9	**0.07**	**1.42**	6.98	1.3	741	1.03	1.16	3.08	0.56	35.2	22.6	1550	1.36	**1,780**	2.88	22	0.22	0.7	0.08	2.27	17.0	10.2	1.15	604	**128.0**
93842	Float Tail Cut 1	**0.01**	**0.28**	5.53	0.8	748	0.89	0.19	2.60	0.10	37.7	17.7	811	1.13	**189**	3.01	21	0.33	0.7	0.06	2.19	18.1	9.4	1.12	525	**20.9**
93843	Float Tail Cut 2	**<0.01**	**0.20**	5.18	1.1	720	0.95	0.16	2.45	0.09	37.3	17.6	966	1.02	**156**	2.88	21	0.28	0.7	0.06	2.11	17.6	9.6	1.12	537	**19.5**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	**ICP Re ppm**	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15	30	10
93833	Float Con 1	2.56	2.9	396	469	13.9	48	**14.50**	3.32	0.7	6.4	1.7	2.1	434	0.23	7.49	5.9	0.23	0.2	7.0	77.7	74.1	10	48	8
93834	Float Con 2	2.76	3.6	535	526	10.8	66	**9.23**	1.48	0.9	8.7	1.1	3.4	583	0.24	3.64	7.8	0.26	0.2	9.9	89.3	20.9	13	32	12
93835	Float Con 3	2.54	4.2	833	472	16.1	62	**15.70**	1.34	1.4	11.2	1.3	4.3	804	0.35	4.25	13.8	0.30	0.3	24.4	110.0	27.3	15	34	13
93836	Float Con 4	2.59	4.4	830	476	8.1	64	**6.57**	0.31	1.0	10.7	0.8	4.3	685	0.28	1.64	11.5	0.28	0.2	14.3	96.9	18.2	15	23	14
93837	Float Con 5	2.69	4.3	921	528	7.6	66	**6.01**	0.27	1.0	10.3	0.8	4.7	661	0.28	1.44	10.3	0.30	0.2	14.0	103.0	20.5	15	25	12
93838	Float Con 6	2.59	4.3	863	485	6.3	62	**4.15**	0.18	1.0	10.2	0.8	4.6	602	0.26	1.13	10.9	0.28	0.2	11.8	93.7	22.6	16	22	13
93839	Float Con 7	2.65	4.2	807	486	5.6	65	**3.09**	0.14	0.9	9.8	0.8	4.4	613	0.27	0.83	9.9	0.29	0.2	11.3	92.3	23.6	14	26	12
93840	Float Con 8	2.72	4.1	732	530	4.9	71	**1.70**	0.09	0.8	9.6	0.6	3.9	615	0.26	0.51	9.1	0.29	0.2	8.1	88.1	12.8	14	23	12
93841	Float Con 9	2.78	4.1	708	485	4.5	74	**1.34**	0.06	0.8	9.6	0.6	3.9	609	0.25	0.44	9.5	0.30	0.2	8.3	85.0	11.2	14	21	12
93842	Float Tail Cut 1	3.15	4.1	411	582	3.5	70	**0.15**	<0.01	0.6	9.1	<0.5	2.4	593	0.29	0.09	9.3	0.26	0.2	3.9	95.6	5.9	16	22	12
93843	Float Tail Cut 2	3.06	4.1	416	590	3.4	68	**0.12**	<0.01	0.6	9.1	0.5	2.4	604	0.27	0.08	7.1	0.27	0.2	3.7	99.1	4.9	15	22	11

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS402 Scope Float 4 (10 kg)

Sample Name	Sample Description	F.A. Au g/t	ICP Ag ppm	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	ICP Cu ppm	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	ICP Mo ppm
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
93844	Float Con 1	**4.44**	**93.60**	3.23	10.6	74	0.39	99.8	2.03	7.41	22.2	16.1	719	0.73	**255,000**	4.05	10	1.35	0.5	0.07	1.10	10.7	4.6	0.57	251	**3,220.0**
93845	Float Con 2	**1.12**	**22.90**	6.17	6.2	239	0.92	22.1	4.09	2.96	36.7	25.2	1540	1.00	**51,000**	3.35	20	2.50	0.7	0.15	1.77	18.6	8.9	1.05	592	**1,300.0**
93846	Float Con 3	**0.64**	**9.93**	6.08	3.0	651	0.96	8.74	3.84	1.32	36.3	23.8	1910	1.13	**19,000**	2.87	20	2.20	0.8	0.10	1.90	18.4	9.6	1.06	628	**590.0**
93847	Float Con 4	**0.31**	**7.24**	6.11	2.6	696	0.96	5.3	3.88	0.90	36.6	24.4	2020	1.20	**11,400**	2.88	21	0.93	0.8	0.10	2.01	18.7	9.9	1.04	664	**417.0**
93848	Float Con 5	**0.22**	**4.02**	5.66	2.1	747	0.91	3.02	3.84	0.60	37	25.1	1840	1.21	**6,160**	2.74	20	0.30	0.8	0.08	2.13	19.2	8.8	1.04	686	**257.0**
93849	Float Con 6	**0.13**	**2.87**	6.25	1.5	734	0.95	2.04	3.67	0.40	37.1	22.4	1700	1.39	**4,290**	2.69	21	0.41	0.8	0.08	2.14	19.1	9.0	1.06	634	**184.0**
93850	Float Con 7	**0.10**	**2.15**	5.81	1.7	732	0.92	1.54	3.57	0.33	34.4	21.8	1620	1.37	**3,160**	2.59	20	0.28	0.8	0.07	2.15	17.8	8.3	1.05	624	**157.0**
93851	Float Con 8	**0.06**	**1.35**	5.75	1.5	742	0.89	0.95	3.37	0.20	35.8	19.9	1350	1.36	**1,760**	2.46	20	0.35	0.8	0.06	2.20	17.9	8.0	1.04	588	**94.4**
93852	Float Con 9	**0.30**	**1.72**	5.92	1.0	797	0.92	1.26	3.63	0.25	36.9	21.6	1380	1.44	**2,700**	2.65	21	0.36	0.8	0.07	2.32	18.8	8.2	1.12	621	**113.0**
93853	Float Con 10	**0.08**	**1.05**	5.68	1.0	766	0.88	0.74	3.36	0.17	34.6	19.8	1430	1.45	**1,400**	2.46	20	0.49	0.8	0.06	2.25	17.8	7.6	1.08	583	**74.3**
93854	Float Con 11	**0.04**	**1.14**	5.58	1.2	783	0.86	0.68	3.29	0.17	35.2	20.4	1460	1.41	**1,340**	2.56	20	0.45	0.7	0.06	2.29	18.0	7.3	1.11	588	**78.0**
93857	Trapped Material	**1.50**	**2.53**	6.41	1.3	643	0.72	2.28	2.69	0.13	54.3	18.5	1170	1.02	**5,810**	4.25	18	0.32	1.0	0.06	1.84	24.7	5.7	0.94	527	**60.4**
93855	Float Tail Cut 1	**<0.01**	**0.19**	5.79	0.9	731	0.79	0.13	2.58	0.04	34.4	16.3	825	1.27	**147**	2.50	19	0.54	0.6	0.05	2.11	17.6	7.2	1.04	504	**17.8**
93856	Float Tail Cut 2	**<0.01**	**0.14**	5.71	0.7	718	0.77	0.13	2.52	0.04	34.2	16.1	900	1.30	**133**	2.44	18	0.33	0.6	0.05	2.11	17.8	6.7	1.01	486	**16.7**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	ICP Re ppm	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15	30	10
93844	Float Con 1	1.37	1.7	290	418	35.4	31	**39.90**	7.10	1.3	4.4	2.8	1.8	319	0.21	19.10	5.5	0.17	0.2	15.3	58.3	5.4	7	39	7
93845	Float Con 2	2.29	3.5	614	883	12.5	52	**16.00**	1.60	1.2	9.4	0.9	3.3	634	0.30	5.05	13.5	0.28	0.2	20.8	94.7	5.0	15	19	9
93846	Float Con 3	2.40	3.7	757	890	9.6	60	**7.28**	0.52	0.9	9.8	0.7	3.7	607	0.35	2.20	13.6	0.28	0.2	16.1	90.7	5.9	15	19	14
93847	Float Con 4	2.47	4.1	842	885	8.3	63	**4.81**	0.32	0.9	11.1	0.6	4.1	581	0.41	1.50	12.6	0.28	0.2	13.5	94.3	8.0	15	17	15
93848	Float Con 5	2.72	4.2	821	795	6.8	68	**3.05**	0.12	0.8	11.1	0.6	3.9	617	0.35	0.96	11.9	0.29	0.2	11.9	82.1	6.3	16	20	16
93849	Float Con 6	2.63	4.0	734	754	5.6	69	**2.14**	0.08	0.7	11.4	0.6	3.7	571	0.36	0.68	12.5	0.29	0.2	10.6	84.4	4.9	16	17	13
93850	Float Con 7	2.64	3.7	716	705	5.2	66	**1.79**	0.06	0.7	10.2	0.6	3.6	530	0.30	0.54	12.1	0.28	0.2	10.1	84.3	5.4	14	19	13
93851	Float Con 8	2.72	3.7	639	660	4.9	70	**0.99**	0.03	0.6	10.4	0.5	2.8	532	0.29	0.34	10.6	0.28	0.2	7.9	76.1	4.7	14	22	11
93852	Float Con 9	2.82	3.8	658	664	4.9	69	**1.28**	0.05	0.7	10.7	0.6	3.3	549	0.32	0.45	11.7	0.30	0.2	8.8	78.7	4.3	14	20	13
93853	Float Con 10	2.80	3.8	584	632	4.5	69	**0.76**	0.03	0.6	10.6	0.6	3.0	549	0.30	0.30	10.2	0.29	0.2	7.1	74.1	3.3	14	17	13
93854	Float Con 11	2.87	3.7	604	648	4.7	68	**0.80**	0.02	0.6	10.1	0.6	3.4	543	0.28	0.28	8.9	0.29	0.2	6.4	80.4	3.6	13	18	11
93857	Trapped Material	2.88	5.1	488	870	4	63	**0.47**	0.16	0.7	8.7	0.7	2.6	487	0.40	0.41	15.3	0.28	0.2	5.7	145.0	2.6	20	18	11
93855	Float Tail Cut 1	2.97	3.4	338	536	3.3	67	**0.12**	<0.01	0.5	8.4	<0.5	2.0	508	0.27	0.07	7.1	0.26	0.2	3.7	75.1	1.8	12	22	7
93856	Float Tail Cut 2	2.97	3.4	364	567	3.5	68	**0.11**	<0.01	0.5	8.1	<0.5	2.0	502	0.26	0.07	7.1	0.25	0.2	3.6	82.1	2.2	13	21	8

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS403 Scope Float 4 (10 kg)

