NI 43-101 Preliminary Assessment
THEMAC Resources Group Limited
Copper Flat Project
Sierra County, New Mexico

Prepared for:

THEMAC Resources Group Limited
1066 West Hastings Street, Suite 2000
Vancouver, BC V6E 3X2
Canada
604.806.6110

SRK Project Number: 191000.020

Prepared by:

SRK Consulting
Engineers and Scientists

7175 W. Jefferson Ave.
Suite 3000
Lakewood, CO 80235

Effective Date: May 6, 2010
Report Date: June 30, 2010

Contributors:
Bart Stryhas, Ph.D, CPG
Michael Levy, P.E., P.G.
Dorinda Bair, BS, CPG
Vladimir Ugorets, PhD.
Jeff Parshley, B.A., P.G.
Nick Michael, BS Mining, MBA

Endorsed by QP:
Peter Clarke, P.Eng., B.Sc., MBA
Jeffrey Volk, CPG, FAusIMM, MSc
Bret Swanson, BE Mining, MAusIMM
Deepak Malhotra, Ph.D.
Mark Pfau, MSc.

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Summary (Item 3)

SRK Consulting (U.S.), Inc. (SRK) has been commissioned by THEMAC Resources Group Limited (THEMAC Resources) to prepare a Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) compliant Preliminary Economic Assessment (PEA) on the Copper Flat copper/molybdenum project (Copper Flat or the Project).

Property Description and Location

The Project is a porphyry copper/molybdenum deposit located in the Las Animas Mining District in South Central New Mexico, in Sierra County. The Project is approximately 150mi south of Albuquerque, New Mexico and approximately 20mi southwest of Truth or Consequences, New Mexico (straight-line distances). Access from Truth or Consequences is by 24mi of paved highway and 3mi of all weather gravel road.

In 1982, Quintana Minerals Corporation (Quintana Minerals) brought the property into production, as an open pit mine with a mill and concentrator (rated at 15,000st/d). The mine was in production for three and a half months, but operations were halted when copper prices declined. The property was placed on care and maintenance until 1986 at which point all the buildings and equipment were removed and sold. However, considerable foundations and other infrastructure remains on site.

Ownership

Hydro Resources Corporation, a New Mexico corporation, Cu Flat, LLC, a New Mexico limited liability company, and GCM, Inc., a New Mexico corporation, have granted New Mexico Copper Corporation (NMCC) an exclusive option to acquire the Copper Flat properties.

NMCC holds an exclusive option to acquire the Copper Flat properties under an Option and Purchase Agreement effective July 23, 2009 with the owners of the properties noted above. The Option and Purchase Agreement has been amended three times through a First Amendment effective January 20, 2010, a Second Amendment effective April 1, 2010, and a Third Amendment and Supplemental Memorandum effective May 28, 2010. NMCC has various obligations set forth for the maintenance of the Copper Flat properties.

Mercator Gold plc (Mercator) is listed on the Alternative Investment Market (AIM) of the London Stock Exchange, and owns all of the shares of NMCC. THEMAC Resources is listed on the Venture Exchange of the Toronto Stock Exchange. On March 12, 2010, Mercator and THEMAC Resources, entered into a Heads of Agreement providing for the acquisition by THEMAC Resources, subject to certain conditions precedent, of all of the assets of NMCC. The conditions precedent include the entry by Mercator and THEMAC Resources into a definitive agreement and the receipt by THEMAC Resources of a Canadian National Instrument 43-101 compliant PEA of the proposed restart of production at Copper Flat.

Geology and Mineralization

The deposit area is within a roughly circular block of andesitic volcanic rocks about 4mi in diameter. These andesitic rocks have been intruded by a quartz monzonite porphyry stock (Copper Flat stock). The porphyry copper mineralization is contained within the Copper Flat porphyry stock and breccia pipe. The pipe is mineralized and composed of altered quartz monzonite porphyry breccias fragments from the Copper Flat quartz monzonite (CFQM) in a

matrix of quartz and sulfides. Higher-grade material is contained within the mineralized breccia pipe (1,300ft x 600ft, and over 1,000ft in depth). Drilling (approximately on 100ft spacings) has indicated internal continuity and consistency of grade.

Copper Flat is best described as an alkalic Cu-Au mineralized breccia pipe, associated with, and genetically linked to an alkalic porphyry system. The best analogs to Copper Flat are Terrane Metal's Mount Milligan, British Colombia deposit, and the Continental breccia pipe mined in the nearby Central Mining district in New Mexico

The mineralization and alteration at Copper Flat are similar to most hydrothermal porphyry copper deposits in the southwest United States, but differs significantly in that the majority of the economic mineralization and contained metal occurs within the breccia pipe; and that few supergene effects are present. The Copper Flat copper deposit is a hypogene sulfide deposit with nearly all of the copper occurring as chalcopyrite. Pyrite is the other main sulfide mineral; subordinate amounts of molybdenite, galena, and sphalerite are present.

Molybdenite is not abundant in the quartz monzonite porphyry stock. Where it is present, it occurs either in quartz veins or as thin coatings on fractures. Minor sphalerite and galena are present in both carbonate and quartz veinlets in the stock.

Mineralization within the breccia pipe is characterized by large, irregular masses of pyrite and chalcopyrite as part of the breccia matrix, and is associated with large crystals of quartz, biotite, and potassium feldspar.

The gold-silver-copper veins surrounding the quartz monzonite stock are related to the second stage. Second stage mineralization was associated with the strong potassic alteration minerals that formed gangue minerals in the breccia matrix.

Historic Reserve Estimates

The Copper Flat history of published mineral reserve estimates and audits began with Inspiration Development Company in 1974. A number of reserve estimates were subsequently made for Copper Flat including Western Knapp Engineers in 1976 for Quintana Minerals, Pincock, Allen & Holt in 1980 and 1989 for Quintana Minerals, and Rio Gold Mining Ltd and N.A. Degerstrom, Inc. for Gold Express Corporation in 1991. Following these, Dunn-Behre Dolbear performed a reserve audit for Gold Express in 1993, and Alta Gold Company prepared a mine reserve estimate in 1998. These historic estimates do not comply with the Canadian Institute of Mining, Metallurgy and Petroleum terminology under NI 43-101 guidelines.

The existence of potentially economic gold and silver mineralization at the Copper Flat deposit was identified by Quintana Minerals (Section 4.4, Historic Production), and Alta Gold Company (Section 4.3, Historic Reserve Estimates and Audits).

However, the historic drilling programs did not typically assay samples for precious metals. Therefore, no resource estimation was conducted by SRK for gold or silver as part of the PEA, due to the lack of sufficient precious metals data from the historic drilling programs. This lack of data established that a precious metals resource estimate developed at this point would not be compliant with NI 43-101 requirements.

SRK recommends a pilot precious metals re-assay program using historic pulps to assess potential zones of interest. Based on findings of the pilot program, additional re-assaying of historic pulps could be conducted for gold and silver in order to develop a compliant precious metals resource estimate. NMCC is presently working to advance such a pilot program.

Future metallurgical testwork can be designed to further address the recovery of gold and silver in the concentrates. Inclusion of gold and silver in the economics of the Project has the potential of making a positive impact.

Preliminary Economic Assessment Results

Mineral Resources

The mineral resources for the Copper Flat deposit have been estimated by SRK at 107Mst grading an average of 0.303% Cu and 0.010% Mo classified as Indicated mineral resources with an additional 46Mst grading an average of 0.240% Cu and 0.006% Mo classified as Inferred mineral resources. The resource estimate is stated above a 0.12% Cu cut-off grade and contained within a potentially economic open pit.

The mineral resources are reported in accordance with Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101), and have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resource will be converted into mineral reserves. The resource estimate was completed by Jeffrey Volk, CPG, FAusIMM, an independent Qualified Person, as this term is defined in NI 43-101. The effective date of this resource estimate is May 6, 2010 and is based on data received by SRK in March 2010. The mineral resource statement for the Copper Flat copper project is presented in Table 1.

Table 1: SRK Mineral Resource Statement for the Copper Flat Deposit*, May 6, 2010

Resource Classification	Quantity (Mst)	Grade Cu (%)	Contained Metal Copper Cu (M-Lbs)	Grade Mo (%)	Contained Metal Molybdenum Mo (M-Lbs)
Indicated†	107	0.303	645	0.010	21.4
Inferred†	46	0.240	222	0.006	5.6

* Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates. The cut-off grades are based on metal price assumptions of US$3.50/lb of copper, and a metallurgical recovery of 90.9% for copper. Economic assumptions used for reporting molybdenum were a metal price of US$10.00/lb of molybdenum, and a metallurgical recovery of 54.3%. Gold and silver were not used in the pit limits optimization for reporting resources.
† Reported at a cut-off grade of 0.12 % Cu contained within a potentially economically open pit.

The mineral resources are reported above a 0.12% Cu cut-off grade to reflect “reasonable prospects” for economic extraction. SRK considers that portions of the Copper Flat deposit are amenable for open pit extraction, and has not considered underground mining methods for deeper portions of the deposit.

The “reasonable prospects for economic extraction” requirement was tested by designing a series of conceptual open pit shells using the Lerchs-Grossman optimizing algorithm. These parameters were selected by SRK to represent an “optimistic” expectation reflecting the intent that the resource should comprise material that has the potential to be economically mineable in the future. The reader is cautioned that the results from this pit optimization are used solely for the purpose of reporting mineral resources that have “reasonable prospects” for economic extraction by an open pit. (This is separate from the pit optimization for PEA mine engineering that estimates potentially mineable material on a more conservative basis.) After review of several scenarios considering different metal prices, SRK assumed an "optimistic" copper price of US$3.50/lb. Other parameters included a metallurgical recovery for copper of 90.9%; mining costs of US$1.72/short ton mined; processing and G&A costs of US$5.49/short ton processed, and slope angles of 45º in all areas. (Pit optimization for PEA mine engineering purposes used a copper price of US$2.75/lb.)

Geotechnical – Pit Slopes

Copper Flat is contained almost entirely within quartz monzonite and includes a central mineralized breccia pipe. The central breccia pipe contains a higher grade than the surrounding quartz monzonite and therefore is the primary target for mining, leaving mostly quartz monzonite final pit walls with a breccia pipe pit bottom. The final pit will be roughly circular in shape with a diameter of approximately 2,500ft, and final wall heights on the order of 600ft to 900ft.

Very little documented geotechnical information currently exists for Copper Flat. SRK is not aware of any geotechnical drilling campaigns, laboratory testing, or pit slope analyses that have been carried out in the past for the Project. Recently, NMCC personnel logged qualitative geotechnical data during the 2010 resource confirmation drilling program, consisting of six diamond drillholes drilled into the central mineralized breccia pipe intersecting pit bottom. The geotechnical information obtained from the 2010 program will be useful in characterizing the breccia unit for interim pit slope walls; however, most of the final pit slopes will be comprised of the quartz monzonite surrounding the breccia where no geotechnical data exists. A geologic outcrop mapping exercise was also completed by NMCC personnel (December 2009) on the existing bench faces which included discontinuity orientation. NMCC's analysis of the mapping data demonstrated high angle faults most commonly with a NE-SW trend and occasionally a NNW-SSE trend. Jointing in the rock showed similar attitudes but also showed a concentration with a shallow to moderate NE dip.

SRK's scope of work did not include geotechnical logging oversight, data analysis or a site visit for such purposes in preparation of this PEA report. Consequentially, pit slope stability analyses were not conducted for optimization of pit slope angles. A conservative overall slope angle of 45º was assumed for the PEA open pit design purposes. There is an opportunity in subsequent phases of the project development to evaluate the potential for steeper pit slope angles.

Hydrogeology

Regional groundwater flow in the Rio Grande Basin is generally towards the Rio Grande. The local groundwater system within and near the proposed open pit operation consists of two main components:

1) Groundwater in the volcanic rocks and the intrusive porphyry that dominate the mine area.
2) Groundwater within the alluvial sediments of the Palomas Basin adjacent to the mine and in the area of the proposed well field for production water.

SRK worked with Adrian Brown Consultants (ABC) in 1995 on hydrogeological studies for Copper Flat. The water level elevation in the existing pit lake reported by SRK-ABC (1995) was 5,443ft above mean sea level (famsl). Inflow to the proposed open pit, groundwater withdrawal for mine water supply from a production well field in the Palomas Basin, and associated impacts during mining and post-mining conditions were evaluated/assessed by SRK and ABC (SRK-ABC, 1995; ABC, 1996). The predicted maximum inflow to the proposed pit in 1995 was in the range of 400 to 600gpm.

Based on the results of preliminary groundwater flow modeling conducted by ABC (SRK-ABC, 1995; ABC, 1996), it is possible to conclude at this level of the study that:

- Inflow to the proposed open pit would range from an initial rate of approximately 60gpm to an estimated maximum rate of 400 to 600gpm;
- There is no active dewatering system that would be required; pit dewatering can be done by using in-pit sumps; and
- A pit lake would be formed by the post-mining conditions with predicted elevation of 5,250famsl and would act as an evaporative sump for groundwater, lowering the water table adjacent to the pit area.

It should be noted that the results of the predictions listed above are preliminary, based on available hydrogeological characterization data in the mine area, and a slightly different pit plan.

The total water demand for the Project would be approximately 6,000gpm with majority of the water used in the mill operation. Of this, about 4,000gpm would be obtained from:

- Pit dewatering;
- Reclaimed process water; and
- Pumpback decant water from the tailings impoundment.

Approximately 2,000gpm would be fresh water makeup from production wells.

The freshwater supply would come from four existing high capacity wells located about 8mi east of the plant site on BLM land. These wells were drilled to a depth of 957ft and 1,005ft. Groundwater flow modeling in 1995 and 1996 showed a possibility of groundwater abstraction at an average of 2,000gpm from the Palomas Basin for mine water supply use during mine life.

Mining

Mining operations at the Copper Flat deposit will be characterized by a low stripping ratio pit (strip ratio of 0.38, waste to minable resource), with the mining of disseminated porphyry mineralization situated in a moderately mountainous region. The pit was previously pre-stripped of waste prior to ore production when the mine was briefly operated in 1982. The various water diversion structures previously constructed around the pit area are still in place and will be used.

The preliminary pit design was determined to be approximately 2,500ft (east-west), 2,500ft (North-South), 900ft deep. The pit design was broken into three phases for scheduling purposes, with 80ft wide ramps, 30ft bench heights and a maximum haul road grade of 10%.

Open pit mining will be by conventional diesel-powered equipment, a combination of blast hole drills, hydraulic face shovels, rubber-tired wheel loaders and off-highway haul trucks. Support equipment such as graders, track dozers, and a water truck will aid in the mining of the mineral resources and waste. An in-pit crushing and conveying study is recommended.

Indicated and Inferred mineral resources were considered for all optimization and production scheduling analysis and were based on an internal cut-off grade of 0.14% Cu. (The internal cut-off grade is based on process and G&A operating costs.) This PEA report includes the Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves.

A variable cut-off grade strategy, with elevated cut-off grades for the first 14 years of production, increased the mill feed head grades in those years, and provided over three years of low-grade stockpile processing after the pit mining operations end. Table 2 shows the quantity estimates contained within the pit design that are the basis for project economic analysis.

Table 2: Pit Design Material Inventory

Variable	Value
Mill Short Tons (High-Grade and Low-Grade)	95,489,578
Waste Short Tons	36,649,026
Strip Ratio (Waste Tonnage / Mill Tonnage)	0.38
Mill Cu Grade (%)	0.32%
Mill Mo Grade (%)	0.010%
Insitu Cu klbs (Pre-Metallurgical Recovery)	614,113
Insitu Mo klbs (Pre-Metallurgical Recovery)	19,262

This Preliminary Assessment includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the Preliminary Assessment will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

Potentially mineable resources used in the mine production schedule were estimated using a 0.14% Cu cut-off grade for mill feed material. Low-grade stockpile material consists of material with copper grades between 0.14% and 0.20% Cu, and is fed during the last four years of the mine life. Table 3 illustrates the full production schedule starting after a mine construction period (with an estimated start year).

Table 3: Copper Flat Mine Production Schedule

Year	Mill Feed Short Tons	Waste Short Tons	Total Short Tons	Stockpile Accumulation Short Tons	Stockpile Processed Short Tons	Cu %	Cu lbs (Pre-Process)	Mo Lbs (Pre-Process)
2014	5,775,000	403,725	6,830,502	651,777		0.42	48,845,498	1,657,702
2015	5,775,000	3,512,242	10,252,694	965,452		0.42	48,370,664	1,408,078
2016	5,775,000	2,600,725	10,061,696	1,685,971		0.42	47,964,996	1,121,276
2017	5,790,822	4,444,297	11,408,337	1,173,218		0.34	39,154,834	875,715
2018	5,775,000	4,798,713	11,292,195	718,482		0.37	43,068,013	1,143,430
2019	5,775,000	6,364,861	13,515,871	1,376,010		0.40	45,901,779	1,290,100
2020	5,775,000	5,067,468	12,931,141	2,088,673		0.37	42,349,340	1,335,504
2021	5,790,822	4,920,819	13,032,317	2,320,676		0.32	36,557,947	983,813
2022	5,775,000	2,484,582	10,618,526	2,358,944		0.30	34,826,827	981,511
2023	5,775,000	1,117,818	8,732,361	1,839,543		0.31	35,375,292	1,261,047
2024	5,775,000	340,853	7,303,914	1,188,061		0.31	35,938,517	1,411,079
2025	5,790,822	253,761	7,231,885	1,187,302		0.34	39,318,173	1,461,367
2026	5,775,000	223,016	7,364,533	1,366,517		0.36	41,829,222	1,615,302
2027	5,775,000	116,148	1,562,632	320,541	4,649,057	0.20	23,218,975	992,804
2028	5,775,000	0	0	0	5,775,000	0.17	20,087,826	682,172
2029	5,790,822	0	0	0	5,790,822	0.18	20,576,283	684,041
2030	3,026,290	0	0	0	3,026,290	0.18	10,728,728	357,480
Grand Total	**95,489,578**	**36,649,026**	**132,138,604**	**19,241,168**	**19,241,169**	**0.32**	**614,112,915**	**19,262,422**

This preliminary production schedule includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the Preliminary Aassessment will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

Metallurgy and Processing

Extensive metallurgical studies were undertaken on large samples in the 1970's, namely 80st and 70st of breccia and quartz monzonite samples. Locked-cycle testing undertaken at Colorado School of Mines Research Institute indicated that over 50% of gold and over 90% of silver reported to the Cu-Mo concentrate for the flowsheet developed for the Copper Flat Concentrator.

Quintana Minerals operated the former concentrator for several months in 1982 with a rated capacity of 15,000st/d. After only three months of operation, the mine was closed due to lower copper prices and higher interest rates. The mill was later disassembled and sold.

The copper recovery in the concentrate steadily improved during the operation of the mill reaching 92% in June 1982. The molybdenum circuit operated for only a short time in 1982 producing a 46% Mo concentrate without the final cleaning stage. With a longer operating period, the plant could have achieved a saleable molybdenum concentrate product (>50% Mo) at an overall plant recovery of 62%. This is consistent with plant practices and recoveries for similar by-product operations.

A conceptual process flowsheet was developed for processing 17,500st/d of ore with an overall availability factor of 93%. The major equipment is the same size as originally installed by Quintana Minerals. The present flowsheet design incorporates modern equipment where applicable, and the design incorporated in this study is considered "Standard" practice in the mining industry.

Included in the PEA estimate of costs are new foundations and support concrete, new structural steel, and construction costs of the buildings. Although foundations from the previously operating plant were left buried in place, for the purposes of the PEA it was assumed that these foundations would not be suitable for reuse. Changes in the size of the process equipment selected will require changes to the foundation plans and building outlines. A proper field assessment of the foundations has not yet been conducted. However, there is an opportunity here for the foundation costs to be partially reduced should some of the foundations be found to be in suitable condition.

The tailings storage facility (TSF) layout is located in the area of the previously constructed tailings impoundment. The starter embankment was constructed in the early 1980's and approximately 1.2Mst of tailings material was placed within the existing tailings impoundment before production ceased. SRK developed a preliminary level cost estimate for the tailings storage facility (TSF) for conventionally discharged slurried tailings, 95Mst of tailings, life-of-mine of 16.5 years, and with a synthetically lined impoundment.

Infrastructure

Infrastructure includes items such as the primary access road, water systems, electrical power distribution, and the concentrate load-out facility. Where possible, existing serviceable items were presumed to be re-used or upgraded, otherwise new construction was assumed.

The primary items that were assumed to be re-usable include the mine access road, the water well field, the primary freshwater pipeline, the main electrical substation at I-25, the 115kV power transmission lines, 25kV power line to the well field, the reclaim tunnel, and the access cutting from the mill site to the tails area.

Access to the mine site includes approximately 3mi of all weather gravel road, which will require regrading in addition to some widening and work at key points. Additions of acceleration and deceleration lanes at Highway 90 will be necessary to facilitate the heavy truck traffic into and out of the mine site, and assume new lanes 1,500ft long each.

The milling and process system will receive fresh water from a series of previously existing wells, located about 8mi east of the site. Additionally, the previously used 20in diameter pipeline was left in place. It was assumed that the wells will be uncapped and refitted with new pumps for current use, and that the pipeline will be in serviceable condition and can also be re-used. The well field and pipeline pump stations were powered via a 25kV power line, which was also assumed can be reconnected and re-used.

Electrical power in the county is provided by Sierra Electric Co-op. A high voltage substation is still in existence near Caballo, 13mi to the east of the mine site. This substation supplies a 115kV line to the mine site and to the town of Hillsboro, which was assumed to be fully operational and can be tied into for site power.

A new substation will need to be constructed at the plant site. An emergency generator allowance was also included as backup power would be required in the event of power loss to maintain critical systems and to aid in a controlled shut down.

Product concentrate will be produced on site, and the resulting dried bulk copper concentrate and bagged molybdenum concentrates will need to be shipped to other facilities. An on-site concentrate load-out facility will be required, and two possible off-site load-out facility locations were identified. The off-site load-out facility would essentially be a fenced in area adjacent to a new rail siding containing truck off loading and rail car loading capabilities.

The copper concentrate will be transported via railcar to a smelter facility, such as the Freeport-McMoRan Morenci Operation. Molybdenum product would be transported from the mill in "super sacks".

A truck scale and scale house will be needed to weigh the copper concentrate and molybdenum concentrate trucks leaving the site en route to the load-out facility. An estimate for these costs has been included.

Environmental and Permitting

The proposed mining operations at the Copper Flat Mine will develop an open pit, and create waste rock dumps and a tailings storage area. Waste rock from the operation will be deposited on existing rock piles located to the west, north, east, and south of the existing pit. At the end of the mine life all of these rock piles will be reclaimed using a revegetated soil cover.

It is proposed to redesign and expand the existing tailings impoundment facility that was constructed in 1982 by the previous mine operator. Transport of tailings from the mill to the impoundment will be via a pipeline. The new design will include the placement of a synthetic liner beneath the tailings.

It can be assumed that over time net acid generation will occur in the sulfide bearing waste rock dumps and tailings, and that this condition will require operational management and mitigation to ensure long-term physical and geochemical stability during operations and post closure.

Major mining projects in New Mexico have been limited over the last two decades. The New Mexico Mining Act of 1993 (Act) was passed for the purpose of "promoting responsible utilization and reclamation of lands affected by exploration, mining or the extraction of minerals that are vital to the welfare of New Mexico." The Act establishes requirements for a "hard rock" mine to obtain permit applications, environmental standards, reclamation plans, and financial assurance to support the reclamation plan.

Two government entities are at the center of the New Mexico Mining Act: the Mining Commission and the Mining and Minerals Division (MMD) of the New Mexico Energy, Minerals and Natural Resources Department. The permit application process for a new mining operation is complex. The application must contain considerable detail both on the nature and impacts of the proposed operation and on the background and capability of the mine owners and operators. The baseline investigation must provide information on (and the permit application must assure that) the operation and reclamation of the facility protect human health and safety, wildlife, cultural resources, and hydrologic balance. The Mining Commission rules require that a new mining operation employ best management practices, which include designing the operations to avoid or minimize acid drainage and other impacts to ground and surface water, to control erosion, and to use contemporaneous reclamation when practicable.

The Copper Flat Project will require various state and federal authorizations, licenses and permits to operate the Project. The permit requirements will be reviewed and updated as the Project advances through the environmental impact statement and permitting process.

Comprehensive environmental and socio-economic baseline studies were completed as part of the previous attempt to reopen the Copper Flat Mine in the late 1990's. However, due to the age of these studies, additional baseline updates will be required for both the state and federal permitting processes. Supplemental studies are currently being performed, and will be undertaken in accordance with state and federal standards of data acquisition, quality assurance and reporting. A full-year of data is required for some study topics to provide the basis for modeling seasonal effects.

NMCC is in the process of preparing a new Plan of Operations for submittal to the BLM, and initiation of the National Environmental Policy Act (NEPA) approval process, as this has been identified as the critical path item for project permitting. No other permit applications have been initiated at this time.

Reclamation of disturbed areas caused by the project will be in compliance with federal and state regulations. As proposed, the current project will be developed, operated and closed with the objective of leaving the property in a condition that will mitigate potential environmental impacts and restore the land to an agreed to land use and capability. Closure and reclamation activities will be carried out concurrent with mine operation wherever possible, and final closure and reclamation measures will be implemented at the time of mine closure.

Surface facilities, equipment and buildings related to the mining project will be removed, foundations covered, and the plant site restored to self-sustaining plant communities similar to those that are currently present on-site and on adjacent undisturbed lands. The topography, slopes and aspects of the disturbed and reclaimed areas will be developed to blend in with the present, existing physiographic forms of the Copper Flat area, as feasible.

The New Mexico Mining Act requires that each operator post, prior to obtaining a permit, financial assurance "sufficient to assure the completion of the performance requirements of the permit, including closure and reclamation, if the work had to be performed by the director or a third party contractor." The act also prohibits the operator from using "any type or variety of self-guarantee or self-insurance."

Project Economics

The financial results of this report are based upon work performed by SRK and has been prepared on an annual basis. All costs are in Q2 2010 US constant dollars.

The financial analysis results, shown in Table 4, indicate an $NPV_{6\%}$ of US$144million with an IRR of 23% (after estimated taxes). Payback will be in 1.75 years from the start of production.

The following provides the basis of the SRK LoM plan and economics:

- Measured, Indicated and Inferred resources are included;
- A mine life of 17 years;
- An overall average metallurgical recovery rate of 90% Cu and 55% Mo over the LoM;
- Mill recoveries of gold and silver are not included in these economic results;
- A operating cost of US$1.41/lb-Cu;
- Capital costs of US$291million, comprised of initial capital costs of US$179million, and sustaining capital over the LoM of US$112million;
- Mine closure cost, included in the above estimates is US$40million; and
- The analysis does not include provision for salvage value.

Table 4: Financial Model Results (US$)

		Value	Units
Market Prices			
	Copper	$3.00	/lb-Cu
	Molybdenum	$12.00	/lb-Mo
Estimate of Cash Flow (all values in $000s)			
Net Smelter Return (NSR)			
	Copper Concentrate	$1,494,203	$000s
	Molybdenum Concentrate	$102,215	$000s
	NSR	**$1,596,418**	**$000s**
	Freight & Handling	($24,828)	$000s
	Gross Revenue	**$1,571,591**	**$000s**
	Royalty	($51,077)	$000s
	Net Revenue	**$1,520,514**	**$000s**
Operating Costs			
	Mining	$208,354	$000s
	Processing	$488,207	$000s
	G&A	$52,535	$000s
	Total Operating	**$749,096**	**$000s**
	Operating Margin (EBITDA)	**$771,418**	**$000s**
	Initial Capital	$179,037	$000s
	LoM Sustaining Capital	$111,720	$000s
	Income Tax	$133,387	$000s
	Cash Flow Available for Debt Service	**$347,274**	**$000s**
	$NPV_{6\%}$	**$144,497**	**$000s**
	IRR	**23%**	

Conclusions and Recommendations

The scope of this PEA was intended for the use of NMCC and THEMAC Resources to further the evaluation of the Copper Flat project by providing a mineral resource estimate, (with classification of resources in accordance with the CIM classification system), and a Preliminary Assessment of the economic potential of the property. It is SRK's opinion that the resource model described in this report is suitable for preliminary economic evaluation, and assessment of project viability for determination of advancement of the Project. The PEA results justify advancing the Project to a Pre-Feasibility Study.

Some environmental studies have been previously undertaken and are also currently in progress. Some additional drilling is anticipated. Resource, geotechnical, hydrogeological and other studies should be implemented in the future. Current studies show that the Copper Flat deposit can be mined by conventional open pit mining methods, and processed by well-established processing techniques.

The Project is not remote, as readily available services, including power, water and land transportation infrastructure are close to the site. Based on field observations, available geologic data, previous production operations, metallurgical testwork, available environmental data, various studies and other PEA work, SRK's opinion is that there are no evident flaws to the development of the Project.

The objectives moving forward should be focused on progressing the Project through a Pre-feasibility Study, and pending positive economic results at that stage, onto a Feasibility Study. SRK acknowledges that a significant amount of development level work has been previously conducted.

Project economics are likely to be improved by implementation of the recommendations in this section, together with other initiatives and potential improvements that NMCC is researching.

The following work programs are recommended:

Resources

For resource estimation, SRK makes the following recommendations:

- High resolution aerial topographic survey and necessary ground surveying;
- Additional step out drilling to extend the current resource base;
- Resource conversion drilling to convert Inferred to Indicated resources;
- Development of a 3-D geologic model (and 3-D grade solids) to better constrain grade estimation for copper and molybdenum, as well as to allow more flexibility in the assignment of density;
- A pilot precious metals re-assay program using historic pulps to assess the location and tenor of potentially economic zones of gold and silver;
- Continuing existing Quality Assurance/Quality Control program; and
- Possible development of site-specific analytical standards for use with all subsequent exploration and drilling programs.

NMCC has developed a Phase II drilling program, based on parameters provided by SRK to address extending the current resources base and resource conversion drilling. The objectives of a Phase II drilling program at Copper Flat (to follow on from the Phase I drilling program completed in early 2010) would be directed towards data required for a Pre-Feasibility Study:

- Convert the maximum amount of Inferred resource to Indicated resource based on in-fill drilling of high-frequency zones of Inferred mineral blocks;
- Drill a minimum of three, preferably four drillholes, to a 1,500ft depth for down-hole IP modeling of the breccia pipe; and
- Provide further geological-assay evidence for construction of a gold-silver resource.

Geotechnical – Pit Slopes

There is potential for optimization (steepening) of pit slope angles for the Project provided additional geotechnical data is collected and evaluated. Additional geotechnical data collection and analysis will be necessary for further mine planning for the Pre-Feasibility Study level.

A geotechnical data collection program should be carried out including discontinuity orientation, laboratory strength testing and surface outcrop mapping. Geotechnical core drilling programs should be conducted, with field point load testing and packer testing. Laboratory strength testing should include uniaxial and triaxial compressive strength and direct shear testing, encompassing each major rock type at the site.

For the Pre-Feasibility Study, SRK recommends drilling a minimum of four geotechnical core holes, which could also be used for hydrogeologic testing. Additional hydrogeologic drilling beyond the four recommended geotechnical holes should also be oriented and logged for geotechnical data.

Geotechnical - Tailings

The tailings storage facility containment requirements should be confirmed before the design advances, and trade off studies between different construction methods and tailings deposition methods performed before an optimized design can be developed. SRK recommends that the following work be performed to advance the next level of design:

- Design criteria should be developed for the most current understanding of the design;
- Containment approach with definition of composite liner system required;
- A detailed topographic survey should be available;
- Field investigations should be performed for the tailings impoundment area,
- Tailing characterization/laboratory test work to confirm tailings design assumptions;
- Sideslope configuration and stability analysis to confirm the sideslopes required;
- Site water balance should be performed to estimate water requirements for the Project;
- Closure. The next stage of design should confirm the closure criteria and requirements;
- Freeboard height assumptions should be confirmed;
- Surface water estimation from upgradient water basin area and runoff characteristics;

- Monitoring program with installation of piezometers and groundwater monitoring wells; and
- Pre-Feasibility Study level engineering for water balance, slope stability, etc.

Hydrogeology

Based on existing hydrogeological data available in the area of the proposed open pit, SRK would recommend conducting an additional hydrogeological study to bring the understanding of groundwater conditions (hydraulic parameters, water levels, and groundwater chemistry) to the Pre-Feasibility level. This study should include:

- Drilling of five inclined (70°) HQ coreholes to a depth of 1,200ft in the vicinity of the proposed open pit;
- Targeting volcanic and intrusives, their contacts, known faults and structural zones;
- Conducting airlift testing from packer isolated intervals (about eight tests per hole) to develop profiles of the change in hydraulic conductivity with depth and to define the permeability of faults and structural zones in the vicinity of the pit;
- Conducting groundwater sampling during airlift testing (two samples per hole) to determine the lateral and vertical distribution of water chemistry;
- Installing of two standpipe piezometers (to depths of 300ft and 1,200ft) in each borehole to define depth to water table, direction of groundwater flow, and vertical hydraulic gradient;
- Monitoring water levels in new and existing piezometers/water wells;
- Conducting spring inventory, monitoring discharges, and water chemistry sampling (including current pit lake); and
- Conducting data analysis and updating the existing conceptual hydrogeological model.
    - Developing a 3-D numerical groundwater flow model to predict:
        - Passive inflow to the proposed open pit and additional active dewatering (if required);
        - Groundwater abstraction from the production well field in the Palomas Basin and associated drawdowns;
        - Pit lake elevation and water chemistry after mining has ceased; and
        - Possible impact to the groundwater system during mining and post-mining conditions.

It should be noted that a reduction of the cost of the proposed hydrogeological study can be achieved by combining the hydrogeological testholes with geotechnical drilling requirements.

Mining

There is potential to optimize the mine planning during the usual course of the Pre-Feasibility Study and subsequent planning. Mine planning recommendations include:

- Optimization of the cut-off grade strategy. There is opportunity to reduce the payback period of the project by stockpiling of low-grade material and processing it later;
- Detailed pit phase design. Further work on the pit design sequencing will allow improvement of the mill feed head grades and waste stripping profile through the mine life;
- Detailed mine waste rock plan. This will define waste material movements and land disturbance into a unified plan for environmental compliance and costing;
- Development of a multi-element mine production schedule. A net smelter return (NSR) mine production schedule including copper, molybdenum, gold and silver should be developed;
- An in-pit crushing and conveying study; and
- Optimization of the mine equipment selection, and Pre-Feasibility Study level mining costing should be performed.

Metallurgy and Processing

The Pre-Feasibility Study will require an extensive metallurgical test program since the PEA was based on historical data that was generated over twenty years ago.

The following metallurgical program is proposed for the Pre-Feasibility Study:

- Comminution test program to be undertaken to generate data for the SAG milling and ball milling grinding circuit. This will include rod mill and ball mill work indices, abrasion index, impact index and JK Drop Weight tests on the two main mineralization rock types;
- Flotation test work to confirm that the conceptual process flowsheet is technically feasible and to generate process design data for sizing the unit operations, namely flotation, thickening, filtration, etc;
- Test program to perform locked-cycle tests to determine the overall metallurgical balance for the copper and molybdenum circuits and production of concentrates, and for determination of concentrate quality; and
- Metallurgical testwork to assess the recovery of gold and silver in the envisioned processing circuit.

Infrastructure

The Pre-Feasibility Study cost study would essentially look at the infrastructure items in significantly more detail. This would require a site visit by two people (structural and mechanical) for several days to evaluate the existing infrastructure and to better evaluate key site location items. Additionally, the study would necessitate more detailed engineering and estimates of the buildings, foundations, steel, and infrastructure items.

The site visit would be required to better establish the condition of the existing infrastructure items to determine if they can be refitted and re-used or will require replacement.

The proposed locations for the new concentrate load-out facility at Rincon and at the old rail siding locations near the intersection of County Road 27 and Highway 26 will need to be evaluated, and a trade-off study performed to determine the recommended location.

The Pre-Feasibility Study would require generation of approximately 24 drawings. Additionally, the estimate would be refined following more detailed equipment sizing and specification. The Pre-Feasibility Study would also entail structural geotechnical review and overhead crane design criteria.

Environmental and Permitting

Comprehensive environmental and socio-economic baseline studies were completed as part of the previous attempt to reopen the Copper Flat Mine. However, due to the age of these studies, additional baseline updates will be required for both the state and federal permitting processes. Supplemental studies are currently being performed, and will be undertaken in accordance with state and federal standards of data acquisition, quality assurance and reporting. A full-year of data is required for some study topics to provide the basis for modeling seasonal effects.

A review of pre-existing environmental baseline studies (gap analysis) completed from 1994 through 1999 is being undertaken to ascertain the utility of past studies in contributing to current study requirements.

NMCC is in the process of preparing a new Plan of Operations for submittal to the BLM, and initiation of the NEPA approval process, as this has been identified as the critical path item for project permitting. No other permit applications have been initiated at this time. Supplemental geochemical characterization work has been initiated by NMCC as part of the current investigation of the site.

The Copper Flat project will require various state and federal authorizations, licenses and permits to operate the Project. The previously completed and ongoing technical studies and environmental baseline assessments will form the basis of the applications. The permit requirements will be reviewed and updated as the Project advances through the environmental impact statement and permitting process.

General

To highlight important recommendations for the Project:

- Continue development of the resource model to include gold and silver (re-assay program);
- Carry out necessary field programs, including aerial survey, drilling for resource category conversion, and geotechnical, hydrogeology and environmental studies;
- There is potential for optimization (steepening) of pit slope angles for the Project provided additional geotechnical data is collected and evaluated to support this;
- Perform trade-off studies to determine the optimum tailings storage approach, which will satisfy environmental requirements together with potential cost reductions;
- Advance the project environmental permitting programs;
- Conduct Pre-Feasibility Study level metallurgical testwork, mining studies, and necessary trade-off studies to optimize the project economics; and

- Complete a Pre-Feasibility Study to further advance the Project.

SRK anticipates that the proposed Pre-Feasibility Study programs will cost approximately US$3.0million, excluding ongoing project environmental permitting programs. Details of the cost estimate are provided in Table 5.

Table 5: Estimated Pre-Feasibility Study Costs with Field Programs and Testwork *

Item	Cost (US$)
Resource Phase II Drilling Program Requirements	$995,000
Aerial Topography Survey and Site Surveying	$25,000
Geotechnical Pit Slope Program and Study (with drilling costs in Hydrogeology)	$130,000
Geotechnical Tailings Pre-Feasibility Program and Study	$120,000
Hydrogeology Pre-Feasibility Program and Study (including drilling costs)	$1,100,000
Metallurgical Pre-Feasibility Program and Testwork	$170,000
Infrastructure Pre-Feasibility Assessment Program	$160,000
Remaining Pre-Feasibility Study (PFS) NI 43-101 Compliant	$300,000
Total	**$3,000,000**

* Preliminary June 2010 outline excluding environmental permitting programs.

Not all these costs were applied to the PEA economic evaluation as they address development of additional resources and are also subject to corporate allocations. The work proposed includes completion of a Pre-Feasibility Study (PFS), which would include an improved resource model, detailed mining and process planning, accomplishment of PFS level project optimization, and definition of the general site arrangements.

The above cost estimate excludes ongoing project environmental permitting programs, however the hydrogeology work program would overlap with the environmental work programs.

1 Introduction (Item 4)

SRK Consulting (U.S.), Inc. (SRK) has been commissioned by THEMAC Resources Group Limited (THEMAC Resources) to prepare a Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) compliant Preliminary Economic Assessment (PEA) on the Copper Flat copper/molybdenum project (Copper Flat or the Project). The Project is located in South Central New Mexico, near the town of Hillsboro, approximately 150mi south of Albuquerque, and approximately 20mi southwest of Truth or Consequences (straight-line distances).

In July 2009, New Mexico Copper Corporation (NMCC) acquired an exclusive option over the Copper Flat property by making a payment of US$150,000 in consideration for the grant of the option. NMCC carried out due diligence on the Project, which is a former producing mine from the early 1980's. Areas of focus for the development plans will include the evaluation of the Project economics, assessment of the potential for expansion of existing reserves and resources; and an assessment of the likely time required to secure all necessary permits for the recommencement of production. To exercise its option over the Project, NMCC would make additional payments to the vendors who intend to retain a net smelter return (NSR) royalty of 3.25%.

1.1 Terms of Reference and Purpose of the Report

This PEA is intended for the use of NMCC for the further development and advancement of Copper Flat towards the Pre-Feasibility Study stage. It provides a mineral resource estimate, a classification of resources in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) classification system and an evaluation of the property, which presents a current view of the potential project economic outcome. This PEA includes the potential mining of Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Therefore, the term "mineable resource" is used in lieu of "reserves" to describe potentially mineable material in this report. There is no certainty that the PEA will be realized.

This PEA has been prepared in general accordance with the guidelines provided in NI 43-101 Standards of Disclosure for Mineral Projects, and conforms to Form 43-101F1 for technical reports. The Resource and Reserves definitions are as set forth in the Appendix to Companion Policy 43-101CP, CIM – Definitions Adopted by CIM Council, November 2005.

NMCC may also use this PEA for any lawful purpose to which it is suited. The intent of this PEA is to provide the reader with a comprehensive review of the potential economics of this mining operation and related project activities, and to provide recommendations for future work programs to advance the Project.

1.2 Reliance on Other Experts (Item 5)

SRK's opinion contained herein is based on information provided to SRK by NMCC throughout the course of SRK's investigations, which in turn reflect various technical and economic conditions at the time of writing. Given the nature of the mining business, these conditions can change significantly over relatively short periods. Consequently, actual results may be significantly more or less favorable than presented herein.

This report includes technical information that may require subsequent calculations to derive sub-totals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, SRK does not consider them to be material to the report.

1.2.1 Sources of Information

The sources of information include data and reports supplied by NMCC personnel, as well as documents included/referenced in Section 20 References, as well as relying on personal experience with the subject deposit. SRK used its experience to determine if the information from previous reports was suitable for inclusion in this PEA and adjusted information that required amending. Revisions to previous data were based on research, recalculations and information from other projects. The level of detail utilized was appropriate for this level of study.

This PEA is based on information collected by SRK during the site visits. In addition, a number of meetings were conducted with SRK and NMCC. This PEA is based on the following sources of information:

- Personal inspection of the Copper Flat site and surrounding area;
- Technical information provided to SRK by NMCC through various reports;
- Information provided to SRK related to resource model generation;
- Technical and economic information subsequently developed by SRK and associated consultants; and
- Additional information obtained from public domain sources.

The information contained in this PEA is based on documentation believed to be reliable. The recommendations and conclusions stated in this report are based on information provided to SRK.

The historical mineral resource and reserve estimates presented in this report are based on information collected and compiled in the early 1960’s to late 1980’s. The estimates are the result of best practices of that time. They do not comply with requirements of CSA NI 43-101 and should not be relied upon.

Additional sources of information include data and reports cited in Section 20 – References of this PEA.

1.3 Qualifications of Consultants (SRK)

The SRK Group is comprised of over 1,000 staff, offering expertise in a wide range of resource engineering disciplines. The SRK Group’s independence is ensured by the fact that it holds no equity in any project and that its ownership rests solely with its staff. This permits SRK to provide its clients with conflict-free and objective recommendations on crucial judgment issues. SRK has a demonstrated record of accomplishment in undertaking independent assessments of Mineral Resources and Mineral Reserves, project evaluations and audits, technical reports, and independent evaluations to bankable standards on behalf of exploration and mining companies and financial institutions worldwide. The SRK Group has also worked with a large number of major international mining companies and their projects, providing mining industry consultancy service.

This PEA has been prepared based on a technical and economic review by a team of consultants sourced principally from the SRK Group's Denver, US office. These consultants are specialists in the fields of geology, exploration, mineral resource and mineral reserve estimation and classification, underground mining, mineral processing and mineral economics.

Neither SRK nor any of its employees and associates employed in the preparation of this report has any beneficial interest in NMCC. SRK will be paid a fee for this work in accordance with normal professional consulting practice.

The individuals who have provided input to this PEA have extensive experience in the mining industry and are members in good standing of appropriate professional institutions. Mark Pfau, Exploration Consultant (NMCC), is the Qualified Person (QP) for the geological data (Sections 4-11). Jeff Volk, Principal Resource Geologist (SRK), is the QP for the resource estimation (Section 15), Bret Swanson, Senior Mining Engineer (SRK), is the QP for the open pit mining (Section 17.1), Deepak Malhotra, Process Engineering Consultant (RDi), is the QP for the mineral processing (Section 14 and 17.4), and Peter Clarke, Principal Mining Engineer (SRK), is the QP for all other Sections and the overall preparation of the report. The Certificates are provided in Appendix A.

The key project personnel contributing to this report are listed in Table 1.3.1.

Table 1.3.1: Key Project Personnel

Company	Name	Discipline
SRK	Peter Clarke, B.Sc., P. Eng., QP	Project Management
	Jeffrey Volk, M.Sc., CPG, FAusIMM, QP	Resource Estimation
	Bart Stryhas, Ph.D., CPG	Geology Support
	Dorinda Bair, B.Sc., CPG	Geology/QA/QC
	Bret Swanson, B.E. (Mining), MAusIMM, QP	Open Pit Mining
	Deepak Malhotra, Ph.D., QP, with RDi Staff	Processing
	Mike Levy, P.E., P.G.	Geotechnical Pit Slopes
	Vladimir Ugorets, Ph.D.	Hydrogeology
	Behrent Engineering Company	Project Infrastructure
	Jeff Parshley, B.A., P.G.	Environmental/Permitting
	Nick Michael, B.Sc., MBA	Project Economics
	Neal Rigby, PhD Mining	Report Review
NMCC	Patrick Harford	Managing Director
	John King	Project Manager
	Mark I. Pfau, MSc., QP	Exploration Consultant

1.3.1 Site Visit

Two site visits were made. Personnel who participated in the site visit on July 1, 2009, included: from NMCC, John King; from SRK, Peter Clarke, Principal Mining Engineer. John King, and Bart Stryhas, SRK Principal Resource Geologist, made a second site visit on September 22 and 23, 2009. Bret Swanson, SRK Principal Mining Engineer, and Nick Michael, SRK Principal Mineral Economist joined them on September 23, 2009. During the site visits, SRK inspection included the access road, previous mill site area, waste dumps, pit area, diversion channel and sample storage facilities.

1.4 Effective Date

Unless otherwise specifically noted, the information containing in this report is effective as of May 6, 2010.

1.5 Units of Measure

Imperial units (actually American System) of measurement are used in this report. Abbreviations are given in Section 21.

2 Property Description and Location (Item 6)

The Copper Flat Project is a copper/molybdenum porphyry deposit located in Sierra County, South Central New Mexico. In 1982, Quintana Minerals Corporation (Quintana Minerals) brought the property into production, as an open pit mine with a mill and concentrator (rated at 15,000st/d). The mine was in production for three and a half months, but operations were halted when copper prices declined. The property was placed on care and maintenance until 1986 at which point all the buildings and equipment were removed and sold. However, considerable foundations and other infrastructure remains on site.

2.1 Property Location

Copper Flat is located in the Las Animas Mining District in South Central New Mexico, in Sierra County. The center of the mineralization is at approximately 32.970300N latitude, 107.533527W longitude. The Project is approximately 150mi south of Albuquerque, New Mexico and approximately 20mi southwest of Truth or Consequences, New Mexico (straight line distances). Access from Truth or Consequences is by 24mi of paved highway and 3mi of all weather gravel road. The Project location is shown in Figure 2-1.

The property is located between the communities of Caballo and Hillsboro, north of New Mexico State Highway 152. The property is located south of Animas Peak, and in Sections 30 and 31, Township 15 South, Range 5 West; Sections 30 and 31, Township 15 South, Range 6 West; Sections 23-27 and 34-36, Township 15 South, Range 7 West; Section 6, Township 16 South, Range 6 West; and Section 2, Township 16 South, Range 7 West; all of the New Mexico Principal Meridian. The property is within the Hillsboro 15' USGS quadrangle.

2.2 Mineral Titles

The United States (US) federal law governing locatable minerals is the Mining Law of 1872. This law established a process by which a claimant may locate and extract mineral resources. It also established a process by which a claimant can bring a claim to patent. When a claim is patented, ownership of the land and mineral rights transfer from the Federal Government to the claimant. Under the mining law of 1872, there are four types of claims that can be patented:

- Lode claims with a maximum size of 600ft x 1,500ft;
- Placer Claims with a maximum size of 20 acres per locater or 160 acres for an association placer;
- Mill Site Claims with a maximum size of 5 acres; and
- Tunnel Site Claims with a maximum length of 3,000ft.

Location notices for each claim are filed with the BLM and at the courthouse in the county in which the claims are located. Copies of the individual claim notices and the detailed map showing their locations are on file with the central BLM office in Santa Fe, New Mexico, and with the Sierra County Recorder's office in Truth or Consequences, New Mexico. An annual maintenance fee on unpatented claims of US$140 per claim must be paid to the BLM by September 1 each year. An annual recording fee is paid to Sierra County for unpatented claims. The recording fee is a nominal charge for paper handling of US$9 for the first page and $US3 for each additional page and is variable depending on how many pages are recorded. This fee has not exceeded US$50 for the unpatented claims at the Project. Patented claims are subject to state taxes (Bureau of Land Management, 2010).

The Project includes 208 patented and unpatented claims, which include lode, placer and mill site claims, and 17 fee land parcels totaling approximately 3,298.73 acres in contiguous and noncontiguous land parcels and claim blocks. Fee lands vary in total acreage from parcel to parcel. The patented and unpatented mining, mill site and placer claims are owned by Hydro Resources Corporation and parcels of other fee land are owned by Cu Flat, LLC. These two companies are the vendors to NMCC. The agreements and ownership are described further in Section 2.4. Table 2.2.1 summarized the claims and fee land by ownership and the list of claims and fee lands are found in Appendix B.

Table 2.2.1: Ownership by Type of Claim and Fee Land

Type	No. of Claims	Owner	
Patented Claims	23	Hydro Resources Corporation	Surface and Mineral Estate
Unpatented Lode Claims	174	Hydro Resources Corporation	Mining Rights
Unpatented Placer Claims	2	Hydro Resources Corporation	Surface Rights
Unpatented Mill Site Claims	9	Hydro Resources Corporation	Surface Rights
Fee Lands	13	Cu Flat LLC	Surface and Mineral Estate
Fee Lands	1	Hydro Resources Coporation	Mineral Estate
Fee Land	3	Cu Flat LLC	Surface Estate
Total	***225***	***Total Acreage***	***3,298.7***

Within the claim blocks and fee lands found within the air permit boundary are two non-contiguous patented lode claims and four contiguous parcels of fee land owned by a third party. Hydro Resources Corporation has the mineral rights but not the surface rights to one of the fee lands, which comprises approximately 4.8 acres with an approximate location in the NE¼ of the SW¼ of Section 30 T15S R6W. An agreement existed between the third party and the previous owner/operators of the Project allowing access across these lands. NMCC is actively working to reestablish this agreement. NMCC has evaluated the location of these parcels relevant to the mineralized zone of the Project and determined that the status of these parcels will have no affect on project construction and mining. SRK agrees with the analysis by NMCC and that the Project can be constructed and mined with, or without, the inclusion of the patented claims and fee lands.

Unpatented claims located before 2009 were located using compass and chain traverses and later surveyed during the 1970’s when the Project was held by Quintana Minerals. Newly located unpatented claims have been placed using a Trimble GPS ground station and with handheld GPS. All patented claims and fee lands have been surveyed by a licensed surveyor. SRK does not know how claim corners have been marked at the Project. However, standard procedure is to mark patented claim corners with 5/8in rebar and unpatented claim corners with 4in wooden posts.

In addition, the United States has reserved any oil, gas, coal, and certain other nonmetallic minerals not subject to the location of unpatented mining claims under the Mining Law of 1872 on the unpatented mining claims at the Project. This does not affect the patented lands around the deposit. Figures 2-2 shows land status in air permit area and 2-3 shows noncontiguous mill site claims located east of the Project. SRK has not independently verified land status.

2.3 Location of Mineralization

Mineralization is contained within patented and unpatented claims controlled by NMCC under the agreements discussed in Section 2.4. The deposit area is within a roughly circular block of andesitic volcanic rocks about 4mi in diameter. These andesitic rocks have been intruded by a quartz monzonite porphyry stock (Copper Flat Quartz Monzonite). The porphyry copper mineralization is contained within the Copper Flat porphyry stock and breccia pipe. Higher-grade material is contained within the mineralized breccia pipe (1,300ft x 600ft, and over 1,000ft in depth). The pipe is a continuous zone of mineralizaiton composed of altered quartz monzonite porphyry, and breccias in a matrix of quartz, biotite, potassium feldspar and sulfides. The deposit consists entirely of hypogene copper mineralization, with nearly all of the copper occurring as chalcopyrite. The location of mineralization is shown in Figure 2-2.

2.4 Royalties, Agreements and Encumbrances

Hydro Resources Corporation (Hydro Resources), a New Mexico corporation, Cu Flat, a New Mexico limited liability company, and GCM, Inc. (GCM), a New Mexico corporation, have granted NMCC the exclusive option described below to acquire the Copper Flat properties, which consist of the following:

- Both the surface estate and the mineral estate in 23 patented mining claims;
- Both the surface estate and the mineral estate in 13 parcels of other fee land;
- The surface estate in an additional three parcels of other fee land;
- The mineral estate in an additional one parcel of fee land;
- Mining rights in 174 unpatented mining claims;
- Surface rights on two unpatented placer claims; and
- Surface rights in nine unpatented millsites.

NMCC has the obligations set forth below for the maintenance of the Copper Flat properties.

NMCC holds an exclusive option to acquire the Copper Flat properties under an Option and Purchase Agreement effective July 23, 2009 with the owners of the properties (Hydro Resources, Cu Flat, and GCM). The Option and Purchase Agreement has been amended three times through a First Amendment effective January 20, 2010, a Second Amendment effective April 1, 2010, and a Third Amendment and Supplemental Memorandum effective May 28, 2010.

NMCC has to date paid Hydro Resources, Cu Flat, and GCM US$1,150,000 pursuant to the Option and Purchase Agreement. To exercise its exclusive option, NMCC must pay an additional US$1,850,000 on or before August 14, 2010, and make a final payment of US$7,000,000 on or before February 14, 2011. The final payment may be deferred until May 16, 2011 by the payment of US$150,000 on or before February 14, 2011.

Even before NMCC exercises its exclusive option to acquire the Copper Flat properties, it has the right under the Option and Purchase Agreement to evaluate, explore and develop the Copper Flat properties.

If and after NMCC exercises its exclusive option to acquire the Copper Flat properties and obtains all state and federal permits required for commercial operation, it must pay advance royalties to Hydro Resources and GCM each calendar quarter. If the average daily Comex spot copper price during the calendar quarter for which the advance royalty is paid is less than US$2.00/lb (adjusted upward for inflation or downward for deflation), the advance royalty for that quarter will be US$50,000. If the average daily Comex spot copper price during a calendar quarter is US$2.00/lb or more (adjusted for inflation/deflation), the advance royalty for that quarter will be US$112,500.

NMCC is also required each calendar quarter to pay a 3.25% net smelter return royalty to Hydro Resources and GCM on mineral products produced from the Copper Flat properties. Advance royalty payments will be credited against and deducted from amounts due for net smelter return royalties.

NMCC's advance royalty and net smelter return royalty obligations will end when the aggregate amount of all such royalties paid exceeds US$10,000,000.

NMCC must pay New Mexico property taxes on the Copper Flat properties and fees to the United States required to maintain the unpatented mining claims and millsites included in the properties. However, the Copper Flat properties are not subject to any other royalties, payment obligations, or other agreements or encumbrances or to any back-in rights.

Mercator Gold plc (Mercator) is listed on the Alternative Investment Market (AIM) of the London Stock Exchange, and owns all of the shares of NMCC. THEMAC Resources Group Ltd. (THEMAC Resources) is listed on the Venture Exchange of the Toronto Stock Exchange. On March 12, 2010, Mercator and THEMAC Resources, entered into a Heads of Agreement providing for the acquisition by THEMAC Resources, subject to certain conditions precedent, of all of the assets of NMCC. The conditions precedent include the entry by Mercator and THEMAC Resources into a definitive agreement and the receipt by THEMAC Resources of a Canadian NI 43-101 compliant PEA for the proposed restart of production at Copper Flat. On completion of the transaction, the board of directors of THEMAC Resources will be composed of five directors, two of whom shall be nominated by Mercator. Kevin Maloney and Barrett Sleeman shall also be directors. The two directors nominated by Mercator and the other two directors shall mutually agree upon the fifth director. The Heads of Agreement provides that Mercator and THEMAC Resources will consider a different form of transaction, should the different form provide material advantages to both parties or to either party, without material or adverse affects on the other party. The Heads of Agreement has been amended three times.

2.5 Environmental Liabilities and Permitting

The Project was originally permitted during Quintana Minerals' operations in the 1980's. In 1992, a new plan of operations was submitted to restart the operation and an Environmental Assessment (EA) was started, but the permitting process was never completed. When Alta Gold Company (Alta Gold) acquired the property in the mid 1990's, they initiated the permitting and approvals process again. Significant baseline data were collected and applications were submitted for all of the major state and federal permit applications. By the time Alta Gold declared bankruptcy in early 1999, the public comments in the draft Environmental Impact Statement (EIS) had been received, and the public hearing on the New Mexico Mining Act Permit and the New Mexico Groundwater Discharge Permit had been conducted. Although the permitting process was nearly complete, final permits had not been issued and the time for appeals or litigation had not yet begun.

2.5.1 Required Permits and Status

From a regulatory perspective, re-permitting the Copper Flat Mine is permissable. Baseline data collected by Alta Gold, Gold Express Corporation (Gold Express), Rio Gold Mining Ltd (Rio Gold), and Quintana Minerals will be relevant to future permits and the insights gained by this work will provide a strong basis for future permits. Quintana Minerals had a fully approved EA before start up of the mine in 1982. Gold Express had updated the Quintana Minerals EA in 1993 when the rules were changed and an EIS was then required by both Federal and State mandate. In 1999, Alta Gold completed the public input process and was ready to submit the Preliminary Final EIS to the state for review and permit issuance. SRK and others carried out the Alta Gold mine permit work from the years 1995 to 1999. The four major permits or approvals needed are:

- BLM Plan of Operation;
- New Mexico Groundwater Discharge Permit;
- New Mexico Mining Permit; and
- New Mexico Air Quality Permit.

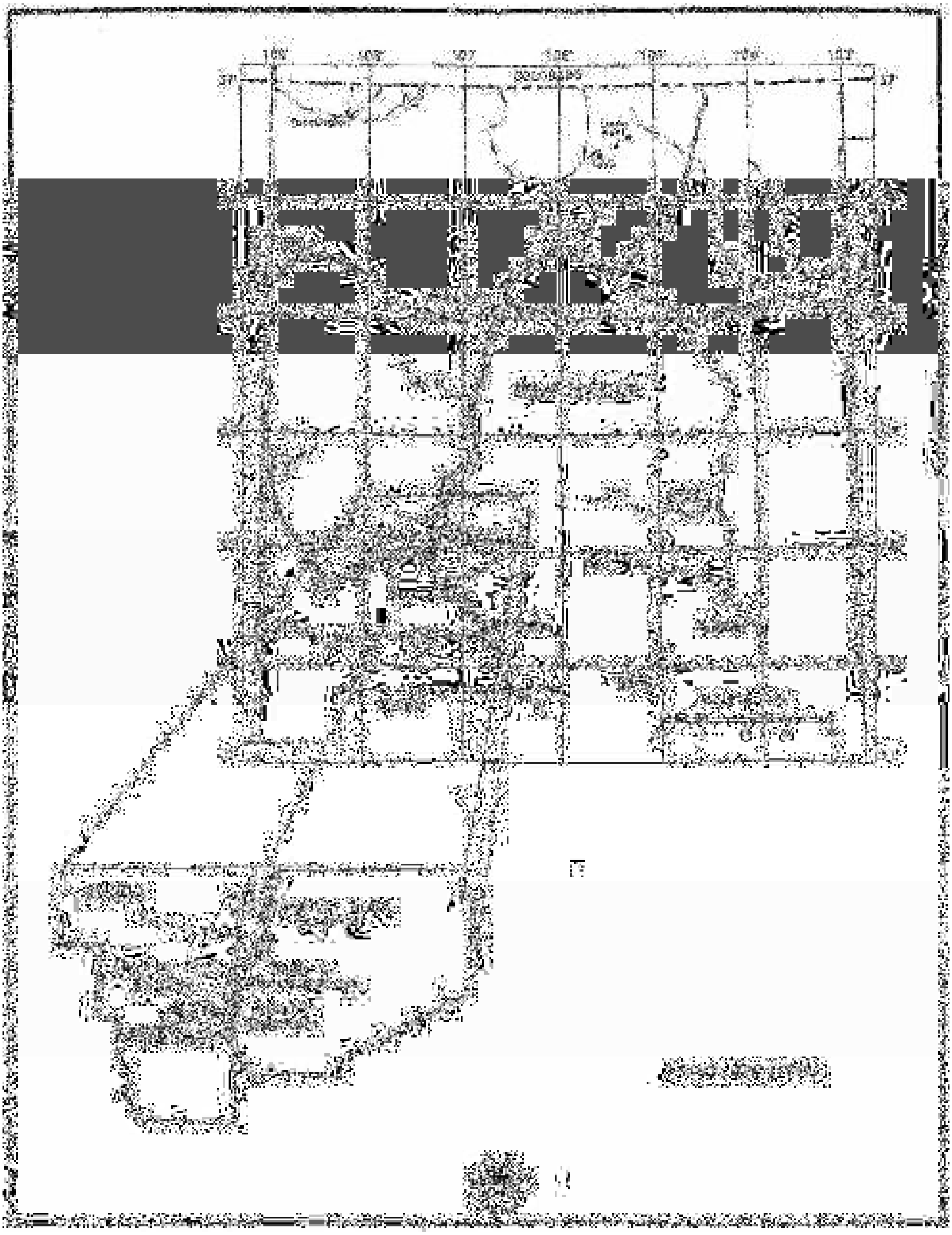
Table 2.5.1.1 lists the major permits required by the State and Federal adjacencies per New Mexico Energy, Minerals and Natural Resources Department.

Table 2.5.1.1: Major Permits and Approvals Required for the Copper Flat Project

Permit/Approval	Granting Agency
Federal	
Approval of Plan of Operations	Bureau of Land Management
Nationwide Dredge and Fill Permit (Section 404)	Army Corps of Engineers
FCC License	Federal Communications Commission
MSHA Registration	Mining Safety and Health Administration
Stormwater Disposal Permit (NPDES)	Environmental Protection Agency
State	
Mining Permit	New Mexico Energy, Mineral and Natural Resources Department-Mining Act Reclamation Bureau
Water Pollution Control Permits	New Mexico Energy, Mineral and Natural Resources Department-Mining Act Reclamation Bureau, Environmental Protection Agency
Surface Disturbance Permit (Air Quality)	New Mexico Environment Department - Air Quality Bureau
Permit to Construct (Air Quality)	New Mexico Environment Department - Air Quality Bureau
Permit to Operate (Air Quality)	New Mexico Environment Department - Air Quality Bureau
Permit to Appropriate Water	New Mexico State Engineer's Office
Permits for Dam Construction and Operations	New Mexico State Engineer's Office
Approval to Operate a Sanitary Landfill	New Mexico Environment Department-Solid Waste Bureau
Tailings Discharge	New Mexico Environment Department-Groundwater Bureau
Radioactive Material License	New Mexico Environment Department-Hazardous and Radioactive Bureau-Radiation Licensing and Registration Section, (RLRS)
Cultural Resources Clearance	State Historic Preservation Office

2.5.2 Compliance Evaluation

The Copper Flat property is considered to be currently in environmental compliance. Additional base line data collection and modeling required by State and Federal authorities may take up to one year of data collection time in areas like air quality, water quality (surface and underground), and mine waste geochemistry. There will be overlap in the collection of any required additional base line data and proceeding with formal documentation of the required permits. An additional period of time, of the order of two years, may be needed to complete regulatory review, public input and final issuance of the major permits.



SRK Consulting Engineers and Scientists		Copper Flat Location Map
SRK JOB NO.: 191000.020	Sierra County, New Mexico	
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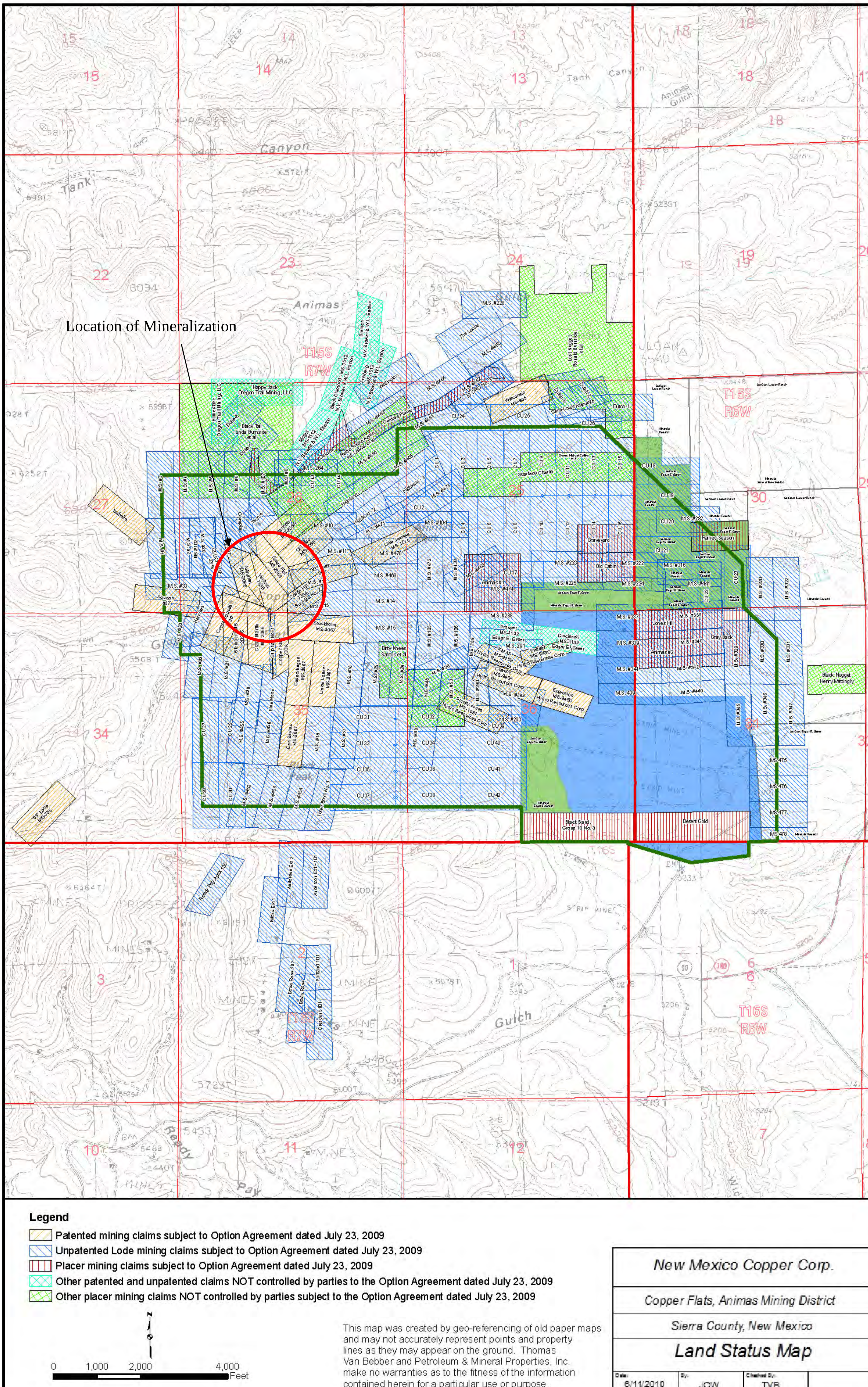

SRK Consulting
Engineers and Scientists
DENVER, COLORADO

SRK JOB NO.: 191000.02
FILENAME: Figure_2-2.docx

Sierra County, New Mexico

Copper Flat

Claim Map Showing Location of Mineralization

DATE:	APPROVED:	FIGURE:	REVISION NO.:
06/23/2010	APPROVED	2-2	A

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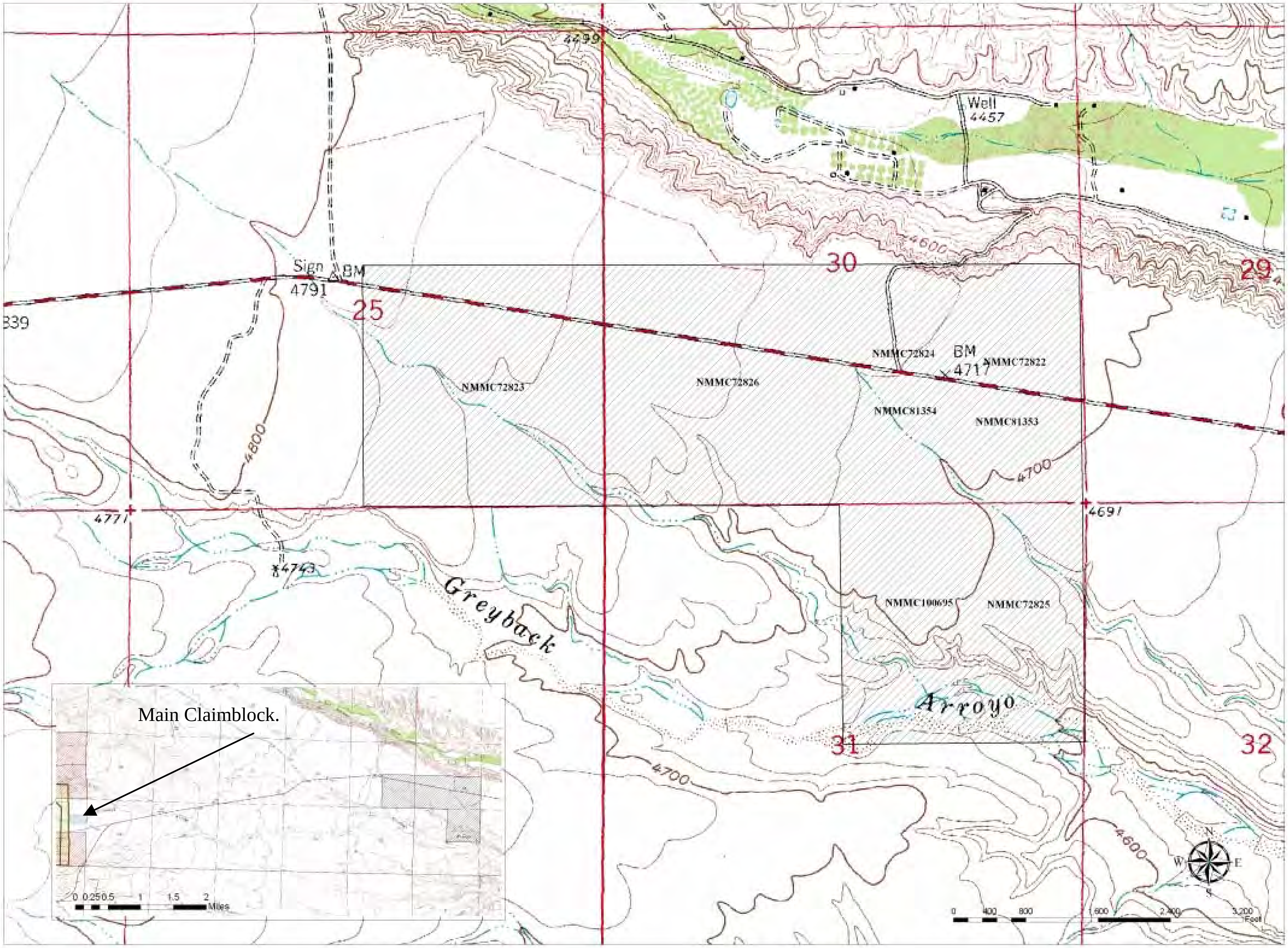

Modified from:
U.S. Bureau of Land Management
LR2000, 2010.

SRK Consulting Engineers and Scientists DENVER, COLORADO		Copper Flat Project Noncontiguous Mill Site Claims			
SRK JOB NO.: 191000.020	Sierra County, New Mexico	DATE: 6/17/2010	APPROVED: APPROVED	FIGURE: 2-3	REVISION NO.: A
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3 Accessibility, Climate, Local Resources, Infrastructure and Physiography (Item 7)

3.1 Topography, Elevation and Vegetation

The property lies in the arid semi-desert country of south-central New Mexico in the foothills of the Black Range. The Black Mountains rise to elevations of above 9,000ft about 25mi west of the site. This project site lies within the Las Animas Hills.

Elevations generally range from about 5,200ft on the southeast side of the property (tailings dam area), to around 5,700ft on the northwest side of the property. The highest elevation locally is Animas Peak (on the north side of the property) at about 6,160ft.

Elevation, precipitation, soil types, and surface grade and aspect influence vegetation distribution within the area. The dominant types of vegetation include desert grassland, creosote bush, and juniper woodland (in drainages and slope toes).

3.2 Climate and Length of Operating Season

The regional climate is high desert, and is generally hot with a July average of 76°F (maximum 107°F), and January average of 39°F (record minimum 1°F). The area is generally dry with about 13in of average annual precipitation, which occurs mostly as rainfall during July to September. Winters are cold and dry. Snowfall is possible from October through April, but more typically occurring between December and February. The average annual total is 8in of snowfall. Prevailing wind direction is predominantly from the west, and secondarily from the north, and generally average 10 to 15mph. Wind speeds in excess of 50mph may occur as major storms pass through the area.

3.3 Physiography

The Copper Flat Property is located in the Las Animas Hills, which occur along the western edge of the Rio Grande Valley. The Rio Grande Valley is approximately 30mi wide and trends north-south. The Rio Grande river flows north-south along the eastern edge of the valley, and is about 14mi east of the site, where it flows into the Caballo Reservoir.

Much of the proposed mine area has been disturbed by previous mining activities including the initial open pit, waste dumps, stockpile area, former plant area, and past tailings impoundment areas.

3.4 Access to Property

The travelling distance from Albuquerque to Truth or Consequences is about 150mi driving south on Interstate Highway 25 (I-25). Access to the site from Truth or Consequences is by 24mi of paved highway (two-lane) plus a final 3mi of all weather gravel road.

3.5 Surface Rights

Hydro Resources, one of the vendors to NMCC, owns the surface rights in the patented mining claims included in the Copper Flat Property, in which they also own the mineral estate. Cu Flat, another of the vendors to NMCC, owns the surface rights in the parcels of other fee land included in the Copper Flat Property in which they also own the mineral estate, as well as in three other parcels of other fee land. Hydro Resources has title to the surface rights in 132 unpatented mining claims included in the Copper Flat Property and in nine unpatented mill sites. Hydro Resources owns an undivided two-thirds interest in the surface rights as well as in the mining rights in 44 unpatented mining claims included in the Copper Flat Property and GCM, also a vendor to NMCC, owns an undivided one-third interest in the surface and mining rights in those 44 claims. The United States has retained rights to manage and dispose of plant resources and to manage other non-mineral surface resources on the unpatented mining claims.

There are sufficient surface rights for access and construction of the Project.

3.6 Local Resources and Infrastructure

Sierra County is a rural county. Historically, this region of New Mexico was mainly an agricultural, ranching and tourism community, with a mining history.

The town of Hillsboro is located about 3 to 4mi away to the southwest of the site, and Truth or Consequences (year round population just over 8,000) is about 20mi to the northwest. Hillsboro is a small community of artists, writers and ranchers with a post office, fire department, library, and a few motels, restaurants and stores. Truth or Consequences is the seat of Sierra County and the center of county infrastructures including hotels, hospitals, schools, and other public services.

There are municipal airports at Truth or Consequences and Las Cruces, but main commercial flight traffic utilizes the Albuquerque airport. The Truth or Consequences Municipal Airport is located 6mi north of the city.

3.6.1 Access Road and Transportation

Access from the site is by 3mi of all weather gravel road and 10mi of paved highway (State Highway 152) east to I-25, near Caballo Reservoir. The 10mi to I-25 is mainly a straight and relatively flat road (and does not include any sharp turns or significantly adverse grades). I-25 is the primary north-south highway.

It is planned for copper concentrate to be thickened, filtered and trucked approximately 41mi to a railhead at Rincon, near Hatch, New Mexico on I-25, (or another site), and then transported by rail to a smelter, most likely in Arizona. Alternatively, a possible rail loading point at the intersection of State Highways 26 and 27 south of the Project could be used. Molybdenum concentrate would be filtered, dried and bagged on site and then transported by truck or rail. This could be taken to the Sierrita Smelter, near Tucson, Arizona.

3.6.2 Power Supply

Sierra Electric Co-op provides electric power in the county. An 115kV power line to the mine site stills exists, which comes from a substation 13mi to the East at Caballo Reservoir, and presently supplies power to Hillsboro. The original mine site power setup included a 20MVA transformer to step down the power to 4.16kV.

3.6.3 Water Supply

An existing 25kV power line could be used to run power from the mine site to the previously used water well field, which is about 8mi to the East. There are four wells, which were capped when the mine was closed, and could be re-used. A 20in diameter pipeline runs from the well field (parallel to Highway 152) to the mine site. This pipeline is reportedly in serviceable condition, but this has not been confirmed.

At the time Hydro Resources re-acquired the Copper Flat Property (2001), it received a conveyance of 1,019 acre-feet of water rights. Hydro Resources and the other vendors of the Copper Flat Property to NMCC have agreed that if NMCC exercises its option to acquire the Copper Flat Property, they will transfer these rights to NMCC for use at the Project. Third parties near the Project area own many thousands of acre-feet of additional water rights. NMCC would need to acquire the right to use those water rights at the Project, and negotiations have been initiated.

3.6.4 Buildings and Ancillary Facilities

There are no buildings currently on the site, apart from a small viewing structure and a sample storage building. A state and federally approved water diversion channel exists around the mine site area.

Typical mine and mill infrastructure will be required to be constructed at the mine site, some of which may be able to utilize previous foundations.

3.6.5 Construction Camp Site

It is anticipated that there will not be a construction camp facility on the property during the period of mine construction. Also, no on-site camp is planned for the mine operations as the mine workforce will live in existing surrounding communities.

3.6.6 Tailings Storage Area

It is planned that tailings will be thickened and piped by gravity to the area of the previously existing 370-acre tailings pond (located within the held claims), which would require upgrading with a suitable plastic liner. Additional refurbishment of the facility will be required. Two decant towers still exist.

3.6.7 Waste Disposal Area

There are three previous waste dumps of various sizes at the Project that were used during the Quintana Minerals production period in the 1980's. NMCC will investigate the use of these waste dumps as future disposal sites. These are located within the area of the held claims.

3.6.8 Manpower

Sufficient human resources will be available for any renewed production for the Project. Part of the workforce will come from surrounding communities. The remaining workforce, including some of the labor for specifically skilled and/or technical positions, would be hired to the area. Abundant experienced mining personnel exist in the Silver City area.

4 History (Item 8)

The first recorded production of placer and lode gold from the Hillsboro Mining District (the District), New Mexico occurred in 1877. The District is also referred to as the Las Animas Mining District. Over 285,000oz of placer and lode gold, valued at US$8.5million, was produced over the next 100 years. Most of the gold and silver production came from underground and placer operations, located in and around the Copper Flat area (Harley, 1934; Segerstrom et al., 1975; Dunn, 1982, 1984).

Gold was initially recovered using arrastras (stone grinding) and then by stamp mills in the district prior to 1881. A tent city named Gold Dust was founded in 1881 in the district and was home to numerous prospectors looking for placer gold deposits. A 10-stamp mill operated at the Bobtail mine on the Snake vein from about 1881 to 1884 and had a capacity of 20 to 25st/d. Placer deposits in Snake Gulch located southwest of the Project were also mined using hydraulic mining methods. Mills operated at the Richmond (1890-1892), Bonanza (1890-1910), Ready Pay/Porter (1898-1913), Snake (1910), and Wicks mines. The copper-matte smelter (capacity 30st/d) in the town of Hillsboro was built in 1892 and operated until it was closed in the early 1900's. The Stenburg copper mine, located at the Project, was in operation between 1911 and 1931. Small-scale copper and precious metals mining took place in the district up until 1941 (Harley, 1934; Segerstrom et al., 1975; Dunn, 1982, 1984; Raugust, 2003).

Underground development was primarily focused on the Bigelow and Jackpot vein systems. The U.S. government's War Production Limitation Board, L-208, closed the last documented underground activity in 1942. Historic placer workings occupy almost every stream channel radiating from the Copper Flat intrusive center. Minor placer mining activity continues today conducted primarily by local prospecting clubs and weekenders (Segerstrom et al., 1975; Dunn, 1982, 1984).

4.1 Ownership

Prior to 1952, the Project was held by various owners. Newmont Mining Company (Newmont) explored the District for copper in 1952, followed by Hilltop Mining, Bear Creek Mining Company (BCMC), and Inspiration Development Company (Inspiration). Hilltop Mining worked in the area prior to BCMC, which was involved with the Project between 1958 and 1959. Inspiration acquired the Project in 1967 and leased it to Quintana Minerals in 1974 (Segerstrom et al., 1975; Dunn, 1982, 1984).

In 1979, Quintana Minerals formed a partnership with Phibro Minerals Enterprises, Inc. forming the Copper Flat Partnership, which was financed by Canadian Imperial Bank of Commerce located in Toronto, Ontario, Canada. Under this partnership, Quintana Minerals was the operator (Segerstrom et al., 1975; Dunn, 1982, 1984).

In August 1987, Inspiration leased its mining claims to Hydro Resources with the option to purchase, which was finalized by 1989. In 1989, Rio Gold optioned Copper Flat from Hydro Resources.

The Copper Flat Partnership, which at this time included Copper Flat Mining Co. Ltd a subsidiary of Rio Gold, maintained control of the Project and held the property until 1993 when Gold Express optioned the Project. Gold Express acquired Copper Flat from Rio Gold with the intent of placing the property into production employing the 1982 design parameters. The following year, in June 1994, Alta Gold acquired the option on the Project from Gold Express. Alta Gold held the Project until its bankruptcy in 1999.

The property reverted back to Hydro Resources in 2001, in conjunction with Cu Flat and GCM (collectively the vendors) who presently own the Copper Flat property.

In July 2009, NMCC acquired an exclusive option over the Copper Flat property from the vendors. Future payments are discretionary, and NMCC can elect not to proceed with the exercise of the option at any stage.

4.2 Historic Exploration and Development

In 1952, Newmont initiated the first modern exploration program for porphyry copper mineralization in the district. This included 3,369ft of drilling in six angle holes in the central quartz monzonite (Kuellmer, 1955). The results were not encouraging enough for Newmont to continue. The Newmont drill and assay data is recorded and is available. BCMC followed in 1958-59 and drilled 9,346ft in 20 widely spaced core holes. BCMC was testing for an enrichment blanket of secondary copper, which was not found. The BCMC drill and assay data is still available (Dunn, 1984).

Inspiration continued porphyry copper exploration starting in the late 1960's. By 1973, Inspiration had completed 30 core drillholes. Employing this drilling and the second splits from the BCMC data, Inspiration calculated a minable resource of 66Mst with an average grade of 0.45% copper. Inspiration purchased the patented claims, performed metallurgical work, and completed two water wells on the property (Dunn, 1984).

Inspiration leased the property to Quintana Minerals in 1974. By late 1975, Quintana Minerals had drilled 141 holes using five rigs, drilling around the clock. Quintana Minerals' exploration program lead to a comprehensive mine development program which included extensive metallurgical work, underground drifting, bulk sampling, and drillhole composite testing) all preformed by Colorado School of Mines Research Center. Quintana Minerals' program included detailed geologic investigations into the relationship between the breccia pipe and the quartz monzonite host rocks, as well as the relationship between host rocks and mineralization. In late 1976, the Project was placed on hold awaiting an improvement in metals prices.

In the first half of 1979, the Project was reactivated due to higher copper prices. Processing methods were reviewed and semi-autogenous grinding (SAG), and copper-molybdenum flotation separation became the basis for subsequent design work. In January 1980 a decision was made to develop the mine. Quintana Minerals' production history is discussed under Section 4.4, Production History.

In 1989, Hydro Resources of Albuquerque, New Mexico, acquired the Copper Flat property from Inspiration, along with all royalties. Hydro Resources maintains a considerable archive of information related to the Project dating back to Inspiration's involvement in the Project. This includes over 14,000 sample pulps and skeleton core from the Quintana drilling programs.

Rio Gold and Tenneco Minerals (Tenneco) drilled six large-diameter RC holes in 1990 and Tenneco left without further interest. Gold Express optioned the property in 1993, but performed no exploration or development.

Alta Gold then acquired the property from Gold Express in June 1994, and went as far as obtaining a draft final EIS for the Project issued in March 1999, but went bankrupt (due to financial problems with other assets) before any permits were issued.

Hydro Resources reacquired all the properties in 2001 (having previously temporarily owned the property), along with all royalties.

During late 2009 and early 2010, NMCC conducted a sample verification program that included pulp reject analysis and drilling. These recent activities are discussed in Sections 9 and 12 respectively.

4.3 Historic Reserve Estimates and Audits

The historical mineral resource and reserve estimates presented in this report are based on exploration and development activities, which started in the 1960's. Historic resource estimates do not comply with the CIM terminology under NI 43-101 guidelines, and the reader is cautioned that these estimates are not mineral resources or mineral reserves as defined by NI 43-101(2002), and should not be relied upon.

The Copper Flat history of published ore reserve estimates and reserve audits begins with Inspiration Development in 1974. Prior to Dunn-Behre Dolbear's (DBD) reserve audit in 1993 for Gold Express, four previous reserve estimates were made for Copper Flat. This included Western Knapp Engineers (WKE) in 1976 for Quintana Minerals, Pincock, Allen & Holt (PAH) in 1980 and 1989 for Quintana Minerals, and Rio Gold and N.A. Degerstrom Inc. (NAD) who completed a mine plan in 1991 for Gold Express (Dunn-Behre Dolbear, 1993). Reserve comparisons are made on the most significant calculations in Table 4.3.1.

Table 4.3.1: Historical Mine Reserve Estimates Comparison for Copper Flat

	WKE (1976)	PAH (1989)	NAD(1991)
Cut-off-Grade (% Cu)	0.25	Variable	0.23
Tons (st) Ore (1,000)	59,897	60,720	59,119
Tons (st) Waste (1,000)	102,672	60,588	60,164
Stripping Ratio	1.71:1	0.71:1	1.02:1
Ore Grade (% Cu)	0.43	0.425	0.425
Ore Grade (% Mo)	0.013	0.012	N/C

From Dunn Behre Dolbear, 1993, Table 7.1

Historic resource and reserve estimates do not comply with the CIM terminology under Canadian Securities Administrators NI 43-101 guidelines. The reader is cautioned that these estimates are not mineral resources or mineral reserves and should not be relied upon.

Gold Express obtained an audit from DBD as to the quality of the reserve for NM Rothschild & Sons, Ltd, which was filed with the SEC. DBD stated in their letter to Rothschild on Copper Flat (1993):

"DBD's review has not disclosed any significant technical flaws in Gold Express's assumptions for the project. The accuracy of the project's technical performance and financial projections made by Gold Express meet or exceed generally accepted industry standards for a developing project for a due-diligence review."

"The estimate of 60 million tons of ore at a grade of 0.43% copper used in Gold Express's 1992 10-K filing are considered by DBD to be acceptable and accurate and meet the SEC standards for proven and probable ore reserve categories …"

Gold Express encountered problems of raising money in a declining commodity market, and economics forced the company to find a buyer for the project in 1994.

In 1994, Alta Gold purchased Gold Express' agreement with Hydro Resources, and acquired the title to the Project. Alta Gold began a formal EIS process with federal and state guidance, and engaged PAH to produce an audit update of the minable reserves at Copper Flat. The PAH audit was for 1998 and published in 1999, and was filed with the SEC. Alta Gold and PAH employed a polygonal reserve estimation process using Medsystem®. The PAH audit states:

"On the basis of PAH's review of the methodology and checks of the composite cumulative frequency and variograms, PAH believes that the Alta Gold model has been prepared according to accepted engineering practice and is suitable for use in mine planning."

Table 4.3.2 shows the Alta Gold mine reserve estimate for Copper Flat in 1998.

Table 4.3.2: Alta Gold Mine Reserve Estimate for Copper Flat 1998

Item	Amount
Economic breakeven Cut-off (%EQCU)	0.310
Internal cut-off (% EQCU)	0.240
Ore Tons (st 000s)	59,119
Copper Grade (%Cu)	0.425
Copper Tons	251,256
Molybdenum Grade (%Mo)	0.013
Molybdenum Tons	7,685
Gold Grade (oz Au/ ton)	0.004
Gold (ounces)	251,256
Silver Grade (oz Ag/ ton)	0.061
Silver (ounces)	3,577,000
Waste Tons (st 000s)	49,175
Total Tons (st 000s)	108,294
Strip Ratio (waste tons/ore tons)	0.83
From PAH 1999, Table 1.4	

Historic resource estimates do not comply with the CIM terminology under Canadian Securities Administrators NI 43-101 guidelines. The reader is cautioned that these estimates are not mineral resources or mineral reserves and should not be relied upon.

In early 1999, the BLM completed a final EIS report. However, Alta Gold declared bankruptcy and the Project was placed on care and maintenance. The preliminary final EIS was written, but not published.

From 1997-2003, the Project has generated significant research on environmental considerations on mining projects. Several professional and private papers written on Copper Flat continue to be cornerstone publications for environmental considerations on mining projects in New Mexico. These include The Natural Defenses of Copper Flat, Sierra County, New Mexico; New Mexico Bureau of Geology and Mineral Resources, Open File Report 475, J.S. Raugust, 2003; and Copper Flat Mine-Compilation of Pit Lake Studies (for Alta Gold), SRK Consulting (U.S.), Inc., October 1997, SRK Project 68610.

NMCC acquired the right to purchase the Project in July 2009 from Hydro Resources, and has been pursuing the reactivation of the former mine since. This PEA is part of NMCC's work to advance the Project, and place it back into production. The exploration, development, and production history are summarized in Table 4.3.3.

Table 4.3.3: Summary Exploration and Development History, Copper Flat

Company	Dates	Drillholes	Other Exploration	Database	Remarks
Newmont Mining Corp.	1952-55	N1-6	Surface mapping, soils surveys	Archive	3,369ft of drilling
Bear Creek Exploration	1958-59	20	Surface mapping, alteration, Soil surveys	Archive	9,346ft of drilling, re-sampled by Inspiration, discovered breccia pipe.
Inspiration Consolidated	1967-73	CF 1-20	Surface mapping, ground mag, seismic, soils surveys.	Alta Gold	Re-sampled and verified Bear Creek drilling Patented claims purchased
Inspiration Development	1968-71	IDC 1-29	Surface mapping, sampling of gold-silver veins, IP surveys.	Alta Gold and Archive	23,046ft, plus deep drilling surrounding andesites First met studies and resource estimate
Quintana Minerals	1974-78	2000-3000, 5000, 7000, 8000 series	U.G. drifting 2,241ft, bulk sample, met studies.	Alta Gold	94,097ft drilling and 100 thin sections in 141 drillholes. WKE resource estimate and infrastructure development.
Copper Flat Partnership/CIBC	1980-82	No drilling	No Exploration	Alta Gold	Quintana and Phibro Minerals. Development, production, and then receivership. First PAH audit.
Rio Gold	1989-91	TCF 1-6	Start of EIS, permitting	Archive	Six RC holes drilled by Tenneco, to be evaluated for database. Second PAH reserve audit.
Gold Express	1992-93	No drilling	No exploration	Archive	Project financing, met studies, DBD reserve audit.
Alta Gold	1994-99	No drilling	No exploration	Archive	Project financing, EIS, orthophoto survey (Cooper) Third PAH reserve audit.
NMCC	2009-10	CF09-1-2 CF10-3-6B	Pit mapping	SRK	5,046ft confirmation drilling and PEA. Re-analysis Quintana pulps and SRK resource statement

Figure 4-1 shows the Copper Flat mine of Quintana Minerals, in a photo taken in 1982. The photo shows the pre-stripped open pit in the background, as it is today. The then state-of-the-art milling facility is in the middle with mining equipment shops on the left, tailings thickener in the lower middle (tailings out of sight to lower left), crushing facilities on the right of mill, waste rock dumps out of sight on the right, and beyond the pit.

4.4 Historic Production

Quintana Minerals prepared an EA report for state and federal agencies in 1975, and by mid-1976, an independent engineering firm Western Knapp Engineering (WKE) had prepared a formal Feasibility report. Final engineering was started with power contracts signed, when copper prices slumped and the open pit mining project was shelved in early 1977. With the recovery of metal prices in 1979, Quintana Minerals re-evaluated the economic viability of the Project, and authorized a new formal detailed engineering study. By this time, the value of the molybdenum, gold, and silver affected the mine economics.

Quintana Minerals formed a 70%/30% partnership with Phibro Mineral Enterprises in late 1979, with Quintana Minerals as the operator. Financing was arranged through the Canadian Imperial Bank of Commerce (CIBC), and construction was started in June of 1980 under the Copper Flat Partnership. The mineable reserves at that time were 60Mst (54Mt) grading 0.42%Cu and 0.012%Mo, plus credits in gold and silver.

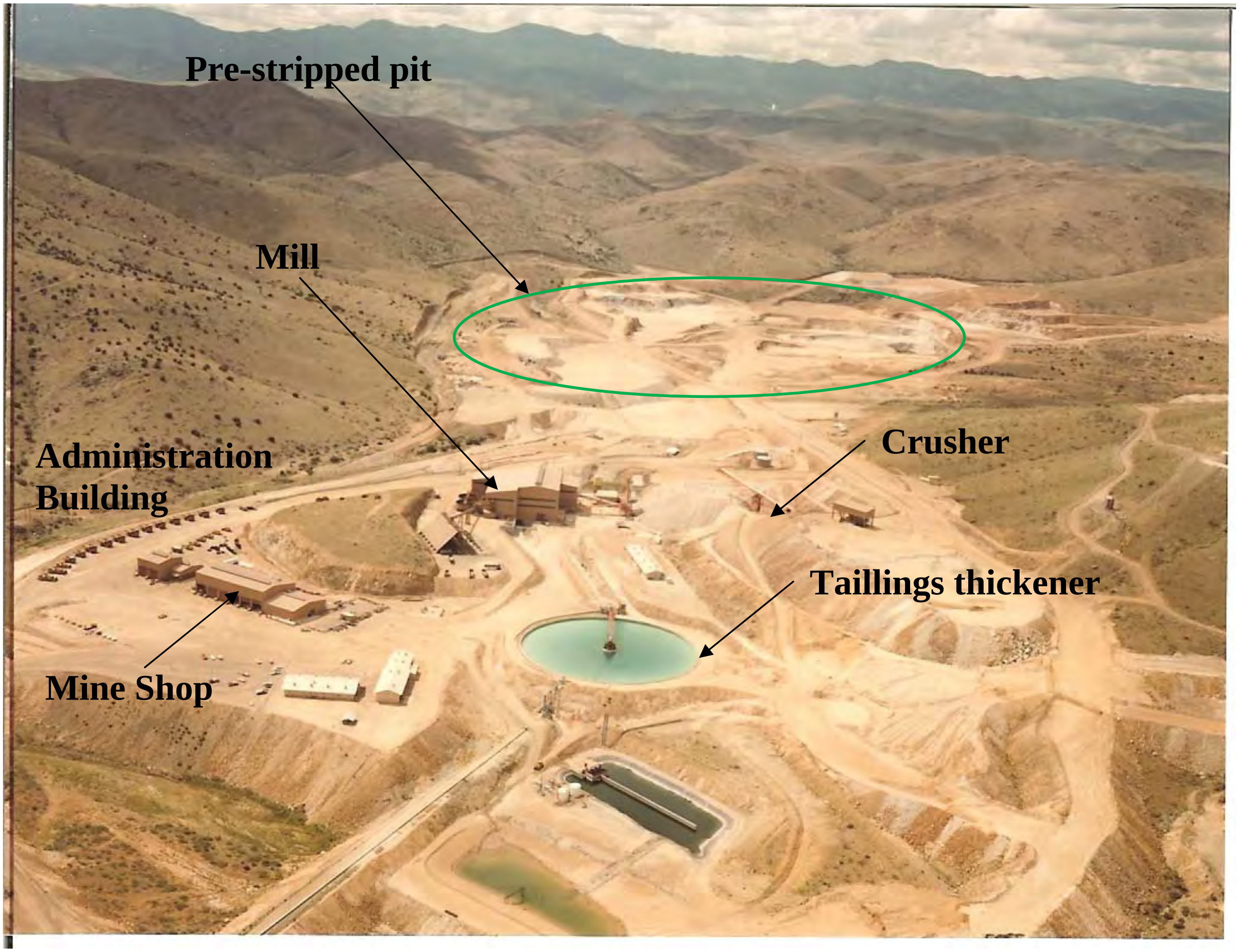
Wright Engineers of Vancouver, B.C., Canada, were responsible for design engineering while W-J Engineers of San Bruno, California, were responsible for detailed engineering. M.M. Sundt Construction Company of Tucson, AZ, was the construction contractor. Quintana Minerals assumed responsibility for overall project management.

In mid-March 1982, (Figure 4-1) and after a US$112million capital investment, the Copper Flat open pit copper mine began full production at a rated capacity 15,000st/d, a waste to ore ratio of 1.8:1, and a cut-off grade of 0.25%Cu. After just 3.5 months of production, the mine shut down on June 30, 1982, due to extremely low copper prices (US$0.70/lb) and extremely high interest rates on the CIBC loan. The mine produced 1.48Mst of ore recovering 7.4Mlbs of copper, 2,301oz of gold, and 55,966oz of silver during the period. Table 4.4.1 shows the production.

Table 4.4.1: Quintana Minerals, Inc. Mine Production at Copper Flat

	Actual	Planned
Tons Ore (st) Mined	1,478,047	1,892,387
Tons Waste (st) Mined	3,098,330	3,361,478
Grade, Copper (%)	0.448	0.433
Grade, Molybdenum (%)	0.0088	0.013
From Dunn Behre Dolbear, 1993, Table 7.1		

The Copper Flat mine passed its project stabilization with CIBC during this initial mining period before going into receivership. By late 1985, the surface facilities equipment were sold to the Ok Tedi mine in Papua New Guinea, and the site was reclaimed by CIBC as formally approved by state and federal requirements. The structural foundations, power lines, water wells, and in-ground infrastructure were left in-place.



The Copper Flat mine of Quintana Minerals Corporation, in a photo from 1982.

SRK Consulting Engineers and Scientists		Copper Flat
		Copper Flat Mine in 1982
SRK JOB NO.: 191000.020	Sierra County, New Mexico	DATE: 20100504 · APPROVED: APPOVED · FIGURE: 4-1 · REVISION NO.: A
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5 Geologic Setting (Item 9)

The Copper Flat project is located along the western edge of the Rio Grande Valley in southern New Mexico. The Rio Grande valley is the physiographic expression of the Rio Grande Rift, which stretches from the Gulf of Mexico north into southern Colorado. The Project lies in the transition zone between the Colorado Plateau to the north and the Basin and Range province to the south, sometimes referred to as the central mountains province (Titley, 1982).

The Project area is located in Animas uplift. In the Project region, this uplift borders the lower Rio Grande rift on the west side of the valley. The Animas Hills are separated from the Black Range to the west by the Warm Springs Graben, in which sits the town of Hillsboro. The Animas Uplift and the Project area are separated from the Rio Grande River by 20mi of Tertiary aged, Santa Fe Group alluvial sediments, referred to as the Palomas Basin of the Rio Grande Valley. Figure 5-1 shows regional structural features. The regional geology and maps are taken from the Preliminary Final EIS, Copper Flat project, U.S. Bureau of Land Management (BLM), March 1999, and from McLemore et al., 2000.

The stratigraphy of the area can be seen in the uplifts that bound the Rio Grande Valley. The basement rock consists of Precambrian granites, schists, and gneisses, and is unconformably overlain by Paleozoic-Mesozoic sedimentary rocks. The principal units near the Project area are Paleozoic carbonates and shales of the Ordovician Montoya Limestone, the Silurian age Fusselman Dolomite, and the Devonian Percha shale. The regional stratigraphic column is presented in Table 5.1.

Table 5.1: Stratigraphic Column of the Project Area

	Symbol	Thickness (ft)	Stratigraphic Units	
Tertiary-Quaternary	Qvy	10-70	Pleistocene and Holocene valley alluvium	
	Qvo	50-100	Pleistocene river, arroyo and fan deposits	
	TQb	50-200	Pliocene basalt flows, dikes and plugs	
	Tsfp	300-1,000	Upper Santa Fe Group Fanglomerate (Palomas Formation)	
	Tv	1,000-2,000	Santa Fe Group, Rincon Formation	
		1,000	Tertiary volcanic rocks	
Cretaceous *(Igneous Rocks)*	Kql	3,000+	Quartz latite dikes	*Copper Flat Volcanics and Intrusives*
	Kii		Intermediate composition intrusives	
	Kd		Late Cretaceous andesite dikes	
	Ka		Andesite rocks near Copper Flat	
	Kis		Late Cretaceous silicic intrusives	
Cretaceous *(Sedimentary Rocks)*	Kacfs		Sandstone	
	KM	300-400	Mancos Shale, Not exposed in the Project area	
	KDS	100-200	Dakota Sandstone. Not exposed in the Project area	
Paleozoic	PM	1,000-2,000	Manazano Group sedimentary rocks. Abo Sandstone, Yeso Formation shales, sandstones, and gypsum deposits, and Sand Andres Limestone. Not exposed west of the Rio Grande River in Project area	
	IP	400-1,000	Pennsylvanian carbonate rocks including Syrena, Oswaldo and Magdalena Groups, minor conglomeratic sandstone and cherty massive limestone	
	DM	200-500	Devonian and Mississippian carbonate rocks (Kelly Limestone, Lake Valley Limestone, Caballero Formation) and Percha Shale	
			Ordovician Montoya Group and Fusselman Dolomite	
	OS	250-600	Cambrian-Ordovician Bliss Sandstone and El Paso Group Limestone	
	Є	500-700		
Precambrian	pЄ		Precambrian massive granite	

Modified by SRK from U.S. Bureau of Land Management, 1999.

Figure 5-2 is a schematic geologic cross section of the district illustrating the stratigraphy. In this section the Late Cretaceous silicic intrusive (Kis) and the andesite (Ka) are shown cutting the Paleozoic section at depth, the deepest drillholes in the project area bottom at an elevation of approximately 4,000ft in the intrusive core area.

5.1 Regional Geology

Regionally, the Project lies on the eastern edge of the Cretaceous aged, Arizona-Sonora-New Mexico porphyry copper belt. While there is a significant amount of age difference, Copper Flat (74.93m.y., McLemore, et al., 2000), Chino (Santa Rita 59.0m.y.), and Tyrone (56.2m.y.) form a distinct lineament known as the Santa Rita lineament in southwest New Mexico and continuing into adjacent Arizona. Copper Flat is one of the oldest known porphyry deposits in the Southwest, and is the eastern most such deposit in the U.S (Hedlund, 1974; Dunn, 1982; Titley, 1982).

The Laramide orogeny occurred during the Cretaceous in this area. The Laramide orogeny and the associated porphyry copper deposits in the Arizona-Sonora-New Mexico copper belt are a product of magmas generated during the subduction of the Farallon plate beneath the North American plate between 75 and 50Ma. Copper Flat is located on the Sonora slab segment of the Farallon plate, between the Gila tear to the northwest and the Nacozari tear to the southwest (Keith, et al., 1995).

The Cretaceous orogenic activity was followed by mid-Tertiary volcanism that resulted in extensive caldera formation and deposition of widespread tuff units. At about 35Ma, Basin and Range faulting began, as did the opening of the Rio Grande rift, which continues to the present.

5.2 District Geology

The district geology is modified from Raugust (2003) and from McLemore et al., (2003). The predominant geologic feature of the Hillsboro mining district is the Cretaceous age Copper Flat stratovolcano. The Hillsboro mining district comprises the Animas Hills, a low range formed by the Animas Hills horst at the western edge of the Rio Grande rift. Faults that bound the Animas Hills horst are related to the tectonic activity of the Miocene-age Rio Grande rift (Dunn, 1982). In spite of its close proximity, there is no known connection between the Rio Grande rift and the Copper Flat volcanic/intrusive complex. The Copper Flat volcanic/instrusive complex had been interpreted as an eroded stratovolcano based on the presence of agglomerate and flow band textures in some of the andesites (Richards, 2003).

The eastern edge of the Animas Hills horst is a 4mi diameter circular block of Cretaceous aged andesite that has been eroded to a topographic low. The andesite is in fault contact with Santa Fe Group sediments deposited in the ancestral Rio Grande rift. A drillhole in the southwest corner of T15S, R6W indicates that Santa Fe Group sediments are at least 2,000ft thick (Dunn, 1982). The remaining periphery of the volcanic terrain is marked by nearly vertical faults along which the andesite has been down-dropped against Paleozoic sedimentary rocks. The vertical displacement along these faults is not known, but drillholes collared in andesite were still in andesite at depths greater than 3,000ft from the surface. The thickness of the andesite and the concentric fault pattern suggest a “deeply eroded” Cretaceous-age caldera complex (Dunn, 1982). However, the depth of erosion is controversial.

Two quartz monzonite stocks, the Copper Flat Quartz Monzonite (CFQM) and the Warm Springs Quartz Monzonite (WSQM), intrude the core of the volcanic complex. The CFQM stock has a surface expression of approximately 0.4mi^2 and has been dated by the argon-argon (^{40}Ar/^{39}Ar) techniques to be 74.93 ±0.66 million years old (McLemore et al., 2000). The surrounding andesites also have been dated using argon-argon techniques to be 75.4 ±3.5 million years old (McLemore et al., 2000). The barren WSQM was emplaced after the period of mineralization, but is still related to the other igneous rocks. Hedlund (1974) reported a K-Ar age date of 73.4 million years from biotite concentrate taken from Inspiration drill core.

At least 34 dikes radiate out from the CFQM. The latite, quartz latite, and monzonite dikes are generally oriented N45-55°E and N40-50°W and represent a late stage differentiation of the CFQM stock. The dikes are as much as 125ft (38m) wide and 5,200ft (1,575m) long (Hedlund 1985). The dikes are gray to tan, typically holocrystalline and porphyritic. Two predominant types of dikes occur: a porphyritic latite with large orthoclase phenocrysts and an aphanitic latite. The dikes contain quartz, potassium feldspar, plagioclase, biotite, magnetite, locally hornblende, pyrite, apatite, and rutile (McLemore et al., 2000). The latite dikes cut both the andesite and the CFQM, but do not cut the unaltered WSQM.

The Kneeling Nun tuff (ca. 34Ma) and the Sugarlump Tuff (ca. 35Ma) unconformably overlie the local andesite flows. The tuffs are known to have been erupted from the Emory caldera, and indicate that the Copper Flat volcanic/intrusive complex was buried during the Oligocene, and exhumed during Miocene uplift at 21.7 ±3.6Ma (Kelly et al., 1997). Black, scoriaceous basalt dikes that intruded the andesite and quartz monzonite are unaltered, and are likely associated with later Pliocene alkali basalt flows (4 Ma, Seager et al., 1984) that are locally abundant.

Figure 5-3 shows the district geology. The fault-bounded Cretaceous andesites of the district sharply define the Copper Flat volcanic/intrusive complex against the Santa Fe Group Quaternary sediments. The CFQM and mineralized breccia pipe are in the core of the andesite complex, while the barren WSQM is found along the southwest edge.

5.3 Project Geology

The project geology is from Dunn (1984) with additions and modifications provided by NMCC. The geologic map of Copper Flat, presented in Figure 5-3, has been simplified from Quintana mapping originally done at a scale of 1”:200’ (1:2400). The map is entirely within the quartz monzonite (CFQM) and includes a central mineralized breccia pipe. Much of the deposit and almost all the breccia lie beneath 5 to 35ft. of alluvial cover at the Project. The outline of the breccia and the numerous faults shown in the covered area were determined from close-spaced drilling and underground development.

5.3.1 Lithology

The andesite is generally a fine-grained porphyritic rock with phenocrysts of plagioclase (andesine) and amphibole in a groundmass of plagioclase and potassium feldspar with rare quartz. Agglomerates or flow breccias are locally present, but the andesite is generally massive and attitudes are difficult to determine. The andesite immediately south of the quartz monzonite is coarse-grained and may represent a shallow intrusive phase. Magnetite is a common association with the mafic phenocrysts, and accessory apatite is found in nearly every thin section (Dunn, 1984).

An irregular mass of andesite breccia is found along the northwestern contact of the quartz monzonite. It contains potassium feldspar phenocrysts and andesitic rock fragments in a matrix of sericite with minor quartz and may represent a pyroclastic unit. Similar tuff breccias are encountered in drillholes and occur in a few other outcrops in the map area, but are too small to be mapped separately. Magnetite, chlorite, epidote, and accessory apatite are also present in the andesite breccia (Dunn, 1984).

Figure 5-4 shows the CFQM occupying the center of the map. The narrow neck shown in this figure can be observed an additional 2,500ft to the northeast outside the map area. The stock contains few mappable xenoliths or roof pendants of andesite, and only a few isolated outcrops of quartz monzonite occur within the andesite. The andesite at the contact shows no obvious contact metamorphism, and the quartz monzonite rarely shows visible evidence of chilling at the contact (Dunn, 1984).

Most of the CFQM is porphyritic, with large orthoclase phenocrysts up to 5cm long. It consists of about equal amounts of andesine and orthoclase, although in places either feldspar may comprise more than 50% of the rock. Andesine usually occurs as smaller phenocrysts, less than 1cm long while orthoclase comprises much of the groundmass. Quartz makes up 15% of the CFQM, and occurs as small phenocrysts and as part of the groundmass. Both hornblende and biotite occur as primary minerals. Magnetite is common, associated with the mafic minerals, and apatite is a ubiquitous accessory. Rare sphene crystals are present (Dunn, 1984).

Several textural and compositional variants of the CFQM have been observed, but have not been mapped separately. Locally, the rock is nearly equigranular while elsewhere is porphyritic but with only the small plagioclase phenocrysts. Quartz is absent in some parts of the stock. Some of the textural variations appear to be the result of later hydrothermal alteration (Dunn, 1984).

Although more detailed mapping may indicate that some of the variations represent separate intrusive phases, all the rock types of the CFQM stock are older than the later fine-grained dikes and older than the mineralization and alteration (Dunn, 1984).

The latite dikes and plugs shown on the geologic map cut both the andesite and the CFQM. Three different types of dike are distinguished in hand specimens, but are not distinguished on this map. Many of the smaller dikes have been omitted due to scale. Most of the dikes are fine-grained latite containing 5 to 10% euhedral plagioclase phenocrysts ranging up to 5mm long in a groundmass of plagioclase, potassium feldspar, and minor quartz. Apatite is also found in the dikes. The other two types of dikes are similar. One contains 1 to 2% rounded quartz phenocrysts (quartz eyes) up to 2mm, and the other dike contains no quartz but does contain abundant large orthoclase phenocrysts up to 25mm long. Cross-cutting relationships indicate that the quartz eye-bearing dikes are older than the latite dikes, and that the dikes with the large phenocrysts are younger. The dikes are generally 5 to 30ft. wide (Dunn, 1984).

The two plugs shown in Figure 5-4 consist of fine-grained latite. The larger irregular plug to the north is not well exposed except for its contact with the CFQM. Several small outcrops of both andesite and CFQM occur within the plug, which may actually be a complex dike swarm. The smaller plug to the south is better exposed and is a single body of latite (Dunn, 1984).

Post-mineral rocks have been omitted from the geologic map (Figure 5-4). The only post-mineral rocks in the area are a single feldspar porphyry dike that cuts the andesite northwest of the larger latite plug to the north of deposit, and a few narrow basalt dikes that cut both the andesite and the CFQM (Dunn, 1984).

5.3.2 Structure

The major fault zones at the Project were likely established prior to the emplacement of the CFQM. These structures were controlling factors in later igneous events and mineralization. The same structures were still active after the mineralization process. Alluvial covered areas at the Project are due to more active erosion at the intersection of the numerous faults that have had post-mineral movement. This post-mineral movement has resulted in wide, strongly brecciated fault zones. Some of the post-mineral dikes have been emplaced within these fault zones (Dunn, 1984).

Three principal structural trends are present in the area. The most prominent of these is a northeast striking fault trend that includes the Hunter fault and the other parallel faults at the Project. The other two structural trends are west-northwest striking faults, marked by the Patten and Greer faults, and east-northeast striking faults, marked by the Olympia and Lewellyn faults. All of the fault structures are dipping nearly vertical; the Hunter fault system dips 80°W, and both the Olympia and Lewellyn fault systems dip between 80°S and 90° (Dunn, 1984).

In general, the outline of the Copper Flat stock parallels the three structural trends. The southern contact is sub-parallel to the Greer fault, although the contact is cut by the fault, and the southeastern and northwestern contacts are roughly parallel to the Olympia and Lewellyn faults. The elongate neck of the stock is parallel to the Hunter fault system. It has not been possible to determine whether there was movement on the fault systems prior to the emplacement of the stock or whether these were simply well defined fracture systems (Dunn, 1984).

The latite dikes are observed to strike in all the three principal fracture directions. However, the majority, including those related to the most productive veins mined in the district, strike northeast. A narrow zone of fault gouge commonly occurs along the contact between dikes and the andesite, with the mineralization post-dating fault movement (Harley, 1934). There is evidence in the extreme west of the Project of fault movement during the period of dike emplacement. A younger porphyritic dike was emplaced in a fault (possibly an extension of the Patten fault) that had previously offset an early latite dike (Dunn, 1984).

Post-dike movement has marked the three principal faults, and both the Hunter and Patten fault systems have had definite post-mineral movement. Both faults have “smeared-out” sulfides, and both offset the breccia pipe as well as the zones within the breccia pipe. Slickensides observed on fault surfaces in drill core and in underground workings are nearly horizontal. This apparent strike-slip movement is usually compatible with the displacement of the dikes mapped on the surface. However, the Greer fault shows both right-lateral and left-lateral displacement of different offset features indicating that there has been some vertical displacement (Dunn, 1984).

Limited information on fault zones (from drillhole intersections and from the underground workings) suggests that the material within the fault zones has variable strikes and dips. The material in the northeast fault zones contains a high proportion of wet gouge, often with no recognizable rock fragments. Where the Hunter fault zone is encountered underground, material has the same consistency as wet concrete and has been observed to flow in underground headings. However, the material in the east-northeast fault zones contains only highly broken rock and little obvious gouge. The width of the fault zones in both systems varies along strike from less than a foot to nearly 25ft. in the Patten fault east of the Project. Despite the intense brecciation within the fault zones, the total displacement along the faults does not appear to exceed a few tens of feet (Dunn, 1984).

NMCC has mapped the pit area and diversion cuts in detail at 1”:40’ (1:480) and has examined the pre-mineral and post-mineral stress orientations in the andesites and CFQM. There is no significant difference in the stress fields pre- and post- mineral. Figure 5-5 is the stereonet compilation of 101 fault measurements collected in the Project pit area. The diagrams in this figure show the structural orientations associated with and parallel to the Hunter fault zone have NE-SW dominate orientations, while structures associated with and parallel to the Patten fault zone are NNW-SSE and are secondary.

5.3.3 Breccia Pipe

The central higher-grade portion of the deposit is contained in a mineralized breccia pipe that is almost completely covered by the alluvium in the Project area. The shape of the breccia pipe, beneath the alluvium, is shown on the geologic plan map in Figure 5-6 and in cross section in Figure 5-7. The eastern portion of the breccia pipe is outside the outline of the main mineralization; the rest of the breccia, however, it is higher grade than the surrounding CFQM. The breccia hosts nearly one-half of the copper but comprises only about one-third of the total resource tonnage that is in the resource (Dunn, 1984).

The breccia pipe is a zone within the CFQM that has been cut by numerous, randomly oriented, irregular veins that are thicker and coarser-grained than the narrow fracture-controlled veinlets in the surrounding stock. Part of the northwestern section of the pipe contains angular, rotated fragments cemented by the same hydrothermal matrix. The extent of breccia with rotated fragments can be determined only roughly, because most of the data have come from drill core samples (Dunn, 1984). The entire breccia pipe at the Project, corresponds to both Zone 2 (crackle breccia) and Zone 3 (breccia pipes) in Copper Basin, Arizona, as described by Johnston et al., (1961).

The breccia pipe is exposed in only a few places and is 1,300ft long by approximately 600ft wide at the surface with the long axis perpendicular to the predominant northeast fracture direction. It has a vertical extent of over 1,000ft, with veins of coarse pegmatitic material found at approximately 1,700ft deep in one drillhole. Close-spaced drillholes, approximately 100ft apart within the center of the deposit, show that the breccia pipe occurs as a single, continuous body. Only two drillholes outside the breccia intercepted short intervals of stockwork veining similar to that found in the main breccia pipe (Dunn, 1984).

The shape of the main breccia pipe shown in detail in Figure 5-6 represents the elevation of the underground bulk sample workings. This map and two vertical cross sections presented in Figure 5-7 show the approximate extent of the zone containing rotated fragments. The cross-section b-b' is south of that zone. Although the breccia does reach the surface beneath the alluvium, much of the breccia pipe is covered by overlying CFQM. This upper contact with the CFQM is relatively sharp, and is shown on the cross sections to have a gentle south dip, suggesting that the top of the pipe has barely been uncovered by erosion (Dunn, 1984).

The pipe has a steep plunge to the southwest, which may be the result of post-mineral rotation. A limited number of attitudes taken in the andesites show 20° dips to the east. If these attitudes represent later movement, the breccia would have originally been vertical. Drillholes at the eastern edge of the pipe intercept CFQM with a relatively sharp contact. If rotation has taken place, these holes actually drill out the side of the breccia pipe. Drillholes along the western edge drill from breccia into CFQM but with a long gradational contact, which most likely represents the true bottom of the pipe (Dunn, 1984).

Most of the fragments in the breccia consist of mineralized CFQM. Fragments of mineralized latite are locally abundant and are found where dikes exposed in the CFQM can be projected into the brecciated zone. Andesite fragments in the breccia pipe occur only as mixed fragments partially in contact with intrusive CFQM. Andesite fragments are clustered within short intervals in only a few drillholes. These observations indicate that the andesite fragments represent only the brecciation of original andesite xenoliths in the CFQM. No other rock types are recognized as fragments in the breccia (Dunn, 1984).

The matrix of the breccia consists primarily of varying proportions of quartz, biotite (phlogopite), potassium feldspar, pyrite and chalcopyrite. Magnetite, molybdenite, fluorite, anhydrite, and calcite are locally common. Apatite is a common accessory mineral. No tourmaline is found in the breccia matrix or in the surrounding veins. Minerals in the matrix are commonly quite large with biotite books up to 5cm across. Much of the quartz-feldspar matrix has a pegmatitic texture. Breccia fragments are rimmed with either biotite or potassium feldspar, and the quartz and sulfide minerals have generally formed in the center of the matrix (Dunn, 1984).

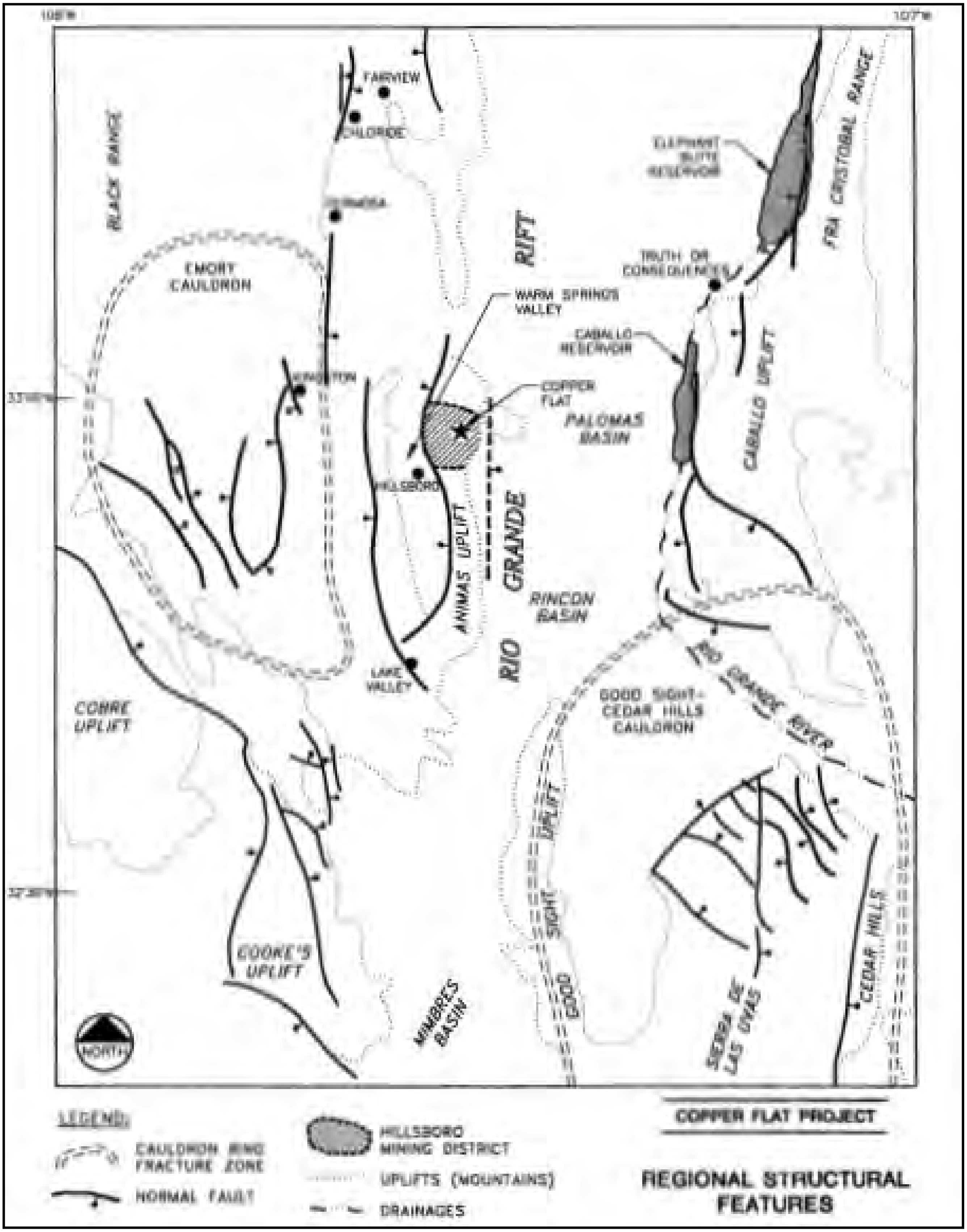
In general, the large biotite crystals have grown nearly perpendicular to the breccia-fragment contact. Where this has occurred the contact between the biotite and breccia fragment is very sharp. Magnetite is common in the matrix and is the principal matrix mineral in one drillhole near the center of the body. However, the primary magnetite has been destroyed in the CFQM immediately surrounding the breccia pipe and in the fragments. Open space within the breccia can be found but is not common. Where found, these vugs are lined with euhedral crystals, primarily of quartz and sulfide minerals. Fluorite, calcite, and apatite also occur in open cavities. Apatite is found as euhedral crystals up to 10mm across in the center of large sulfide or magnetite crystals. It appears to be concentrated near the center of the breccia pipe associated with magnetite (Dunn, 1984).

Although the matrix is in sharp contact with the fragments in many instances, other fragments are quite diffuse because of the formation of a broad alteration envelope of very fine-grained secondary biotite surrounding the matrix. Other fragments are deeply embayed, and appear to have been corroded by the hydrothermal fluid that formed the matrix (Dunn, 1984).

The proportions of the major hydrothermal minerals vary in different parts of the breccia, and the pipe is divided based on the principal gangue minerals in the matrix into two types. These are biotite breccia and quartz-feldspar breccia. These two sub-divisions do not correspond to the division between breccia with rotated or not-rotated fragments (Dunn, 1984).

The distribution of biotite breccia is important because it generally forms high-grade chalcopyrite mineralization. The grade in the quartz-feldspar breccia is considerably more variable. Generally, the chalcopyrite content varies with the quartz content. The matrix in the eastern waste portion of the breccia consists primarily of pegmatitic potassium feldspar with subordinate amounts of quartz and pyrite and only rare chalcopyrite (Dunn, 1984).

This elliptical body of breccia that forms the center of the Copper Flat porphyry deposit is very similar to the high-grade core of the Ajo deposit that Gilluly (1946) ascribed to pegmatitic replacement. Much of the high-grade core has been mined out at Ajo, but some large boulders are still present in the pit. These contain definite rotated angular fragments of quartz monzonite in a matrix of very coarse-grained chlorite, quartz, and chalcopyrite.



Source: U.S Bureau of Land Management, 1999

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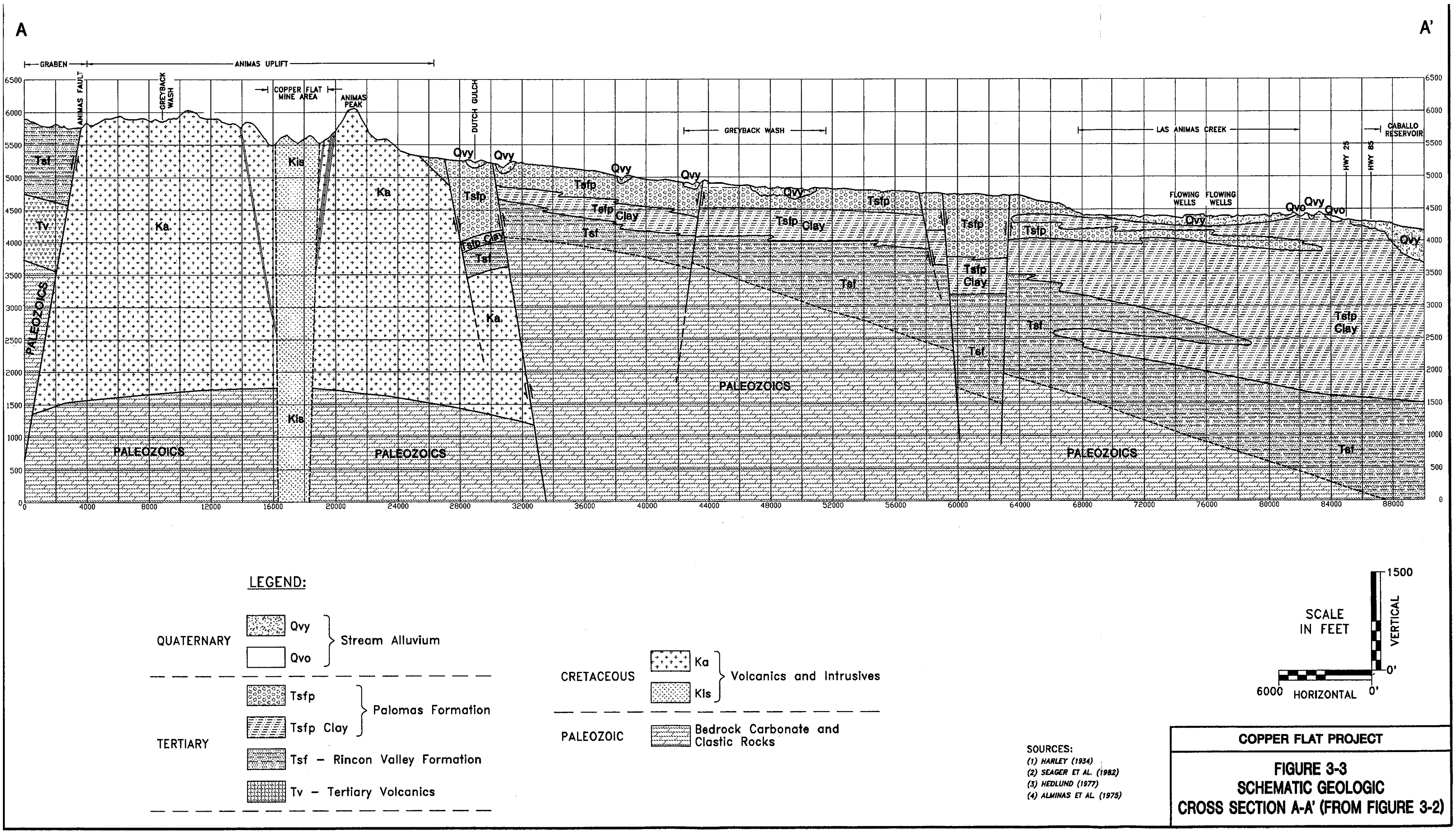

Source: U.S. Bureau of Land Management, 1999

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SRK JOB NO.: 191000.020	Sierra County, New Mexico	Copper Flat Project
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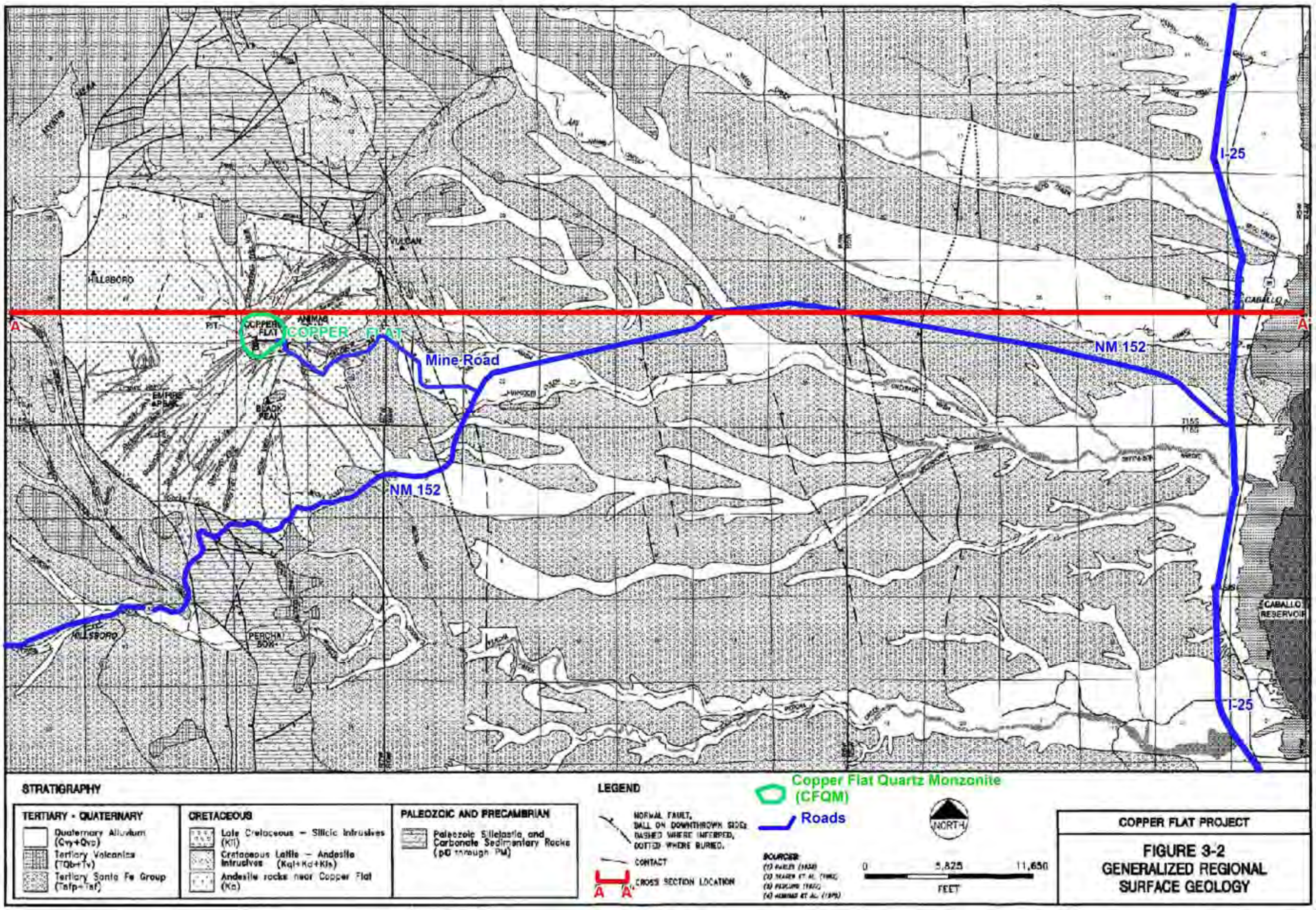

Source: U.S. Bureau of Land Management, 1999

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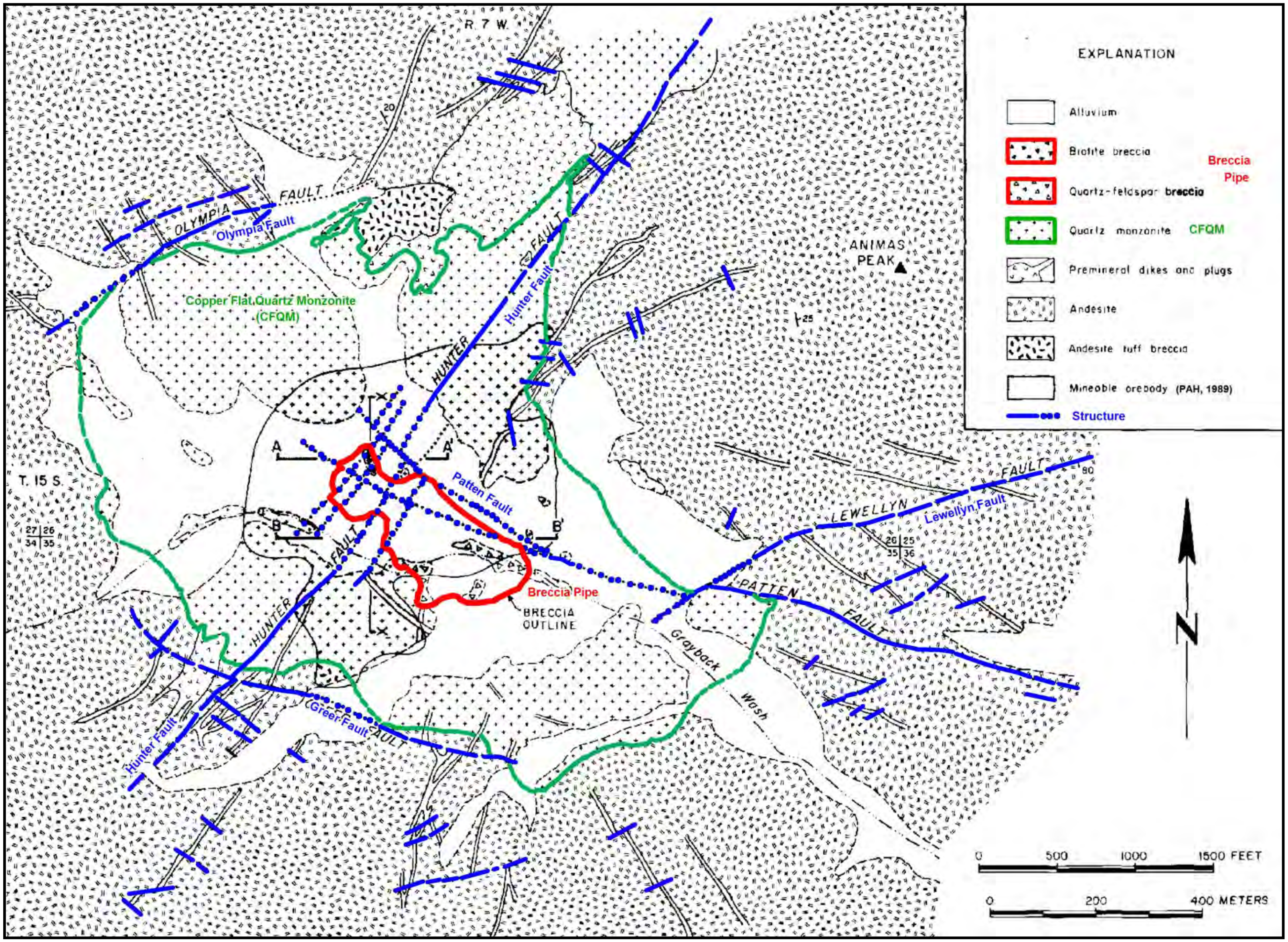
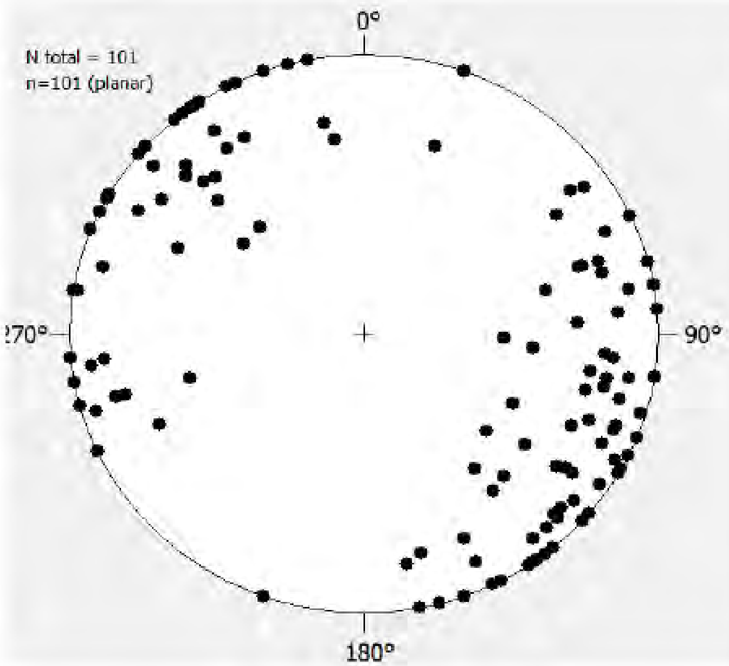
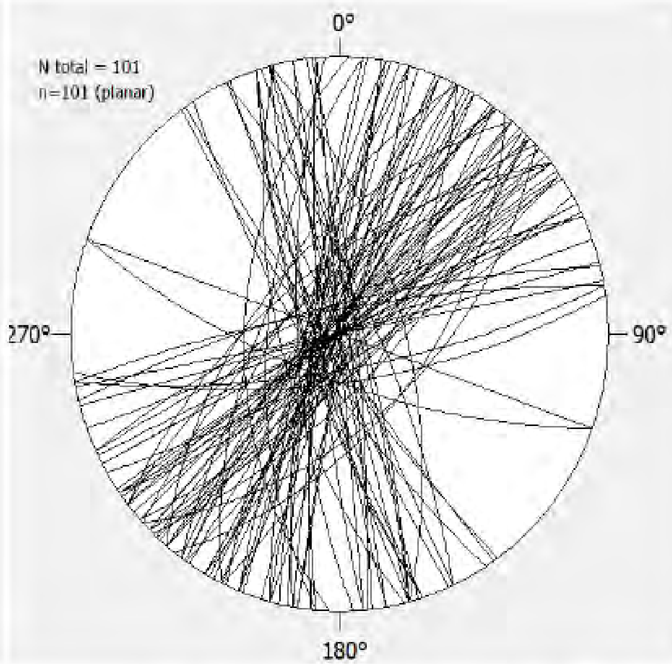


Modified from Dunn, 1982

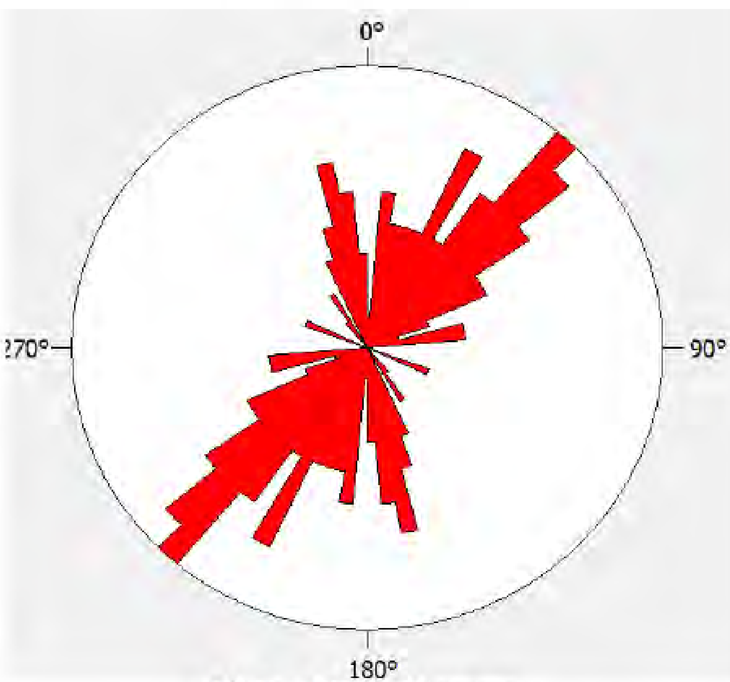
SRK Consulting Engineers and Scientists DENVER, COLORADO		Copper Flat Project
SRK JOB NO.: 191000.020	Sierra County, New Mexico	Project Geologic Map Showing Mineable Orebody in 1982
FILENAME: Figure_5-4.docx		DATE: 6/8/2010 · APPROVED: APPOVED · FIGURE: 5-4 · REVISION NO.: A



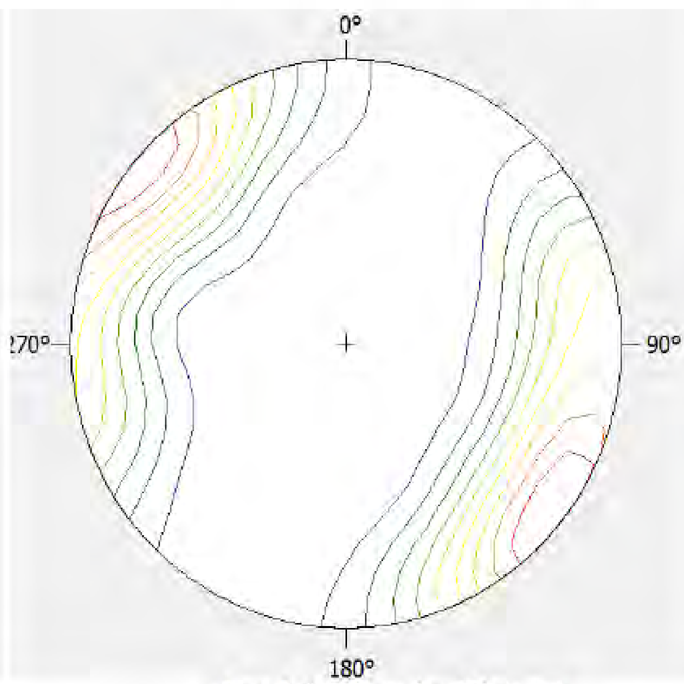
Pit Fault Pi Diagram



Pit Fault Great Circle Diagram



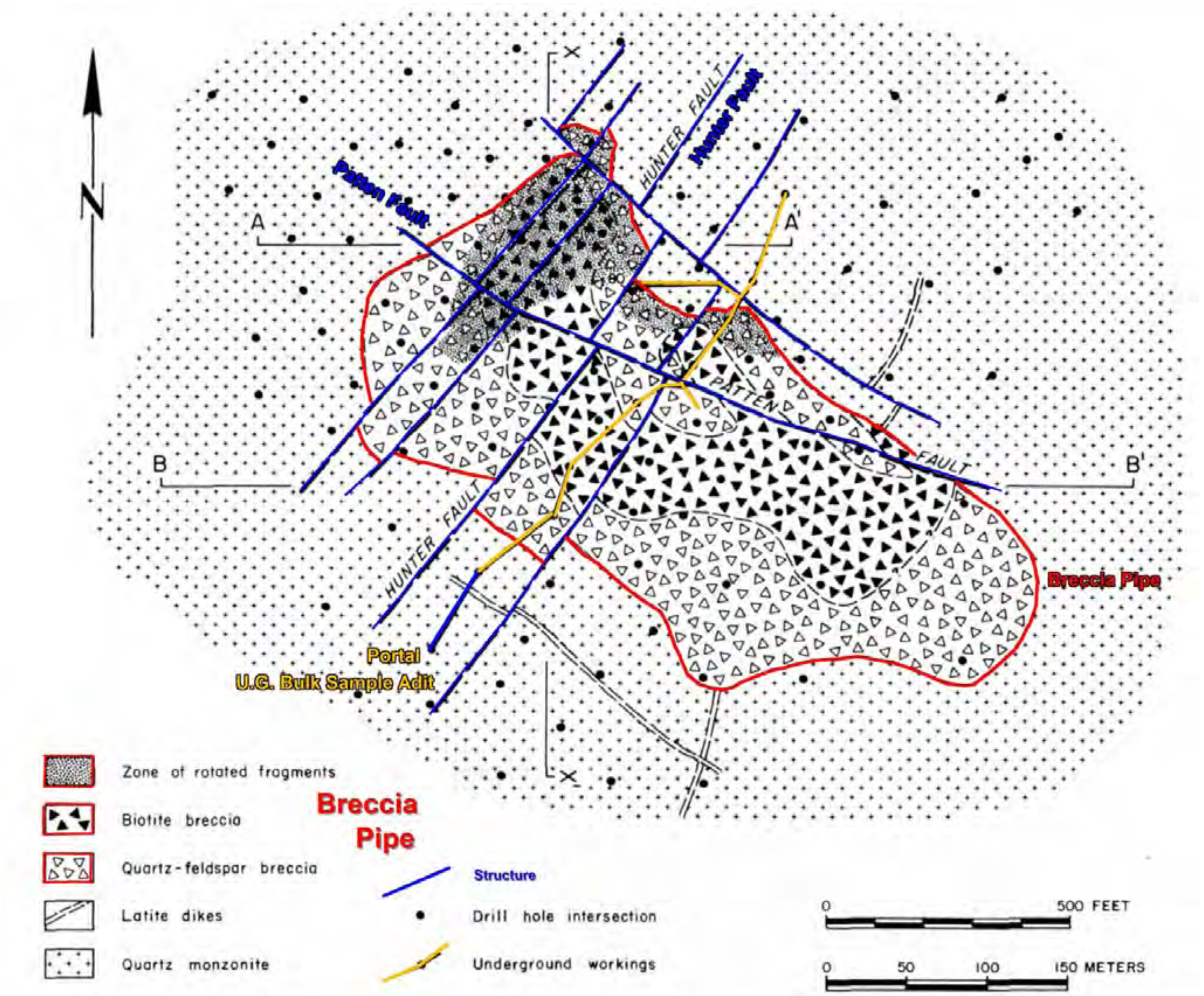
Pit Fault Rose Diagram



Cut Joint Density Diagram

Source: New Mexico Copper Corporation, 2010

SRK Consulting Engineers and Scientists DENVER, COLORADO		Copper Flat Project
		Pi, Great Circle, Rose and Cut Joint Diagrams for Faults Showing the Principal Orientations in the Project Pit Area
SRK JOB NO.: 191000.020	Sierra County, New Mexico	DATE: 6/8/2010
FILENAME: Figure_5-5.docx		APPROVED: APPROVED
		FIGURE: 5-5
		REVISION NO.: A



Modified from Dunn, 1982

SRK Consulting Engineers and Scientists DENVER, COLORADO		Copper Flat Project
		Geologic Map of the Copper Flat Breccia Pipe at 5,300ft
SRK JOB NO.: 191000.020	Sierra County, New Mexico	DATE: 6/8/2010 · APPROVED: APPROVED · FIGURE: 5-6 · REVISION NO.: A
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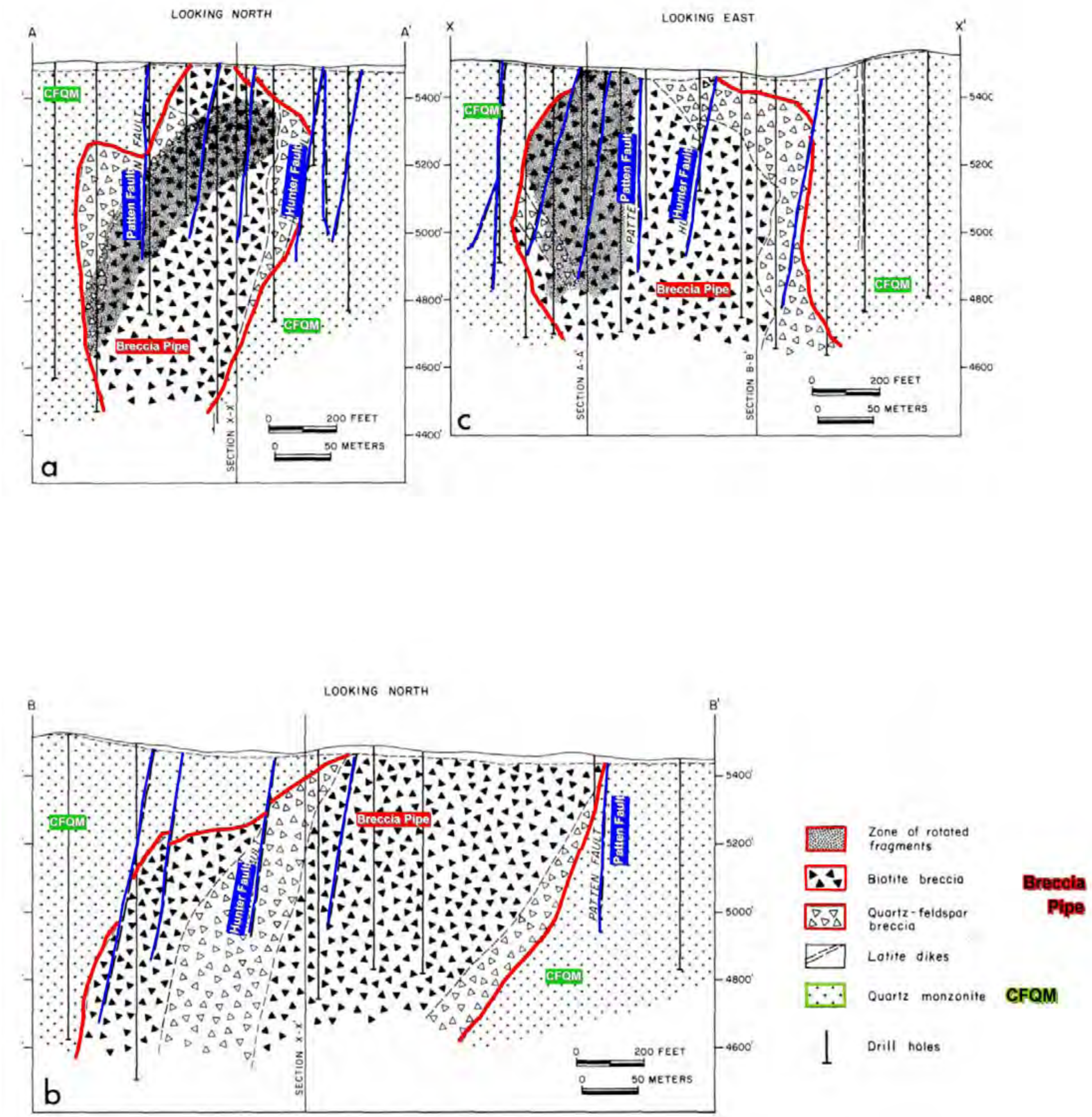

Modified from Dunn, 1982

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Sierra County, New Mexico

Copper Flat Project

Cross-Section a (a-a'), b (x-x') and c (b-b')

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6 Deposit Type (Item 10)

The data presented in Chapter 6, Deposit type, is taken from McLemore et al (2000), McLemore (2001), Richards (2003), and current NMCC work.

6.1 Geological Model

Most previous workers at the Project have described the Project as a combination of the following three types:

- A monzonite hosted, disseminated copper deposit (Reeves, 1963);
- A quartz monzonite porphyry stock (Hood, 1983); and
- A quartz monzonite porphyry (Dunn, 1984).

These descriptions though correct do not address all aspects of the deposit.

Work by others in the district have provided additional data. Lowell (1988) was the first to suggest that the Hillsboro district was a gold-rich porphyry system type that develops in alkaline igneous settings. In 1992, Jones described metal zoning associated with gold-rich porphyry systems that is directly applicable to the Copper Flat deposit and the Hillsboro mining district. In addition, McLemore et al., (2000) and McLemore (2001) documented chemical characteristics that identifies the Copper Flat deposit as an alkalic copper-gold system.

The following paragraph is excerpted from McLemore et al., 2000, and documents the observations relevant to rock type chemistry*. *Changes to standardizations have been made to suit the format of this report.

"The least altered andesites are metaluminous and alkaline; the least altered quartz monzonites and latites are alkaline to subalkaline. The linear variation in Na_2O+K_2O/SiO_2, V/TiO_2, SiO_2 vs. TiO_2, and SiO_2 vs. Zr/TiO_2, and SiO_2 vs. other major elements suggest that the igneous rocks are comagmatic. Pearce element plots of Na/Zr vs. Al/Zr and (K+Na)/Mg vs. Al/Mg indicate that magmatic differentiation was controlled in part by feldspar fractionation. These plots also indicate that the latite/quartz latite dikes are closely related to the intrusion of the three quartz monzonite porphyry intrusions."

Figure 6-1 presents plots constructed by McLemore et al., (2000) that show major element chemistry of the rocks within the deposit, illustrating that the rocks are alkalic. Based on this work, McLemore et al., (2000) classify the rocks at Copper Flat as syn-collision to volcanic arc granites, as defined by Pearce, et al., (1984), and consistent with highly evolved arc magmatism related to the subduction of the Farallon plate. McLemore et al (2000) also document that the Copper Flat deposit is a low sulfur system (<7%) with total pyrite content of <2%.

Mineralization at the Project is hosted primarily in a breccia pipe and is interpreted to have been deposited at the time of pipe formation. According to Dunn (1984), all mineralization is hosted by the CFQM at the Project. However, NMCC observes that the breccia pipe hosts the richest mineralization. Breccia pipe mineralization is approximately one-third of the resource, but represents one-half of the contained copper and molybdenum. This part of the deposit type description needs further refinement.

6.1.1 Origin of Breccia Pipe

The Copper Flat breccia pipe is directly related to a late stage mineralization and alteration event. Any hypothesis concerning the origin of the breccia pipe that forms the center of the Copper Flat copper deposit must account for the following observations:

- The matrix cementing the breccia fragments consists entirely of hydrothermal minerals, the same minerals that formed the second stage veins that cut the surrounding stock;
- Neither rock flour nor any igneous rock material occurs as part of the matrix;
- The quartz monzonite and latite fragments within the breccia were mineralized prior to the formation of the breccias;
- The most intense brecciation occurs near the top of the breccia body along the northern and western margin;
- Only a small proportion of the breccia pipe contains definite rotated fragments. This zone plunges to the west and shows a gradual decrease in the amount of separation and rotation with depth;
- The amount of displacement between rotated fragments appears small with a maximum of a few inches. First stage veins can often be traced from one fragment to an adjacent one, even though these veins have been cut by the breccia matrix;
- The bottom of the breccia pipe is marked by a gradual decrease in the number of stockwork veins within the CFQM;
- Latite fragments within the breccia pipe are concentrated along the projection of the dikes that intrude the stock, and andesite fragments are found in irregular concentrations, which are interpreted as brecciated andesite xenoliths or roof pendants; and
- The long axis of the breccia pipe is perpendicular to the principal northeast fracture direction in the stock, which is parallel to the least-stress direction.

The absense of rock flour or gouge in the matrix suggests that brecciation was not the result of tectonic movement. The apparent lack of appreciable movement between the fragments and the gradational contact between true breccia and the zone of stockwork veining preclude any explosive mechanism for the brecciation. The process of mineralization stoping described by Locke (1926) would result in appreciable downward movement and mixing of the fragments and is not supported by the observations at the Project.

The mechanism for the formation of the Copper Flat mineralized breccia pipe that appears most compatible with the above observations is autobrecciation resulting from retrograde boiling. This occurs when the pressure of the mineralizing hydrothermal fluid exceeds the confining pressure (Phillips, 1973). Expansion and brecciation caused by retrograde boiling within consolidated rock form breccia with the following characteristics that are observed at the Project:

- The breccia consists of zones of rotated fragments with no appreciable displacement. (The zones of true breccia are enclosed within a body of stockwork or crackle breccia where no movement of the fragments has occurred);

- The most intense brecciation occurs near the top of the breccia pipe, where the difference between the vapor pressure of the hydrothermal fluid and the confining pressure was greatest;
- The amount of brecciation decreases with depth due to increased confining pressure;
- Horizontal expansion is greatest parallel to the least-stress direction resulting in an elongate body oriented in the same direction; and
- Retrograde boiling and subsequent expansion and fracturing initially had to occur beneath a cover of unfractured rock; when the fracturing reached the surface, the vapor pressure was released and brecciation ceased. At the Project, unbrecciated quartz monzonite still overlies much of the breccia, and the dip of the upper contact suggests that the breccia has only been unroofed by recent erosion.

6.2 Deposit Model

Copper Flat is best described as an alkalic Cu-Au mineralized breccia pipe, associated with, and genetically linked to an alkalic porphyry system. The best analogs to Copper Flat are Terrane Metal's Mount Milligan, British Colombia deposit and the Continental breccia pipe located in the Central Mining district in New Mexico.

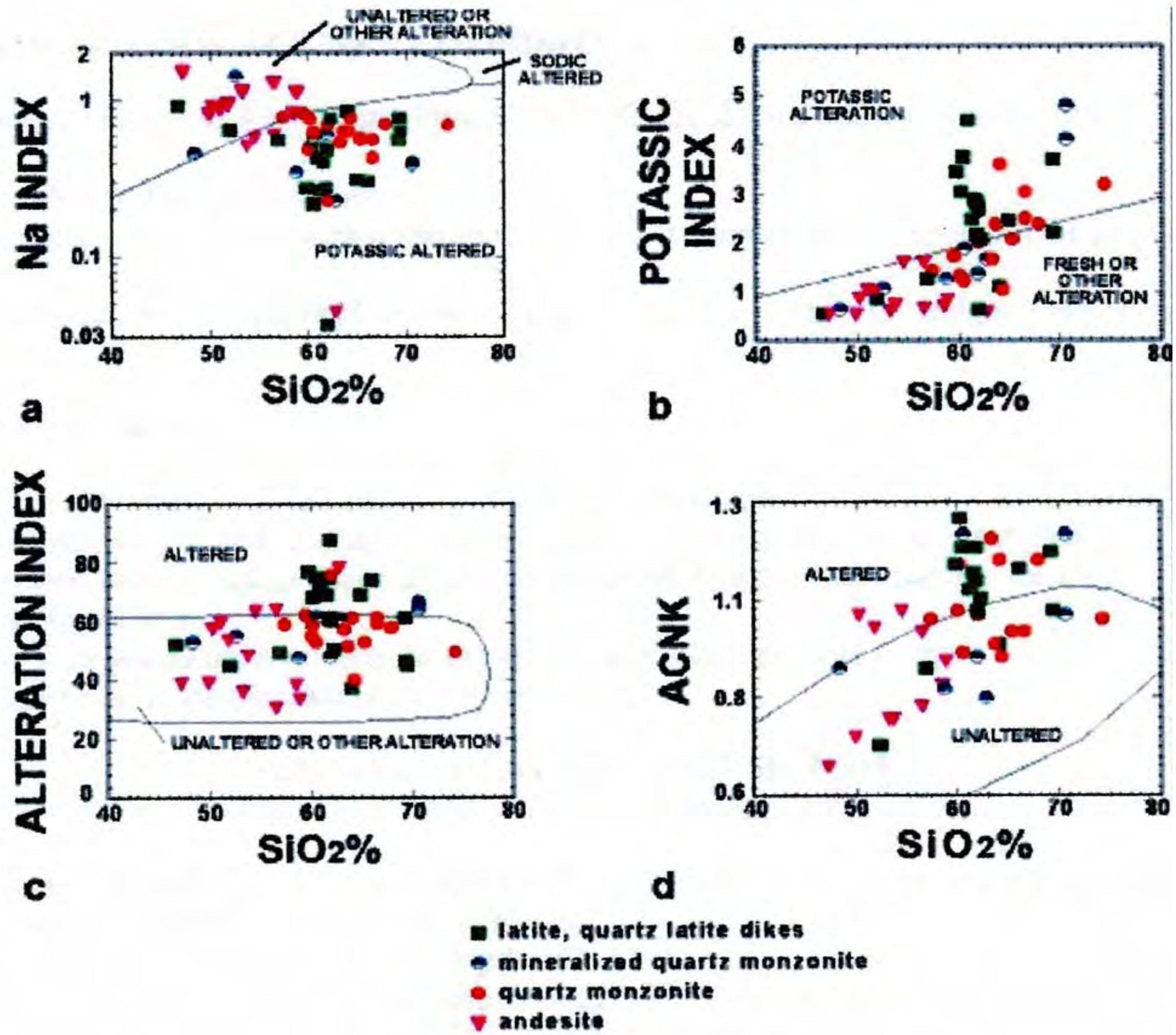
Small, high-grade breccia bodies within the quartz diorite at El Teniente (Camus, 1975) and elsewhere in Chile (Kents, 1964) are very similar to the Copper Flat breccia pipe. These are still covered by unfractured rock as observed at the Project and are thought to have formed through autobrecciation. Camus suggests that those at El Teniente formed at a depth of about 2,000m; the depth of formation of the Copper Flat breccia pipe may be of the same magnitude.

The breccia pipe was formed by autobrecciation resulting from retrograde boiling. Hydrothermal minerals formed the matrix of the breccia, the irregular veins in the surrounding crackle breccia and open space filling in the breccia. Some part of the second stage mineralization occurred as replacement, which modified the original breccia texture.

Unlike most deposits in the southwestern U.S. there is very little supergene enrichment. Mineralization is primarily hypogene. The Copper Flat deposit does not show the symmetrical and telescoped zoning of alteration types that is considered typical of most porphyry copper deposits. Alteration includes, potassic, two separate episodes of sericitic and propylitic, but on a smaller scale than other more "typical" porphyry systems. The geology of Copper Flat indicates that the hypogene mineralization and alteration, including the formation of the breccia pipe, was the result of the final crystallization of the CFQM melt and related dikes.

Richards (2003) interprets the Project as an eroded volcano. Figure 6-2, presents the location of the Copper Flat mineralization with reference to this interpretation. In this diagram, Richards (2003) has placed mineralization at similar depths to those found at El Teniente in Chile. Since the breccia now crops out at the surface, this interpreation suggests that approximately 0.5 to 2km of volcanic rocks have been eroded from the central zone of mineralization. Fluid inclusion work at the Project suggest formation depth between 1 and 2km and temperatures of formation of breccia pipe and veins ranging from 226 to 360°C (Norman, et al., 1989; McLemore, 2000). The subvolcanic plutons and supracrustal sequence shown represent the variation of andesites at Copper Flat.

This is the current exploration model NMCC is using for further exploration at the Project.



Source: McLemore, et al.., 2000

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Sierra County, New Mexico

Copper Flat Project

Major Element Chemistry of Igneous Rocks in the Copper Flat Deposit

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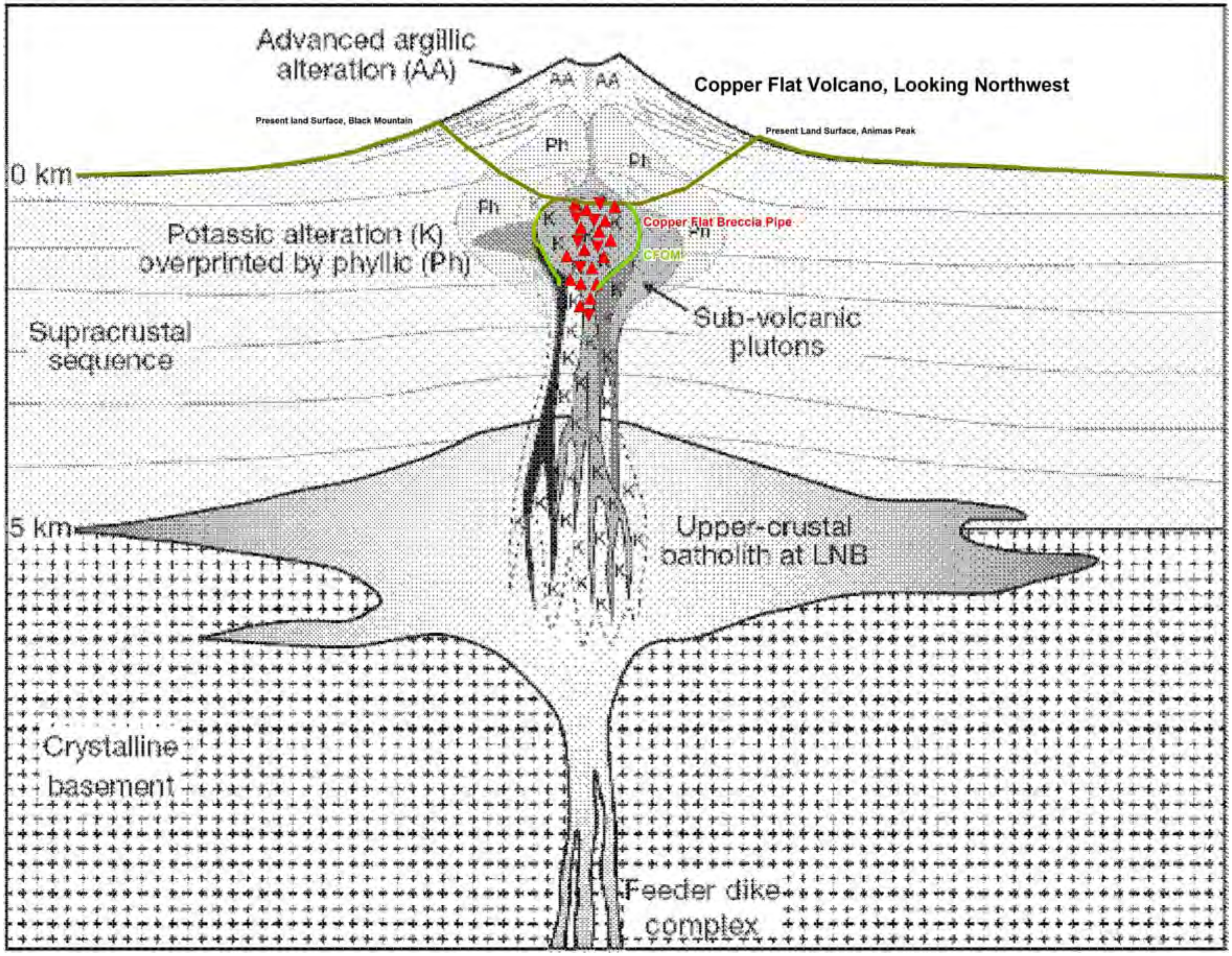

Modified from Reaves, 2003.

SRK Consulting Engineers and Scientists DENVER, COLORADO		Copper Flat Project
SRK JOB NO.: 191000.020	Sierra County, New Mexico	Interpretation of Copper Flat as an Eroded Volcanic Core
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7 Mineralization (Item 11)

The mineralization, hydrothermal alteration, and paragenesis are modified from Dunn, 1984; and current NMCC work. Vein orientation studies were undertaken as part of the geotechnical evaluation of the pit area by NMCC. The mineralization and alteration at the Project are similar to most hydrothermal porphyry copper deposits in the southwestern U.S. The Project differs significantly from other hydrothermal porphyry copper deposits in the southwestern U.S. in that mineralization occurs within the breccia pipe and few supergene effects are present.

7.1 Primary Mineralization

The Project is a hypogene sulfide deposit with the majority of the copper occurring in chalcopyrite. Pyrite is the second most abundant sulfide mineral. Other sulfide minerals inlcude subordinate amounts of molybdenite, galena, and sphalerite. Rare bornite has been recognized, occurring outside of the breccia pipe. Minor tetrahedrite crystals have been found in drill core (Dunn, 1984).

The total sulfide content ranges from 1% (by volume) in the eastern portion of the breccia pipe and the surrounding CFQM to 5% in the CFQM to the south and west. Sulfide content is highly variable within the breccia, with small areas containing as much as 20% sulfide minerals. Sulfide mineralization is restricted to the CFQM and breccia pipe, with an abrupt drop in the sulfide content at the andesite contact. Minor pyrite mineralization extends into the andesite along the pre-mineral dikes (Dunn, 1984).

Mineralization within the CFQM consists of pyrite and chalcopyrite occurring as disseminations or along fracture-controlled veinlets, and as disseminations associated with mafic minerals. Pyrite is more abundant than chalcopyrite in the CFQM except in two separate areas:

- A narrow zone immediately surrounding and overlying the western end of the breccia pipe containing abundant chalcopyrite in quartz-sulfide veinlets; and
- The outcrops southeast of the breccia and south of Grayback Wash, where disseminated chalcopyrite is present with no associated pyrite.

The first area contains the highest-grade CFQM mineralization. Changes in the copper grade in the CFQM, due to changes in the total sulfide content and in the ratio of pyrite to chalcopyrite, are gradational both laterally and vertically (Dunn, 1984).

Molybdenite is not abundant in the CFQM. Where it is present, it occurs either in quartz veins or as thin coatings on fractures. Minor sphalerite and galena are present in both carbonate and quartz veinlets in the CFQM stock (Dunn, 1984).

Mineralization within the breccia pipe is characterized by large, irregular masses of pyrite and chalcopyrite as part of the breccia matrix, and is associated with large crystals of quartz, biotite, and potassium feldspar. Some of the larger sulfide masses encountered in the underground workings measured up to 2ft across. Molybdenite occurs in the matrix as coarse crystals up to 2in across. Minor amounts of pyrite and molybdenite, with rare sphalerite and galena, occur in narrow quartz and carbonate veinlets that cut both the fragments and the breccia matrix (Dunn, 1984).

Chalcopyrite is most abundant within the biotite breccia. Chalcopyrite occurs as large irregular masses, and as fine disseminations within the large biotite books. A definite horizontal mineral zoning occurs within the quartz-feldspar breccia. The highest copper content is at the western end of the breccia and is associated with abundant quartz and subordinate amounts of potassium feldspar. The highest molybdenum content occurs in this area. Pyrite and potassium feldspar both become increasingly abundant to the east at the expense of chalcopyrite, molybdenite, and quartz, and even pyrite becomes scarce at the extreme eastern edge of the breccia (Dunn, 1984).

The breccia outside the mineable mineralization has a matrix comprised almost entirely of pegmatitic potassium feldspar and a copper grade of less than 0.1%. This matrix mineralization has been superimposed on the existing disseminated mineralization within the fragments of quartz monzonite. The form of the resulting mineralization within the breccia pipe has caused abrupt changes in the copper content over short distances. Copper assays of adjacent intervals in the same drillhole sample within the breccia may differ by more than 1% copper (Dunn, 1984).

7.2 Supergene Mineralization

In contrast to other porphyry copper deposits of the Southwest, little oxidation and supergene enrichment have occurred at the Project. Erosion of the volcanic/intrusive center at the Project kept pace with the rate of oxidation; and the rate of oxidation was inhibited by the low (<2%) total pyrite content of the mineralization (Dunn, 1984; Richards, 2003).

A small chalcocite zone occurs in the CFQM adjacent to and overlying the breccia pipe. It also extends to the northeast for about 200ft along the N35°E fracture direction. Chalcocite occurs within a few tens of feet of the surface as film on chalcopyrite and does not represent a significant amount of the copper within the zone of enrichment. Chalcocite is very rare within the breccia pipe (Dunn, 1984).