Sample Name	Sample Description	F.A. Au g/t	ICP Ag ppm	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	ICP Cu ppm	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	ICP Mo ppm
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
93905	Float Con 1	**2.31**	**60.70**	3.35	7.1	493	0.67	55.2	2.11	2.12	21.5	15.5	877	0.60	**158,000**	3.14	12	1.30	0.5	0.06	1.31	8.1	6.4	0.66	364	**2,020.0**
93906	Float Con 2	**1.20**	**21.20**	5.44	6.6	612	1.28	21	3.56	1.49	35.9	30.8	1640	0.88	**42,100**	3.32	22	1.90	0.9	0.17	1.59	13.8	12.3	0.91	636	**1,810.0**
93907	Float Con 3	**0.45**	**6.89**	5.49	3.3	738	1.19	5.28	3.35	0.58	43.4	33.2	2450	0.88	**10,500**	3.02	22	1.14	1.1	0.13	1.87	17.0	10.4	0.88	802	**665.0**
93908	Float Con 4	**0.15**	**3.34**	5.88	1.7	836	1.32	2.31	3.46	0.24	42.7	29.6	2100	1.08	**4,430**	2.79	23	1.00	1.0	0.09	2.20	15.7	11.8	1.02	783	**300.0**
93909	Float Con 5	**0.14**	**2.69**	5.81	2.3	783	1.23	1.95	3.31	0.22	40.1	27.6	2060	1.13	**3,840**	2.59	22	0.96	1.0	0.09	2.03	15.2	10.7	0.97	730	**254.0**
93910	Float Con 6	**0.15**	**2.32**	6.23	2.5	820	1.18	1.68	3.42	0.23	40.1	28.1	2100	1.20	**3,190**	2.68	22	0.84	1.0	0.09	2.09	15.5	10.7	1.02	747	**219.0**
93911	Float Con 7	**0.15**	**1.56**	6.27	1.6	832	1.17	1.02	3.48	0.17	41.1	28.1	2090	1.17	**1,910**	2.68	22	0.39	1.0	0.08	2.16	15.7	10.2	1.03	752	**172.0**
93912	Float Con 8	**0.25**	**1.33**	5.81	1.8	839	1.15	0.88	3.50	0.13	42.4	27.5	1910	1.18	**1,530**	2.62	22	0.50	1.0	0.08	2.19	16.4	10.4	0.99	753	**128.0**
93913	Float Con 9	**0.09**	**1.05**	5.85	1.3	801	1.26	0.71	3.30	0.16	39.6	23.4	1930	1.03	**1,170**	2.48	22	0.86	1.0	0.08	2.08	15.5	10.9	1.01	736	**105.0**
93914	Float Con 10	**0.06**	**1.02**	5.91	1.8	824	1.14	0.66	3.38	0.14	40.9	23.9	2040	1.15	**1,130**	2.54	22	0.72	1.0	0.08	2.03	15.6	9.9	1.01	724	**106.0**
93915	Float Con 11	**0.04**	**0.63**	5.44	1.3	788	1.16	0.43	3.02	0.08	37.7	21.1	1470	0.93	**709**	2.43	21	0.96	0.8	0.07	1.96	14.0	10.5	1.01	646	**73.1**
93916	Float Con 12	**0.03**	**0.53**	5.88	1.9	812	0.96	0.4	3.10	0.07	40.3	20.9	1510	0.98	**641**	2.51	22	1.15	0.9	0.07	2.08	15.2	9.3	1.01	677	**64.1**
93917	Float Con 13	**0.03**	**0.53**	5.96	1.4	808	1.10	0.37	3.01	0.07	40.3	21.1	1450	1.06	**578**	2.43	21	0.52	0.8	0.07	1.96	15.5	10.4	0.98	681	**59.0**
93918	Float Tail Cut 1	**0.01**	**0.13**	5.27	1.0	740	1.10	0.11	2.52	0.02	41.9	18.0	985	0.99	**127**	2.74	21	0.17	0.8	0.06	1.94	16.1	11.1	1.00	621	**18.6**
93919	Float Tail Cut 2	**<0.01**	**0.13**	5.43	1.2	756	1.10	0.11	2.61	0.02	39.2	17.8	912	0.86	**111**	2.69	21	0.51	0.7	0.06	1.97	14.6	11.2	1.00	632	**17.3**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	ICP Re ppm	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15	30	10
93905	Float Con 1	1.82	2.4	356	383	16.7	44	**18.90**	4.53	1.1	5.5	1.8	2.0	424	0.31	11.20	4.6	0.19	0.2	8.8	68.8	5.0	8	30	11
93906	Float Con 2	2.18	4.5	693	432	16.8	63	**17.90**	1.29	1.9	10.7	1.1	3.8	918	0.55	6.94	14.8	0.29	0.2	26.3	102.0	7.8	14	25	18
93907	Float Con 3	2.45	5.6	1,100	579	9.3	80	**6.24**	0.33	1.6	12.6	0.8	5.4	917	0.70	2.61	16.9	0.28	0.2	15.9	103.0	16.8	19	14	36
93908	Float Con 4	2.71	5.2	880	555	6.5	90	**2.86**	0.13	1.1	13.8	0.7	4.5	807	0.60	1.05	12.9	0.31	0.2	11.0	94.1	23.8	18	20	27
93909	Float Con 5	2.52	4.5	858	531	5.9	87	**2.49**	0.10	1.0	11.9	0.6	4.3	748	0.38	1.05	11.5	0.29	0.2	11.5	90.8	6.8	15	15	18
93910	Float Con 6	2.60	4.7	856	541	5.5	88	**2.12**	0.09	1.2	11.3	0.6	4.3	768	0.38	0.89	10.9	0.30	0.2	9.5	90.0	8.5	15	14	18
93911	Float Con 7	2.63	4.7	869	544	5	88	**1.56**	0.06	1.0	12.8	0.7	4.3	765	0.40	0.68	10.7	0.30	0.2	9.5	90.5	6.2	17	15	16
93912	Float Con 8	2.70	4.7	849	556	5.1	87	**1.35**	0.04	1.0	12.3	0.6	4.2	729	0.45	0.76	11.3	0.30	0.2	8.6	91.3	7.2	17	16	19
93913	Float Con 9	2.61	4.8	799	583	5.9	86	**1.04**	0.04	0.9	12.1	0.6	3.9	732	0.53	0.48	11.5	0.29	0.2	8.9	90.3	10.6	16	16	17
93914	Float Con 10	2.58	4.6	846	578	5.1	85	**1.03**	0.04	0.9	11.0	0.6	4.1	725	0.43	0.46	9.6	0.29	0.2	7.8	92.1	5.8	16	17	23
93915	Float Con 11	2.67	4.4	616	595	4.4	78	**0.69**	0.03	0.8	10.7	0.6	3.2	667	0.39	0.33	9.6	0.28	0.2	5.9	85.6	4.3	14	17	18
93916	Float Con 12	2.77	4.4	627	615	4.3	84	**0.62**	0.02	0.8	10.8	<0.5	3.3	728	0.35	0.24	8.9	0.29	0.2	5.9	90.3	4.3	16	18	18
93917	Float Con 13	2.69	4.3	595	615	4.1	86	**0.54**	0.02	0.8	11.3	0.6	3.2	702	0.39	0.32	9.5	0.28	0.2	5.7	87.9	5.4	14	17	14
93918	Float Tail Cut 1	2.83	4.3	392	626	3.8	82	**0.10**	<0.01	0.7	10.7	0.6	2.2	713	0.44	0.12	7.3	0.25	0.2	3.6	101.0	2.4	15	23	16
93919	Float Tail Cut 2	2.86	4.3	373	607	3.4	76	**0.09**	<0.01	0.7	10.1	0.6	2.1	700	0.45	0.11	6.9	0.26	0.2	3.5	99.7	2.7	13	25	14

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS501 Scope Rougher-Cleaner Float 4 (10 kg)

Sample Name	Sample Description	**F.A. Au g/t**	**ICP Ag ppm**	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	**ICP Cu ppm**	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	**ICP Mo ppm**
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	37	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	37	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
94019	Cleaner Con 1	**5.54**	**150.00**	2.68	14.1	263	0.71	129	2.30	7.83	21	29.0	1270	0.61	**315,000**	4.71	12	1.89	0.5	0.18	0.73	9.8	6.5	0.37	316	**3,990.0**
94020	Cleaner Con 2	**4.96**	**135.00**	3.91	13.7	295	0.89	124	2.59	8.01	25	30.9	1500	0.61	**301,000**	4.99	13	0.82	0.6	0.18	0.91	11.4	7.5	0.47	376	**3,760.0**
94021	Cleaner Con 3	**3.33**	**129.00**	3.45	12.5	359	0.82	111	2.68	7.72	25	30.9	1700	0.73	**273,000**	4.63	14	1.93	0.6	0.17	1.01	12.0	7.5	0.50	389	**3,650.0**
94022	Cleaner Con 4	**4.37**	**126.00**	3.39	10.3	363	0.95	105	2.74	6.93	25	31.7	1720	0.69	**263,000**	4.54	15	2.10	0.5	0.18	1.03	12.0	8.2	0.49	405	**3,380.0**
94023	Cleaner Con 5	**4.36**	**114.00**	3.68	22.6	387	0.97	101	2.74	6.57	29	34.2	1930	0.69	**237,000**	4.53	15	2.05	0.6	0.17	1.10	13.3	8.6	0.52	449	**3,180.0**
94024	Cleaner Con 6	**3.70**	**133.00**	4.48	12.2	354	0.94	110	2.94	7.21	30	35.2	2090	0.69	**251,000**	4.84	17	1.17	0.6	0.20	1.15	13.8	9.3	0.55	477	**3,520.0**
94025	Cleaner Con 7	**4.12**	**94.40**	4.30	10.0	318	0.96	84	2.78	5.79	25	31.9	1980	0.59	**210,000**	4.29	15	0.76	0.6	0.17	1.13	11.4	8.5	0.56	436	**2,770.0**
94026	Cleaner Con 8	**5.50**	**107.00**	3.12	9.4	420	1.06	89.9	3.00	6.34	28	33.9	2110	0.78	**215,000**	4.30	17	2.25	0.6	0.19	1.20	13.1	9.4	0.53	481	**2,990.0**
94027	Cleaner Con 9	**2.81**	**88.20**	3.80	4.5	478	1.02	68.1	3.02	4.92	28	35.4	2370	0.90	**162,000**	3.97	17	1.83	0.5	0.17	1.38	13.2	9.6	0.61	522	**2,250.0**
94076	Cleaner Tails cut 1	**0.34**	**7.87**	7.76	3.5	770	0.99	6.09	3.33	0.72	27	25.9	2170	1.15	**16,000**	3.14	21	0.51	0.7	0.07	2.05	13.9	6.9	1.06	570	**294.0**
94077	Cleaner Tails cut 2	**0.32**	**7.23**	7.57	4.0	729	0.85	5.65	3.20	0.91	24	24.2	2180	0.98	**14,100**	2.99	19	0.49	0.6	0.07	1.92	12.3	6.1	0.99	529	**259.0**
94028	Float Tail Cut 1	**0.01**	**0.32**	5.83	1.3	740	0.81	0.11	2.59	0.04	32	18.4	1130	0.93	**108**	2.86	19	0.15	0.6	0.05	1.94	16.0	8.7	1.01	511	**19.7**
94029	Float Tail Cut 2	**<0.01**	**0.22**	4.97	0.8	763	0.83	0.09	2.57	0.04	34	18.9	1160	1.03	**111**	2.84	19	0.51	0.6	0.05	2.08	16.9	8.5	1.03	522	**18.6**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	**ICP Re ppm**	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15	30	10
94019	Cleaner Con 1	1.00	2.7	511	235	41.1	26	**40.10**	7.49	2.4	5.6	6.6	3.6	560	0.38	26.10	13.4	0.16	0.3	24.8	68.9	10.8	9	45	8
94020	Cleaner Con 2	1.21	3.0	623	278	41.5	31	**41.10**	6.44	2.3	6.5	6.1	3.8	581	0.48	25.10	12.7	0.19	0.3	26.9	75.6	7.0	11	36	8
94021	Cleaner Con 3	1.32	3.1	707	306	41.5	35	**37.90**	5.64	2.3	6.7	6.2	6.1	591	0.41	23.90	12.3	0.19	0.3	24.4	78.9	8.2	12	36	9
94022	Cleaner Con 4	1.38	3.2	708	285	35.8	35	**35.00**	5.18	2.3	6.7	6.0	4.3	615	0.42	22.10	13.2	0.20	0.3	25.8	77.8	8.6	11	30	10
94023	Cleaner Con 5	1.43	3.4	803	299	34.2	38	**36.00**	5.08	2.2	8.2	5.7	4.6	667	0.50	21.80	15.5	0.21	0.3	26.9	79.6	16.9	14	29	10
94024	Cleaner Con 6	1.49	3.8	881	329	37.5	40	**36.20**	4.72	2.5	8.1	6.0	5.1	708	0.53	21.90	14.2	0.22	0.3	31.6	88.1	7.9	13	33	10
94025	Cleaner Con 7	1.49	3.5	824	307	29.3	35	**31.10**	4.38	2.0	7.1	4.5	4.6	621	0.51	18.30	9.6	0.21	0.3	24.1	81.2	6.6	12	24	10
94026	Cleaner Con 8	1.56	3.4	887	294	31.0	42	**30.30**	4.62	2.1	8.4	5.4	4.7	667	0.33	18.70	14.8	0.22	0.2	27.8	87.1	7.1	13	26	15
94027	Cleaner Con 9	1.78	3.6	987	328	28.3	48	**25.70**	3.38	2.2	6.8	4.5	6.1	658	0.29	15.00	12.8	0.23	0.3	23.3	86.6	11.9	12	23	9
94076	Cleaner Tails cut 1	2.49	4.1	937	540	8.8	62	**3.49**	0.51	0.9	7.6	0.8	4.4	474	0.28	1.41	10.5	0.30	0.2	9.4	96.7	5.9	13	21	11
94077	Cleaner Tails cut 2	2.38	3.7	931	544	8.0	54	**3.07**	0.48	0.9	6.8	0.7	4.2	432	0.25	1.26	10.1	0.28	0.2	8.1	95.9	5.5	11	22	11
94028	Float Tail Cut 1	2.95	4.0	455	621	3.3	54	**0.10**	<0.01	0.6	7.4	<0.5	2.3	477	0.33	0.09	11.7	0.26	0.2	4.2	96.4	2.0	14	21	10
94029	Float Tail Cut 2	3.00	4.0	469	592	3.3	59	**0.09**	<0.01	0.5	7.1	<0.5	2.3	469	0.30	0.05	6.4	0.26	0.2	3.1	100.0	1.7	14	22	9

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS502 Scope Rougher-Cleaner Float 4 (10 kg)