No large tonnage of oxidized copper mineralization is present. The base of oxidation is abrupt and is in most places, less than 30ft, even within fault zones. Malachite and chrysocolla are the most abundant oxidized minerals. These are observed as small aggregates of euhedral crystals found in the post-mineral basalt dikes within the zone of oxidation (Dunn, 1984).

The copper and molybdenum assays in some of the drillhole samples in the oxidized zone show a strong correlation between enriched copper and high-grade molybdenum within the same assay intervals. These data give at least empirical support for molybdenum enrichment. However, no visible ferrimolybdite or other oxide minerals have been identified and visible molybdenite is completely absent. Quartz veins are rare or absent in these samples as well. Below the zone of enrichment, molybdenite is easily recognized with a hand lens in samples containing as low as 0.010% molybdenum (Dunn, 1984).

7.3 Hydrothermal Alteration

The Copper Flat deposit does not show the symmetrical and telescoped zoning of alteration types that is considered typical of most porphyry copper deposits, although the same alteration minerals are present.

The strong potassic alteration within and immediately surrounding the breccia pipe is the most prominent alteration feature of the Copper Flat deposit. Secondary biotite and potash feldspar occur in the breccia matrix as large crystals and replacement of the rock fragments. The biotite that forms as replacement occurs as finely shredded aggregates. Euhedral primary biotite books observed in the CFQM are apparently stable although locally biotite has been partially altered to chlorite. The secondary potassium feldspar occurs as narrow veinlets or alteration envelopes along quartz veins. Secondary potassium feldspar has almost completely replaced the original rock, with only vague outlines remaining to indicate the original texture (Dunn, 1984).

Quartz occurs as veinlets and in the breccia matrix and formed contemporaneously with biotite and potassium feldspar during the potassic alteration. Chlorite is locally associated with secondary biotite but may have formed later at the expense of biotite. Minor purple colored anhydrite is present, as is rare gypsum that occurs as thin coatings on fractures. Minor fluorite has been noted but its distribution and concentrations have not been documented (Dunn, 1984).

Sericite alteration is associated with quartz-carbonate veins and minor koalinite formation. Sericite alteration has affected almost the entire CFQM and related dikes as well as breccia fragments of these materials in the breccia pipe. Sericite has replaced the plagioclase, and sericite occurs in the groundmass of the rocks. Both sericite and chlorite have preferentially replaced original mafic minerals (Dunn, 1984).

Sericite alteration is strongly developed in one near-surface zone southwest of the breccia pipe. The CFQM and the dikes in this area are completely altered to sericite and quartz. Here the original texture of the CFQM has been destroyed and it is difficult to distinguish the stock from the dikes at surface. However, the intense alteration extends only a few tens of feet from the surface and is clearly a supergene effect that was controlled by the original high pyrite:chalcopyrite ratio in this area. Laterally, this zone of supergene alteration extends for about 500ft south of Grayback Wash and to within about 500ft of the western margin of the stock (Dunn, 1984).

Two separate periods of hypogene sericite alteration occurred at Copper Flat:

- The first prior to the formation of the breccia and the potassic alteration; and
- The second that post dates the potassic alteration.

The sericite in the CFQM, and in the fragments in the breccia surrounding it, has been replaced by both secondary biotite and secondary potassium feldspar. Areas of pervasive secondary feldspar and the breccia matrix have been subsequently cut by quartz veinlets with only minor sulfides but with well-developed sericite envelopes. The two periods of sericite alteration are associated with a different assemblage of sulfide minerals, pyrite with minor chalcopyrite in the early period; and pyrite, galena, and sphalerite in the later period (Dunn, 1984).

Propylitic alteration is common in the andesite and the andesite breccias, but it is rarely developed in the CFQM or in the latite dikes. Dikes containing weak quartz-sericite alteration with minor pyrite are observed cutting unmineralized andesite, which shows only chlorite and epidote alteration (Dunn, 1984).

7.4 Paragenesis

The sequence of mineralizing events that formed the Copper Flat deposit is depicted schematically on Figure 7-1. Three stages of hypogene mineralization have been recorded although it is likely that these were not three separate periods but rather a continuous change during time. The three stages are associated with different sulfide and alteration assemblages. No absolute figures are available for the temperature, pressure, or timing for the mineralization (Dunn, 1984).

The first stage of mineralization, the introduction of pyrite with subordinate amounts of chalcopyrite, affected nearly the entire CFQM stock. This stage occurred after the formation of the latite dikes but prior to the formation of the breccia pipe. The chalcopyrite generally formed as disseminations and the pyrite as coatings along fractures and as discrete veins. No definite first stage molybdenite can be identified. Magnetite formed during this stage as replacement of original mafic minerals. This mineralization was associated with the first stage of sericite and chlorite alteration with subordinate quartz and minor carbonates (Dunn, 1984).

The second stage began with the formation of the breccia and continued through the crystallization of the breccia matrix. Pyrite and chalcopyrite were deposited with subordinate amounts of molybdenite and magnetite, and trace amounts of sphalerite and galena. This stage affected the breccia pipe and the surrounding and overlying CFQM. Most of the mineralization formed as open space filling between the fragments and as veins in the stock, although some second stage mineralization formed as replacement, particularly of the fragments within the breccia. Higher-grade veins of quartz, chalcopyrite, and molybdenite have been emplaced along the N35°E fracture system for several hundred feet away from the breccia and are thought to have formed during the second stage of mineralization (Dunn, 1984).

The gold-silver-copper veins surrounding the CFQM stock are related to the second stage mineralization. Second stage mineralization was associated with the strong potassic alteration minerals that formed gangue minerals in the breccia matrix. There is no clear evidence of the age relationship between the biotite breccia and the quartz-feldspar breccia, although the pegmatitic potassium feldspar matrix at the eastern edge of the breccia pipe appears to have been the last material to crystallize (Dunn, 1984).

The first-stage mineralization may have been limited to a peripheral disseminated mineralization that formed contemporaneously with the breccia mineralization. Careful examination of the fragments in the breccia has led to the conclusion that two stages were involved. A few fragments contain narrow quartz-pyrite veinlets or narrow chlorite veinlets that are restricted to the fragment. Such veining indicates pre-breccia mineralization. Many of the fragments show only disseminated pyrite and minor chalcopyrite mineralization with sericite alteration. These fragements are cemented by a matrix of chalcopyrite, magnetite, and molybdenite, with secondary biotite and potassium feldspar. This difference between the mineralization in the fragments and that in the matrix suggests that the mineralizing periods were separated in time (Dunn, 1984).

The third stage of mineralization is clearly separate from the second stage and occurs as narrow quartz, pyrite, and chalcopyrite veinlets that cut both the fragments and the matrix of the breccia. Molybdenite in quartz veins, and sphalerite and galena in carbonate veins, is also related to third-stage mineralization. These veins have alteration envelopes of late sericite. Third-stage mineralization contributes a minor amount of sulfide minerals to the Copper Flat deposit compared to the first two stages (Dunn, 1984).

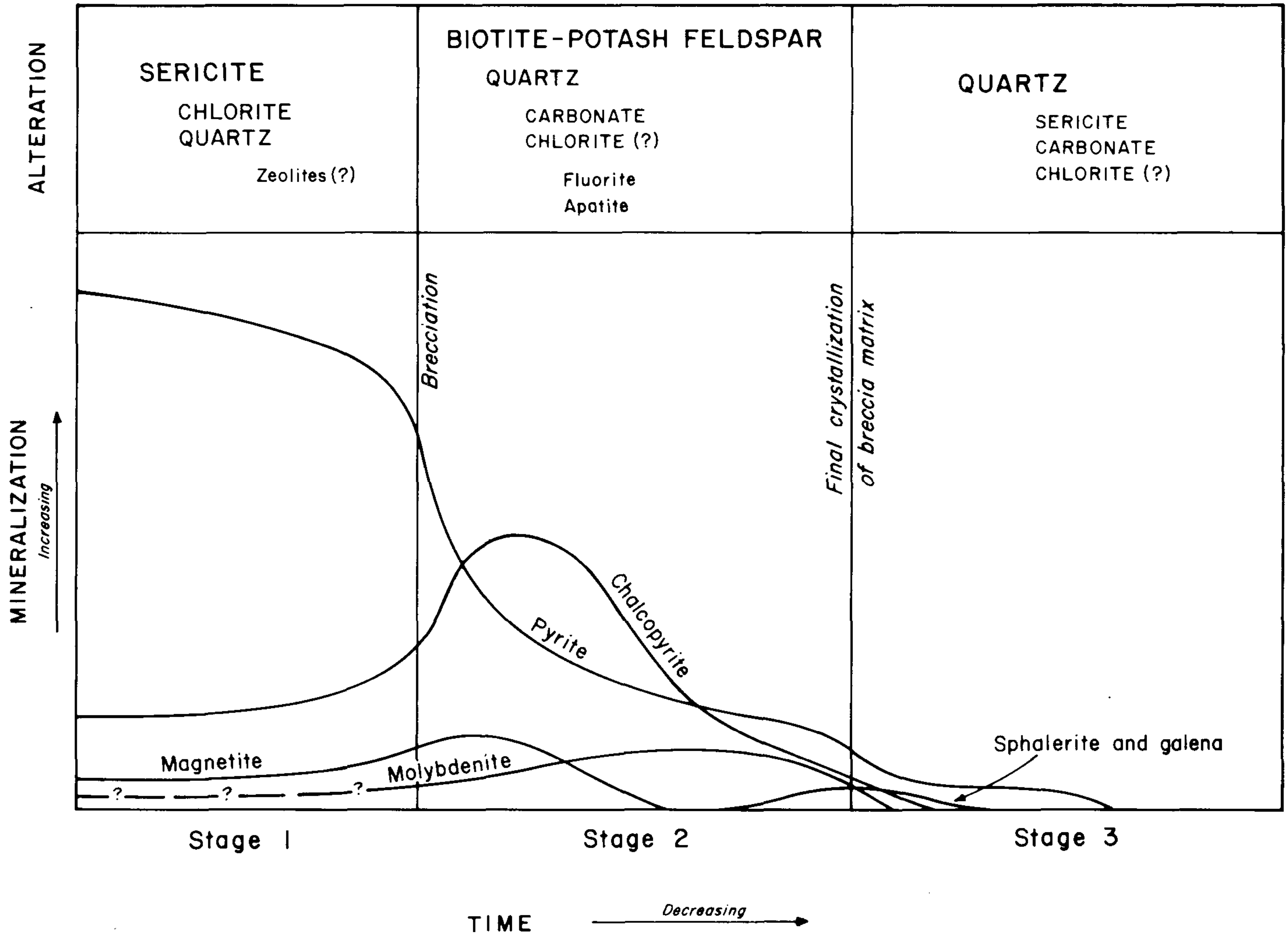
McLemore (2000) summarizes the fluid inclusion data from the Hillsboro district as follows:

- Homogenization temperatures averaged 320-360°C for the majority of inclusions from the breccia zone with salinities of 7-45 Eq wt% NaCl;
- Formation pressures of 127-166 bars, at a depth of 1-2km;

- Veins showed high homogenization temperature ranges of 226-388°C with salinities of 5.7-33.7 Eq. wt% NaCl; and
- Similar composition of fluids from the vein and breccia hosted deposits indicate that a similar fluid source with different chemical depositional processes produced the mineral deposits, not differences in fluid composition.

7.5 Vein Orientations

From the analyses performed by NMCC, there are stress field differences between the pit and the diversion cuts. Faults, inside and outside of the pit, trend dominantly northeast-southwest. These are more than likely normal faults that are related to extension in the area that occurred after mineralization. Within the pit, mineralized veins follow a similar trend. However, outside of the pit the veins have an orientation to the northwest-southeast in addition to northeast-southwest. Figure 7-2 shows great circle and rose diagrams illustrating the difference in vein orientations found in the pit and in the water diversion cuts.



Source: Dunn, 1984

SRK Consulting Engineers and Scientists DENVER, COLORADO		Copper Flat Project
		Paragenetic Sequence of Alteration and Mineralization at Copper Flat
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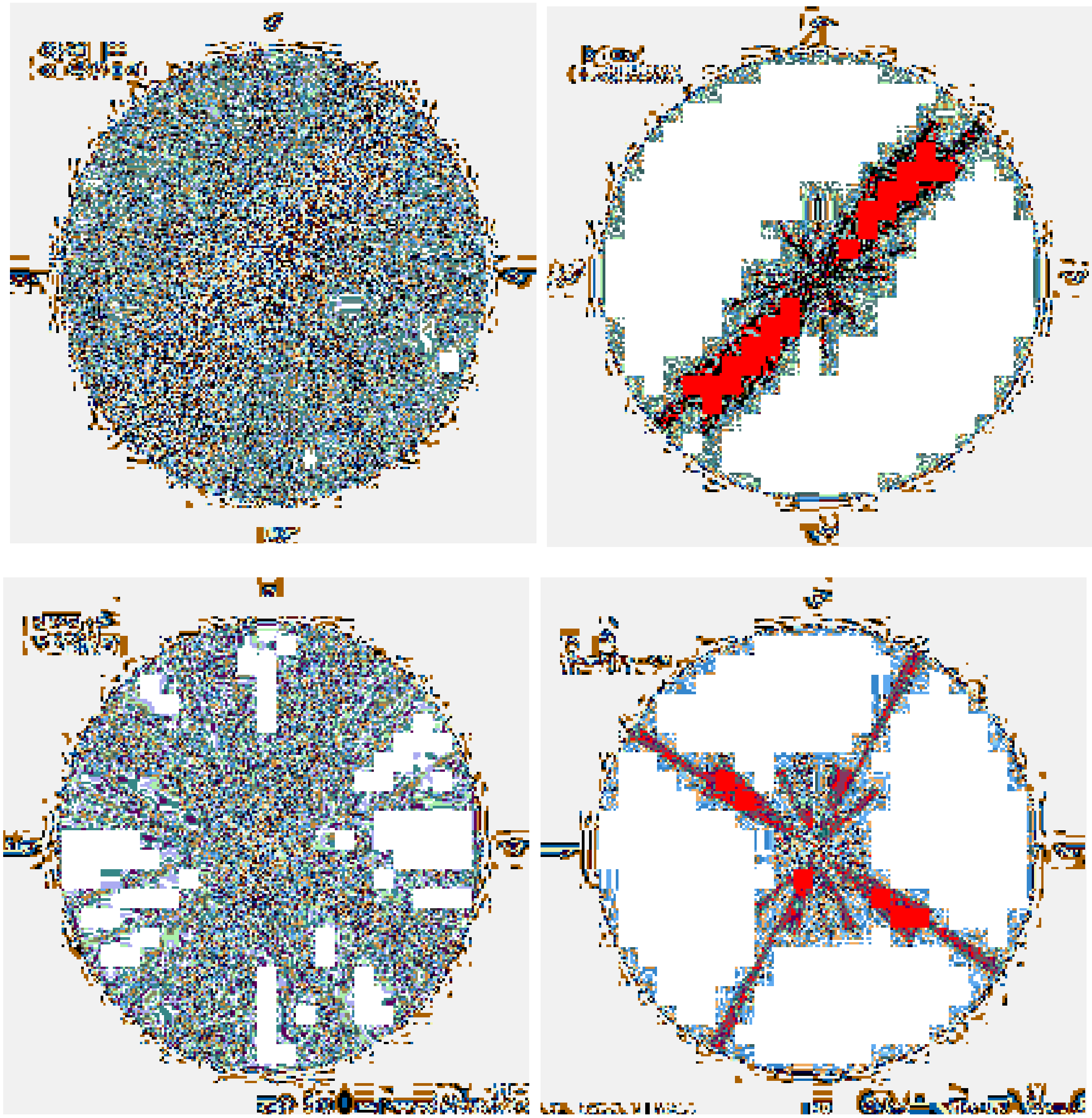

SRK Consulting Engineers and Scientists DENVER, COLORADO		Copper Flat Project Great Circle and Rose Diagrams for the Pit (above) and Diversion Cuts (below)			
SRK JOB NO.: 191000.020	Sierra County, New Mexico	DATE: 20100504	APPROVED: APPROVED	FIGURE: 7-2	REVISION NO.: A
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8 Exploration (Item 12)

With the exception of recent work completed by NMCC, all exploration and drilling conducted at site is historic conducted between the 1950's and the 1990's. All of the relevant exploration at the Project was completed between the late 1960's and the end of production in 1982. Historic exploration is discussed in Section 4.

The current work performed by NMCC was to conduct resource verification and includes mapping and drilling. Drilling is discussed in Section 9.

8.1 Project Exploration Potential

Expansion of the copper resource could occur with further drilling. This exploration would occur at depth below the bottom of the planned open pit or horizontally into the walls of the pit in the east-northeast direction and to the south quarter of the pit. NMCC management and senior consultants are evaluating this exploration.

During condemnation drilling of the plant site area, Quintana Minerals noted that a potential resource of up to 10Mst existed in that area, but determined that the plant site was critical. A synergy exists with this additional resource, which if mined, would allow the main pit to be mined to a deeper level.

8.2 Precious Metals Resource

The existence of economic concentrations of gold and silver mineralization at the Copper Flat deposit was identified by Quintana Minerals. The Quintana Minerals database was generated from drilling, metallurgical test work, and by production returns from the smelter. However, at that time, gold and silver analyses of drill core were not precise enough to generate a precious metal distribution model and less than 10% of the core was submitted for analyses.

NMCC management and senior consultants are evaluating assaying a significant part of the Quintana Minerals pulps for precious metals. Additional discussion is in-progress on how to evaluate the surrounding precious metals workings, which radiate from the central breccia pipe outward for over a mile.

8.3 Interpretation

Exploration was performed between 1952 and 1990 by various companies including Newmont, BCMC, Inspiration, Quintana Minerals, Tenneco and Alta Gold. The Project was briefly put into production in 1982, but was closed due to falling copper prices. NMCC has conducted a resource verification program that includes reanalysis of stored pulps from previous drilling programs and confirmation and infill drilling.

9 Drilling (Item 13)

As detailed in Section 4, there are 184 drillholes in the historic database compiled by Alta Gold. None of the Newmont, Bear Creek, or Inspiration core is available. Tenneco drilled large-diameter RC holes and no duplicate samples are available.

The historic drill database consists entirely of vertical drillholes with one exception, TCF-3, an angle hole completed by Tenneco Minerals in 1990. Quintana Minerals skeletonized its drillholes for storage purposes, and the remaining 39 core holes, were re-compiled by NMCC personnel as part of the data compilation process, and are currently stored on site. Quintana Minerals achieved an excellent 96% recovery on their drilling programs.

9.1 2010 Copper Flat Drilling Program

In August 2009, SRK conducted an initial assessment of the Copper Flat project for NMCC. The results of that study recommended a confirmatory core-drilling program to verify the existing resource. In September and October of 2009, the Copper Flat drilling program was jointly proposed by NMCC and SRK. SRK recommended a minimum of 6,000ft of drilling and NMCC chose the drill sites. The plan was jointly approved by SRK and NMCC.

The purpose of the NMCC drilling program was two-fold:

1. To verify the historic Alta Gold database in conjunction with the pulp re-analysis program (discussed in Section 11).
2. Expand the resource beyond the limits of the historic resource and develop an advanced model of the breccia and porphyry mineralization adjacent to and below the historic resource, compiled by PAH in 1999.

Secondary goals included providing updated geotechnical and environmental information, between-section grade continuity identification, and locating additional drill targets.

9.1.1 Drilling Program

NMCC conducted a six-drillhole, 6,500ft program, with each hole planned to +1,000ft depth. Each drillhole was angled, and was designed to verify different aspects of the mineralization and geology of the deposit. Drilling was accomplished using HQ (2.50in) and NQ (1.875in) sized core.

Drilling was conducted by Godbe Drilling Services (Godbe), of Montrose Colorado using two Longyear LF-70 skid mounted drill rigs. Godbe is a New Mexico licensed drilling company. The New Mexico MMD examined and permitted three drill sites, for two drillholes at each location. The drilling permit was issued on December 23, 2009, after a 65-day review. The drilling program commenced on January 3, and terminated February 8, 2010.

All drill core was boxed using standard HQ and NQ wax-impregnated, 10ft capacity core boxes, banded at the drill site, and returned to the secure core logging facility at the end of each 12-hour shift. The core was logged as it arrived at the facility by NMCC personnel, who were on site at all shift changes, and checked the drill rigs twice per day.

9.1.2 Completion

NMCC completed seven drillholes comprising 5,046.5ft of core (78% completion) before expending their permit restrictions at the three sites. Three of the drillholes terminated prematurely due to bad ground. One of those holes, CF10-6B, was designed to twin CF09-01 and had limited success. Recoveries typically exceeded 98%.

Two types of surveys were conducted during and after the drilling program. Down-hole surveys for orientation were taken every 100ft using a Reflex EZ-Shot® down hole camera. There was no significant deviation in bearing or dip in any of the drillholes. Collars were surveyed by Richter Land Surveying (Richter) based in Truth or Consequences, New Mexico using a survey grade, Trimble 4700 RTK Global Positioning System (GPS) with ±1cm vertical and ±1to 2cm horizontal accuracy. Richter is a registered land surveyor in the state of New Mexico.

The drillholes were plugged with bentonite and capped with cement, as required by the New Mexico Mining and Minerals Division (MMD). All drill cuttings were placed in a low area of the pit and buried. The drill sites were reclaimed as per MMD requirements. The overall quality of the drilling program was deemed excellent by NMCC and the State of New Mexico.

9.1.3 Results

Figure 9-1 is a drillhole layout map of the Copper Flat deposit showing the NMCC drilling in relation to the historic drilling. Table 9.1 summarizes the NMCC drillhole and survey information. Detailed results of the confirmation of the historic drilling are discussed in Section 11.

Table 9.1: Copper Flat Project Summary Drillhole Information

Hole Id	Drill Site	Azimuth	Dip	Length Feet	Section	Geology and Mineralization
C09-01	Site 1	280	-70	847.5	716900EW	Designed to test NW extension of breccia beneath CFQM. Results, low- grade CFQM, hole stopped 150ft short of target by fault.
CF09-02	Site 1	55	-65	141.5	716900EW	Designed to test limits of mineralization to northeast, Results, low-average grade, hole stopped 850' short in Hunter fault zone
CF10-03	Site 2	270	-70	1041	716800EW	Designed to test high-grade core of breccia pipe. Results, breccia entire length of hole, averaged +0.5% Cu. Drilled to completion
CF10-04	Site 2	90	-60	1014.5	716800EW	Designed to test eastern limits of mineralization. Results, CFQM and minor breccia, low to average grade. Drilled to completion.
CF10-05	Site 3	260	-70	602.5	716500EW	Designed to test breccia pipe at depth. Results, breccia entire length of hole, low to average grade. Stopped 400' short in Patten fault.
CF10-06	Site 3	170	-70	1200	592250NS	Designed to test breccia at depth to the south. Results, breccia entire hole, average to high-grade upper part, to low-grade bottom. Drilled to completion.
CF10-06B	Site 1	225	-70	199.5	592250NS	Attempted re-drill of CF09-01. Stopped 800' short in unknown fault structure Average to high-grade in CFQM.
Total				**5046.5**		

Given the steeply plunging to vertical, cylindrical shape of the deposit, the only true thickness measurement would be horizontal drillholes. All of the current angled drillholes terminated in mineralized rock. Orientations of the mineralization, particularly the highest-grade zones in the breccia, appear to be steeply plunging shoots along NNE structures. High-grade intercepts in the drill core therefore are likely to be 50-70% of true thickness.

SRK is of the opinion that the drilling was conducted using industry best practice. Because of the nature of the deposit, that includes breccia and coarse sulfides, it is necessary to collect as much sample as possible to avoid a nugget effect. Quintana Minerals drilled NX core and submitted the whole core to obtain an adequate sample. The NMCC drilling program was conducted drilling both NQ and HQ core and was split. Analysis of QA/QC field duplicates discussed in Section 11, suggest that the samples collected for Mo analysis may have been too small. SRK recommends drilling HQ core on all subsequent exploration programs to obtain an adequate sample for analysis.

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DENVER, COLORADO

SRK JOB NO.: 191000.020	Sierra County, New Mexico	Copper Flat Project
FILENAME: Figure_9-1.docx		Drillhole Location Map

DATE:	APPROVED:	FIGURE:	REVISION NO.:
6/18/2010	APPROVED	9-1	A

10 Sampling Method and Approach (Item 14)

Historic sampling methods, approach and drilling security are not well documented at the Project. The majority of data used in the current resource is from drilling conducted prior to 1982.

10.1 Historic Sample Preparation

BCMC and Inspiration split NX-sized core and submitted ½ of the core for analysis. During the due diligence conducted by Quintana Minerals prior to its acquisition of the Project, several confirmation analyses were conducted using the remaining second ½ of the BCMC and Inspiration core. Low analytical correlation between the two core halves, resulted in whole core submissions for analysis in subsequent drilling programs conducted by Quintana Minerals starting with drillhole H75-30.

To address the previous drilling programs, Quintana Minerals submitted the second half of the core from BCMC and Inspiration drilling programs and averaged the results from both analyses with skeleton samples taken for reference. This represented over 2000 samples from the first 29 drillholes. Quintana Minerals was dissatisfied with sample preparation at the primary analytical lab and developed its own method conducted on site (Dunn, 1984). This is discussed in Section 11.

Quintana Minerals had an established core storage and logging area on site. The core skeletonized by Quintana Minerals, the sample pulps from drilling programs between 1974 and 1976 and the sample rejects are stored at the Project in the core storage area of the old administrative building.

10.2 NMCC Pulp Re-Analysis

NMCC conducted a two phase a re-analysis program to confirm analytical results in the database. The two phases included:

- Selective and statistically relevant reanalysis of a percentage of the 14,729 existing pulps from the Quintana Minerals drilling programs from 1974 to 1978, conducted in 2009 and 2010; and
- Sample and analysis of the confirmation core drilling program conducted by NMCC in early 2010 (discussed in Section 9).

The skeletonized core, sample pulps from drilling programs between 1974 and 1978 and sample rejects are stored at the Project in the core storage area of the old administrative building. This building at the Project was re-opened and rehabilitated in September 2009. Sample pulps from the Quintana Minerals drilling programs from 1974 to 1978 were located in the core storage areas as were the skeleton cores, and sample rejects from the Quintana drilling programs.

A crew of three NMCC employees inventoried the sample pulps retained at the site. All pulp boxes were opened and the pulps were sorted. The sample identification (ID), series number, dates and “customer number” were listed on the pulp envelope and this information was recorded in a database. The pulp inventory process required six man-months to complete.

10.2.1 Drillhole Sample Numbers and Storage

Project data files archived in Albuquerque, provided a cross reference of the Alta Gold coding of drillholes and the original drillhole numbers listed on the sample pulp. Alta Gold had simplified the drillhole numbers for use in Medsystem software during resource evaluations between 1990 and 1998, and had coded the drillholes with a numerical, 4-digit code according to year and company.

This correlation was required since Alta Gold numbers were not recorded on the pulp envelopes. The Quintana Minerals drillhole numbers were alphanumeric following the form H-75-XX, which represented Hillsboro-1975-Hole#. Pulps from any single drillhole were largely segregated and easily separated on site. Some drillholes were missing pulps which had rotted, broken open, or were totally consumed in the past analytical process. NMCC has completely segregated the pulps by drillhole and repaired damaged pulp envelopes where necessary. No pulps were removed from the original envelope. All original envelopes were relabeled and placed into Ziploc bags for added security.

In addition, it was noted that some of the samples recorded a series number and dates, different from the others. The Quintana Minerals number series showed that these were composite pulps that were compiled for various testwork. This was later confirmed in the Albuquerque document archives.

After sorting approximately 20 drillholes, it was realized that the "customer number" was the only unique number on the envelopes, and the number of envelopes per drillhole equaled the number of intervals assayed in the Alta Gold Medsystem database. Clearly, the "customer number" related to the assay interval as an identification number, which was common in the 1970's when samples were hand numbered without pre-printed perforated sample tags in standard use today. Finally, it was recognized that drillholes from 1975 had two sets of pulps, one dated February to April, and a second set dated July through October. This reflected the Quintana Minerals re-assay of the first 29 drillholes during the 1975 program described by Dunn, 1984.

10.2.2 Initial Pulp Sample Submission

Pulps from three drillholes for 165 pulps were selected to be sent to Skyline Assayers (Skyline) in Tucson, Arizona, H75-08 (March 1975), H75-08B (July 1975), and H75-17 (March 1975) during the winter of 2009-2010. No additional sample prep was required on the pulps. NMCC used Exploration Best Practices Guidelines, and included Quality Assurance/Quality Control (QA/QC) samples with its submission. All of the pulp samples are duplicates or triplicates of the original core samples. With favorable results from the first submission, 441 additional pulps from eight drillholes were submitted to Skyline. Analyses and results are discussed in Section 11 and SRK's conclusions in Section 12.

10.2.3 Final Pulp Analysis

In February 2010, after all of the initial re-assay results were compiled, it was decided that 10% of the pulp database needed to be re-assayed. An additional 780 pulps were submitted for re-analysis with QA/QC, to Skyline. These were submitted as part of sample verification since the original assay certificates were not available for the Quintana Minerals drilling and sampling programs.

10.3 2010 NMCC Drilling Program

NMCC maintained a rigorous program of drill core management and chain-of-custody-sample controls throughout the 2010 drilling program. Drill core drop-off, logging, sawing, sampling, and storage were laid-out in a uni-direction "assembly line" that resulted in an efficient and quality controlled process of sample generation from core production through sample shipment.

10.3.1 Data Collection

The drill core was first examined for completeness in labeling and integrity after being logged into the logging and sampling facility at Copper Flat. Logging was first initiated with core mark-up for depths, RQD, recovery; and a modified geotechnical log supplied by SRK, which covered intact properties, facture densities, infilling, and hardness. This was followed by photography of the core in three-box increments. Detailed photography ensued during the core logging process to document mineralization, hydrothermal alteration, and lithology.

Logging was accomplished using hand-written log sheets that detailed lithology, hydrothermal alteration, oxidation, structure, mineralization, type-of-mineralization, estimated grades of Cu and Mo, and sulfide ratios. The supervising geologist verified logging for quality.

Based on factors controlling lithology, structure, alteration, and mineralization; the sample intervals were laid out by the core logging geologist and identified using pre-numbered sample tag books. Samples were a minimum of 5ft and a maximum of 10ft in length based on lithological breaks, unless an interval showed poor recovery. The core logging geologist also laid-out the QA/QC samples for blanks, standards, and field duplicates.

Finally, the geologic logs, sample intervals, assays, and QA/QC were incorporated into a final geologic log entered into an Excel spreadsheet. The final geologic log is based on sample intervals so that all relevant information is documented on a per sample basis. The geologic logs are included in Appendix C.

10.3.2 Sample Method

Sampling was performed with a table-mounted 12in core saw with the HQ or NQ core cut lengthwise into two equal halves. Fifty-percent of the sample was bagged for assay and 50% retained for reference, third-party review, and future sampling. A trained crew of three, who rotated between sawing and sampling, were also instructed on ensuring that mineralization was equally split between the samples. Difficult samples were oriented for sawing by the geologist on site. Sampling was carried out 12 hours per day with a geologist on site at all times. Sampling was verified for quality by the supervising geologist.

The sample tag books were filled-in by the core sampling personnel with date, interval, type of sample, and signed by the individual. All QA/QC samples were inserted into the samples stream by the sample crew using the sample list generated by the geologist. Approximately 110 additional 1in cut coins and small cut slabs were collected for reference, petrography, and bulk density measurements. All field duplicate samples had a cut coin retained for reference. Sample pick-up was provided weekly by Skyline Assayers in Tucson.

10.3.3 Factors Impacting Drilling, Sampling, and Sample Quality

Given the high core recovery from the drilling program (98%) and its prompt delivery to the logging facility, there are no factors concerning the retrieval of the core and its subsequent delivery that would compromise resulting data. Core sampling was carried out under close supervision and guidance and there are no factors regarding sample quality that would compromise the analytical results. All sample rejects and pulps, and reference samples, have been returned to the Copper Flat logging facility.

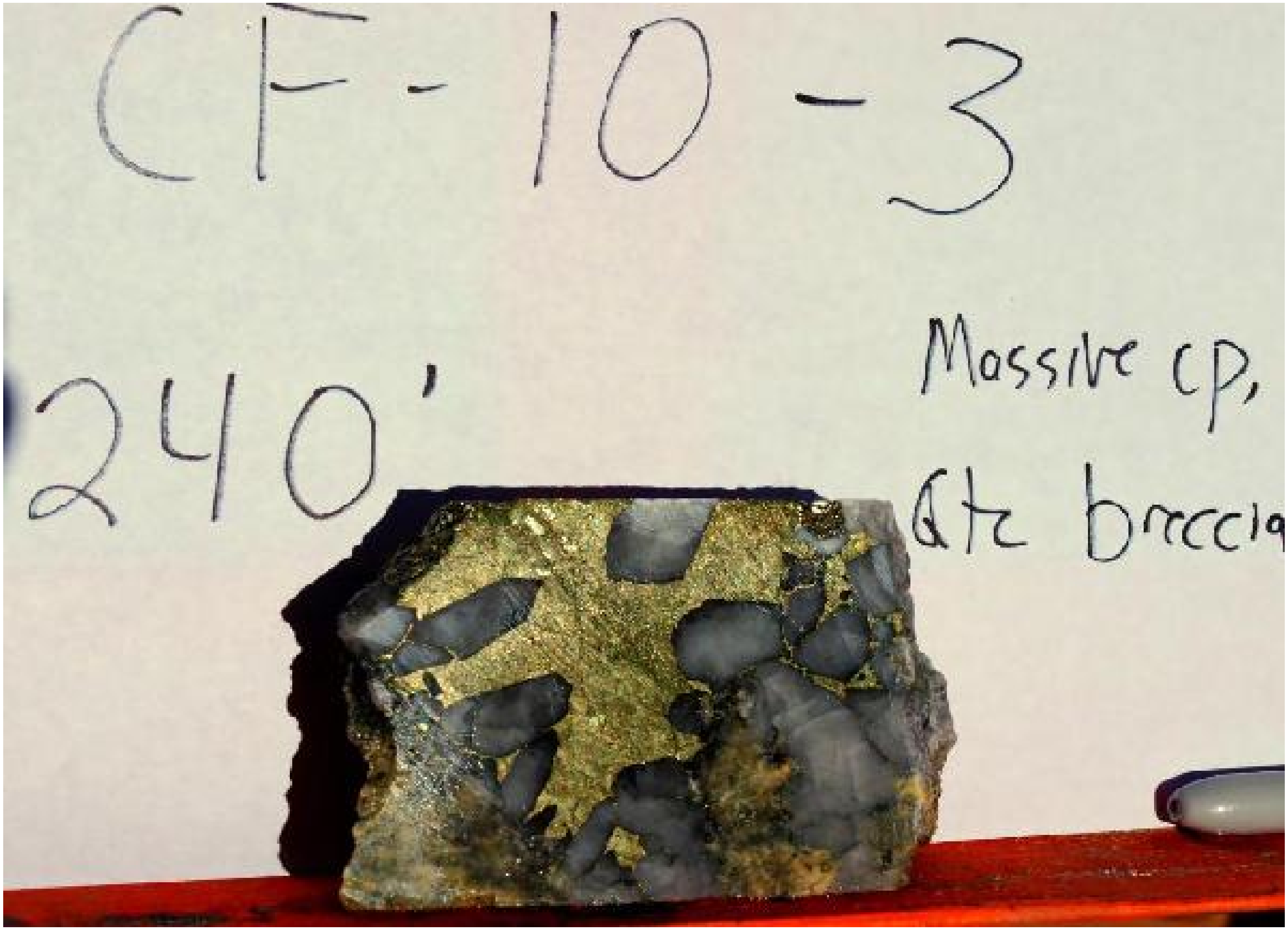
10.3.4 Factors Impacting Accuracy of Results

The most prominent geologic feature of the mineralization at Copper Flat is the breccia pipe. As discussed in Section 5.3 the breccia is variable in texture and mineralization. This proved to be a challenge during the sampling process, as semi-massive and net textured sulfides, and veins of chalcopyrite and molybdenite were encountered in several drillholes. This resulted in Quintana Minerals analyzing whole-core samples during their drilling programs in the 1970's.

Because of the experience of Quintana Minerals, NMCC inserted extra field duplicates comprising 10% of the breccia samples. This was done to document any variability and nugget effect between the two halves of the same drill core interval. The detailed results are discussed in Section 11.

There is variability in the NMCC field duplicate samples. The results are within acceptable ranges for field duplicate analysis for Cu. However, Mo showed greater variability suggesting a larger sample may be appropriate for Mo analysis. Molybdenite minerals in general can be difficult to drill and sample. In the higher-grade material, molybdenite will have the tendency to flake or spall off because of its platey habit and can be lost during drilling and sampling. Because of this characteristic, a minimum sized drill core should be NQ, which was used by NMCC. If after drilling the sample sits in a core box for an extended period, molybdenum may be lost from the sample through this process. Powdering of the material and smearing during sample preparation may also cause molybdenite loss or sample cross contamination. Blank analysis discussed in Section11 showed no evidence of cross contamination.

SRK is of the opinion that the NMCC sampling was conducted using industry best practices with good attention to detail.



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Engineers and Scientists
DENVER, COLORADO

Copper Flat Project

Net Textured Breccia In-Fill of Chalcopyrite from CF10-03, 240ft Depth

Sierra County, New Mexico

SRK JOB NO.:	191000.020
FILENAME:	Figure_10-1.docx

DATE:	APPROVED:	FIGURE:	REVISION NO.:
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11 Sample Preparation, Analyses and Security (Item 15)

11.1 Historic Sample Preparation and Analytical Methods

The historic laboratory sample preparation, analytical methods and security procedures are not well documented at the Project. According to NMCC, Inspiration Development used Union Assay Office (Union) in Salt Lake City, Utah, for the analytical portion of its work. Signed assay certificates are available for 10 of the Inspiration drillholes that include signed duplicate assays from Union and Skyline with dates between 1970 and 1971. There is no documentation of laboratory sample Preparation.

Quintana Minerals used Southwestern Assayers and Chemists (Southwestern) in Tucson, Arizona. Southwestern's sample preparation procedures are not documented, but Quintana Minerals was not satisfied with Southwest's results attributing it to sample preparation. Quintana Minerals developed its own sample preparation procedure used at the Project (Dunn, 1984). The flow chart for core sample preparation by Quintana Minerals is shown in Figure 11-1.

Quintana Minerals continued to use Southwestern as the primary analytical lab for its drilling programs. Because of the study that identified split NX core as having an insufficient volume of material for analysis, Quintana Minerals submitted whole cores and regularly re-submitted 5-10% of the assay pulps to Southwestern (the primary laboratory), Skyline and Jacobs Labs as a QA/QC check analysis (Dunn, 1984).

Analysis was for total copper (TCu) and Mo. SRK was unable to confirm the analytical techniques used previously at the different laboratories. However, between 1974 and 1978 both analyses for TCu and Mo were usually colorimetric techniques.

11.2 NMCC Data Verification

As part of data verification, NMCC submitted pulp duplicates from reject material from previous Quintana Minerals drilling programs. In addition, NMCC drilled seven drillholes to verify mineralization and geology at the Project. Drilling is discussed in Section 9.

11.2.1 Sample Preparation and Analytical Methods

All analyses performed as part of the NMCC resource verification including both pulp rejects stored on site and drill core, were conducted by Skyline. Skyline has ISO/IEC 17025:2005 accreditation valid through February 28, 2012 for:

- Fire Assay (FA) Gravimetric finish for Au and Ag;
- FA Atomic Absorption Spectroscopy (AAS) for Au;
- AAS for total and soluble Cu;
- Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP-OES) for total Cu, Pb, Zn, Fe, Mo, Mn, Ni and Co;
- Volumetric and electrolytic for Cu analyses; and
- Sample preparation and digestion techniques for these analyses.

Analyses were performed for TCu, Mo, Au and Ag. A Standard aqua regia digestion was used with AAS for total Cu, ICP-OES for Mo, FA with an AAS finish for Au and AAS for Ag. Table 11.2.1 lists the detection limits for these analyses.

Table 11.2.1: Detection Limits for Skyline

Element and Analytical Technique	TCu (AAS)	Mo (ICP-OES)	Au (FA-AAS)	Ag (AAS)
Detection Limit	0.01%	0.001%	5ppb	0.1ppm

11.2.2 Sample Preparation Procedures

Once the samples arrive at Skyline they are checked against the sample submission form, entered into the client log book, dated and assigned a job number. This information is then entered into the Laboratory Information Management System (LIMS). The sample preparation at Skyline is as follows:

- Samples are oven dried at 225-250°F for 8-24 hours;
- Samples are then tagged and bar coded;
- Samples are crushed to 70-80% passing -10 mesh;
- Samples are homogenized by splitting three times in a riffle splitter, and then recombined for a final split;
- An aliquot of 250-280g is split and placed into an envelope, reject material is retained;
- The 250g+ aliquot is dried at 200°;
- The sample is then pulverized to 95% passing 150 mesh; and
- The pulverized sample is sent for analysis.

The crusher, splitter and pulverizer are cleaned with compressed air between samples and the pulverizer is cleaned with quartz sand as needed between samples. The pulverizer is also cleaned with quartz sand between batches. Quartz sand used for cleaning is discarded after one use. Course rejects were stored and returned to NMCC after all analyses were complete.

11.2.3 Analytical Procedures

At Skyline, Cu, Mo and Ag are digested using the following method:

- Accurately weigh 0.4000 to 0.4300 grams of sample into a 200mL flask;
    - o Samples are weighed in batches of 20 samples plus 2 laboratory checks (duplicates) and 2 laboratory standards per rack. At the end of the job weigh the tenth sample out of each rack plus 4 standards.
- Add 10.0mL HCl, 3.0mL HNO_3 and 1.5mL HClO4 to each flask;
- The flask is then placed on a medium hot plate (about 250°C);
- The sample is digested until the only remaining acid present is $HClO_4$ (The volume of the liquid in the flask should be reduced to less than 1mL);
- Remove from the hot plate and cool to approximately room temperature;

- Add about 25mL deionized (DI) water and 10.0mL HCl and boil gently for about 10 to 20 minutes; and
- Cool the flask and contents to room temperature, dilute to the mark (200mL) with DI water and stopper and shake well to mix.

Total Cu is analyzed on the AAS and Mo is analyzed on the ICP-OES both using standards made up in 5% HCl. Silver is analyzed on the AAS.

Gold was analyzed by FA with AAS finish. The Au analysis was conducted by Skyline and its affiliated laboratory Assayers Canada in Vancouver, British Columbia Canada.

11.3 Quality Controls and Quality Assurance

NMCC used standard industry practice in its QA/QC program for the pulp re-analysis and core sampling programs.

For the pulp re-analysis, NMCC inserted standards every 30 samples. Blanks were not included in the pulp re-analysis program because blanks are designed to monitor sample preparation equipment and cross-contamination. Since no further sample preparation was necessary, no blanks were inserted into the sample stream. Because the analyses were conducted on reject material from previously analyzed intervals and represented a duplicate analysis, no duplicates were submitted.

The QA/QC for drilling program core samples included blanks, standards, and field duplicates. In addition, check samples in the form of pulp duplicates were sent to ALS Chemex in Reno Nevada. These samples were inserted into the sample stream at the following frequencies and each represented approximately 5% of the total sample database:

- Blank samples—1 every 20 samples;
- Standard samples—1 every 20 samples;
- Field duplicate samples—1 every 20 samples;
- Field duplicate samples in breccia—1 every 10 samples; and
- Check samples—33 samples total plus 5% of the standards (not available at the time of review).

Blank material used in the QA/QC program was a Quaternary basalt collected locally. NMCC had the sample prepared and four splits analyzed for 41 elements using ICP to determine its suitability as a blank. Table 11.3.1 is the selected ICP analysis for the elements of interest of the four submissions of the basalt blank.

Table 11.3.1: Blank Sample Analysis, Select 41-Element ICP

Element Conc.	Ag ppm	As ppm	Cu ppm	Fe %	Mo ppm	Pb ppm	S %	Zn ppm
Detect. Limit	0.2	5	1	0.01	2	2	0.01	1
Method	TE-2	TE-2	TE-2	TE-2	TE-2	TE-2	TE-2	TE-2
Sample No								
604603	<0.2	14	43	7.29	2	17	0.07	88
604604	<0.2	13	44	7.47	2	21	0.07	100
604605	<0.2	9	45	7.46	3	16	0.06	91
604606	<0.2	14	43	7.42	2	18	0.06	88

Reference material (standards) were inserted approximately every 20th sample in the sample streams for the core analysis and every 30th sample in the pulp re-analysis, or approximately 5% of the sample database for core and approximately 3% of the database for pulps. Internal standards from Skyline were an additional 5% of the database for pulps and core samples. The external standards were reference material from WCM Minerals (WCM) in Vancouver, B.C., Canada. Table 11.3.2 is the published analysis of the standards.

Table 11.3.2: Standard Analysis Values

WCM Minerals Reference Material (Standards)							
Standard Number	**Element**	**Conc.**	**Cu-152**	**Cu-157**	**Cu-163**	**Cu-171**	**Cu-170**
Certified Value	Cu	%	1.16	0.48	1.06	0.19	0.35
Certified Value	Mo	%	0.157	0.057	0.156	0.032	0.093
Certified Value	Ag	ppm	27	15	99	14	10
Certified Value	Au	ppm	1.62	0.84	4.35	0.22	0.16

Thirty-three check samples were sent with standards from Skyline to ALS Chemex in Reno as a lab check. Check samples constituted 5% of the drill core sample base. In addition, all of the check samples were re-analyzed employing a four-acid digestion method to verify the digestion method. NMCC reported that the differences between the two digestion methods resulted in a third decimal point difference in the copper and a fourth decimal point difference in the molybdenum values. The check sample results were not available and not reviewed by SRK.

Field duplicate samples were the second-half of the core collected approximately every 20th sample for 5% of the database. However, when sampling the breccia material, every 10th sample was taken as a field duplicate to document potential nugget effects in the values.

11.3.1 Results

Pulp Analysis

Initially, NMCC submitted pulps from three Quintana Minerals' drillholes to Skyline in the Fall of 2009. These drillholes were H75-13, H75-17 and H75-18. NMCC inserted three standards per drillhole into the sample stream. These drillholes were selected from the drilling period when core was split and the split core for a given interval was submitted as two independent samples. Because of this, an A and B pulp were submitted to Skyline for each interval. This represented 226 A pulps and 235 B pulps. These A and B samples were compared to single results for each interval from the Almburg laboratory. The single result represents averages of the original A and B analyses. There were 237 averages from the original analytical work from Almburg.

Perfect reproducibility between a duplicate and original falls along a 45°slope (x=y) plotted on a scatterplot. An acceptable result for a pulp analysis is expected to be within ±10% of the original analysis.

The results from the initial pulp program for TCu show that the ICP-OES analyses were slightly higher than the historic analyses. This was observed in three separate scatterplots when the original analysis was plotted against A pulps, B pulps and the average of A and B pulps. This suggests that the original analytical data may be conservative. Plotting A versus B pulps shows relatively even distribution around x=y with A showing slightly higher values in the higher grades. Approximately 50% of the pulp duplicates were outside ±10% of the original analysis and 21% were outside of ±20% of the original. This is most likely the result of the differences between the original colorimetric analyses versus the pulp analyses conducted using ICP-OES coupled with the "nugget effect" observed by previous workers at the Project. Pulp A and pulp B represent two halves of the core. In the breccia zone where mineralization is irregular, different analytical results may be observed in each core half, and is the reason Quintana Minerals submitted whole core for analysis. The data reviewed was not separated into breccia duplicates and non-breccia duplicates, but review of these two sample populations could confirm Quintana Minerals' observations. Scatterplots for the initial pulp analysis program are shown in Figure 11-2.

The results from the initial pulp program for Mo analyses show that the ICP-OES is slightly lower than the original colorimetric analyses. This is most pronounced on the original versus pulp A scatterplot. There is also less consistency between pulp A and pulp B. There are some considerations in sampling molybdenite, which may or may not apply to this situation. Molybdenite tends to flake and spall over time in core boxes and coarse samples. Differences in sample preparation including choice of crushing and pulverizing equipment may also affect results. In sample preparation for Mo analysis it is recommended that low chrome steel pulverizing equipment be used. Since these are pulp samples, flaking and spalling are not interpreted to be the reason for variation between the two analyses. SRK does not know whether the present or historic sample preparation used a low chrome steel pulverizer in the sample preparation. This variation in results may be evidence of a larger "nugget effect" of molybdenite within the deposit as compared to Cu. This indicates that a larger sample may need to be collected for Mo analysis. Scatterplots for Mo are shown in Figure 11-3.

In February 2010, an additional 517 B pulps were submitted for analysis. This submission combined with the initial pulp program represents 10% of the pulp database. These samples were submitted for additional resource verification since the original assay certificates were not available from the Quintana Minerals drilling and sampling programs. With previous samples for B pulps this represents 752 sample pairs. Similar results were seen for TCu and for Mo as were seen in the initial program using both A and B pulps. With more analyses, TCu appeared to be more centered on x=y indicating good repeatability for pulp and original and less bias between analytical techniques. The Mo analyses was less consistent and below 0.01% shows less repeatability between original and duplicate analyses. However, there is still some correlation between analyses. Scatterplots for TCu and Mo for the final pulp analyses are shown in Figures 11-4 and 11-5 respectively.

Standards inserted into the pulp duplicate sample streams were assessed below with those from the drilling program.

Drilling Program

NMCC submitted a total of 33 blanks during the drilling program. A blank is considered a failure when it returns an analytical result for the element of interest 5X the detection limit for that analysis. There were no blank failures indicating that there was no cross contamination between samples during crushing and pulverizing at Skyline.

During the course of the drilling program 79 field duplicates were submitted to Skyline. Perfect reproducibility between a field duplicate and the original falls along a 45°slope (x=y) plotted on a scatterplot. An acceptable result for a field duplicate analysis is expected to be within ±20% of the original analysis. Analytical results near the detection limit show wide variability. Unless there was extreme difference in significant figures, those samples were not considered failures. Eleven field duplicates were identified as failures and resubmitted with the original sample for analysis. There was acceptable reproducibility between TCu original and field duplicates. However, field duplicate reproducibility for Mo is poor indicating that a larger sample should be collected. SRK does not know which analyses were from HQ core splits and which were from NQ core splits. This data would aid in determining the minimum sample size for Mo analysis. Figures 11-6 and 11-7 present the scatterplots for TCu and Mo respectively.

Standards inserted into the sample stream are expected to perform within ± 2 standard deviation (2σ) of the mean for the standard, and the standard is expected to perform within this range 95% of the time. Standards are determined for a specific analytical technique or techniques. Values for a Certified Reference Material (CRM) are determined by submitting the sample to several laboratories for multiple analyses.

NMCC used three of the standards listed above for both the drilling and pulp reanalysis. These were CU152, CU157 and CU171. There were 69 standards submissions divided between the three standards as listed below:

- CU152—17 analyses for Cu and 16 analyses for Mo;
- CU157—24 analyses for Cu and 23 analyses for Mo; and
- CU171—28 analyses for Cu and 26 analyses for Mo.

Analytical certificates for the reference material used at the Project include average and average T (T-test) calculations with standard deviation for analyses for each element. Average T and the standard deviation T were used to calculate the performance range for the standards in use for the programs. Table 11.3.1.1 lists the average T with 2σ T that would be added or subtracted from average T for Cu and Mo.

Table 11.3.1.1: Average T and 2σ T for Standards at the Project

Standard	Cu Average T	Cu ±2σ T	Mo Average T	Mo ±2σ T
CU152	1.16%	0.056%	0.157%	0.006%
CU157	0.480%	0.023%	0.057%	0.0056%
CU171	0.19%	0.0076%	0.032%	0.002%

The average T are the values recommended for use by WCM and 2σ T is 2X 1σ T recommended by WCM.

The CU152 analyses had no failures for Cu and two Mo failures and CU157 had one Cu failure and no Mo failures. Reanalysis of failures returned results within the performance range. Over time, analytical results for CU152 became higher for Cu and lower for Mo. Performance on CU157 was slightly higher than the average for Cu and slightly lower than average for Mo, but showed the best performance for the standards. Figures 11-8 and 11-9 show plots for the standard performance for CU152 and CU 157 respectively.

Standard CU171 did not perform well for Mo and anomalously for Cu. There were three Cu failures and 11 Mo failures for this standard. The Cu analyses that were not failures were all 0.19%. Failures were either 0.18% or 0.17%. When the failures were reanalyzed the reanalysis was 0.19%. Over a third of the Mo analyses failed. However, the Mo analyses was generally clustered around the lower 2σ line on the plot. Those Mo results that were reanalyzed gave results of 0.030 and 0.031%. The lower end of the performance range for Mo as recommended by WCM is 0.030%.

The anomalous performance for Cu and the performance for Mo in CU171 could be the result of one of the following:

- Analyses for the Project become more erratic in these lower ranges;
- The standard is not appropriate for the Skyline analyses used for the Project;
- The standard was generated from a different type of material than found at the Project; and/or
- There was a problem with the initial analyses when the standard was created by WCM.

The clustering of Mo analyses around the lower end of the performance range suggests that the standard is performing at a lower average than reported in the certificate of analysis from WCM. Though not ideal, this could be addressed by taking the average of the standards results at the Project and determining a 2σ performance range that is Project specific. The average for Mo for CU171 was 0.030% with 1σ of 0.001. Using this technique the performance range would have been between 0.032 and 0.028% resulting in one Mo failure for the standard. However, this would have to be done for Cu as well and although Cu performed anomalously, it was within the performance range specified in the analytical certificate. Results for CU171 are shown in Figure 11-10.

SRK is of the opinion that the failure of this standard does not impact the integrity of the database. SRK recommends discontinuing the use of this standard and replacing it with a similar low range standard. If a different standard performs in a similar way, then a different digestion or analytical technique may be needed. Ultimately, SRK recommends development of site specific standards for use in all drilling and exploration programs at the Project. This would provide a matrix match in the standard and the standard could be developed using the exact analytical technique used for the Project.

The 33 check samples submitted to ALS Chemex were not available for review by SRK.

11.4 Security

NMCC initiated security measures during the drilling and sampling programs that are currently in place. These security measures include the following:

- Monitoring the locked gate to the pit area allowing only NMCC personnel to pass;
- Maintaining a 24-hour security guard at the administration building, which includes the office, logging, sample and storage facility;
- Changing of keys to the office, gates, and other locks bi-monthly;
- Weatherproofing the administration building roof and walls, with security mesh installed over windows;
- Storage of all pulps, core, and samples under lock and key on a daily basis;
- Double count of samples and verification on sample shipments with Skyline; and

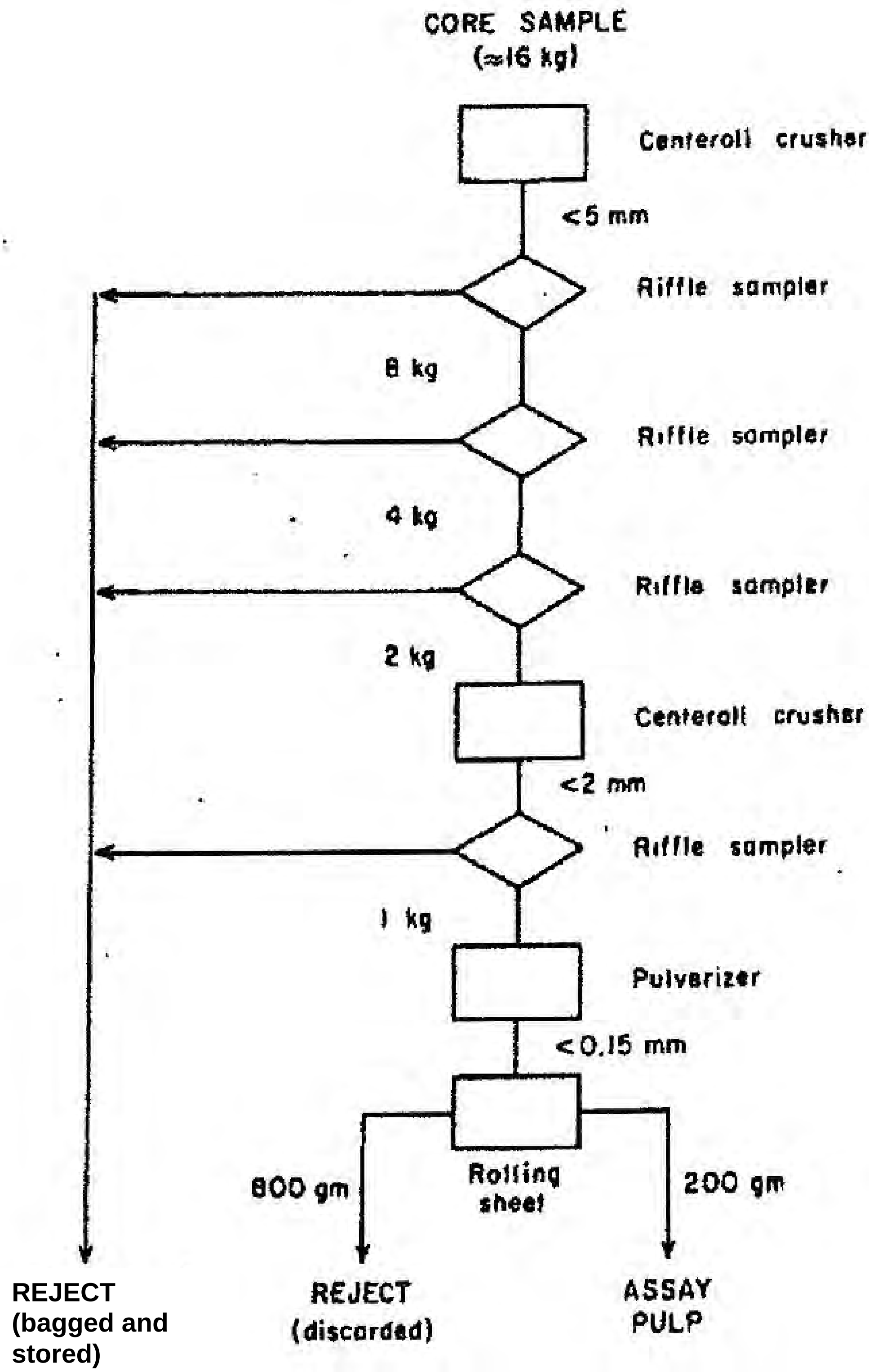
- Having a geologist was present during all sampling hours and shipment times.

11.5 Interpretation

NMCC reports that QA/QC programs were in place during the Inspiration and Quintana Minerals drilling programs, documented in archived memos. Partial analytical results for check assays are available for the Inspiration program. There is no evidence to suggest that the methodologies of sample preparation or analysis were substandard in any way by labs employed by Inspiration or Quintana Minerals. SRK has not seen these memos.

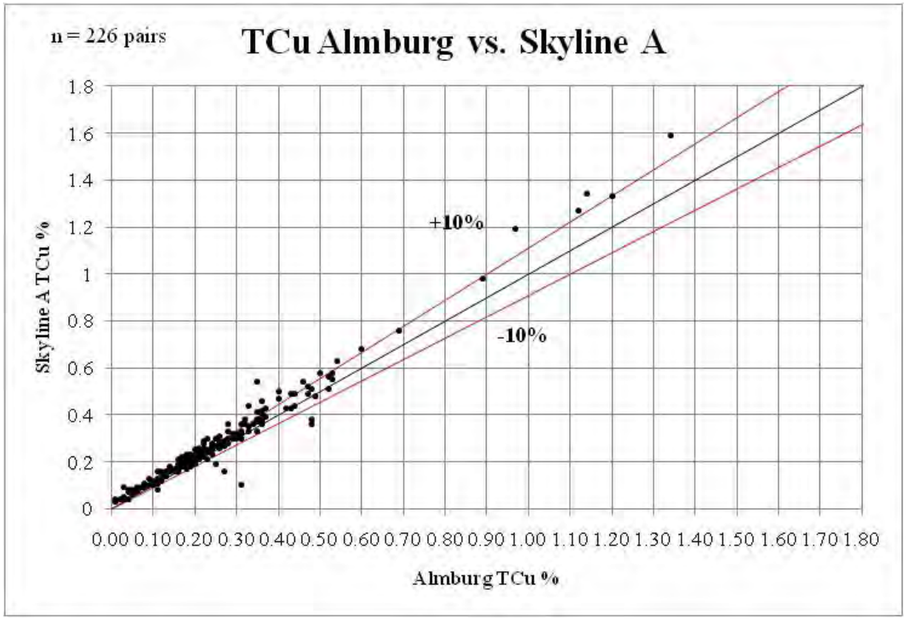
Dunn (1984) published a brief description of Quintana Minerals QA/QC program, but the actual signed preparation procedures and assay results are not available. The sample preparation procedures from Southwestern, Jacobs, Union, and Skyline between 1974 and 1978 are not available. These laboratories were commonly used by the mining industry during that time period.

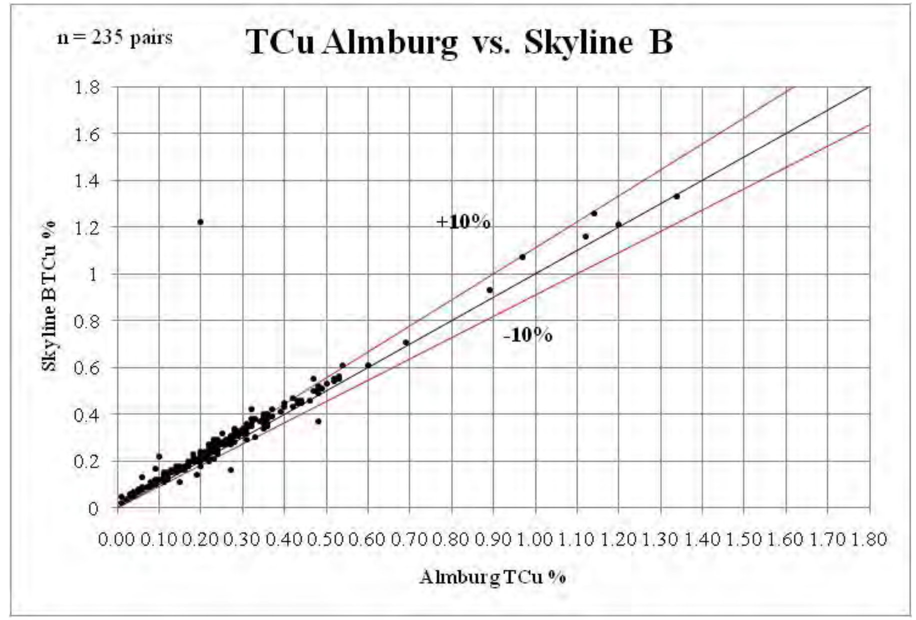
The QA/QC program was monitored throughout the analytical programs and failures were addressed by reanalysis. SRK is of the opinion that NMCC had conducted its resource verification, QA/QC and drilling programs using industry best practices and that the historic database can be used in resource estimation.

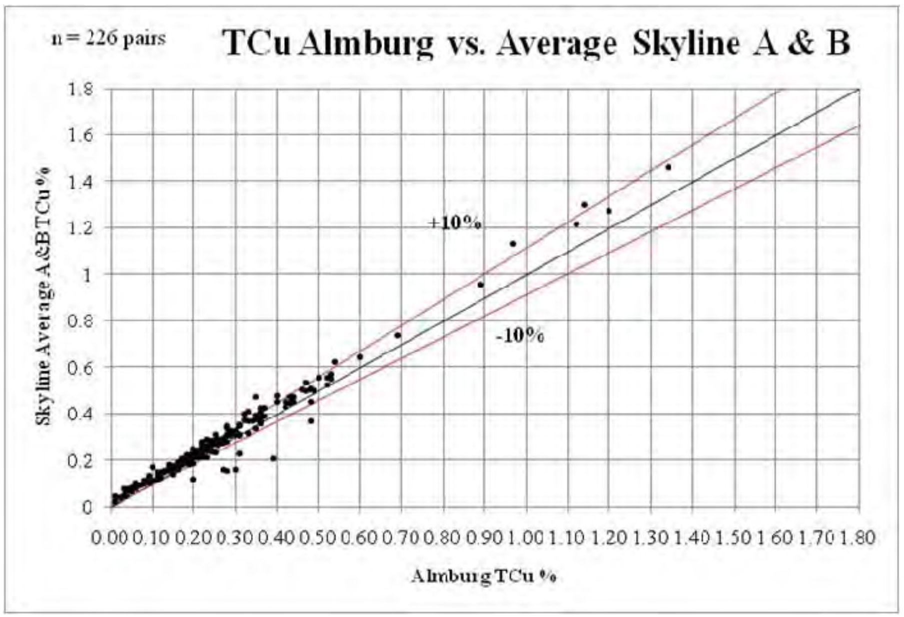


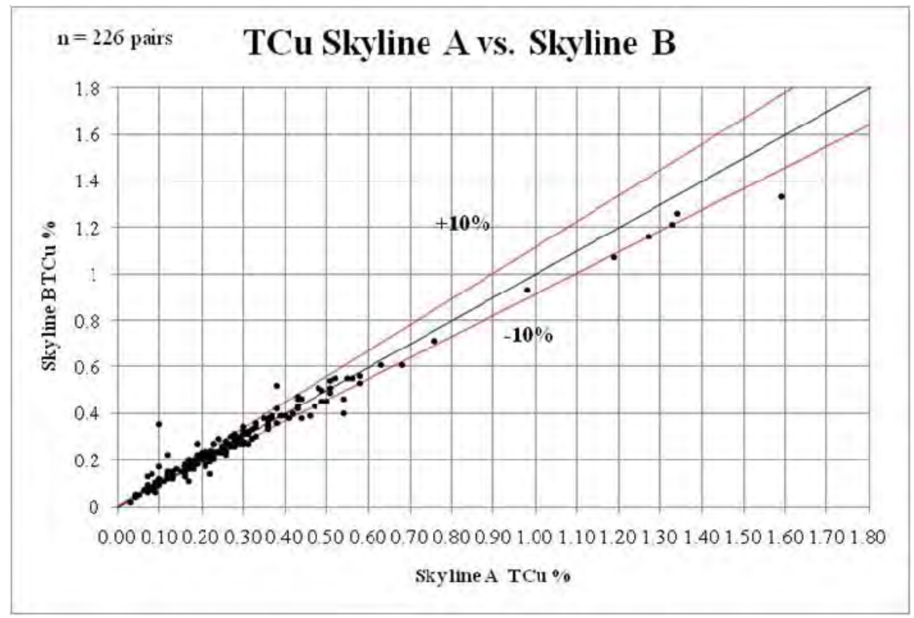
Source: Dunn. 1984

SRK Consulting Engineers and Scientists DENVER, COLORADO		Copper Flat Project
		Quintana Minerals, Inc. Sample Preparation Flow Chart
SRK JOB NO.: 191000.020	Sierra County, New Mexico	DATE: 20100504 / APPROVED: APPROVED / FIGURE: 11-1 / REVISION NO.: A
FILENAME: Figure_11-1.docx		









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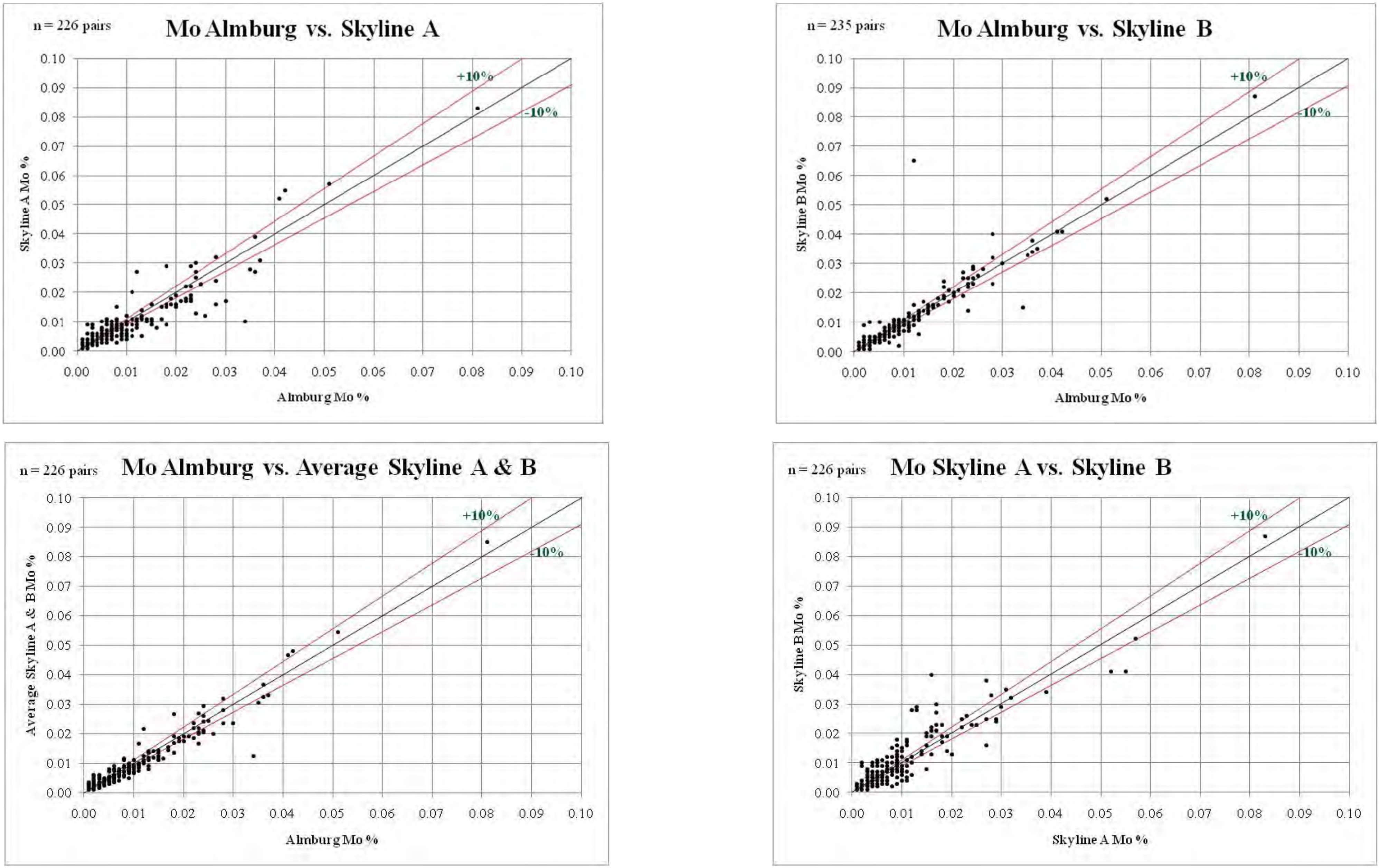
Copper Flat Project

Cu Scatterplots for Initial Pulp Reanalysis Program

Sierra County, New Mexico

SRK JOB NO.:	191000.020
FILENAME:	Figure_11-2.docx

DATE:	APPROVED:	FIGURE:	REVISION NO.:
6/17/2010	APPROVED	11-2	A



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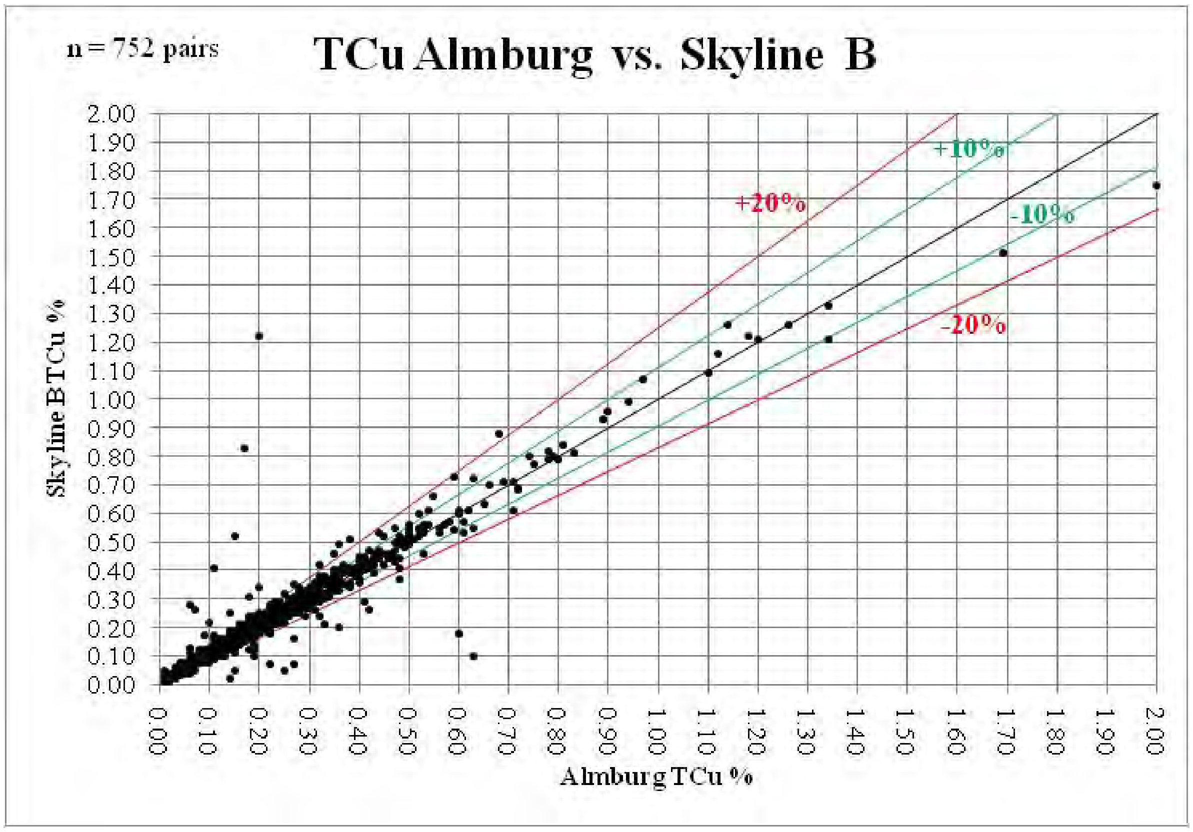
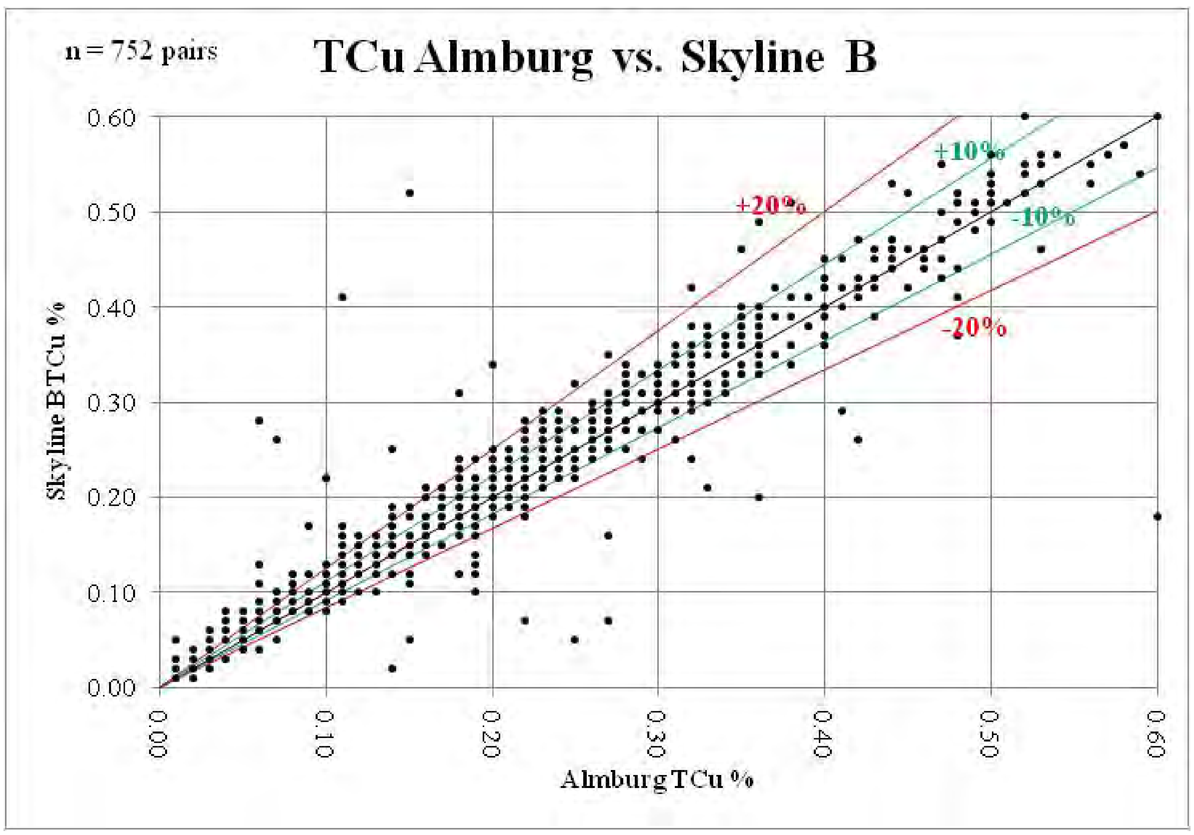
SRK JOB NO.: 191000.020	Sierra County, New Mexico	Copper Flat Project		
FILENAME: Figure_11-3.docx		Mo Scatterplots for Initial Pulp Reanalysis Program		
		DATE: 6/17/2010	APPROVED: APPROVED	FIGURE: 11-3	REVISION NO.: A

Scatterplot all Samples

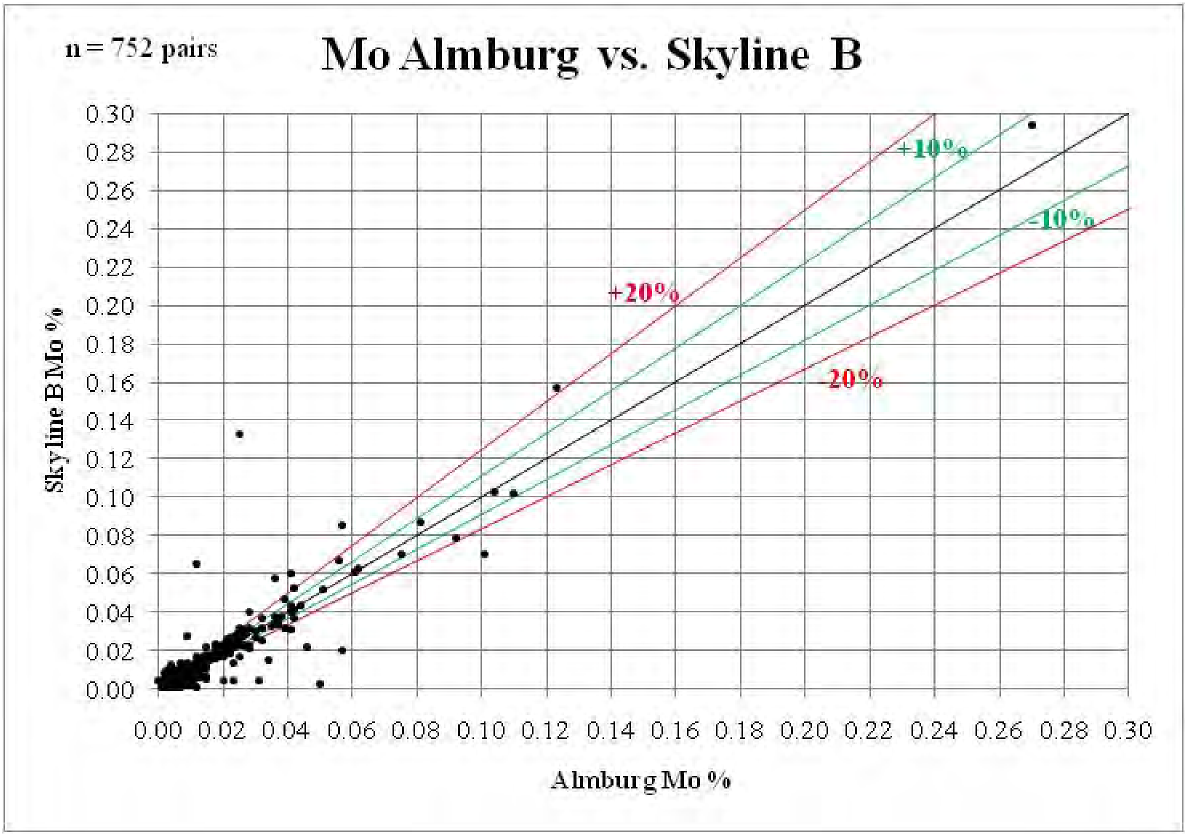


Scatterplot of Samples between 0.00 and 0.60% Cu

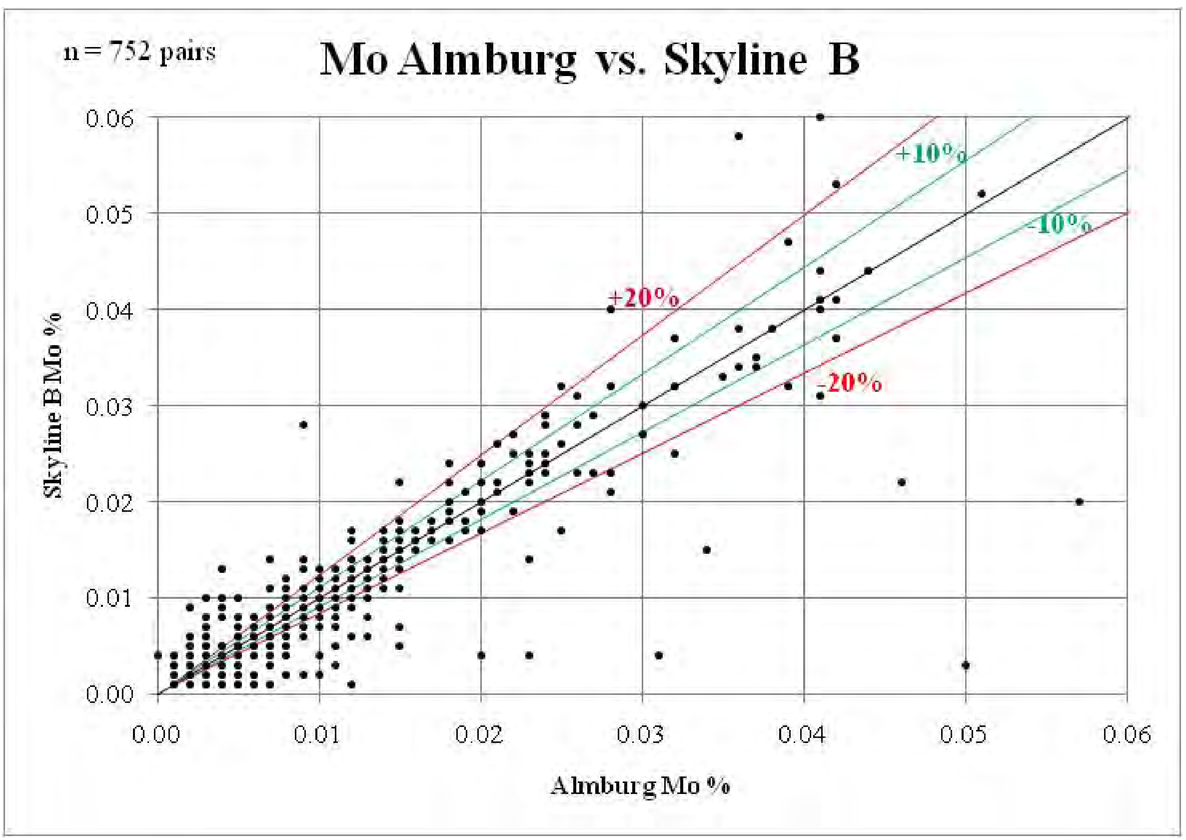


SRK Consulting Engineers and Scientists		Copper Flat
		Cu Scatterplots for Alll Pulp Reanalysis
SRK JOB NO.: 191000.020	Sierra County, New Mexico	DATE: 6/18/2010 / APPROVED: APPROVED / FIGURE: 11-4 / REVISION: A
FILENAME: Figure_11-4.docx		