Sample Name	Sample Description	F.A. Au g/t	ICP Ag ppm	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	ICP Cu ppm	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	ICP Mo ppm
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.8	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.0	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
94084	Cleaner Con 1	**7.49**	**189.00**	2.46	17.0	204	0.60	153.0	2.03	10.30	16.3	25.7	1120	0.49	**362,000**	5.56	11	1.76	0.4	0.14	0.58	8.1	4.1	0.39	278	**4,280.0**
94085	Cleaner Con 2	**5.00**	**157.00**	3.73	15.0	318	0.83	127.0	2.72	9.74	22.8	32.2	1670	0.61	**297,000**	5.54	14	2.09	0.5	0.16	0.87	11.0	5.3	0.57	387	**4,200.0**
94086	Cleaner Con 3	**4.16**	**92.30**	4.95	12.2	377	1.05	77.5	3.51	6.66	26.5	36.9	2520	0.68	**172,000**	5.06	18	1.24	0.6	0.20	1.02	13.1	6.8	0.69	496	**3,180.0**
94087	Cleaner Con 4	**1.21**	**25.40**	7.38	4.7	663	0.94	19.7	3.86	2.36	26.2	30.3	2450	1.14	**45,600**	3.69	20	0.61	0.7	0.11	1.77	14.2	7.1	1.02	582	**1,010.0**
94088	Cleaner Con 5	**0.25**	**4.68**	8.11	3.0	748	1.01	3.0	4.14	0.73	27.1	29.8	2680	1.17	**6,470**	3.44	21	0.53	0.7	0.09	2.01	14.7	7.4	1.12	631	**302.0**
94089	Cleaner Tails	**0.10**	**1.32**	8.87	2.6	818	0.95	0.9	3.65	0.35	25.7	24.5	1870	1.15	**1,470**	3.14	21	0.36	0.7	0.07	2.12	13.1	7.5	1.15	587	**146.0**
94090	Cleaner Tails	**0.09**	**1.24**	7.90	2.7	808	0.95	0.9	3.60	0.35	25.7	23.6	1810	1.16	**1,450**	2.99	21	0.36	0.7	0.07	2.13	13.5	7.1	1.13	568	**144.0**
94078	Float Tail I Cut 1	**<0.01**	**0.41**	7.60	1.2	742	0.80	0.1	2.63	0.06	25.3	18.1	1090	0.81	**359**	2.90	19	0.20	0.6	0.05	1.90	12.9	6.2	1.04	484	**20.7**
94079	Float Tail I Cut 2	**0.01**	**0.23**	7.66	1.1	771	0.76	0.1	2.73	0.05	24.6	17.2	1060	0.76	**162**	3.19	18	0.30	0.6	0.05	1.98	12.7	5.7	1.08	454	**17.9**
94080	Float Tail II Cut 1	**0.01**	**0.24**	7.66	1.1	718	0.78	0.1	2.51	0.05	25.4	18.3	1110	0.81	**132**	2.99	19	0.51	0.6	0.05	1.84	13.0	5.9	0.99	480	**17.0**
94081	Float Tail II Cut 2	**0.02**	**0.20**	9.49	1.7	849	0.76	0.1	3.13	0.04	25.3	17.2	1120	0.81	**146**	3.48	18	0.44	0.6	0.05	2.25	13.2	5.6	1.17	455	**15.6**
94082	Float Tail III Cut 1	**<0.01**	**0.24**	8.71	1.3	774	0.79	0.1	2.78	0.05	26	18.1	1120	0.81	**151**	3.19	19	0.45	0.7	0.05	1.99	13.4	6.0	1.06	488	**18.7**
94083	Float Tail III Cut 2	**0.02**	**0.18**	8.74	0.8	810	0.78	0.1	2.92	0.04	25.2	18.0	1210	0.71	**135**	3.23	18	0.32	0.6	0.05	2.06	12.6	5.9	1.11	474	**17.3**
94078-83	Average Tail	**0.01**	**0.25**	8.31	1.2	777	0.78	0.1	2.78	0.05	25.3	17.8	1118	0.79	**181**	3.16	18	0.37	0.6	0.05	2.00	13.0	5.9	1.08	473	**17.9**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	ICP Re ppm	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15	30	10
94084	Cleaner Con 1	0.78	2.1	466	217	47.7	22	**50.50**	>10	2.3	3.0	6.3	3.0	420	0.14	31.90	8.9	0.14	0.2	22.7	65.5	4.2	7	47	7
94085	Cleaner Con 2	1.13	2.6	707	310	45.1	30	**50.50**	9.47	2.4	5.1	5.7	4.0	542	0.20	27.40	14.1	0.20	0.2	26.5	82.2	5.6	10	40	10
94086	Cleaner Con 3	1.39	3.4	1,090	351	33.2	35	**39.30**	4.85	2.5	6.5	4	5.3	679	0.23	17.90	16.5	0.24	0.2	33.0	104.0	7.2	12	26	10
94087	Cleaner Con 4	2.14	3.9	1,080	453	14	55	**12.70**	1.59	1.2	8.2	1.1	4.9	525	0.26	4.73	13.3	0.29	0.2	16.2	104.0	6.0	13	22	11
94088	Cleaner Con 5	2.42	4.3	1,170	539	7.1	60	**3.93**	0.25	1.0	8.9	0.5	5.1	534	0.28	1.24	13.1	0.31	0.2	12.5	109.0	5.4	14	18	11
94089	Cleaner Tails	2.54	3.9	803	490	5.9	62	**1.65**	0.07	0.8	8.2	0.5	4.1	480	0.26	0.44	12.4	0.32	0.2	8.6	96.9	4.4	12	25	11
94090	Cleaner Tails	2.53	3.8	794	485	7.8	62	**1.57**	0.06	0.8	8.4	0.5	3.6	475	0.26	0.42	11.4	0.32	0.2	9.3	96.7	4.5	13	25	11
94078	Float Tail I Cut 1	2.71	3.6	453	644	3.6	54	**0.13**	0.01	0.6	6.3	0.6	2.3	434	0.24	0.09	7.4	0.25	0.2	3.6	97.4	1.7	12	21	12
94079	Float Tail I Cut 2	2.90	3.5	445	646	3.6	52	**0.11**	0.01	0.6	6.0	<0.5	2.2	417	0.26	0.05	6.7	0.27	0.2	3.3	98.6	1.6	12	22	12
94080	Float Tail II Cut 1	2.63	3.7	464	657	3.7	54	**0.09**	0.02	0.6	6.4	<0.5	2.3	439	0.26	0.05	9.1	0.24	0.2	3.6	99.7	1.7	12	22	17
94081	Float Tail II Cut 2	3.21	3.5	476	670	3.3	53	**0.09**	0.01	0.6	6.0	<0.5	2.2	426	0.26	0.04	6.4	0.29	0.2	3.5	103.0	1.7	12	22	12
94082	Float Tail III Cut 1	2.87	3.7	476	642	3.6	54	**0.11**	0.01	0.6	6.3	<0.5	2.4	454	0.25	0.04	6.6	0.27	0.2	3.5	97.7	1.7	12	21	14
94083	Float Tail III Cut 2	2.98	3.6	501	712	3.5	48	**0.10**	0.01	0.6	6.1	<0.5	2.4	431	0.25	0.05	6.0	0.26	0.2	3.2	108.0	1.6	12	24	10
94078-83	Average Tail	2.88	3.6	469	662	3.55	52	**0.10**	0.01	0.6	6.2	0.6	2.3	434	0.25	0.05	7.0	0.26	0.2	3.5	100.7	1.7	12	22	13

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS601 Scope Rougher-Cleaner Float 4 (3.3 kg)

Sample Name	Sample Description	**F.A. Au g/t**	**ICP Ag ppm**	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	**ICP Cu ppm**	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	**ICP Mo ppm**
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
94155	Cleaner Con 1	**NA**	**143.00**	2.43	53.8	120	0.59	204	1.71	<0.02	26.2	75.9	308	0.77	**373,000**	7.25	12	2.23	0.7	0.24	0.57	11.3	9.4	0.52	277	**34,400.0**
94156	Cleaner Con 2	**NA**	**88.50**	3.73	31.0	248	0.93	108	2.25	<0.02	28	60.8	757	1.20	**202,000**	4.73	15	1.19	0.7	0.18	1.23	12.4	8.8	0.74	403	**27,900.0**
94157	Cleaner Con 3	**NA**	**97.90**	3.91	33.5	219	1.00	115	2.33	<0.02	27.4	34.4	802	1.35	**211,000**	4.63	16	1.16	0.7	0.12	1.35	12.3	7.7	0.72	414	**9,944.0**
94158	Cleaner Con 4	**NA**	**118.00**	2.80	26.0	134	0.74	185	1.83	<0.02	18.9	22.6	415	0.65	**368,000**	6.13	12	0.98	0.4	0.13	0.76	8.5	6.0	0.48	258	**4,080.0**
94159	Cleaner Tails	**NA**	**57.70**	4.64	11.3	334	0.92	45.9	2.55	<0.02	29.2	19.1	1300	0.94	**110,000**	3.30	17	0.55	0.7	0.08	1.68	13.2	5.5	0.82	506	**464.0**
94160	Float Tail Cut 1	**NA**	**0.30**	4.89	1.4	712	0.75	0.24	2.43	<0.02	29.6	16.2	982	0.67	**363**	2.78	19	0.28	0.8	0.05	1.94	12.4	8.0	0.98	539	**31.1**
94161	Float Tail Cut 2	**NA**	**0.34**	5.55	1.0	723	0.77	0.22	2.55	<0.02	30.3	16.4	951	0.79	**350**	2.80	19	0.32	0.7	0.05	1.96	13.2	7.8	1.00	555	**30.4**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	**ICP Re ppm**	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15	30	10
94155	Cleaner Con 1	0.59	2.8	167	90	114	27	**288.00**	>10	6.6	9.1	8.9	3.1	451	0.70	42.70	31.5	0.15	0.7	147.0	91.1	15.5	14	188	20
94156	Cleaner Con 2	1.45	3.5	330	223	77.3	51	**243.00**	7.33	4.6	9.7	5.2	3.1	491	0.59	26.00	14.3	0.21	0.4	89.7	91.8	15.5	14	141	12
94157	Cleaner Con 3	1.64	3.5	339	320	60	56	**103.00**	7.65	3.3	8.5	4.8	3.3	491	0.55	21.60	11.0	0.23	0.3	37.7	80.7	12.2	12	80	12
94158	Cleaner Con 4	0.93	2.4	191	193	49	30	**43.10**	9.84	2.7	6.0	6.2	1.8	447	0.36	28.70	8.7	0.16	0.2	28.3	65.0	7.9	9	50	18
94159	Cleaner Tails	2.28	3.4	537	472	17.2	57	**5.15**	3.26	1.1	8.2	2.4	3.1	567	0.54	8.42	6.5	0.23	0.2	6.3	80.8	5.1	12	27	10
94160	Float Tail Cut 1	2.84	4.1	415	570	3.6	66	**0.26**	<0.01	0.6	8.6	<0.5	2.4	616	0.51	0.06	7.8	0.25	0.2	4.1	91.0	1.8	14	22	31
94161	Float Tail Cut 2	2.90	4.1	419	610	3.5	74	**0.24**	<0.01	0.6	8.7	<0.5	2.3	638	0.46	0.06	7.2	0.25	0.2	4.2	87.8	2.0	14	23	12

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS602 Scope Rougher-Cleaner Float 4 (3.3 kg)