Scatterplot all Samples



Scatterplot of Samples between 0.00 and 0.06% Mo



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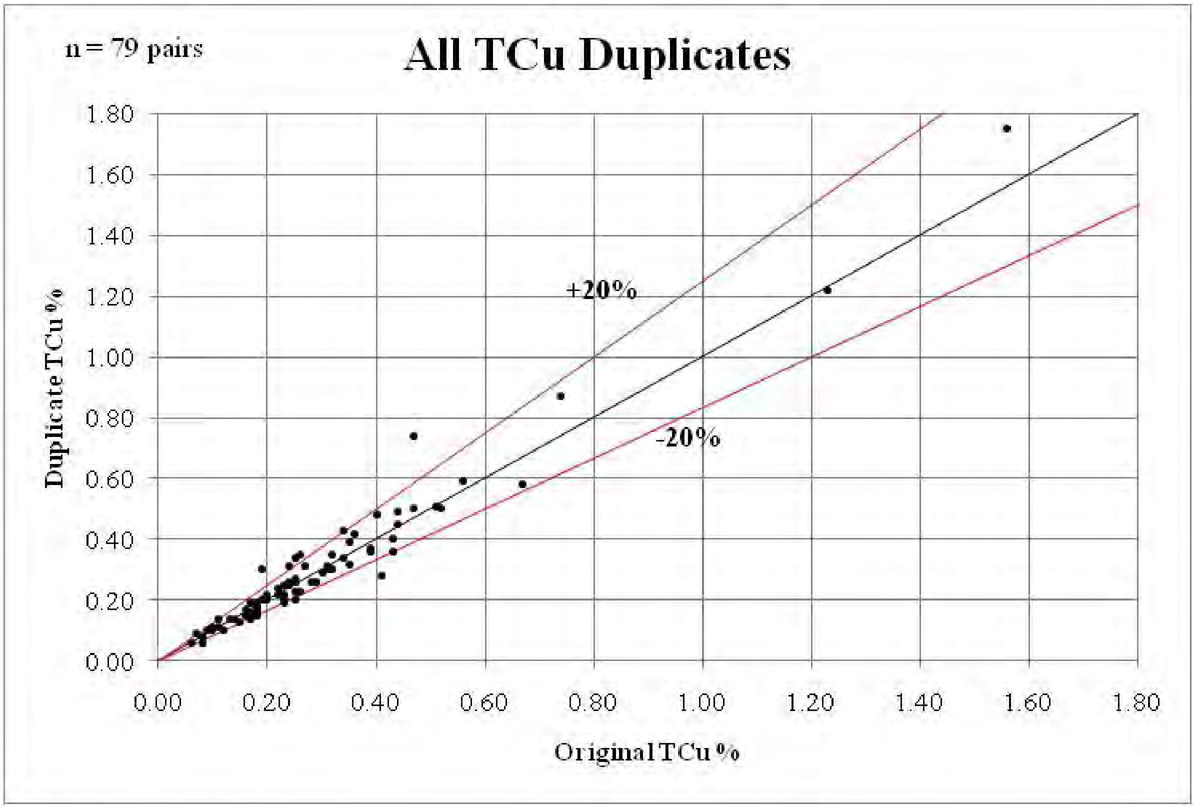
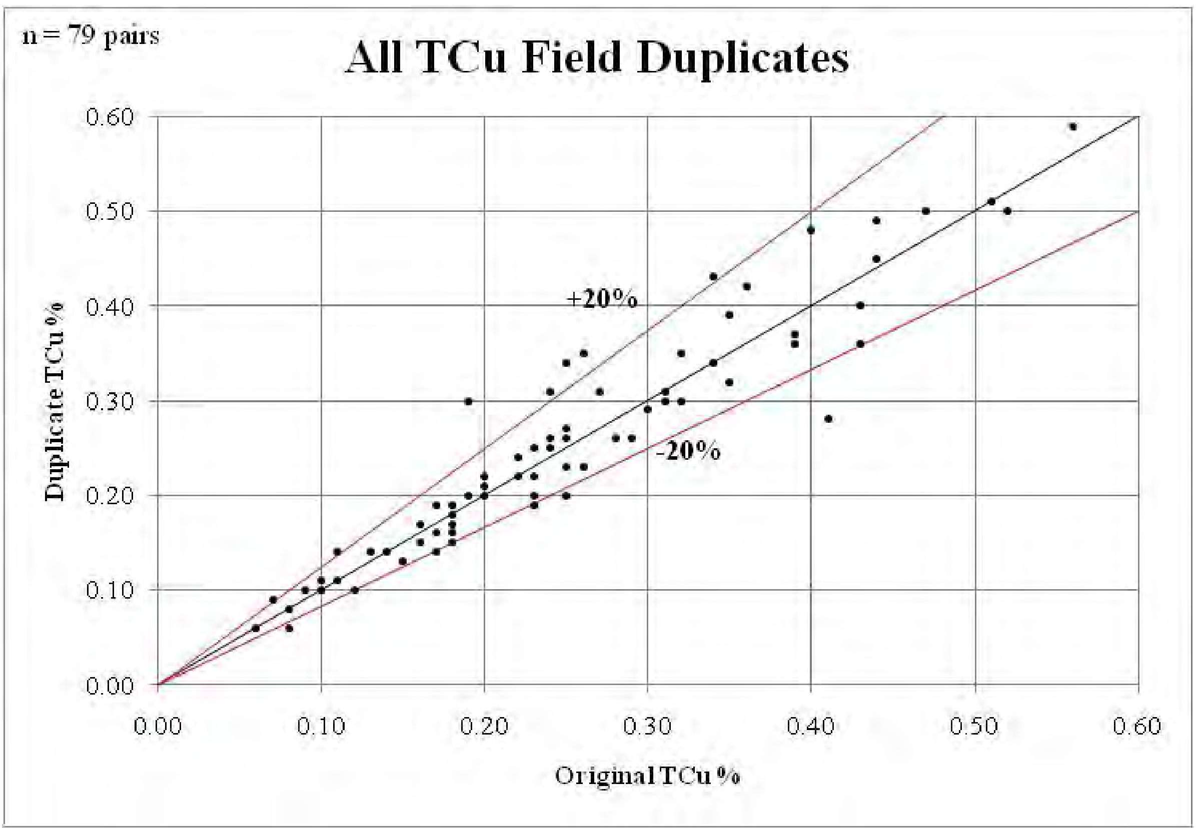
SRK JOB 191000.020	Sierra County, New Mexico	Copper Flat
FILENAME: Figure 11-5.docx		Mo Scatterplots for All Pulp Reanalysis

DATE:	APPROVED	FIGURE:	REVISION
6/18/2010	APPROVED	11-5	A

Scatterplot all Samples

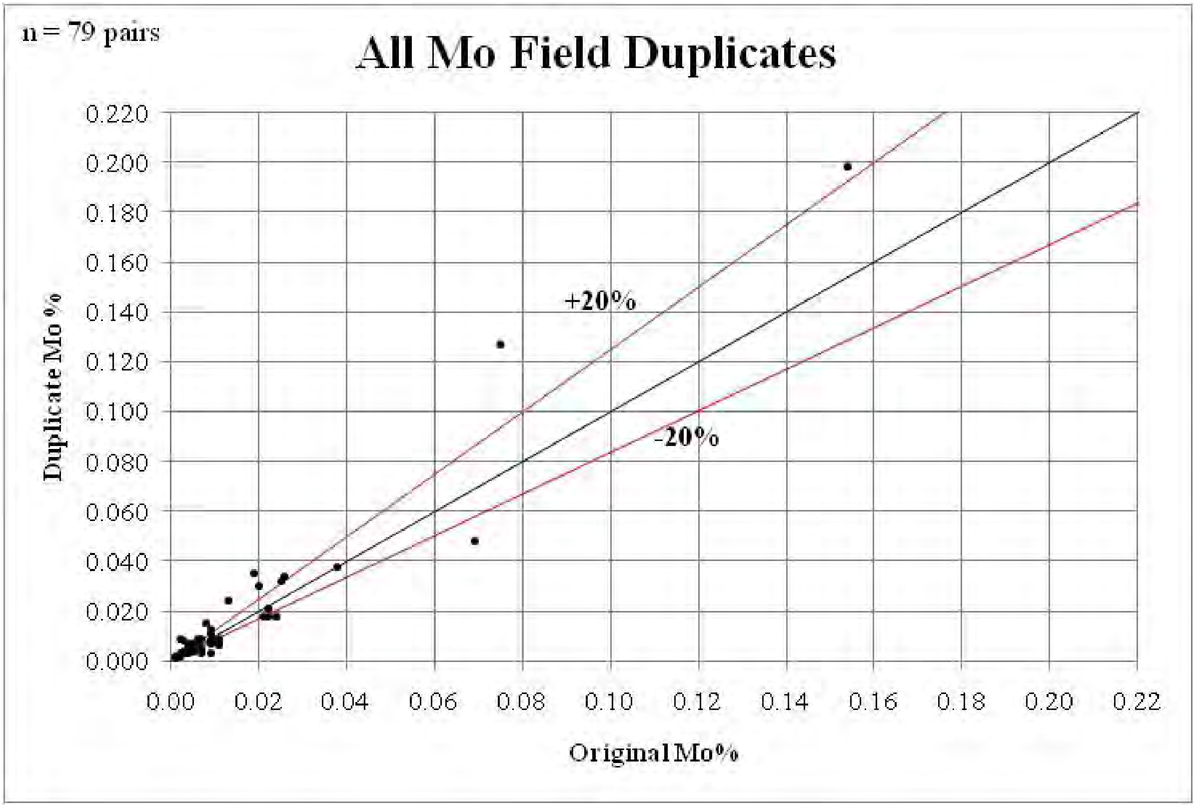


Scatterplot of Samples between 0.00 and 0.06% Cu

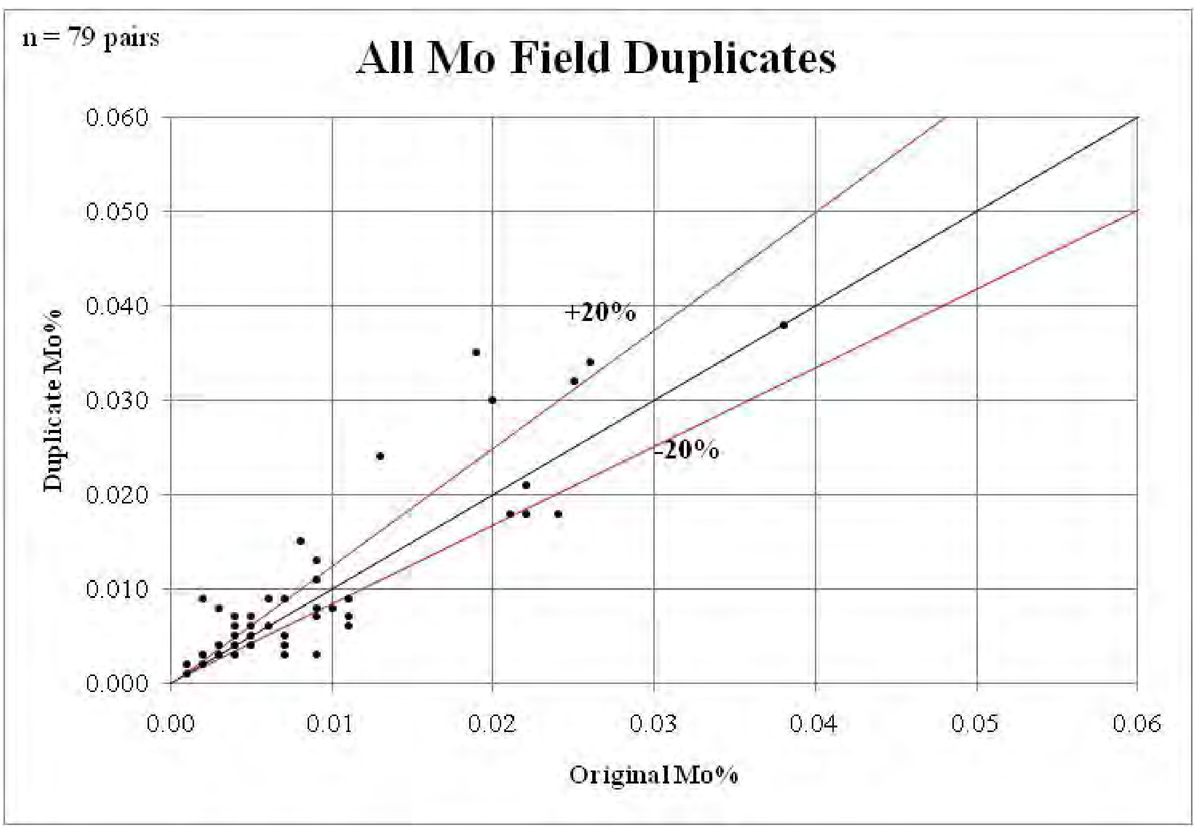


SRK Consulting Engineers and Scientists		Copper Flat
		Cu Scatterplots for Field Duplicates
SRK JOB 191000.020	Sierra County, New Mexico	DATE: 6/18/2010 · APPROVED: APPROVED · FIGURE: 11-6 · REVISION: A
FILENAME: Figure 11-6.docx		

Scatterplot all Samples



Scatterplot of Samples between 0.00 and 0.06% Mo



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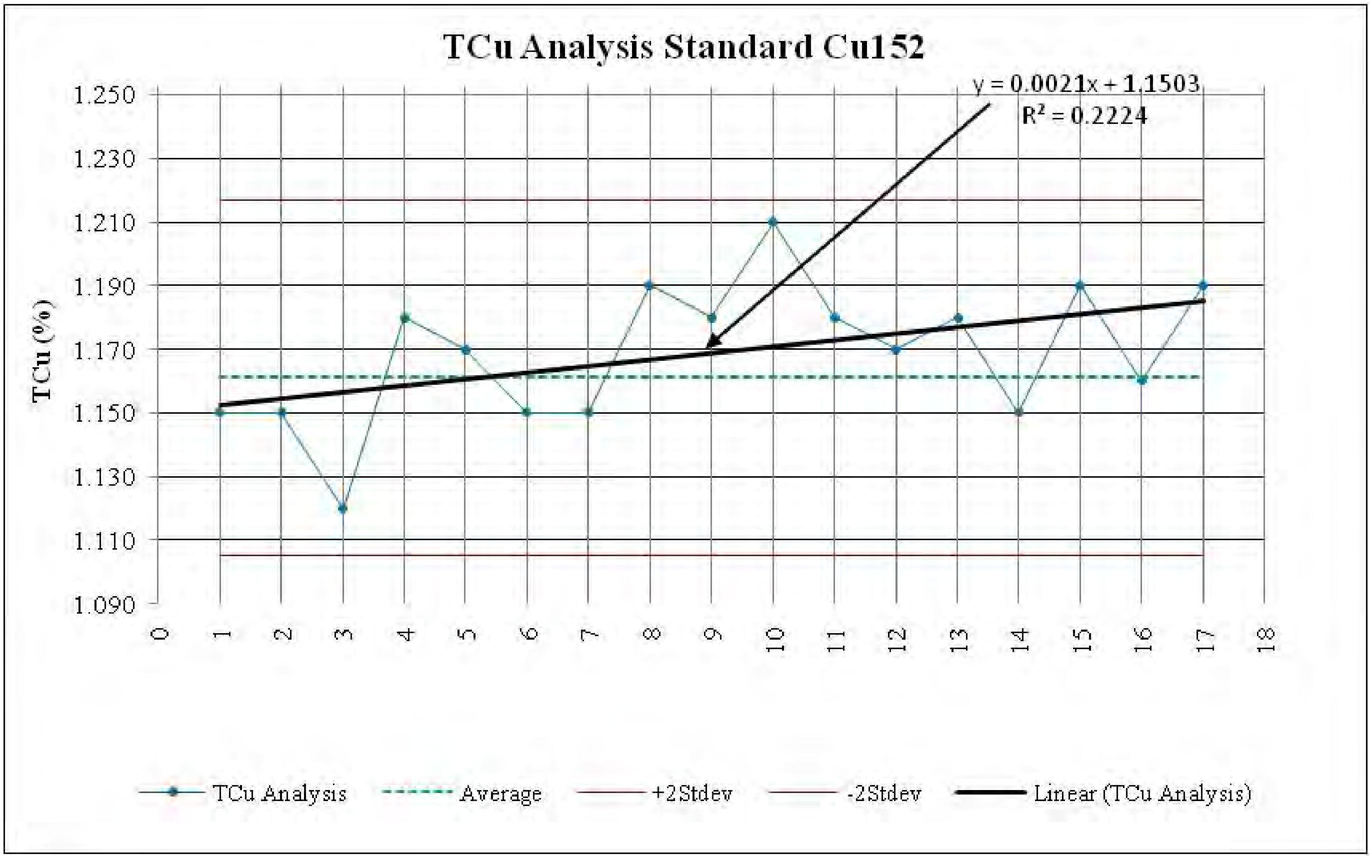
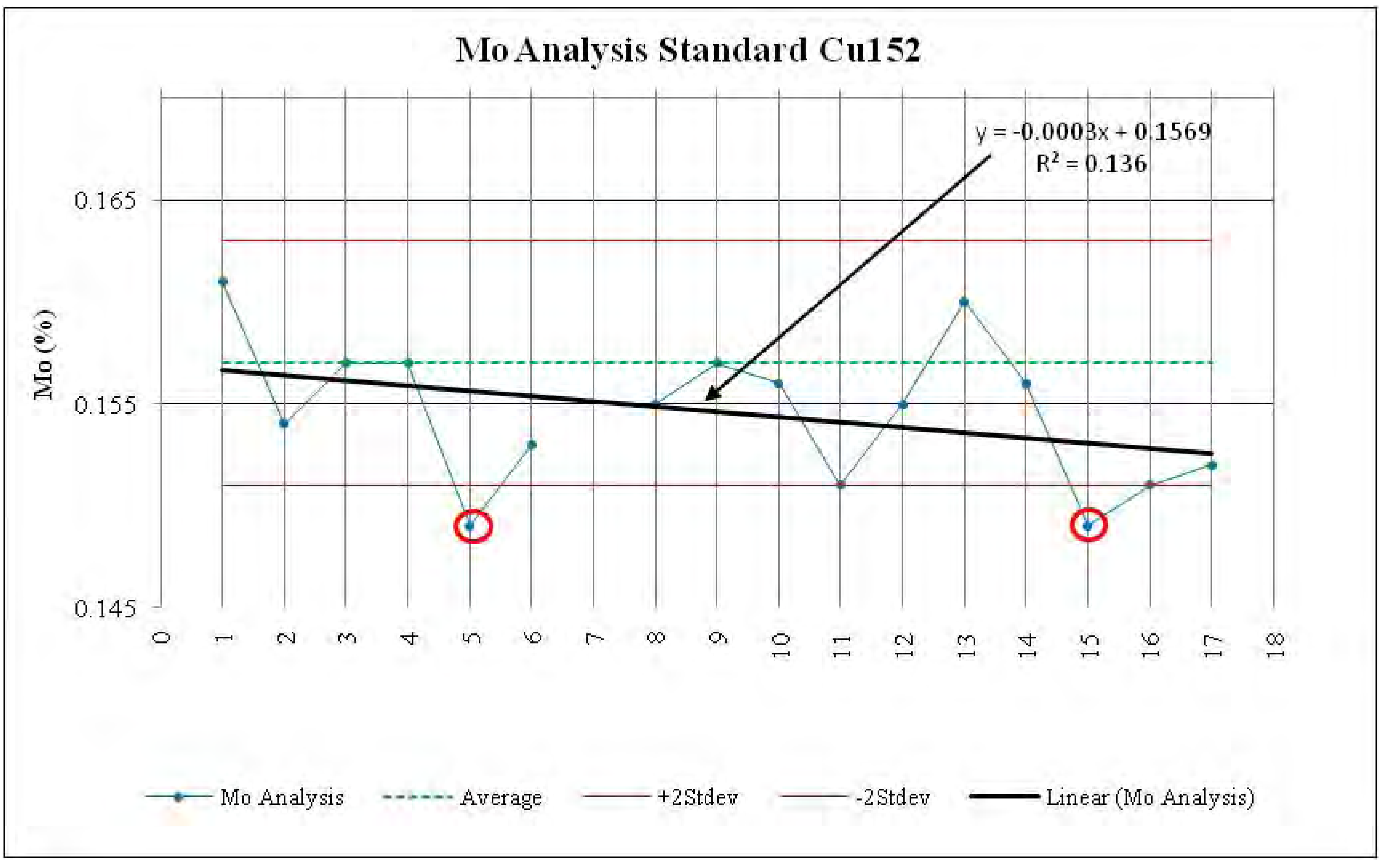
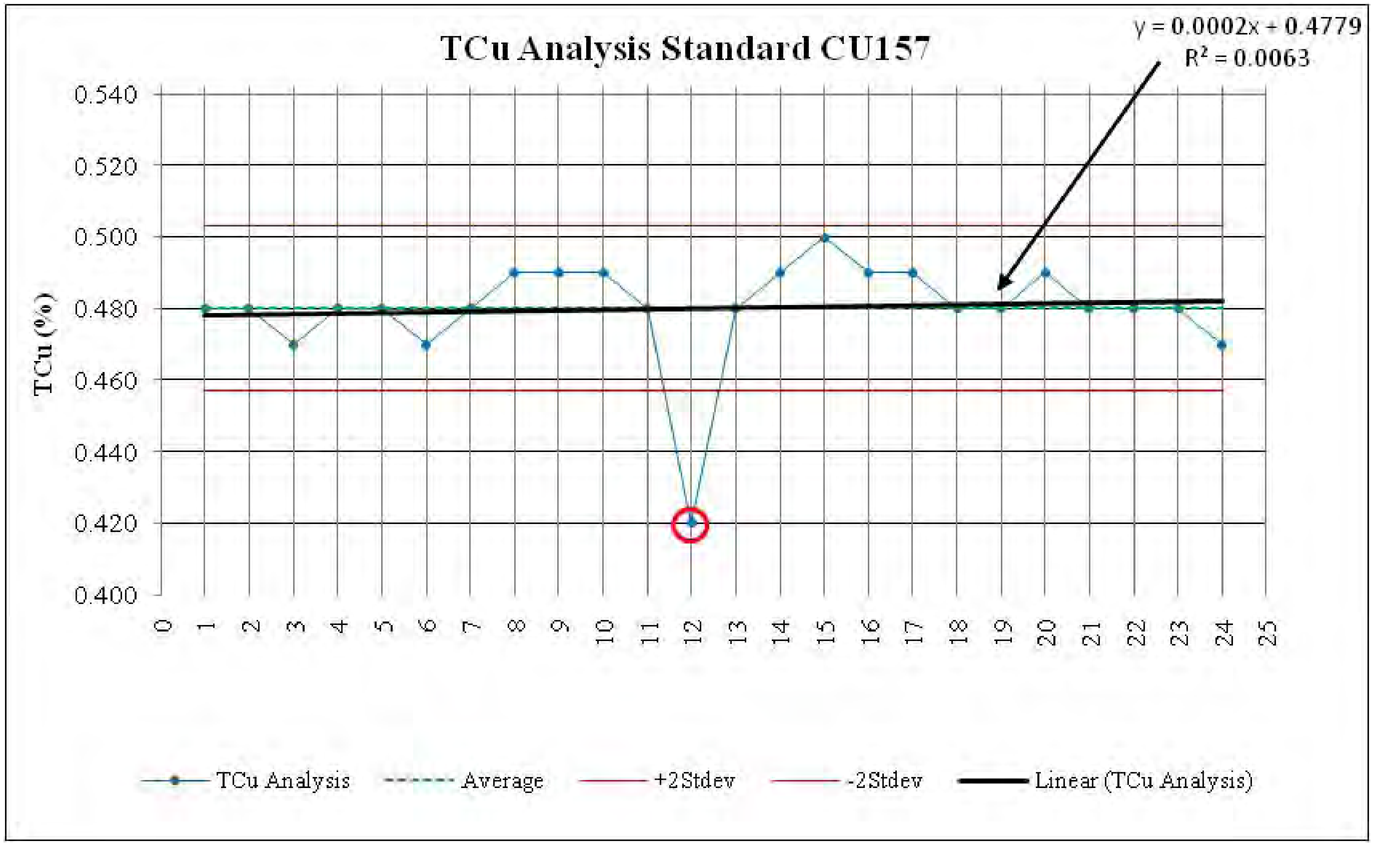
SRK JOB 191000.020	Sierra County, New Mexico	Copper Flat
FILENAME: Figure 11-7.docx		Mo Scatterplots for Field Duplicates

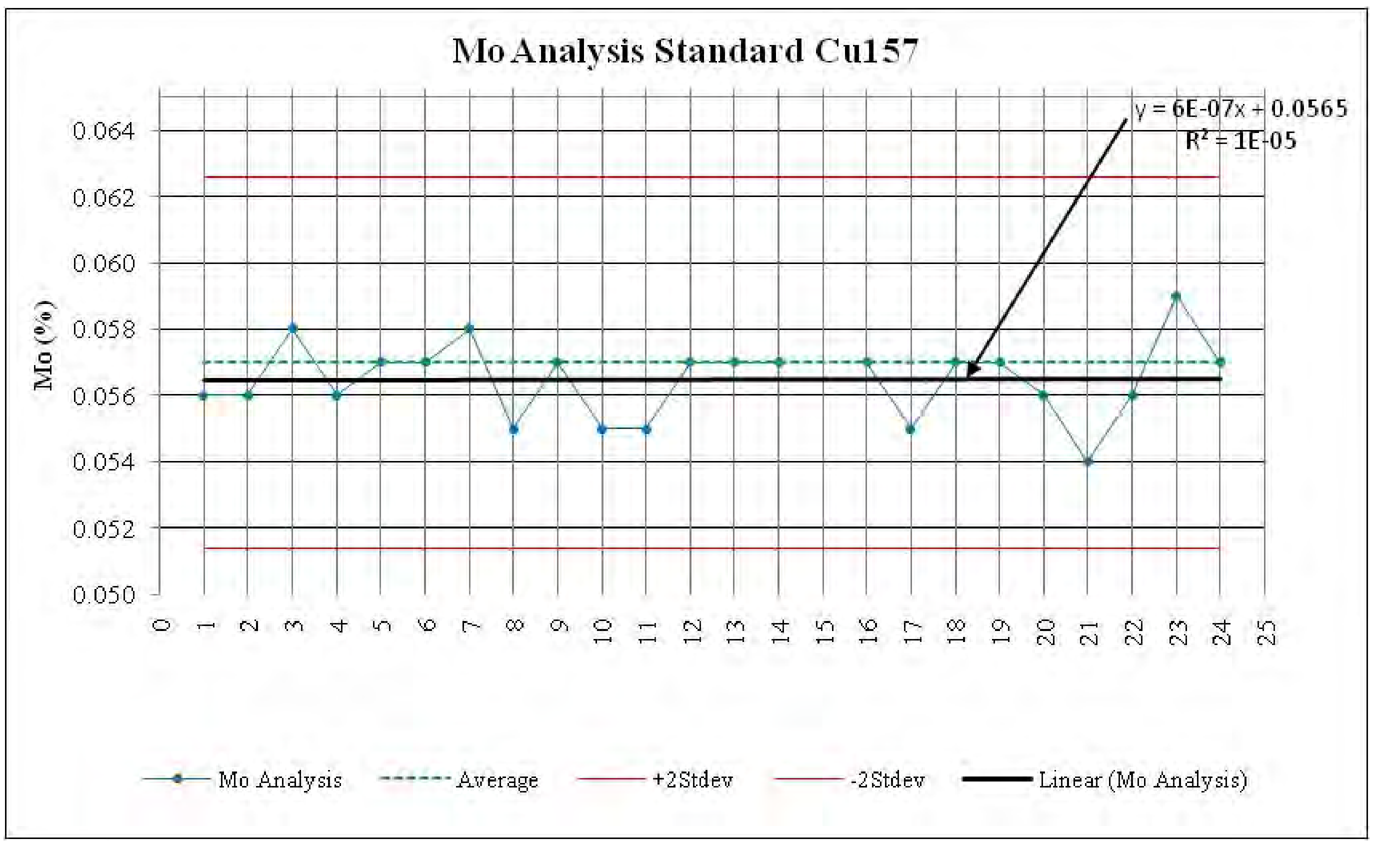
DATE:	APPROVED	FIGURE:	REVISION
6/18/2010	APPROVED	11-7	A





SRK Consulting Engineers and Scientists		Copper Flat			
		Plot of CU152 for Cu and Mo			
SRK JOB 191000.020	Sierra County, New Mexico	DATE: 6/18/2010	APPROVED APPROVED	FIGURE: 11-8	REVISION A
FILENAME: Figure 11-8.docx					





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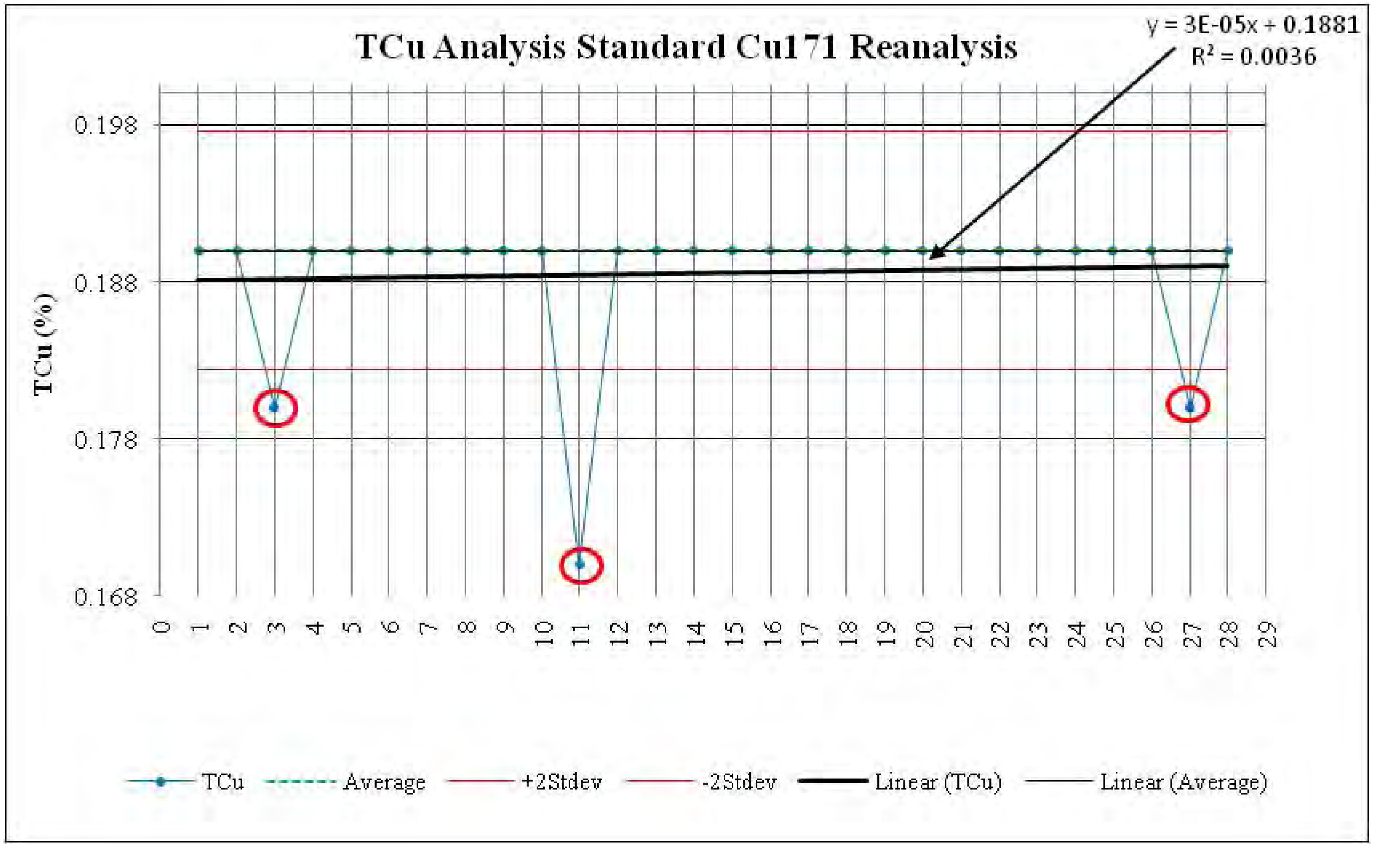
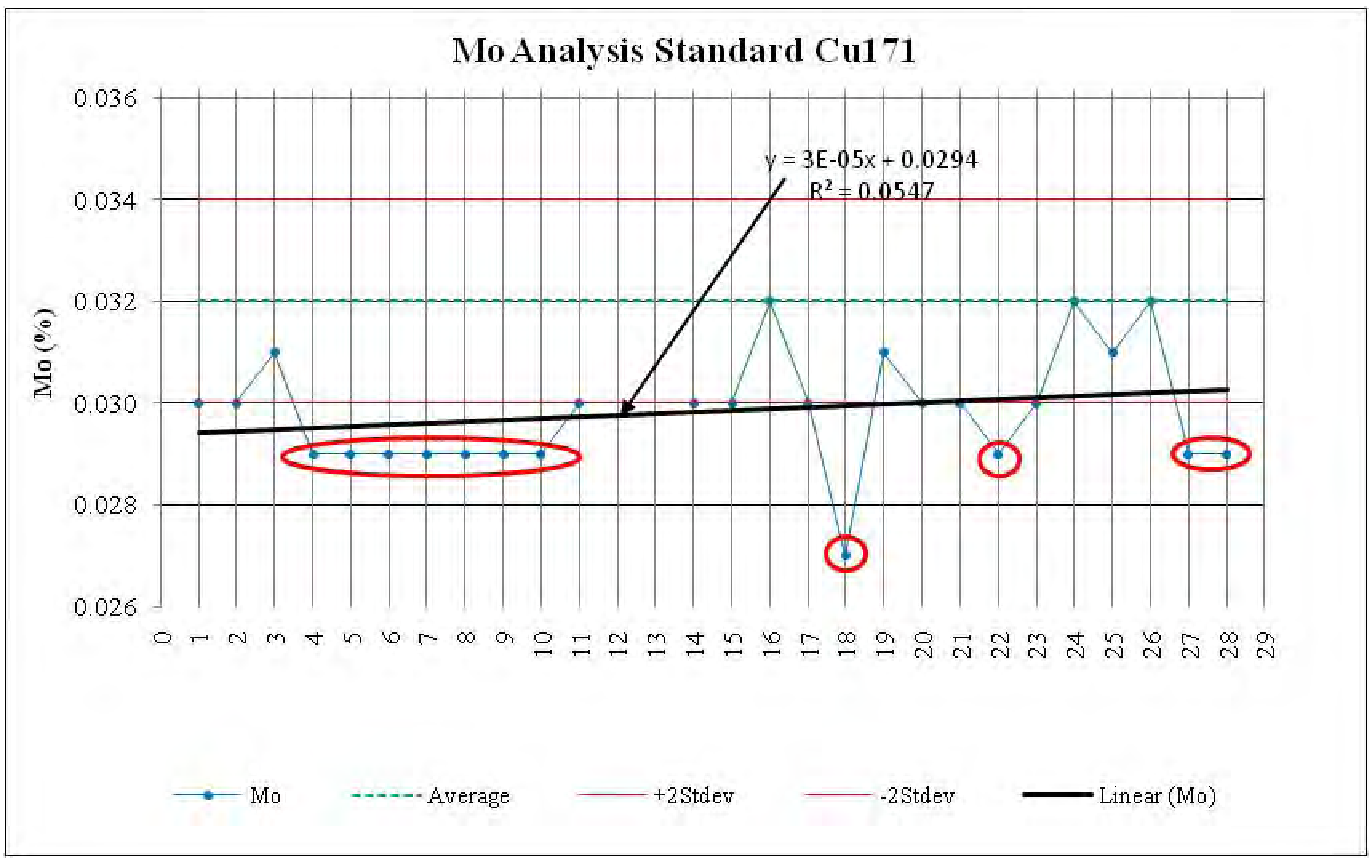
Copper Flat

Plot of CU157 of Cu and Mo

Sierra County, New Mexico

SRK JOB	191000.020	DATE:	APPROV	FIGURE:	REVISIO
FILENAME:	Figure_11-9.docx	6/25/2010	APPROVED	11-9	A





SRK Consulting Engineers and Scientists		Copper Flat			
		Plot of CU171 of Cu and Mo			
SRK JOB 191000.020	Sierra County, New Mexico	DATE: 6/18/2010	APPROV APPROVED	FIGURE: 11-10	REVISIO A
FILENAM Figure 11-10.docx					

12 Data Verification (Item 16)

As part of data verification by SRK, historic drilling data was reviewed, and although none of the original assay certificates have been located, approximately 10% of the pulp and core duplicate pulps archived on site were re-assayed for copper and molybdenum by NMCC at SRK's request. The re-assay data have been validated by SRK and SRK is of the opinion that the results show good reproducibility compared with the historic data provided. Further, SRK is of the opinion that the data is suitable for use in resource estimation. SRK reviewed the results of the reanalysis, which is discussed in Section 11.

SRK did not independently collect samples for assay.

13 Adjacent Properties (Item 17)

Adjacent lands include federal, state and private property. Federal lands are administered by the BLM. In addition, there are several placer claims held by clubs for recreational collecting, which represent surface mineral concentrations.

There are no known adjacent properties with mineralization similar to that of the Project.

14 Mineral Processing and Metallurgical Testing (Item 18)

The Copper Flat deposit is a porphyry type deposit occurring in a small quartz monzonite porphyry stock that has intruded the center of a circular andesite plug. The primary copper mineral is chalcopyrite. By-product values are contained in molybdenum, gold, and silver.

Historically, bench-scale and pilot-plant scale testing was undertaken to develop design data and commercial plant which was to produce copper and molybdenite concentrates.

14.1 Bench-Scale Testing

Extensive metallurgical studies have been undertaken on large samples in the 1970's, namely 80st and 70st of breccia and quartz monzonite samples. The head grades of the samples were 0.50% Cu and 0.017% Mo for the breccia and 0.47% Cu and 0.021% Mo for the quartz monzonite. These grades corresponded well with the estimated head grades for the first few years of production. Locked-cycle testing undertaken at Colorado School of Mines Research Institute indicated that the copper concentrate contained 0.16 to 0.23oz/st of gold and 4.73 to 5.23oz/st of silver. The results indicated that over 50% of the gold and over 90% of the silver reported to the Cu-Mo concentrate when ore is processed in the flowsheet developed for the Copper Flat Concentrator. It should be noted, however, that in Pincock, Allen and Holt's, March 1979 technical report entitled, *Review of Selected Metallurgical test Information, Copper Flat Project*, that analytical problems were recorded as being present due to then existent difficulties (in the 1970's) in assaying with precision and accuracy with the gold and silver levels near to the detection limits.

The process flowsheet consisted of crushing and grinding ore followed by bulk Cu-Mo rougher flotation. The bulk rougher flotation concentrate was reground and subjected to two stages of cleaner flotation. The cleaner concentrate was sent to a Cu-Mo separation circuit using a standard scheme of depressing copper with NaHS and floating Mo. The flotation tailing from the Cu-Mo separation circuit was the final copper concentrate assaying 28% Cu. The rougher molybdenite concentrate was reground and cleaned to produce a saleable product.

14.2 Copper Flat Concentrator

Quintana Minerals, in partnership with Phibro Mineral Enterprises, designed and built the concentrator in 1982 with the rated capacity of 15,000st/d. Copper concentrates were shipped to the ASARCO smelter in El Paso, Texas. After only three months of operation the mine was closed due to lower copper prices and higher interest rates. The mill was later disassembled and sold.

The copper flat concentrator processed 327,205st of ore in June 1982, considered a representative month, to produce 4,518t of concentrate with a grade of 0.18oz/st of gold and 4.3oz/st of silver. The head grade was 0.44% Cu and the calculated head grade of gold and silver were 0.005oz/st and 0.066oz/st, respectively.

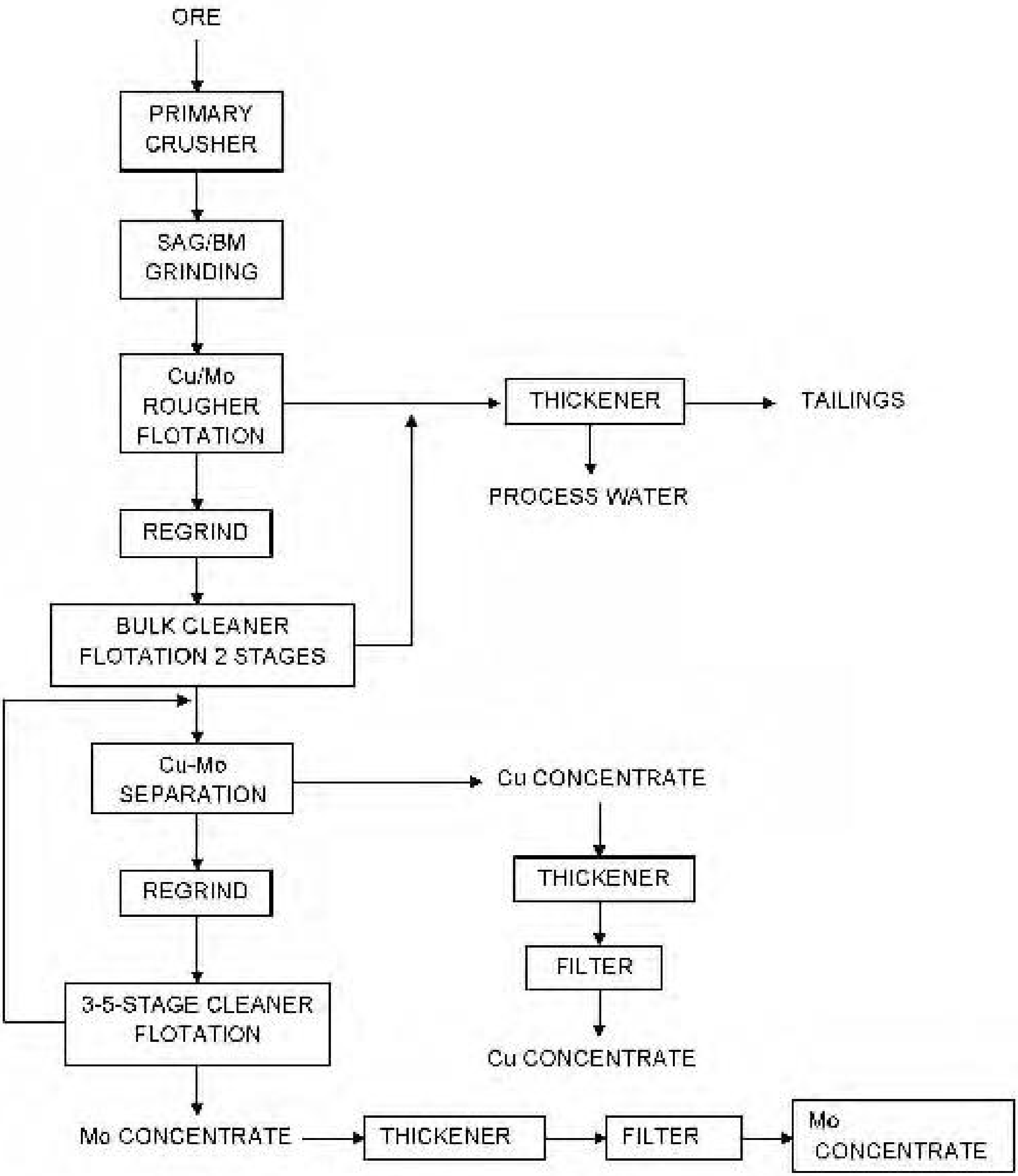
The copper recovery in the concentrate steadily improved during the operation of the mill reaching 92% in June 1982. The molybdenum circuit operated for only a short time in 1982 producing a 46% Mo concentrate without the final cleaning stage. With a longer operating period, the plant could have achieved a saleable molybdenum concentrate product (>50% Mo) at an overall plant recovery of 62%. This is consistent with plant practices and recoveries for similar by-product operations.

14.3 Conceptual Process Flowsheet

The conceptual process flowsheet was developed for processing 17,500st/d of ore with an overall availability factor of 93%. The basis for the flowsheet and the capital and operating cost are given in Table 14.3.1. The simplified process flowsheet is given in Figure 14-1. The process flowsheet is very similar to the one developed by Quintana Minerals Corp. The major equipment is also the same size as originally installed by Quintana Minerals Corp. The present flowsheet design incorporates modern equipment where applicable. For example, larger flotation cells have been selected for the rougher flotation, bulk cleaner flotation cells are column cells and tower mills replaced the regrind mills. The design incorporated in this study is considered "Standard" practice in the mining industry.

Table 14.3.1: Design Parameters for the Conceptual Process Flowsheet

Item	Amount
Tonnage/day	17,500
Availability	93%
Tones/hr	784
Feed grade	
% Cu	0.425 (av. 0.391)
% Mo	0.013 (av. 0.012)
Cu Concentrate Grade	
% Cu	28
Mo Concentrate Grade	
% Mo	>50
Concentrate Tonnage/day	
Cu	220
Mo	2.6
Cu Recovery %	
Cu	92
Mo	62
Au	>50
Ag	90



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SRK JOB NO.: 191000.020	Sierra County, New Mexico	Copper Flat Project
FILENAME: Figure_14-1.docx		Conceptual Process Flowsheet for Cu-Mo Flotation Plant

DATE:	APPROVED:	FIGURE:	REVISION NO.:
20100526	APPOVED	14-1	REV A

15 Mineral Resources (Item 19)

The mineral resource estimate was prepared by Jeffrey Volk, FAusIMM, CPG, Principal Resource Geologist at SRK Denver. Grade estimations are made from a three-dimensional block model based on grade assignments using commercial mine planning software (Vulcan® v7.5 build 627). The project limits are based in the NAD27 (New Mexico West Zone) State Plane coordinate system, using a block size of 50 x 50 x 30ft. Copper mineralization at Copper Flat is constrained within both the monzonite porphyry and the cross cutting brecciated rocks. Historic drillholes are vertical, and copper mineralization tends to exhibit an annular shape within the porphyry, which is cut by breccia mineralization defined along a relatively consistent WNW-trending higher-grade zone.

The resource estimate has been generated from composites derived from drillhole sample assay results, and is constrained by 0.12% and 0.3% Cu 3-D grade solids constructed by NMCC personnel. No geologic model was utilized in the resource estimation. Grade interpolation has been defined based largely on the geology, drillhole spacing and geostatistical analysis of the data. The resources have been classified by their proximity to the sample locations and number of drillholes used to inform the blocks. SRK finds the resource model and resource classification to be acceptable for resource reporting under CIM guidelines.

15.1 Drillhole Database

The final Copper Flat database was received from NMCC on March 24, 2010 and comprises historic data from drilling programs conducted by Inspiration, Quintana Minerals and Tenneco, as well as a seven-hole confirmation program conducted by NMCC in 2009-2010. The assay data was obtained by NMCC from historic files (PAH), an archived database recovered from Alta Gold's mine engineering computer obtained from a former Alta Gold employee. This drilling data has been reviewed by SRK and although none of the original assay certificates have been located, approximately 10% of the pulp and core duplicate pulps archived on site were re-assayed at SRK's request. The re-assay data have been validated by SRK, and SRK is of the opinion that the results show good reproducibility compared with the historic data provided, and that the data is suitable for use in resource estimation. SRK was provided a database including collar, survey assay and lithology information for all available drillhole data on the property on March 24, 2010. This database comprises 191 drillhole and underground samples accounting for 134,610.2ft (41,029.19m) of drilling/underground drifting. Of this total, 127,658.8ft have non-zero values for total copper. The average non zero assay interval is 8.93ft, with minimum and maximum assay intervals of 0.9 and 132.0ft, respectively, for a total of 14,297 assay determinations.

Drilling was conducted during 1968-1973 by Inspiration, 1974-1979 by Quintana Minerals and during the early 1990's by Newmont and Tenneco. An assay QA/QC program was reportedly implemented during active drilling campaigns. This program included internal re-assays, submission of standards and systematic check assays sent to external laboratories. None of this historic information was available for review by SRK, and therefore no conclusion can be drawn regarding the precision and accuracy of the historic assays. However, a rigorous QA/QC program was implemented for both the 2009-2010 drilling program and the pulp re-assay program. SRK has reviewed the results of this program, and is of the opinion that the results confirm that the data are of high quality and suitable for use in resource estimation.

All of the historic drilling was oriented vertically. Down-hole survey information for the 2009-2010 angle-drilling program was conducted using a Reflex EZ-Shot® survey instrument, with readings conducted on an average of 100ft intervals down hole.

15.2 Coordinate System

All drilling data as well as the digital vertical sections and corresponding grade wireframes have been provided to SRK in New Mexico State Plane West Zone coordinate system using the NAD27 datum. Resource modeling and grade estimation work has been conducted in this coordinate space. At SRK's request, NMCC resurveyed collar coordinates in March 2010 using static GPS observations and OPUS, conducted by Richter Land Surveying. Based on observed discrepancies between the historic topographic surface and the historic drillhole collar locations, a global transformation of the historic collar locations was conducted, based on the results of the 2010 resurvey.

15.3 Overburden and Topography Surface

A wireframe digital terrain model (DTM) surface of the original (pre-mining) topography was provided by NMCC covering the deposit area. An additional surface was provided for current (post-mining) topography. The source of these data is unknown. A visual comparison between the drillhole collars and the provided pre-mining topography shows good agreement in un-mined areas. However, visual inspection of the drillhole collar elevations and the post-mining topographic surface shows some discrepancies, with all of the new drill collars located above the provided post-mining surface. SRK considers that the topography as provided digitally by NMCC is reasonably accurate and appropriate for use in resource estimation. No overburden surface exists, and past mining operations have removed much of the surficial material originally present at the start up of production.

Based on the survey discrepancies as described above, SRK recommends that NMCC obtain a high resolution survey of the property area prior to proceeding with Pre-Feasibility Study and detailed design work.

15.4 Geology and Grade Modeling

No detailed geologic logs are available for most drillholes in the provided database. Although photographs (slides) of most of the drillholes have been located, none of these data have been compiled into a digital database. SRK recommends that the detailed geologic logs be generated from these archived slides, and compiled into the current digital database, for use in future resource estimation and data analysis.

In order to constrain grade estimation, grade polygons were constructed in 100ft spaced N-S sections using a nominal 0.12% Cu cut-off. Additional higher-grade polygons were constructed using a nominal 0.3% Cu cut-off in order to better restrict a geologically continuous higher-grade core of the deposit. Due to rapid geometric changes encountered between sections, connecting these polygons into a continuous 3-D shape proved extremely difficult. As an alternative, the polygons were extruded laterally +/- 50ft to allow for the creation of a continuous 3-D solid to constrain grade estimation. SRK recommends that NMCC geologists construct 3-D solids reconciled in plan and section for the next generation of resource estimation. SRK also recommends that NMCC develop a 3-D geologic model to better constrain grade estimation, as well as to allow more flexibility in the assignment of density.

A computer generated limiting shell was constructed to constrain the molybdenum grade estimation to a maximum distance of 125ft from all drillholes. These solids were generated using Leapfrog software. SRK recommends that manual grade shapes be constructed for molybdenum at possibly a lower cut-off prior to the next resource estimate.

15.5 Exploratory Data Analysis

The raw copper assay dataset was inspected for the presence of high-grade outlier values that could adversely impact grade estimation. After review of log probability plots, all raw copper assays were capped at 2.0% Cu (99.59th percentile of the distribution). This resulted in the capping of 60 assays (530.2ft of sampling). A similar analysis was conducted for the raw molybdenum data. Based on this analysis, all raw molybdenum data was capped at 0.315% Mo (99.64th percentile of the distribution). This resulted in the capping of nine assays (123ft of sample. All data was capped prior to compositing.

SRK is of the opinion that the statistical distributions of copper and molybdenum are reasonably well behaved, and copper assay capping has resulted in a 1.17% reduction of metal and a corresponding reduction of 1.75% for molybdenum on a grade-thickness basis. Log probability plots for raw copper and molybdenum assays are provided in Figures 15-1 and 15-2, respectively.

15.6 Compositing

All raw copper assay data was composited into 30ft down-hole lengths. Molybdenum assay data was composited using 30ft bench composite lengths, primarily due to the difference in grade estimation procedures. The composite length was selected to reflect the anticipated selective mining unit (SMU), with mining currently envisioned using a 30ft bench height. Several holes were randomly selected and the composited values were checked for accuracy. No errors were found.

Composites were back-flagged using the three 3-D solids (for copper above and below the 0.3% Cu cut-off, and for molybdenum), and were identified as to which solid they were situated in for retrieval during the grade estimation procedures.

15.7 Specific Gravity

SRK was provided with a database consisting of 104 bulk density determinations conducted by NMCC using the wet immersion method. Although there appears to be a loose relationship between lithology and density, the absence of a 3-D geologic model precluded the possibility of applying density as a function of rock type. Given the relatively narrow range between minimum and maximum values (2.39 to 3.29g/cm^3), SRK assigned a global density of 2.64g/cm^3 to all blocks based on the average value of the data provided. This average appears reasonable, given the range of rock types present within and surrounding the mineralized zone at Copper Flat.

15.8 Variogram Analysis and Modeling

In order to assess the independent controls, variograms were generated using the commercial software package Sage 2001© developed by Isaacs & Co. Multidirectional variograms were generated for composited copper sample data. One variogram was produced from all of the data contained within the 0.12% and 0.3% copper grade solids. The results are summarized in Table

15.8.1. The experimental variograms are provided in Appendix D. An experimental 3-D omni-directional correlogram was also generated, to be used as a basis for resource classification.

Table 15.8.1: Correlogram Parameters – Copper: Composites Internal to Copper Grade Solids

Zone				1st Structure			2nd Structure		
	Nugget	S1	S2	Range (ft)	AZ(deg)	Dip (deg)	Range (ft)	AZ (deg)	Dip (deg)
All data	0.185	0.389	0.337	245	183	71	579	95	87
	Spherical Models			60	36	16	435	92	-3
				198	123	-10	145	2	0

(Correlograms conducted on 30ft DH composite data.)

The shorter range orientation (first structure) appears to be geometrically compatible with the higher grade breccia mineralization, while the longer range orientation (second structure) appears related to the more annular and peripheral porphyry mineralization.

An omni-directional semivariogram of 30ft molybdenum bench composites showed a range of approximately the average drillhole spacing of 125ft.

15.9 Block Model Limits

A regular celled block model was created in Vulcan™ software using the parameters presented in Table 15.9.1.

Table 15.9.1: Copper Flat Block Model Specifications

Axis Direction	Minimum (ft)	Maximum (ft)	No. of Parent Blocks
X	590,600	593,800	64
Y	714,850	718,350	70
Z	4,000	5,800	60

A block size of 50ft x 50ft x 30ft was chosen, and is considered appropriate with respect to the current drillhole spacing as well as the SMU size typical of an operation of this type and scale.

All blocks were back flagged using the grade solids to assign percentage of block within the 0.12% and 0.3% Cu shapes. Blocks with less than 10% by volume internal to the low-grade shape were excluded from grade estimation.

15.10 Grade Estimation

Block grades for copper were estimated by inverse distance weighing (IDW, to the second power), and all block grade estimates were made using length weighted composite drillhole data. Grade estimates within blocks occurring along the low-grade/high-grade boundary were assigned a grade estimate using both the high-grade composite data and a separate grade estimate using only the low-grade composite data. The resultant block grade was calculated by weight averaging the high-grade and low-grade estimates using the proportion of the block in each of the two grade shapes as a weighting factor. The interpolation parameters are summarized by domain in Table 15.10.1. The block grades were then diluted along the edges of the low-grade solid to account for the volume of the block external to the mineralized solid.

Table 15.10.1: Interpolation Parameters for Copper

Search Pass	Search Ellipse Range (ft)			No. Composites			Search Orientation
	X	Y	Z	Min/block	Max/block	Max/hole	
1	120	100	30	2	8	1	First Structure
2	240	200	60	2	8	1	Second Structure
3	480	400	150	1	8	1	Second Structure

An additional search pass was conducted to assign nearest neighbor (NN) grades for model validation.

Block grades for molybdenum were estimated by IDW to the second power. The grade estimation was confined within a hard boundary solid constructed 125ft from all drillholes. The blocks were estimated from 30ft bench composites. A three-pass estimation method was used. The first pass assigned grade to all blocks containing a composite based on that composite's grade. The second pass required a minimum/maximum of 5/15 composites, from at least three drillholes in three octants using a 250ft isotropic search. The third pass was used to estimate blocks surrounding isolated drillholes.

Therefore, no resource estimation was conducted by SRK for gold or silver as part of the PEA, due to lack of sufficient data from the historic drilling programs. This situation determined that any current resource estimation for gold and silver would not be compliant with NI 43-101 requirements. Nevertheless, SRK recommends that additional assaying be conducted for gold and silver in areas of known precious metal occurrence, and that future metallurgical testwork address the recovery of these potentially economic secondary metals.

All block grades were diluted to the full parent cell dimensions, using the percentage of block internal to the 0.12% Cu grade solid as a basis.

15.11 Model Validation

Various measures have been implemented to validate the resultant resource block model. These measures include the following:

- Comparison of drillhole composites with resource block grade estimates from all zones both visually in plan and section;
- Statistical comparisons between block and composite data using histogram and cumulative distribution analysis;
- Generation of a comparative nearest neighbor model; and
- Swath plot analysis (drift analysis) comparing the IDW (to the second power) model with the nearest neighbor model.

15.11.1 Visual Inspection

Visual comparison between the block grades and the underlying composite grades in plan and section show close agreement, which would be expected considering the estimation methodology employed. An example cross section and level plan showing block grades, composite grades and resource pit outline are provided in Figures 15-3 and 15-4, respectively.

15.11.2 Block-Composite Statistical Comparison

SRK also conducted statistical comparisons between the undiluted IDW block grades (Measured, Indicated and Inferred contained within the resource pit) and the underlying composite grades (Figure 15-5). This comparison shows that the model grade distribution is appropriately smoothed when compared with the underlying composite distribution, and that the comparison of average grades and percentages above cut-offs (at incremental cut-offs) show close agreement.

15.11.3 Comparison of Interpolation Methods

For comparative purposes, additional grades were estimated using nearest neighbor (NN) interpolation methods. The nearest neighbor model was estimated using no “soft” boundary constraint as was applied to the IDW model. The results of the NN model are compared to the IDW model at a zero percent Cu cut-off grade in Table 15.11.3.1. It can be observed that the nearest neighbor model exhibits a ~7% increase in grade over the corresponding IDW model, due the removal of the “soft” 0.3% Cu boundary during grade estimation. The effect of this boundary removal is that blocks external to the 0.3% Cu boundary were allowed to be informed using copper grades internal to the higher-grade boundary, resulting in projection of these higher grades into the 0.12% Cu domain. This comparison shows that the IDW model is slightly conservative compared to the NN model, but appears to better constrain the higher-grade material.

Table 15.11.3.1: Comparison of Tonnage and Grade Above Zero Cu% Cut-off: IDW and Nearest Neighbor Models

Model	Cut-off	K-Tons	Cu (%)	Cu K-lbs
Measured and Indicated				
ID2	>=0	128,524	0.268	689,435
Nearest Neighbor	>=0	128,623	0.289	743,056
% Difference (ID2 - NN)		-0.08%	-7.69%	-7.78%
Inferred				
ID2	>=0	50,225	0.228	228,881
Nearest Neighbor	>=0	50,279	0.242	243,463
		-0.09%	-7.34%	-7.43%

15.11.4 Swath Plots (Drift Analysis)

A swath plot is a graphical display of the grade distribution derived from a series of bands, or swaths, generated in several directions through the deposit. Grade variations from the IDW model are compared (using the swath plot) to the distribution derived from the (NN) grade model.

On a local scale, the NN model does not provide reliable estimations of grade, but on a much larger scale it represents an unbiased estimation of the grade distribution based on the underlying data. Therefore, if the IDW model is unbiased, the grade trends may show local fluctuations on a swath plot, but the overall trend should be similar to the NN distribution of grade.

Swath plots have been generated in three orthogonal directions for distribution of copper in the Copper Flat deposit. Swath plots for copper along the EW, NS and vertical directions are shown in Figures 15-6 through 15-8, respectively. A similar analysis was conducted for the molybdenum grade estimate, with an example provided in Figure 15-9.

There is good correspondence between both models in all orthogonal directions. The degree of smoothing in the IDW model is evident in the peaks and valleys shown in the swath plots, however, this comparison shows close agreement between the IDW and NN models in terms of overall grade distribution as a function of X, Y and Z location.

15.12 Resource Classification

The mineral resources at the Copper Flat deposit have been classified in accordance with the CIM definition standards for mineral resources and mineral reserves. The classification parameters are defined in relation to the block-composite separation distance based on distances derived from an experimental 3-D omni-directional correlogram, and are intended to encompass zones of reasonably continuous mineralization. The 3-D omni-directional correlogram is provided in Figure 15-10. Due to the lack of, historical production data, no blocks have been classified as Measured.

Indicated Mineral Resources – Blocks in the model which has been estimated using a minimum of two drillholes which are at maximum average block-composite separation distance of 185ft.

Inferred Mineral Resources – Blocks in the model that do not meet the criteria for Indicated resources but are within a maximum average distance of 380ft from one or more drillholes.

15.13 Mineral Resource Statement

The mineral resources for the Copper Flat copper deposit, located in the Las Animas mining district in south central New Mexico, have been estimated by SRK at 107Mst grading an average of 0.303% copper classified as Indicated mineral resources with an additional 46Mst grading an average of 0.240% copper classified as Inferred mineral resources. The resource is stated above a 0.12% copper cut-off and contained within an open pit.

The mineral resources are reported in accordance with Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) and have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resource will be converted into mineral reserves. The resource estimate was completed by Jeffrey Volk, CPG, FAusIMM, an independent Qualified Person, as this term is defined in NI 43-101. The effective date of this resource estimate is May 6, 2010 and is based on data received by SRK in March 2010. The mineral resource statement for the Copper Flat copper project is presented in Table 15.13.1.

Table 15.13.1: SRK Mineral Resource Statement, Copper Flat Deposit*, May 6, 2010

Resource Classification	Quantity (Mst)	Grade Cu (%)	Contained Metal Copper Cu (M-Lbs)	Grade Mo (%)	Contained Metal Molybdenum Mo (M-Lbs)
Indicated†	107	0.303	645	0.010	21.4
Inferred†	46	0.240	222	0.006	5.6

* Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates. The cut-off grades are based on metal price assumptions of US$3.50/lb of copper, and a metallurgical recovery of 90.9% for copper. Economic assumptions used for reporting molybdenum were a metal price of US$10.00/lb of molybdenum, and a metallurgical recovery of 54.3%. Gold and silver were not used in the pit limits optimization for reporting resources.
† Reported at a cut-off grade of 0.12 % Cu contained within a potentially economically open pit.

The mineral resources are reported at a cut-off grade to reflect the "reasonable prospects" for economic extraction. SRK considers that portions of the Copper Flat copper deposit are amenable to open pit extraction, and has not considered underground mining methods for deeper portions of the deposit.

The "reasonable prospects for economic extraction" requirement was tested by designing a series of conceptual open pit shells using the Lerchs-Grossman optimizing algorithm. These parameters were selected by SRK to represent an "optimistic" expectation reflecting the intent that the resource should comprise material that has the potential to be economically mineable in the future. The reader is cautioned that the results from this pit optimization are used solely for the purpose of reporting mineral resources that have "reasonable prospects" for economic extraction by an open pit. (This is separate from the pit optimization for PEA mine engineering that estimates potentially mineable material on a more conservative basis.) After review of several scenarios considering different metal prices, SRK assumed an "optimistic" copper price of US$3.50/lb. Other parameters included a metallurgical recovery for copper of 90.9%; mining costs of US$1.72/st mined; processing and G&A costs of US$5.49/st processed, and slope angles of 45º in all areas. The US$3.50/lb copper price was selected by SRK to represent an "optimistic" expectation reflecting the intent that the resource should comprise material that is potentially economically mineable in the future. (Pit optimization for PEA mine engineering purposes used a copper price of US$2.75/lb.)

15.14 Mineral Resource Sensitivity

In order to assess the impact of cut-off grade on contained metal, tonnage and grade were reported within the resource pit above a series of copper cut-offs (Tables 15.13.1 and 15.13.2). As can be observed from these estimates, the resource is relatively insensitive to cut-off grade in the 0.10 to 0.20% Cu range, which is likely the cut-off grade range of economic interest.

Table 15.13.1: Copper CoG Sensitivity Analysis within Resource Pit – Indicated Resources

Cut-off (Cu %)	Mst	Cu Grade (%)	Mlbs
>=0.05	119	0.280	665
>=0.1	110	0.297	653
>=0.15	99	0.316	624
>=0.2	77	0.355	548
>=0.25	54	0.411	443
>=0.3	37	0.473	351
>=0.35	26	0.537	279
>=0.4	19	0.601	225
>=0.45	14	0.663	183
>=0.5	10	0.724	152

Table 15.13.2: Copper CoG Sensitivity Analysis within Resource Pit – Inferred Resources

Cut-off (Cu %)	Mst	Cu Grade (%)	Mlbs
>=0.05	48	0.233	226
>=0.1	47	0.237	224
>=0.15	43	0.249	212
>=0.2	28	0.287	159
>=0.25	15	0.342	102
>=0.3	8	0.395	67
>=0.35	5	0.455	42
>=0.4	3	0.512	28
>=0.45	1	0.589	17
>=0.5	1	0.652	12

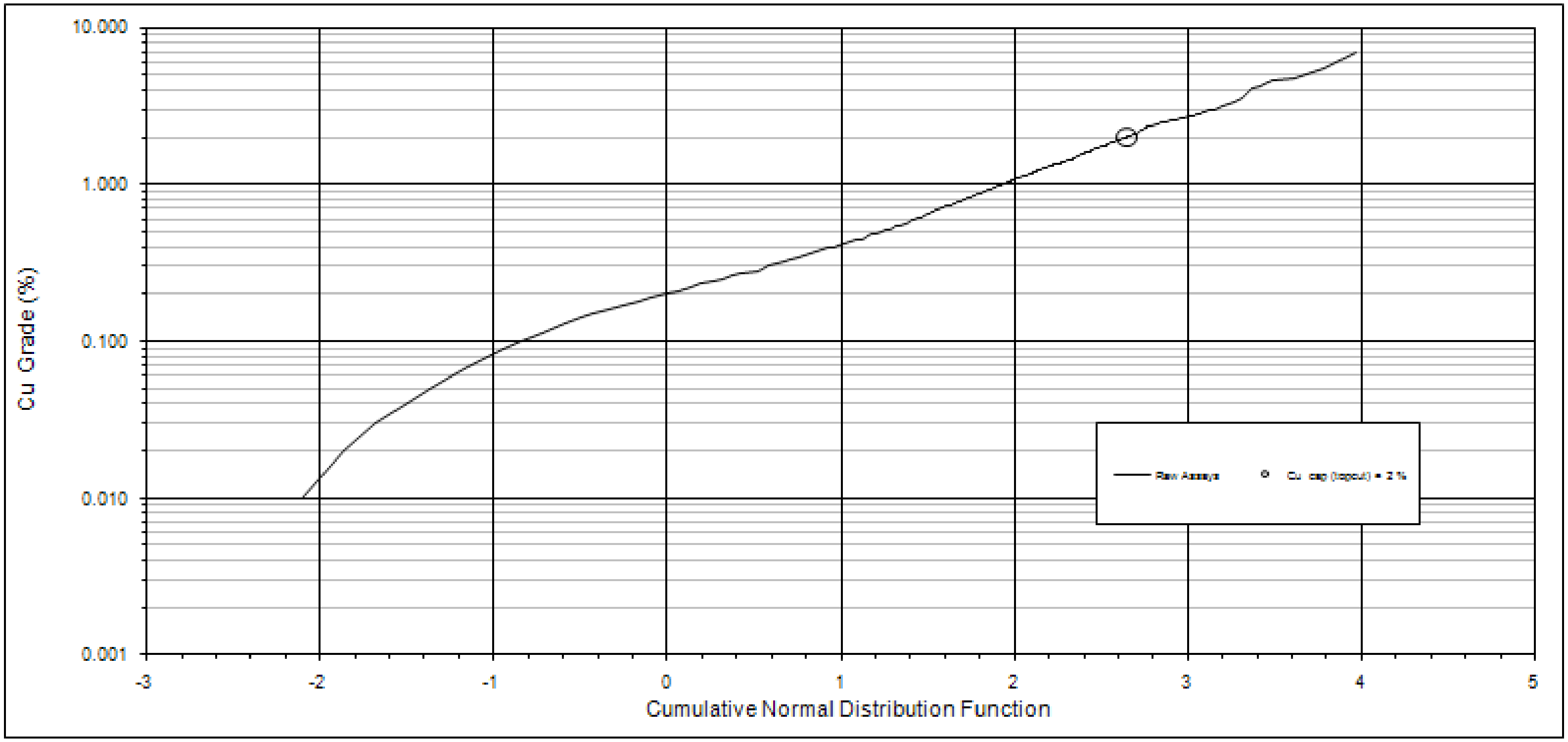
15.15 Discussion and Conclusions

The current resource is drill limited, both at depth and to the north and east. SRK recommends additional step out drilling to extend the current resource base, as well as resource conversion drilling to convert Inferred to Indicated resources.

Based on the minor discrepancies observed between the existing DTM for the present day topographic surface and the collar elevations measured from the recent drilling program, SRK recommends that NMCC acquire a high-resolution topographic survey prior to advancing the project through a Pre-Feasibility Study and subsequent detailed design work.

SRK also recommends that NMCC develop a 3-D geologic model to better constrain grade estimation for copper and molybdenum, as well as to allow more flexibility in the assignment of density.

Historic production has documented the occurrence of economic concentrations of gold and silver. The historic drilling programs did not typically include assaying for precious metals. SRK recommends a pilot precious metals re-assay program using historic pulps to assess potentially economic zones of gold and silver.



Untransformed Cu Statistics

	Cu Cutoff = 0.01 %		Cu Cutoff = 0.12 %		Cu Cutoff = 1.00 %		Cu Cutoff = 2.00 %	
	Meters	Cu (%)	Meters	Cu (%)	Meters	Cu (%)	Meters	Cu (%)
Raw Assays	129,666	0.277	100,487	0.339	3,536	1.536	550	2.767
incr. % and grade	22.5%	0.065	74.8%	0.295	2.3%	1.309	0.4%	2.767
low cut	0.01		25 g/mt percentile		GT lost by capping		percent of GT >= 7 g/mt	
			99.59%		1.17%		0.19%	
Cu cap (topcut)	2.00		percent of GT >= 2 g/mt		CV uncapped		CV capped	
			4.12%		1.06		0.95	

Log Normal Approximation Model

Mean	Standard Deviation	Third Parameter
-1.50	0.40	0.00

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Sierra County, New Mexico

Copper Flat Project

Log Probability of Raw Copper Assays

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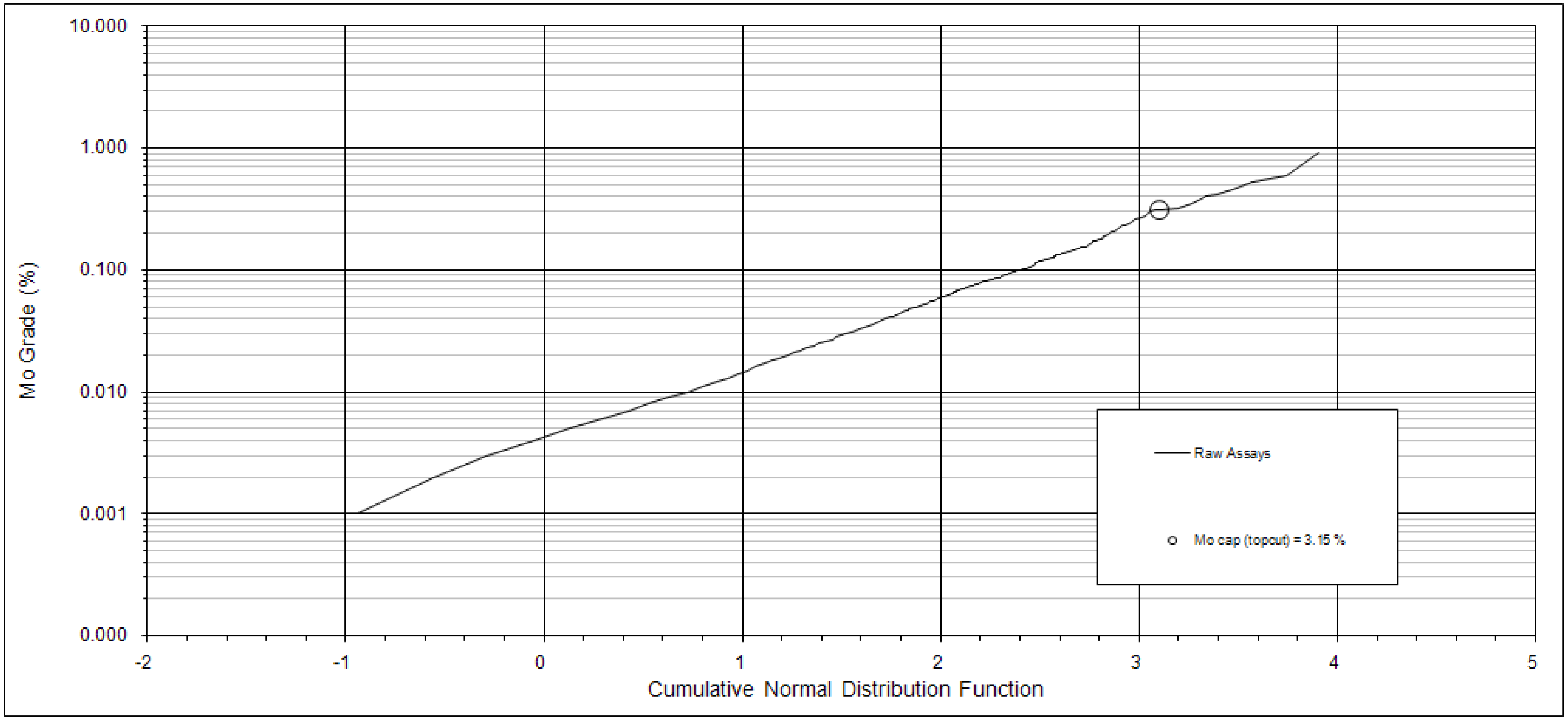
06/10/2010	APPROVED	15-1	A



Untransformed Mo Statistics

	Mo Cutoff = 0.001 %		Mo Cutoff = 0.005 %		Mo Cutoff = 0.010 %		Mo Cutoff = 0.315 %		Log Normal Approximation Model		
	Meters	Mo (%)	Meters	Mo (%)	Meters	Mo (%)	Meters	Mo (%)	Mean	Standard Deviation	Third Parameter
Raw Assays	118,899	0.010	61,977	0.018	31,401	0.029	123	0.444	-1.50	0.40	0.00
incr. % and grade	47.9%	0.002	25.7%	0.007	26.3%	0.027	0.1%	0.444			

		25 g/mt percentile	GT lost by capping	percent of GT >= 1 g/mt
low cut	0.01	99.64%	1.75%	1.12%
		percent of GT >= 0 g/mt	CV uncapped	CV capped
Mo cap (topcut)	0.315	5.71%	2.25	1.97

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SRK JOB NO.: 191000.020		Copper Flat Project
FILENAME: Figure_15-2.docx	Sierra County, New Mexico	Log Probability Plot of Raw Molybdenum Assays

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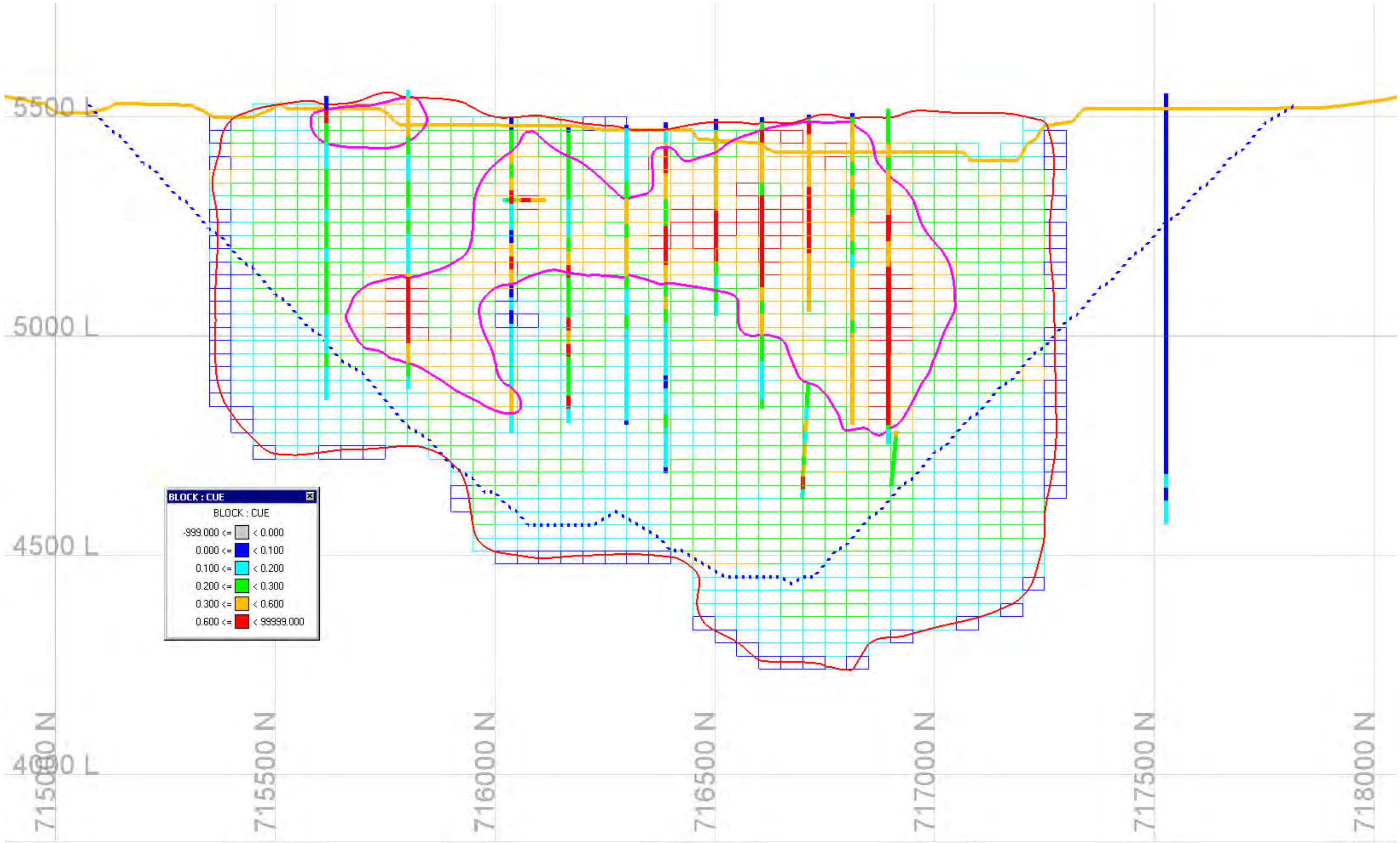
06/21/2010	APPROVED	15-2	A



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SRK JOB NO.: 191000.020	Sierra County, New Mexico	Copper Flat Project
FILENAME: Figure_15-3.docx		Example N-S Cross-Section 592,000E, Showing Block Grades, Composite Grades, Resource Pit Outline and 0.12% Cu Grade Shape

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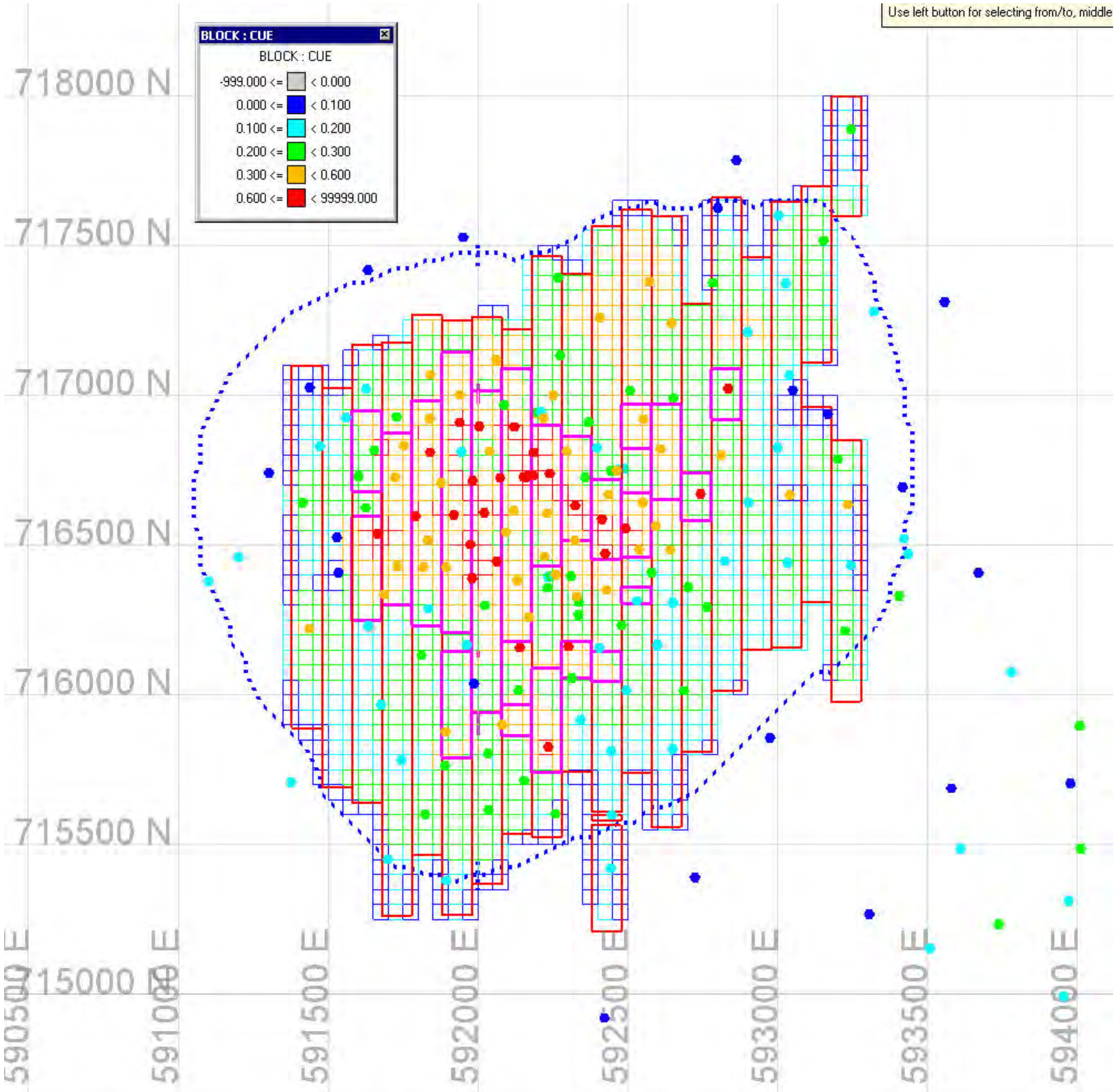
06/21/2010	APPROVED	15-3	A



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Sierra County, New Mexico

Copper Flat Project

Level Plan (5,200' elev.), Showing Block Grades, Composite Grades, Resource Pit Ouline and 0.12% Cu Grade Shape

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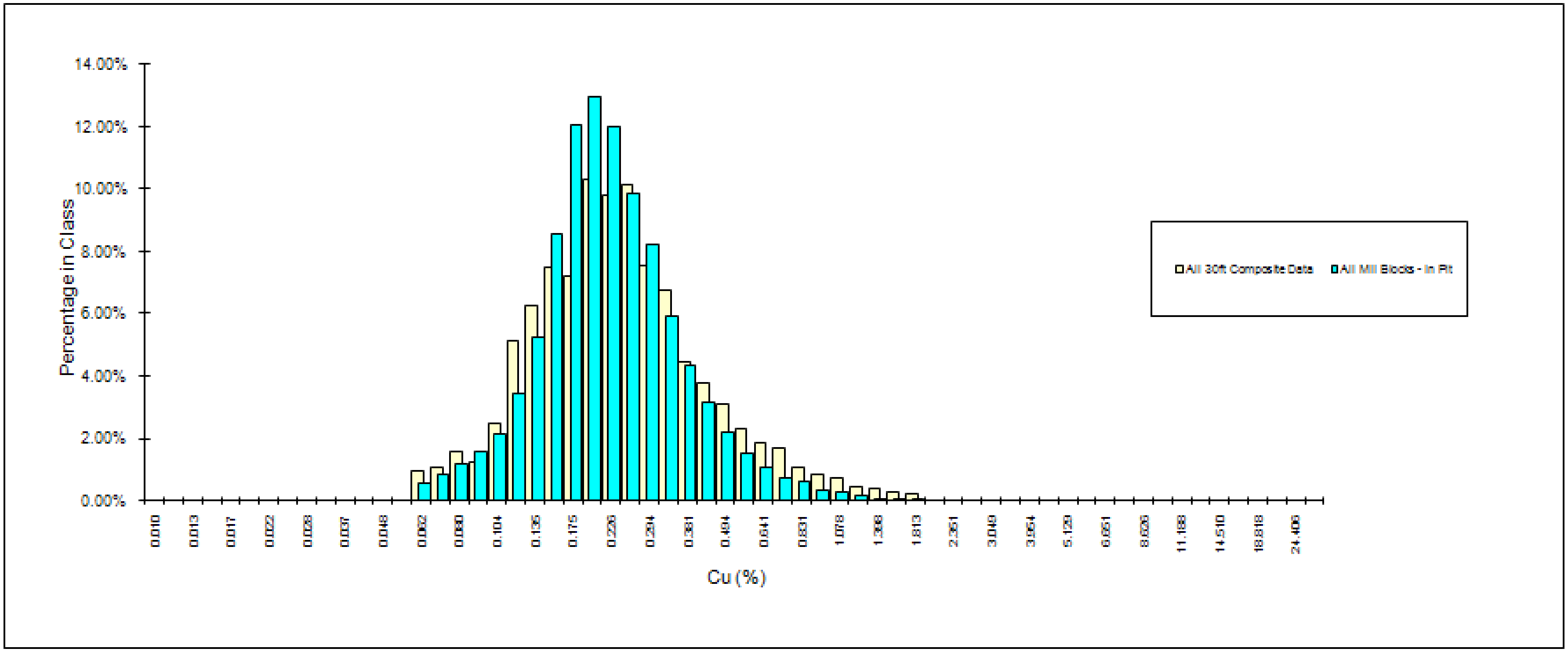

	Untransformed Cu Statistics								Log Normal Approximation Model		
	Cu Cutoff = 0.010 %		Cu Cutoff = 0.120 %		Cu Cutoff = 0.300 %		Cu Cutoff = 1.000 %				
	feet/tons	Cu (%)	feet/tons	Cu (%)	feet/tons	Cu (%)	feet/tons	Cu (%)	Mean	Standard Deviation	Third Parameter
All 30ft Composite Data	105,770	0.309	97,071	0.328	37,575	0.528	2,691	1.343	-1.50	0.50	0.00
incr. % and grade	8.2%	0.089	56.3%	0.202	33.0%	0.465	2.5%	1.343			
All Mil Blocks - In Pit	167,831,152	0.267	155,213,223	0.282	45,721,769	0.458	1,245,910	1.235			
incr. % and grade	7.5%	0.089	65.2%	0.208	26.5%	0.436	0.7%	1.235			

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FILENAME: Figure_15-5

Sierra County, New Mexico

Copper Flat Project

Histogram Comparison of Block Grade vs. Composite Grade Distributions: Copper

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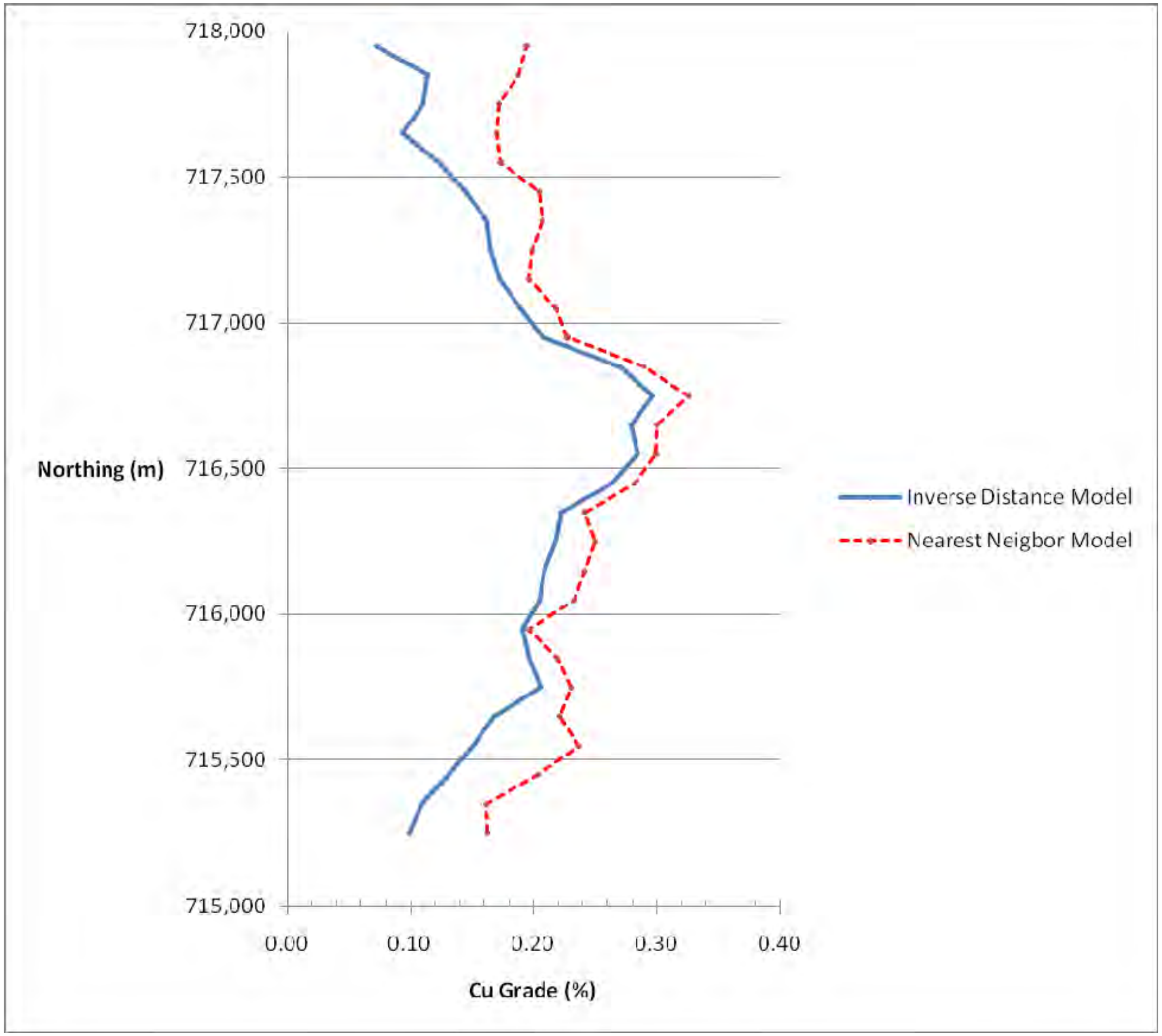

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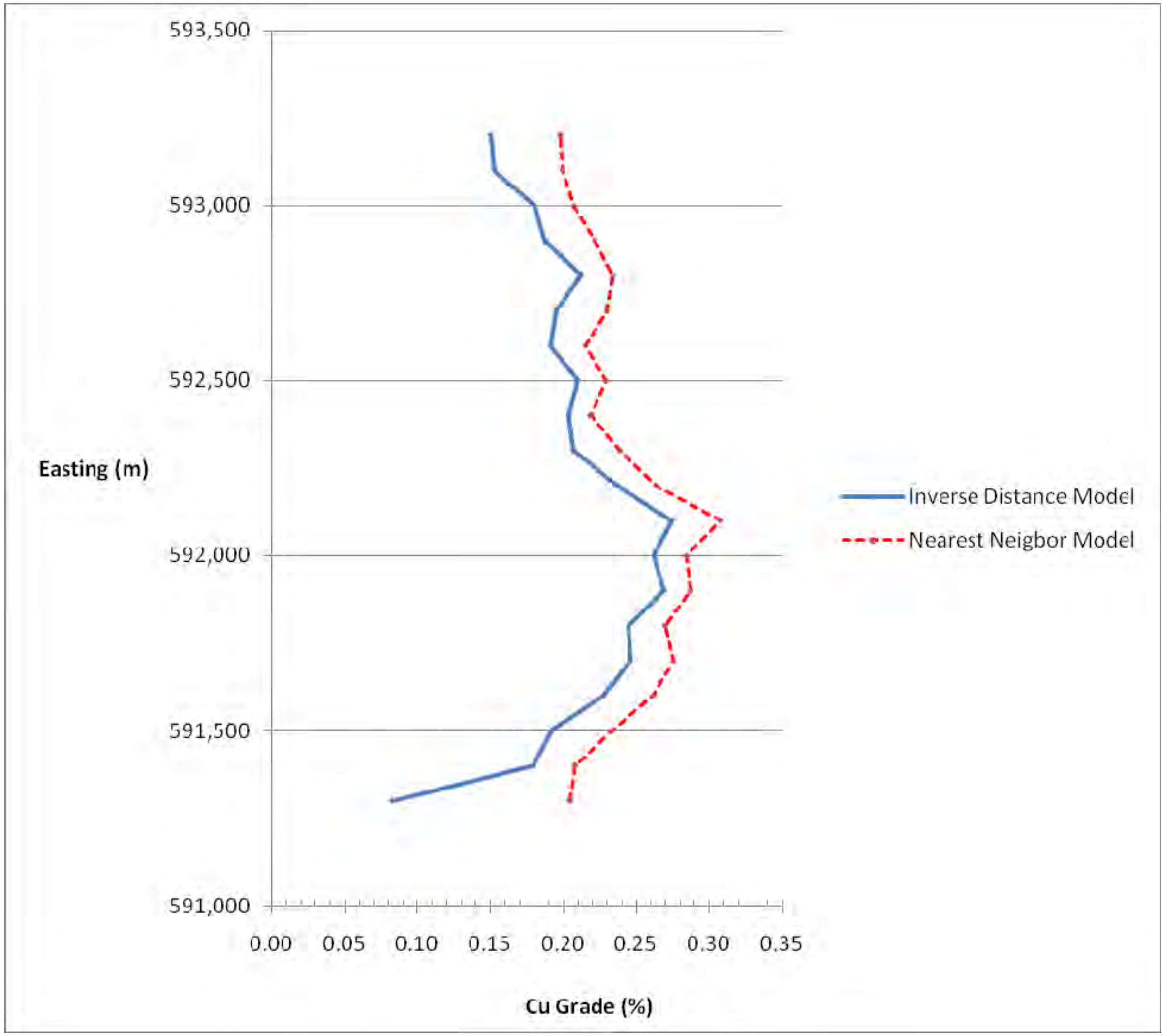
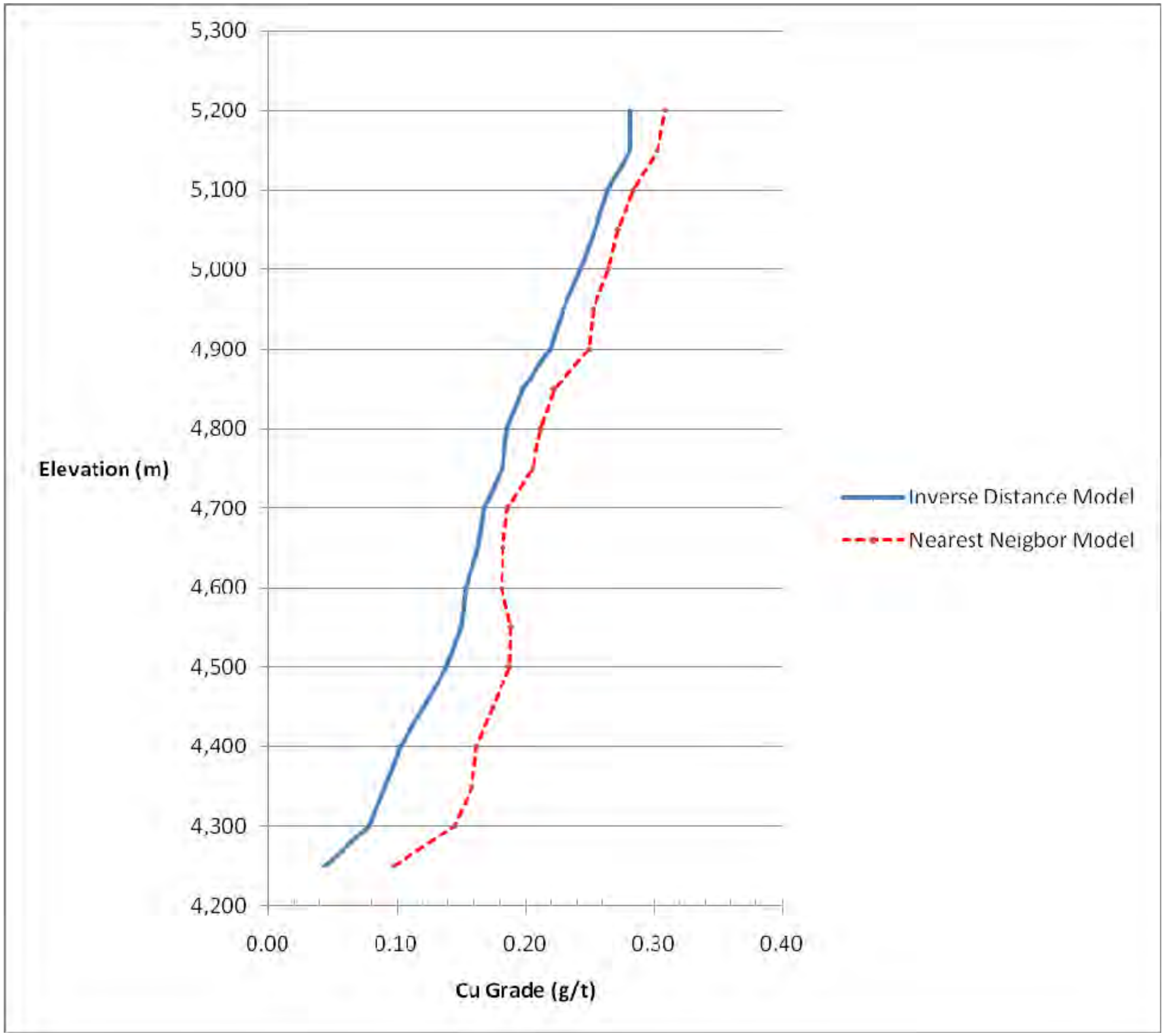
SRK JOB NO.: 191000.020	Sierra County, New Mexico	Copper Flat Project
FILENAME: Figure_15-6.docx		East-West Swath Plot - Cu Inverse Distance and Nearest Neighbor Models

DATE:	APPROVED:	FIGURE:	REVISION NO.:
06/10/2010	APPROVED	15-6	A



SRK Consulting Engineers and Scientists		Copper Flat Project
		North-South Swath Plot - Cu Inverse Distance and Nearest Neighbor Models
SRK JOB NO.: 191000.020	Sierra County, New Mexico	DATE: 06/10/2010
FILENAME: Figure_15-7.docx		APPROVED: APPROVED
		FIGURE: 15-7
		REVISION NO.: A



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SRK JOB NO.: 191000.020	Sierra County, New Mexico	Copper Flat Project
FILENAME: Figure_15-8.docx		Vertical Swath Plot - Cu Inverse Distance and Nearest Neighbor Models

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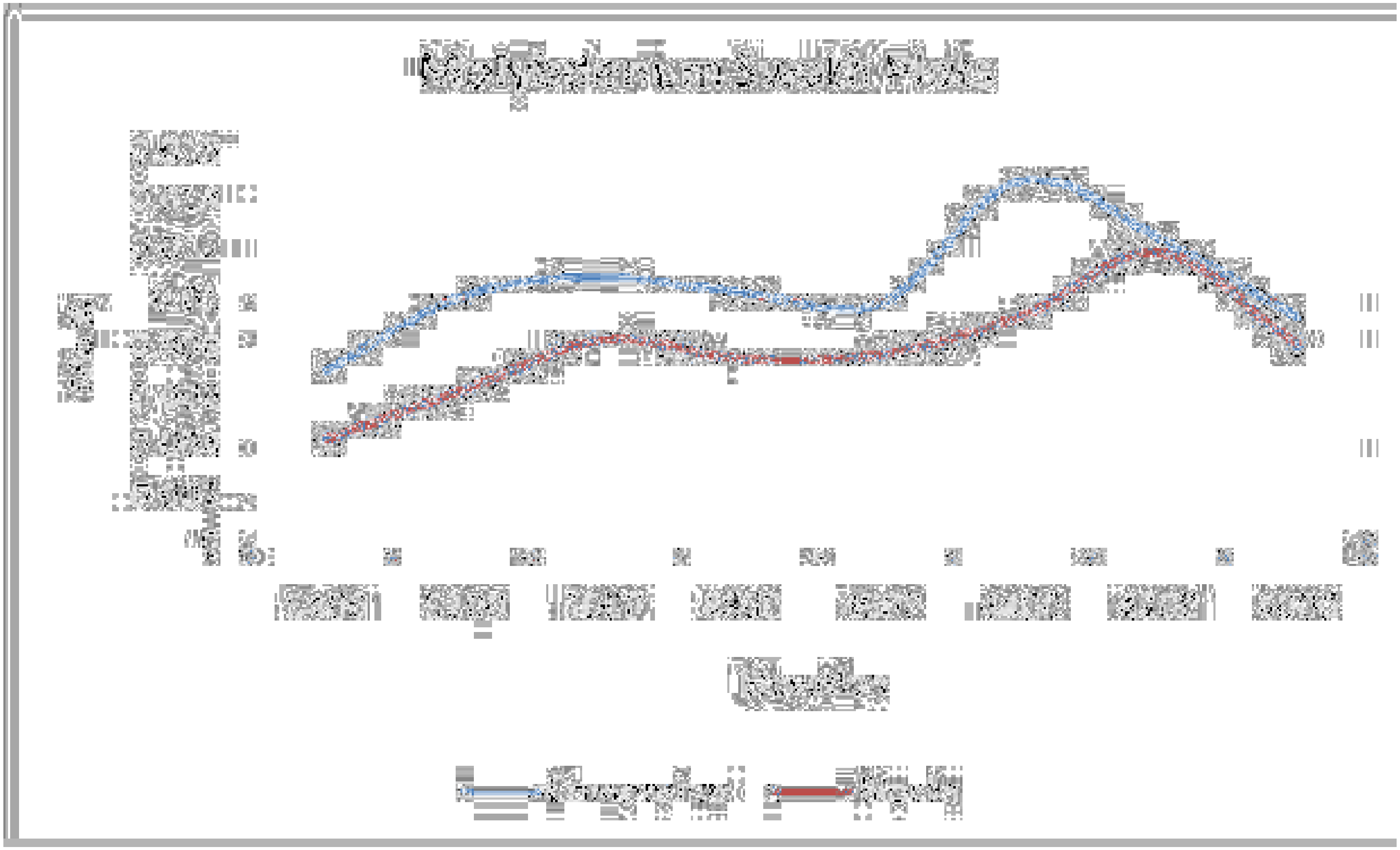
06/10/2010	APPROVED	15-8	A



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SRK JOB NO.: 191000.020	Sierra County, New Mexico	Copper Flat Project
FILENAME: Figure_15-9		Vertical Swath Plot - Mo Inverse Distance Block Estimates vs. Composite Samples

DATE:	APPROVED:	FIGURE:	REVISION NO.:
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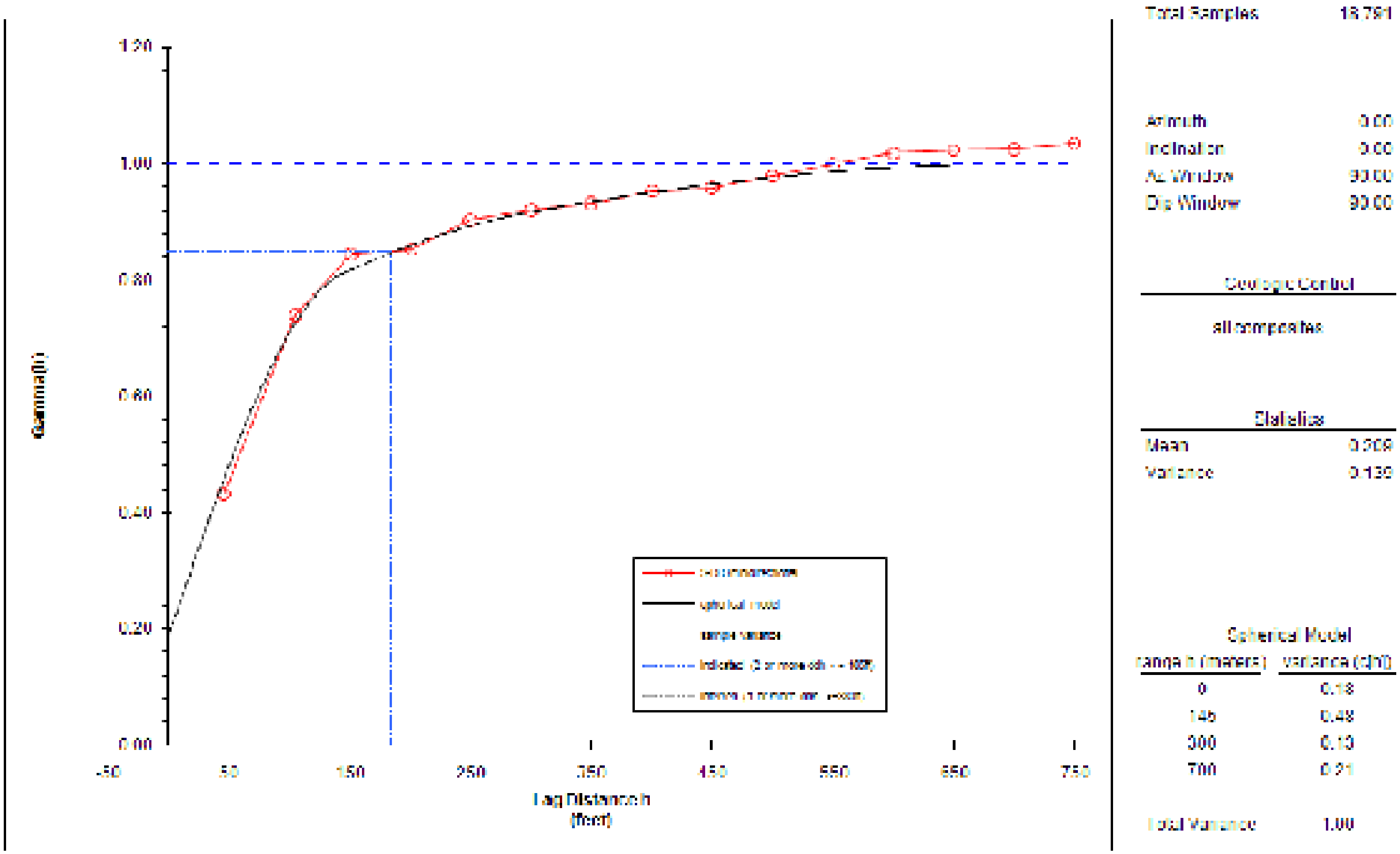

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Sierra County, New Mexico

Copper Flat Project

3-D Omni-Directional Classification Correlogram - All 30ft Copper Composites

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06/10/2010	APPROVED	15-10	A

16 Other Relevant Data and Information (Item 20)

There is no other relevant data and information that is not already contained within this Technical Report.

17 Additional Requirements for Development Properties and Production Properties (Item 25)

17.1 Mining Operations

Mining operations at the Copper Flat deposit will be characterized by a low stripping ratio pit (strip ratio of 0.38, waste to minable resource) from a disseminated porphyry mineralization situated in a moderately mountainous region in South-Western New Mexico, USA. Mining operations will benefit from relatively short ore hauling distances, bulk material mining and ample operational mining widths. Environmental constrains relating to waste management requirements may affect mining operations.

The pit was previously pre-stripped of waste prior to ore production when the mine was briefly operated in 1982. The various water diversion structures previously constructed around the pit area are still in place and will be used.

The preliminary pit design was determined to be approximately 2,500ft (east-west), 2,500ft (North-South), 900ft deep with a volume of 1.6Bft^3. The pit design was broken into three phases for scheduling purposes, with 80ft wide ramps, 30ft benches, 20ft berms and a maximum in-pit haul road grade of 10%. The pit has been restricted in size to conform to current design limitations in tailings storage capacity, and for optimization of project cash-flow.

Open pit mining will be by conventional diesel-powered equipment, a combination of blast hole drills, hydraulic face shovels, rubber-tired wheel loaders and off-highway haul trucks. Support equipment such as graders, track dozers, and a water truck will aid in the mining of the mineral resources and waste.

The disposal locations of waste material from the pit will be ultimately influenced by the tailings dam construction method selected. Downstream tailings dam construction will use most of waste material produced from the current pit, whereas upstream tailings dam construction will use very little. For the purposes of this report, waste dump locations indicated were sized assuming no waste material would be used in the tailings dam construction to ensure adequate waste sites would be available.

Figure 17-1 presents the general arrangement plan of the copper flat mine site.

Indicated and Inferred mineral resources were considered for all optimization and production scheduling analysis and were based on an internal cut-off grade of 0.14% Cu. (The internal cut-off grade is based on process and G&A operating costs.) This PEA report includes Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the Project outcome will be realized as presented. Mineral Resources that are not mineral Reserves do not have demonstrated economic viability.

17.1.1 Pit Optimization

Pit optimization was carried out on the SRK resource model using Whittle™ v4.2 pit optimization software in conjunction with Maptek's Vulcan 8.0™ general-purpose mine planning package.

Pit optimization was based on preliminary economic estimations of mining, processing and selling related costs. These preliminary costs are likely to vary from those reported in the final economic analysis, which are based on the final pit selection and mine production schedule.

17.1.2 Whittle™ Parameters

Table 17.1.2.1 indicates the parameters used for pit optimization, which were based on the SRK resource block model (0410_srk.bmf) modified May 20, 2010.

Table 17.1.2.1: Whittle™ Block Model and Slope Dimensions

Whittle™ Parameter	Type	Value
Base Units	Cu	%
	Mo	%
Block Model Dimensions	Geological Model	
	X	50 feet
	Y	50 feet
	Z	30 feet
	No. X	64
	No. Y	70
	No. Z	60
Pit Slopes	Directions	Slope Angle
	All	45

Pit optimization slope zones applied to the geologic block model are based on a default angle of 45º, which is a conservative estimate and may be optimized through future geotechnical studies.

Table 17.1.2.2 illustrates the economic and operational limits applied to the optimization. Costs are based on current estimates developed by SRK. Concentrate transportation, insurance and refining after beneficiation have been included within a selling cost.

For pit optimization analysis only, an 8% discount rate (used for financial analysis only) and US$155million initial capital cost (preliminary estimate attributed to the open pit mining project case) were used.

Table 17.1.2.2: Whittle™ Economic and Operations Parameters

Whittle™ Parameter	Type	Value
Mining Cost	Reference Mining Cost	US$1.72/st waste & ore
Mill Processing Cost		
	Selection Method	Cu-Based Cut-Off Only
	Processing and G&A Costs	5.79/st processed
	Cu Recovery	90.9%
	Mo Recovery	54.3%
Element Selling Prices/Cost		
	Cu Price	US$2.75/lb
	Mo Price	US$10.00/lb
	Cu Selling Cost	US$0.30/lb
	Mo Selling Cost	US$2.19/lb
Optimization	Revenue Factor Range	0.30-2 86 Factors
Operational Scenario - Time Costs	Initial Capital Cost (Preliminary)	US$155,000,000
	Discount Rate Per Year	8%
	Process Method Limit	5,775,000st/y

17.1.3 Pit Optimization Analysis

From various pit optimizations with multiple processing and mining cost sensitivities, the resultant pit dimension Figure 17-2 is a representation of how the pit optimization results are affected by different revenue factors or copper price changes from US$2.75/lb. Pit 36 represents a revenue factor of 1.0, which equates to the maximum cash flow possible for the deposit.

Table 17.1.3.1 illustrates the optimum pit results achieved for Pit 36.

Table 17.1.3.1: Ultimate Pit Whittle™ Results

Variable	Value
Mill Short Tons	128,651,797
Total Short Tons	187,880,861
Strip Ratio (Waste Tonnage / Mill Tonnage)	0.46
Cu Grade (%)	0.30%

Note: This PEA includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the PEA will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

Table 17.1.3.2 illustrates the pit results achieved for Pit 26, smaller pit upon which the preliminary pit design was based (pit design limited by tailings capacity for mill feed processed).

Table 17.1.3.2: Restricted Pit Whittle™ Results

Variable	Value
Mill Short Tons	93,933,120
Total Short Tons	120,248,077
Strip Ratio (Waste Tonnage / Mill Tonnage)	0.28
Cu Grade (%)	0.33%

See Footnote on Table 17.1.3.1.

17.1.4 Engineering Pit Design

The preliminary pit design was determined to be approximately 2,500ft (east-west), 2,500ft (North-South), 900ft deep with a volume of 1.6Bft^3. The pit design was broken into three phases for scheduling purposes, with 80ft wide ramps, 30ft benches, 20ft berms and a maximum in-pit haul road grade of 10%.

Table 17.1.4.1: Engineering Pit Design Results

Variable	Value
Mill Short Tons (High-Grade and Low-Grade)	95,489,578
Waste Short Tons	36,649,026
Total Short Tons	132,138,604
Strip Ratio (Waste Tonnage / Mill Tonnage)	0.38
Mill Cu Grade (%)	0.32%
Mill Mo Grade (%)	0.010%
Insitu Cu klbs (Pre-Metallurgical Recovery)	614,113
Insitu Mo klbs (Pre-Metallurgical Recovery)	19,262
Comparison To Whittle Results	
Total Short Tons % Change	+9.9 %
Mill Short Tons % Change	+2.3 %
Cu Grade % Change	-1.5%
Strip Ratio % Change	+37%

See Footnote on Table 17.1.3.1.

The inclusion of haul roads and creation of practical pit design when compared with pit optimization results, indicate a 2.3% increase of mill tons and 37% increase in stripping ratio that can be attributed to the effect of mining width and environmental concerns. The strip ratio increase is slightly misleading given the relatively low strip ratio to begin with (from Whittle™), and a better estimate of the effect of mining width is the 10% overall increase in total tons. Considering that two to three ramp widths are contained in the final pit wall this number is not unreasonable if the mill feed tonnage is to be maximized to the extent possible.

17.1.5 Production Schedule

A cut-off grade strategy was incorporated to improve mill feed head grades. This involved sending material with a cut-off grade greater than 0.20% Cu to the crusher, and incremental material between 0.14% and 0.20% to a low-grade stockpile during the first 14 years of operations. At the end of the in-situ mining, the low-grade stockpile material is fed to the crusher starting in the fourth to final year of operation (3 to 4 years of low-grade stockpile processing).

The increase in production rate and re-handling costs are offset by processing the increased head grades earlier, and given the limited production capacity of the process plant. This improved the capital payback performance.

Each phase design triangulation was constructed into a 3-D solid representing a 30ft mining bench. Potentially mineable resources used in the preliminary production schedule were estimated using a Cu (0.14%) cut-off for mill feed material within each block for eventual processing.

The schedule includes Inferred mineral resources that are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves.

Table 17.1.5.1 illustrates the full production schedule starting after a mine construction period (with an estimated start year).

Table 17.1.5.1: Mine Production and Stockpile Re-Handle Schedule

Year	Mill Feed Short Tons	Waste Short Tons	Total Short Tons	Stockpile Accumulation Short Tons	Stockpile Processed Short Tons	Cu %	Cu lbs (Pre-Process)	Mo Lbs (Pre-Process)
2014	5,775,000	403,725	6,830,502	651,777		0.42	48,845,498	1,657,702
2015	5,775,000	3,512,242	10,252,694	965,452		0.42	48,370,664	1,408,078
2016	5,775,000	2,600,725	10,061,696	1,685,971		0.42	47,964,996	1,121,276
2017	5,790,822	4,444,297	11,408,337	1,173,218		0.34	39,154,834	875,715
2018	5,775,000	4,798,713	11,292,195	718,482		0.37	43,068,013	1,143,430
2019	5,775,000	6,364,861	13,515,871	1,376,010		0.40	45,901,779	1,290,100
2020	5,775,000	5,067,468	12,931,141	2,088,673		0.37	42,349,340	1,335,504
2021	5,790,822	4,920,819	13,032,317	2,320,676		0.32	36,557,947	983,813
2022	5,775,000	2,484,582	10,618,526	2,358,944		0.30	34,826,827	981,511
2023	5,775,000	1,117,818	8,732,361	1,839,543		0.31	35,375,292	1,261,047
2024	5,775,000	340,853	7,303,914	1,188,061		0.31	35,938,517	1,411,079
2025	5,790,822	253,761	7,231,885	1,187,302		0.34	39,318,173	1,461,367
2026	5,775,000	223,016	7,364,533	1,366,517		0.36	41,829,222	1,615,302
2027	5,775,000	116,148	1,562,632	320,541	4,649,057	0.20	23,218,975	992,804
2028	5,775,000	0	0	0	5,775,000	0.17	20,087,826	682,172
2029	5,790,822	0	0	0	5,790,822	0.18	20,576,283	684,041
2030	3,026,290	0	0	0	3,026,290	0.18	10,728,728	357,480
Grand Total	**95,489,578**	**36,649,026**	**132,138,604**	**19,241,168**	**19,241,169**	**0.32**	**614,112,915**	**19,262,422**

See Note on Table 17.1.3.1.

17.1.6 Mine Operations

Owner operator mining operations are expected to be used at Copper Flat given the extended mine life of the Project.

Drilling

The initial drilling equipment fleet would consist of two Atlas Copco DM45 (or equivalent) rotary blast hole drills capable of drilling 5in blast holes. Working benches will be 30ft. Blast hole cuttings will be collected and analyzed in the mine sample laboratory. Together with blast hole survey data, the results will be plotted on maps, and laid out in the field as part of a grade control program.

Blasting

Heavy ammonium nitrate/fuel oil (ANFO) explosives would predominantly be used given the relatively dry conditions expected. The anticipated powder factor for main production blasting is 0.42lbs explosives/st rock.

Loading

The main loading equipment fleet will consist of two face hydraulic shovels, Terex RH90-C (or equivalent) capable of loading the truck fleet of most likely Caterpillar 777 (100st capacity) rigid body haul trucks (or equivalent). A Caterpillar 992G (or equivalent) front-end loader will be utilized as a backup loading unit.

Hauling

Cycle times were estimated based on a Caterpillar 777, or equivalent-type, truck indicated basic cycle times ranging from 6 minutes up to 28 minutes at the end of mine life, with one-way distances increasing from 2,000ft to 30,000ft. It will be important to account for detailed haul costs in the mine planning. It should be noted that ore delivery will require more mining trucks to achieve the same process plant production as the pit deepens. The requirement for RoM waste for the tailings embankment has a significant effect on the waste truck cycle times. (If RoM waste is not required for tailings dam construction, closer waste dump locations available for dumping will reduce the waste cycle times.)

Mining Support

The mine major mining support equipment would consist of one-track dozer (Cat D8 class), two rubber-tired dozers (Cat 834 class), a grader (Cat 16G class), a water truck (8,000gal) and a backhoe. The track dozer will be required for drill site preparation, road and ramp development, waste dump and stockpile maintenance, and other duties. The rubber-tired dozers will assist the hydraulic shovels, and other lighter dozing duties. The grader and water truck will maintain mine roads, ramps and operating surfaces, and the excavator will perform ancillary work, and site development work including pioneering and road development. The mine will also have equipment for pit lighting. Various other mining equipment maintenance support trucks will be required.

The mine department will have mine surveying equipment, mine engineering and geology office equipment (instruments, computers, software, printers, plotter etc.), and mine communications (radios).

17.1.7 Ancillary Mining Operations

Ground Preparation

Where necessary, the mining advance will be preceded by ground preparation consisting of soil clearing and cleanup, and will be carried out with a Cat D8-type track dozer and backhoe. Topsoil will be stockpiled in an appropriate location and will be used later for reclamation purposes.

Mine Area Drainage

The mine will be responsible for mine water management operations. The topographic characteristics of the ground required the previous construction of a diversion channel around the pit. To the extent possible, diversion ditches will be located above the open pit areas to drain water flowing towards the pit area and re-direct it into natural and current engineered drainages. Where this is not possible diversion ditch structures will be developed within the pit area to drain water away from the pit. Mine dewatering will also be accomplished using diesel generator powered submersible pumps placed in sumps at pit bottoms. Water coming into contact with the mining operations will be pumped from the pit area and collected. All collected drainage water will be held in drainage basins, where suspended solids will be removed by decantation.

Tailings Dam Embankment

Some of the pit waste may be used in the construction of a tailings dam embankment for tailings disposal. This may reduce the size of the waste dumps and minimize the need to import fill for the tailings dam from other sources.

17.1.8 Waste Dump Design

Waste dumps have been placed to the west and north of the pit, and to the east of the proposed crusher location. Each location is within water diversion boundaries for capture of precipitation run-off. Figure 17-1 illustrates the potential waste dump locations on the Copper Flat site map.

Dumps were designed according to the parameters in Table 17.1.8.1 and were planned to minimize dump reclamation costs at the end of mine life using a 1.3:1 H:V lift face slope ratio as the constructed as-built slope angle, and a regraded lift slopes of not less than 2.5:1 H:V.

Table 17.1.8.1: Dump Design Parameters

Dump Parameter	Value
Batter Angle (º)	37º
Berm Width (ft)	30 ft
Lift Height (ft)	30 ft
Road Width (ft)	80 ft
Road Grade (%)	10%
Slope (º)	22º

The waste dumps have been sized based on the volume of waste exiting the pit with a swell factor of 30% applied to generate a waste dump target volume. As the lift heights are only 30ft, the action of mining trucks will likely reduce the swell factor through compaction.

Table 17.1.8.2 illustrates the waste dump capacities and vertical heights.

Table 17.1.8.2: Waste Dump Geometry and Capacity

Waste Dump Location	Height (ft)	Area (ft^2)	Volume (ft^3)
West	120	792,342	37,262,740
North	90	1,305,800	37,947,572
East	315	5,425,815	567,498,952
Total		**7,523,957**	**642,709,264**

Space has been allocated to store over three years of low-grade stockpile material through normal mining operations. Without a definite mill and support infrastructure layout, the low-grade stockpile has been located near the potential crusher location and is in alignment with previous low-grade stockpile locations from historic production. If most of the waste will be required for the tailings embankment (not determined yet as certain), then the planned waste dumps can be reduced and part of those areas can be allocated to low-grade stockpile storage space. Table 17.1.8.3 illustrates the potential dimensions of the low-grade stockpile.

Table 17.1.8.2: Low-Grade Stockpile Geometry and Capacity

Dump	Height (ft)	Area (ft^2)	Volume (ft^3)
Low-Grade Stockpile	250	2,699,283	287,632,199

17.2 Geotechnical Engineering – Pit Slopes

As discussed in Section 5, Copper Flat is contained almost entirely within quartz monzonite and includes a central mineralized breccia pipe comprised mostly of quartz monzonite fragments cemented by a hydrothermal matrix. The central breccia pipe contains a higher grade than the surrounding quartz monzonite and therefore is the primary target for mining, leaving mostly quartz monzonite final pit walls with a breccia pipe pit bottom. The final pit will be roughly circular in shape with a diameter of approximately 2,500ft, and final wall heights on the order of 600ft to 900ft (Figure 17-1).

Three principal structural trends are present in the area. The most prominent of these is northeast, a direction that includes the Hunter fault and the other parallel faults in Copper Flat. The other two structural trends are west-northwest, marked by the Patten and Greer faults, and east-northeast, marked by the Olympia and Lewellyn faults. The Hunter fault system dips 80° to the west, and the Patten and Greer fault systems both dip between 80° and 90° to the south.

17.2.1 Existing Geotechnical Data Analyses

Very little documented geotechnical information currently exists for Copper Flat. SRK is not aware of any geotechnical drilling campaigns, laboratory testing or pit slope analyses that have been carried out in the past for the Project. Recently, NMCC personnel logged qualitative geotechnical data during the 2010 resource confirmation drilling program consisting of six diamond drillholes drilled into the central mineralized breccia pipe, intersecting pit bottom. Details of the 2010 drill program are contained in Section 9.1. The geotechnical information obtained from the 2010 program will be useful in characterizing the breccia unit for interim pit slope walls; however, most of the final pit slopes will be comprised of the quartz monzonite surrounding the breccia where no geotechnical data exists. SRK provided recommendations for the 2010 geotechnical program logging procedures, but did not oversee the geotechnical core logging program or analyze the data.

A geologic outcrop mapping exercise was also completed by NMCC personnel (December 2009) on the existing bench faces which included discontinuity orientation. A total of 134 fractures and 36 faults were measured in the area. NMCC's analysis of the mapping data demonstrated high angle faults most commonly with a NE-SW trend and occasionally a NNW-SSE trend. Jointing in the rock showed similar attitudes but also showed a concentration with a shallow to moderate NE dip. SRK geotechnical engineers did not visit the site or review the mapping program procedures or results.

SRK's scope of work did not include geotechnical logging oversight, data analysis or a site visit for such purposes in preparation of this PEA report. Consequentially, pit slope stability analyses were not conducted for optimization of pit slope angles. A conservative overall slope angle of 45º was assumed for the potential open pit resource estimation and pit design purposes. There is an opportunity in subsequent phases of the project development to evaluate the potential for steeper pit slope angles.

17.3 Hydrogeology

17.3.1 Regional Groundwater System

Groundwater provides a major source of water for domestic and agricultural consumption in southern New Mexico. The high evaporation rate during the long, hot summers and the low precipitation rate result in surface waters being an unreliable source of water on a year-round basis. The Rio Grande provides water for both New Mexico and Texas. Intermittent streams that feed the Rio Grande, such as Las Animas Creek and Percha Creek in the project area, are local sources of water for at least part of the year. Additional water comes from shallow domestic and agricultural wells. Water in the Lower Rio Grande Basin is fully appropriated.

Groundwater in the Lower Rio Grande Basin flows from the highlands on either side of the basin through bedrock and valley alluvium to the center of the basin and to the Rio Grande itself. Figure 17-3 shows a generalized conceptual model of groundwater flow in the project region. Bedrock aquifers in the Paleozoic sedimentary rocks are recharged by snowmelt and heavy rains in the highlands by flow along faults and bedding planes. This water flows along a hydraulic gradient toward the approximate center of the Rio Grande Valley.

Valley alluvium is recharged by precipitation along mountain fronts where the alluvial fans are exposed and by streams that flow out of the highlands and lose water to the alluvium as they flow toward the Rio Grande. Many intermittent streams, such as Las Animas Creek and Percha Creek, are "losing streams" over at least part of their reach. This alluvial groundwater then flows down-gradient to the Rio Grande. Most areas within the lower Rio Grande Valley that have not been significantly disturbed by human activity are in hydraulic equilibrium. Water coming into the system by precipitation recharge is balanced by outflow to major streams, evapotranspiration, and interbasin flow.

17.3.2 Local Groundwater System

The local groundwater system within and near the proposed open pit operation consists of two main components:

1) Groundwater in the volcanic rocks and the intrusive porphyry that dominate the mine area.
2) Groundwater within the alluvial sediments of the Palomas Basin adjacent to the mine and in the area of the proposed well field for production water. Groundwater in the alluvial sediments beneath and just down-gradient from the existing tailings impoundment has been impacted by seepage from the existing tailings over the past ten years.

Hydrogeological data characterizing the first component of the local groundwater system in the vicinity of the proposed open pit is described below. SRK worked with Adrian Brown Consultants (ABC) in 1995 on hydrogeological studies for Copper Flat. The description of groundwater within the alluvial sediments of the Palomas Basin adjacent to the mine area (second component) is covered in the Copper Flat Mine Hydrogeological Studies (SRK-ABC, 1995) and the Draft EIS (1996) and is not repeated in this report.

17.3.3 Groundwater Within the Mine Pit Area

Groundwater within the mining district and the area of the present open pit is hosted in andesitic volcanic rocks. Previous hydrogeological modeling in the mine pit area is predominantly based upon the following sources (SRK-ABC, 1995; ABC, 1996):

- Water level in six wells (GWQ-5,GWQ-6, GWQ-22A and B, GWQ-23A and B) and existing pit lake;
- Springs elevation to the west of the pit lake; and
- Groundwater chemistry data in seven wells (GWQ-4, GWQ-5, GDW-6, GWQ-22A and B, GWQ-23A and B), two springs, and pit lake.

Hydraulic parameters of the volcanic rocks, fault, and structural zones have not yet been characterized.

17.3.4 Water Levels

The water level elevation in the existing pit lake reported by SRK-ABC (1995) was 5,443 feet above mean sea level (famsl), indicating that about 723ft of currently proposed open pit walls would be saturated. Water level data in the vicinity of the open pit, used for previous hydrogeological modeling, were taken from six wells: GWQ-5; GWQ-6; GWQ-22A and B; and GWQ-23A and B; with elevations ranging from 5,538famsl to 5,360famsl. Well GWQ-5 is located approximately 4,000ft east-southeast from the pit (within the old plant site area) with a measured water level elevation of 5,370famsl, and Well GWQ-6 is located approximately 2,500ft southeast from Well GWQ-5 with a measured water level elevation of 5,360famsl. Wells GWQ-22A and B, GWQ-23A and B (A shallow and B deep), are located immediately upgradient and downgradient from the existing pit lake with measured water levels 5,538 to 5,526famsl and 5,450 to 5,440famsl, respectively. The groundwater elevation data suggest that if hydraulic communication exists between the wells and the current pit at Copper Flat, the groundwater gradient in the andesitic volcanic rocks may generally be to the east or southeast from the current pit lake. However, based on later data developed from GWQ-22 and GWQ-23, the Copper Flat pit lake is believed to function as a localized groundwater sink in the immediate vicinity of the pit (Copper Flat Mine Compilation of Pit Lake Studies, Figure 3, SRK, December 1997). Springs to the west of the pit are located at elevations of 5,700 to 5,900famsl, but may reflect local perched aquifers that do not have hydraulic communication with groundwater near the pit. A basin-margin fault approximately 10,000 to 12,000ft east of the current pit most likely restricts eastward flow of water within the andesites of the mining district. Regional groundwater flow in the Rio Grande Basin is generally towards the Rio Grande.

17.3.5 Hydraulic Parameters

There have been no attempts to measure the hydraulic properties of bedrock, faults and structural zones in the mining district. SRK (1995) estimated the hydraulic conductivity of bedrock in vicinity of the pit of 0.03 to 0.04ft/d based on results of the model calibration to the measured water levels at the steady-state conditions.

17.3.6 Groundwater Chemistry

District water sampling of two springs west of the current pit (wells BG and BG 2) indicate pH in the range of 8.0 to 8.2, bicarbonate values ranging from 411 to 535mg/L, sulfate values of 184 to 228mg/L, and total dissolved solids (TDS) of approximately 600 to 700mg/L. The springs have sodium-magnesium-calcium bicarbonate-dominated groundwater. Well GWQ-4, which is west and upgradient from the current pit lake, has groundwater with a pH equal to 7.2 to 7.6, TDS in the 600mg/L range, bicarbonate in the 400mg/L range, and sulfate in the 250mg/L range. This water is calcium-sodium-magnesium bicarbonate-dominated groundwater and is sufficiently different from the spring water to suggest that groundwater along Greyback Wash in the mine area is separate hydrologically from the perched water that feeds the springs.

Only four groundwater wells are downgradient from the current pit lake in the mineralized pit area (mining district); Well GWQ-5 is in the old plant site area, and Well GWQ-6 is at the Hilischer West site. Sampling of these two wells in 1993 showed that this groundwater had pH values of 7.3 to 7.7, and TDS ranging from 360mg/L (Well GWQ-6) to 900mg/L (Well GWQ-5). In Well GWQ-5, which is approximately 4,000ft east-southeast from the current pit lake, sulfate levels exceeded bicarbonate levels with values in the range of 575mg/L, versus 398mg/L for bicarbonate. In Well GWQ-6, the sulfate was less than 50mg/L and bicarbonate was in the range of 300mg/L. Thus, water in well GWQ-5 was calcium-sodium-magnesium sulfate-dominated with high bicarbonate, while water in GWQ-6, which is approximately 2,000ft farther from the pit lake, was calcium-sodium-magnesium bicarbonate-dominated. This suggests that water may be currently flowing from the pit lake into the groundwater within the mining district and moving slowly to the east-southeast. An alternate explanation is that the water in Well GWQ-5 was contaminated during mining and milling because it lies within the old plant site at the mine. Additional investigation of this area may be warranted.

The two other downgradient wells GWQ-23A (shallow) and GWQ-23B (deep) were installed in 1996 immediately downgradient from the existing pit lake. Sampling of these four wells in 1996-1997 showed that this groundwater had pH values of 7.7 to 8.2, and TDS ranging from 565mg/L (Well GWQ-23A) to 920mg/L (Well GWQ-23B).

Water chemistry within the existing pit lake suggests that TDS, sulfate, and fluoride exceed New Mexico human health and domestic use water quality standards; pH and metals are close to or within these standards.

In recent field sampling lower pH was observed in April 2010 with pH recorded as being 4.95 and Electrical Conductivity (EC) to 2,880µmhos. This indicates that potential exists for pH to decrease to below New Mexico human health and domestic use water quality standards. Laboratory analysis is currently underway to determine metal chemistry of the pit lake.

17.3.7 Estimate of Groundwater Inflow to Proposed Open Pit and Results of Groundwater Modeling Conducted by SRK and ABC (1995, 1996)

Inflow to the proposed open pit, groundwater withdrawal for mine water supply from a production well field in the Palomas Basin, and associated impacts during mining and post-mining conditions were evaluated/assessed by SRK and ABC (SRK-ABC, 1995; ABC, 1996). This work was based on a series of preliminary 2-D (one layer - confined and unconfined) and 3-D (three layers - unconfined) numerical finite-element groundwater models prepared by ABC (SRK-ABC, 1995; ABC, 1996).

The hydraulic parameters used for the model are summarized in Table 17.3.7.1. Hydraulic parameters of alluvium are based on previous studies of the Palomas Basin by Newcomer et al. (1993), Greene and Halpenny (1976), and ABC (SRK-ABC, 1995; ABC, 1996). Hydraulic parameters of bedrock have not been characterized by field work (not measured) and were estimated based on results of calibration of the model to steady-state water levels, measured in 17 locations, including the springs.

Table 17.3.7.1: Hydraulic Parameters Used in Adrian Brown Consultants (SRK-ABC, 1995, ABC 1996) Groundwater Model

Lithologic Type		Hydraulic Conductivity (ft/d)	Specific Storage (1/ft)	Specific Yield ( )
Bedrock	Andesite/Monzonite	0.04	6.40E-06	0.04
	Paleozoics/Volcanics	0.03	6.40E-06	0.04
	Pit area	0.04	6.40E-06	0.04
Alluvium	West Palomas Basin Santa Fe	0.05	5.00E-05	0.16
	Palomas Basin in well field	0.11	5.00E-05	0.2
	Palomas Basin east of well field	7.7	2.50E-05	0.23

The predicted maximum inflow to the proposed pit in 1995 was in the range of 400 to 600gpm and is shown in Figure 17-4.

Based on the results of preliminary groundwater flow modeling conducted by ABC (1996) it is possible to conclude at this level of the study that:

- Inflow to the proposed open pit would range from an initial rate of approximately 60gpm to an estimated maximum rate of 400 to 600gpm;
- There is no active dewatering system that would be required; pit dewatering can be done by using in-pit sumps;
- A cone of depression at the end of pit dewatering would propagate up to 6,000 to 10,000ft away from the center of the proposed pit however; no impact to Warm Springs Canyon to the west from the pit is expected. Pit dewatering and drawdown may affect the three seeps located along Greyback Wash and their associated riparian vegetation;
- A pit lake would be formed by the post-mining conditions with predicted elevation of 5,250famsl and would act as an evaporative sump for groundwater, lowering the water table adjacent to the pit area; and
- Pit lake chemistry is expected to be similar to existing pit lake water chemistry, suggesting that TDS, sulfate, and fluoride may exceed New Mexico human health and domestic use water quality standards; pH and metals should be close to or within these standards.

It should be noted that the results of the predictions listed above are preliminary, based on available hydrogeological characterization data in the mine area, slightly different pit plan (ultimate elevation simulated by the model in 1995 and 1996 for the open pit was 4,780famsl instead of the current proposed 4,720famsl), and should be revised at the Pre-Feasibility Study level.

17.3.8 Mine Water Supply

The total water demand for the Project would be approximately 6,000gpm with the majority of the water used in the mill operation. Of this, about 4,000gpm would be obtained from:

- Pit dewatering;
- Reclaimed process water; and
- Pumpback decant water from the tailings impoundment.

Approximately 2,000gpm would be fresh water makeup from production wells.

The freshwater supply for the mine would come from four existing high capacity wells located about 8mi east of the plant site on BLM land. These wells were drilled to a depth of 957ft and 1,005ft. All were 26in in diameter and were cased with 16in casing with the annual space packed with minus 3/8in washed gravel. The projected long-term capacity of the three production wells ranges from 1,000 to 1,800gpm (Green and Halpenny, 1976). ABC groundwater flow modeling (SRK-ABC, 1995; ABC, 1996) showed a possibility of groundwater abstraction at an average of 2,000gpm from the Palomas Basin for mine water supply use during mine life.

17.4 Processing

The conceptual process flowsheet was developed for processing 17,500st/d of ore with an overall availability factor of 93%. The basis for the flowsheet and the capital and operating cost estimation are given in Table 17.4.1. The simplified process flowsheet was shown previously in Figure 14-1. The major equipment is the same size as originally installed by Quintana Minerals. The present flowsheet design incorporates modern equipment where applicable. For example, larger flotation cells have been selected for the rougher flotation, bulk cleaner flotation cells are column cells and tower mills replaced the regrind mills. The design incorporated in this study is considered "Standard" practice in the mining industry.

Table 17.4.1: Design Parameters for the Conceptual Process Flowsheet

Item	Amount
Tonnage/day	17,500
Availability	93%
Tones/hr	784
Feed grade	
% Cu	0.425 (av. 0.391)
% Mo	0.013 (av. 0.012)
Cu Concentrate Grade	
% Cu	28
Mo Concentrate Grade	
% Mo	>50
Concentrate Tonnage/day	
Cu	220
Mo	2.6
Cu Recovery %	
Cu	92
Mo	62
Au	>50
Ag	90

17.4.1 Recoverability

Extensive metallurgical studies were undertaken on large samples in the 1970's, namely 80st and 70st of breccia and quartz monzonite samples. Locked-cycle testing undertaken at Colorado School of Mines Research Institute indicated that the copper concentrate contained 0.16 to 0.23oz/st of gold and 4.73 to 5.23oz/st of silver. The results indicated that over 50% of the gold and over 90% of the silver reported to the Cu-Mo concentrate for the flowsheet developed for the Copper Flat Concentrator.

The flotation tailing from the Cu-Mo separation circuit was the final copper concentrate assaying 28% Cu. The rougher molybdenite concentrate was reground and cleaned to produce a saleable product.

Quintana Minerals operated the former concentrator for several months in 1982 with a rated capacity of 15,000st/d. Copper concentrates were shipped to the ASARCO smelter in El Paso, Texas. After only three months of operation the mine was closed due to lower copper prices and higher interest rates. The mill was later disassembled and sold.

The copper recovery in the concentrate steadily improved during the operation of the mill reaching 92% in June 1982. The molybdenum circuit operated for only a short time in 1982 producing a 46% Mo concentrate without the final cleaning stage. With a longer operating period, the plant could have achieved a saleable molybdenum concentrate product (>50% Mo) at an overall plant recovery of 62%. This is consistent with plant practices and recoveries for similar by-product operations.

17.4.2 Tailings

SRK developed a preliminary level cost estimate for the tailings storage facility (TSF). The estimate was based on the following design criteria and design assumptions:

- Tailing permit boundary consisting of 100ft offsets from both the property boundary (provided by the client) and Greyback Wash;
- Production rate of up to 17,500st/d, with a LoM of 16.5 years (for a total tailings production of 95Mst);
- Synthetically lined impoundment;
- Conventionally discharged slurried tailings with a beach slope of 0.7%;
- Compacted fill slopes of 2H:1V with a 20ft crest width (downstream construction);
- A minimum freeboard of 5ft; and
- An in-place tailings density of 90lb/ft^3.

The TSF layout is located in the area of the previously constructed tailings impoundment that was designed by Sergent, Hauskins & Beckwith (1980). The starter embankment was constructed in the early 1980's and approximately 1.2Mst of tailings material was placed within the existing tailings impoundment before production ceased. SRK estimated the TSF cost based on a downstream construction method with a synthetic liner.

17.5 Infrastructure

Infrastructure capital costs include items such as the primary access road, water systems, electrical power distribution, and the concentrate load-out facility. Where possible, existing serviceable items were presumed to be re-used or upgraded, otherwise new construction was assumed.

The primary items that were assumed to be re-usable include the mine access road, the water well field, the primary freshwater pipeline, the main electrical substation at I-25, the 115kV power transmission lines, 25kV power line to the well field, the reclaim tunnel, and the access cutting from the mill site to the tailings area. A more detailed description of the infrastructure is provided in the remainder of this section.

17.5.1 Access Road Work

Access to the mine site includes approximately 3mi of all weather gravel road. The road is currently in place, as it was left from the prior operation, and is in generally serviceable condition. The road will require regrading in addition to some widening and work at key points.

17.5.2 Highway 90 Access Upgrades

Additions of acceleration and deceleration lanes at Highway 90 were included. These upgrades will be necessary to facilitate the heavy truck traffic into and out of the mine site. The upgrades would be in compliance with Department of Transportation requirements, and assume new lanes 1,500ft long each.

17.5.3 Fresh Water Pumping System

The milling and process system will receive fresh water from a series of previously existing wells. The well field is located about 8mi east of the site. There are four wells that were capped off when the mine was closed. Additionally, the previously used 20-inch diameter pipeline was left in place. It was assumed that the wells will be uncapped and refitted with new pumps for current use, and that the pipeline will be in serviceable condition and can also be re-used. The well field and pipeline pump stations were powered via a 25kV power line. It is also assumed that the power line can be reconnected and re-used.

Each of the four well pumps would be sized to produce 1,350gpm. The wells are connected via distribution pipelines to a large holding tank at the first transfer pump station. Three pump stations will be required to transport the water to the final holding tank at the mill. The total elevation head between the first pump station (near the well field) and the mill fresh water tank is about 1,000ft. This elevation differential is divided up between the pump stations. Each pump station will also have a holding/surge tank. The total capacity of the fresh water pumping system would allow for all well pumps to be producing simultaneously, however during normal operation only a portion of this capacity will likely be needed. The equipment estimated to be required includes new well field pumps, three new pumping stations with tanks, and a mill site 300,000gal freshwater tank.

17.5.4 Plant Site Electrical Power

Electrical power in the county is provided by Sierra Electric Co-op. A high voltage substation is still in existence near Caballo 13mi to the east of the mine site. This substation supplies a 115kV line to the mine site and to the town of Hillsboro. It is assumed that that the 115kV line is fully operational and can be tied into for site power.

A new substation will need to be constructed at the plant site. The new operation will require a 35MVA substation, which will step the 115kV incoming power down to 4,160V. Additionally, multiple step-down transformers will also be required to reduce from 4,160V to 480V. The equipment estimate includes means to tie into the existing 115kV lines, install the high voltage 35MVA transformer and step down 460V as required. Additionally, equipment has been included for capacitors to account for power factor corrections, and high voltage and medium voltage switch gear at the substation.

An emergency generator allowance has also been included in the estimated equipment, which would be required in the event of power loss to maintain critical systems and to aid in a controlled shut down. A 350kVA diesel generator has been included.

An allowance for power distribution costs to the tailings areas and at the well field have also been included in the estimate. Motor control centers and other power distribution have been included as a factor in the overall plant equipment costs.

17.5.5 Concentrate and Molybdenum Load-Out Facility

Product concentrate will be produced on site, and the resulting dried bulk copper concentrate and bagged molybdenum concentrates will need to be shipped to other facilities. An on-site concentrate load-out facility will be required, and two possible off-site load-out facility locations have been identified. The first location would be at or near Rincon and a second possible location is at the old rail siding location near the intersection of County Road 27 and Highway 26. This location is approximately 35 miles southwest of the mine site. Although it has not been determined which location would ultimately be utilized, the overall cost of construction and operation would be very similar at either site. The off-site load-out facility would essentially be a fenced in area adjacent to a new rail siding containing truck off loading and rail car loading capabilities.

Molybdenum product would be transported from the mill in “super sacks”. This product could be shipped to the Freeport-McMoRan Sierrita facility in Arizona.

The copper concentrate will be loaded into trucks at the mill site and transported to the off-site load-out facility. At the new facility, the copper concentrate will be unloaded and transferred into a 100st above ground storage bin. The product will be transferred from the storage bin to rail cars. The majority of bulk storage capacity for the copper concentrate is at the mill. The load-out facility will be utilized primarily as a product transfer point. The copper concentrate will be transported via railcar to a smelter facility, such as the Freeport-McMoRan Morenci Operation. The rail siding would include enough track capacity for twenty 100st rail cars.

17.5.6 Truck Scale and Scale House

A truck scale and scale house will be needed to weigh the copper concentrate and molybdenum concentrate trucks leaving the site en route to the load-out facility. An estimate for these costs has been included.

17.5.7 Tailings Pipe Line and Pumps

Tailings from the mill processing system will be transported via pipeline to the tailings impoundment area. The tailings pipeline will be approximately 4,500ft long. An existing utility cutting between the mill and the tailings pond was left in place after the mine shutdown. The tailings line can be routed through this utility cutting. Capital costs were included for an 18” HDPE tailings line.

Reclaimed water from the tailings dam will be pumped back up to the mill via a process water recovery system. This system will include a pump station near the tailings pond, 16” HDPE process water pipeline, and a 60,000gal receiving tank at the mill site.

The estimate includes costs for tailings line and process water recovery system as well as allowances for associated electrical and control systems.

17.6 Markets and Contracts

NMCC is not currently in production and has no operational sales contracts in place at this time. Should the project go into production, smelter agreements for the treatment and refining of copper and molybdenum concentrates (including recovery of gold and silver) will be put into place. For the purpose of this PEA smelter terms and costs have been estimated.

Certain site drilling activities are anticipated to occur as part of the project development, and drilling contracts may be enacted during the next phase of the project advancement.

17.7 Environmental Considerations and Permitting

17.7.1 Waste Management

General

Future mining operations at the Copper Flat Mine may expose waste rock and mill feed material that has the potential to leach metals and metalloids, and possibly generate acid. This could affect runoff and seepage from the waste rock dumps, as well as the chemistry of the pit lake that will form after closure. Waste rock from the operation will be deposited on existing rock piles located to the west, north, east, and south of the existing pit. At the end of the mine life all of these rock piles will be reclaimed using a revegetated soil cover.

NMCC proposes to redesign and expand the existing tailings impoundment facility that was constructed in 1982 by the previous mine operator. Transport of tailings from the mill to the impoundment will be via a pipeline. The new design will include the placement of a synthetic liner beneath the tailings. Ancillary facilities associated with the tailings facility will include a slurry and/or cyclone delivery system, a solution reclaim and recycling system, an embankment seepage return system, groundwater monitoring wells and an embankment stability monitoring system.

Waste Characterization

Despite the lack of a classical supergene enrichment blanket, the deposit does have a thin “oxide” zone, down to 10ft below the original ground surface, in which all sulfides appear to be oxidized. A “transitional” zone in which sulfides are partially oxidized extends 10 to 20ft below the oxide zone. Below the transitional zone is a “sulfide” zone where fresh sulfides are visible.

All the rock below the 5480 bench (20-40ft below the original surface) in the pit contains primarily fresh sulfides, except along the Sternberg lode. The Sternberg lode on the west side of the pit is partially oxidized and is referred to as transitional material. This is a mineralized vein and a zone of structural weakness in which sulfides have been partially oxidized due to preferential weathering, and potentially as a result of historic in-situ acid leaching. As a result of natural processes and/or past mining activities, oxidation in the Sternburg lode area has been enhanced. Abundant amorphous to poorly crystalline copper and iron oxy-hydroxy-sulfate salts occur in this area. The salts that are soluble in water at surficial temperatures, are considered to be the main source of acidity at this location.

Some superficial oxidation and wallrock alteration has been observed in the pit walls. Nowhere is oxidation greater than a depth of 30ft, even within or along faulted contacts (Dunn, 1982).

The waste rock in the deposit comprises five lithologies:

1. Quartz monzonite.
2. Quartz breccias.
3. Biotite breccias.
4. Andesite.
5. Quartz veins.

Whereas all of these rock types are represented on the existing waste rock piles, future waste rock will be dominantly comprised of fresh, unoxidized quartz monzonite and, to a lesser extent, andesite.

A geochemical testing program was initiated during the previous attempt to reopen the mine, and included site visits and laboratory testing programs conducted in 1994 and 1997. In each phase of investigation, field-testing (contact pH and conductivity) was performed.

The primary observations made on the basis of the past geochemical testing programs were:

- The future waste rock will be composed primarily of quartz monzonite. The majority of this waste rock can be expected to exhibit acid generating potential as indicated by both acid base accounting and NAG tests, and has potential to generate leached metal and sulfate chemistry that may exceed New Mexico human health and domestic use of water quality standards;
- While static and NAG tests indicate a net acid producing potential, kinetic tests indicate that the unoxidized material is slow to oxidize. Kinetic testing of unoxidized samples produced neutral to slightly alkaline leachates with low concentrations of sulfate and dissolved metals, however the program was terminated early and may not represent a complete characterization of this material type. Additional kinetic testing is currently underway to supplement this data. The laboratory kinetic test behavior is consistent with observed field conditions; and
- Partially oxidized material, or the transition waste rock, exhibits low contact pH and high conductivity. Leach testing of the transition material indicates soluble sulfate and metals loads that indicate acid generating behavior. It should be noted, however, that only limited quantities of similar material occur within the future mining area.

Supplemental geochemical characterization work has been initiated by NMCC as part of the current investigation of the site. Addition testing is being performed in accordance with the recently released Bureau of Land Management Instruction Memorandum NV-2010-014, *Nevada Bureau of Land Management Rock Characterization Resources and Water Analysis Guidance for Mining Activities* (BLM, January 8, 2010).

Implications for Waste Management

The general approach to waste rock management and the control of acid rock drainage (ARD) is to control the flux of water through the waste rock. Future waste will be placed on existing waste rock piles in a manner that minimizes the potential for leaching of dissolved constituents. Surface water will be managed during operations to promote runoff from the waste rock and prevent surface water run-on.

Management of future waste rock will include concurrent reclamation, where feasible, and will incorporate disposal practices that will facilitate reclamation and closure of the waste rock disposal facilities.

The presence of fine-grained pyrite in the tailings may lead to enhanced oxidation and generation of low pH high metal and sulfate chemistry in any leachate or seepage generated from this material. Volumetrically, this material is likely to be extremely small compared to the majority of silicate tailings that will have a neutral pH and low metal chemistry, although sulfate may still exceed New Mexico human health and domestic use of water quality standards in the seepage from these tailings. Addition testing is being performed in accordance with the recently released Bureau of Land Management Instruction Memorandum NV-2010-014, *Nevada Bureau of Land Management Rock Characterization Resources and Water Analysis Guidance for Mining Activities* (BLM, January 8, 2010).

17.7.2 Regulatory Approval Process for Project Development

Overview

Major mining projects in New Mexico have been limited over the last two decades. The New Mexico Mining Act of 1993 (Act) was passed for the purpose of "promoting responsible utilization and reclamation of lands affected by exploration, mining or the extraction of minerals that are vital to the welfare of New Mexico." The Act establishes requirements for a "hard rock" mine to obtain permit applications, environmental standards, reclamation plans, and financial assurance to support the reclamation plan.

The Mining Act applies not only to all mines operating when the Act was passed and to all future mines, but it also covers some mines that were no longer operating at the time the Act became law. The definition of "existing mining operation" includes any "operation that produced marketable minerals for a total of at least two years between January 1, 1970 and the effective date of the New Mexico Mining Act." Therefore, a mine that produced marketable minerals for two years in the 1970's but was shut by the time the Act passed in 1993 is still covered. Because the Copper Flat mine did not operate for more than 90 days, this provision does not apply to the existing Copper Flat mine.

Two government entities are at the center of the New Mexico Mining Act: the Mining Commission and the Mining and Minerals Division (MMD) of the New Mexico Energy, Minerals and Natural Resources Department. The Mining Commission is charged with developing the rules necessary to implement the Mining Act and hearing appeals of permitting and enforcement actions by MMD. The Mining Commission consists of eleven members, four appointed by the Governor and seven ex officio. The seven ex officio members represent different government entities. The appointed members, consisting of two voting members and two alternates, "shall be chosen to represent and to balance environmental and mining interests." MMD is the state regulatory agency responsible for ensuring that all mines operating in New Mexico comply with the New Mexico Mining Act.

Requirements for "New" Mine Permits in New Mexico

The permit application process for a new mining operation is complex. The application must contain considerable detail both on the nature and impacts of the proposed operation and on the background of the mine owners and operators. The applicant must collect at least twelve months of environmental baseline data on the permit area. The baseline investigation must provide information on (and the permit application must assure that) the operation and reclamation of the facility protect human health and safety, wildlife, cultural resources, and hydrologic balance. The Mining Commission rules require that a new mining operation employ best management practices, which include designing the operations to avoid or minimize acid drainage and other impacts to ground and surface water, to control erosion, and to use contemporaneous reclamation when practicable.

The director cannot issue a new mining permit unless he or she can find that the reclaimed operation will achieve "a self-sustaining ecosystem appropriate for the life zone of the surrounding areas" unless conflicting with a post-mining land use (no other waivers allowed), that the proposed reclamation is economically and technically feasible, and that all environmental requirements can be met without perpetual care. In addition, the operator or owners cannot fail any of the bad actor tests established under the Act and the rules. A new mine permit has a maximum term of twenty years with ten-year renewal periods.

New Mexico Authorizations, Licenses and Permits

The Copper Flat Project will require various state and federal authorizations, licenses and permits to operate the Project.

Table 17.7.2.1 shows a preliminary list of the New Mexico authorizations, licenses and permits that NMCC will be required to obtain. The previously completed and ongoing technical studies and environmental baseline assessments will form the basis of the applications. The permit requirements will be reviewed and updated as the Project advances through the environmental impact statement and permitting process.

Table 17.7.2.1: New Mexico Authorizations, Licenses and Permits Required for the Copper Flat Project

State of New Mexico Permits and Licenses	Issuing Agency
New Mexico Mining Act Permit	NMEMNRD MMD[1]
Exploration Permit (Done for Completed Exploration)	NMEMNRD MMD[1]
Mine Registration	NMEMNRD MMD[1]
Endangered Plant Species Permit	NMEMNRD[1] Forestry Division
Groundwater Discharge Permit (Tailings Discharge)	NMED[2] Groundwater Bureau
Groundwater Discharge Permit (Liquid Waste Discharge Permit - Other)	NMED[2] Groundwater Bureau
Stage 1 Abatement Plan (Part of DP-001 application)	NMED[2] Groundwater Bureau
Hazardous Waste Management	NMED[2] Hazardous Waste Bureau
Water Supply	NMED[2] Drinking Water Bureau
Air Quality Construction and Operations Permit (Pre Construction)	NMED[2] Air Quality Bureau
Air Quality Permits (Operation)	NMED[2] Air Quality Bureau
Solid Waste Facility Permit	NMED[2] Solid Waste Bureau
Petroleum Storage Tank Regulations	NMED[2] Petroleum Storage Tank Regulations
Permit to Appropriate Public Surface Waters	Office of the State Engineer
Permit to Appropriate Underground Water	Office of the State Engineer
Mine Dewatering Permit	Office of the State Engineer
Permits for Dam Construction and Operations	Office of the State Engineer
Abandonment of Mine Drillholes that Encounter Water	Office of the State Engineer
Permits to Conduct Archeological Surveys	Department of Cultural Affairs, Historic Preservation Division (SHPO)
Emergency Notification Plan	NM State Mine Inspector
Surface Disturbance Permit	NMED Air Quality Bureau
Radioactive Material License	NM Radiation Control Bureau

[1] NMEMNRD MMD – New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division
[2] NMED – New Mexico Environment Department

Federal Authorizations, Licenses and Permits

Hardrock mining and exploration operations on public lands administered by the U.S. Federal Government are regulated by a complex set of laws and regulations intended to protect the environment. The basic statute for hardrock mining on federally-administered lands is the *General Mining Law of 1872*. Land management direction and guidance is further provided in the *Federal Land Policy and Management Act of 1976* (FLPMA) for the U.S. Department of the Interior, Bureau of Land Management (BLM) and in the *1897 Organic Act* and the *1976 National Forest Management Act* for the U.S. Department of Agriculture, Forest Service. These statutory authorities are further developed in the regulations adopted by the respective agencies. Since the Copper Flat Mine is partially located on federal lands administered by the BLM, the focus of the remaining discussion will be on the BLM authorization process, and not the Forest Service process.

Proposed mining activities on BLM-administered lands trigger the application of Part 3809 regulations (43 CFR Part 3809), which establish guidelines intended to assure compliance with the FLPMA prohibition of "unnecessary or undue degradation of public lands." The preparation and acceptance of the 3809 Plan of Operations (PoO), which includes detailed information on the proposed operation, as well as environmental management, mitigation, and reclamation measures, must then be evaluated for potential environmental impacts under the National Environmental Policy Act (NEPA). For operations that are expected to have significant impacts on the environment, the environmental impact statement (EIS) under NEPA is the primary decision-making tool for the federal land manager. The EIS process includes requirements for publicly "scoping" the issues and identifying alternatives to be evaluated, and results in a record of decision that determines the content of the PoO and mitigation requirements. For smaller operations on federal lands, an environmental assessment (EA) often is produced instead of an EIS. The EA is intended to assist the federal land management agency in deciding whether environmental impacts will be significant.

In addition to the federal land management agency authorization, several other federal authorizations, licenses and permits will be required for the Copper Flat Project. These include:

Table 17.7.2.2: Federal Authorizations, Licenses and Permits Required for the Project

Federal Government Approvals and Licenses	Issuing Agency
43 CFR 3809 Plan of Operations	U.S. DOI, BLM[1]
NEPA Environmental Impact Statement & Record of Decision	U.S. DOI, BLM[1]
Section 404, Clean Water Act	U.S. Army Corps of Engineers
National Pollutant Discharge Elimination System (NPDES)	U.S. Environmental Protection Agency
MSHA Registration	Mine Safety and Health Administration
FCC License	Federal Communications Commission
Blasting Activities	U.S. Bureau of Alcohol, Tobacco and Firearms

[1] United States Department of the Interior, Bureau of Land Management
NEPA – National Environmental Policy Act of 1969
EIS – Environmental Impact Statement

Community Engagement and Consultation Requirements

The New Mexico Mining Act provides substantial opportunities for the public to participate in the major actions. Public notice is required on applications for the issuance, renewal, or revision of permits; for variance or standby requests; and for the release of financial assurance. The act requires that notice be provided several ways, including mailing to all property owners within a half mile of the operation, to local governments, and to those citizens on lists maintained by MMD; posting in four conspicuous places including the facility entrance; and publishing a notice in a local newspaper. The notice provides citizens with an opportunity to comment on the proposed action and to request a public hearing.

Any person who is adversely affected by any order, penalty assessment or permit action taken by the MMD director can appeal to the Mining Commission. The commission will then conduct an evidentiary hearing on the appeal. The commission decision can be appealed to the District Court.

Finally, the Mining Act is unique among New Mexico environmental statutes in allowing a "citizen suit." A citizen with an adversely affected interest can sue any person who has allegedly violated any rule, order, or permit issued under the Act, or sue the Energy, Minerals and Natural Resources Department (EMNRD), the Environment Department, or the Mining Commission for violating the Act or for failing to perform any non-discretionary duty under the act. A citizen suit cannot be commenced if the agencies have undertaken and are "diligently prosecuting" an enforcement action.

During the preparation of Copper Flat Project EIS, the BLM will also be required to develop an external scoping (consultation) program in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality's (CEQ) NEPA regulations (40 CFR Parts 1500–1508), the Department of the Interior NEPA manual (516 DM 2), and the BLM National Environmental Policy Act Handbook (H-1790-1). External scoping involves notification and opportunities for feedback from other federal agencies, organizations, tribes, local governments, and the public. External scoping can be used to identify coordination needs with other agencies; refine issues through public, tribal and agency feedback on preliminary issues; and identify new issues and possible alternatives. Tribal consultation focuses on established government-to-government relationships, and can be a lengthy processes.

The CEQ regulations mandate external scoping for an EIS, and such scoping has formal requirements. The time-limited scoping period that follows the publication of a Notice of Intent to prepare an EIS is referred to as formal scoping. External scoping methods include, but are not limited to: Federal Register notices, public meetings, field trips, direct mailing, media releases, newsletters, NEPA registers, and email notifications.

Current Status of Permitting Program

NMCC is in the process of preparing a new Plan of Operations for submittal to the BLM, and initiation of the NEPA approval process, as this has been identified as the critical path item for project permitting. No other permit applications have been initiated at this time.

Based on discussions with the NMED by NMCC contractor, Intera, even though the Discharge Permit (DP) issued to the Copper Flat Mine (DP-001) is not closed, given the length of time the permit has been inactive, a new application for DP-001 must be developed and submitted. The new application will be considered a renewal request for DP-001.

Groundwater impacts from the existing unlined tailings impoundment have been documented, but have not been fully characterized. In addition, recent samples of pit lake water quality reveal exceedances of water quality standards, and the NMED is concerned about migration of this water away from the pit causing additional groundwater impacts as well as ongoing contact with wildlife. As such, a Stage 1 Abatement Plan has been required by the NMED in a letter issued to Mr. George Lotspeich on August 20, 2008. However, Intera has learned from the NMED that the abatement requirements can be addressed as part of the discharge plan permitting process.

17.7.3 Environmental and Socio-Economic Baseline Studies

Overview

Comprehensive environmental and socio-economic baseline studies were completed as part of the previous attempt to reopen the Copper Flat Mine in the late 1990's. However, due to the age of these studies, additional baseline updates will be required for both the state and federal permitting processes. Supplemental studies are currently being performed, and will be undertaken in accordance with state and federal standards of data acquisition, quality assurance and reporting. A full-year of data is required for some study topics to provide the basis for modeling seasonal effects.

A review of pre-existing environmental baseline studies (gap analysis) completed from 1994 through 1999 is being undertaken to ascertain the utility of past studies in contributing to current study requirements.

Study Area

Baseline environmental and socioeconomic study areas to assess the mine development areas, along with adjacent lands tailored to the needs of the study topic (e.g., watersheds; affected communities), were defined based on the existing Project Area. Significant expansion of this area, perhaps as a result of the redesign and expansion of the proposed tailings disposal facility, may require new baseline investigations.

Meteorology and Air Quality

A meteorological station will be established at the mine site as soon as practicable to continuously collect climate data such as temperature, humidity, wind direction and speed, and solar radiation. Particulate matter (PM) collection stations will be also be established at that time. Local climate and atmospheric conditions will be compared to regional weather stations.

Hydrology

Hydrological surveys are being undertaken to establish surface water flow and water quality. Hydrometric station locations were identified in 1994 in preparation for stream flow measurements and freshet monitoring and analysis. Hydrological and meteorological studies contribute to water balance analysis and help to inform environmental permit applications. Environmental assessments require a full year of hydrological measurements to ensure seasonal coverage.

Hydrogeology

The regional and mine site groundwater conditions have been established through an existing network of strategically located groundwater monitoring wells. Additional groundwater studies are being performed to update the previous groundwater database and models for the site. Groundwater samples from the monitoring wells will be analyzed for water quality. Depending on the interim results and modeling outputs, additional groundwater monitoring wells may need to be established in proximity to the proposed tailings disposal facility to assess local conditions for geotechnical engineering design and seepage flow analysis. Environmental assessments require a full year of hydrogeological measurements. Hydrogeological data are used for groundwater modeling, pit inflow analysis and contaminant transport predictions.

17.7.4 Environmental Management and Monitoring

Environmental Management Plans

Development and operation of the mine and associated access roads will affect a range of terrestrial habitat types and wildlife species. Mining operations, through the plant emissions and potential for fugitive dust from various operations may also affect the quality of air at the mine site and surrounding locations.

NMCC will develop preliminary mitigation strategies as part of the Mine Permit and EIS preparation. At a minimum, the following management plans will be included:

- Access road management plan, including traffic management and safety on access roads and construction site, and maintenance;
- Waste rock and tailings plan;
- ARD prediction and prevention management plan;
- Water management plan;
- Air emissions and fugitive dust management plan;
- Noise management plan;
- Materials handling and management plan;
- Soil management plan;
- Erosion control and sediment control plan;
- Vegetation management plan;
- Wildlife management plan;
- Spill contingency and emergency response plan;
- Domestic and industrial waste management plan;
- Archaeological and heritage site protection plan; and
- Stormwater Pollution Prevention Plan (SWPPP).

Detailed mitigation strategies that satisfy regulatory requirements will be developed during the basic engineering and permitting phases.

17.7.5 Environmental Monitoring Program

NMCC will develop and implement an environmental monitoring program that will complement and provide data for the development of the management plans. The results of the monitoring program will be used to measure the success of the management strategies and to identify where amendments are necessary. The terms and conditions of the final monitoring program will be embodied in the permit conditions of the Mine Permit, and federal authorizations, as necessary.

17.7.6 Reclamation and Closure Requirements

Reclamation of disturbed areas caused by the project will be in compliance with federal and state regulations. Under the Federal Land Policy Management Act (FLPMA), the BLM is responsible for preventing undue or unnecessary degradation of federal BLM lands which may result from operations authorized by the mining regulations (43 CFR 3809). The Mining Act Reclamation Program (MARP) was created under the New Mexico Mining Act of 1993 to regulate hardrock mining reclamation activities for all minerals, and requires the preparation of a reclamation plan for submittal and approval by the New Mexico Energy, Minerals and Natural Resources Department (NMEMNRD) and New Mexico Environmental Department (NMED). Closure of the tailings embankment must comply with requirements of the New Mexico State Engineers office.

As proposed, the current project will be developed, operated and closed with the objective of leaving the property in a condition that will mitigate potential environmental impacts and restore the land to an agreed to land use and capability. Closure and reclamation activities will be carried out concurrent with mine operation wherever possible, and final closure and reclamation measures will be implemented at the time of mine closure.

Reclamation Objectives

The objectives of the Copper Flat reclamation program will be as follow:

- To minimize erosion damage through careful control of surface water runoff. This involves the use of contouring, water bars and riprap where needed;
- To protect the quality of surface and ground water resources by minimizing pollutant formation, and on-site containment of any unavoidable toxicity problems;
- To establish surface soil conditions most conducive to regeneration of a stable plant community through stripping, stockpiling, and reapplication of alluvial or soil material where feasible;
- To revegetate disturbed areas with a diverse mixture of plant species, including native and introduced species, in order to establish long-term productive plant communities compatible with planned future uses;
- To stabilize plant communities with the use of accepted conservation practices;
- To maintain public safety by stabilizing, removing, or fencing land forms which could constitute a public hazard; and
- To meet or exceed state and federal reclamation regulations.

Surface facilities, equipment and buildings related to the mining project will be removed, foundations covered, and the plant site restored to self-sustaining plant communities similar to those that are currently present on-site and on adjacent undisturbed lands. The topography, slopes and aspects of the disturbed and reclaimed areas will be developed to blend in with the present, existing physiographic forms of the Copper Flat area, as feasible.

Reclamation Units

For the purposes of reclamation planning the Copper Flat project has been broken down into the following key reclamation units:

- Open pit;
- Waste rock dumps;
- Tailings disposal facility;
- Mine site facilities;
- Infrastructure and ancillary facilities; and
- Haul/access roads.

17.7.7 Reclamation Security Bond

The New Mexico Mining Act requires that each operator post, prior to obtaining a permit, financial assurance (FA) "sufficient to assure the completion of the performance requirements of the permit, including closure and reclamation, if the work had to be performed by the director or a third party contractor." The act also prohibits the operator from using "any type or variety of self-guarantee or self-insurance."

Traditionally, mines have relied on surety bonds as the primary form of FA. However, changes in the insurance industry have made surety bonds very difficult and very expensive to obtain for mining companies. The Mining Commission recently amended their rules to allow additional forms of FA, including trust funds, and to allow mechanisms such as "net present value." Recent large FA submittals have included a package of instruments, including trust funds, guarantees, collateral and letters of credit. Companies have also been more willing to accelerate their reclamation work to decrease their FA obligations.

Based on the limited information available on the design and layout of the currently proposed Copper Flat project, SRK anticipates a closure cost on the order of US$40million. This preliminary estimate was calculated using the Standardized Reclamation Cost Estimator v. 1.3 (SRCE) (www.nvbond.org) and experience at U.S. mines of similar size and magnitude.

17.7.8 Summary of Relevant Environmental Issues

The proposed Copper Flat project currently has several key environmental issues, and will likely face some additional issues during the permitting and authorization process. These include:

Pit Lake

Following closure of the Copper Flat project, a pit lake will form. While additional studies and predictive modeling of the possible future pit lake are currently being prepared by NMCC, previous studies conducted during the last permitting attempt provided the following conclusions about the Copper Flat pit:

- The mineralization at Copper Flat is classified as being a copper porphyry. However, unlike most copper porphyry deposits, sulfide content is very low, calcite is a common accessory mineral, and no supergene enrichment zone or substantial gossan cap are present;
- Laboratory test results indicated the rate of net acid generation is slow, and at least initially, net alkalinity exceeded net acid generation. Available buffering capacity may be provided through mineral-water reactions and groundwater recharge; although, with time, acid generation from the wall rocks would exceed acid consumption available from

mineral-water reactions. Additional buffering capacity from groundwater alkalinity may compensate for this loss. Over time, it is possible that net acid generation may exceed net alkalinity, but current information is inconclusive in order to make a definitive assessment;

- Groundwater in the Copper Flat area has a neutral pH and excess alkalinity. Groundwater quality is generally good and has only a few exceedences against standards. Groundwater quality is predicted to be neutral pH, low metals, and high sulfate in the vicinity of the pit, with groundwater flow is toward the pit lake;
- Pit lake chemistry has varied with time and is currently neutral to mildly alkaline pH with increasing sulfate concentrations. Change in water chemistry over time indicates that it is reaching gypsum saturation. Pit lake quality meets most applicable surface water standards; and
- The post-closure pit water quality is likely to be similar to the current pit water quality with slightly increased salinity. Geochemical modeling should be conducted to confirm this.

Acid Rock Drainage (ARD)

The future waste rock will be composed primarily of quartz monzonite. The majority of this waste rock is indicated by acid base accounting (ABA) and net acid generation (NAG) tests to have a net acid generating potential. However, field observations conducted in 1994 indicated that little oxidation and acid generation had occurred at the site, despite exposure of waste rock and pit walls, since mining operations were suspended in 1982. Observed conditions are likely influenced by the arid conditions of the site. Mineralogical observations also suggest that the sulfides occur in a crystalline form that is less susceptible to oxidation. Over time, however, it can be assumed that net acid generation will occur in the sulfide bearing waste rock dumps and tailings, and that this condition will require operational management and mitigation to ensure long-term physical and geochemical stability during operations and post closure.

Historic Tailings Seepage

Groundwater monitoring down-gradient of the tailings has indicated the presence of elevated concentrations of some constituents, suggesting water from the existing, unlined impoundment has seeped into the local aquifer. A Stage 1 Abatement Plan must be prepared as part of the Discharge Permit (DP-001) application to address this issue, as well as the current and future water quality in the pit lake.

Public Participation and Potential Opposition

Public opposition to the previous attempt to permit the Copper Flat project was organized. Future plans to open the mine, and increase its production and waste disposal facilities, could garner equal attention.

17.8 Taxes and Royalties

NMCC will be subject to the following taxes as they relate to the Project:

- Federal income tax; and
- State income tax.

In addition, the Project will also be subject to the following levies applicable in the State of New Mexico:

- Franchise tax;
- Ad Valorem tax;
- Gross Receipts tax; and
- Severance tax.