Sample Name	Sample Description	**F.A. Au g/t**	**ICP Ag ppm**	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	**ICP Cu ppm**	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	**ICP Mo ppm**
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
94171	Cleaner Con 1	**NA**	**46.80**	5.34	8.7	569	0.81	40.1	3.31	<0.02	30.7	36.1	1890	0.85	**90,100**	3.65	16	1.36	0.8	0.12	1.66	13.0	7.7	0.80	571	**14,700.0**
94172	Cleaner Con 2	**NA**	**42.20**	6.12	7.5	611	0.82	35.4	3.41	<0.02	30.8	34.3	1720	0.78	**77,100**	3.57	16	1.30	0.6	0.12	1.67	13.1	8.2	0.81	551	**13,700.0**
94173	Cleaner Con 3	**NA**	**45.10**	5.77	7.7	617	0.83	36.8	3.41	<0.02	30.7	34.6	1800	0.71	**89,600**	3.57	16	0.94	0.6	0.11	1.73	13.1	8.6	0.81	542	**13,200.0**
94174	Cleaner Con 4	**NA**	**43.30**	5.73	6.6	639	0.84	33.6	3.50	<0.02	30.9	29.1	1670	0.93	**85,100**	3.44	17	1.08	0.7	0.10	1.75	13.4	9.4	0.85	543	**9,540.0**
94175	Cleaner Tails	**NA**	**47.70**	4.98	4.2	86	0.72	43.9	2.82	<0.02	24.2	17.4	1340	0.77	**120,000**	3.58	15	0.35	0.6	0.07	1.62	10.2	7.9	0.78	474	**940.0**
94169	Float Tail Cut 1	**NA**	**0.31**	6.71	1.3	754	0.94	0.35	2.74	<0.02	32.4	18.0	1050	0.92	**264**	3.16	20	0.21	0.7	0.06	2.08	13.7	10.2	1.08	642	**29.9**
94170	Float Tail Cut 2	**NA**	**0.43**	6.87	1.5	755	0.89	0.16	2.70	<0.02	31.2	18.3	1070	0.89	**250**	3.05	20	0.30	0.6	0.05	2.05	13.1	9.8	1.03	653	**27.9**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	**ICP Re ppm**	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15	30	10
94171	Cleaner Con 1	2.16	4.4	801	718	42.4	61	**204.00**	4.14	2.5	8.2	2.5	4.9	618	0.33	10.00	11.8	0.27	0.3	29.2	103.0	28.7	14	80	20
94172	Cleaner Con 2	2.21	4.3	713	684	39.3	61	**202.00**	3.94	2.4	8.3	2.2	4.3	622	0.29	9.05	11.8	0.26	0.3	27.3	97.6	14.6	15	71	14
94173	Cleaner Con 3	2.20	4.1	752	676	41.8	63	**190.00**	3.98	2.4	8.1	2.2	4.4	621	0.31	9.45	10.7	0.26	0.3	26.8	96.4	13.7	14	76	13
94174	Cleaner Con 4	2.30	4.7	672	632	30.6	67	**129.00**	3.58	1.9	8.7	1.9	4.1	618	0.28	8.16	11.0	0.26	0.3	22.3	92.2	11.6	14	58	15
94175	Cleaner Tails	2.14	3	555	442	14.9	58	**9.30**	4.09	1.0	7.1	1.7	2.9	558	0.19	6.61	8.2	0.23	0.2	10.2	81.1	6.8	11	28	10
94169	Float Tail Cut 1	2.93	4.4	425	633	3.8	84	**0.21**	0.01	0.7	8.9	0.5	2.5	710	0.44	0.08	7.5	0.26	0.2	3.5	102.0	2.0	15	24	17
94170	Float Tail Cut 2	2.89	4.1	431	637	3.5	82	**0.19**	<0.01	0.6	9.0	<0.5	4.5	700	0.26	0.06	7.4	0.26	0.2	3.6	99.1	1.8	15	25	16

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS603 Scope Rougher-Cleaner Float 5 (10 kg): Rougher Float Results

Sample Name	Sample Description	**F.A. Au g/t**	**ICP Ag ppm**	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	**ICP Cu ppm**	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	**ICP Mo ppm**
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
94300	Rougher Conc. 1	**1.35**	**47.50**	4.51	8.6	602	1.49	44.3	2.43	4.39	27.1	20.6	1020	1.10	**68,500**	4.12	17	1.06	0.6	0.07	1.68	12.2	17.3	0.87	718	**4,890.0**
94301	Rougher Conc. 2	**1.18**	**51.10**	4.69	7.8	608	1.01	35.7	2.38	0.86	27.1	13.6	921	1.04	**116,000**	3.51	13	1.44	0.6	0.05	1.66	12.2	10.0	0.82	512	**469.0**
94302	Rougher Conc. 3	**1.68**	**61.30**	4.96	12.3	542	1.19	57.9	2.62	1.72	28.1	22.1	1480	1.12	**128,000**	4.20	13	1.88	0.6	0.08	1.56	12.4	9.5	0.84	544	**1,810.0**
94303	Rougher Conc. 4	**0.88**	**31.80**	5.99	2.5	655	1.33	25.5	3.14	1.24	31.5	29.2	2500	1.08	**47,400**	4.07	15	1.22	0.7	0.10	1.78	14.2	11.3	0.90	725	**1,470.0**
94304	Rougher Conc. 5	**1.21**	**27.00**	5.08	4.3	590	1.10	18.9	3.65	1.31	39.3	25.4	2420	0.98	**41,500**	4.19	16	1.20	0.7	0.16	1.59	14.4	10.6	0.87	633	**1,780.0**
94305	Rougher Conc. 6	**0.33**	**10.80**	6.19	4.0	724	1.65	5.6	3.18	0.66	43.8	38.6	2400	1.36	**11,200**	3.57	22	0.32	1.0	0.11	2.04	19.3	17.1	1.05	934	**702.0**
94306	Rougher Conc. 7-8	**0.13**	**5.03**	6.39	3.2	741	1.64	2.53	3.05	0.32	45.3	40.3	2470	1.42	**4,770**	3.41	21	1.06	1.0	0.09	2.07	20.2	16.8	1.01	983	**333.0**
94307	Rougher Conc. 9	**0.10**	**2.63**	5.18	1.9	756	0.99	1.58	3.17	0.19	38.2	21.2	2660	1.33	**3,020**	3.32	15	0.83	0.7	0.07	1.96	13.8	8.8	1.00	653	**129.0**
94308	Rougher Conc. 10	**0.06**	**2.14**	6.37	2.7	756	1.43	1.01	2.98	0.19	40.7	32.7	2160	1.25	**1,910**	3.13	19	0.80	0.8	0.07	2.07	14.7	14.2	0.98	894	**150.0**
94309	Rougher Tails, Cut 1	**0.01**	**0.26**	6.04	1.3	740	1.27	0.15	2.56	0.05	45.5	18.4	1040	1.04	**217**	2.97	19	0.72	0.8	0.06	1.97	19.9	15.1	1.03	762	**25.6**
94310	Rougher Tails, Cut 2	**<0.01**	**0.21**	6.12	1.8	737	1.27	0.14	2.61	0.03	45.4	17.8	1030	1.03	**197**	2.96	18	0.38	0.8	0.06	1.98	20.0	14.5	1.03	736	**23.2**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	**ICP Re ppm**	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15	30	10
94300	Rougher Conc. 1	2.31	4.6	353	509	80.2	69	**34.20**	2.36	4.5	7.5	2.7	2.5	481	0.71	10.50	5.2	0.23	0.2	8.0	82.0	8.6	11	129	15
94301	Rougher Conc. 2	2.29	3.1	337	506	33.9	53	**5.78**	2.85	1.7	5.3	1.9	1.6	385	0.82	9.15	5.1	0.23	0.2	4.6	76.1	6.8	8	51	15
94302	Rougher Conc. 3	2.01	3	580	418	64.3	45	**17.90**	3.51	3.4	6.5	2.6	2.9	423	0.51	14.80	6.6	0.25	0.2	13.6	85.3	15.8	8	74	11
94303	Rougher Conc. 4	2.36	3.8	1,010	467	48.0	50	**16.00**	1.71	2.7	7.9	1.8	4.3	557	0.57	6.76	9.1	0.27	0.3	16.3	101.0	13.7	10	49	11
94304	Rougher Conc. 5	2.14	3.4	975	379	39.8	57	**19.60**	1.32	2.2	6.5	1.1	4.2	850	0.27	6.41	13.6	0.28	0.3	21.4	111.0	17.8	10	44	12
94305	Rougher Conc. 6	2.50	4.9	985	535	24.7	99	**5.31**	0.43	1.8	12.6	1.4	5.0	928	0.37	2.27	10.5	0.30	0.2	12.0	103.0	18.8	20	54	34
94306	Rougher Conc. 7-8	2.52	5	1,050	540	16.1	102	**2.68**	0.15	1.3	13.0	1.2	5.5	877	0.37	1.32	9.6	0.29	0.2	8.7	98.7	20.8	20	31	40
94307	Rougher Conc. 9	2.54	3.4	1,070	534	15.0	71	**1.65**	0.08	0.9	6.4	0.7	4.0	527	0.28	0.59	7.1	0.30	0.2	6.6	95.1	14.7	10	34	11
94308	Rougher Conc. 10	2.55	4.4	894	593	12.8	91	**1.13**	0.08	1.0	10.4	1	4.4	775	0.31	0.56	8.2	0.28	0.2	6.2	89.4	15.3	17	34	17
94309	Rougher Tails, Cut 1	2.83	4.2	421	640	5.0	87	**0.16**	<0.01	0.6	9.5	0.7	2.5	806	0.33	0.14	7.8	0.26	0.2	3.8	97.3	4.5	19	25	22
94310	Rougher Tails, Cut 2	2.85	4	412	653	4.7	86	**0.16**	0.01	0.6	9.3	0.7	2.3	766	0.34	0.09	8.6	0.26	0.2	3.8	96.5	4.9	18	21	20

MET-SOLVE LABORATORIES INC.

MS1445: Happy Creek Rateria: IS603 Scope Rougher-Cleaner Float 5 (10 kg): Cleaner Float Results

Sample Name	Sample Description	**F.A. Au g/t**	**ICP Ag ppm**	ICP Al %	ICP As ppm	ICP Ba ppm	ICP Be ppm	ICP Bi ppm	ICP Ca %	ICP Cd ppm	ICP Ce ppm	ICP Co ppm	ICP Cr ppm	ICP Cs ppm	**ICP Cu ppm**	ICP Fe %	ICP Ga ppm	ICP Ge ppm	ICP Hf ppm	ICP In ppm	ICP K %	ICP La ppm	ICP Li ppm	ICP Mg %	ICP Mn ppm	**ICP Mo ppm**
93472	Head, cut 1	**0.09**	**2.81**	4.32	1.3	683	0.85	1.82	2.62	0.19	36.5	9.4	15.8	0.96	**4,830**	2.37	18	0.22	0.8	0.06	1.86	17.2	8.6	0.97	370	**79.1**
93473	Head, cut 2	**0.07**	**2.22**	4.63	0.7	701	0.91	2.02	2.60	0.20	36.5	10.4	16.8	0.97	**4,750**	2.35	19	0.25	0.7	0.06	1.87	17.1	9.2	1.00	401	**86.8**
94337	Cleaner Con 1	**6.15**	**142.00**	4.61	34.0	332	0.96	50.6	2.95	51.90	36.2	83.7	1790	0.75	**92,000**	3.73	17	1.54	0.7	0.23	1.09	17.7	0.4	0.87	622	**76,600.0**
94338	Cleaner Con 2	**5.61**	**172.00**	5.48	23.1	439	1.06	55.1	3.66	42.30	38.5	70.2	2370	0.94	**96,200**	4.05	19	1.65	0.7	0.22	1.53	18.7	<0.1	0.91	679	**47,200.0**
94339	Cleaner Con 3	**3.10**	**119.00**	5.67	15.1	533	1.16	42.6	3.44	14.40	33.7	45.4	2450	1.08	**83,900**	3.78	20	0.92	0.6	0.13	1.82	15.4	<0.1	0.96	688	**13,500.0**
94340	Cleaner Con 4	**2.37**	**95.50**	5.74	11.2	633	1.23	33.2	3.43	8.98	32.3	40.0	2440	1.33	**71,800**	3.76	20	1.73	0.7	0.11	1.90	14.9	<0.1	0.99	702	**7,000.0**
94341	Cleaner Con 5	**1.25**	**61.40**	4.75	3.3	662	1.32	23.4	3.26	3.39	33.2	32.4	2230	1.34	**52,800**	3.37	21	1.20	0.7	0.09	2.02	15.1	<0.1	0.96	672	**2,300.0**
94342	Cleaner Tail, cut 1	**0.48**	**36.30**	4.91	8.1	666	1.22	22.5	2.64	0.76	30	24.2	1730	1.11	**60,700**	3.17	18	1.07	0.7	0.08	1.89	13.8	<0.1	0.92	535	**300.0**
94343	Cleaner Tail, cut 2	**0.83**	**34.40**	4.54	4.7	617	1.01	21.6	2.62	0.44	28.2	23.1	1740	1.10	**58,500**	3.08	17	0.22	0.6	0.08	1.88	12.7	<0.1	0.90	510	**300.0**
94309	Rougher Tail, cut 1	**0.01**	**0.26**	6.04	1.3	740	1.27	0.15	2.56	0.05	45.5	18.4	1040	1.04	**217**	2.97	19	0.72	0.8	0.06	1.97	19.9	15.1	1.03	762	**25.6**
94310	Rougher Tail, cut 2	**<0.01**	**0.21**	6.12	1.8	737	1.27	0.14	2.61	0.03	45.4	17.8	1030	1.03	**197**	2.96	18	0.38	0.8	0.06	1.98	20.0	14.5	1.03	736	**23.2**

Sample Name	Sample Description	ICP Na %	ICP Nb ppm	ICP Ni ppm	ICP P ppm	ICP Pb ppm	ICP Rb ppm	**ICP Re ppm**	ICP S %	ICP Sb ppm	ICP Sc ppm	ICP Se ppm	ICP Sn ppm	ICP Sr ppm	ICP Ta ppm	ICP Te ppm	ICP Th ppm	ICP Ti %	ICP Tl ppm	ICP U ppm	ICP V ppm	ICP W ppm	ICP Y ppm	ICP Zn ppm	ICP Zr ppm
93472	Head, cut 1	2.77	3.9	8	568	3.8	59	**0.83**	0.10	0.5	9.1	<0.5	0.7	512	0.71	0.82	8.1	0.25	0.2	4.6	86.1	2.3	14	30	12
93473	Head, cut 2	2.78	4.1	8	588	3.7	62	**0.83**	0.10	0.5	9.3	0.5	0.7	540	0.49	0.36	6.8	0.25	0.2	4.1	82.1	2.7	15	30	10
94337	Cleaner Con 1	1.34	3.3	783	1410	336.0	38	**627.00**	7.47	21.6	10.5	6.4	5.4	460	0.24	45.20	4.6	0.24	0.5	24.9	115.0	37.6	13	388	16
94338	Cleaner Con 2	1.74	4.0	992	994	358.0	51	**463.00**	6.48	24.8	10.9	4.3	6.3	524	0.31	44.70	5.9	0.27	0.5	23.1	119.0	39.6	14	383	18
94339	Cleaner Con 3	2.19	4.0	1,040	630	199.0	66	**142.00**	3.84	15.1	9.7	2.5	5.9	521	0.27	24.50	6.5	0.28	0.4	17.0	108.0	29.8	13	193	13
94340	Cleaner Con 4	2.39	4.1	1,020	671	134.0	68	**75.10**	3.23	11.7	9.5	2.3	5.3	531	0.27	16.90	5.9	0.28	0.3	12.1	103.0	21.5	13	139	12
94341	Cleaner Con 5	2.58	4.0	949	634	72.1	70	**25.50**	2.20	6.6	11.9	1.8	4.6	562	0.31	9.52	6.6	0.28	0.3	10.4	96.9	18.7	14	77	15
94342	Cleaner Tail, cut 1	2.52	3.5	768	582	22.9	62	**1.52**	1.97	2.1	7.7	1.7	4.1	507	0.23	7.17	6.5	0.26	0.2	7.1	89.7	11.8	11	29	11
94343	Cleaner Tail, cut 2	2.48	3.3	750	551	22.2	60	**1.56**	1.74	1.9	7.1	1.5	3.6	473	0.20	5.14	6.7	0.26	0.2	6.6	87.3	7.9	11	25	9
94309	Rougher Tail, cut 1	2.83	4.2	421	640	5.0	87	**0.16**	<0.01	0.6	9.5	0.7	2.5	806	0.33	0.14	7.8	0.26	0.2	3.8	97.3	4.5	19	25	22
94310	Rougher Tail, cut 2	2.85	4.0	412	653	4.7	86	**0.16**	0.01	0.6	9.3	0.7	2.3	766	0.34	0.09	8.6	0.26	0.2	3.8	96.5	4.9	18	21	20

Appendix L

Mineralogy

101B - 9850 - 201 Street, Langley, British Columbia
tel: 604-888-7604 · fax: 604-888-7611 · www.met-solvelabs.com

Process Mineralogical Consulting Ltd.

A Mineralogical Description of

DS210 Master Composite from the Highland Valley property, British Columbia

Prepared for

Happy Creek Minerals

Project #: MAR2013-01

NOTE:
This report refers to the samples as received.

SUMMARY REPORT

Met-Solve Laboratories submitted one sample, identified as IS-200 from the Happy Creek Minerals Highland Valley property for mineralogical analysis. The purpose of the investigation was to characterize the mineral composition of the sample with emphasis on liberation and association of copper (Cu)-bearing minerals for mineral processing test work.

METHODS

The sample was received as ground material having a K_{80} of ~ 53µm and was sized at 53µm and 20µm. Each size fraction was submitted for the preparation of replicate polished sections and included 3 polished sections from the +53µm, 2 from the +20µm and 1 from the -20µm size fractions. The polished sections were analysed using the Tescan Integrated Mineral Analysis (TIMA) system equipped on a Tescan Vega 3 Scanning Electron Microscope fitted with an Energy Dispersive Spectrometer (SEM-EDS). This was used to identify a statistical number of particles from each polished section with identification based upon the elemental composition. The mineral abundance analysis, liberation and association of the Cu-bearing minerals were carried out using this methodology.

TIMA is a recent addition to the automated mineralogy market. It incorporates the simultaneous acquisition of both Backscatter Electrons (BSE) and Energy Dispersive spectra (EDX) to detect and analyse the mineral composition of a prepared sample. The acquisition time at each pixel is adjusted based upon the BSE & EDX signal strength significantly shortening data acquisition times. TIMA offers superior imaging and mineral detection with the use of a YAG (yttrium-aluminum-garnet) scintillator BSE detector allowing for accurate mineral detection of ultra fine grains. TIMA can carry out mineral abundance, mineral liberation and association analyses providing acquired mineral diagrams, particle & grain size distributions, elemental distributions and liberation/locking characteristics of selected phases.

FINDINGS

The results of the investigation indicate the following:

- Sample is mainly composed of feldspar minerals and quartz with minor amounts of mafic minerals (amphibole, pyroxene, actinolite) and micas (muscovite) (Table 1, Fig.1). Micaceous minerals (aluminosilicates) present in Co-Mo porphyries that are a result of alteration of the feldspar mineral are known to cause some difficulties with flotation. The amount of mica in this sample is minor overall and present, as discrete grains and will likely not cause issues with flotation (Fig. 5).
- Sulphide minerals are present in minor amounts and dominated by chalcocite and bornite. Pyrite is only present in trace amounts and suggests that rougher floatation concentration will yield high grades and recoveries.
- Cu is mainly present as chalcocite (secondary Cu mineral) with subordinate amounts occurring as bornite (Table 2). Chalcopyrite and covellite are present in trace amounts. The partial dissolution of Cu from secondary copper sulphides leads to inadvertent activation of other sulphide minerals (pyrite, pyrrhotite, sphalerite), and this can lead to major problems in achieving selective copper flotation. The proportion of secondary Cu in this sample may be of concern for accidental activation, but as there is little to no other sulphide minerals the chance of accidental activation is limited. The content of other sulphide minerals should be monitored within differing geologic zones in order to optimize methodology to depress accidentally activated sulphides.
- The Cu-sulphide mineral association (Table 9) indicates that these are mainly Free, or no association, with moderate amounts as binary particles with silicate minerals. TIMA images (Fig 10, 11, 12) illustrate the locked and middling Cu-sulphide occurrences where the locked Cu-sulphide may have a small proportion of recoverable Cu-sulphides by flotation as they are exposed on the exterior of the overall silicate particle. The middling grains illustrate a significant proportion of recoverable Cu-sulphide as large portions of the Cu-sulphide are exposed to flotation reagents. These will likely only slightly dilute the concentrate with silicate gangue.

- Mineral release curves indicate that the optimal regrind target size for the Cu-sulphide grains is between 40 to 50µm (Fig. 3). As ~91% of the Cu-sulphide minerals are liberated (>80% of particle) (Table 3) the potential for increased recovery is limited.
- Other sulphide minerals present in the sample are mainly composed of pyrite with only trace (1 grain observed) of molybdenite. This other sulphides are also mainly liberated (~95%, Table 5).
- Molybdenite was not included in this study due to the extremely low statistical representation of this mineral. Increased polished section replicates of the size fractions or concentration of the molybdenite would need to be employed in order to obtain enough particles to provided statistical representation.

CONCLUSION / RECOMMENDATION

Overall the Cu-sulphide mineral is suitable for concentration through flotation methods or through flotation and slight gains may be made with a secondary grind at a K_{80} of 50µm to 60µm. Flotation of the Cu-sulphide minerals should yield a high Cu grade a recovery due to the lack of other sulphide minerals and the absence of silicate minerals deleterious to flotation.

It is strongly recommended to further the investigation of molybdenite by producing a molybdenite concentrate and a heavy liquid concentrate. For liberation purposes a heavy liquid concentrate is preferred, as this will provide information on grains that remain associated with silicate minerals. A flotation concentrate of molybdenite is suitable for gathering a large population of liberated molybdenite in order to submit for Electron Microprobe analysis for trace element determination (Re determinations).

May 16, 2013

Geoffrey R. Lane, B.Sc., P.Geo
Chief Mineralogist
Process Mineralogical Consulting Ltd.

TECHNICAL ASSISTANCE:

Polished Section Preparation:	Alan Verstraeten, Mineralogical Technician
SEM / TIMA Operation & Data Reduction:	Jason Redpath, Junior Mineralogist

APPENDIX I

TIMA Results

Table 1: Mineral Abundance determined by TIMA by size fraction and calculated head.

Observed Mineral Abundance

Sample	IS 200			
Fraction	**+53 µm**	**+20 µm**	**-20 µm**	**Head**
Fraction Mass %	20.8	35.9	43.3	-
Molybdenite	0	0	0.03	0.01
Chalcopyrite	0.00	0.00	0.00	0.00
Bornite	0.15	0.31	0.18	0.25
Covellite	0.00	0.01	0.01	0.01
Chalcocite	0.21	0.56	1.04	0.67
Other Sulphides	0.03	0.05	0.07	0.05
Carbonates	0.92	1.72	2.69	1.97
Quartz	23.3	25.5	17.9	21.7
Plagioclase	46.4	44.8	45.5	45.5
Orthoclase	11.3	12.4	13.4	12.6
Actinolite	2.17	1.38	1.75	1.70
Pyroxene	0.92	1.16	1.57	1.29
Chlorite	3.80	1.72	1.40	2.01
Fe-Oxides	1.59	3.13	2.11	2.37
Amphiboles	2.92	1.98	3.00	2.62
Epidote	1.34	2.03	2.07	1.90
Mica	4.05	2.19	5.87	4.17
Other Silicates	0.76	0.63	1.12	0.87
Sulphates/Phosphates	0.15	0.37	0.28	0.29
Total	**100**	**100**	**100**	**100**

Table 2: Cu deportment by mineral by size fraction and calculated head

Elemental Deportment of Copper

Sample	IS 200			
Fraction	**+53 µm**	**+20 µm**	**-20 µm**	**Head**
Fraction Mass %	20.8	35.9	43.3	-
Chalcopyrite	0.13%	0.06%	0.15%	0.11%
Bornite	35.2%	29.9%	11.9%	22.1%
Covellite	0.26%	0.58%	0.68%	0.58%
Chalcocite	64.2%	69.3%	87.1%	77.1%
Tetrahedrite	0.03%	0.00%	0.00%	0.01%
Other Copper	0.20%	0.12%	0.12%	0.13%
Total	**100%**	**100%**	**100%**	**100%**