Federal Income Tax

Corporate Federal income tax is determined by computing and paying the higher of a regular tax or a Tentative Minimum Tax (TMT). If the TMT exceeds the regular tax, the difference is called the Alternative Minimum Tax (AMT). Regular tax is computed by subtracting all allowable operating expenses, overhead, depreciation, amortization and depletion from current year revenues to arrive at taxable income. The tax rate is then determined from the published progressive tax schedule. An operating loss may be used to offset taxable income, thereby reducing taxes owed, in the previous three and following 15 years. The highest effective corporate income tax is 35%.

The AMT is determined in three steps. First, regular taxable income is adjusted by recalculating certain regular tax deductions, based on AMT laws, to arrive at AMT Income (AMTI). Second, AMTI is multiplied by 20% to determine TMT. Third, if TMT exceeds regular tax, the excess is the AMT amount payable in addition to the regular tax liability.

State Taxes

The State of New Mexico corporate income tax rate is 7.6% for net income over US$1million. A deduction is allowed for depletion.

A franchise tax of US$50 is payable annually. This is a nominal amount.

Property tax in New Mexico is levied as an Ad Valorem on Copper. Ad Valorem is calculated as 2.3% of assessed value. Assessed value is 30% of the market value of copper produced. Market value is the sale price of copper less royalty.

The Gross Receipts tax is essentially a sales tax and is levied at 5%.

Severance tax for the privilege of severing natural resources is levied at 0.5% of taxable value.

Royalty

NMCC is required each calendar quarter to pay a 3.25% net smelter returns royalty to Hydro Resources and GCM on mineral products produced from the Copper Flat properties. Advance royalty payments paid will be credited against, and deducted from amounts due for net smelter return royalties.

17.9 Capital Costs

PEA-level capital costs are estimated using SRK in-house database information. Capital costs for the mill (crusher, grinding mills, flotation cells, etc.) based on recently completed studies have been applied. The capital costs presented are to a PEA level of accuracy and are expected to be within ±40%. A contingency of 20% has been applied to account for exclusions in the estimate. All costs are in 2Q 2010 US dollars.

LoM capital costs are shown in Table 17.9.1. The initial capital estimate is US$179million. An additional US$112million in sustaining capital will be required. LoM capital will therefore be about US$291million.

Table 17.9.1: LoM Capital Cost Summary (US$000s)

	Initial	Sustaining	LoM
Mining	$20,981	$27,781	$48,762
Process	$97,310	$0	$97,310
Tailings Dam	$43,939	$43,939	$87,877
Infrastructure	$7,358	$0	$7,358
Owner	$9,450	$40,000	$49,450
Total Capital	**$179,037**	**$111,720**	**$290,757**

17.9.1 Mine Capital

Initial mine capital has been estimated at US$21million. Capital items include loaders, trucks, a drill and equipment to support conventional truck/shovel operations. The estimate also includes provisions for mine shop equipment and spare parts. Site development capital and structures are included in the process and infrastructure estimate. Sustaining capital, totaling US$28million over the 17-year LoM provisions scheduled equipment replacements.

Table 17.9.2: Mining Capital (US$000s)

	Initial	Sustaining	LoM
Atlas DM45	$1,184	$710	$1,894
Terex RH 90-C	$4,100	$2,460	$6,560
CAT 992G	$1,980	$0	$1,980
CAT 777F	$5,120	$19,200	$24,320
CAT D8R	$584	$350	$934
CAT 834H	$1,714	$1,028	$2,742
CAT 16G	$668	$668	$1,336
Water Truck	$630	$0	$630
Shops Equipment & Spares	$750	$0	$750
Mine Support Equipment	$2,343	$839	$3,182
Site Development	$0	$0	$0
Subtotal	**$19,073**	**$25,256**	**$44,329**
Contingency (10%)	$1,907	$2,526	$4,433
Total	**$20,981**	**$27,781**	**$48,762**

17.9.2 Process Facility Capital

The estimated LoM capital cost for the mill and buildings is $97million as shown in Table 17.9.3.

Table 17.9.3: Process Facility Capital (US$000s)

	Initial	Sustaining	LoM
Direct Costs			
Primary Crusher	$2,813	$0	$2,813
Coarse Ore Handling	$2,691	$0	$2,691
Grinding & Classification	$13,615	$0	$13,615
Cu Flotation & Regrind	$4,070	$0	$4,070
Copper Concentrate Handling	$1,290	$0	$1,290
Mo Recovery Plant	$2,605	$0	$2,605
Civil/Structural (including buildings)	$33,511	$0	$33,511
Electrical & Instrumentation	$11,640	$0	$11,640
Mobile Equipment	$1,940	$0	$1,940
Subtotal Direct Costs	**$74,174**	**$0**	**$74,174**
EPCM (7.5%)	$5,563	$0	$5,563
Spare Parts (5.0%)	$1,354	$0	$1,354
Subtotal	**$81,092**	**$0**	**$81,092**
Contingency (20%)	$16,218	$0	$16,218
Total	**$97,310**	**$0**	**$97,310**

Costs for construction of new buildings are included in the estimate. The buildings include the primary crusher building, mill and flotation building, and additional facility buildings. Concrete and structural steel costs are also estimated. The estimate includes complete construction of the following buildings:

- Primary Crusher Building;
- Mill and Flotation Building;
- Shops and Warehouse;
- Small Vehicle Repair Building;
- Administration Building;
- On Site Concentrate Storage Building;
- Change House and Mine Office; and
- Assay, Metallurgical and Lab Building.

Included in the costs are new foundations and support concrete, new structural steel, and construction costs of the buildings. Although foundations from the previously operating plant were left buried in place, for the purpose of the PEA it is assumed that these foundations would not be suitable for reuse. Changes in the size of the process equipment selected will require changes to the foundation plans and building outlines. A proper field assessment of the existing foundations will be completed during the Pre-Feasibility study. There is an opportunity for significant capital savings should it be feasible to use the existing foundations for the new mill structure and thickener.

17.9.3 Tailings Dam Capital

Costs for mining and haulage of mine waste used in the tailings embankment is included separately under the mining costs. The initial tailings dam construction will be US$44million. Three more lifts will be required over the LoM in Years 6 (US$30million), 11 (US$10million) and 16 (US$4million). The tailings dam cost estimate has been based on typical design criteria. SRK is of the opinion that tailings dam capital cost estimate can be reduced with further study.

Table 17.9.4: Tailings Capital (US$000s)

		Initial	Sustaining	LoM
Site Preparation		$890	$890	$1,780
Earthworks		$19,893	$19,893	$39,786
Geosynthetics		$7,246	$7,246	$14,492
Overliner		$5,727	$5,727	$11,453
Piping		$579	$579	$1,157
Miscellaneous		$538	$538	$1,076
EPCM		$1,743	$1,743	$3,486
	Subtotal	**$36,615**	**$36,615**	**$73,231**
Contingency (20%)		$7,323	$7,323	$14,646
	Total	**$43,939**	**$43,939**	**$87,877**

17.9.4 Infrastructure Capital

Infrastructure capital costs include items such as the primary access road, water supply systems, electrical power distribution, and the concentrate load-out facility. Where possible, the estimate assumes reuse of existing items that remain serviceable.

The estimate includes construction work for the following:

- Access Road Work;
- Highway 90 Access Upgrades;
- Site Grading;
- Removal of Existing Foundations;
- Underground Site Utilities;
- Refurbishment of Reclaim Tunnel;
- Plant Site Electrical Power;
- Concentrate and Molybdenum Load-Out Facility;
- Truck Scale and Scale House;
- Fresh Water Pumping System; and
- Tailing Pipe Line and Pumps.

Capital costs were estimated for the infrastructure items for the project. The primary items that were assumed to be re-usable include the mine access road, the water well field, the primary freshwater pipeline, the main electrical substation at I-25, the 115kV power transmission lines, 25kV power line to the well field, the reclaim tunnel, and the access cutting from the mill site to the tails area.

The estimated capital cost for these infrastructure items is US$7million, as shown in Table 17.9.5.

Table 17.9.5: Infrastructure Capital (US$000s)

		Initial	Sustaining	LoM
Earthworks		$1,981	$0	$1,981
Site Electrical		$1,560	$0	$1,560
Fresh Water System		$1,498	$0	$1,498
Tailings Pipelines		$573	$0	$573
Miscellaneous		$520	$0	$520
	Subtotal	**$6,132**	**$0**	**$6,132**
Contingency (20%)		$1,226	$0	$1,226
	Total	**$7,358**	**$0**	**$7,358**

A more detailed description of some of the infrastructure items not previously described is provided here.

Site Grading

Site Grading was evaluated to account for required grade work at the plant site. A cost allowance was estimated to cover required site grading to support the layouts of the new buildings and infrastructure items. The plant area is currently covered with old backfill from the reclamation work. This material will need to be removed, the site area graded to proper slopes and elevations for the new construction.

Removal of Exiting Foundations

The foundations for the crusher, mill, and processing, and other buildings were left in place and buried during the reclamation work following the mine and mill shutdown. (It may be possible that some of these structures can be excavated and re-used. As previously stated, for the purposes of the PEA it was assumed that these foundations would not be suitable for reuse.) This estimate includes costs to excavate, demolish, and remove the existing foundations in order to reuse the locations of the previous facilities. The work was estimated under the assumptions that the foundations will be exposed by excavation with heavy machinery, the foundations will be broken apart and demolished with hydraulic breakers. The rubble will be loaded into trucks with hydraulic excavators and loaders and disposed of in an appropriate area.

Underground Site Utilities

The mill site will require underground utilities including; firewater loop, potable water distribution, and sewer lines and sewage system. An allowance based on rough take off quantities has been included in the estimate for underground utilities.

Refurbishment of the Reclaim Tunnel

The reclaim tunnel underneath the course ore stockpile was left in place during the mine shutdown. It was assumed some work and repairs will be required to make the tunnel serviceable for the new operation. An allowance for this cost has been included in the estimate.

17.9.5 Owner Costs

Owner costs are US$9.5million and include provisions for permitting, resource delineation as well as additional engineering associated with the advancement of the project. Owner costs are shown on Table 17.9.6.

Also included is a mine closure cost estimate of US$40million to be expended at the end of the LoM. This estimate includes closure of the tailings dam. As with the construction of the dam, there may be potential for lower closure costs as more detail is defined.

Table 17.9.6: Owner Costs (US$000s)

		Initial	Sustaining	LoM
EIA & Permitting		$1,500	$0	$1,500
Reclamation Bond		$0	$0	$0
Employee Training		$1,000	$0	$1,000
Communications		$150	$0	$150
Security		$300	$0	$300
Community Relations		$2,000	$0	$2,000
Legal Permits & Fees		$1,000	$0	$1,000
Drilling Program		$1,000	$0	$1,000
Engineering Studies		$1,500	$0	$1,500
Contractor Mobilization		$1,000	$0	$1,000
Corporate Services		$0	$0	$0
Mine Closure		$0	$40,000	$40,000
	Subtotal	**$9,450**	**$40,000**	**$49,450**
Contingency (0%)		$0	$0	$0
	Total	**$9,450**	**$40,000**	**$49,450**

17.10 Operating Costs

PEA-level operating costs were estimated using in-house database information. All costs are in 2Q 2010 US dollars. LoM operating costs are shown in Table 17.10.1. Over the LoM, operating costs will be about US$7.84/st of ore milled.

Table 17.10.1: LoM Operating Cost Summary (US$)

		$/st-milled	LoM ($000s)
Mining		$2.18	$208,354
Process		$5.11	$488,207
G&A		$0.55	$52,535
	Total	**$7.84**	**$749,096**

17.10.1 Mine Operating Cost

Mine operating costs will average US$1.38/st-mined (US$2.18/st-milled) as summarized in Table 17.10.2. Costs are typical of surface operations of this size in the Western United States. Haulage costs may be reduced if waste rock does not have to be hauled to the tailings embankment.

Table 17.10.2: Mine Operating Cost (US$)

		$/st-mined	LoM ($000s)
Drilling & Blasting		$0.19	$29,178
Loading		$0.21	$31,070
Hauling		$0.43	$65,752
Roads & Dumps		$0.22	$33,070
Mine Support		$0.05	$8,096
Mine G&A Labor		$0.27	$41,187
	Total	**$1.38**	**$208,354**

17.10.2 Mill Operating Cost

Mill operating costs estimates for the Copper Flat flowsheet were estimated based on conventional crushing, SAG – Ball mill grinding, bulk flotation, copper-molybdenum separation and concentrate handling operation. Operating information available from similar sized operations was used where applicable.

Process operating costs are summarized in Table 17.10.3. The process operating cost estimate totals 5.11/st-milled

Table 17.10.3: Mill Operating Cost (US$)

		$/st-milled	LoM ($000s)
Wear & Grinding Steel		$1.01	$96,253
Reagents		$0.67	$63,548
Electric Power		$1.58	$150,725
Fuel		$0.03	$2,538
Maint. Parts & Supplies		$0.74	$70,439
Water		$0.10	$9,549
Tailings		$0.20	$18,899
Process Labor		$0.80	$76,256
	Total	**$5.11**	**$488,207**

17.10.3 General & Administrative

G&A costs will average US$0.55/st-milled, or US$3.1million per year, over the LoM. The estimate includes environmental permitting, general maintenance, outside services, overhead labor and other overheads associated with site operations.

17.11 Economic Analysis

The financial results of this report are based upon work performed by SRK and have been prepared on an annual basis. All costs are in Q2 2010 US constant dollars.

17.11.1 Model Parameters

A financial model was prepared on an unleveraged, post-tax basis the results of which are presented in this section. Key criteria used in the analysis are discussed in detail throughout this report. Financial assumptions used are shown summarized in Table 17.11.1.

Table 17.11.1: Model Parameters

Description	Value
Mine Life	17 years
Ore Milled	95,490kst
Payable Copper	531Mlb
Payable Molybdenum	9.5Mlb
Copper Price (LoM avg)	$3.00/lb
Molybdenum Price (LoM avg)	$12.00/lb
Effective Tax Rate	25%
Discount Rate	6%

A 4-year pre-production period is required to allow for permitting, detailed engineering, and due diligence/financing. The mine will have an estimated life of 17 years given the mineable resource described in this report.

Market price of assumptions of US$3.00/lb copper and US$12.00/lb molybdenum provide the basis for projected revenues.

Copper and molybdenum concentrates are assumed to be sold to nearby smelters in Arizona.

Smelting and refinery costs as well as the calculation of payable metals are summarized in Tables 17.11.2-3. The assumptions shown in the tables are based upon typical smelter terms.

Table 17.11.2: NSR Copper Concentrate

			Value	Units
Copper Concentrate			**986**	**kst**
	Grade:	Copper	28.0%	
		Molybdenum	0.0%	
	Contained Metal:	Copper	552,024	klb
		Molybdenum	0	klb
Payable Copper				
		Cu in Concentrate	552,024	klb
		Cu Deduction (1%)	(19,715)	klb
		Cu Losses (0.25%)	(1,380)	klb
		Payable Copper	**530,929**	**klb**
		Gross Revenue	**1,656,073**	**$000s**
	TC/RC			
		Cu Deduction	(59,145)	$000s
		Cu Losses	(4,140)	$000s
		TC	(64,074)	$000s
		RC	(34,510)	$000s
		TC/RC	**(161,870)**	**$000s**
		Cu Revenue	**1,494,203**	**$000s**
		Realized Price	$2.81	$/lb-Cu

Table 17.11.3: NSR Molybdenum Concentrate

		Value	Units
Molybdenum Concentrate		**9.6**	**kst**
Grade:	Molybdenum	55%	
Contained Metal:	Molybdenum	10,594	klb
Payable Molybdenum			
	Mo in Concentrate	10,594	klb
	Mo Deduction	(1,059)	klb
	Mo Losses	(26)	klb
	Payable Mo	**9,508**	**klb**
	Gross Revenue	**127,132**	**$000s**
Deductions			
	Mo Deduction	(12,713)	$000s
	Mo Losses	(318)	$000s
	Roasting Charge	(11,886)	$000s
	Mo Deductions	**(24,917)**	**$000s**
	Mo Revenue	**102,215**	**$000s**
	Realized Price	$10.75	$/lb-Mo

Freight and handling costs are estimated to be US$21.22/st-Cu concentrate for copper, and US$39.60/st-Mo concentrate for molybdenum. In addition, a US$1.00/st-concentrate (Cu & Mo) is provisioned for insurance, umpire assaying and other concentrate handling costs.

17.11.2 Project Financials

The financial analysis results, shown in Table 17.11.4, indicate an $NPV_{6\%}$ of US$144million with an IRR of 23% (after estimated taxes). Payback will be in 1.75 years from the start of production. The following provides the basis of the SRK LoM plan and economics:

- Measured, Indicated and Inferred resources are included;
- A mine life of 17 years;
- An overall average metallurgical recovery rate of 90% Cu and 55% Mo over the LoM;
- Mill recoveries of gold and silver are not included in these economic results;
- A operating cost of US$1.41/lb-Cu;
- Capital costs of US$291million, comprised of initial capital costs of US$179million, and sustaining capital over the LoM of US$112million;
- Mine closure cost, included in the above estimates is US$40million; and
- The analysis does not include provision for salvage value.

Table 17.11.4: Financial Model Results (US$)

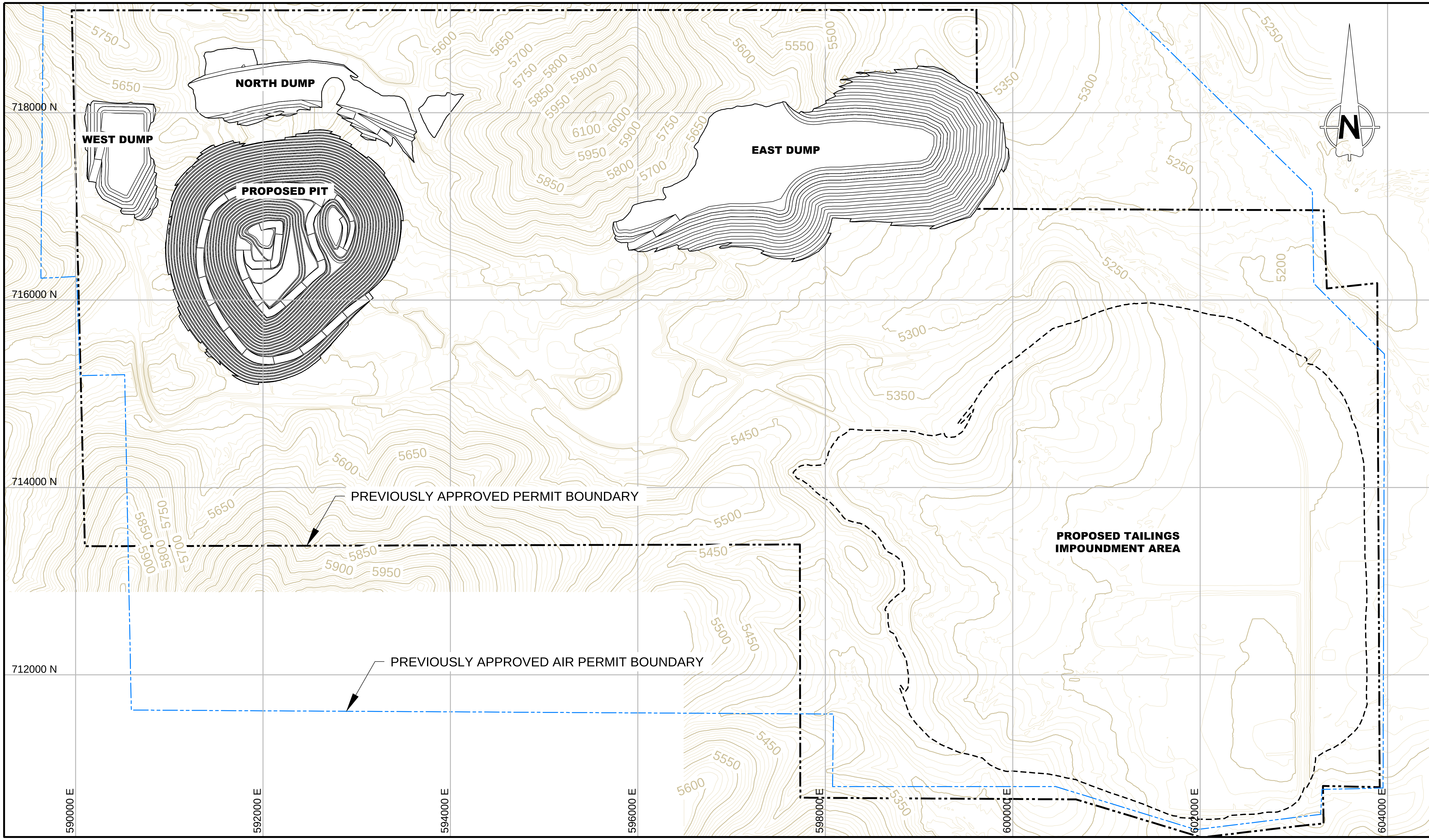
	Value	Units
Market Prices		
Copper	$3.00	/lb-Cu
Molybdenum	$12.00	/lb-Mo
Estimate of Cash Flow (all values in $000s)		
Net Smelter Return (NSR)		
Copper Concentrate	$1,494,203	$000s
Molybdenum Concentrate	$102,215	
NSR	**$1,596,418**	**$000s**
Freight & Handling	($24,828)	
Gross Revenue	**$1,571,591**	**$000s**
Royalty	($51,077)	$000s
Net Revenue	**$1,520,514**	**$000s**
Operating Costs		
Mining	$208,354	$000s
Processing	$488,207	$000s
G&A	$52,535	$000s
Total Operating	**$749,096**	**$000s**
Operating Margin (EBITDA)	**$771,418**	**$000s**
Initial Capital	$179,037	$000s
LoM Sustaining Capital	$111,720	$000s
Income Tax	$133,387	$000s
Cash Flow Available for Debt Service	**$347,274**	**$000s**
$NPV_{6\%}$	**$144,497**	**$000s**
IRR	**23%**	

17.11.3 Sensitivity

Sensitivity analysis for key economic parameters is shown in Table 17.11.5. The Project is nominally most sensitive to metal prices (revenues). The Project's sensitivities to capital and operating costs are quite similar.

Table 17.11.5: Project Sensitivity ($NPV_{6\%}$, US$000s)

Parameter	-10%	-5%	Base	5%	10%
Revenues	$80,000	$112,000	$144,000	$177,000	$209,000
Capital Costs	$161,000	$153,000	$144,000	$136,000	$128,000
Operating Costs	$173,000	$159,000	$144,000	$130,000	$116,000



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SRK Consulting
Engineers and Scientists
7175 West Jefferson Ave. Suite 3000
Denver, Colorado 80235
303-985-1333

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COPPER FLAT
SEIRRA COUNTY, NEW MEXICO

PRELIMINARY ASSESMENT

SITE LAYOUT

DATE:	APPROVED:	FIGURE:	REVISION NO.
JUNE 2010	TM	17-1	A

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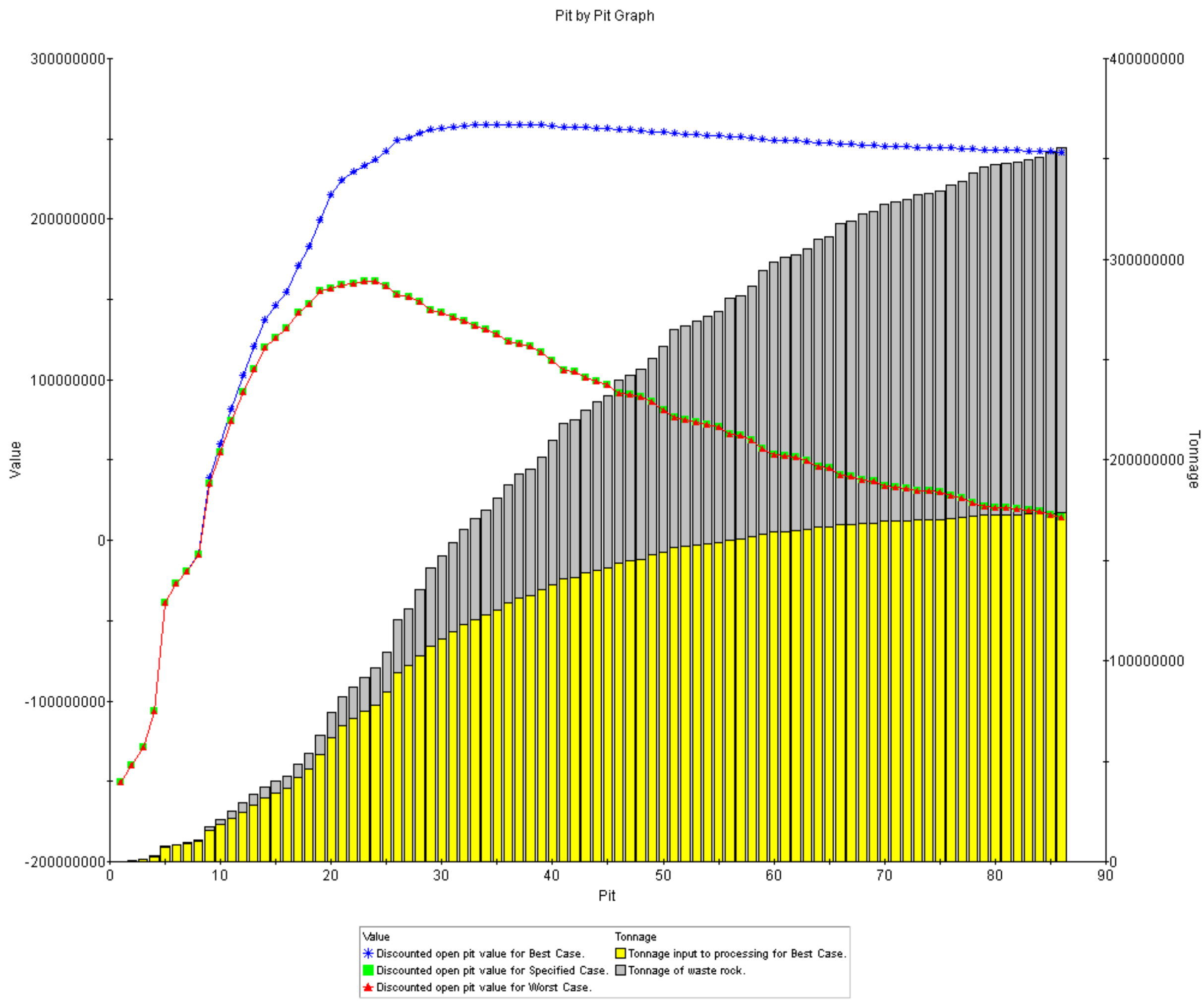

SRK Consulting Engineers and Scientists DENVER, COLORADO		Copper Flat Project			
		Pit by Pit Graph			
SRK JOB NO.: 191000.020	Sierra County, New Mexico	DATE: 20100602	APPROVED: APPOVED	FIGURE: 17-2	REVISION NO.: REV A
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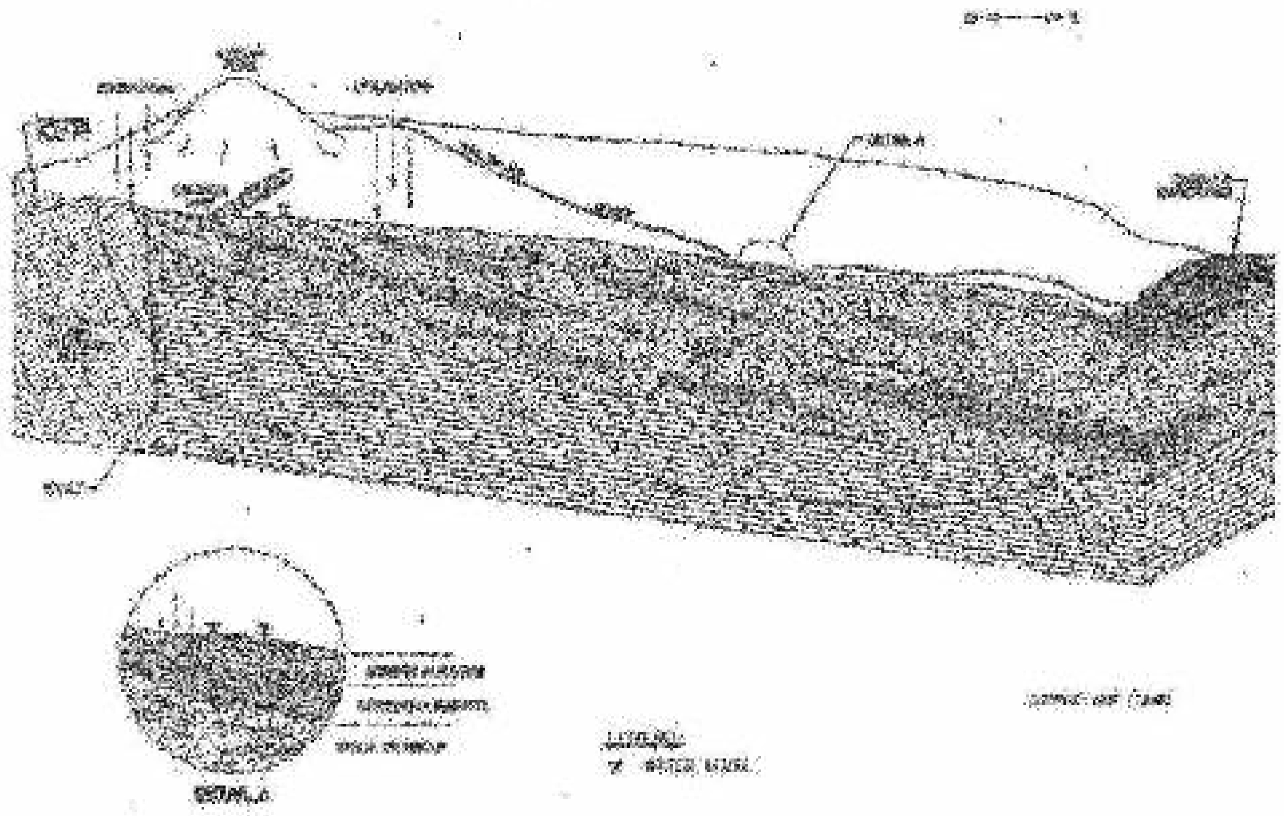

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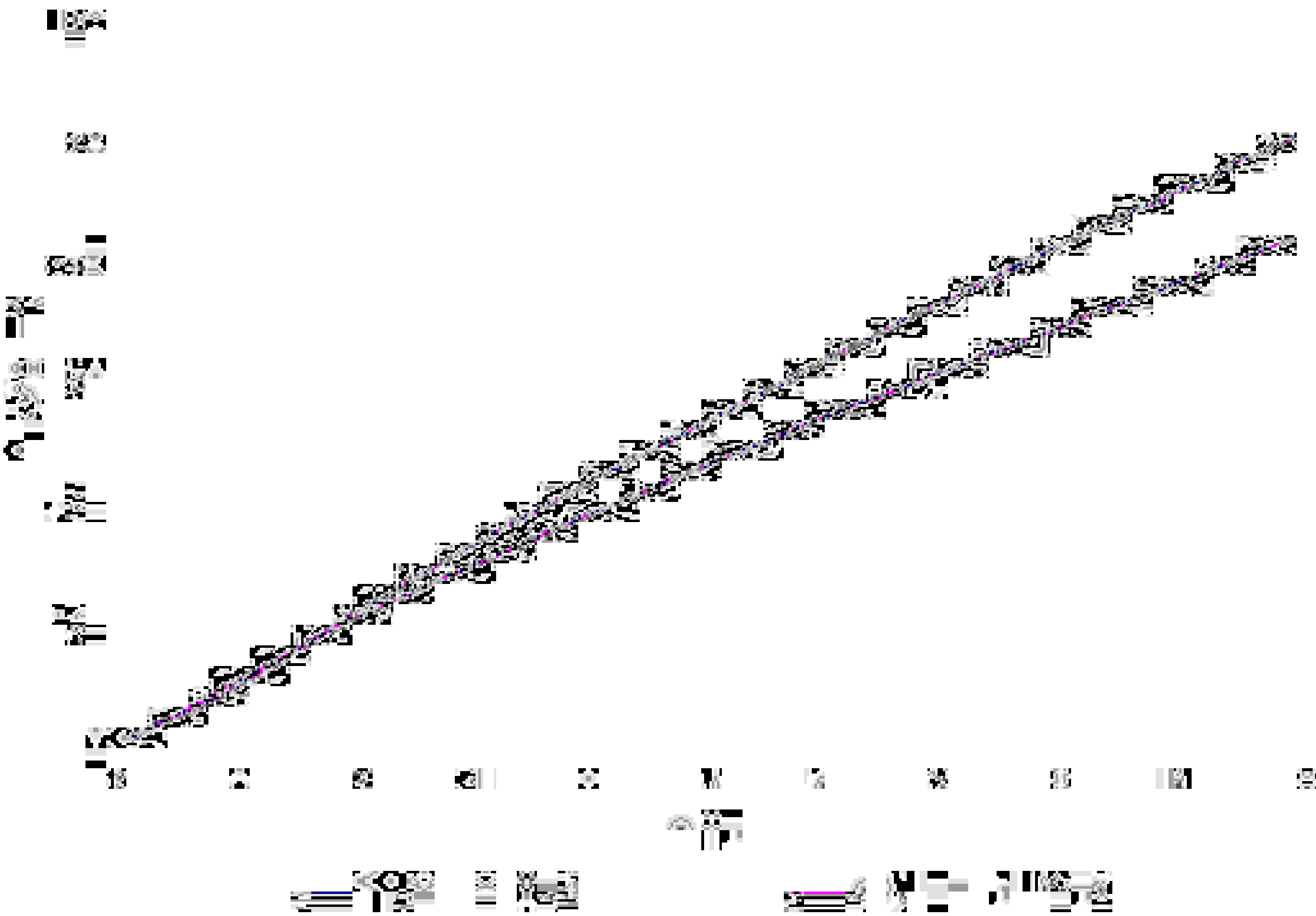
SRK JOB NO.: 191000.020	Sierra County, New Mexico	Copper Flat Project
FILENAME: Figure_17-3.docx		Conceptual Hydrogeological Model

DATE:	APPROVED:	FIGURE:	REVISION NO.:
20100504	APPROVED	17-3	A



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SRK JOB NO.: 191000.020	Sierra County, New Mexico	Copper Flat Project
FILENAME: Figure_17-4.docx		Predicted Inflow to Open Pit by SRK (1995)

DATE:	APPROVED:	FIGURE:	REVISION NO.:
20100504	APPROVED	17-4	A

18 Interpretation and Conclusions (Item 21)

SRK finds the resource model and resource classification to be acceptable for resource reporting under CIM guidelines. It is SRK's opinion that the resource model described in this report can be used for preliminary economic evaluation, and is appropriate for assessing project viability, and determining suitable advancement of the Project. The PEA results justify advancing the Project to a Pre-Feasibility Study.

18.1 Field Surveys

There are minor discrepancies observed between the existing DTM for the present day topographic surface and the collar elevations measured from the recent drilling program. It is SRK's opinion that these discrepancies do not impact the resource estimate, but will need be resolved for future exploration and potential development. SRK concludes that NMCC should acquire a high-resolution topographic survey prior to advancing the project through a Pre-Feasibility Study and subsequent detailed design work. Additional survey compilation work and site specific ground surveying should be completed, as necessary, to tie in all relevant previous surveys (including those for drilling, claim boundaries, etc).

18.2 Analytical and Testing Data

Although there is variability in the NMCC field duplicate samples, the results are within acceptable ranges for field duplicate analysis for copper. The results for molybdenum showed greater variability, which suggests a larger sample may be appropriate for molybdenum analysis. Molybdenite minerals in general can be difficult to drill and sample. In the higher-grade material, molybdenite will have the tendency to flake or spall off because of its platey habit and can be lost during drilling and sampling. If after drilling the sample sits in a core box for an extended period, molybdenum may be lost from the sample through this process. Powdering of the material and smearing during sample preparation may also cause molybdenite loss or sample cross contamination. The sample size was appropriate for copper analysis, but because of the nature of the molybdenum minerals a larger sample may be necessary.

One standard currently used by NMCC does not appear to be performing well. For standard CU171, results for TCu are anomalously the same. This standard is also performing low for Mo. SRK is of the opinion that the failure of this standard does not impact the integrity of the database. All other standards performed as expected.

The 2009-2010 database verification conducted by NMCC used best industry practices for sample collection, QA/QC and analysis. Based on results of the pulp reanalysis and drilling programs conducted as part of this verification, SRK is of the opinion that the historic database can be used in resource estimation.

The historic drilling programs did not typically include assaying for precious metals. A pilot precious metals re-assay program for gold and silver, using historic pulps, should be conducted.

18.3 Exploration Conclusions

Resource estimation showed good correspondence between the IDW and NN models in all orthogonal directions. The degree of smoothing in the IDW model is evident in the peaks and valleys shown in the swath plots, however, this comparison shows close agreement between the IDW and NN models in terms of overall grade distribution as a function of X, Y and Z location.

The current resource is drill limited, both at depth and to the north and east. SRK recommends additional step out drilling to extend the current resource base, as well as resource conversion drilling to convert Inferred to Indicated resources. In addition, it was reported by Quintana Minerals that there is exploration potential within the district, specifically the Southwest Extension, Copper Ledge and Copper Ridge. These three areas have limited drilling and have been identified as areas with exploration potential.

18.4 Other Relevant Information

The scope of this PEA was intended for the use of NMCC and THEMAC Resources to further the evaluation of the Copper Flat project by providing a mineral resource estimate, (with classification of resources in accordance with the CIM classification system), and a Preliminary Assessment of the economic potential of the property. It is SRK's opinion that the resource model described in this report is suitable for preliminary economic evaluation, and assessment of project viability for determination of advancement of the Project. The PEA results justify advancing the Project to a Pre-Feasibility Study.

Some environmental studies have been previously undertaken and are also currently in progress. Some additional drilling is anticipated. Resource, geotechnical, hydrogeological and other studies should be implemented in the future. Current studies show that the Copper Flat deposit can be mined by conventional open pit mining methods, and processed by well-established processing techniques.

The Project is not remote, as readily available services, including power, water and land transportation infrastructure are close to the site. Based on field observations, available geologic data, previous production operations, metallurgical testwork, available environmental data, various studies and other PEA work, SRK's opinion is that there are no evident flaws to the development of the Project.

The objectives moving forward should be focused on progressing the Project through a Pre-Feasibility Study, and pending positive economic results at that stage, onto a Feasibility Study.

SRK acknowledges that a significant amount of development level work has been previously conducted. Certain project opportunities and risks are noted below.

18.4.1 Opportunities

The following opportunity aspects are noted:

- In the next stage of study, the resource model should include gold and silver so as to be reportable as a mineral resource, and thus ultimately also a mineral reserve in a mine plan, according to NI 43-101 standards. This will add value to the Project;
- There is potential for optimization (steepening) of pit slope angles for the Project provided additional geotechnical data is collected and evaluated. This could reduce the waste stripping ratio within designed open pits for the Project;
- For the tailings storage facility, trade off studies among different construction methods and tailings deposition methods should be performed to optimize the design. This could reduce the estimated costs for this facility, and could possibly increase the tailings capacity within the historical project permit boundary limits;

- Additional step-out drilling could increase the estimated mineral resources of the Copper Flat deposit within certain limits; and
- Project economics can be improved by implementation of the recommendations in this PEA, together with other initiatives and potential improvements that NMCC is researching.

18.4.2 Risks

The following risk aspects are noted:

- Certain agreements with vendor parties to the Project have not been finalized and could potentially result in relatively minor complications. These are likely to be resolved satisfactorily in the course of ongoing negotiations;
- The historical project permit boundary limits (at the east end of the tailings dam) potentially constrain the maximum capacity of the tailings storage facility, and if not extended to the east might constrain the maximum mill feed tonnage from future open pit designs. However, extension of these limits is possible, but they would change the permit boundary; and
- Recent technical field assessments of various components of the previous infrastructure have not yet been carried out. The PEA assumed most of these components (except the foundations) could be re-used. It is possible that certain items (for example, the water pipeline from the wells to the property) may be found to be in need of repair, upgrading or replacement.

19 Recommendations (Item 22)

19.1 Recommended Work Programs

19.1.1 Mineral Resources

Prior to advancing the Project through Pre-Feasibility and subsequent detailed design work, SRK recommends that the minor discrepancies observed between the existing DTM for the present day topographic surface and the collar elevations measured from the recent drilling program be resolved through the acquisition of a high resolution topographic survey (i.e. LIDAR) and necessary ground surveying. This should be completed as soon as possible to eliminate compounding errors between older data and ongoing work.

For resource estimation, SRK makes the following recommendations:

- Additional step out drilling to extend the current resource base;
- Resource conversion drilling to convert Inferred to Indicated resources;
- Development of a 3-D geologic model (and 3-D grade solids) to better constrain grade estimation for copper and molybdenum, as well as to allow more flexibility in the assignment of density;
- A pilot precious metals re-assay program using historic pulps to assess the location and tenor of potentially economic zones of gold and silver;
- A global assessment of the presence of potentially deleterious elements for copper and molybdenum concentrates;
- Continuing existing Quality Assurance/Quality Control program; and
- Possible development of site-specific analytical standards for use with all subsequent exploration and drilling programs.

The QA/QC should be continued for all drilling and exploration programs to include blanks, standards, field duplicates and pulp duplicates as well as sending a percentage of check samples to a second laboratory. Evidence from field duplicates suggests that the sample is too small to completely assess Mo. This should be addressed through varying sample size in the field duplicates. During the recent program both NQ and HQ core were drilled. SRK recommends that HQ be the minimum core size drilled at the Project. In addition, standard CU171 should be replaced because of its performance. Ultimately, SRK recommends development of site specific standards for use in all drilling and exploration programs at the Project. This would provide a matrix match in the standard and the standard could be developed using the exact preparation and analytical technique used for the Project.

NMCC has developed a Phase II drilling program, based on parameters provided by SRK to address extending the current resources base and resource conversion drilling. The objectives of a Phase II drilling program at Copper Flat (to follow on from the Phase I drilling program completed in early 2010) would be directed towards data required for a Pre-Feasibility Study:

- Convert the maximum amount of Inferred resource to Indicated resource based on in-fill drilling of high-frequency zones of Inferred mineral blocks;

- Drill a minimum of three, preferably four drillholes, to a 1,500ft depth for down-hole IP modeling of the breccia pipe; and
- Provide further geological-assay evidence for construction of a molybdenum gold-silver resource.

Table 19.1.1.1: Estimated Phase II Drilling Program Requirements and Costs*

Item	Rate	Cost (US$)
12,000ft HQ core, one rig, 12 weeks	US$60/ft	$720,000
20 Man-weeks Consultant's Time and Expenses	US$4,000/week	$85,000
Resource Consultant Oversight and Services	US$20,000/mo	$40,000
Down-hole IP Survey		$45,000
1,500 Assays	US$30/assay	$45,000
Surveying		$5,000
Core Logging and Sampling, 12 weeks	US$2,500/wk	$30,000
Permits, Site Prep, Site Office, and Security	US$2,500/mo	$7,500
Sample bags, Standards, Supplies		$2,500
Compilation Au-Ag-Mo Data, Petrography-SEM		$15,000
Total		**$995,000**

* Preliminary June 8, 2010 Outline

19.1.2 Geotechnical Recommendations

Geotechnical - Pit Slopes

There is potential for optimization (steepening) of pit slope angles for the Project provided additional geotechnical data is collected and evaluated. Additional geotechnical data collection and analysis will be necessary for further mine planning for the Pre-Feasibility Study level.

A geotechnical data collection program should be carried out including discontinuity orientation, laboratory strength testing and surface outcrop mapping. Geotechnical core drilling programs should be conducted with a triple tube coring system where logging can be conducted in the splits, before additional core damage occurs during boxing and transport. Future geotechnical core drilling programs should also include field point load testing and packer testing. Laboratory strength testing should include uniaxial and triaxial compressive strength and direct shear testing, encompassing each major rock type at the site.

For the Pre-Feasibility level study, SRK recommends drilling a minimum of four geotechnical core holes, drilled to intercept final pit walls at approximately 30% to 50% of ultimate wall height from the ultimate pit bottom. The holes should be drilled at an inclination of approximately 60º to 70º from horizontal to facilitate discontinuity orientation. Based on the current pit design, the four holes would be approximately 1,000ft in length each, resulting in a total of 4000ft of geotechnical drilling. The four recommended geotechnical holes could also be used for hydrogeologic testing as discussed in Section 19.1.3. Additional hydrogeologic drilling beyond the four recommended geotechnical holes should also be oriented and logged for geotechnical data.

The cost estimate of the proposed geotechnical study is about US$130,000, as shown in Table 19.1.2.1, assuming the drilling costs are included under the hydrogeology program.

Table 19.1.2.1: Cost Estimate of Proposed Geotechnical Study for Copper Flat

Individual Cost	Linear ft	US$/m	Shifts (12hr)	hrs	US$/hrs	Subtotal (US$)
Logging Costs			64	780	$105	$82,000
Per diem, Airfare, Lodging						$15,000
Analysis and Report Costs				100	$155	$15,500
Analysis and Report Costs				100	$105	$10,500
Lab Testing Costs						$7,000
Total				**980**		**$130,000**

Geotechnical - Tailings

The TSF containment requirements should be confirmed before the design advances, and trade off studies between different construction methods and tailings deposition methods performed before an optimized design can be developed. The cost estimate of the proposed program is approximately US$150,000. SRK recommends that the following work be performed to advance the next level of design:

- Design Criteria. A set of project design criteria should be developed that reflects the most current understanding of the design. This would include site climatological parameters (rainfall, evaporation, etc.), along with environmental, construction and operation requirements;
- Containment. SRK developed the TSF design assuming that a composite liner system would be required within the TSF impoundment. SRK recommends direct consultation with regulatory agencies to confirm the lining requirements;
- Detailed Topographic Survey. A topographic survey of the area should be available to a resolution level of +/- 3ft or better. The area should be sufficiently large to account for the diversion channels and any borrow areas;
- Field Investigation. Field investigations should be performed for the tailings impoundment area, including characterizing the foundation conditions and potential borrow areas. These investigations include the following:
    - Field reconnaissance. A field reconnaissance should be done to confirm the surface geologic and any hazards. The geology within and adjacent to the impoundment area should be mapped, including any faulting that may impact the performance of the structure,
    - Geotechnical investigation. A geotechnical program including boreholes along the embankment centerline, and test pits within the impoundment area, as well as borrow areas should be performed. Samples should also be taken for laboratory testing, such as water content, grain size, Atterberg Limits, permeability, shear strength, interface shear strength testing, liner load testing, etc., and
    - Hydrogeological investigation. The hydrogeology of the impoundment area should be evaluated and supported by a hydrogeologic investigation.
- Tailing characterization. Laboratory test work should be done to confirm tailings design assumptions, such as the specific gravity, particle size distribution, densities and water contents;

- Sideslope Configuration and Stability Analysis. As part of the conceptual study, sideslope configurations were assumed. Site-specific peak ground accelerations should be established for the site, so that a pseudo-static stability analysis can be done to confirm the sideslopes required from a stability perspective. The sideslopes used in the design should also consider construction and closure requirements;
- Site Water Balance. A water balance should be performed, in which the water requirements are estimated for the Project;
- Closure. The next stage of design should confirm the closure criteria and requirements;
- Environmental Baseline Data. Baseline data collection, such as ground and surface water, should start to be collected immediately to establish a database;
- Freeboard. The freeboard assumptions should be confirmed;
- Surface Water. The upgradient surface water basin area and runoff characteristics are confirmed and attenuation structures considered in more detail;
- Monitoring Program. Installation and monitoring programs for piezometers, slope indicators, survey monuments and groundwater monitoring wells should be developed; and
- Pre-Feasibility Level Engineering. Perform additional analyses to support a Pre-Feasibility Study for the water balance, slope stability, etc. As the water balance, and process water available for makeup water, is sensitive to the assumptions regarding precipitation and storm events, this should be evaluated in more detail.

19.1.3 Hydrogeology Recommendations

Based on the existing hydrogeological data available in the area of the proposed open pit, SRK would recommend conducting an additional hydrogeological study to bring the understanding of groundwater conditions (hydraulic parameters, water levels, and groundwater chemistry) to the Pre-Feasibility level. This study should include:

- Drilling of five inclined (70°) HQ coreholes to a depth of 1,200ft in the vicinity of the proposed open pit;
- Targeting volcanic and intrusives, their contacts, known faults and structural zones;
- Conducting airlift testing from packer isolated intervals (about eight tests per hole) to develop profiles of the change in hydraulic conductivity with depth and to define the permeability of faults and structural zones in the vicinity of the pit;
- Conducting groundwater sampling during airlift testing (two samples per hole) to determine the lateral and vertical distribution of water chemistry;
- Installing of two standpipe piezometers (to depths of 300ft and 1,200ft) in each borehole to define depth to water table, direction of groundwater flow, and vertical hydraulic gradient;
- Monitoring water levels in new and existing piezometers/water wells;
- Conducting spring inventory, monitoring discharges, and water chemistry sampling (including current pit lake);

- Conducting data analysis and updating the existing conceptual hydrogeological model;
  - Developing a 3-D numerical groundwater flow model to predict:
    - Passive inflow to the proposed open pit and additional active dewatering (if required);
    - Groundwater abstraction from the production well field in the Palomas Basin and associated drawdowns;
    - Pit lake elevation and water chemistry after mining has ceased; and
    - Possible impact to the groundwater system during mining and post-mining conditions.

The cost estimate of the proposed hydrogeological study is about US$1,100,000. Its distribution between different tasks is shown in Table 19.1.3.1. It should be noted that a reduction of the cost of the proposed hydrogeological study can be achieved by combining the hydrogeological testholes with geotechnical drilling requirements.

Table 19.1.3.1: Cost Estimate of Proposed Hydrogeological Study for Copper Flat

Description of Work	Total Amount	Drilling Company Costs				Consulting Costs				Total Cost US$
		Hours	Expenses (US$)	Cost (US$)	Total (US$)	Hours	Expenses (US$)	Cost (US$)	Total (US$)	
Drilling of 5 decline (70 degree) HQ coreholes to the depth of 1200 ft and move to next hole labor	Total 6,000 ft (10-12 Days)	1140	$72,000	$450,000	$522,000	1140	$19,000	$114,000	$133,000	$655,000
Packer airlift testing during 8 tests per hole	Total 40 tests (avg 12 hrs per test)	480	$-	$108,000	$108,000	480	$50,000	$48,000	$98,000	$206,000
Groundwater sampling during airlift testing 2 samples per hole	Total 10 water samples						$1,500	$-	$1,500	$1,500
Installation of two standpipes (to depth 300 ft and 1200 ft) in each borehole	Total 5 double piezometers	240	$50,000	$54,000	$104,000	240		$24,000	$24,000	$128,000
Monitoring water levels in new and existing piezometers/water wells	Total 20 piezos/wells					10	$500	$1,000	$1,500	$1,500
Spring inventory, monitoring discharges, and water chemistry sampling (including current pit lake)	Total 10 springs (+ 2 pit lake samples)					40	$4,000	$4,000	$8,000	$8,000
Data analysis, groundwater modeling, reporting	Consultation Fees							$100,000	$100,000	$100,000
Total		**1860**	**$122,000**	**$612,000**	**$764,000**	**1,912**	**$75,000**	**$291,000**	**$366,000**	**$1,100,000**

Assumptions	
Mob Demob Fees	US$30,000
Per diem 6 crew per 12 hours @$85/12Hr	US$42,000
Per diem SRK 2 people US$70per person	US$9,000
Laboratory Fees for Water samples Profile 2 Constituents US$300 per sample. One Sample per hole	US$1,500
Packer and additional equipment	US$50,000
Vehicle Rental	US$10,000
One inch sch 40 10' PVC Pipe Threaded US$20 per stick (Estimated Drillers wanted US$42/ft)	US$15,000

19.1.4 Mining

There is potential to optimize the mine planning during the usual course of the Pre-Feasibility Study and subsequent planning. Mine planning recommendations include:

- Optimization of the cut-off grade strategy. There is opportunity to reduce the payback period of the project by increasing the copper head grade early in the mine life through stockpiling of low-grade material;
- Detailed pit phase design. Further work on the pit design sequencing will allow improvement of the mill feed head grades and waste stripping profile through the mine life. The primary ore crusher location should be finalized;
- Detailed mine waste rock plan. This will define waste material movements and land disturbance into a unified plan for environmental compliance and costing;
- Development of a multi-element mine production schedule. Along with refinements and improvements in the molybdenum, gold and silver estimation in the resource model, a full net smelter return (NSR) mine production schedule (including copper and these elements) should be developed that will facilitate maximization of the project value;
- An in-pit crushing and conveying study; and
- Optimization of the mine equipment selection, and Pre-Feasibility Study level mining costing should be performed.

19.1.5 Processing Recommendations

The Pre-Feasibility Study will require an extensive metallurgical test program since the PEA was based on historical data that was generated over twenty years ago. The conceptual process flowsheet and the major equipment for the flowsheet used in the PEA were the same size as installed by Quintana Minerals in 1982.

The following metallurgical program is proposed for the Pre-Feasibility Study:

- A drilling program should be undertaken to obtain several hundred kilograms of the two major mineralization types, namely breccia and quartz monzonite for the metallurgical studies. This could be provided by the resource drilling program (for conversion of Inferred resources to Indicated);
- Comminution test program to be undertaken to generate data for the SAG milling and ball milling grinding circuit. This will include rod mill and ball mill work indices, abrasion index, impact index and JK Drop Weight tests on the two main mineralization rock types;
- Flotation test work to confirm that the conceptual process flowsheet is technically feasible and to generate process design data for sizing the unit operations, namely flotation, thickening, filtration, etc;
- Test program to perform locked-cycle tests to determine the overall metallurgical balance for the copper and molybdenum circuits and production of concentrates, and for determination of concentrate quality including potentially deleterious components which might result in smelter penalties for the treatment of the concentrates; and

- Metallurgical testwork to assess the recovery of gold and silver in the envisioned processing circuit.

The metallurgical test program to generate information for the Pre-Feasibility Study is estimated to cost US$180,000 (excluding the drilling program).

19.1.6 Infrastructure Recommendations

The Pre-Feasibility Study cost study would essentially look at the above items in significantly more detail. This level of study would require a site visit by two people (1 structural, 1 mechanical) for several days to evaluate the existing infrastructure and to better evaluate key site location items. Additionally, the study would necessitate more detailed engineering and estimates of the buildings, foundations, steel, and infrastructure items.

The site visit would be required to better establish the condition of the existing infrastructure items to determine if they can be refitted and re-used or will require replacement. The major items and areas that need investigated in further detail are:

- Well field wells;
- Well field tie in piping;
- Fresh water pipeline;
- Pump station locations;
- Power line to well field;
- Tie in point from 115KV line to mill substation;
- Location of mill substation;
- Mill to tailings pond utility cutting;
- Course ore reclaim tunnel;
- Investigate foundation locations; and
- Confirm locations of new buildings.

The proposed locations for the new concentrate load-out facility at Rincon and at the old rail siding locations near the intersection of County Road 27 and Highway 26 will need to be evaluated, and a trade-off study performed to determine the recommended location.

The Pre-Feasibility Study would require generation of approximately 24 drawings including:

- Plan Drawings;
  - Building locations,
  - Drainage, and
  - Yards and fences.
- General Arrangements;
  - Substations,
  - Buildings,

  - Pump stations, and
  - Fresh water and process water tanks.
- Mechanical Isometrics;
  - Process water,
  - Sewage treatment,
  - Firewater,
  - Plant air,
  - Instrument air,
  - Propane gas,
  - Diesel and gasoline, and
  - Reagents.
- Power and Electrical; and
  - Power transmission line and substation layout,
  - Site distribution,
  - Electrical one lines, and
  - Motor list.
- Control Architecture.

Additionally, the estimate would be refined following more detailed equipment sizing and specification. The Pre-Feasibility Study would also entail structural geotechnical review and overhead crane design criteria.

The estimated cost for the Pre-Feasibility Study to include the areas of responsibly as described above is approximately US$180,000.

19.1.7 Environmental and Permitting Recommendations

The permit application must contain considerable detail both on the nature and impacts of the proposed operation and on the background and capability of the mine owners and operators.

Comprehensive environmental and socio-economic baseline studies were completed as part of the previous attempt to reopen the Copper Flat Mine in the late 1990's. However, due to the age of these studies, additional baseline updates will be required for both the state and federal permitting processes. Supplemental studies are currently being performed, and will be undertaken in accordance with state and federal standards of data acquisition, quality assurance and reporting. A full-year of data is required for some study topics to provide the basis for modeling seasonal effects.

A review of pre-existing environmental baseline studies (gap analysis) completed from 1994 through 1999 is being undertaken to ascertain the utility of past studies in contributing to current study requirements.

NMCC is in the process of preparing a new Plan of Operations for submittal to the BLM, and initiation of the NEPA approval process, as this has been identified as the critical path item for project permitting. No other permit applications have been initiated at this time.

Supplemental geochemical characterization work has been initiated by NMCC as part of the current investigation of the site. Addition testing is being performed in accordance with the recently released Bureau of Land Management Instruction Memorandum NV-2010-014.

The Copper Flat Project will require various state and federal authorizations, licenses and permits to operate the Project. The previously completed and ongoing technical studies and environmental baseline assessments will form the basis of the applications. The permit requirements will be reviewed and updated as the Project advances through the environmental impact statement and permitting process.

19.1.8 General Recommendations

To highlight important recommendations for the Project:

- Continue development of the resource model to include gold and silver (re-assay program);
- Carry out necessary field programs including aerial survey, drilling for resource category conversion, and geotechnical, hydrogeology and environmental studies;
- There is potential for optimization (steepening) of pit slope angles for the Project provided additional geotechnical data is collected and evaluated to support this;
- Perform trade-off studies to determine the optimum tailings storage approach, which will satisfy environmental requirements together with potential cost reductions;
- Advance the project environmental permitting programs;
- Conduct Pre-Feasibility Study level metallurgical testwork, mining studies, and necessary trade-off studies to optimize the project economics; and
- Complete a Pre-Feasibility Study to further advance the Project.

19.1.9 Costs

SRK anticipates that the proposed Pre-Feasibility Study programs would cost approximately US$3.0million, excluding ongoing project environmental permitting programs. Details of the cost estimate are provided in Table 19.1.9.1.

Table 19.1.9.1: Estimated Pre-Feasibility Study Costs with Field Programs and Testwork *

Item	Cost (US$)
Resource Phase II Drilling Program Requirements	$995,000
Aerial Topography Survey and Site Surveying	$25,000
Geotechnical Pit Slope Program and Study (with drilling costs in Hydrogeology)	$130,000
Geotechnical Tailings Pre-Feasibility Program and Study	$120,000
Hydrogeology Pre-Feasibility Program and Study (including drilling costs)	$1,100,000
Metallurgical Pre-Feasibility Program and Testwork	$170,000
Infrastructure Pre-Feasibility Assessment Program	$160,000
Remaining Pre-Feasibility Study (PFS) NI 43-101 Compliant	$300,000
Total	**$3,000,000**

* Preliminary June 2010 outline excluding environmental permitting programs.

Not all these costs were applied to the PEA economic evaluation as they address development of additional resources, and are also subject to corporate allocations. The work proposed includes completion of a Pre-Feasibility Study (PFS), which would include an improved resource model, detailed mining and process planning, accomplishment of PFS level project optimization, and definition of the general site arrangements.

The above cost estimate excludes ongoing project environmental permitting programs, however the hydrogeology work program would overlap with the environmental work programs.

20 References (Item 23)

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21 Glossary

21.1 Mineral Resources and Reserves

21.1.1 Mineral Resources

The mineral resources and mineral reserves have been classified according to the “CIM Standards on Mineral Resources and Reserves: Definitions and Guidelines” (December 2005). Accordingly, the Resources have been classified as Measured, Indicated or Inferred, the Reserves have been classified as Proven, and Probable based on the Measured and Indicated Resources as defined below.

A Mineral Resource is a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth’s crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.

An ‘Inferred Mineral Resource’ is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes.

An ‘Indicated Mineral Resource’ is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

A ‘Measured Mineral Resource’ is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough to confirm both geological and grade continuity.

21.1.2 Mineral Reserves

A Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined.

A ‘Probable Mineral Reserve’ is the economically mineable part of an Indicated, and in some circumstances a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.

A ‘Proven Mineral Reserve’ is the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified.

21.2 Glossary

Table 21.2.1: Glossary

Term	Definition
Assay:	The chemical analysis of mineral samples to determine the metal content.
Capital Expenditure:	All other expenditures not classified as operating costs.
Composite:	Combining more than one sample result to give an average result over a larger distance.
Concentrate:	A metal-rich product resulting from a mineral enrichment process such as gravity concentration or flotation, in which most of the desired mineral has been separated from the waste material in the ore.
Crushing:	Initial process of reducing ore particle size to render it more amenable for further processing.
Cut-off Grade (CoG):	The grade of mineralized rock, which determines as to whether or not it is economic to recover its gold content by further concentration.
Dilution:	Waste, which is unavoidably mined with ore.
Dip:	Angle of inclination of a geological feature/rock from the horizontal.
Fault:	The surface of a fracture along which movement has occurred.
Footwall:	The underlying side of an orebody or stope.
Gangue:	Non-valuable components of the ore.
Grade:	The measure of concentration of gold within mineralized rock.
Hangingwall:	The overlying side of an orebody or slope.
Haulage:	A horizontal underground excavation which is used to transport mined ore.
Hydrocyclone:	A process whereby material is graded according to size by exploiting centrifugal forces of particulate materials.
Igneous:	Primary crystalline rock formed by the solidification of magma.
Kriging:	An interpolation method of assigning values from samples to blocks that minimizes the estimation error.
Level:	Horizontal tunnel the primary purpose is the transportation of personnel and materials.
Lithological:	Geological description pertaining to different rock types.
LoM Plans:	Life-of-Mine plans.
LRP:	Long Range Plan.
Material Properties:	Mine properties.
Milling:	A general term used to describe the process in which the ore is crushed and ground and subjected to physical or chemical treatment to extract the valuable metals to a concentrate or finished product.
Mineral/Mining Lease:	A lease area for which mineral rights are held.
Mining Assets:	The Material Properties and Significant Exploration Properties.
Ongoing Capital:	Capital estimates of a routine nature, which is necessary for sustaining operations.
Ore Reserve:	See Mineral Reserve.
Pillar:	Rock left behind to help support the excavations in an underground mine.
RoM:	Run-of-Mine.
Sedimentary:	Pertaining to rocks formed by the accumulation of sediments, formed by the erosion of other rocks.
Shaft:	An opening cut downwards from the surface for transporting personnel, equipment, supplies, ore and waste.
Sill:	A thin, tabular, horizontal to sub-horizontal body of igneous rock formed by the injection of magma into planar zones of weakness.
Smelting:	A high temperature pyrometallurgical operation conducted in a furnace, in which the valuable metal is collected to a molten matte or doré phase and separated from the gangue components that accumulate in a less dense molten slag phase.
Stope:	Underground void created by mining.
Stratigraphy:	The study of stratified rocks in terms of time and space.
Strike:	Direction of line formed by the intersection of strata surfaces with the horizontal plane, always perpendicular to the dip direction.
Sulfide:	A sulfur bearing mineral.
Tailings:	Finely ground waste rock from which valuable minerals or metals have been extracted.
Thickening:	The process of concentrating solid particles in suspension.
Total Expenditure:	All expenditures including those of an operating and capital nature.
Variogram:	A statistical representation of the characteristics (usually grade).

Abbreviations

The Imperial system (American system) has been used throughout this report unless otherwise stated. All currency is in U.S. dollars. Market prices are reported in US$ per lb of copper and molybdenum, and US$ per troy oz of gold and silver. Tons are short tons of 2,000lbs. The following abbreviations are used in this report.

Table 21.2.2: Abbreviations

Abbreviation	Unit or Term
A	ampere
AA	atomic absorption
A/m^2	amperes per square meter
ANFO	ammonium nitrate fuel oil
Ag	silver
ARD	acid rock drainage
Au	gold
AuEq	gold equivalent grade
Bft^3	billion cubic feet (feet)
BLM	US Department of the Interior, Bureau of Land Management
°C	degrees Centigrade
CoG	cut-off grade
cm	centimeter
cm^2	square centimeter
cm^3	cubic centimeter
cfm	cubic feet per minute
CRec	core recovery
Cu	copper
°	degree (degrees)
dia.	diameter
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
FA	fire assay
famsl	feet above mean sea level
ft	foot (feet)
ft^2	square foot (feet)
ft^3	cubic foot (feet)
ft^3/st	cubic foot (feet) per short ton
g	gram
gal	gallon
g/L	gram per liter
g-mol	gram-mole
gpm	gallons per minute
g/st	grams per short ton
ha	hectares
HDPE	Height Density Polyethylene
hp	horsepower
ICP	induced couple plasma
ID2	inverse-distance squared
ID3	inverse-distance cubed
ILS	Intermediate Leach Solution
in	inch
kg	kilograms
km	kilometer
km^2	square kilometer

Abbreviation	Unit or Term
koz	thousand troy ounces
kst	thousand short tons
kst/d	thousand short tons per day
kst/y	thousand short tons per year
kV	kilovolt
kW	kilowatt
kWh	kilowatt-hour
kWh/st	kilowatt-hour per short ton
L	liter
L/sec	liters per second
lb	pound
LHD	Long-Haul Dump truck
LLDDP	Linear Low Density Polyethylene Plastic
LoM	Life-of-Mine
m	meter
m^2	square meter
m^3	cubic meter
mg/L	milligrams/liter
Mlbs	million pounds
mm	millimeter
mm^2	square millimeter
mm^3	cubic millimeter
MME	Mine & Mill Engineering
Mo	molybdenum
Moz	million troy ounces
MSHA	Mine Safety and Health Administration
Mst	million short tons
Mst/y	million short tons per year
MW	million watts
m.y.	million years
NEPA	National Environmental Policy Act of 1969 (as Ammended)
NGO	non-governmental organization
NMDOT	New Mexico Department of Transportation
NMED	New Mexico Environmental Department
NMMD	New Mexico Dept. of Energy, Minerals and Nat. Res. - Mining and Minerals Division
NI 43-101	Canadian National Instrument 43-101
oz	troy ounce
oz/st	troy ounce per short ton
%	percent
PLS	Pregnant Leach Solution
PMF	probable maximum flood
POO	Plan of Operations
ppb	parts per billion
ppm	parts per million
psi	pounds per square inch
QA/QC	Quality Assurance/Quality Control
RC	rotary circulation drilling
RoM	Run-of-Mine
RQD	Rock Quality Description
SEC	U.S. Securities & Exchange Commission
sec	second
SG	specific gravity
st	short ton (2,000 pounds)
t	tonne (metric ton) (2,204.6 pounds)
st/h	short tons per hour

Abbreviation	Unit or Term
st/d	short tons per day
st/y	short tons per year
TSF	tailings storage facility
TSP	total suspended particulates
µm	micron or microns, micrometer or micrometers
V	volts
VFD	variable frequency drive
W	watt
XRD	x-ray diffraction
y	year
yd^2	square yard
yd^3	cubic yard

Appendix A

Certificates of Author

SRK Consulting (U.S.), Inc.
7175 West Jefferson Avenue, Suite 3000
Lakewood, Colorado
USA 80235
e-mail: denver@srk.com
web: www.srk.com
Tel: 303.985.1333
Fax: 303.985.9947

CERTIFICATE of AUTHOR

I, Peter Clarke, B.Sc., MBA, P. Eng., do hereby certify that:

1. I am Principal Mining Engineer of:

   SRK Consulting (U.S.), Inc.
   7175 W. Jefferson Ave, Suite 3000
   Denver, CO, USA, 80235

2. I graduated with a B.Sc. degree in Mining Engineering granted by the University of Leeds in 1975 and an MBA granted by the University of Phoenix in 2002.

3. I am a registered member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia since 1982.

4. I have worked as a mining engineer for a total of 28 years since my graduation from university.

5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

6. I am responsible for the overall preparation of technical report titled NI 43-101 Preliminary Assessment, THEMAC Resources Group Limited, Copper Flat Project, Sierra County New Mexico and dated June 30, 2010 (the "Technical Report") relating to the Copper Flat property. I visited the Copper Flat property on July 1, 2009.

7. I have not had prior involvement with the property that is the subject of the Technical Report.

8. I am an independent of the issuer applying all of the tests in section 1.4 of National Instrument 43-101.

9. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

10. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.[1]

11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

[1]If an issuer is using this certificate to accompany a technical report that it will file only with the exchange, then the exchange recommends that this paragraph is included in the certificate.

Dated this 30th Day of June, 2010.

"Signed" *"Sealed"*

Peter Clarke, B.Sc., MBA, P. Eng. P.Eng Registration No.: 13473

SRK Consulting (U.S.), Inc.
7175 West Jefferson Avenue, Suite 3000
Lakewood, Colorado
USA 80235
e-mail: denver@srk.com
web: www.srk.com
Tel: 303.985.1333
Fax: 303.985.9947

CERTIFICATE of AUTHOR

I, Jeffrey Volk, CPG, FAusIMM, MSc, do hereby certify that:

1. I am Principal Resource Geologist with:

   SRK Consulting (U.S.), Inc.
   7175 W. Jefferson Ave, Suite 3000
   Denver, CO, USA, 80235

2. I graduated with a Master of Science degree in Structural Geology from the Washington State University in 1986. In addition, I have obtained a Bachelor of Arts degree in geology from the University of Vermont in 1983.

3. I am a fellow of the Society of Economic Geologists and a Certified Professional Geologist and member of the American Institute of Professional Geologists (AIPG). I am also a fellow and member of the Australian Institute of Mining and Metallurgy (FAusIMM).

4. I have worked as a geologist for a total of 23 years since my graduation from university.

5. I have read the definition of “qualified person” set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.

6. I am responsible for the preparation of Section 15 of the Technical Report titled NI 43-101 Preliminary Assessment, THEMAC Resources Group Limited, Copper Flat Project, Sierra County, New Mexico and dated June 30, 2010 (the “Technical Report”) relating to the Copper Flat property.

7. I have not visited the Copper Flat property.

8. I have not had prior involvement with the property that is the subject of this Technical Report.

9. I am independent of the issuer applying all of the tests in section 1.4 of National Instrument 43-101.

10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

12. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 30th Day of June, 2010.

"Signed"
Jeffrey Volk, CPG, FAusIMM, MSc

"Sealed"
CPG#10835

SRK Consulting (U.S.), Inc.
7175 West Jefferson Avenue, Suite 3000
Lakewood, Colorado
USA 80235
e-mail: denver@srk.com
web: www.srk.com
Tel: 303.985.1333
Fax: 303.985.9947

CERTIFICATE of AUTHOR

I, Bret C. Swanson, BE (Mining), MAusIMM do hereby certify that:

1. I am Senior Mining Engineer of:

   SRK Consulting (U.S.), Inc.
   7175 W. Jefferson Ave, Suite 3000
   Denver, CO, USA, 80235

2. I graduated with a degree in Bachelor of Engineering In Mining Engineering from the University of Wollongong in 1997

3. I am a current member of the Australian Institute of Mining and Metallurgy, #112411.

4. I have worked as a Mining Engineer for a total of 14 since my graduation from university.

5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

6. I am responsible for Section 17.1 of the report entitled NI 43-101 Preliminary Assessment, THEMAC Resources Group Limited, Copper Flat Project, Sierra County, New Mexico and dated June 30, 2010 (the "Technical Report") relating to the Copper Flat property. I visited the Copper Flat property on September 23, 2009.

7. I have not had prior involvement with the property that is the subject of the Technical Report.

8. As of the date of the certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

9. I am independent of the issuer applying all of the tests in Section 1.4 of National Instrument 43-101.

10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 30th Day of June, 2010.

"Signed"
Bret C. Swanson, MAusIMM

CERTIFICATE OF AUTHOR

I, Deepak Malhotra, Ph.D., do hereby certify that:

1. I am the President and Principal Mineral Economist/Metallurgical Engineer of:

   Resource Development Inc
   11475 West I-70 Frontage Road North
   Wheat Ridge, Colorado 80033

2. I graduated with a Master of Science degree in Metallurgical Engineering from the Colorado School of Mines in 1973. In addition, I have obtained a PhD in Mineral Economics in 1977 from the Colorado School of Mines.
3. I am a member of the Society of Mining, Metallurgy and Exploration Inc. (SME) and Canadian Institute of Mining, Metallurgy and Petroleum (CIM) in good standing.

4. I have worked as a Metallurgical Engineer/Mineral Economist for a total of 37 years since my graduation from university.

5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

6. I am responsible for the preparation of Section 14 and 17.4 of the technical report titled NI 43-101 Preliminary Assessment, THEMAC Resources Group Limited, Copper Flat Project, Sierra County, New Mexico and dated June 30, 2010 (the "Technical Report") relating to the Copper Flat Project property. I have not visited the Copper Flat property.

7. I have not had prior involvement with the property that is the subject of the Technical Report.

8. I am independent of the issuer applying all of the tests in section 1.4 of National Instrument 43-101.

9. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

10. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.[1]

11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

[1]If an issuer is using this certificate to accompany a technical report that it will file only with the exchange, then the exchange recommends that this paragraph is included in the certificate.

Dated this 30th Day of June, 2010.

"signed"

____

Deepak Malhotra, Ph.D.

CERTIFICATE OF AUTHOR

I, Mark I. Pfau, BA, MSc., R.P.G., do hereby certify that:

1. I am the President of:

   Tellurian Exploration, Inc.
   3275 Terrace Drive
   Missoula, Montana 59803

2. I graduated with a BA in Geology from the University of Montana in 1976 and a MSc. from the University of Idaho, College of Mines in 1981.

3. I am a member of the Society of Economic Geologists (SEG) and a Registered Professional Geologist in the State of Idaho #724.

4. I have worked as a Geologist for a total of 26 years since my graduation from university.

5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

6. I am responsible for the preparation of Sections 4 through 11 of the technical report titled NI 43-101 Preliminary Assessment, THEMAC Resources Group Limited, Copper Flat Project, Sierra County, New Mexico and dated June 30, 2010 (the "Technical Report") relating to the Copper Flat Project property. I have visited the Copper Flat property on a monthly and continuing basis from late October 2009 until the present.

7. I have had prior involvement with the property that is the subject of the Technical Report. I worked on the Copper Flat property as a consultant since November 2009. Time was spent on the project site as well as Tellurian Exploration's office in Missoula, Montana.

8. I am independent of the issuer applying all of the tests in section 1.4 of National Instrument 43-101.

9. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

10. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.[1]

11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

1 If an issuer is using this certificate to accompany a technical report that it will file only with the exchange, then the exchange recommends that this paragraph is included in the certificate.

Dated this 30th Day of June, 2010.