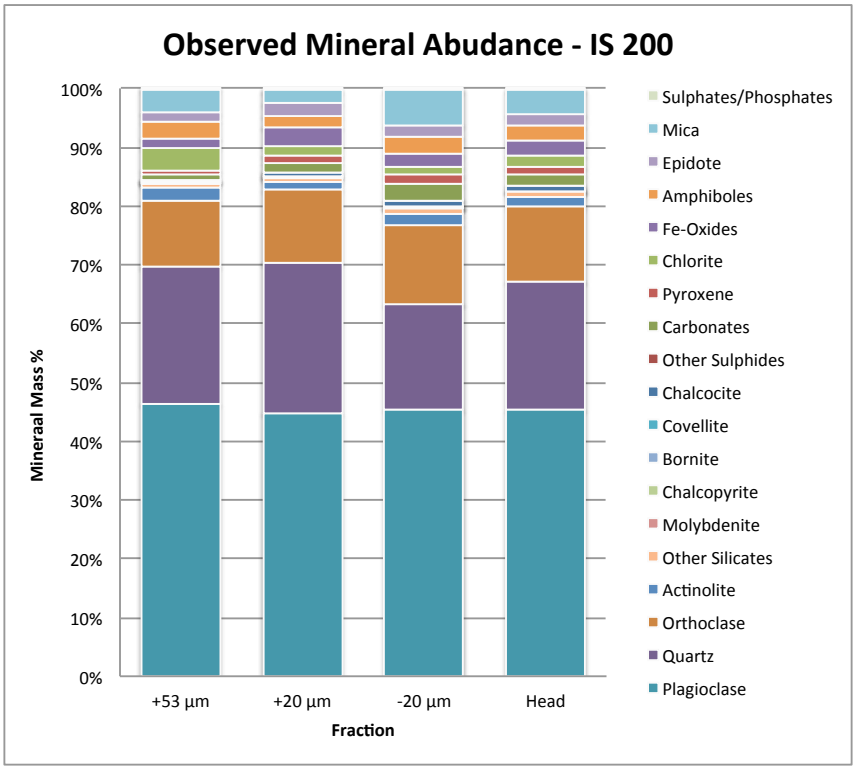


Figure 1: Mineral abundance determined by TIMA

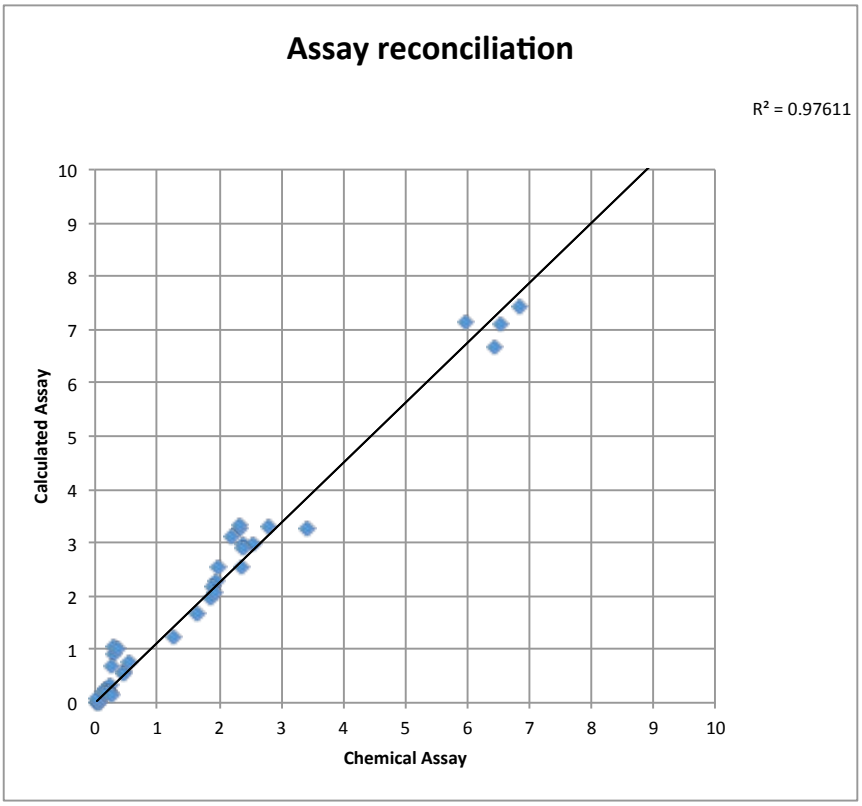


Figure 2: Assay reconciliation between TIMA calculated composition vs chemical assays. Illustrates a 97.6% accuracy based on the mineral abundance determine by TIMA.

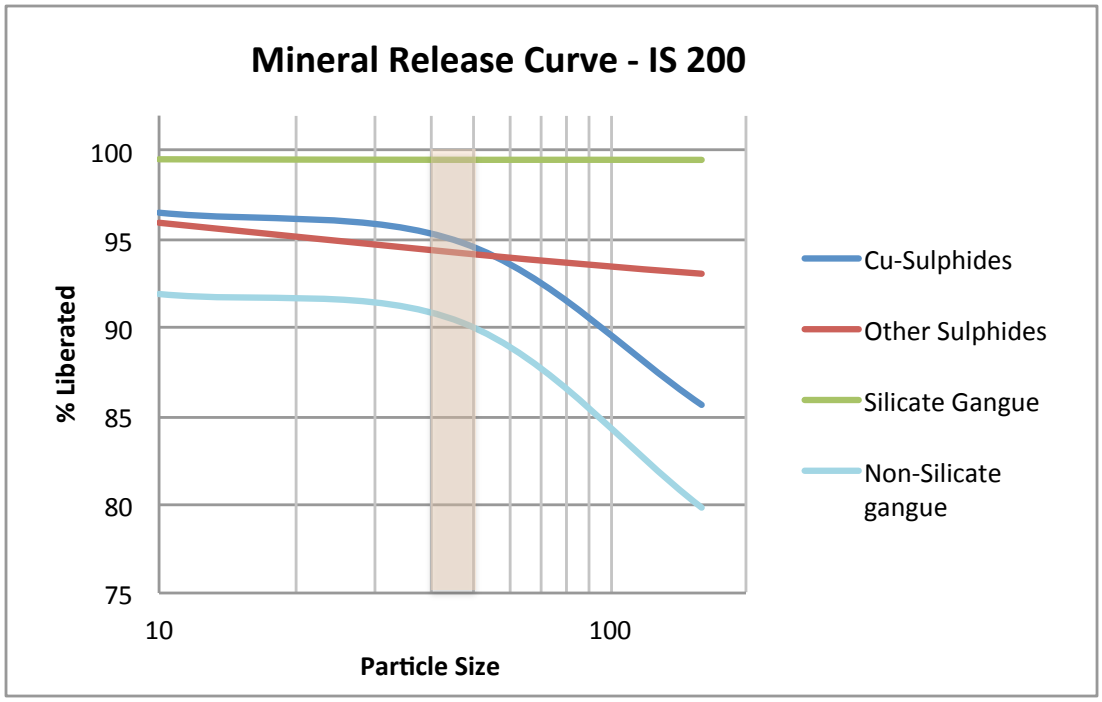


Figure 3: Mineral release curves of Cu-sulphides indicating optimal regrind target between 40µm and 50µm.

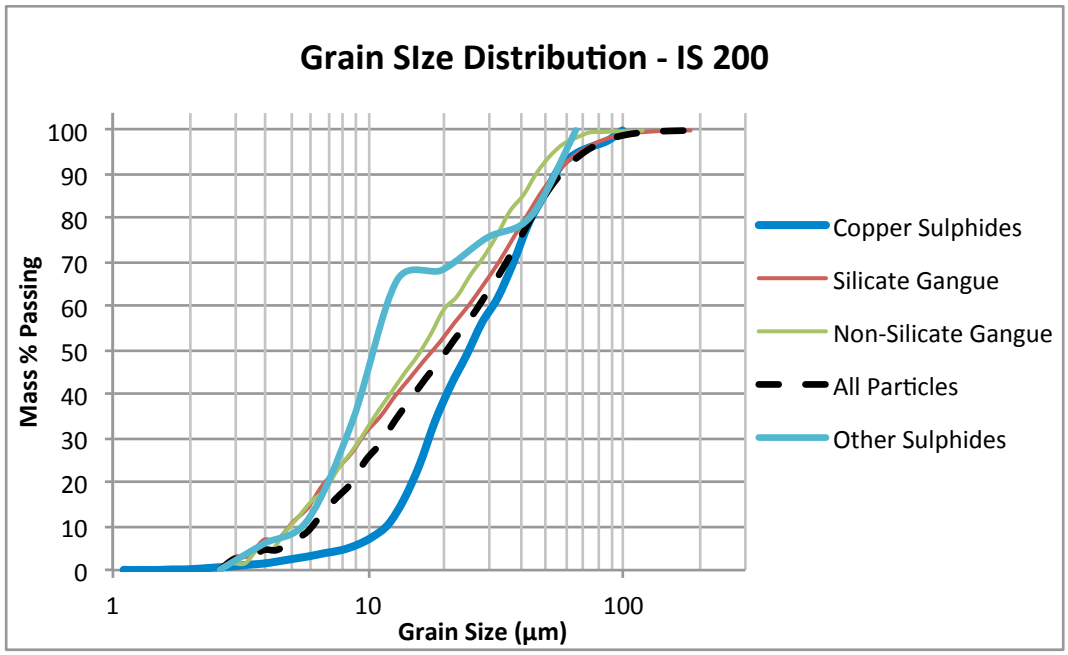


Figure 4: Grain size distribution of Cu-sulphides, Other Sulphides, Silicate and Non-silicate Gangue along with overall particle size having a K_{80} of ~45µm.

Table 3: Grouped liberation categories for Cu-sulphides

Copper Sulphide Liberation

Liberation %	**+53 µm**	**+20 µm**	-20 µm	Head
Locked	3.69	0.9	0.25	1.37
Sub -Middling	4.49	2.7	1.83	4.97
Middling	6.18	1.59	1.41	2.23
Liberated	24.1	19.3	27.8	20.5
Free	61.5	75.5	68.7	71.0
Total	100	100	100	100

Table 4: Cu-sulphide liberation in 10% categories

Copper Sulphide Liberation

Liberation %	**+53 µm**	**+20 µm**	-20 µm	Head
<10 %	1.66	0.41	0.13	0.64
>10<20 %	2.03	0.49	0.12	0.73
>20<30 %	0.70	0.32	1.70	0.91
>30<40 %	0.76	0.49	0.13	0.4
>40<50 %	3.03	1.89	0.00	3.7
>50<60 %	1.82	1.02	0.34	0.9
>60<70 %	0.10	0.01	0.11	0.0
>70<80 %	4.26	0.56	0.96	1.3
>80<90 %	11.6	7.15	6.84	6.0
>90<100 %	12.5	12.2	21.0	14.4
Liberated	61.5	75.5	68.7	71.0
Total	**100**	**100**	**100**	**100**

Figure 5: TIMA images illustrating discrete mica inclusions in K-feldspar indicating limited sericitic alteration of the feldspar reducing problematic flotation of the Cu-sulphides.

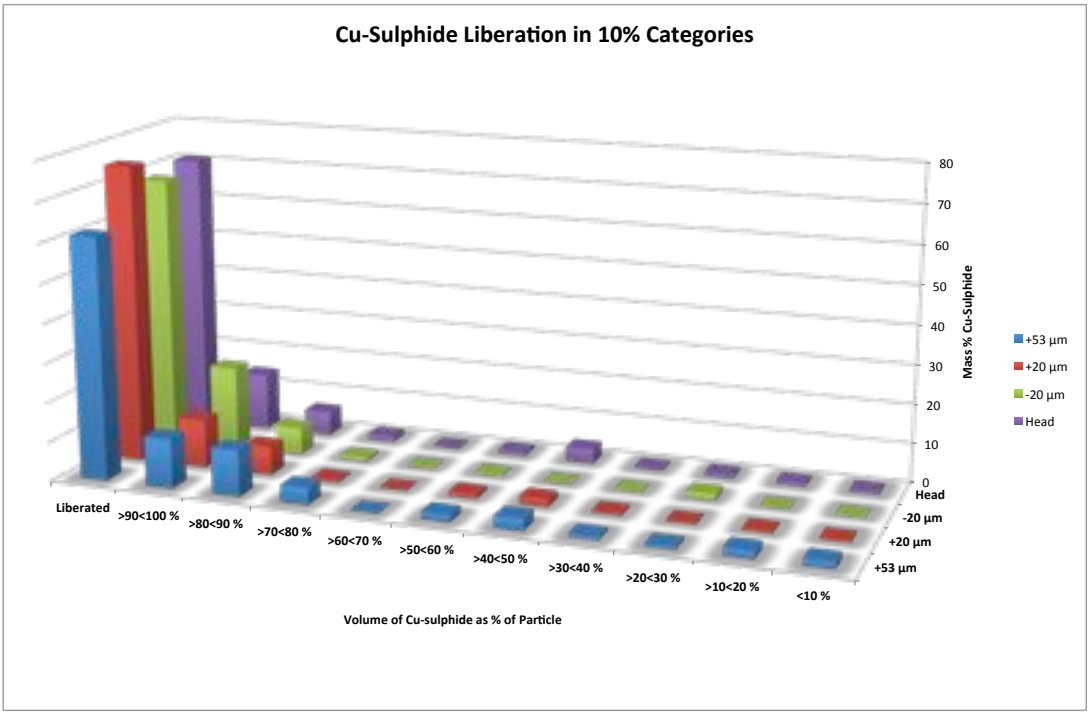


Figure 6: Cu-sulphide liberation in 10% categories of particle volume

Table 5: Liberation of Other Sulphides in grouped termed classes

Other Sulphide Liberation

Liberation %	**+53 µm**	**+20 µm**	-20 µm	Head
Locked	1.30	3.72	0.39	1.78
Sub -Middling	0.00	0.10	1.75	0.79
Middling	5.72	1.98	1.92	2.73
Liberated	0.57	13.8	0.00	5.07
Free	92.4	80.5	95.9	89.6
Total	100	100	100	100

Table 6: Other Sulphide liberation in 10% categories

Apatite Area % of Particle	**DS 210 +75**	**DS 210 +38**	**DS 210 -38**	**Head (Calc)**
<10 %	1.48	0.08	0.37	0.43
>10<20 %	1.73	0.08	0.23	0.43
>20<30 %	8.3	1.14	0.03	2.04
>30<40 %	0.01	0.16	0	0.08
>40<50 %	0.16	0.57	0	0.3
>50<60 %	0	0.9	0.79	0.7
>60<70 %	0	2.37	0.08	1.16
>70<80 %	0	1.39	0.21	0.73
>80<90 %	6.71	2.37	1.16	2.73
>90<100 %	29.0	17.6	18.3	19.9
Liberated	52.6	73.3	78.9	71.5
Total	**100**	**100**	**100**	**100**

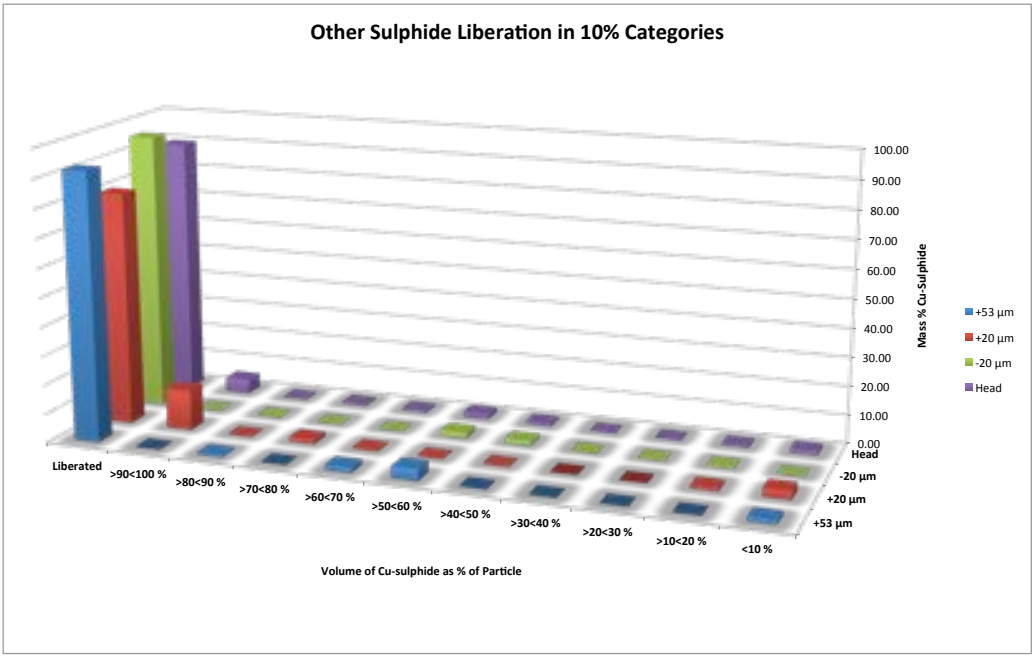


Figure 7: Other Sulphide liberation in 10% categories of particle volume

Table 7: Silicate Gangue liberation in termed categories

Silicate Gangue

Liberation %	**+53 µm**	**+20 µm**	-20 µm	Head
Locked	0.03	0.05	0.05	0.05
Sub -Middling	0.08	0.13	0.14	0.12
Middling	0.38	0.32	0.28	0.32
Liberated	4.65	1.65	1.32	2.13
Free	94.9	97.9	98.2	97.4
Total	100	100	100	100

Table 8: Silicate Gangue liberation in 10% categories

Silicate Gangue

Liberation %	+53 µm	+20 µm	-20 µm	Head
<10 %	0.01	0.02	0.02	0.02
>10<20 %	0.02	0.03	0.03	0.03
>20<30 %	0.02	0.03	0.05	0.04
>30<40 %	0.04	0.04	0.05	0.04
>40<50 %	0.02	0.06	0.04	0.04
>50<60 %	0.07	0.06	0.06	0.06
>60<70 %	0.12	0.07	0.12	0.10
>70<80 %	0.19	0.19	0.10	0.15
>80<90 %	0.53	0.36	0.40	0.41
>90<100 %	4.12	1.29	0.92	1.72
Liberated	94.9	97.9	98.2	97.4
Total	**100**	**100**	**100**	**100**

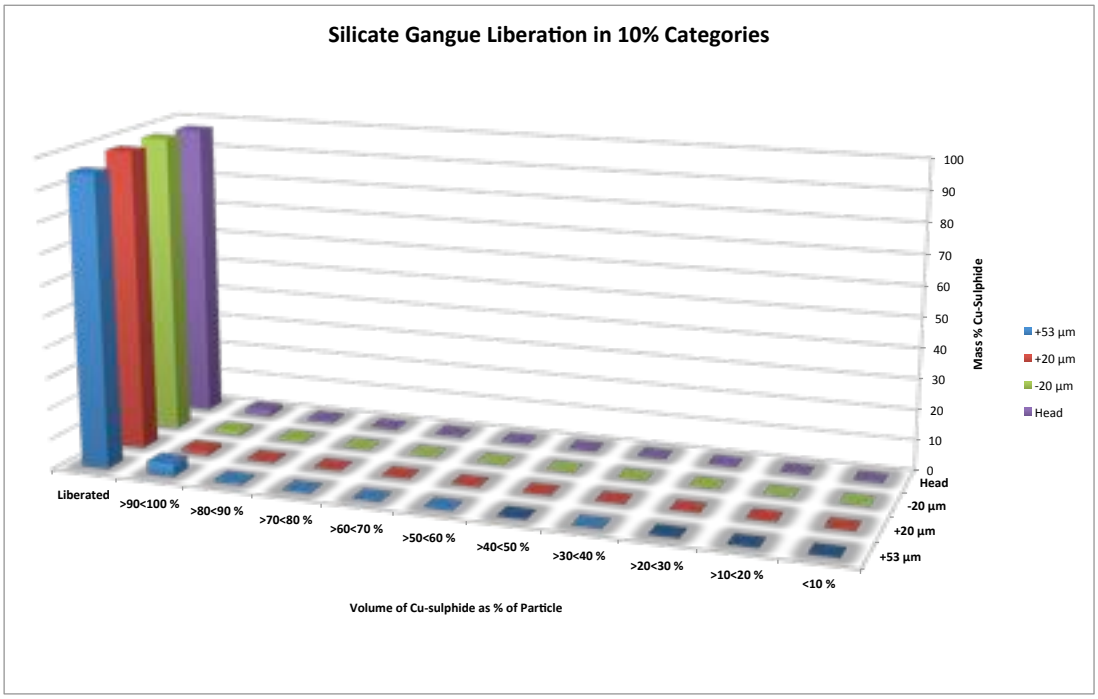


Figure 8: Silicate Gangue liberation in 10% categories

Table 9: Mineral associations for Cu-sulphides, Other Sulphides, Silicate and Non-silicate Gangue minerals of the calculated head

Mineral Association Summary

Primary mineral groups		Copper Sulphides	Other Sulphides	Non-Silicate Gangue	Silicate Gangue
Free particles		77.0	89.8	75.9	97.4
Binary	Copper Sulphides	-	0.31	0.09	0.56
	Other Sulphides	0.05	-	0.20	0.03
	Non-Silicate Gangue	0.25	1.32	-	1.98
	Silicate Gangue	21.0	8.54	23.3	-
Ternaries		1.61	0.05	0.28	0.05
Complex particles		0.03	-	0.21	0.01
Total		**100**	**100**	**100**	**100**

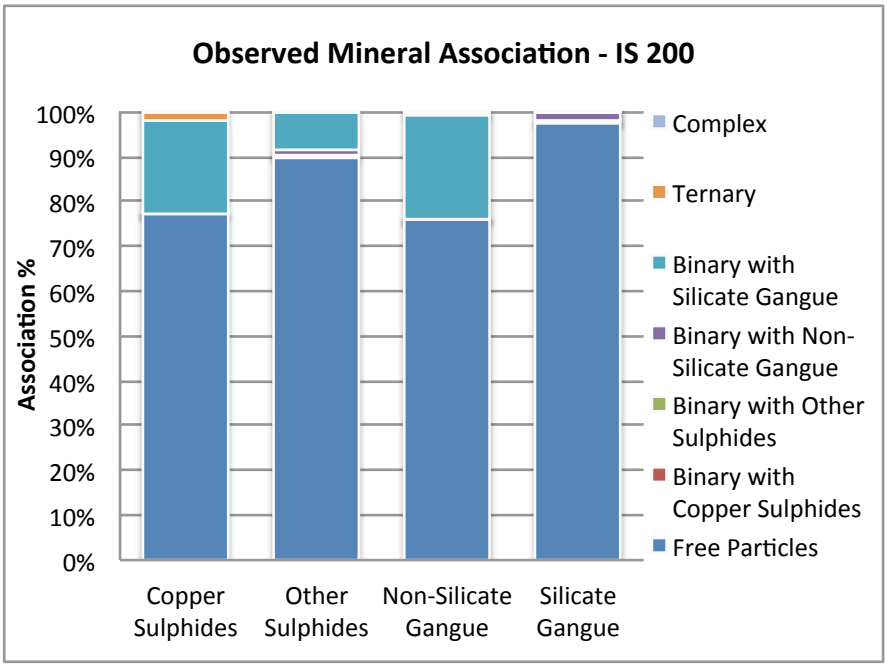


Figure 9: Mineral association of IS 200.