"Signed" *"Sealed"*

____

Mark I. Pfau, BA, MSc., R.P.G. Idaho #724

Appendix B

List of Claims

Unpatented Lode and Placer Claims:

Claim Name		Recorded Book	Page	B.L.M Serial No.
Olympia		H	761	NM MC 60057
GLUCK AUF		I	327	NM MC 60058
Taurus		J	682	NM MC 60059
Hercules		K	231	NM MC 60060
EL ORO No. 3		P	52	NM MC 60063
Saint Louis Republic		I	80	NM MC 60069
Delores		27	269	NM MC 60070
HIGHLANDS No. 1		T	405	NM MC 60071
HIGHLANDS No. 2		T	405	NM MC 60072
HIGHLANDS No. 3		T	406	NM MC 60073
THE WELLINGTON		T	406	NM MC 60074
Three Boys No. 1		T	176	NM MC 60080
BLUE MOON		R	631	NM MC 60081
The Leone		U	478	NM MC 60082
Dolores Placer		36	13	NM MC 60083
JONES HILL PLACER		27	212	NM MC 60084
Duke No. 1		40	23	NM MC 60085
Duke No. 2		40	24	NM MC 60086
Graveyard Placer		29	424	NM MC 60021
Old Cabin Placer		29	420	NM MC 60022
Rainey Season Placer		33	163	NM MC 60027
Desert Gold Placer		R	359	NM MC 60043
Gray Black Placer		R	554	NM MC 60044
Black Sand Group 9	No. 1 Placer (Amended)	46	173	NM MC 60045
Black Sand Group 10	No. 3 Placer (Amended)	46	185	NM MC 60046
Surprise No. 1 Lode		48	13	NM MC 60052
Surprise No. 2 Lode		48	102	NM MC 60053
Dutch-1 Lode		48	556	NM MC 60054
Dutch-2 Lode		48	558	NM MC 60055
Dutch-3 Lode		48	557	NM MC 60056
Renew No. 1 Lode		58	622	NM MC 106464
Renew No. 2 Lode		58	623	NM MC 106465
M. S. #1		34	146	NM MC 60093
M. S. #2		34	146	NM MC 60094
M. S. #3		34	147	NM MC 60095
M. S. #4		34	147	NM MC 60096
M. S. #5		34	148	NM MC 60097
M. S. #6		34	148	NM MC 60098
M. S. #8		34	149	NM MC 60099
M. S. #10		34	150	NM MC 60101
M. S. #11		34	151	NM MC 60102
M. S. #12		34	151	NM MC 60103
M. S. #13		34	152	NM MC 60104
M. S. #14		34	152	NM MC 60105
M. S. #15		34	153	NM MC 60106
M. S. #16		34	153	NM MC 60107
M. S. #17		34	154	NM MC 60108
M. S. #18		34	154	NM MC 60109
M. S. #20		34	155	NM MC 60110
M. S. #21		34	156	NM MC 60111
M. S. #22		34	156	NM MC 60112
M. S. #23		34	157	NM MC 60113
M. S. #25		34	158	NM MC 60114
M. S. #26		34	158	NM MC 60115
M. S. #29		34	160	NM MC 60118
M. S. #33		34	162	NM MC 60122

Unpatented Lode and Placer Claims:			
	Recorded		B.L.M
Claim Name	Book	Page	Serial No.
M. S. #38	34	164	NM MC 60123
M. S. #48	34	167	NM MC 60129
M. S. #49	34	168	NM MC 60130
M. S. #53	34	168	NM MC 60131
M. S. #102	34	176	NM MC 60138
M. S. #104	34	177	NM MC 60139
M. S. #105	34	276	NM MC 60140
M. S. #106	34	277	NM MC 60141
M. S. #107	34	178	NM MC 60142
M. S. 222	34	543	NM MC 60170
M. S. 223	34	543	NM MC 60171
M. S. 224	34	544	NM MC 60172
M. S. 225	34	544	NM MC 60173
M. S. 228	34	546	NM MC 60176
M. S. 264	34	563	NM MC 60194
M. S. 282	34	572	NM MC 60210
M. S. 288	34	575	NM MC 60216
M. S. 289	34	576	NM MC 60217
M. S. 290	34	576	NM MC 60218
M. S. 291	34	577	NM MC 60219
M. S. 292	34	577	NM MC 60220
M. S. 293	34	578	NM MC 60221
M. S. 316	34	589	NM MC 60240
M. S. 320	34	591	NM MC 60244
M. S. 322	34	592	NM MC 60246
M. S. 329	34	596	NM MC 60253
M. S. 330	34	596	NM MC 60254
M. S. 331	34	597	NM MC 60255
M. S. 337	34	12	NM MC 60261
M. S. 338	34	13	NM MC 60262
M. S. 339	34	13	NM MC 60263
M. S. 340	34	14	NM MC 60264
M. S. 341	34	14	NM MC 60265
M. S. 342	34	15	NM MC 60266
M. S. 345	34	16	NM MC 60267
M. S. 346	34	17	NM MC 60268
M. S. 347	34	17	NM MC 60269
M. S. 438	41	564	NM MC 60312
M. S. 439	41	606	NM MC 60313
M. S. 440	41	607	NM MC 60314
M. S. 441	41	714	NM MC 60315
M. S. 452	45	353	NM MC 60318
M. S. 453	45	354	NM MC 60319
M. S. 454	45	355	NM MC 60320
M. S. 455	45	356	NM MC 60321
M. S. 456	45	357	NM MC 60322
M. S. 458	45	359	NM MC 60324
M. S. 460	45	361	NM MC 60326
M. S. 461	45	362	NM MC 60327
M. S. 462	45	363	NM MC 60328
M. S. 463	45	364	NM MC 60329
M. S. 464	45	365	NM MC 60330
M. S. 465	45	366	NM MC 60331
M. S. 467	45	368	NM MC 60333
M. S. 468	45	369	NM MC 60334
M. S. 469	45	370	NM MC 60335

Unpatented Lode and Placer Claims:			
	Recorded		B.L.M
Claim Name	Book	Page	Serial No.
M. S. 470	45	371	NM MC 60336
M. S. 471	45	372	NM MC 60337
M. S. 472	45	373	NM MC 60338
M. S. 473	45	374	NM MC 60339
M. S. 474	45	375	NM MC 60340
M. S. 475	71	1927	NM MC 163361
M. S. 476	71	1928	NM MC 163362
M. S. 477	71	1929	NM MC 163363
M. S. 478	71	1930	NM MC 163364
ANIMAS #1 Placer	45	443	NM MC 60341
ANIMAS #2 Placer	45	444	NM MC 60342
The Betsy Ross	R	93	NM MC 60344
Wicks Extension No. 1	R	100	NM MC 60346
Anderson Extension No. 2	R	93	NM MC 60348
Crescent 101	41	358	NM MC 60349
Wicks Extension 100	41	359	NM MC 60350
Betsy Ross 101	41	360	NM MC 60351
Portland 101	41	361	NM MC 60352
Ready Pay Apex 100	41	362	NM MC 60353
Anderson Extension 101	41	363	NM MC 60354

Unpantented Millsite			
Claim Name	Book	Page	BLM Serial No.
Greer No. 2	47	611	NM MC 72821
Chatfield	47	521	NM MC 72822
Chatfield No. 3	47	523	NM MC 72823
Chatfield No. 4	47	762	NM MC 72824
Chatfield No. 5	47	763	NM MC 72825
Chatfield No. 6	47	764	NM MC 72826
Chatfield No. 9	53	521	NM MC 81353
Chatfield No. 10	53	522	NM MC 81354
Chatfield No. 25	56	689	NM MC 100695

Newly Located Unpatented Lodes		
Claim Name	**Book**	**Page**
CU 1	116	902
CU2	116	903
CU 3	116	904
CU 4	116	905
CU 5	116	906
CU 6	116	907
CU 7	116	908
CU 8	116	909
CU 9	116	910
CU 10	116	911
CU 11	116	912
CU 12	116	913
CU 13	116	914
CU 14	116	915
CU 15	116	916
CU 16	116	917
CU 17	116	918
CU 18	116	919
CU 19	116	920
CU 20	116	921
CU 21	116	922
CU 22	116	923
CU 23	116	924
CU 24	116	925
CU 25	116	926
CU 26	116	927
CU 27	116	928
CU 28	116	929
CU 29	116	930
CU 30	116	931
CU 31	116	932
CU 32	116	933
CU 33	116	934
CU 34	116	935
CU 35	116	936
CU 36	116	937
CU 37	116	938
CU 38	116	939
CU 39	116	940
CU 40	116	941
CU 41	116	942
CU 42	116	943
CU 43	116	944
CU 44	116	945

Patented Claims	
Claim Name	**Mineral Survey**
Feeder	M.S. 943C
Chance	M.S. 945A
Xmas	M.S. 945B
Extension	M.S. 945D
Smokey Jones	M.S. 1024
Little Jewess	M.S. 1715
Wisconsin	Lot No. 805
Copper King	Lot No. 733A
Ventura	Lot No. 733B
Castle Hill	Lot No. 733C
Copperopolis	Lot No. 736
83	Lot No. 806
Soudan	Lot No. 807
Stenberg	M.S. 2066
Allhutten	M.S. 2066
Craze Martin	M.S. 2066
Coppenhagen	M.S. 2067
Carl Sextus	M.S. 2067
Union Leader	M.S. 2067
Stockholm	M.S. 2067
Grass Flat	M.S. 2068
Sandow	M.S. 2068
Old Mac	M.S. 2068

Fee Lands	Lot
Township 15 South, Range 7 West	
Section 36	Part of Lot 1 (Parcel N)
Section 36	Part of Lot 4 (Parcel M)
Section 36	Part of Lot 6 (Parcel J)
Section 36	Lot 10 (Parcel L)
Section 36	Lot 11 (Parcel K)
Section 36	Part of N½SE¼ (Parcel I)
Section 36	Part of N½S½SE¼ (Parcel H)
Township 15 South, Range 6 West	
Section 31	Lot 3 (Parcel D)
Section 31	Lot 6 (Parcel G)
Section 31	Lot 7 (Parcel C)
Section 31	Part of NE¼SW ¼ (Parcel E)
Section 31	N½SE¼SW¼ (Parcel B)
Section 31	Part of S½SE¼NW¼ (Parcel F)
Section 31	Part of SE1/4 (Parcel A)
Township 16 South, Range 6 West	
Section 6	Part of Lot 3 (Parcel P)
Section 6	Part of Lot 4 (Parcel O)

Appendix C

NMCC Geologic Drill Logs

SUMMARY DRILL LOGS, COPPER FLAT MINE - 2010

All Measurements in Feet, Surveys in NMSPC, NAD27West

CF HOLE #	START	COMPLETE	DEPTH	AZ.	INCL.	SECTION	X	Y	Z
CF-09-01	1/3/2010	1/11/2010	847.5	280º	70º	716900	592297	716939	5458
Downhole	Depth	Azimuth	Incl.						
Survey	100'	264.6	69.70						
	200'	262.9	68.90						
	300'	261.6	69.00						
	400'	259.9	70.10						
	500'	258.9	69.80						
	600'	253.2	70.00						
	700'	255.9	69.90						
	800'	252.1	70.30						

ID	SAMPLE	TYPE	FROM	TO	INTER.	TCu (%)	Mo (%)	Au (ppb)	Ag (ppm)	LITHOLOGY	ALTERATION	Mineral	Mineral Form	Remarks
CF-09-1	604567	*Core*	0.0	15.0	15.0	0.14	0.002	55	1.1	QM (Quartz Monzonite)	Ox (oxidation)	cpy, py, mo	diss (disseminated)	poor recovery
CF-09-1	604568	*Core*	15.0	25.0	10.0	0.18	0.004	65	1	QM	Ksp (-Ox)	cpy, py, mo	diss	
CF-09-1	604569	*Core*	25.0	34.5	9.5	0.14	0.001	60	1.1	QM	Ksp (-Ox)	cpy, py, mo	diss	
CF-09-1	604570	*Core*	34.5	45.0	10.5	0.19	0.002	65	1.7	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604571	*Core*	45.0	55.0	10.0	0.14	0.002	45	1	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604572	*Core*	55.0	69.0	14.0	0.25	0.003	55	1.5	QM	Ksp	cpy, py, mo	diss	poor recovery
CF-09-1	604573	*Core*	69.0	80.0	11.0	0.25	0.002	60	1.4	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604574	*Core*	80.0	93.0	13.0	0.27	0.003	125	2.5	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604576	*Core*	93.0	102.0	9.0	0.10	0.002	25	0.5	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604577	*Core*	102.0	113.0	11.0	0.13	0.002	40	0.7	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604578	*Core*	113.0	124.0	11.0	0.17	0.002	45	1.3	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604579	*Core*	124.0	132.0	8.0	0.18	0.003	55	3.2	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604580	*Core*	132.0	150.0	18.0	0.16	0.005	35	15.6	QM	Ksp	cpy, py, mo	diss	poor recovery
CF-09-1	604581	*Core*	150.0	160.0	10.0	0.15	0.003	45	1	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604582	*Core*	160.0	170.0	10.0	0.25	0.003	95	1.5	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604583	*Core*	170.0	180.0	10.0	0.23	0.002	65	1.5	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604584	*Core*	180.0	191.0	11.0	0.24	0.002	45	1.8	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604585	*Core*	191.0	200.0	9.0	0.29	0.004	50	2	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604586	*Core*	200.0	206.0	6.0	0.12	0.001	50	0.7	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604587	*Core*	206.0	218.0	12.0	0.43	0.012	105	3.3	QM	Ksp (-QS) (QS=Quartz-sericite)	cpy, py, mo	diss	
CF-09-1	604589	*Core*	218.0	228.0	10.0	0.23	0.002	75	1.8	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604591	*Core*	228.0	238.0	10.0	0.14	0.003	55	1.8	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604593	*Core*	238.0	248.0	10.0	0.14	0.006	45	1.4	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604594	*Core*	248.0	258.0	10.0	0.15	0.002	105	1.4	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604595	*Core*	258.0	268.0	10.0	0.22	0.007	50	1.4	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604596	*Core*	268.0	279.5	11.5	0.25	0.007	55	1.1	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604597	*Core*	279.5	291.0	11.5	0.29	0.007	90	1.7	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604598	*Core*	291.0	300.0	9.0	0.28	0.006	75	1.7	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604599	*Core*	300.0	308.0	8.0	0.29	0.003	75	1.6	QM	Ksp	cpy, py, mo	diss	
CF-09-1	604600	*Core*	308.0	320.0	12.0	0.49	0.004	170	3.1	QM	Sil (Silicified)	cpy, py, mo	vn (vein)	
CF-09-1	604601	*Core*	320.0	331.0	11.0	0.28	0.005	85	1.5	QM	Sil above 324', Ksp below 324'	cpy, py, mo	diss	
CF-09-1	604602	*Core*	331.0	342.0	11.0	0.25	0.005	80	1.4	QM	Ksp (-f.c. Ill) (fracture-controlled illite)	cpy, py, mo	diss	
CF-09-1	604604	*Core*	342.0	353.0	11.0	0.20	0.002	75	1.3	QM	Ksp (-f.c. Ill)	cpy, py, mo	diss	
CF-09-1	604606	*Core*	353.0	364.0	11.0	0.17	0.002	70	1.3	QM	Ksp (-f.c. Ill)	cpy, py, mo	diss	
CF-09-1	604607	*Core*	364.0	375.0	11.0	0.36	0.006	100	1.9	QM	Ksp (-f.c. Ill)	cpy, py, mo	diss	
CF-09-1	604608	*Core*	375.0	385.0	10.0	0.25	0.012	150	1.1	QM	Ksp (-f.c. Ill)	cpy, py, mo	diss	
CF-09-1	604610	*Core*	385.0	395.0	10.0	0.25	0.013	145	1.5	QM	Ksp (-f.c. Ill)	cpy, py, mo	diss	
CF-09-1	604611	*Core*	395.0	405.0	10.0	0.35	0.008	210	2.3	QM	Ksp (-f.c. Ill)	cpy, py, mo	diss	
CF-09-1	604612	*Core*	405.0	411.0	6.0	0.42	0.002	210	3	QM	Ksp (-f.c. Ill)	cpy, py, mo	diss	
CF-09-1	604613	*Core*	411.0	419.5	8.5	0.30	0.005	70	1.9	QM	Ksp (-f.c. Ill)	cpy, py, mo	diss	minor fault zone
CF-09-1	604615	*Core*	419.5	428.0	8.5	0.30	0.007	140	2.2	QM	Ksp (-f.c. Ill)	cpy, py, mo	diss	
CF-09-1	604616	*Core*	428.0	438.0	10.0	0.20	0.007	100	1.3	QM	Ksp + Ill	cpy, py, mo	diss	minor fault zone
CF-09-1	604617	*Core*	438.0	443.0	5.0	0.40	0.010	155	2.4	QM	Ksp + Ill	cpy, py, mo	diss	minor fault zone
CF-09-1	604618	*Core*	443.0	455.0	12.0	0.22	0.002	100	1.1	QM	Ksp (-Ill) (-chl)	cpy, py, mo	diss	
CF-09-1	604619	*Core*	455.0	465.0	10.0	0.37	0.012	150	3.6	QM	QS (-Ksp)	cpy, py, mo	diss	
CF-09-1	604620	*Core*	465.0	475.0	10.0	0.32	0.003	140	2.4	QM	QS (-Ksp)	cpy, py, mo	diss	
CF-09-1	604621	*Core*	475.0	485.0	10.0	0.47	0.006	215	3.9	QM	QS (-Ksp)	cpy, py, mo	diss	
CF-09-1	604622	*Core*	485.0	490.0	5.0	0.34	0.006	260	2.8	QM	QS (-Ksp)	cpy, py, mo	diss	minor fault zone
CF-09-1	604624	*Core*	490.0	498.0	8.0	0.28	0.028	135	1.6	QM	QS (-Ksp)	cpy, py, mo	diss	
CF-09-1	604625	*Core*	498.0	506.0	8.0	0.20	0.002	95	0.9	QM	QS (-Ksp)	cpy, py, mo	diss	
CF-09-1	604627	*Core*	506.0	516.0	10.0	0.47	0.002	155	3.4	QM	Ksp (-QS)	cpy, py, mo	diss	
CF-09-1	604628	*Core*	516.0	526.5	10.5	0.41	0.003	185	3.3	QM	Ksp (-QS)	cpy, py, mo	diss	
CF-09-1	604630	*Core*	526.5	536.0	9.5	0.19	0.011	75	1.2	QM	Ksp (-fc Ill)	cpy, py, mo	diss	
CF-09-1	604631	*Core*	536.0	546.0	10.0	0.20	0.009	65	1.2	QM	Ksp (-fc Ill)	cpy, py, mo	diss	
CF-09-1	604632	*Core*	546.0	556.0	10.0	0.24	0.027	85	1.6	QM	Ksp (-fc Ill)	cpy, py, mo	diss	
CF-09-1	604633	*Core*	556.0	566.0	10.0	0.37	0.003	150	2.2	QM	Ksp (-fc Ill)	cpy, py, mo	diss	
CF-09-1	604634	*Core*	566.0	578.0	12.0	0.29	0.005	120	2.3	QM	Ksp (-fc Ill)	cpy, py, mo	diss	
CF-09-1	604635	*Core*	578.0	588.0	10.0	0.15	0.003	55	0.8	QM	Ksp (-fc Ill)	cpy, py, mo	diss	
CF-09-1	604636	*Core*	588.0	600.5	12.5	0.10	0.002	45	0.4	QM	Ksp (-fc Ill)	cpy, py, mo	diss	
CF-09-1	604683	*Core*	600.5	608.0	7.5	0.21	0.004	55	1.1	QM	Ksp (-QS) (-Ill)	cpy, py, mo	diss	
CF-09-1	604684	*Core*	608.0	618.0	10.0	0.15	0.003	< 5	1.3	QM	Ksp (-QS) (-Ill)	cpy, py, mo	diss	
CF-09-1	604685	*Core*	618.0	628.0	10.0	0.21	0.005	75	1.5	QM	Ksp (-QS) (-Ill)	cpy, py, mo	diss	
CF-09-1	604687	*Core*	628.0	638.0	10.0	0.24	0.003	110	2.5	QM	Ksp (-QS) (-Ill)	cpy, py, mo	diss	
CF-09-1	604688	*Core*	638.0	648.0	10.0	0.22	0.003	75	1.6	QM	Ksp (-QS) (-Ill)	cpy, py, mo	diss	
CF-09-1	604690	*Core*	648.0	658.0	10.0	0.36	0.005	145	3	QM	Ksp (-QS) (-Ill)	cpy, py, mo	diss	
CF-09-1	604691	*Core*	658.0	668.0	10.0	0.34	0.014	130	3.1	QM	Ksp (-QS) (-Ill)	cpy, py, mo	diss	
CF-09-1	604692	*Core*	668.0	678.0	10.0	0.25	0.004	105	2.5	QM	Ksp (-QS) (-Ill)	cpy, py, mo	diss	
CF-09-1	604694	*Core*	678.0	688.0	10.0	0.30	0.052	110	2.6	QM	Ksp (-QS) (-Ill)	cpy, py, mo	diss	
CF-09-1	604695	*Core*	688.0	695.5	7.5	0.23	0.026	75	1.8	QM	Ksp (-QS) (-Ill)	cpy, py, mo	diss	
CF-09-1	604696	*Core*	695.5	702.5	7.0	0.31	0.014	130	2.7	QM	Ksp + QS (-Ill)	cpy, py, mo	diss	
CF-09-1	604697	*Core*	702.5	708.0	5.5	0.30	0.003	150	3.8	QM	Ksp + QS (-Ill)	cpy, py, mo	diss	
CF-09-1	604698	*Core*	708.0	718.0	10.0	0.26	0.007	145	2.8	QM	Ksp + QS (-Ill)	cpy, py, mo	diss	
CF-09-1	604700	*Core*	718.0	728.0	10.0	0.45	0.009	210	4.5	QM	Ksp (-Ill)	cpy, py, mo	diss	
CF-09-1	604701	*Core*	728.0	738.0	10.0	0.24	0.003	95	2.2	QM	Ksp (-Ill)	cpy, py, mo	diss	

SUMMARY DRILL LOGS, COPPER FLAT MINE - 2010

ID	SAMPLE	TYPE	FROM	TO	INTERVAL	TCu (%)	Mo (%)	Au (ppb)	Ag (ppm)	LITHOLOGY	ALTERATION	Mineral	Mineral Form	Remarks
CF-09-1	604703	*Core*	738.0	748.0	10.0	0.24	0.003	85	2.3	QM	Ksp (-Ill)	cpy, py, mo	diss	
CF-09-1	604704	*Core*	748.0	758.0	10.0	0.17	0.002	120	1.2	QM	Ksp (-Ill)	cpy, py, mo	diss	
CF-09-1	604705	*Core*	758.0	768.0	10.0	0.22	0.004	85	1.9	QM	Ksp (-Ill)	cpy, py, mo	diss	
CF-09-1	604706	*Core*	768.0	778.0	10.0	0.23	0.010	< 5	2.1	QM	QS overprint K-spar+arg	cpy, py, mo	diss	
CF-09-1	604707	*Core*	778.0	788.0	10.0	0.28	0.005	140	2.1	QM	QS op K-spar+ arg	cpy, py, mo	diss	
CF-09-1	604709	*Core*	788.0	798.0	10.0	0.26	0.010	85	2	QM	QS op K-spar+ arg	cpy, py, mo	diss	
CF-09-1	604710	*Core*	798.0	807.0	9.0	0.24	0.005	90	1.8	QM	QS op K-spar+ arg	cpy, py, mo	diss	minor fault zone
CF-09-1	604711	*Core*	807.0	817.5	10.5	0.28	0.006	115	1.7	QM	QS op K-spar+ arg	cpy, py, mo	diss	
CF-09-1	604713	*Core*	817.5	826.5	9.0	0.23	0.009	95	1.5	QM	QS op K-spar+ arg	cpy, py, mo	diss	minor fault zone
CF-09-1	604714	*Core*	826.5	836.5	10.0	0.26	0.004	100	2.2	QM	QS op K-spar+ arg	cpy, py, mo	diss	
CF-09-1	604715	*Core*	836.5	847.5	11.0	0.17	0.012	50	1.1	QM (Quartz Monzonite)	QS op K-spar+ arg	cpy, py, mo	diss	minor fault zone EOH

CF HOLE#	START	COMPLETE	DEPTH	AZ.	INCL.	SECTION	X	Y	Z
CF-10-02	1/3/2010	1/6/2010	141.5	55°	65°	716900	592323	716909	5458.0
Downhole	None								
Survey									

ID	SAMPLE	TYPE	FROM	TO	INTERVAL	TCu (%)	Mo (%)	Au (ppb)	Ag (ppm)	LITHOLOGY	ALTERATION	Mineral	Mineral Form	Remarks
CF-10-02	604551	*Core*	0.0	12.5	12.5	0.20	0.002	90	1.4	QM (Quartz Monzonite)	St frac ox-weath	cpy, py, mo	fract (fracture surfaces)	poor recovery
CF-10-02	604552	*Core*	12.5	24.0	11.5	0.12	0.001	410	1.3	QM	Strong pervasive kspar, minor fracture-controlled illite, minor jarosite on fractures	cpy, py, mo, gn	diss	poor recovery
CF-10-02	604553	*Core*	24.0	30.0	6.0	0.14	0.002	150	6.9	QM	St perv K-spar minor fract arg	cpy, py, mo	diss	
CF-10-02	604554	*Core*	30.0	40.0	10.0	0.32	0.002	120	2.4	QM	St perv K-spar minor fract arg	cpy, py, mo	diss	
CF-10-02	604555	*Core*	40.0	50.0	10.0	0.34	0.005	90	2	QM	St perv K-spar minor fract arg	cpy, py, mo	diss	
CF-10-02	604556	*Core*	50.0	60.0	10.0	0.17	0.002	90	2.4	QM	St perv K-spar minor fract arg	cpy, py, mo	diss	
CF-10-02	604557	*Core*	60.0	69.5	9.5	0.20	0.001	65	1.5	QM	St perv K-spar minor fract arg	cpy, py, mo	diss	
CF-10-02	604559	*Core*	69.5	80.5	11.0	0.33	0.001	150	2.9	QM	intense argillic alteration assoc. with fault zone	cpy, py, mo	diss	
CF-10-02	604560	*Core*	80.5	90.0	9.5	0.56	0.002	170	3.5	QM	St arg in flt	cpy, py, mo	diss	
CF-10-02	604561	*Core*	90.0	99.0	9.0	0.49	0.006	110	3.7	QM	St arg in flt	cpy, py, mo	diss	
CF-10-02	604562	*Core*	99.0	111.0	12.0	0.60	0.003	1870	7.4	QM	St arg in flt	cpy, py, mo	diss	
CF-10-02	604564	*Core*	111.0	119.0	8.0	0.32	0.002	105	2.7	QM	St arg in flt	cpy, py, mo	diss	
CF-10-02	604565	*Core*	119.0	126.0	7.0	0.49	0.003	200	6.6	QM	St arg in flt	cpy, py, mo	diss	
CF-10-02	604929	*Core*	126.0	141.5	15.5	0.45	0.003	160	4.8	QM (Quartz Monzonite)	St arg in flt	cpy, py, mo	diss	poor recovery; fault zone EOH

CF HOLE#	START	COMPLETE	DEPTH	AZ.	INCL.	SECTION	X	Y	Z
CF-10-03	1/12/2010	1/22/2010	1041.0	270°	70°	716700	592264	716737	5462
Downhole	Depth	Azimuth	Incl.						
Survey	100'	262.9	68.20						
	200'	263.1	68.30						
	300'	261.6	68.80						
	403'	261.8	69.30						
	500'	260.1	68.60						
	603'	261.9	68.20						
	700'	261.4	69.10						
	806'	264.8	68.70						
	900'	259.8	69.00						
	1000'	256.8	69.00						

ID	SAMPLE	TYPE	FROM	TO	INTERVAL	TCu (%)	Mo (%)	Au (ppb)	Ag (ppm)	LITHOLOGY	ALTERATION	Mineral	Mineral Form	Remarks
CF-10-03	604755	*Core*	0.0	8.0	8.0	0.22	0.002	430	3.5	QM (Quartz Monzonite)	Heavy oxidation (fracture-controlled) overprints kspar; weak fracture-limited argillic	cpy, py, mo	diss - fract	
CF-10-03	604756	*Core*	8.0	16.5	8.5	0.18	0.005	50	1.6	QM	St frac ox op K-spar+frac arg	cpy, py, mo	diss - fract	
CF-10-03	604757	*Core*	16.5	28.0	11.5	0.51	0.005	165	3.2	QM	St frac ox op K-spar+frac arg	cpy, py, mo	diss	
CF-10-03	604758	*Core*	28.0	39.0	11.0	0.25	0.007	100	2.8	QM	St frac ox op K-spar+frac arg	cpy, py, mo	diss	
CF-10-03	604759	*Core*	39.0	48.5	9.5	0.32	0.005	100	3.3	Bio-bxa (Biotite Breccia)	Strong kspar alteration with weak local argillic (fracture/fault-controlled); minor chloritization	cpy, py, mo	diss + bxa (breccia infill)	
CF-10-03	604760	*Core*	48.5	60.0	11.5	0.48	0.004	100	6	Bio-bxa	St K-spar+frac arg+chl	cpy, py, mo	diss+bxa	
CF-10-03	604761	*Core*	60.0	71.0	11.0	0.61	0.003	165	4.7	Bio-bxa	St K-spar+frac arg+chl	cpy, py, mo	diss+bxa	
CF-10-03	604762	*Core*	71.0	81.0	10.0	0.56	0.004	180	4.5	Bio-bxa	St K-spar+frac arg+chl	cpy, py, mo	diss+bxa	
CF-10-03	604763	*Core*	81.0	94.5	13.5	1.04	0.004	245	9.7	Bio-bxa	St K-spar+frac arg+chl	cpy, py, mo	diss+bxa	Low Recovery
CF-10-03	604764	*Core*	94.5	104.0	9.5	1.23	0.003	325	13.8	Bio-bxa	St K-spar+frac arg+chl	cpy, py, mo	diss+bxa	
CF-10-03	604767	*Core*	104.0	116.0	12.0	0.63	0.003	180	5.6	Bio-bxa	St K-spar+frac arg+chl	cpy, py, mo	diss+bxa	Low Recovery
CF-10-03	604768	*Core*	116.0	125.0	9.0	0.91	0.007	660	8.2	Bio-bxa	Strong kspar and hydrothermal biotite; minor fracture-controlled argillic	cpy, py, mo	bxa	
CF-10-03	604769	*Core*	125.0	132.0	7.0	1.02	0.013	305	8.4	Bio-bxa	St K-spar+second bio minor frac arg	cpy, py, mo	bxa	
CF-10-03	604770	*Core*	132.0	140.0	8.0	1.08	0.023	320	7.9	Bio-bxa	St K-spar+second bio minor frac arg	cpy, py, mo	bxa	
CF-10-03	604771	*Core*	140.0	149.5	9.5	1.20	0.020	350	13.9	Bio-bxa	St K-spar+second bio minor frac arg	cpy, py, mo	bxa	
CF-10-03	604772	*Core*	149.5	155.5	6.0	1.36	0.035	290	11.2	Bio-bxa	St K-spar+second bio minor frac arg	cpy, py, mo	bxa	
CF-10-03	604773	*Core*	155.5	166.0	10.5	0.83	0.017	270	5.7	Bio-bxa	St K-spar+second bio minor frac arg	cpy, py, mo	bxa	
CF-10-03	604774	*Core*	166.0	176.0	10.0	0.46	0.016	75	3.5	QM (Quartz Monzonite)	Strong silicification, moderate to strong kspar and biotite; minor fracture-controlled argillic	cpy, py, mo	diss+bxa	
CF-10-03	604775	*Core*	176.0	185.0	9.0	0.47	0.011	105	4.3	QM	St K-spar+second bio minor frac arg	cpy, py, mo	diss+bxa	
CF-10-03	604778	*Core*	185.0	195.0	10.0	0.51	0.013	140	2.8	QM	St K-spar+second bio minor frac arg	cpy, py, mo	diss+bxa	
CF-10-03	604779	*Core*	195.0	205.0	10.0	1.96	0.052	250	18	QM	Heavy argillization associated with faulting	cpy, py, mo	diss+bxa	
CF-10-03	604780	*Core*	205.0	214.5	9.5	0.67	0.022	105	4.8	QM	St arg in flt	cpy, py, mo	diss+bxa	
CF-10-03	604781	*Core*	214.5	222.0	7.5	0.32	0.009	85	2.5	QM	Strong silicification, moderate to strong kspar and biotite; minor fracture-controlled argillic	cpy, py, mo	diss+bxa	
CF-10-03	604782	*Core*	222.0	230.0	8.0	0.43	0.050	65	3.4	QM	St Silic+K-spar+second bio minor frac arg	cpy, py, mo	diss+bxa	
CF-10-03	604783	*Core*	230.0	240.5	10.5	1.56	0.075	255	11.4	Qtz-bxa (Quartz Breccia)	St Silic+K-spar+second bio minor frac arg	cpy, py, mo	diss+bxa	
CF-10-03	604786	*Core*	240.5	250.0	9.5	0.64	0.055	165	6.1	Qtx-bxa	St Silic+K-spar+second bio minor frac arg	cpy, py, mo	diss+bxa	
CF-10-03	604787	*Core*	250.0	260.0	10.0	0.63	0.013	110	4.8	Qtx-bxa	St Silic+K-spar+second bio minor frac arg	cpy, py, mo	diss+bxa	
CF-10-03	604788	*Core*	260.0	270.0	10.0	0.90	0.031	205	8.5	Qtx-bxa	St Silic+K-spar+second bio minor frac arg	cpy, py, mo	diss+bxa	
CF-10-03	604789	*Core*	270.0	280.0	10.0	0.74	0.031	235	5.2	Qtx-bxa	St Silic+K-spar+second bio minor frac arg	cpy, py, mo	diss+bxa	
CF-10-03	604790	*Core*	280.0	290.0	10.0	0.52	0.020	130	3.5	Qtx-bxa	St Silic+K-spar+second bio minor frac arg	cpy, py, mo	diss+bxa	
CF-10-03	604791	*Core*	290.0	300.0	10.0	0.72	0.032	170	5.7	Qtx-bxa	St Silic+K-spar+second bio minor frac arg	cpy, py, mo	diss+bxa	
CF-10-03	604792	*Core*	300.0	310.0	10.0	2.08	0.052	300	12.6	Bio-bxa (Biotite Breccia)	strong kspar and biotite overprinted by moderate illite/sericite	cpy, py, mo	bxa	
CF-10-03	604793	*Core*	310.0	320.0	10.0	0.81	0.027	190	7.8	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	
CF-10-03	604794	*Core*	320.0	329.0	9.0	0.49	0.030	95	4.1	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	
CF-10-03	604796	*Core*	329.0	338.5	9.5	0.74	0.069	165	7.4	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	
CF-10-03	604798	*Core*	338.5	350.0	11.5	0.46	0.012	165	3.4	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	
CF-10-03	604799	*Core*	350.0	360.0	10.0	0.73	0.021	165	5.5	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	
CF-10-03	604800	*Core*	360.0	370.0	10.0	0.52	0.029	135	3.9	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	
CF-10-03	604801	*Core*	370.0	380.0	10.0	0.53	0.031	180	3.6	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	

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CF-10-03	604803	*Core*	380.0	390.0	10.0	0.43	0.026	125	3.1	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	
CF-10-03	604804	*Core*	390.0	400.0	10.0	0.29	0.017	115	2.8	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	
CF-10-03	604805	*Core*	400.0	410.0	10.0	0.47	0.023	105	3.6	Bio-bxa (Fault Zone)	kspar overprinted by pervasive argillic associated with the faulting	cpy, py, mo	diss + fg (fines in fault gouge)	
CF-10-03	604806	*Core*	410.0	421.5	11.5	0.51	0.023	130	3.6	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	
CF-10-03	604807	*Core*	421.5	432.5	11.0	0.70	0.024	420	5.3	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	
CF-10-03	604809	*Core*	432.5	445.0	12.5	0.40	0.019	115	4	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	poor recovery
CF-10-03	604811	*Core*	445.0	454.0	9.0	0.29	0.010	35	2.6	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604812	*Core*	454.0	463.0	9.0	0.34	0.006	95	3.7	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604813	*Core*	463.0	472.0	9.0	0.36	0.018	115	3.5	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604814	*Core*	472.0	482.0	10.0	0.39	0.010	75	2.3	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604815	*Core*	482.0	492.0	10.0	0.18	0.004	60	1.7	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604816	*Core*	492.0	501.0	9.0	0.41	0.008	75	3.4	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604817	*Core*	501.0	510.5	9.5	0.54	0.006	85	3.3	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604818	*Core*	510.5	520.0	9.5	0.53	0.025	80	5.4	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604819	*Core*	520.0	530.0	10.0	0.53	0.013	95	2.8	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604820	*Core*	530.0	540.0	10.0	0.52	0.011	165	2.8	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604822	*Core*	540.0	548.0	8.0	0.52	0.015	90	2.8	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604823	*Core*	548.0	557.0	9.0	0.51	0.013	110	2.6	Bio-bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	fault zone
CF-10-03	604824	*Core*	557.0	566.0	9.0	0.51	0.014	105	2.8	Bio-bxa (Fault Zone)	kspar + biotite overprinted by pervasive argillic associated with the faulting	cpy, py, mo	diss+bxa	fault zone
CF-10-03	604826	*Core*	566.0	574.0	8.0	0.50	0.012	105	2.2	Bio-bxa (Fault Zone)	K-spar +second bio op by perv arg in flt	cpy, py, mo	diss+bxa	fault zone
CF-10-03	604827	*Core*	574.0	584.0	10.0	0.50	0.022	90	3	Bio-bxa (Fault Zone)	K-spar +second bio op by perv arg in flt	cpy, py, mo	diss+bxa	fault zone
CF-10-03	604828	*Core*	584.0	590.0	6.0	0.49	0.011	60	1.9	Bio-bxa (Fault Zone)	K-spar +second bio op by perv arg in flt	cpy, py, mo	diss+bxa	fault zone
CF-10-03	604829	*Core*	590.0	599.0	9.0	0.49	0.006	110	2.9	Qtz-bxa (Fault Zone)	K-spar +second bio op by perv arg in flt	cpy, py, mo	bxa + fg	fault zone
CF-10-03	604830	*Core*	599.0	609.0	10.0	0.48	0.003	60	1.5	Qtz-bxa (Fault Zone)	K-spar +second bio op by perv arg in flt	cpy, py, mo	bxa + fg	
CF-10-03	604831	*Core*	609.0	619.0	10.0	0.48	0.008	60	2.4	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	
CF-10-03	604833	*Core*	619.0	629.0	10.0	0.47	0.013	60	1.7	Bio-bxa	St K-spar+second bio op arg	cpy, py, mo	diss+bxa	
CF-10-03	604835	*Core*	629.0	636.0	7.0	0.47	0.016	55	1.9	QM/Qtz-bio bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	
CF-10-03	604836	*Core*	636.0	646.5	10.5	0.46	0.029	60	2.1	QM/Qtz-bio bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	poor recovery
CF-10-03	604837	*Core*	646.5	655.0	8.5	0.46	0.043	< 5	1.7	QM/Qtz-bio bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	
CF-10-03	604838	*Core*	655.0	665.0	10.0	0.45	0.010	50	1.4	QM/Qtz-bio bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	
CF-10-03	604839	*Core*	665.0	675.0	10.0	0.45	0.004	50	1.1	QM/Qtz-bio bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	
CF-10-03	604841	*Core*	675.0	685.0	10.0	0.44	0.023	60	1.3	QM/Qtz-bio bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	
CF-10-03	604842	*Core*	685.0	689.0	4.0	0.44	0.033	220	3	QM/Qtz-bio bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	
CF-10-03	604843	*Core*	689.0	696.5	7.5	0.43	0.015	50	2.1	QM/Qtz-bio bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	lots of gouge
CF-10-03	604844	*Core*	696.5	704.5	8.0	0.43	0.036	100	2.7	QM/Qtz-bio bxa (Fault Zone)	K-spar op by perv arg in flt	cpy, py, mo	diss + fg	lots of gouge
CF-10-03	604845	*Core*	704.5	714.0	9.5	0.42	0.021	65	1.5	Bio-bxa (Fault Zone)	strong kspar + biotite, patchy selectively pervasive illite (after feldspar)	cpy, py, mo	diss+bxa	
CF-10-03	604847	*Core*	714.0	724.0	10.0	0.42	0.024	205	3.4	Bio-bxa (Fault Zone)	St K-spar+second bio, patchy-perv arg	cpy, py, mo	diss+bxa	
CF-10-03	604848	*Core*	724.0	730.0	6.0	0.41	0.015	50	1.6	Kspar-bxa (Fault Zone)	St K-spar+second bio, patchy-perv arg	cpy, py, mo	diss + fract	
CF-10-03	604849	*Core*	730.0	736.0	6.0	0.41	0.016	< 5	0.5	Kspar-bxa (Fault Zone)	St K-spar+second bio, patchy-perv arg	cpy, py, mo	diss + fract	
CF-10-03	604851	*Core*	736.0	746.0	10.0	0.40	0.022	10	0.9	Qtz-K-spar bxa (Fault Zone)	St K-spar+second bio, patchy-perv arg	cpy, py, mo	diss+bxa	
CF-10-03	604853	*Core*	746.0	753.0	7.0	0.40	0.024	30	1.1	Qtz-K-spar bxa (Fault Zone)	St K-spar+second bio, patchy-perv arg	cpy, py, mo	diss+bxa	fault zone
CF-10-03	604854	*Core*	753.0	761.0	8.0	0.39	0.034	130	3.6	Qtz-K-spar bxa	St arg op st K-spar	cpy, py, mo	diss+bxa	
CF-10-03	604855	*Core*	761.0	766.5	5.5	0.39	0.031	255	4.4	Qtz-K-spar-bio bxa	St arg op st K-spar+second bio	cpy, py, mo	diss+bxa	
CF-10-03	604856	*Core*	766.5	775.0	8.5	0.38	0.025	335	4.8	Qtz-K-spar-bio bxa	St arg op st K-spar	cpy, py, mo	diss+bxa	
CF-10-03	604857	*Core*	775.0	780.5	5.5	0.38	0.045	160	3	Qtz-K-spar-bio bxa	St arg op st K-spar+chl	cpy, py, mo	diss+bxa	
CF-10-03	604859	*Core*	780.5	790.0	9.5	0.37	0.038	90	1.4	Qtz-bio bxa	St second bio+chl, frac epidote + cal	cpy, py, mo	diss	
CF-10-03	604860	*Core*	790.0	798.0	8.0	0.37	0.084	125	3.8	Qtz-bio bxa	St second bio+chl, frac epidote + cal	cpy, py, mo	diss	
CF-10-03	604861	*Core*	798.0	806.0	8.0	0.36	0.049	95	2.5	Qtz-bio bxa	St second bio+chl, frac epidote + cal	cpy, py, mo	diss	
CF-10-03	604862	*Core*	806.0	815.0	9.0	0.36	0.045	210	4.4	Qtz-bio bxa	St second bio+chl, frac epidote + cal	cpy, py, mo	diss	
CF-10-03	604863	*Core*	815.0	821.0	6.0	0.35	0.036	110	3.1	Qtz-bio bxa	Strong kspar + biotite, minor chlorite	cpy, py, mo	diss	
CF-10-03	604864	*Core*	821.0	827.0	6.0	0.35	0.025	230	3.8	Qtz-bio bxa	St K-spar + second bio+chl	cpy, py, mo	diss	
CF-10-03	604866	*Core*	827.0	833.0	6.0	0.34	0.048	425	7.1	Bio-magnetite bxa (mg clasts)	St second bio+chl, frac epidote + cal	cpy, py, mo	diss	
CF-10-03	604867	*Core*	833.0	840.0	7.0	0.34	0.044	335	11.1	Bio-magnetite bxa (mg clasts)	St second bio+chl, frac epidote + cal	cpy, py, mo	diss	
CF-10-03	604868	*Core*	840.0	848.0	8.0	0.34	0.009	100	3.8	QM	Strong kspar overprinted variably by pale grn illite(?) and gray/cream qtz+sericite	cpy, py, mo	diss	
CF-10-03	604869	*Core*	848.0	856.0	8.0	0.33	0.004	45	1.7	QM	St K-spar op by arg+qtz+sericite	cpy, py, mo	diss	
CF-10-03	604870	*Core*	856.0	862.0	6.0	0.33	0.024	90	1.7	QM (Fault Zone)	St K-spar op by arg+qtz+sericite	cpy, py, mo	diss	
CF-10-03	604872	*Core*	862.0	872.0	10.0	0.32	0.006	65	1.7	QM (Fault Zone)	Strong kspar, minor fracture-controlled argillic	cpy, py, mo	diss	
CF-10-03	604873	*Core*	872.0	880.0	8.0	0.32	0.003	60	1.8	QM (Fault Zone)	St K-spar, minor frac arg	cpy, py, mo	diss	
CF-10-03	604874	*Core*	880.0	886.0	6.0	0.31	0.002	35	1.3	QM (Fault Zone)	St K-spar, minor frac arg	cpy, py, mo	diss	fault zone
CF-10-03	604875	*Core*	886.0	896.0	10.0	0.31	0.004	35	1.2	QM (Quartz Monzonite)	St K-spar, minor frac arg	cpy, py, mo	diss	
CF-10-03	604877	*Core*	896.0	906.0	10.0	0.30	0.004	15	0.7	QM	St K-spar, minor frac arg	cpy, py, mo	diss	
CF-10-03	604879	*Core*	906.0	914.0	8.0	0.30	0.003	20	1	QM	St K-spar, minor frac arg	cpy, py, mo	diss	
CF-10-03	604880	*Core*	914.0	919.0	5.0	0.29	0.005	25	0.6	QM	Wk K-spar, patchy chl-cal, mod. quartz-sericite	cpy, py, mo	diss	
CF-10-03	604881	*Core*	919.0	924.5	5.5	0.29	0.001	5	0.6	QM	Very strong kspar, moderate fracture-controlled argillic	cpy, py, mo	diss	
CF-10-03	604882	*Core*	924.5	929.5	5.0	0.28	0.017	20	0.7	QM	V. st K-spar mod frac arg	cpy, py, mo	diss	
CF-10-03	604884	*Core*	929.5	935.0	5.5	0.28	0.002	25	0.7	QM	V. st K-spar mod frac arg	cpy, py, mo	diss	
CF-10-03	604886	*Core*	935.0	942.0	7.0	0.27	0.005	20	1.1	QM (Fault Zone)	very intense argillic (fault-related), kspar visible in some rubble	cpy, py, mo	fg	
CF-10-03	604887	*Core*	942.0	947.0	5.0	0.27	0.005	5	1	QM (Fault Zone)	V st arg in fault+ K-spar frags	cpy, py, mo	fg	
CF-10-03	604888	*Core*	947.0	956.0	9.0	0.26	0.041	65	1.6	QM	Very strong kspar, moderate fracture-controlled argillic, patchy quartz-sericite(?)	cpy, py, mo	diss	
CF-10-03	604889	*Core*	956.0	966.0	10.0	0.26	0.006	55	1.7	QM	V st K-spar, mod fract arg, patchy quartz-sericite	cpy, py, mo	diss	
CF-10-03	604890	*Core*	966.0	971.0	5.0	0.25	0.005	95	1.8	QM	V st K-spar, mod fract arg, patchy quartz-sericite	cpy, py, mo	diss	
CF-10-03	604892	*Core*	971.0	976.2	5.2	0.25	0.003	< 5	0.8	QM	St K-spar op by frac arg+qtz+sericite	cpy, py, mo	diss	
CF-10-03	604893	*Core*	976.2	985.5	9.3	0.24	0.010	25	0.8	QM	St K-spar op by frac arg+qtz+sericite	cpy, py, mo	diss	
CF-10-03	604894	*Core*	985.5	996.0	10.5	0.24	0.003	35	1	QM	strong qtz/sericite, variable kspar, moderate chloritization, calcite on fractures	cpy, py, mo	diss	
CF-10-03	604895	*Core*	996.0	1006.0	10.0	0.23	0.010	20	0.9	QM	St qtz-ser, variable K-spar, mod. chl+ frac cal	cpy, py, mo	diss	
CF-10-03	604896	*Core*	1006.0	1013.0	7.0	0.23	0.007	25	0.9	QM	St qtz-ser, variable K-spar, mod. chl+ frac cal	cpy, py, mo	diss	
CF-10-03	604898	*Core*	1013.0	1019.5	6.5	0.22	0.036	55	1.7	QM	St qtz-ser, variable K-spar, mod. chl+ frac cal	cpy, py, mo	diss	
CF-10-03	604899	*Core*	1019.5	1026.0	6.5	0.22	0.022	55	1.5	QM	V st K-spar, mod fract arg, patchy quartz-sericite	cpy, py, mo	diss	
CF-10-03	604900	*Core*	1026.0	1031.0	5.0	0.21	0.004	50	1.4	QM	V st K-spar, mod fract arg, patchy quartz-sericite	cpy, py, mo	diss	
CF-10-03	604902	*Core*	1031.0	1041.0	10.0	0.21	0.006	45	1.1	QM	St qtz-ser, variable K-spar, mod. chl+ frac cal	cpy, py, mo	diss	

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CF HOLE #	START	COMPLETE	DEPTH	AZ.	INCL.	SECTION	X	Y	Z
CF-10-04	1/7/2010	1/12/2010	1014.5	90º	60º	716700	592323	716727	5460

Downhole Survey	Depth	Azimuth	Incl.
	100'	349.6 ?	59.20
	200'	81.6	59.60
	300'	81	60.10
	400'	80.6	60.40
	500'	78.7	60.30
	600'	80.7	61.90
	700'	81.5	61.50
	800'	81.1	61.80
	900'	81.2	62.30
	1000'	82.3	62.30

ID	SAMPLE	TYPE	FROM	TO	INTERVAL	TCu (%)	Mo (%)	Au (ppb)	Ag (ppm)	LITHOLOGY	ALTERATION	Mineral	Mineral Form	Remarks
CF-10-04	604638	*Core*	0.0	16.0	16.0	0.46	0.019	140	4.1	QM (Quartz Monzonite)	St frac ox, jar-goe	cpy, py, mo	diss	fault zone--low recovery
CF-10-04	604639	*Core*	16.0	26.0	10.0	0.22	< 0.001	40	1.7	QM	Strong argillization, minor oxidation (jarosite and goethite dominant)	cpy, py, mo	diss	
CF-10-04	604640	*Core*	26.0	32.0	6.0	0.27	0.002	110	3.6	QM	St arg minor ox, jar-goe	cpy, py, mo	diss	
CF-10-04	604641	*Core*	32.0	41.0	9.0	0.25	0.003	45	1.7	QM	kspar with local fracture-controlled argillic, minor chloritization	cpy, py, mo	diss	
CF-10-04	604642	*Core*	41.0	50.0	9.0	0.18	< 0.001	45	1.3	QM	K-spar + frac arg, minor chl	cpy, py, mo	diss	
CF-10-04	604644	*Core*	50.0	60.0	10.0	0.3	0.002	330	6.8	QM	K-spar + frac arg, minor chl	cpy, py, mo	diss	
CF-10-04	604645	*Core*	60.0	70.0	10.0	0.24	0.001	65	1.6	QM	K-spar + frac arg, minor chl	cpy, py, mo	diss	
CF-10-04	604646	*Core*	70.0	80.0	10.0	0.31	< 0.001	105	3.3	QM	K-spar + frac arg, minor chl	cpy, py, mo	diss	
CF-10-04	604647	*Core*	80.0	90.0	10.0	0.2	< 0.001	60	1.9	QM	K-spar + frac arg, minor chl	cpy, py, mo	diss	
CF-10-04	604648	*Core*	90.0	100.0	10.0	0.28	0.002	145	3.9	QM	K-spar + frac arg, minor chl	cpy, py, mo	diss	
CF-10-04	604649	*Core*	100.0	108.0	8.0	0.32	0.004	95	4.3	QM	K-spar + frac arg, minor chl	cpy, py, mo	diss	
CF-10-04	604651	*Core*	108.0	116.0	8.0	0.3	0.002	85	2	QM	K-spar + frac arg, minor chl	cpy, py, mo	diss	
CF-10-04	604652	*Core*	116.0	126.0	10.0	0.27	0.002	65	2	QM	K-spar + frac arg, minor chl	cpy, py, mo	diss	
CF-10-04	604653	*Core*	126.0	136.0	10.0	0.23	0.006	70	2.1	QM	K-spar + frac arg, minor chl	cpy, py, mo	diss	
CF-10-04	604654	*Core*	136.0	145.0	9.0	0.37	0.017	115	2.5	QM	Silicification overprinting kspar alteration and weak fracture-controlled argillic	cpy, py, mo	diss	
CF-10-04	604656	*Core*	145.0	153.0	8.0	0.21	0.035	90	1.7	QM	Silic op K-spar st frac arg	cpy, py, mo	diss	fault zone
CF-10-04	604657	*Core*	153.0	164.0	11.0	0.2	0.002	65	2	QM	Silic op K-spar st frac arg	cpy, py, mo	diss	
CF-10-04	604658	*Core*	164.0	172.0	8.0	0.19	0.002	100	2.2	QM (Fault Zone)	St arg in flt	cpy, py, mo	diss	fault zone
CF-10-04	604659	*Core*	172.0	181.0	9.0	0.32	0.031	95	2.2	QM	Strong kspar with local fracture-controlled argillic alteration	cpy, py, mo	diss	
CF-10-04	604660	*Core*	181.0	192.0	11.0	0.38	0.019	100	2.8	QM	St K-spar frac arg	cpy, py, mo	diss	
CF-10-04	604661	*Core*	192.0	201.0	9.0	0.33	0.003	90	3.7	QM	St K-spar frac arg	cpy, py, mo	diss	
CF-10-04	604662	*Core*	201.0	211.0	10.0	0.18	0.002	45	2	QM	St K-spar frac arg	cpy, py, mo	diss	
CF-10-04	604663	*Core*	211.0	222.0	11.0	0.19	0.001	85	3.2	QM	St K-spar frac arg	cpy, py, mo	diss	
CF-10-04	604664	*Core*	222.0	233.0	11.0	0.38	0.005	155	3.1	QM	St K-spar frac arg	cpy, py, mo	diss	
CF-10-04	604667	*Core*	233.0	243.0	10.0	0.18	0.002	60	1.8	QM	St K-spar frac arg	cpy, py, mo	diss	
CF-10-04	604668	*Core*	243.0	254.0	11.0	0.32	0.009	100	2	QM (Fault Zone)	St K-spar frac arg	cpy, py, mo	diss	Fault Zone
CF-10-04	604669	*Core*	254.0	266.0	12.0	0.32	0.006	75	2.4	QM (Fault Zone)	St K-spar frac arg	cpy, py, mo	diss	Fault Zone
CF-10-04	604670	*Core*	266.0	277.0	11.0	0.15	0.004	40	1.2	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	604671	*Core*	277.0	287.0	10.0	0.12	0.006	30	1	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	604672	*Core*	287.0	299.0	12.0	0.16	0.017	45	1.1	QM	QS+ second bio	cpy, py, mo	diss	Fractured Zone
CF-10-04	604673	*Core*	299.0	310.0	11.0	0.13	0.018	20	0.8	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	604674	*Core*	310.0	320.0	10.0	0.19	0.002	45	1.6	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	604675	*Core*	320.0	331.0	11.0	0.15	0.003	30	1	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	604678	*Core*	331.0	343.0	12.0	0.23	0.018	55	1.8	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	604679	*Core*	343.0	353.0	10.0	0.24	0.011	60	1.8	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	604680	*Core*	353.0	364.0	11.0	0.31	0.006	70	1.9	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	604681	*Core*	364.0	375.0	11.0	0.26	0.004	75	1.7	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	604682	*Core*	375.0	386.0	11.0	0.3	0.011	75	2	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	605501	*Core*	386.5	395.0	8.5	0.29	0.005	95	2.5	QM	QS+ second bio	cpy, py, mo	diss	
CF-10-04	605502	*Core*	395.0	407.0	12.0	0.35	0.003	95	2.3	QM	QS+ second bio	cpy, py, mo	diss	Contact
CF-10-04	605503	*Core*	407.0	417.0	10.0	0.13	0.002	40	1	QM	kspar + biotite and illite	cpy, py, mo	diss	
CF-10-04	605504	*Core*	417.0	428.0	11.0	0.19	0.015	50	1.2	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605505	*Core*	428.0	439.5	11.5	0.24	0.011	55	1.8	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605506	*Core*	439.5	449.0	9.5	0.18	0.005	50	1.2	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605507	*Core*	449.0	460.0	11.0	0.15	0.006	40	1.3	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605508	*Core*	460.0	470.0	10.0	0.25	0.011	45	1.6	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605509	*Core*	470.0	480.0	10.0	0.2	0.003	60	1.5	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605512	*Core*	480.0	492.0	12.0	0.18	0.003	70	1.1	QM (Fault Zone)	significant argillic over kspar + biotite	cpy, py, mo	diss	Fault Zone
CF-10-04	605513	*Core*	492.0	502.0	10.0	0.19	0.004	65	1.5	QM (Fault Zone)	St K-spar op by arg	cpy, py, mo	diss	Fault Zone
CF-10-04	605514	*Core*	502.0	513.0	11.0	0.17	0.006	50	1	QM (Fault Zone)	St K-spar op by arg	cpy, py, mo	diss	
CF-10-04	605515	*Core*	513.0	524.0	11.0	0.2	0.002	65	1.4	QM	kspar + biotite and illite	cpy, py, mo	diss	
CF-10-04	605516	*Core*	524.0	534.0	10.0	0.19	0.002	50	1.5	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605517	*Core*	534.0	544.0	10.0	0.23	0.003	70	1.6	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605518	*Core*	544.0	556.0	12.0	0.2	0.003	65	1.4	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605519	*Core*	556.0	567.0	11.0	0.3	0.002	95	1.9	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605520	*Core*	567.0	577.5	10.5	0.33	0.004	90	1.9	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605521	*Core*	577.5	590.0	12.5	0.3	0.004	80	1.8	QM	K-spar + second bio+arg	cpy, py, mo	diss	fault zone--low recovery
CF-10-04	605522	*Core*	590.0	601.0	11.0	0.22	0.002	70	1.5	QM	K-spar + second bio+arg	cpy, py, mo	diss	Fault Zone
CF-10-04	605525	*Core*	601.0	611.0	10.0	0.24	0.013	55	1.9	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605526	*Core*	611.0	621.0	10.0	0.16	0.001	40	1.3	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605527	*Core*	621.0	632.0	11.0	0.16	0.001	45	1.3	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605528	*Core*	632.0	643.0	11.0	0.21	0.006	55	1.6	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605529	*Core*	643.0	654.0	11.0	0.16	< 0.001	55	1.1	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605530	*Core*	654.0	665.0	11.0	0.17	0.002	55	1.2	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605531	*Core*	665.0	675.0	10.0	0.16	0.003	45	1.3	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605532	*Core*	675.0	686.0	11.0	0.13	< 0.001	35	1	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605533	*Core*	686.0	696.0	10.0	0.18	0.004	45	1.5	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	605534	*Core*	696.0	707.0	11.0	0.25	0.002	70	1.8	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604719	*Core*	707.0	717.0	10.0	0.15	0.002	50	0.8	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604720	*Core*	717.0	727.0	10.0	0.12	0.002	45	1	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604721	*Core*	727.0	739.0	12.0	0.21	0.003	70	1.6	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604722	*Core*	739.0	750.0	11.0	0.24	0.012	75	1.5	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604723	*Core*	750.0	761.0	11.0	0.17	0.005	60	1.3	QM	K-spar + second bio+arg	cpy, py, mo	diss	

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CF-10-04	604724	Core	761.0	770.5	9.5	0.24	0.002	95	1.6	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604725	Core	770.5	780.0	9.5	0.2	0.008	60	1.3	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604726	Core	780.0	791.0	11.0	0.23	0.005	70	1.6	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604727	Core	791.0	802.0	11.0	0.15	0.004	50	1	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604728	Core	802.0	812.0	10.0	0.15	0.002	40	1	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604729	Core	812.0	822.0	10.0	0.14	0.001	50	0.9	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604730	Core	822.0	832.0	10.0	0.17	0.005	55	1.1	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604731	Core	832.0	842.0	10.0	0.17	0.006	40	1	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604734	Core	842.0	852.0	10.0	0.12	0.003	35	0.9	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604735	Core	852.0	863.0	11.0	0.27	0.032	85	1.7	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604736	Core	863.0	870.0	7.0	0.18	0.008	55	1.4	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604737	Core	870.0	878.0	8.0	0.19	0.004	75	1.3	QM (Fault Zone)	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604738	Core	878.0	888.0	10.0	0.24	0.002	75	1.3	QM	K-spar + second bio+arg	cpy, py, mo	diss	Fault Zone
CF-10-04	604739	Core	888.0	898.0	10.0	0.2	0.01	80	1.3	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604740	Core	898.0	908.0	10.0	0.19	0.005	60	1.3	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604741	Core	908.0	918.0	10.0	0.21	0.005	65	1.4	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604742	Core	918.0	928.0	10.0	0.17	0.007	55	1.4	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604745	Core	928.0	936.0	8.0	0.24	0.008	95	1.7	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604746	Core	936.0	945.0	9.0	0.11	0.001	30	0.9	QM	K-spar + second bio+arg	cpy, py, mo	diss	Fault Zone
CF-10-04	604747	Core	945.0	956.0	11.0	0.12	0.004	50	0.7	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604748	Core	956.0	966.0	10.0	0.13	0.006	45	1	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604749	Core	966.0	978.0	12.0	0.15	0.006	35	1.3	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604750	Core	978.0	988.0	10.0	0.26	0.018	90	1.8	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604751	Core	988.0	998.0	10.0	0.24	0.007	85	1.9	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604752	Core	998.0	1006.5	8.5	0.13	0.004	50	1.2	QM	K-spar + second bio+arg	cpy, py, mo	diss	
CF-10-04	604753	Core	1006.5	1014.5	8.0	0.12	0.014	35	1.1	QM (Quartz Monzonite)	K-spar + second bio+arg	cpy, py, mo	diss	EOH

CF HOLE #	START	COMPLETE	DEPTH	AZ.	INCL.	SECTION	X	Y	Z
CF-10-05	1/29/2010	2/6/2010	602.5	260°	70°	716400	592324	716414	5444
Downhole	Depth	Azimuth	Incl.						
Survey	100'	252.2	70.60						
	200'	253.7	70.30						
	300'	251	70.00						
	403'	252.6	70.00						
	500'	253.1	69.80						
	600'	caved							

ID	SAMPLE	TYPE	FROM	TO	INTERVAL	TCu (%)	Mo (%)	Au (ppb)	Ag (ppm)	LITHOLOGY	ALTERATION	Mineral	Mineral Form	Remarks
CF-10-05	605184	Core	0.0	6.5	6.5	0.85	0.022	460	8.6	Bio-bxa (Biotite Breccia)	Mod frac Fe-oxides, st second biotite	cpy, py, mo	disseminated and in breccia matrix	
CF-10-05	605185	Core	6.5	13.0	6.5	0.66	0.009	280	3.9	Bio-bxa	kspar and biotite with minor chlorite and fracture-controlled oxidation	cpy, py, mo	diss and bxa matrix	
CF-10-05	605186	Core	13.0	22.5	9.5	0.48	0.022	210	3.7	Bio-bxa	K-spar+second bio minor chl, frac ox	cpy, py, mo	diss and bxa matrix	
CF-10-05	605187	Core	22.5	32.5	10.0	0.35	0.007	125	2	Bio-bxa	K-spar+second bio minor chl, frac ox	cpy, py, mo	diss and bxa matrix	Gouge zone 23-27'
CF-10-05	605189	Core	32.5	42.0	9.5	0.47	0.004	140	3.2	Bio-bxa	St second bio, patchy K-spar	cpy, py, mo	diss and bxa matrix	
CF-10-05	605191	Core	42.0	52.0	10.0	0.38	0.023	130	5.2	Bio-bxa (Fault Zone)	St second bio, patchy K-spar+ser+cal in flt	cpy, py, mo	diss and bxa matrix	minor fault zone 49-52'
CF-10-05	605192	Core	52.0	59.5	7.5	0.38	0.012	135	3	Bio-bxa	St second bio, patchy K-spar	cpy, py, mo	diss and bxa matrix	
CF-10-05	605193	Core	59.5	68.5	9.0	0.14	0.003	60	2.1	Bio-bxa	strong kspar with lesser biotite+chlorite	cpy, py, mo	breccia matrix	minor fault w/sericite altn 65-67'
CF-10-05	605194	Core	68.5	73.5	5.0	0.11	< 0.001	25	0.6	Bio-bxa	St K-spar less second bio+chl	cpy, py, mo	Bxa matric	
CF-10-05	605195	Core	73.5	79.0	5.5	0.09	0.001	45	0.9	Bio-bxa	St K-spar less second bio+chl	cpy, py, mo	Bxa matric	
CF-10-05	605197	Core	79.0	89.0	10.0	0.19	0.002	55	1.3	Bio-bxa	St K-spar less second bio+chl	cpy, py, mo	diss and bxa matrix	
CF-10-05	605198	Core	89.0	99.0	10.0	0.31	0.01	125	2.8	Bio-bxa	St K-spar less second bio+chl	cpy, py, mo	diss and bxa matrix	
CF-10-05	605199	Core	99.0	109.0	10.0	0.52	0.011	165	3.3	Bio-bxa	St K-spar less second bio+chl	cpy, py, mo	diss and bxa matrix	
CF-10-05	605200	Core	109.0	117.0	8.0	0.34	0.004	115	2.1	Bio-bxa	St K-spar less second bio+chl	cpy, py, mo	diss and bxa matrix	
CF-10-05	605202	Core	117.0	124.0	7.0	0.43	0.003	165	3.8	Bio-bxa	St K-spar less second bio+chl	cpy, py, mo	diss and bxa matrix	
CF-10-05	605203	Core	124.0	133.0	9.0	0.25	0.002	195	5.1	Qtz-bio bxa	Texturally destructive argillic; weak kspar and biotite + chlorite	cpy, py, mo	disseminated, breccia matrix, and fines in fault gouge	fault zone
CF-10-05	605204	Core	133.0	141.0	8.0	0.14	0.002	50	1.4	Qtz-bio bxa	Vst arg+wk K-spar+second bio+chl	cpy, py, mo	diss bxa matrix, fines in fault	fault zone
CF-10-05	605205	Core	141.0	146.0	5.0	0.45	0.002	95	9.2	Qtz-bio bxa	Vst arg+wk K-spar+second bio+chl	cpy, py, mo	diss bxa matrix, fines in fault	fault zone; gouge 142-146'
CF-10-05	605206	Core	146.0	155.5	9.5	0.25	0.002	105	2	Qtz-bio bxa	Vst arg+wk K-spar+second bio+chl	cpy, py, mo	diss bxa matrix, fines in fault	
CF-10-05	605207	Core	155.5	162.5	7.0	0.3	0.013	65	1.9	Bio-bxa (Biotite Breccia)	very strong biotite + chlorite, patchy kspar	cpy, py, mo	disseminated and blebs in breccia matrix	
CF-10-05	605208	Core	162.5	169.5	7.0	0.34	0.009	85	4.1	Bio-bxa	Vst second bio + chl + patchy kspar	cpy, py, mo	diss, blebs in bxa matrix	tiny mt-rich andesite dike at 164'?
CF-10-05	605209	Core	169.5	180.0	10.5	0.2	0.001	70	2.8	Qtz-bxa (Quartz Breccia)	strong quartz-sericite with patchy kspar	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-05	605210	Core	180.0	186.5	6.5	0.34	0.002	125	2.9	Qtz-bxa	St QS, patchy K-spar	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-05	605212	Core	186.5	196.0	9.5	0.38	0.002	110	2.5	Bio-bxa	Vst second biotite + chl, patchy K-spar	cpy, py, mo	diss and bxa matrix	
CF-10-05	605214	Core	196.0	202.0	6.0	0.55	0.006	175	7	QM	pervasive quartz-sericite alteration(?), minor fracture-controlled argillic	cpy, py, mo	diss and vnlt	minor fault zone
CF-10-05	605215	Core	202.0	208.0	6.0	0.31	0.005	130	4.7	QM	Perv QS, minor frac arg	cpy, py, mo	diss and vnlt	minor fault zone
CF-10-05	605216	Core	208.0	216.0	8.0	0.34	0.002	205	2.7	Bio-bxa	strong biotite with minor sericite+quartz and minor chloritization	cpy, py, mo	diss and bxa matrix	
CF-10-05	605217	Core	216.0	226.0	10.0	0.28	0.002	90	2.3	Bio-bxa	St second bio, QS+chl	cpy, py, mo	diss and bxa matrix	
CF-10-05	605218	Core	226.0	233.0	7.0	0.15	0.001	100	4.6	Qtz-bio bxa (Fault-zone)	strong argillic (fault-related), patchy kspar	cpy, py, mo	diss and bxa matrix	minor fault zone
CF-10-05	605219	Core	233.0	241.0	8.0	0.12	0.001	50	1.2	Qtz-bio bxa (Fault-zone)	strong arg in flt patchy K-spar	cpy, py, mo	diss and bxa matrix	minor fault zone
CF-10-05	605221	Core	241.0	251.0	10.0	0.22	0.007	65	1.9	Bio-bxa	St second bio+chl, patchy wk K-spar	cpy, py, mo	diss and bxa matrix	
CF-10-05	605222	Core	251.0	259.0	8.0	0.26	0.127	70	2	Bio-K-spar bxa (Fault Zone)	strong argillic, weak to moderate bt overprints strong early kspar	cpy, py, mo	diss, blebs in bxa matrix	fault zone
CF-10-05	605223	Core	259.0	269.0	10.0	0.41	0.003	180	2.7	Bio-K-spar bxa (Fault Zone)	St arg, mod bio op, st early k-spar	cpy, py, mo	diss, blebs in bxa matrix	fault zone
CF-10-05	605225	Corte	269.0	279.0	10.0	0.24	0.006	80	2.1	Bio-K-spar bxa (Fault Zone)	St arg, mod bio op, st early k-spar	cpy, py, mo	diss, blebs in bxa matrix	fault zone
CF-10-05	605226	Core	279.0	285.0	6.0	0.19	0.002	75	1.3	Bio-K-spar bxa (Fault Zone)	St arg, mod bio op, st early k-spar	cpy, py, mo	diss, blebs in bxa matrix	fault zone
CF-10-05	605227	Core	285.0	295.0	10.0	0.17	0.002	70	1.7	Bio-K-spar bxa (Fault Zone)	St arg, mod bio op, st early k-spar	cpy, py, mo	diss, blebs in bxa matrix	fault zone
CF-10-05	605228	Core	295.0	303.5	8.5	0.11	0.001	50	1.3	Bio-K-spar bxa (Fault Zone)	St arg, mod bio op, st early k-spar	cpy, py, mo	diss, blebs in bxa matrix	fault zone
CF-10-05	605229	Core	303.5	313.5	10.0	0.24	0.003	85	2.2	Bio-bxa (Fault Zone)	strong biotite+chlorite, patchy kspar, weak fracture-controlled argillic	cpy, py, mo	diss bxa matrix, fines in fault	
CF-10-05	605230	Core	313.5	323.5	10.0	0.2	0.003	90	2	Bio-bxa (Fault Zone)	St bio+chl, patchy k-spar, wk frac arg	cpy, py, mo	diss bxa matrix, fines in fault	fault zone 319-323.5'
CF-10-05	605231	Core	323.5	332.0	8.5	0.2	0.001	120	1.7	Bio-bxa (Fault Zone)	St bio+chl, patchy k-spar, wk frac arg	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone
CF-10-05	605232	Core	332.0	342.0	10.0	0.15	0.007	50	1.2	Qtz-K-spar bxa (Fault Zone)	St bio+chl, patchy k-spar, wk frac arg	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone
CF-10-05	605233	Core	342.0	352.0	10.0	0.27	0.002	85	2.2	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone
CF-10-05	605234	Core	352.0	362.0	10.0	0.17	0.006	65	1.7	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone
CF-10-05	605235	Core	362.0	372.0	10.0	0.26	0.005	80	1.9	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone
CF-10-05	605237	Core	372.0	382.0	10.0	0.18	0.005	65	1	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone
CF-10-05	605239	Core	382.0	392.0	10.0	0.16	0.002	50	1.5	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone
CF-10-05	605240	Core	392.0	403.0	11.0	0.31	0.001	60	2.6	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone
CF-10-05	605241	Core	403.0	411.0	8.0	0.12	0.005	55	1.4	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone
CF-10-05	605242	Core	411.0	421.0	10.0	0.31	0.004	100	2.8	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone

CF-10-05	605243	*Core*	421.0	428.0	7.0	0.35	0.005	75	4	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605245	*Core*	428.0	438.0	10.0	0.44	0.003	125	3	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605246	*Core*	438.0	445.0	7.0	0.41	0.005	105	3.8	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605247	*Core*	445.0	454.0	9.0	0.33	0.001	105	4.5	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605248	*Core*	454.0	463.5	9.5	0.24	0.004	70	2.5	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605250	*Core*	463.5	474.0	10.5	0.31	0.012	440	2.9	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605251	*Core*	474.0	484.5	10.5	0.24	0.002	55	2.2	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605252	*Core*	484.5	493.0	8.5	0.23	0.002	60	2.5	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605253	*Core*	493.0	504.0	11.0	0.17	0.004	60	1.8	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605254	*Core*	504.0	512.5	8.5	0.19	0.031	65	1.6	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605255	*Core*	512.5	523.0	10.5	0.2	0.003	55	2	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605256	*Core*	523.0	531.5	8.5	0.35	0.003	75	2.8	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605257	*Core*	531.5	540.3	8.8	0.58	0.002	155	4.2	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605258	*Core*	540.3	550.5	10.2	0.38	0.005	85	2.9	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605259	*Core*	550.5	559.0	8.5	0.16	0.01	55	2.5	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605261	*Core*	559.0	569.0	10.0	0.25	< 0.001	60	2.7	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605263	*Core*	569.0	578.5	9.5	0.41	< 0.001	85	3.7	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605264	*Core*	578.5	590.0	11.5	0.3	0.003	1020	4.1	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605265	*Core*	590.0	599.5	9.5	0.38	0.001	125	5.5	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	major fault zone	
CF-10-05	605267	*Core*	599.5	602.5	3.0	0.54	0.004	345	8.6	Qtz-K-spar bxa (Fault Zone)	St arg op v.st K-spar	cpy, py, mo	diss bxa matrix, fines in fault	cave-in fault gouge/sand	EOH

CF HOLE #	START	COMPLETE	DEPTH	AZ.	INCL.	SECTION	X	Y	Z
CF-10-06	1/12/2010	1/24/2010	1200.0	170º	70º	716400	592307	716404	5453
Downhole	Depth	Azimuth	Incl.						
Survey	117'	228	69.70						
	207'	161	70.40						
	317'	165	71.10						
	417'	160.8	70.80						
	527'	165.3	71.60						
	614'	162.5	71.30						
	718.5'	166.3	71.60						
	828.5'	160.7	70.20						
	907'	162	70.90						
	1007'	161.7	70.50						
	1200	159.6	70.80						

ID	SAMPLE	TYPE	FROM	TO	INTERVAL	TCu (%)	Mo (%)	Au (ppb)	Ag (ppm)	LITHOLOGY	ALTERATION	Mineral	Mineral Form	Remarks
CF-10-06	605001	*Core*	0.0	10.0	10.0	0.30	0.005	165	4.2	Bio-bxa (Biotite Breccia)	weak fracture-controlled jarosite+goethite overprints strong chlorite+biotite overprints kspar	cpy, py	diss	
CF-10-06	605002	*Core*	10.0	21.0	11.0	0.28	0.007	115	1.7	Bio-bxa	K-spar+second bio-chl op, frac jar+goe	cpy, py, mo	diss	
CF-10-06	605003	*Core*	21.0	27.0	6.0	0.59	0.008	265	5.2	Bio-bxa	very strong biotite + chlorite, weak patchy kspar	cpy, py, mo	diss and bxa matrix	
CF-10-06	605004	*Core*	27.0	37.0	10.0	0.99	0.011	320	9.5	Bio-bxa	Vst bio + chl, wk patchy k-spar	cpy, py, mo	diss and bxa matrix	
CF-10-06	605005	*Core*	37.0	47.0	10.0	0.51	0.006	195	5.6	Bio-bxa	Vst bio + chl, wk patchy k-spar	cpy, py, mo	diss and bxa matrix	
CF-10-06	605007	*Core*	47.0	58.0	11.0	0.23	0.002	90	2.1	Bio-bxa	Vst bio + chl, wk patchy k-spar	cpy, py, mo	diss and bxa matrix	
CF-10-06	605009	*Core*	58.0	62.0	4.0	0.20	0.002	120	2.3	Bio-bxa	Vst bio + chl, wk patchy k-spar	cpy, py, mo	diss and bxa matrix	
CF-10-06	605010	*Core*	62.0	71.0	9.0	0.43	0.009	200	5.9	Bio-bxa	Vst bio + chl, wk patchy k-spar	cpy, py, mo	diss and bxa matrix	
CF-10-06	605012	*Core*	71.0	77.0	6.0	0.35	0.003	125	4.7	Bio-bxa	St arg op v.st K-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605013	*Core*	77.0	88.5	11.5	0.39	0.020	125	4.5	Bio-bxa	St arg op v.st K-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605014	*Core*	88.5	94.0	5.5	0.42	0.004	105	3.9	Bio-bxa	St arg op v.st K-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605015	*Core*	94.0	100.0	6.0	0.42	0.049	165	3.4	Bio-bxa (Fault Zone)	Vst arg	cpy, py, mo	diss bxa matrix, fines in fault	
CF-10-06	605016	*Core*	100.0	110.0	10.0	0.23	0.009	75	1.6	Bio-bxa	K-spar op by chl.	cpy, py, mo	diss and vnlt	
CF-10-06	605018	*Core*	110.0	114.5	4.5	0.22	0.002	90	1.6	Bio-bxa	K-spar op by chl	cpy, py, mo	diss and vnlt	
CF-10-06	605020	*Core*	114.5	126.0	11.5	0.28	0.009	90	1.6	Bio-bxa	K-spar op by chl	cpy, py, mo	diss and vnlt	
CF-10-06	605021	*Core*	126.0	137.0	11.0	0.11	0.002	25	1.3	Bio-bxa (Fault Zone)	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605023	*Core*	137.0	143.5	6.5	0.16	0.001	55	1.4	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605024	*Core*	143.5	153.5	10.0	0.22	0.004	65	2	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605025	*Core*	153.5	160.0	6.5	0.34	0.028	100	3.1	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605026	*Core*	160.0	168.0	8.0	0.21	0.002	105	2.6	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605027	*Core*	168.0	174.5	6.5	0.18	0.007	65	1.4	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605029	*Core*	174.5	181.5	7.0	0.51	0.002	210	5.3	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605031	*Core*	181.5	187.0	5.5	0.78	0.007	230	5.5	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605032	*Core*	187.0	195.0	8.0	0.29	0.005	135	3.5	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605033	*Core*	195.0	202.0	7.0	0.21	0.006	150	2.6	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605034	*Core*	202.0	212.0	10.0	0.24	0.009	390	2.3	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605036	*Core*	212.0	222.0	10.0	0.31	0.006	225	2.2	Bio-bxa (Fault Zone)	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605037	*Core*	222.0	231.0	9.0	0.44	0.004	275	5	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605038	*Core*	231.0	240.0	9.0	0.39	0.007	95	2.4	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605039	*Core*	240.0	247.0	7.0	0.13	0.004	75	1.1	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605040	*Core*	247.0	257.0	10.0	0.19	0.004	50	1.9	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605042	*Core*	257.0	267.0	10.0	0.28	0.031	65	2.2	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605043	*Core*	267.0	277.0	10.0	0.24	0.003	150	5.5	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605044	*Core*	277.0	287.0	10.0	0.19	0.003	70	2.6	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605046	*Core*	287.0	297.0	10.0	0.15	0.009	55	1.7	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605047	*Core*	297.0	309.0	12.0	0.31	0.004	180	6.4	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605049	*Core*	309.0	317.0	8.0	0.22	0.015	55	1.6	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605050	*Core*	317.0	327.0	10.0	0.26	0.019	70	2.2	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605051	*Core*	327.0	334.0	7.0	0.22	0.005	55	1.8	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605052	*Core*	334.0	345.0	11.0	0.20	0.005	75	3.1	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605053	*Core*	345.0	354.0	9.0	0.39	0.004	125	5.2	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605055	*Core*	354.0	366.0	12.0	0.29	0.004	90	2.5	Bio-bxa (Fault Zone)	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605057	*Core*	366.0	374.0	8.0	0.32	0.006	145	2.2	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605058	*Core*	374.0	383.0	9.0	0.23	0.004	50	2.3	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605059	*Core*	383.0	393.0	10.0	0.28	0.003	105	4.2	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605060	*Core*	393.0	400.0	7.0	0.33	0.004	70	3.1	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605061	*Core*	400.0	410.0	10.0	0.35	0.009	115	3	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605063	*Core*	410.0	417.0	7.0	0.41	0.004	115	2.4	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605064	*Core*	417.0	427.0	10.0	0.17	0.004	80	1.5	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605065	*Core*	427.0	437.0	10.0	0.39	0.014	130	3	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605066	*Core*	437.0	445.0	8.0	0.22	0.004	55	1.9	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	

CF-10-06	605067	Core	445.0	452.0	7.0	0.25	0.003	60	2.2	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605069	Core	452.0	461.0	9.0	0.34	0.006	95	5.1	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605070	Core	461.0	467.0	6.0	0.51	0.005	135	3.1	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605071	Core	467.0	477.0	10.0	0.19	0.002	45	1.6	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605073	Core	477.0	482.0	5.0	0.16	0.002	50	2.6	Bio-bxa	K-spar op by chl	cpy, py, mo	diss, blebs in bxa matrix	
CF-10-06	605074	Core	482.0	487.0	5.0	0.47	0.004	255	2.6	Bio-bxa	K-spar op by chl	cpy, py, mo	disseminated, in veinlets, and in breccia matrix	
CF-10-06	605076	Core	487.0	495.5	8.5	0.50	0.001	170	2.1	Bio-bxa	K-spar op by chl	cpy, py, mo	diss vnlts bxa matrix	
CF-10-06	605077	Core	495.5	504.0	8.5	0.21	0.008	40	2.3	Bio-bxa	biotite + chlorite, patchy kspar	cpy, py, mo	diss vnlts bxa matrix	
CF-10-06	605078	Core	504.0	513.0	9.0	0.29	0.009	3000	3	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss vnlts bxa matrix	
CF-10-06	605079	Core	513.0	522.0	9.0	0.47	0.007	65	2	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss vnlts bxa matrix	
CF-10-06	605080	Core	522.0	532.0	10.0	0.25	0.002	90	1.7	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss vnlts bxa matrix	
CF-10-06	605082	Core	532.0	541.0	9.0	0.23	0.003	50	1.3	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss vnlts bxa matrix	
CF-10-06	605084	Core	541.0	551.0	10.0	0.25	0.008	125	1.5	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss vnlts bxa matrix	
CF-10-06	605085	Core	551.0	558.0	7.0	0.26	0.004	65	2	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss vnlts bxa matrix	
CF-10-06	605086	Core	558.0	567.0	9.0	0.34	0.003	70	2.4	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss vnlts bxa matrix	
CF-10-06	605087	Core	567.0	576.0	9.0	0.31	0.011	70	2.5	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	disseminated and blebs in breccia matrix (spotty)	
CF-10-06	605089	Core	576.0	587.0	11.0	0.16	0.004	65	1.5	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605090	Core	587.0	597.0	10.0	0.25	0.006	90	1.8	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605091	Core	597.0	604.0	7.0	0.31	0.010	85	2.3	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605092	Core	604.0	613.5	9.5	0.28	0.002	110	1.3	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605093	Core	613.5	621.0	7.5	0.25	0.002	100	1.5	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605095	Core	621.0	627.0	6.0	0.33	0.004	130	2.9	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605096	Core	627.0	632.0	5.0	0.27	0.002	50	2	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605097	Core	632.0	640.0	8.0	0.38	0.004	110	2.4	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605099	Core	640.0	650.5	10.5	0.48	0.006	105	2.5	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605100	Core	650.5	660.5	10.0	0.44	0.005	60	2.5	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605102	Core	660.5	669.0	8.5	0.27	0.010	60	1.4	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605103	Core	669.0	677.0	8.0	0.46	0.005	245	2.6	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss blebs bxa matrix (spotty)	
CF-10-06	605104	Core	677.0	685.0	8.0	0.26	0.002	155	1.5	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	mainly disseminated	
CF-10-06	605105	Core	685.0	692.5	7.5	0.39	0.005	165	2.2	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss	
CF-10-06	605107	Core	692.5	700.0	7.5	0.36	0.003	100	1.6	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss	
CF-10-06	605109	Core	700.0	709.0	9.0	0.17	0.004	45	0.9	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss	
CF-10-06	605111	Core	709.0	718.5	9.5	0.22	0.002	50	1.3	Bio-bxa	Patchy K-spar op by send bio-chl	cpy, py, mo	diss	
CF-10-06	605112	Core	718.5	727.0	8.5	0.29	0.004	235	2.2	Bio-Qtz bxa (Biotite-Quartz Breccia)	strong kspar	cpy, py, mo	diss	
CF-10-06	605113	Core	727.0	737.0	10.0	0.18	0.004	365	1.6	Bio-Qtz bxa	St k-spar	cpy, py, mo	diss	
CF-10-06	605114	Core	737.0	747.0	10.0	0.19	0.020	20	1.1	Bio-Qtz bxa	St k-spar	cpy, py, mo	diss	
CF-10-06	605115	Core	747.0	752.0	5.0	0.18	0.009	235	1.3	Bio-Qtz bxa	St k-spar	cpy, py, mo	diss	fault zone
CF-10-06	605117	Core	752.0	757.0	5.0	0.14	0.006	35	0.6	Bio-Qtz bxa	strong kspar; minor jarosite??	cpy, py, mo	diss	
CF-10-06	605118	Core	757.0	767.0	10.0	0.17	0.001	40	0.9	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	diss	very poor recovery
CF-10-06	605119	Core	767.0	781.0	14.0	0.20	0.004	45	1.1	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	diss	very poor recovery
CF-10-06	605120	Core	781.0	791.0	10.0	0.14	0.001	< 5	0.6	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	diss	some minor faulting
CF-10-06	605121	Core	791.0	800.5	9.5	0.10	0.002	30	0.3	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	diss	
CF-10-06	605123	Core	800.5	810.0	9.5	0.13	0.002	30	0.8	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	diss	
CF-10-06	605124	Core	810.0	820.0	10.0	0.12	0.003	25	0.2	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	diss	
CF-10-06	605126	Core	820.0	826.0	6.0	0.14	0.006	25	0.8	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	diss	
CF-10-06	605127	Core	826.0	832.5	6.5	0.18	0.014	135	1.6	Bio-Qtz bxa (Fault Zone)	St K-spar+jar+goe	cpy, py, mo	diss	fault zone
CF-10-06	605128	Core	832.5	842.0	9.5	0.18	0.001	60	1	Bio-Qtz bxa	St K-spar+jar+goe	cpy, py, mo	diss	
CF-10-06	605130	Core	842.0	852.0	10.0	0.13	0.003	30	0.8	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	diss	
CF-10-06	605131	Core	852.0	861.0	9.0	0.19	0.003	70	1.5	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	diss	
CF-10-06	605132	Core	861.0	866.5	5.5	0.34	0.003	70	1.7	Bio-Qtz bxa (Fault Zone)	St K-spar+jar	cpy, py, mo	diss	fault zone
CF-10-06	605133	Core	866.5	871.5	5.0	0.24	0.003	40	1.4	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	diss	increased cpy
CF-10-06	605135	Core	871.5	878.0	6.5	0.17	0.002	25	1.1	Bio-Qtz bxa	St K-spar+jar	cpy, py, mo	disseminated and in veinlets	
CF-10-06	605137	Core	878.0	883.0	5.0	0.39	0.012	90	3.7	Bio-Qtz bxa (Fault Zone)	St K-spar+second bio+jar	cpy, py, mo	diss and vnlt	fault zone
CF-10-06	605138	Core	883.0	892.5	9.5	0.25	0.017	410	5.7	Bio-bxa	St K-spar+second bio+jar	cpy, py, mo	diss and vnlt	
CF-10-06	605139	Core	892.5	902.5	10.0	0.24	0.002	45	2	Bio-bxa	St bio + k-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605140	Core	902.5	907.0	4.5	0.28	0.002	40	1.3	Bio-bxa	St bio + k-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605141	Core	907.0	917.0	10.0	0.23	0.004	65	1.2	Bio-bxa	St bio + k-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605143	Core	917.0	927.0	10.0	0.17	0.001	70	1.3	Bio-bxa	St bio + k-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605144	Core	927.0	937.0	10.0	0.24	0.001	75	5.6	Bio-bxa	St bio + k-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605145	Core	937.0	947.0	10.0	0.21	0.006	75	1.6	Bio-bxa	St bio + k-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605146	Core	947.0	954.0	7.0	0.16	0.004	40	1.4	Bio-bxa	St bio + k-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605147	Core	954.0	964.0	10.0	0.14	0.002	35	1.1	Bio-bxa	St bio + k-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605149	Core	964.0	974.0	10.0	0.17	0.021	35	1.5	Bio-bxa	St bio + k-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605150	Core	974.0	982.0	10.0	0.23	0.003	70	1.7	Bio-bxa	St bio + k-spar	cpy, py, mo	diss and vnlt	
CF-10-06	605152	Core	982.0	992.0	10.0	0.08	0.002	40	1	QM	kspar; moderate chlorite + calcite	cpy, py, mo	disseminated, in fractures, and rare blebs	
CF-10-06	605153	Core	992.0	997.0	10.0	0.06	0.002	30	0.8	QM	K-spar +mod chl + cal	cpy, py, mo	diss fracs, and rare blebs	
CF-10-06	605154	Core	997.0	1003.0	10.0	0.12	0.001	25	0.4	QM	K-spar +mod chl + cal	cpy, py, mo	diss fracs, and rare blebs	
CF-10-06	605156	Core	1003.0	1013.0	10.0	0.15	0.002	40	0.7	Bio-bxa	strong kspar and chlorite	cpy, py, mo	veinlets and rare blebs	
CF-10-06	605157	Core	1013.0	1023.0	10.0	0.24	0.001	70	1.2	Bio-bxa	St k-spar +chl	cpy, py, mo	vnlts and rare blebs	
CF-10-06	605158	Core	1023.0	1030.0	7.0	0.22	0.003	45	1.6	Bio-bxa	St k-spar +chl	cpy, py, mo	vnlts and rare blebs	
CF-10-06	605159	Core	1030.0	1035.5	10.0	0.17	0.002	25	0.8	Bio-bxa	St k-spar +chl	cpy, py, mo	vnlts and rare blebs	
CF-10-06	605161	Core	1035.5	1046.0	10.5	0.18	0.003	55	1	Bio-bxa (Fault Zone)	St k-spar +chl	cpy, py, mo	veinlets, rare blebs, and in shears	
CF-10-06	605163	Core	1046.0	1063.0	10.0	0.07	0.005	25	1.4	Bio-bxa (Fault Zone)	St k-spar +chl	cpy, py, mo	vnlts, rare blebs, and in shears	v. poor recovery, fault zone
CF-10-06	605164	Core	1063.0	1072.5	9.5	0.08	0.011	10	0.6	Qtz-bxa (Quartz Breccia)	strong kspar with patchy biotite+chlorite	cpy, py, mo	sporadic disseminated and in veinlets, rare moly veinlets	
CF-10-06	605165	Core	1072.5	1082.5	10.0	0.07	0.003	10	1	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	ireg diss vnlts, rare mo vnlts	
CF-10-06	605166	Core	1082.5	1092.5	10.0	0.08	0.006	5	0.7	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	ireg diss vnlts, rare mo vnlts	
CF-10-06	605167	Core	1092.5	1099.5	7.0	0.07	0.002	15	0.7	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	ireg diss vnlts, rare mo vnlts	
CF-10-06	605169	Core	10995.5	1109.0	10.0	0.06	0.002	5	0.3	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	ireg diss vnlts, rare mo vnlts	
CF-10-06	605170	Core	1109.0	1119.0	10.0	0.08	0.008	< 5	0.5	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	vnlts, little diss	
CF-10-06	605171	Core	1119.0	1129.0	10.0	0.13	0.003	20	0.7	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	vnlts, little diss	
CF-10-06	605172	Core	1129.0	1139.0	10.0	0.13	0.008	10	0.6	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	vnlts, little diss	
CF-10-06	605173	Core	1139.0	1149.0	10.0	0.08	0.004	105	1.7	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	vnlts, little diss	
CF-10-06	605175	Core	1149.0	1159.0	10.0	0.07	0.003	5	0.6	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	vnlts, little diss	
CF-10-06	605176	Core	1159.0	1165.0	6.0	0.05	0.003	10	0.6	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	vnlts, little diss	
CF-10-06	605178	Core	1165.0	1170.0	10.0	0.11	0.002	10	0.5	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	vnlts, little diss	
CF-10-06	605179	Core	1170.0	1180.0	10.0	0.05	0.004	5	0.4	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	vnlts, little diss	
CF-10-06	605180	Core	1180.0	1190.0	10.0	0.06	0.008	10	0.4	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	vnlts, little diss	
CF-10-06	605182	Core	1190.0	1200.0	10.0	0.07	0.006	10	0.4	Qtz-bxa	St k-spar patchy bio+chl	cpy, py, mo	vnlts, little diss	

SUMMARY DRILL LOGS, COPPER FLAT MINE - 2010

CF HOLE #	START	COMPLETE	DEPTH	AZ.	INCL.	SECTION	X	Y	Z
CF-10-06b	1/23/2010	1/29/2010	199.5	225°	70°	716900	592280	716929	5457
Downhole	Depth	Azimuth	Incl.						
Survey	100'	212.9	71.70						
	200'	caved							

ID	SAMPLE	TYPE	FROM	TO	INTERVAL	TCu (%)	Mo (%)	Au (ppb)	Ag (ppm)	LITHOLOGY	ALTERATION	Mineral	Mineral Form	Remarks	
CF-10-06b	604904	*Core*	0.0	5.0	5.0	0.13	< 0.001	30	1.2	QM (Quartz Monzonite)	St ox-weath	py, cpy	disseminated		
CF-10-06b	604905	*Core*	5.0	15.0	10.0	0.17	< 0.001	45	1.3	QM	strong kspar+biotite overprinted by weak fracture-controlled argillic and minor jarosite on fractures, minor chloritization	cpy, py, mo	diss		
CF-10-06b	604906	*Core*	15.0	25.0	10.0	0.23	< 0.001	65	1.6	QM	St K-spar+second bio, frac arg+jar+chl	cpy, py, mo	diss		
CF-10-06b	604908	*Core*	25.0	35.0	10.0	0.19	0.014	70	1.5	QM	St K-spar+second bio, frac arg+jar+chl	cpy, py, mo	diss		
CF-10-06b	604909	*Core*	35.0	45.0	10.0	0.19	< 0.001	60	1.7	QM	St K-spar+second bio, frac arg+jar+chl	cpy, py, mo	diss		
CF-10-06b	604910	*Core*	45.0	55.0	10.0	0.12	< 0.001	55	1	QM	Kspar + illite dominant with fracture-controlled argillic, minor chloritization of biotite	cpy, py, mo	mainly disseminaetd, minor vein mineralization		
CF-10-06b	604911	*Core*	55.0	64.0	9.0	0.44	0.002	175	2.8	QM	St K-spar+second bio, frac arg+chl	cpy, py, mo	diss minor vn		
CF-10-06b	604912	*Core*	64.0	78.5	14.5	0.31	< 0.001	100	3	QM (Fault Zone)	intense fault-related argillization	cpy, py, mo	disseminated and fines in fault gouge	poor recovery	
CF-10-06b	604913	*Core*	78.5	84.0	5.5	0.17	< 0.001	45	1.5	QM (Fault Zone)	St arg in flt	cpy, py, mo	diss and fines in fault	no coin (fault zone)	
CF-10-06b	604915	*Core*	84.0	94.0	10.0	0.15	< 0.001	60	1.1	QM	kspar with patchy quartz-sericite overprint, minor fracture controlled argillic, calcite on some fractures	cpy, py, mo	diss, rare mo-qtz vns		
CF-10-06b	604916	*Core*	94.0	103.5	9.5	0.22	0.001	90	2.1	QM	K-spar+qs op, minor frac arg+cal	cpy, py, mo	diss, rare mo-qtz vns		
CF-10-06b	604917	*Core*	103.5	113.0	9.5	0.29	0.002	90	2.1	QM	K-spar+qs op, minor frac arg+cal	cpy, py, mo	diss, rare mo-qtz vns		
CF-10-06b	604918	*Core*	113.0	119.0	6.0	0.28	0.002	95	1.9	QM	K-spar+qs op, minor frac arg+cal	cpy, py, mo	diss, rare mo-qtz vns		
CF-10-06b	604919	*Core*	119.0	124.0	5.0	0.45	0.081	135	2.5	QM	K-spar+qs op, minor frac arg+cal	cpy, py, mo	diss, rare mo-qtz vns		
CF-10-06b	604921	*Core*	124.0	136.5	12.5	0.56	0.154	90	2.9	QM (Fault Zone)	intense fault-related argillization overprints very strong kspar (still visible in rubble pieces)	cpy, py, mo	diss and fines in fault		
CF-10-06b	604923	*Core*	136.5	147.0	10.5	0.25	0.006	65	1.5	QM (Fault Zone)	St arg in flt op st K-spar	cpy, py, mo	diss and fines in fault	poor recovery	
CF-10-06b	604924	*Core*	147.0	156.5	9.5	0.25	0.005	70	1.4	QM (Fault Zone)	St arg in flt op st K-spar	cpy, py, mo	diss and fines in fault		
CF-10-06b	604926	*Core*	156.5	172.0	15.5	0.33	0.014	95	2.4	QM (Fault Zone)	St arg in flt op st K-spar	cpy, py, mo	diss and fines in fault	poor recovery	
CF-10-06b	604927	*Core*	172.0	183.0	11.0	0.43	0.018	85	3.3	QM (Fault Zone)	St arg in flt op st K-spar	cpy, py, mo	diss and fines in fault	poor recovery	
CF-10-06b	604928	*Core*	183.0	199.5	16.5	1.53	0.035	360	23.4	QM (Fault Zone)	St arg in flt op st K-spar	cpy, py, mo	diss and fines in fault	very poor recovery	EOH