APPENDIX II

TIMA Images

PARTICLE IMAGES – CU-SULPHIDES

Figure 10: Locked (<30% Liberated) Cu-sulphides bearing grains

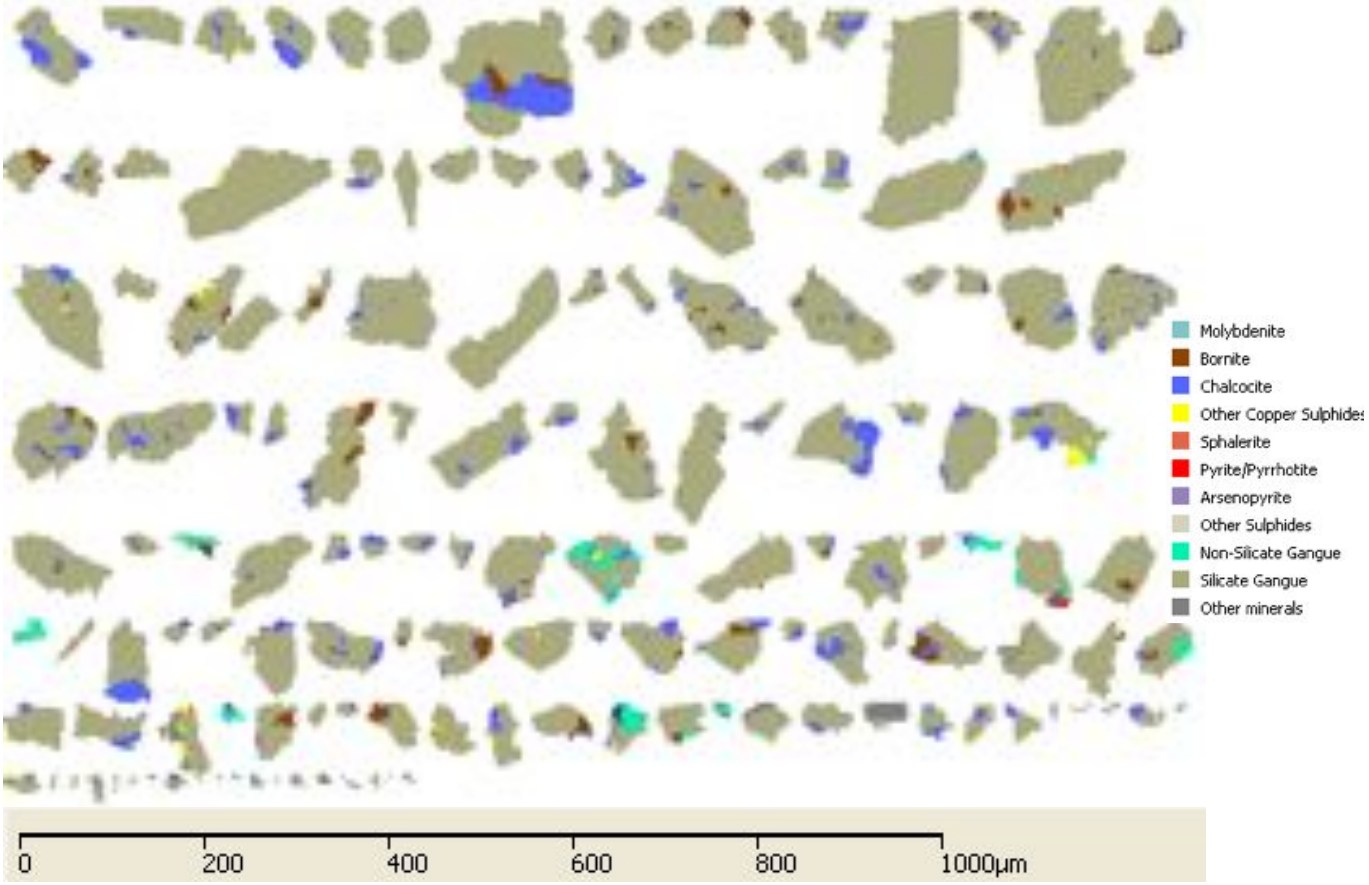


Figure 11: Middling (>30% Liberated) Cu-sulphides grains

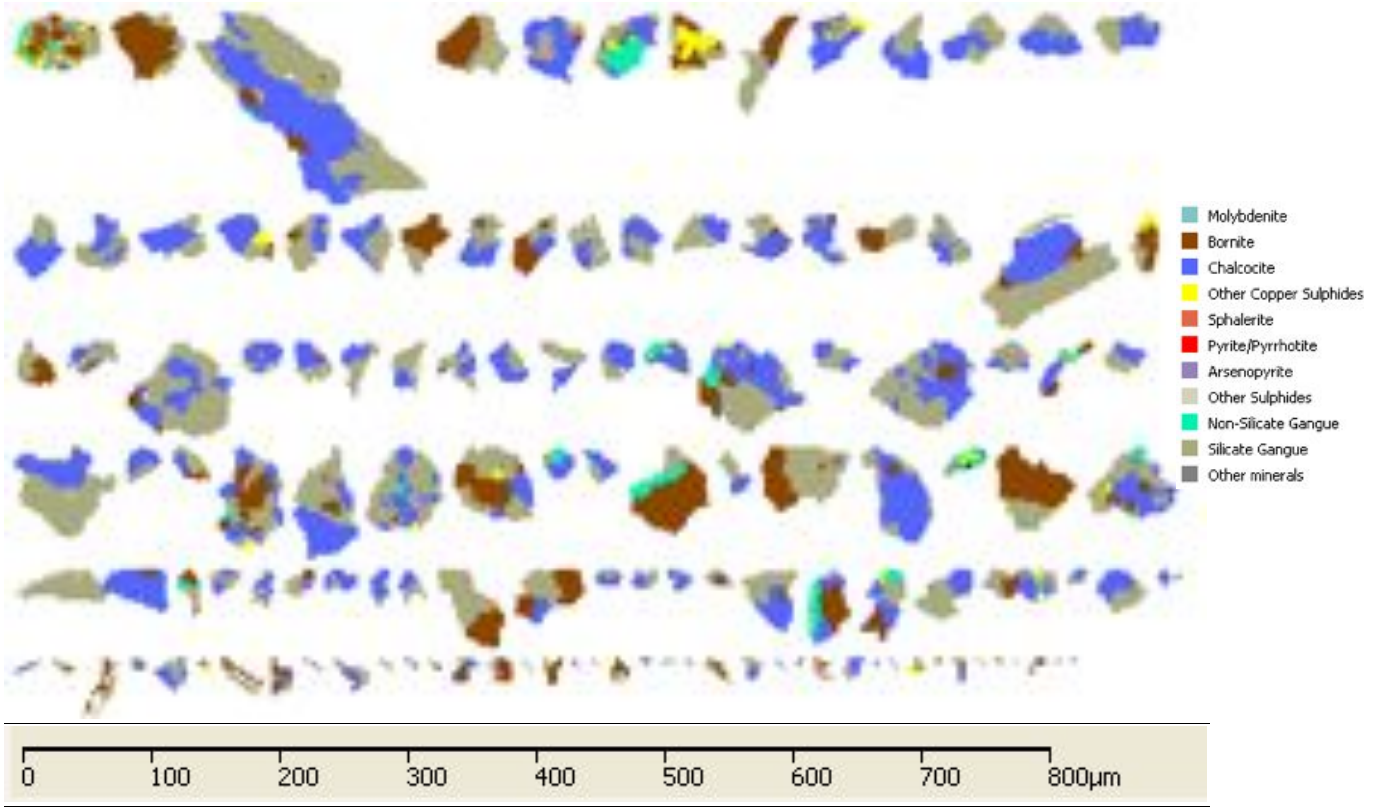
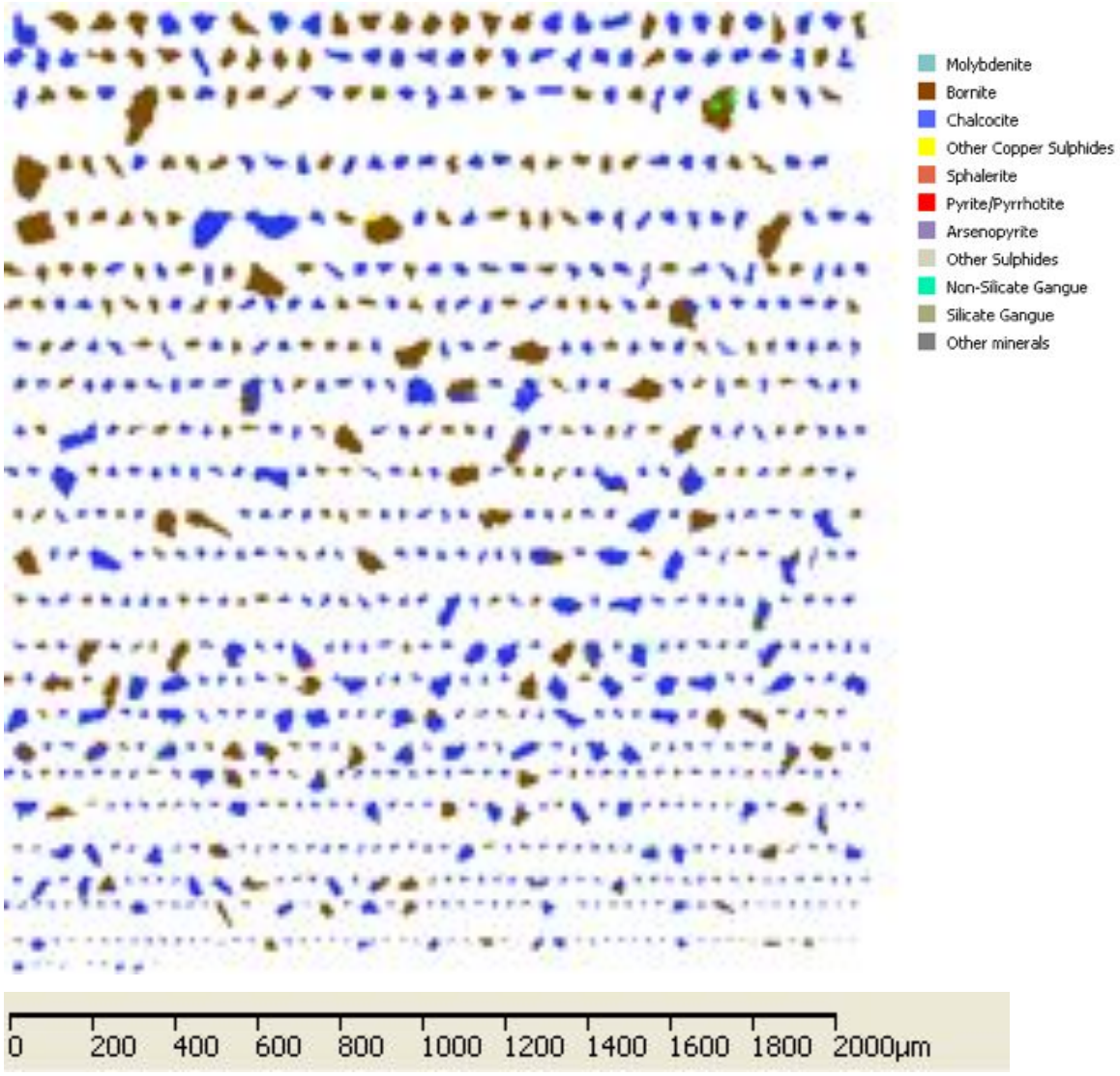
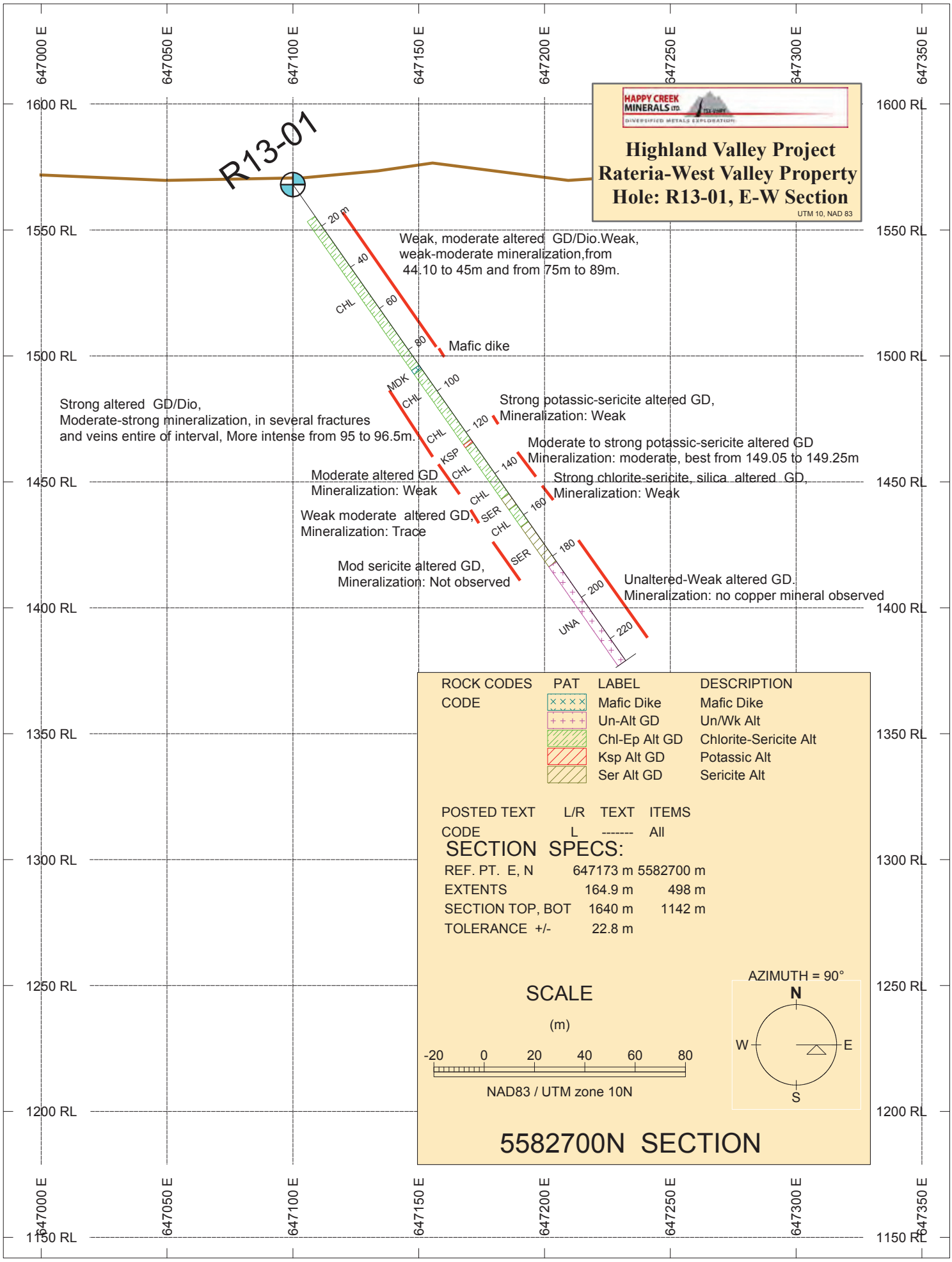


Figure 12: Liberated (>80% Liberated) Cu-sulphides grains




HAPPY CREEK MINERALS LTD.
Highland Valley Project
Rateria-West Valley Property
Hole: R13-01, E-W Section
UTM 10, NAD 83
R13-01
647000 E
647050 E
647100 E
647150 E
647200 E
647250 E
647300 E
647350 E
1600 RL
1550 RL
1500 RL
1450 RL
1400 RL
1350 RL
1300 RL
1250 RL
1200 RL
1150 RL
20 m
40
60
80
100
120
140
160
180
200
220
CHL
MDK
KSP
SER
UNA
Weak, moderate altered GD/Dio.Weak, weak-moderate mineralization,from 44.10 to 45m and from 75m to 89m.
Mafic dike
Strong altered GD/Dio, Moderate-strong mineralization, in several fractures and veins entire of interval, More intense from 95 to 96.5m.
Strong potassic-sericite altered GD, Mineralization: Weak
Moderate to strong potassic-sericite altered GD Mineralization: moderate, best from 149.05 to 149.25m
Strong chlorite-sericite, silica altered GD, Mineralization: Weak
Moderate altered GD Mineralization: Weak
Weak moderate altered GD, Mineralization: Trace
Mod sericite altered GD, Mineralization: Not observed
Unaltered-Weak altered GD. Mineralization: no copper mineral observed
ROCK CODES
CODE
PAT
LABEL
DESCRIPTION
Mafic Dike
Mafic Dike
Un-Alt GD
Un/Wk Alt
Chl-Ep Alt GD
Chlorite-Sericite Alt
Ksp Alt GD
Potassic Alt
Ser Alt GD
Sericite Alt
POSTED TEXT CODE
L/R
TEXT
ITEMS
L

All
SECTION SPECS:
REF. PT. E, N 647173 m 5582700 m
EXTENTS 164.9 m 498 m
SECTION TOP, BOT 1640 m 1142 m
TOLERANCE +/- 22.8 m
SCALE
(m)
-20
0
20
40
60
80
NAD83 / UTM zone 10N
AZIMUTH = 90°
N
W
E
S
5582700N SECTION

Fig. 6