Appendix D
Experimental Variograms

Copper Flat - Correlograms: zones 1 and 2

Medsystem and Vulcan Rotation Conventions

Nugget ==> 0.185
C1 ==> 0.389
C2 ==> 0.337

First Structure -- Spherical

LH Rotation about the Z axis ==> 36
RH Rotation about the X' axis ==> 16
LH Rotation about the Y' axis ==> -10

Range along the Z' axis ==> 245.5	Azimuth ==> 183	Dip ==> 71
Range along the Y' axis ==> 60.6	Azimuth ==> 36	Dip ==> 16
Range along the X' axis ==> 198.5	Azimuth ==> 123	Dip ==> -10

Second Structure -- Spherical

LH Rotation about the Z axis ==> 2
RH Rotation about the X' axis ==> 0
LH Rotation about the Y' axis ==> -3

Range along the Z axis ==> 579.3	Azimuth ==> 95	Dip ==> 87
Range along the X' axis ==> 434.5	Azimuth ==> 92	Dip ==> -3
Range along the Y' axis ==> 145.2	Azimuth ==> 2	Dip ==> 0

Modeling Criteria

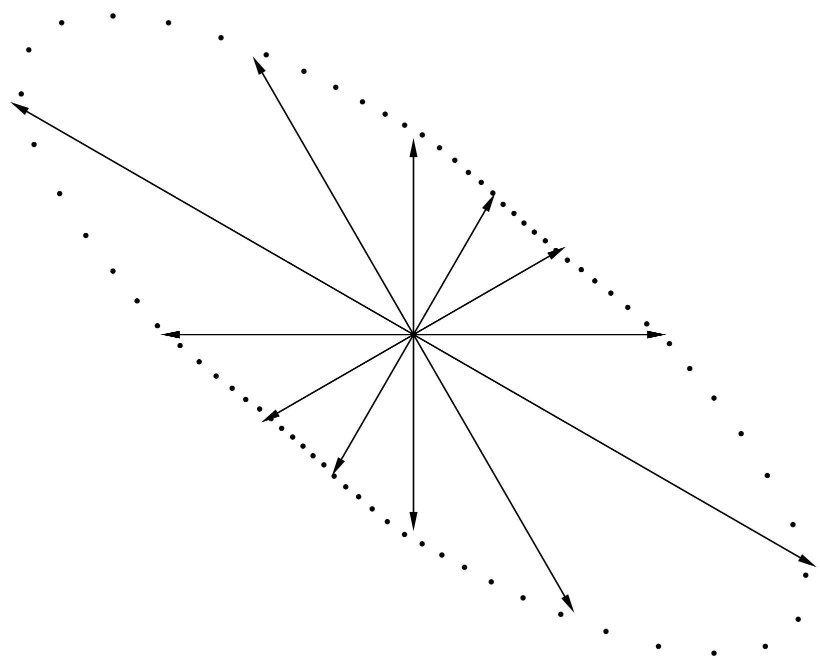
Minimum number pairs req'd ==> 100
Sample variogram points weighted by # pairs

Copper Flat - Correlograms: zones 1 and 2

Structure Number 1

Rose Diagram of Ranges Dipping 0 Degrees
Scale:

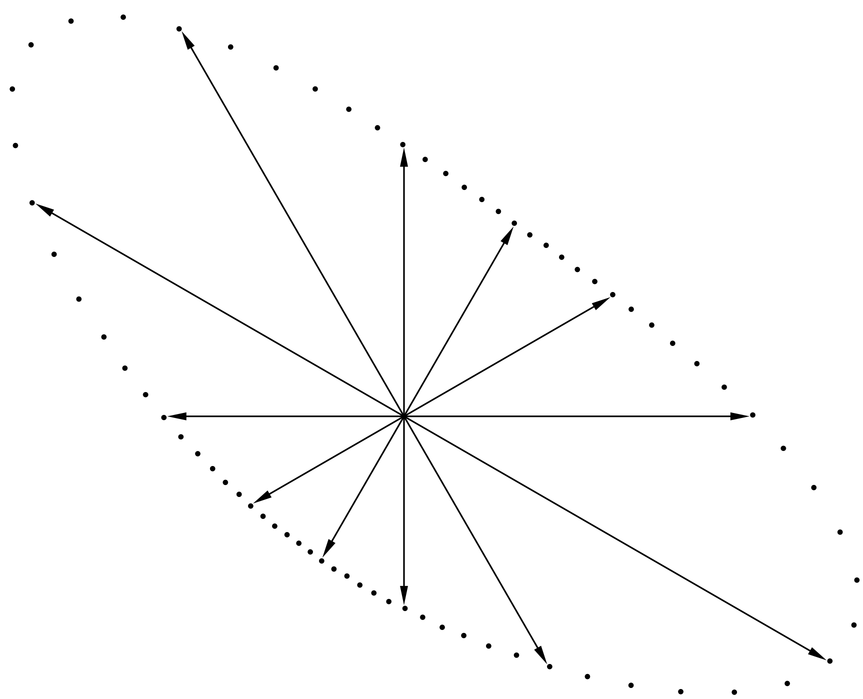
200 Units



Copper Flat - Correlograms: zones 1 and 2

Structure Number 1

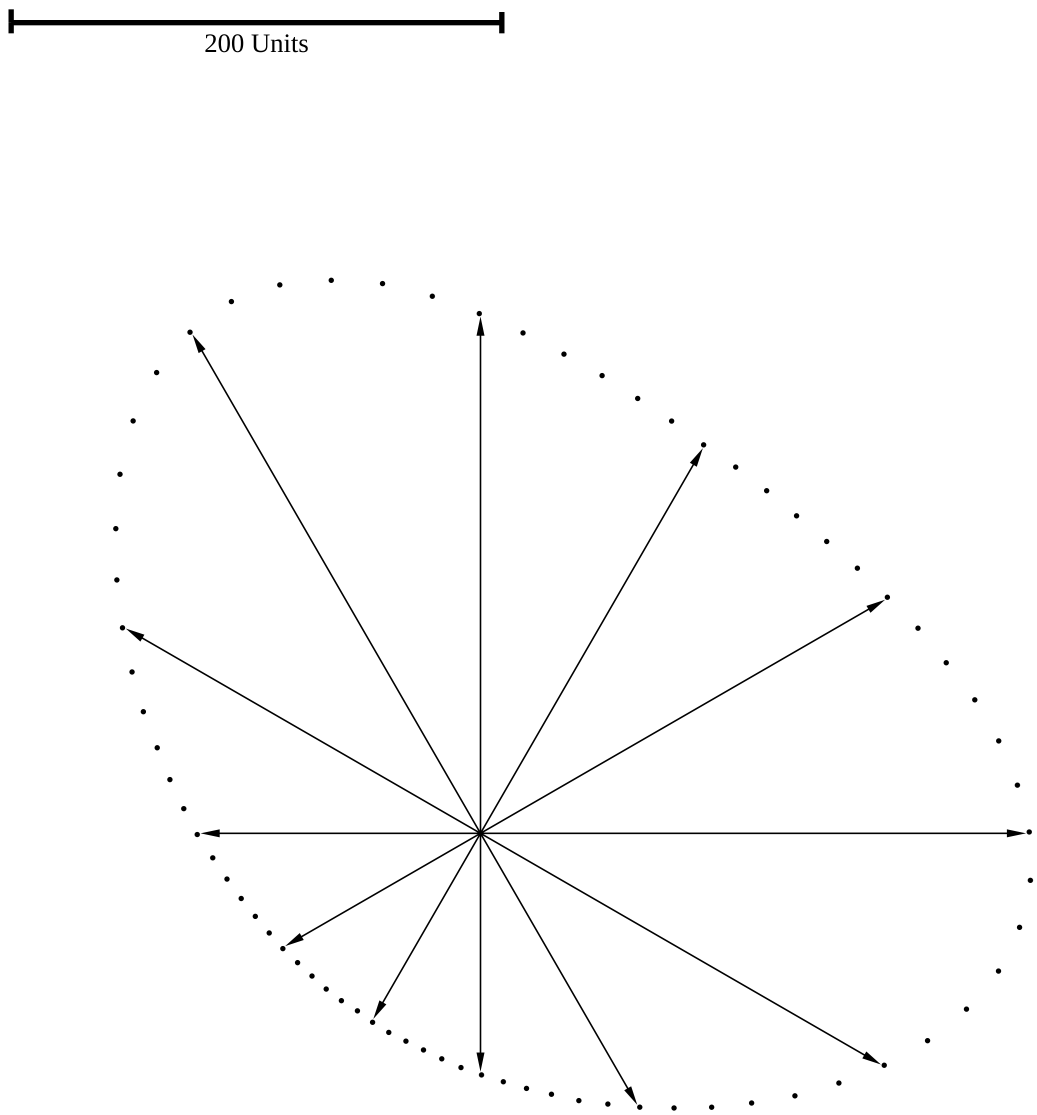
Rose Diagram of Ranges Dipping 30 Degrees
Scale:



Copper Flat - Correlograms: zones 1 and 2

Structure Number 1

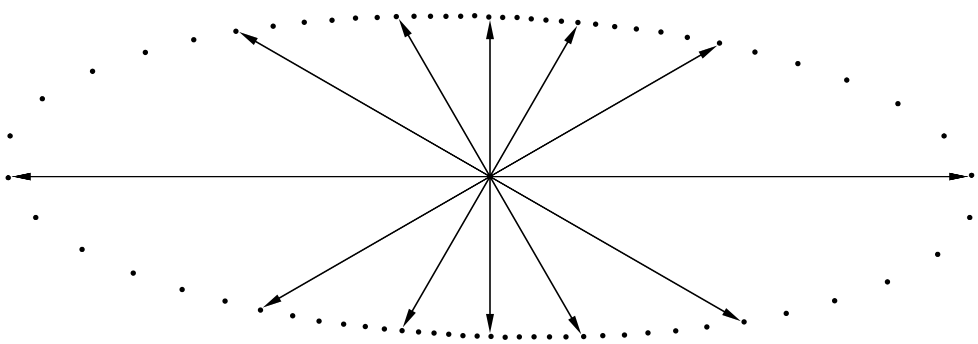
Rose Diagram of Ranges Dipping 60 Degrees
Scale:



Copper Flat - Correlograms: zones 1 and 2

Structure Number 2

Rose Diagram of Ranges Dipping 0 Degrees
Scale:

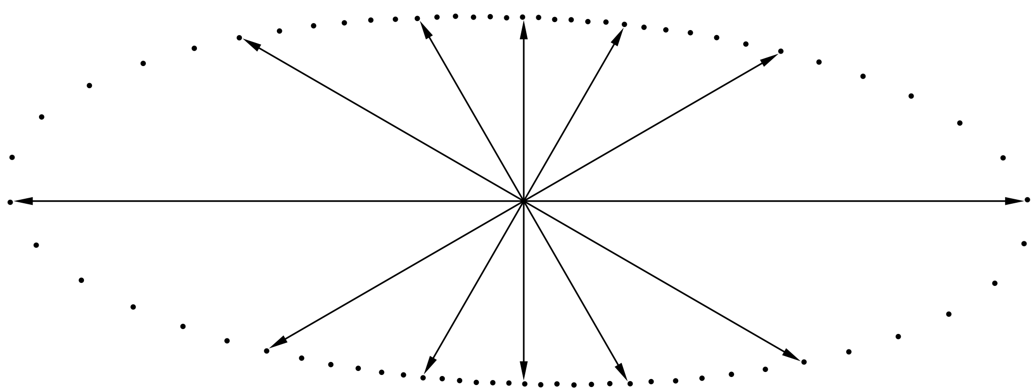


Copper Flat - Correlograms: zones 1 and 2

Structure Number 2

Rose Diagram of Ranges Dipping 30 Degrees
Scale:

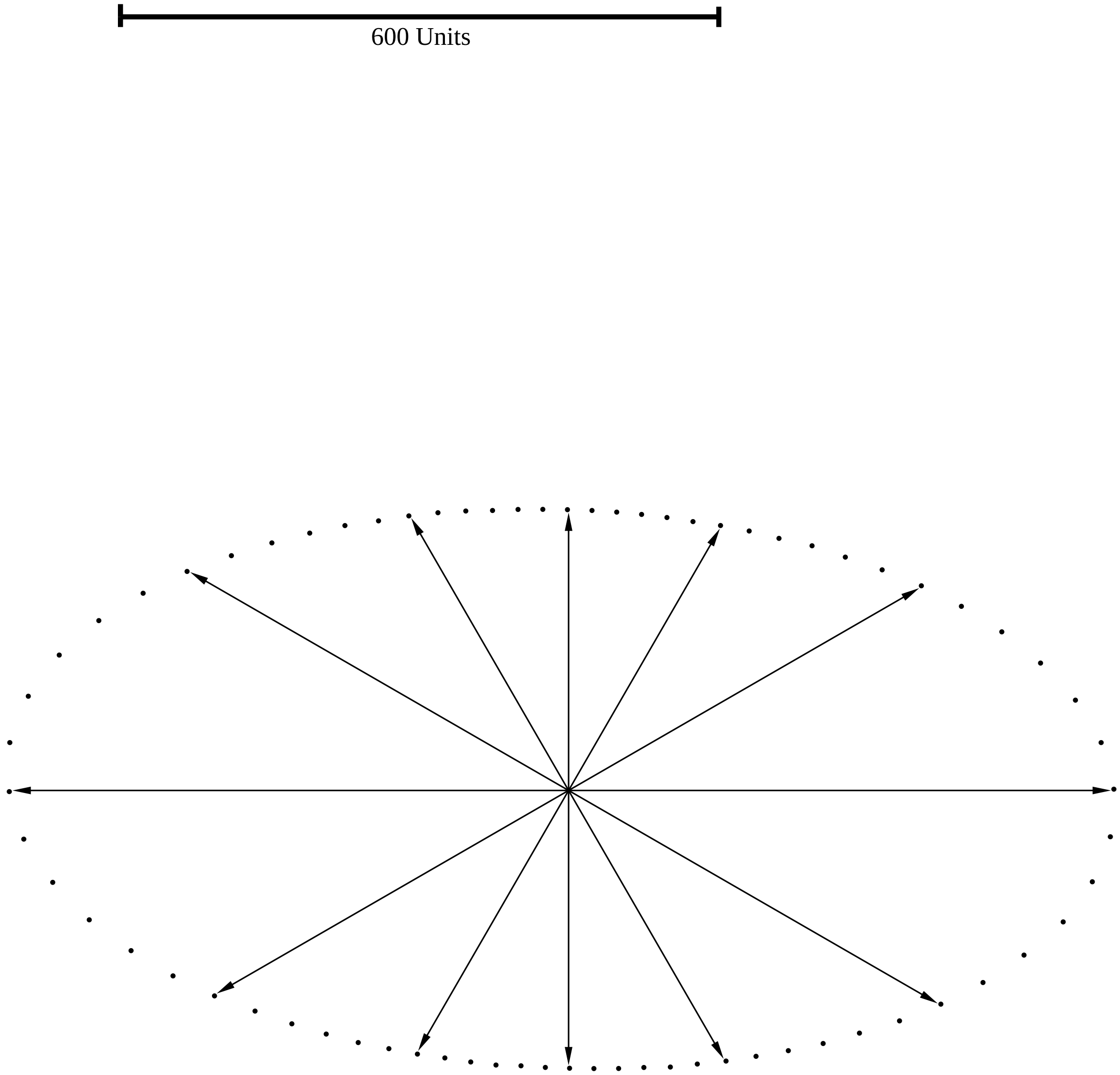
600 Units



Copper Flat - Correlograms: zones 1 and 2

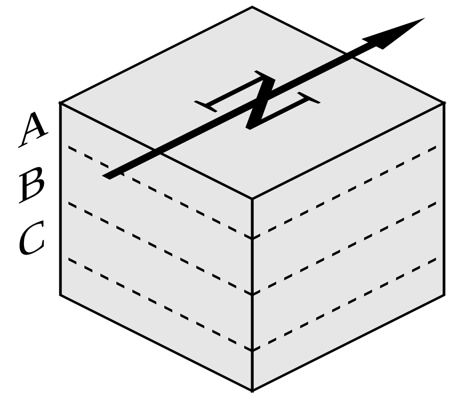
Structure Number 2

Rose Diagram of Ranges Dipping 60 Degrees
Scale:

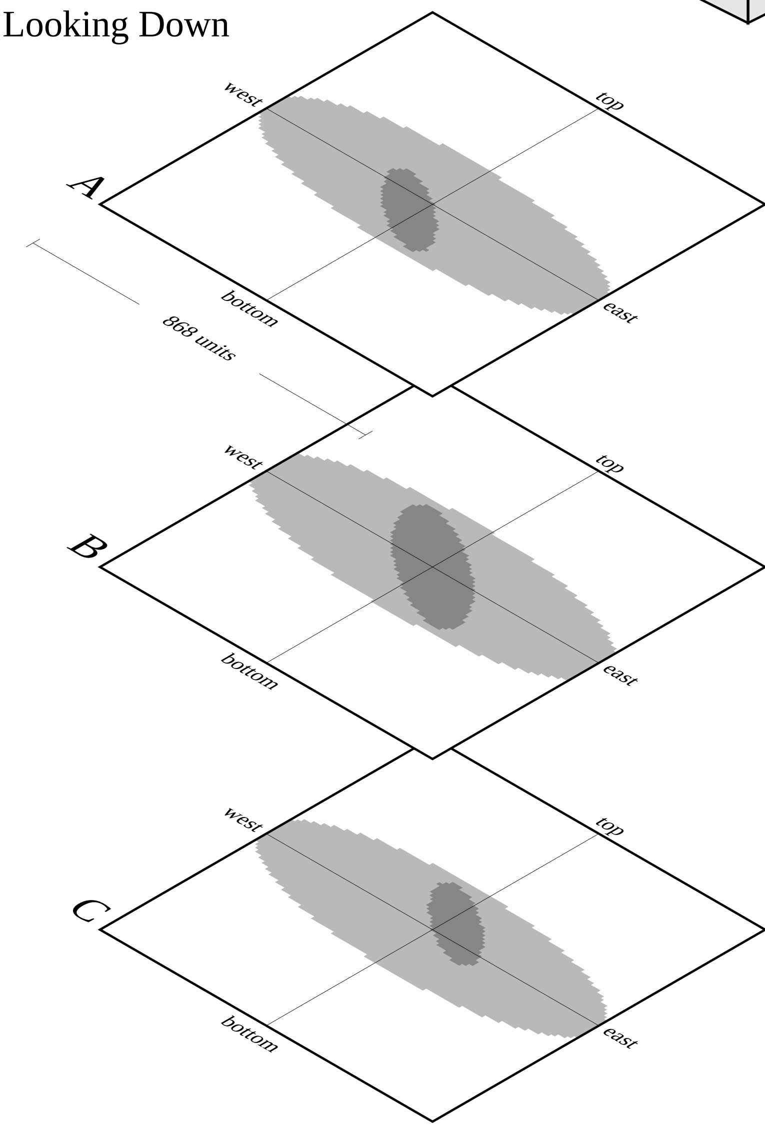


Horizontal Slices Through the Ellipsoids

Reference Cube



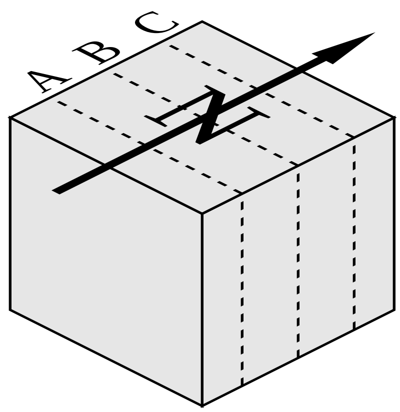
X-Y Planes Looking Down



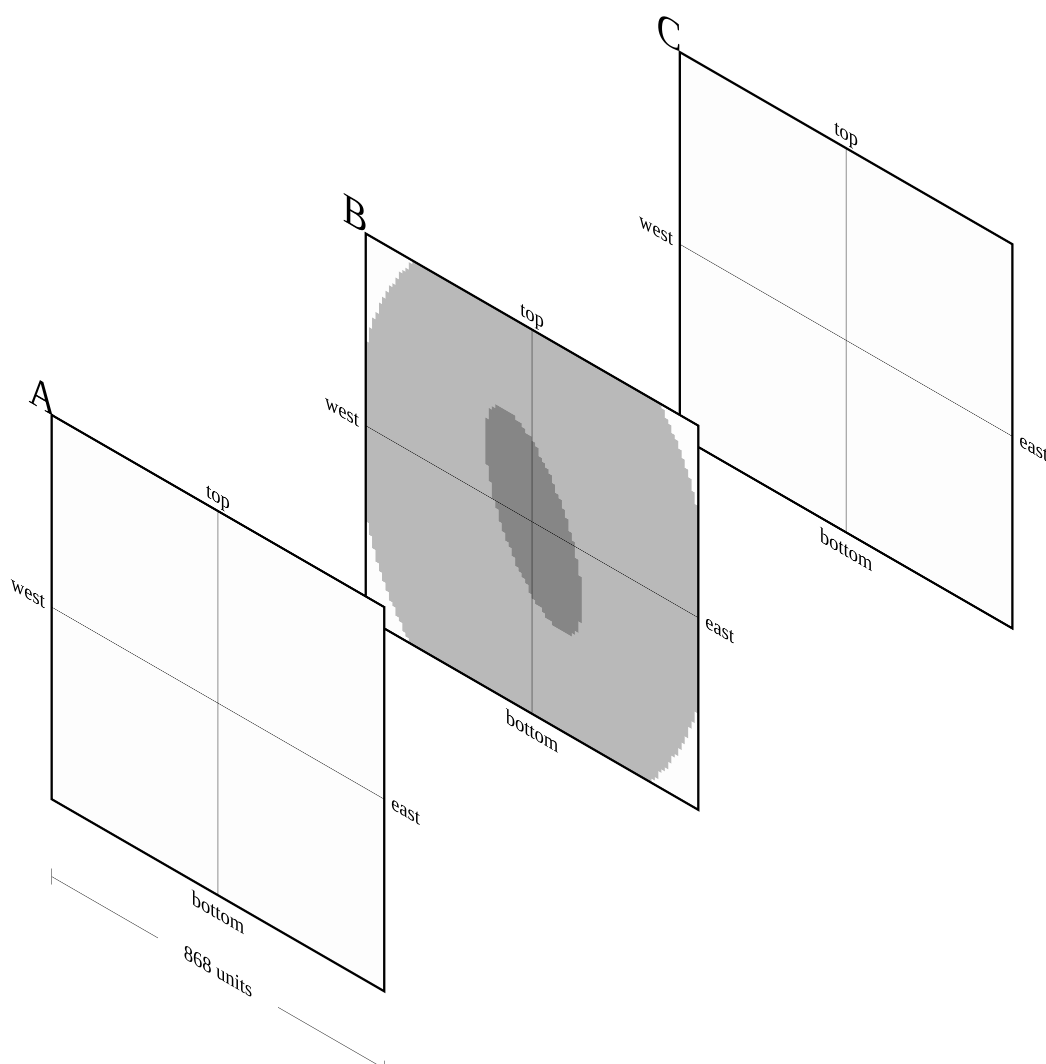
Note -- the orientation, dip and lengths of the ellipsoid axes in these figures may be "apparent" rather than "true".

Cross Section Views Through the Ellipsoids

Reference Cube



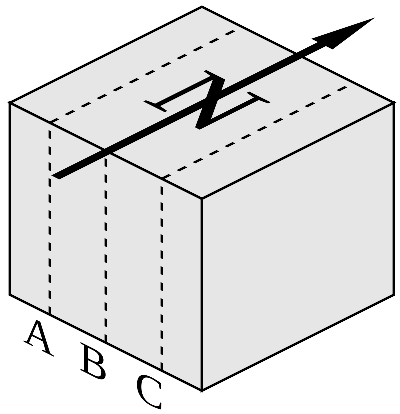
X-Z Planes Looking North



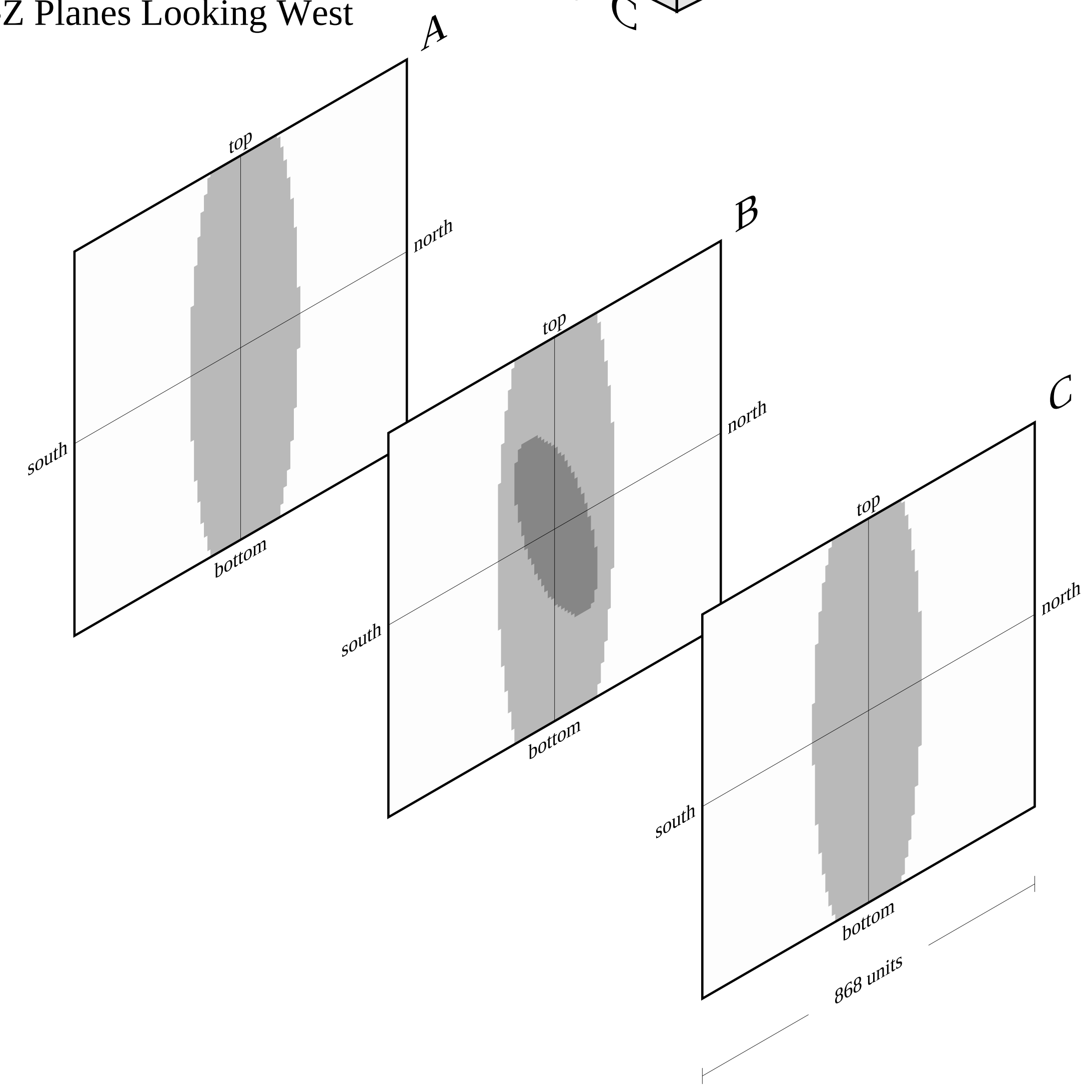
Note -- the orientation, dip and lengths of the ellipsoid axes in these figures may be "apparent" rather than "true".

Long Section Views Through the Ellipsoids

Reference Cube

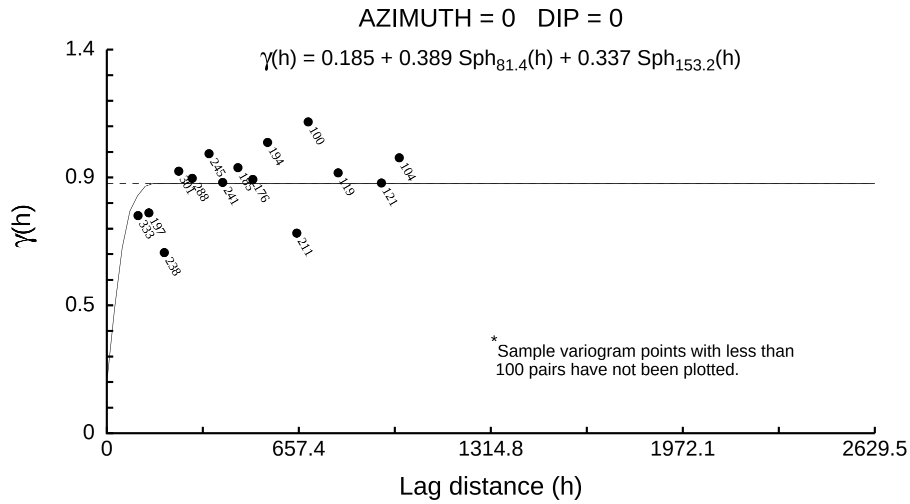


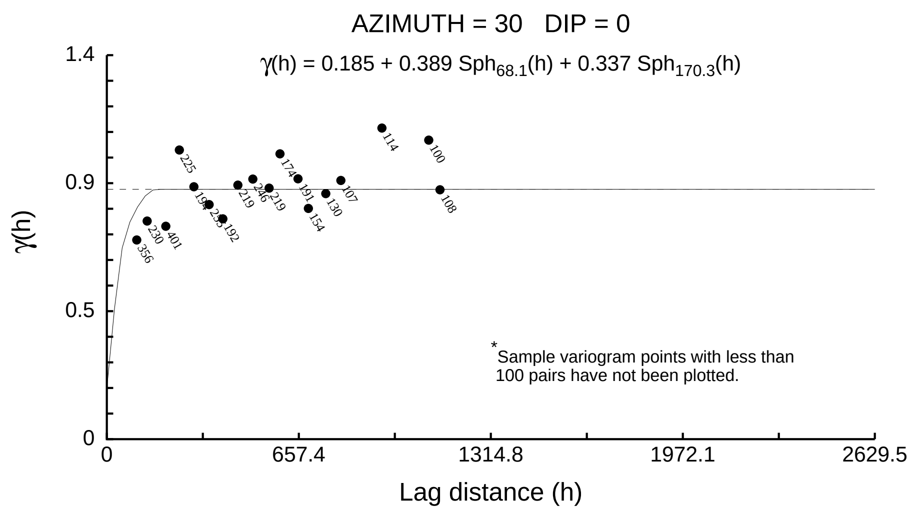
Y-Z Planes Looking West

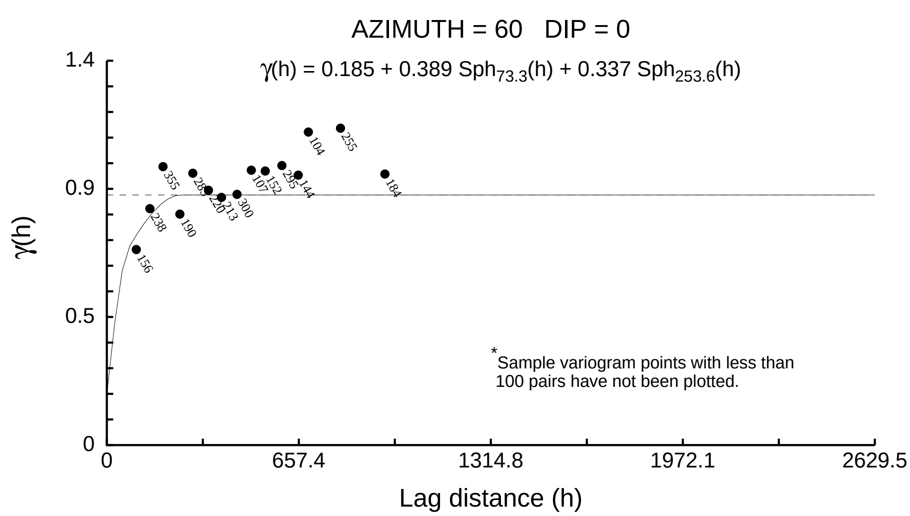


Note -- the orientation, dip and lengths of the ellipsoid axes in these figures may be "apparent" rather than "true".

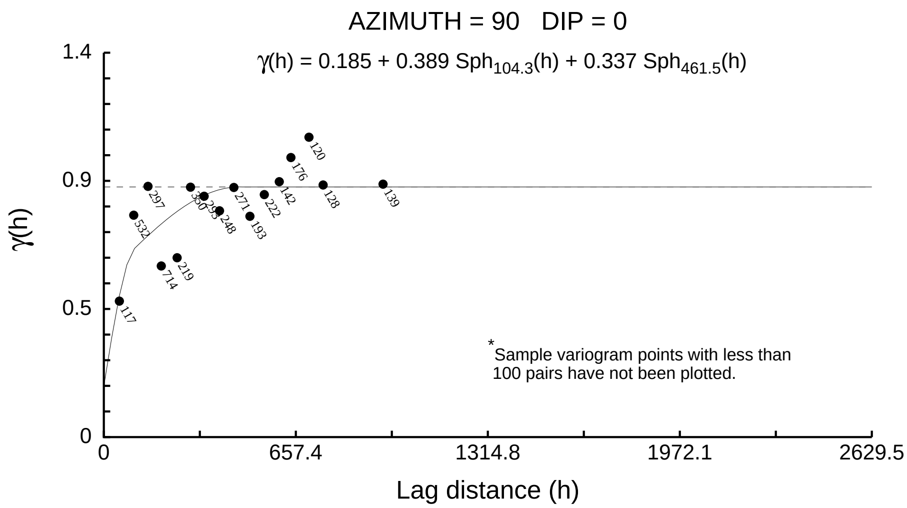
Copper Flat - Correlograms: zones 1 and 2

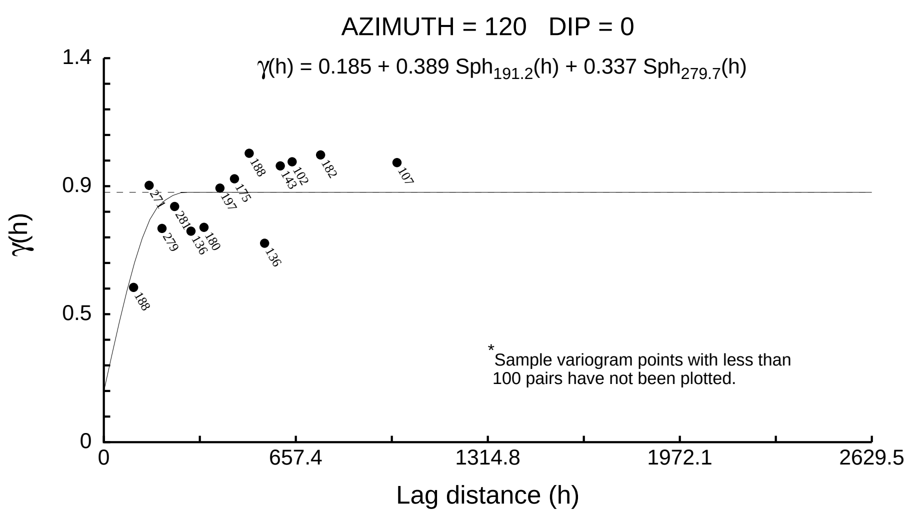


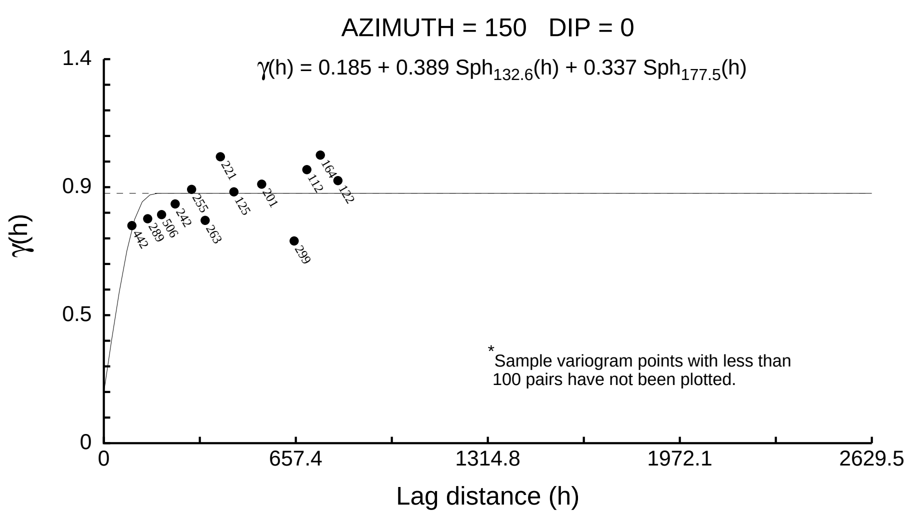




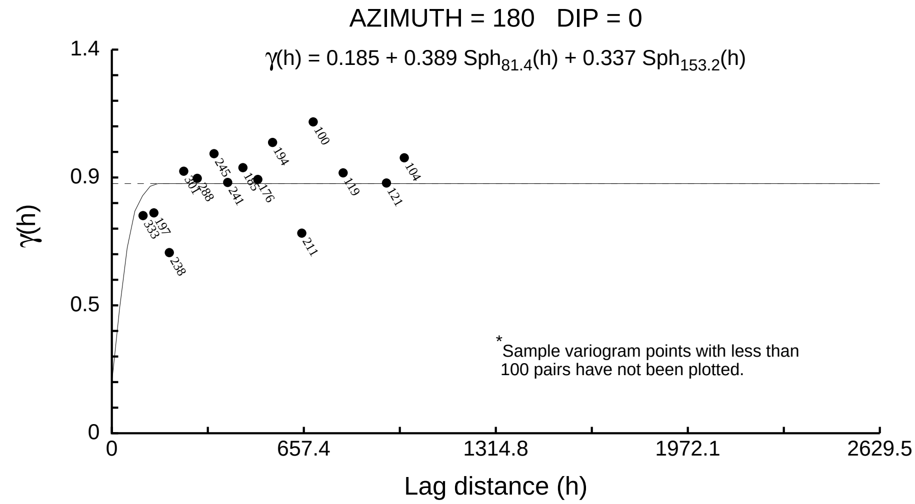
Copper Flat - Correlograms: zones 1 and 2

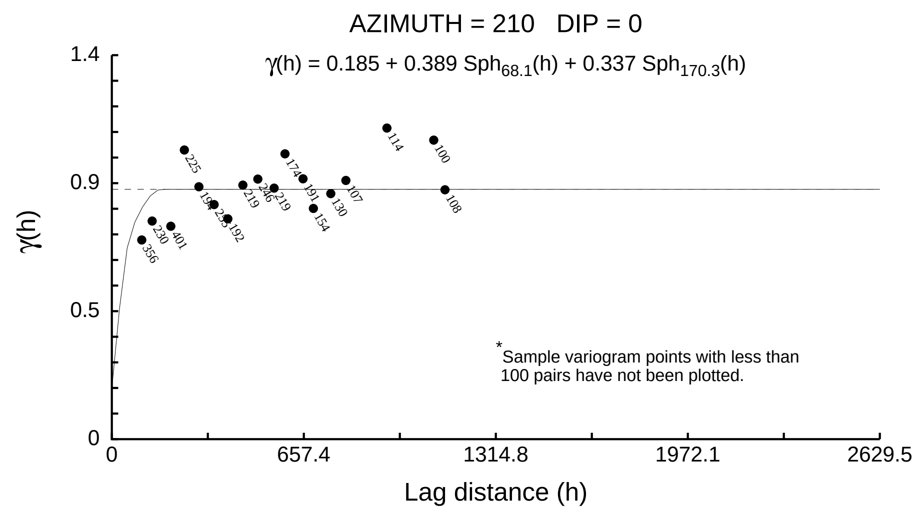


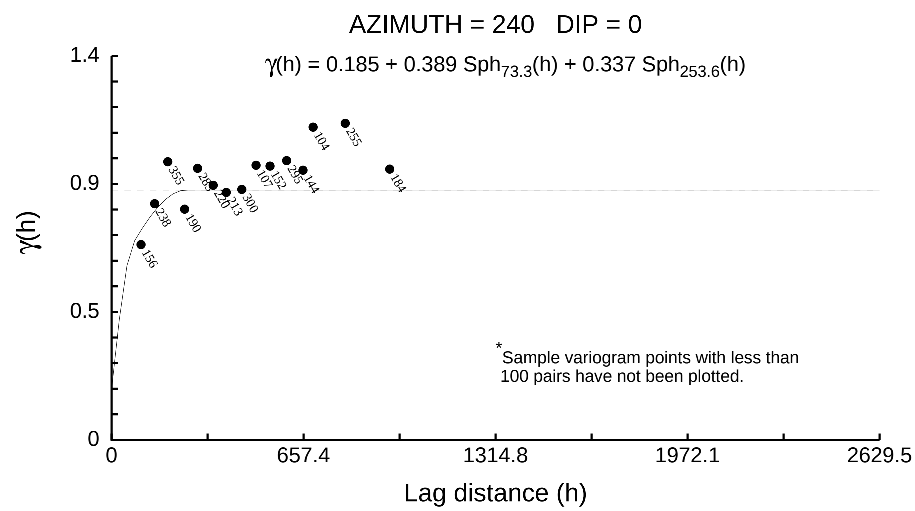




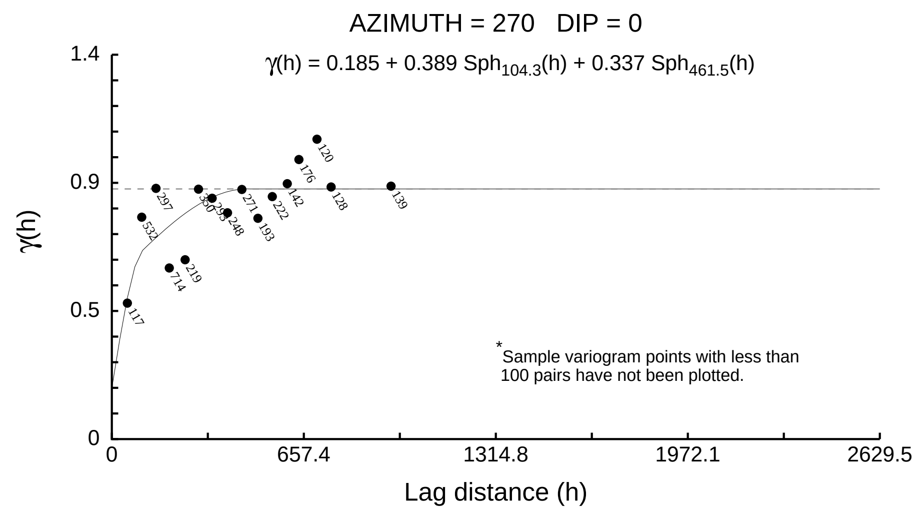
Copper Flat - Correlograms: zones 1 and 2

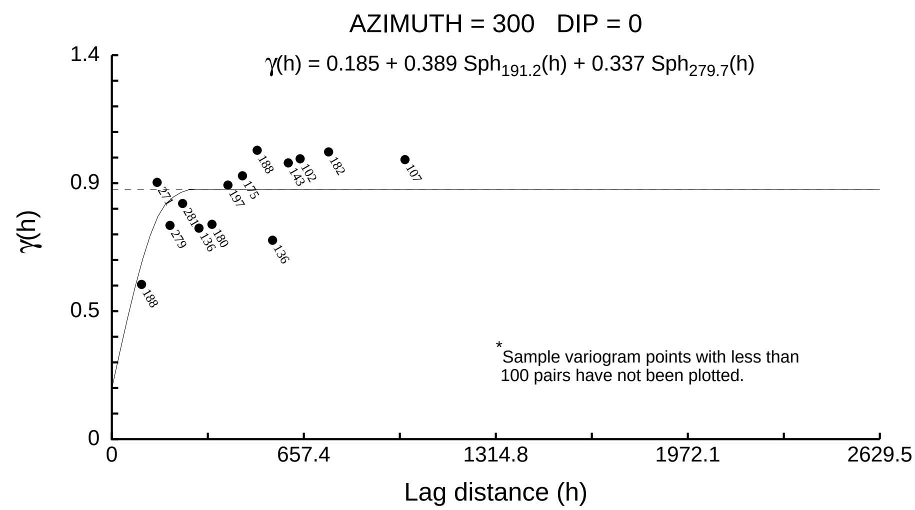


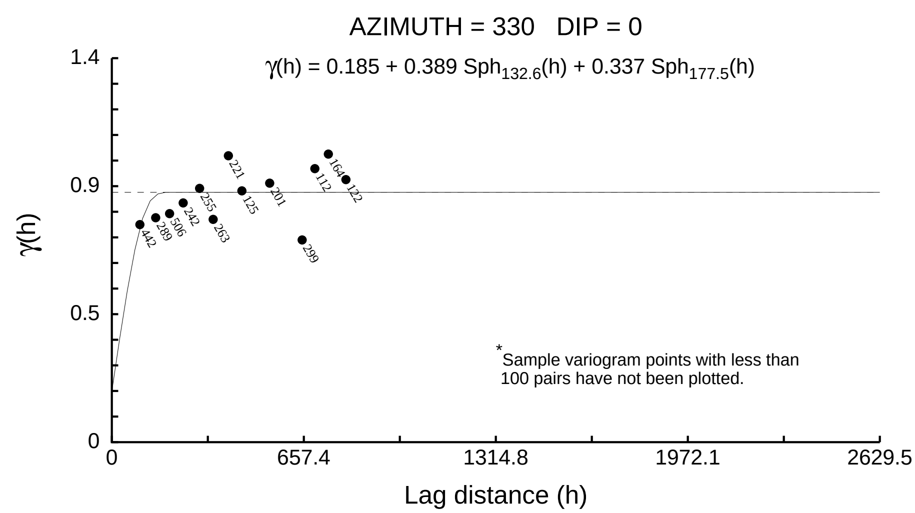




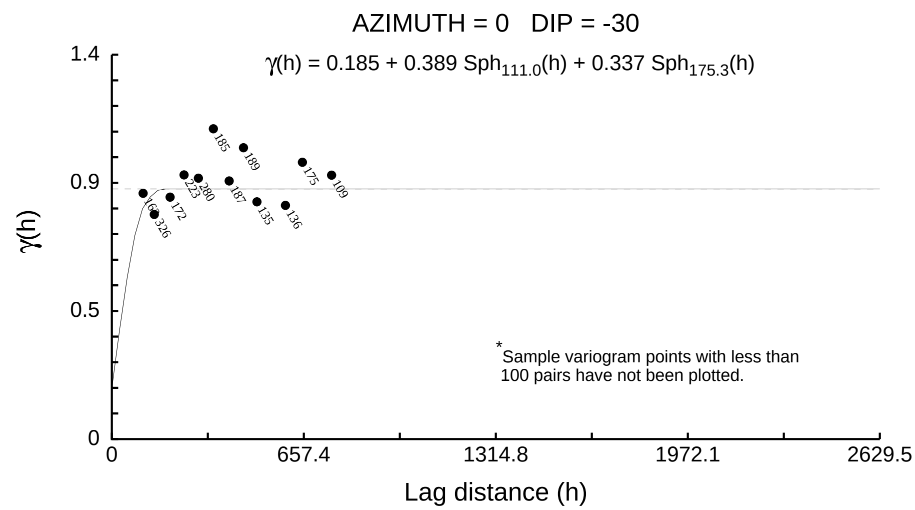
Copper Flat - Correlograms: zones 1 and 2

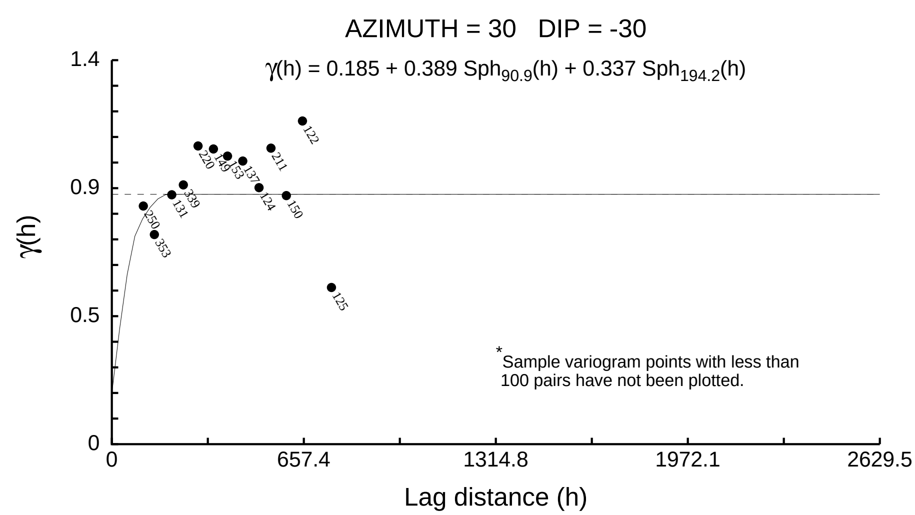


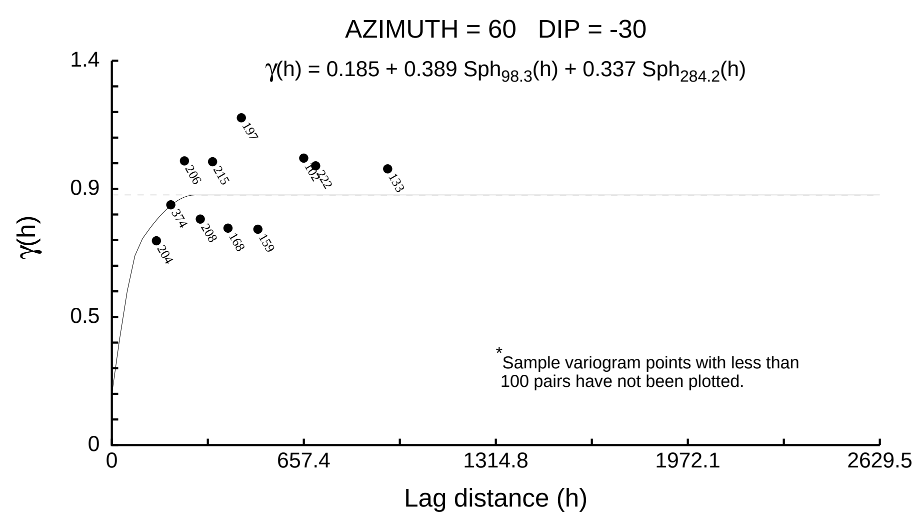




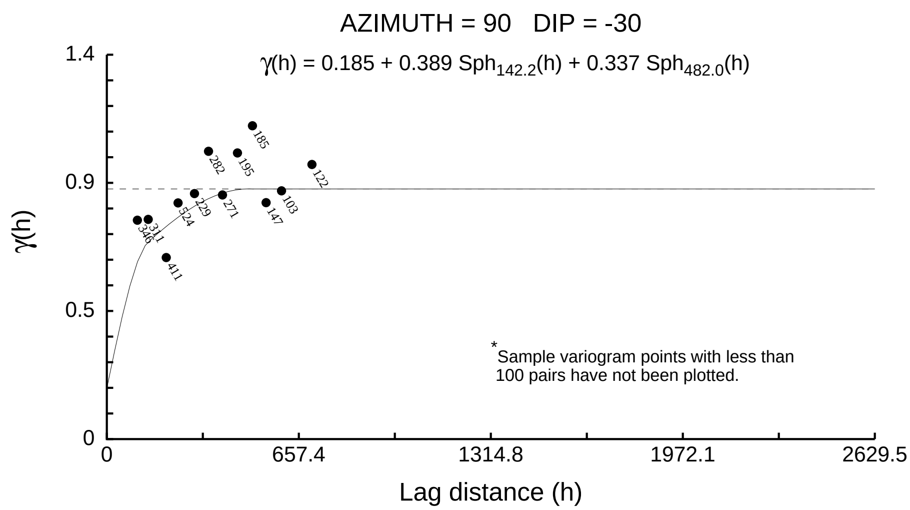
Copper Flat - Correlograms: zones 1 and 2

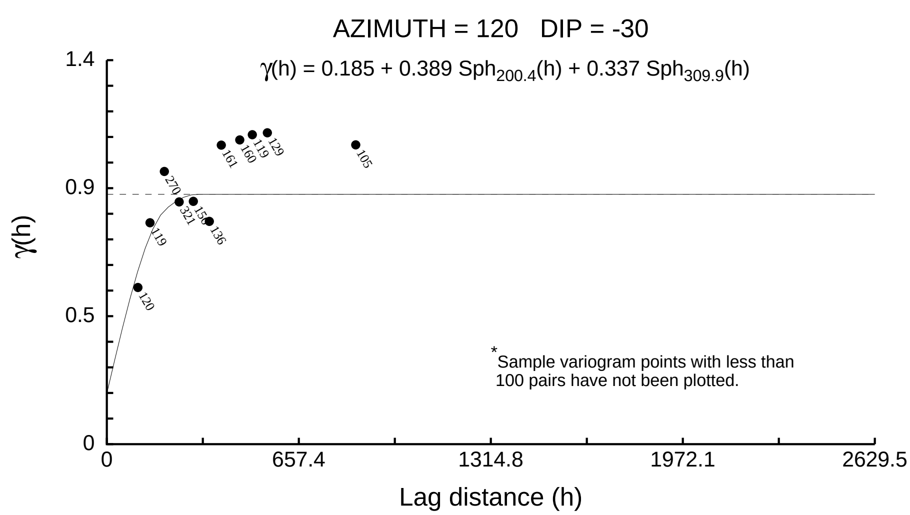


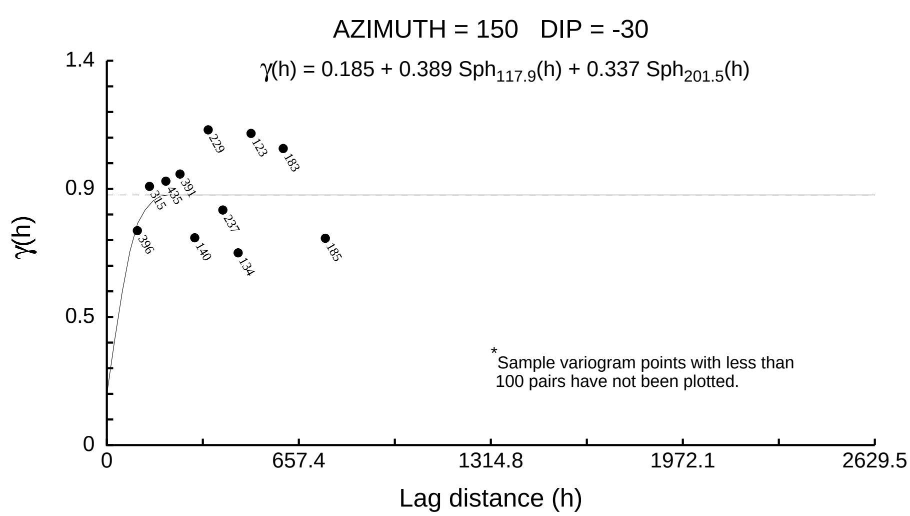




Copper Flat - Correlograms: zones 1 and 2







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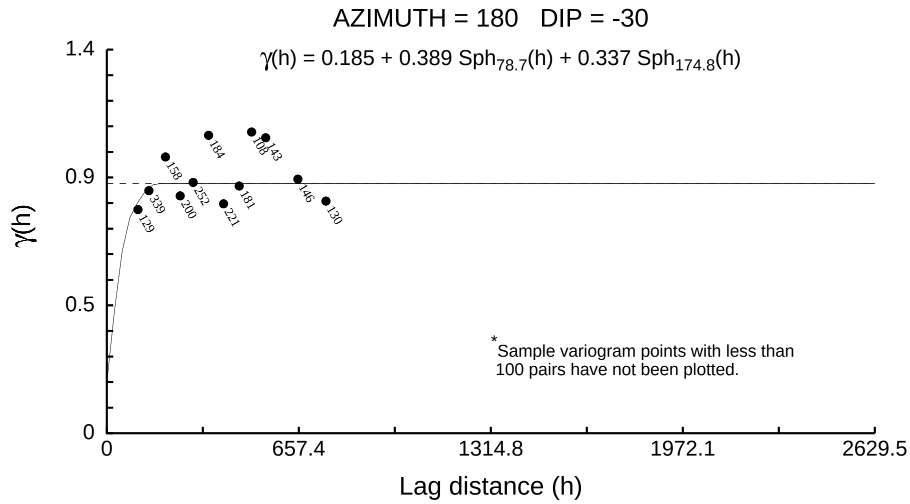
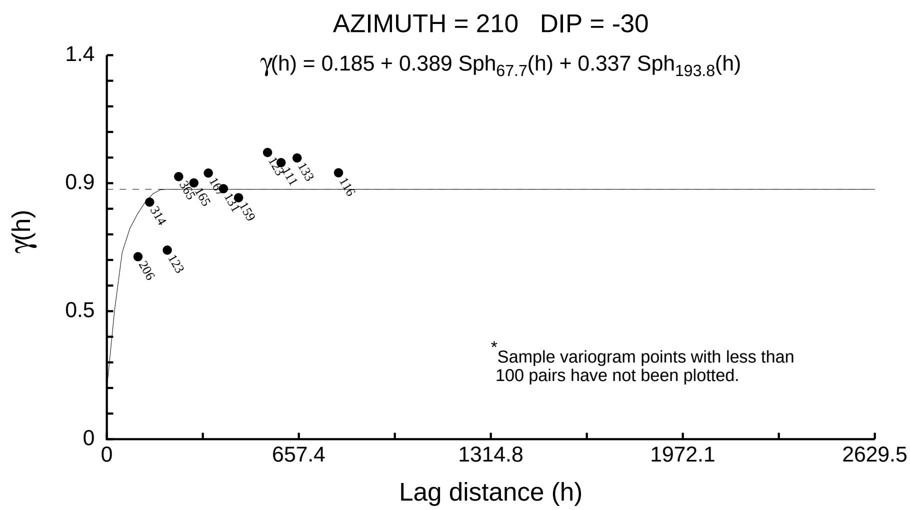
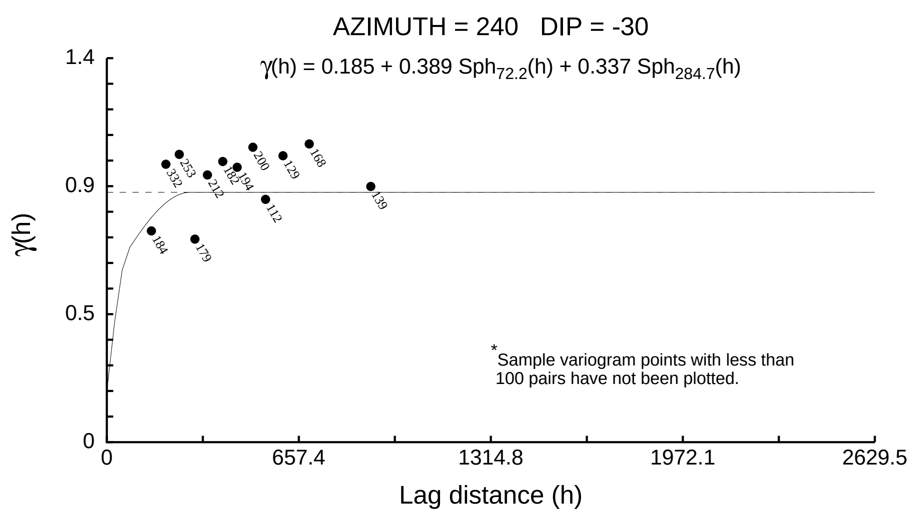
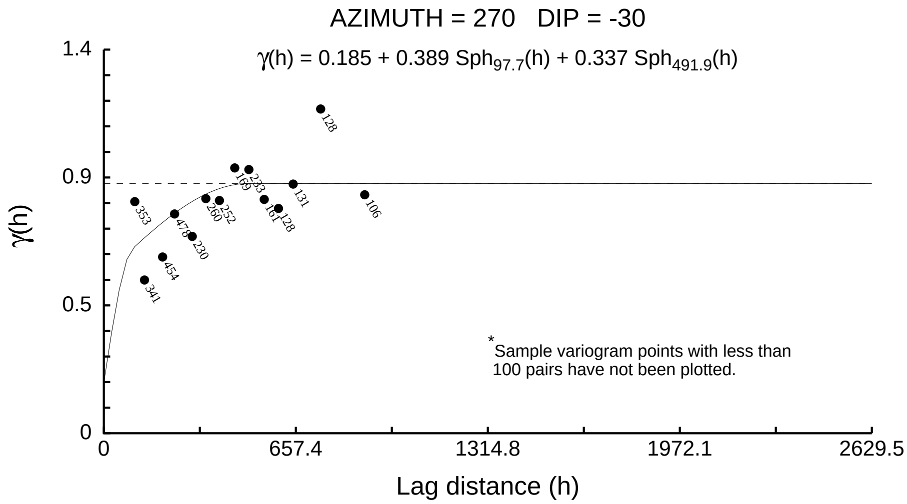
Copper Flat - Correlograms: zones 1 and 2

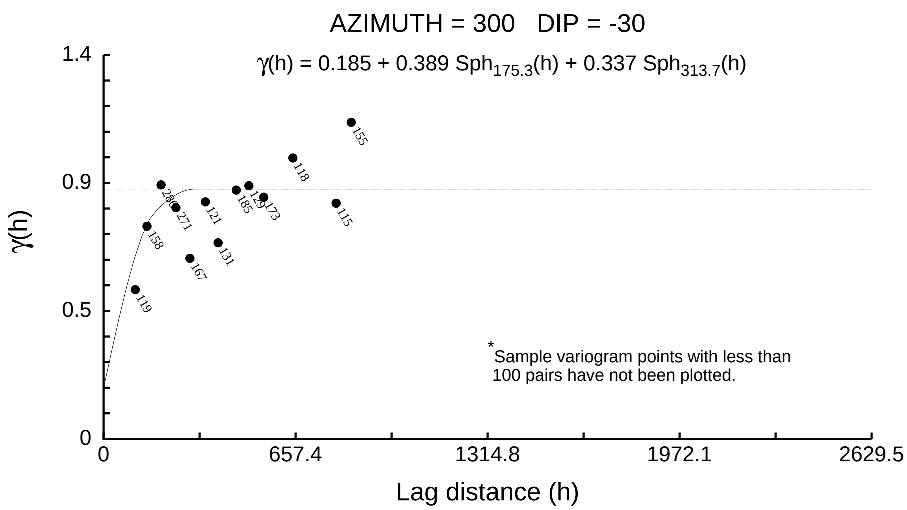


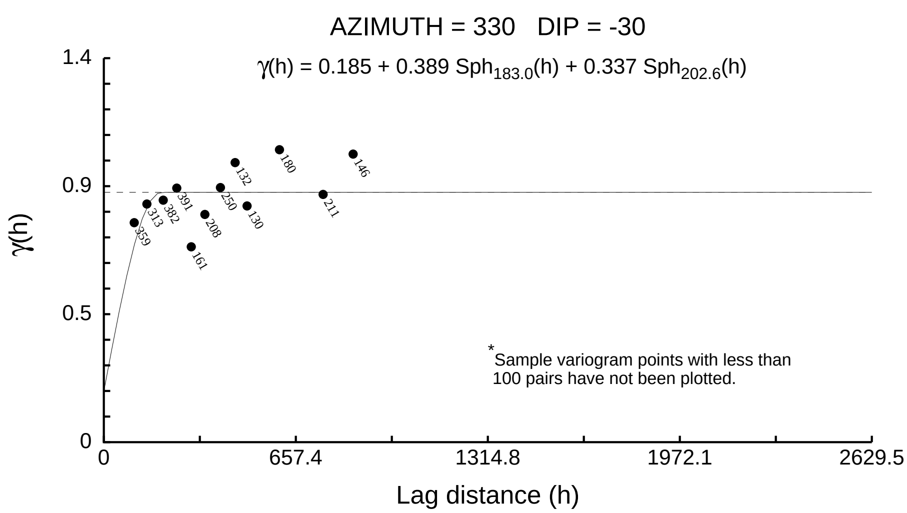




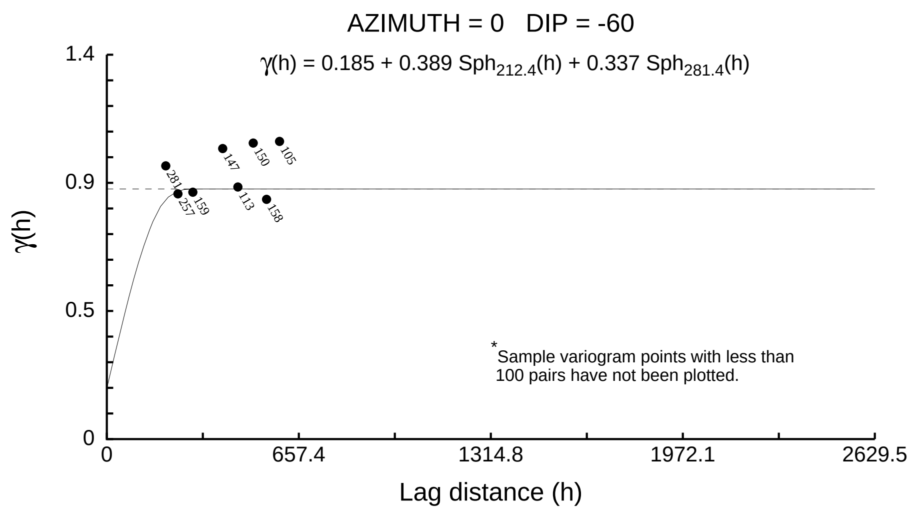
Copper Flat - Correlograms: zones 1 and 2

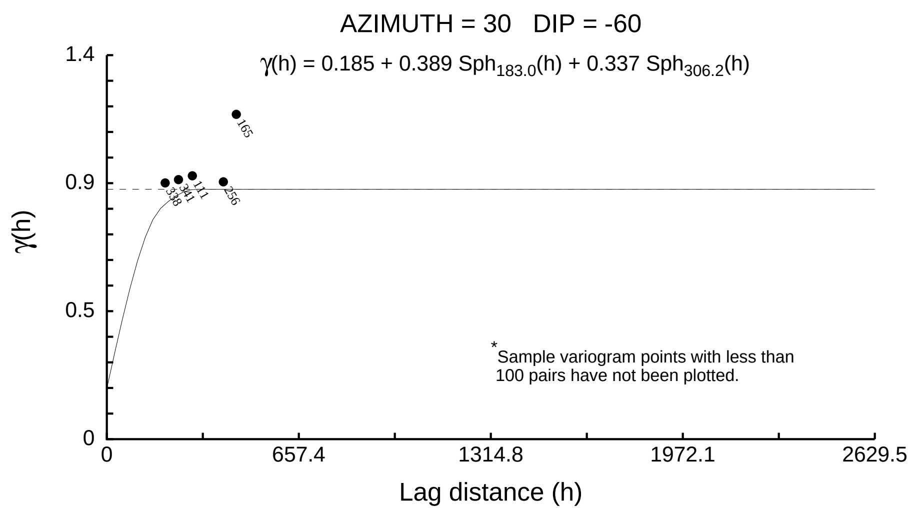


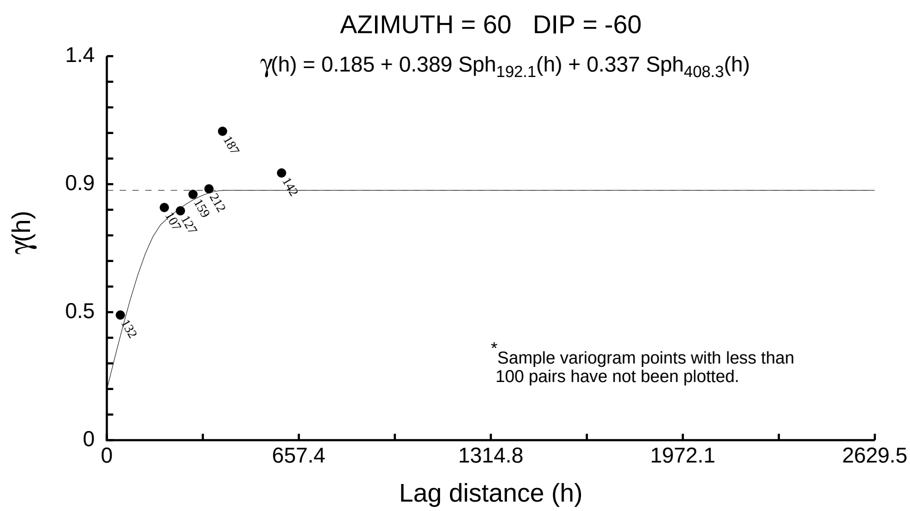




Copper Flat - Correlograms: zones 1 and 2







Copper Flat - Correlograms: zones 1 and 2

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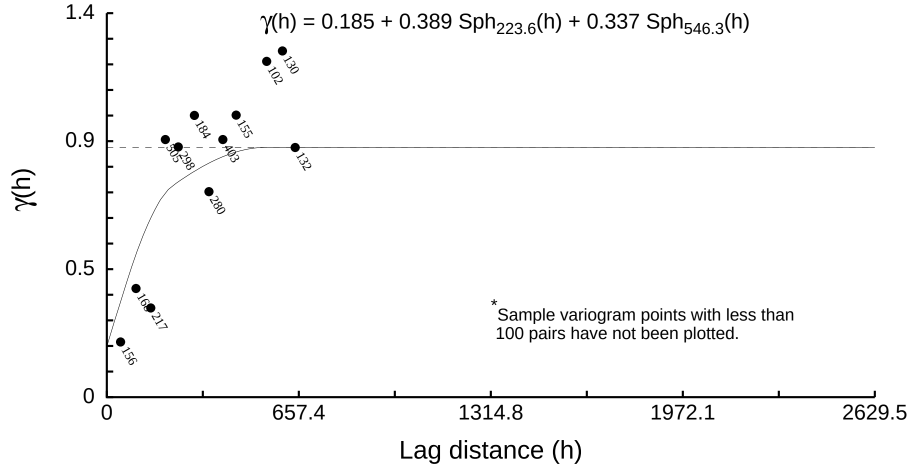

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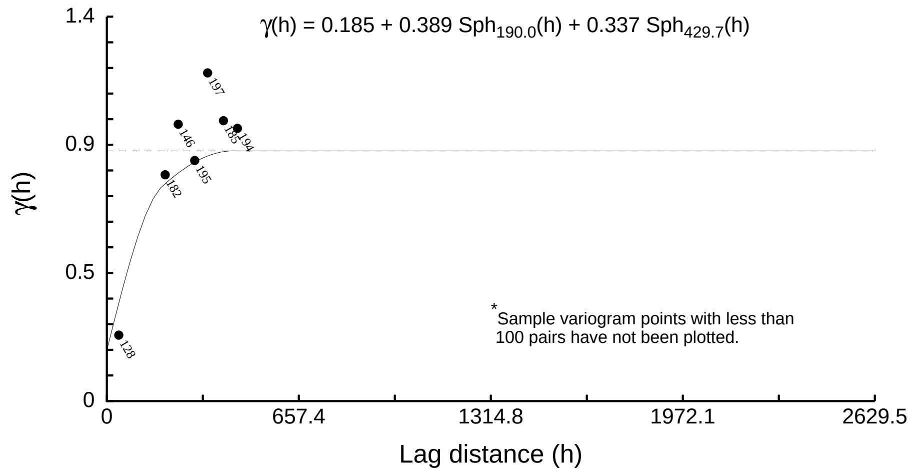

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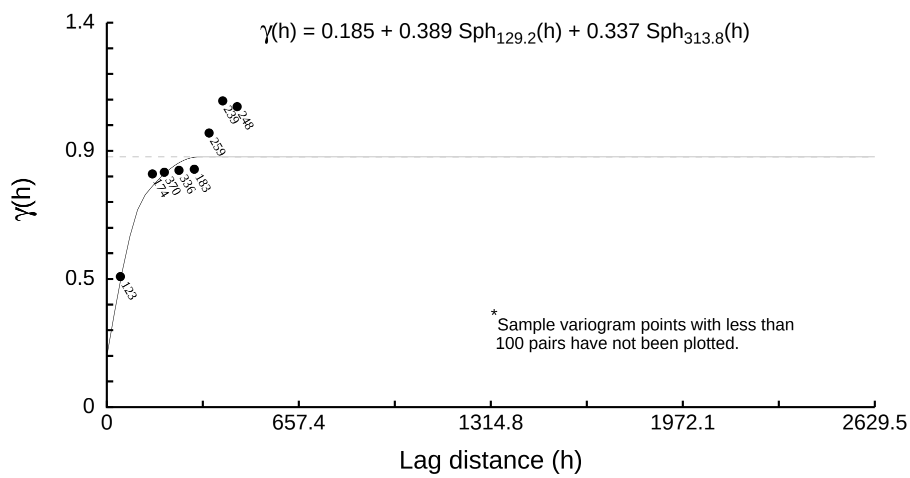
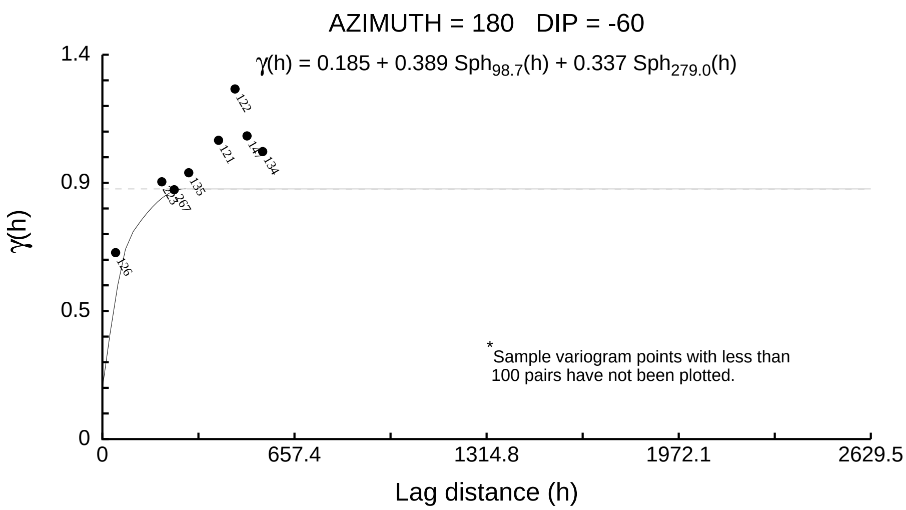
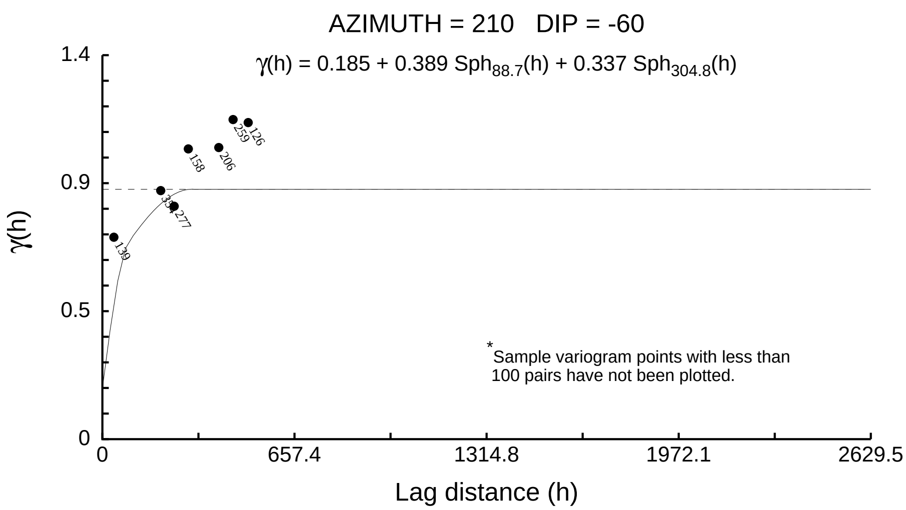
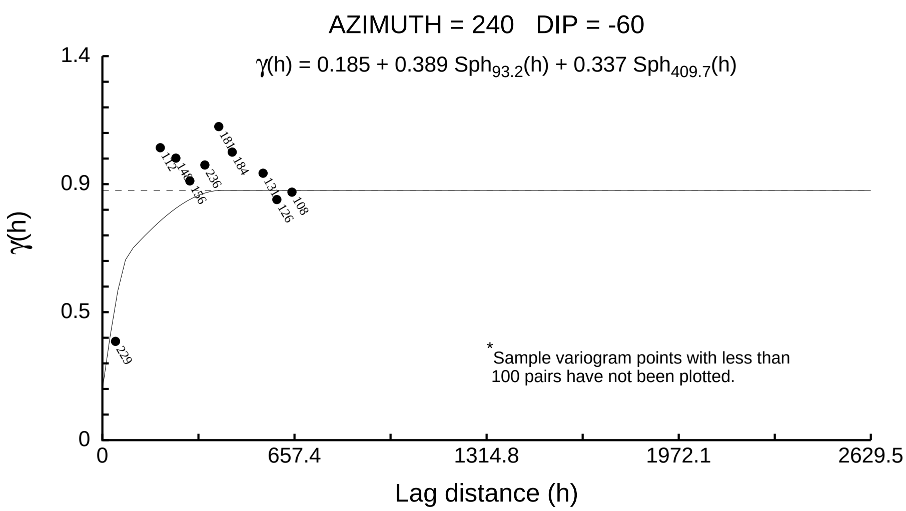


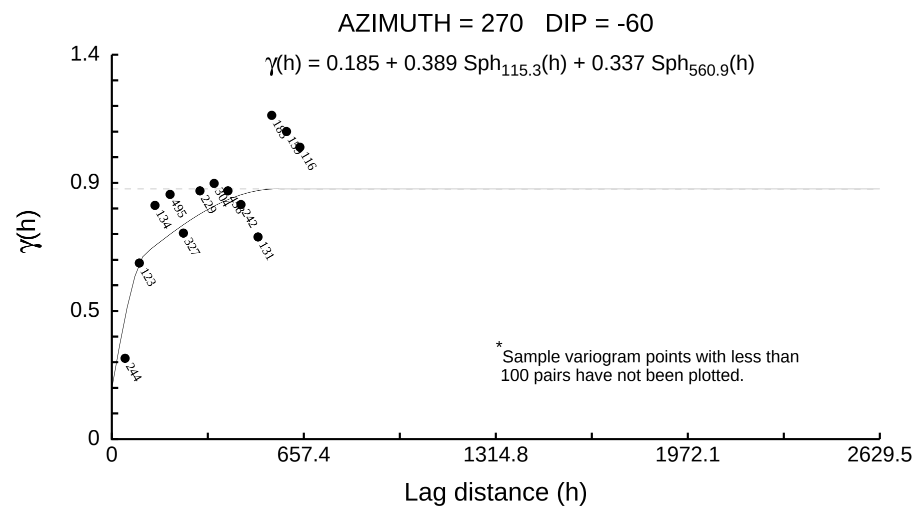
Copper Flat - Correlograms: zones 1 and 2

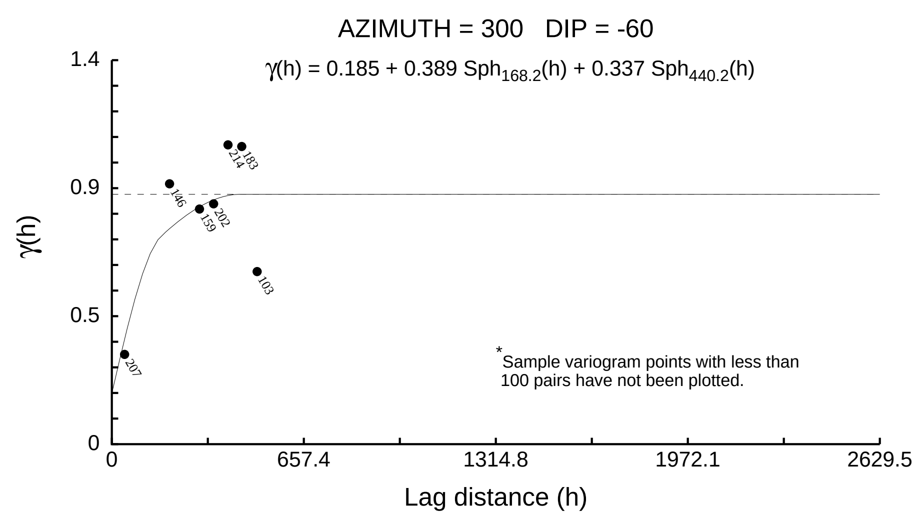


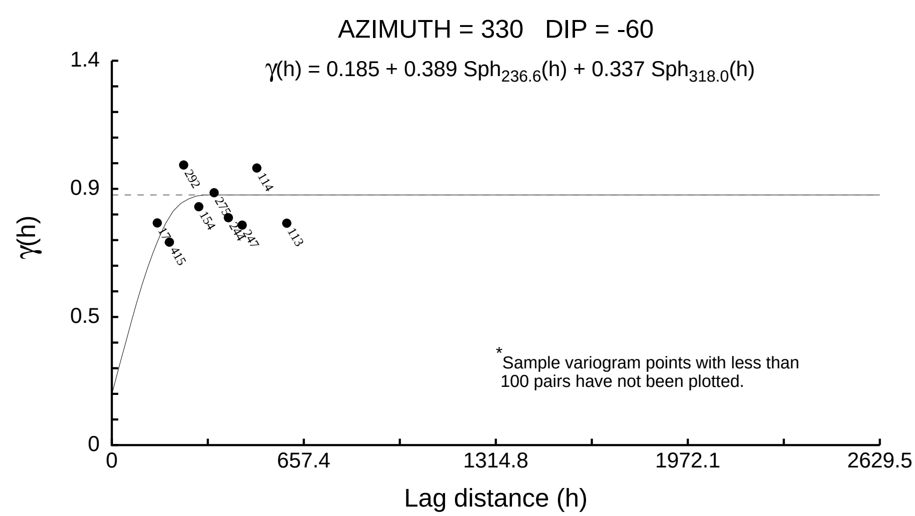




Copper Flat - Correlograms: zones 1 and 2







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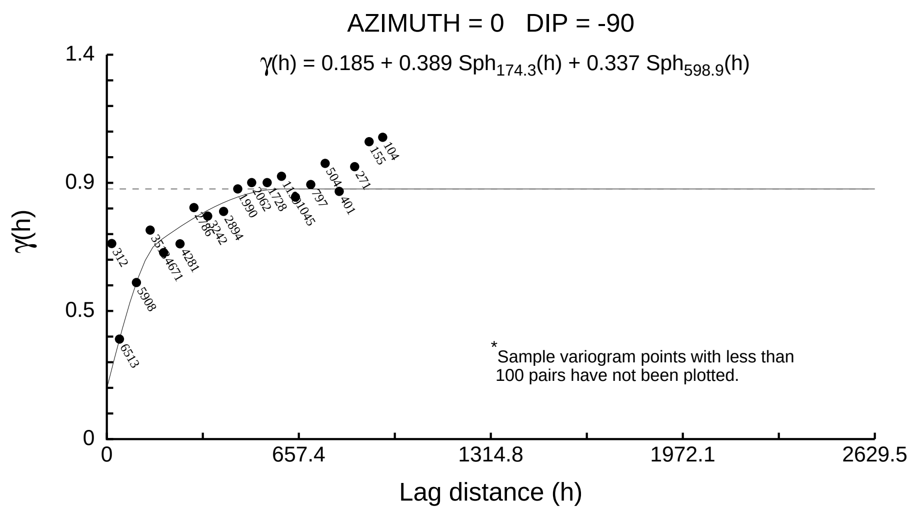
Copper Flat - Correlograms: zones 1 and 2



THEMAC Resources Group Limited, NI 43-101 Preliminary Assessment, Copper Flat, Sierra County, New Mexico 6th day of May 2010 (effective date).

Dated this 30th Day of June, 2010.

“Signed”

Peter Clarke, P.Eng., B.Sc., MBA

“Signed”

Jeffrey Volk, CPG, FAusIMM, MSc

“Signed”

Bret Swanson, BE Mining, MAusIMM

“Signed”

Deepak Malhotra, Ph.D.

“Signed”

Mark Pfau, MSc.