

# Independent Technical Report and Resource Estimate for the Desert Hawk Kiewit Project in Gold Hill Utah, USA

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Latitude 40° 07' 00" North  
Longitude 113° 49' 40" West



Prepared for:  
**Desert Hawk Gold Corporation**

August 31, 2011

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## 1.0 SUMMARY

Robert Cameron Consulting was retained by Desert Hawk Gold Corporation (Desert Hawk) to prepare an Independent Mineral Resource Estimate and Technical Report on their Kiewit project in the Clifton-Gold Hill Mining District, near Gold Hill, Utah. Dr. Robert Cameron meets the criteria to act as a Qualified Person under Canadian National Instrument 43-101 *Standards of Disclosure for Minerals Projects*.

### 1.1 Property Description

The Desert Hawk properties cover most of the historic Clifton-Gold Hill Mining District located in Tooele County, northwest Utah, in the Deep Creek Mountains. This area is approximately 190 miles west-southwest of Salt Lake City, Utah and 30 miles south of the town of Wendover, Nevada. The Desert Hawk Gold Hill property which includes the Kiewit project consists of two primary leases containing sub-leases for exploration and mining rights on the property held by Clifton Mining Company and the Moeller Family Trust. The Desert Hawk package consists of approximately 342 unpatented Lode and placer BLM claims, 42 patented claims and 5 State of Utah Mineral Leases. Over an area of roughly 12,050 acres with the ability to obtain additional area from Clifton Mining who hold roughly 21,000 acres in the District.

The Kiewit project is approximately centered at Latitude 40° 07' 00" North, Longitude 113° 49' 40" West UTM Zone, 12T with NAD27 CONUS Datum, which is approximately 4 miles southeast of the old mining town of Gold Hill, Utah. Gold Hill consists of a half dozen homes with electrical power, water and telephone lines. The town of Gold Hill just north of the Property has an elevation of approximately 5,321' a.s.l. The project area is bounded on the east by the Great Salt Lake Desert (elev. 4,300'), on the north by Dutch Mountain (elev. 7,735'), on the west by the Clifton Flat (elev. 6,600') and on the south by Montezuma Peak (elev. 7,369').

The soils and vegetation of the Clifton-Gold Hill area are those typical of the Basin and Range consisting of sagebrush and grasslands. The soils generally are well drained. The vegetation is abundant sagebrush with sparse trees. The climate of the Clifton-Gold Hill area is that of the Basin and Range: typically arid with hot, dry summers and cold, dry winters. Annual precipitation averages 12 inches. Approximately half of this amount falls between February and May. Rainfall during the summer and early fall is in the form of severe thunderstorms and showers. During the winter snowfall is generally light and seldom reaches depths of more than a foot though snowstorms can be expected between the months of October and May.

### 1.2 History

The Gold Hill area has had extensive mining activity dating back to the late 1800's. Around 1857, galena-rock samples attracted the attention of California settlers traveling through Overland Canyon on the Pony Express Canyon Road. The Gold Hill Mining District boasts 43 historical mines and workings, 123 showings, and has produced gold, silver, copper, bismuth, lead, zinc, tungsten, arsenic, molybdenum, cobalt and beryllium over a 70 year period beginning in the late 1800's through to end of the Second World War. Many small mines were active in the District until World War II when US Gold production was shut down to shift miners into production of strategic minerals.

Recent exploration activities in the District began in 1980 with American Consolidated Mining Company (ACMC), a predecessor to Clifton Mining. They began a systematic effort to consolidate the fragmented holdings in the District which led to surface exploration efforts by many major mining



companies within the District. Kiewit Mining identified a low-grade gold deposit in a stockwork granodiorite in which Goldstack drilled in 1993. In 2003, Dumont Nickel (Dumont) entered a JV agreement with Clifton Mining to explore the district and assembled databases on the past exploration work from Clifton Mining's archives and completed additional drilling in the Kiewit area and surface exploration and mapping in other parts of the Mining District. In 2009 with rising gold prices, Desert Hawk Gold Corporation entered into a lease arrangement with Clifton Mining for the exploration and exploitation rights in the District and acquiring access to Clifton Mining's database of past exploration.

### **1.3 Geological Setting**

The Desert Hawk Clifton-Gold Hill Property lies in the east central part of the Great Basin section of the Basin and Range province. In eastern Nevada and western Utah the Great Basin is characterized by north-south trending fault-block ranges composed primarily of Paleozoic carbonate assemblage rocks that comprise the Cordilleran Geosyncline. The Great Basin is bounded on the west by the mid-Paleozoic Antler Orogenic Belt, on the south by the Las Vegas shear zone, and on the east by the Colorado Plateau.

The Gold Hill area hosts lithologic units ranging from Cambrian in age through to the Quaternary including six Paleozoic sedimentary formations of Carboniferous-age from the Cordilleran miogeosyncline that underlie the property area (Nolan, 1935). Geology of the Clifton-Gold Hill Mining District is dominated by a large Jurassic granodiorite stock intruding Carboniferous sedimentary package consisting of carbonates (limestone and dolomite) and lesser clastic sequences notably shale and quartzite. The contact between the granodiorite and sediments is clearly intrusive at many localities, though it is locally less obvious and is a post intrusive fault contact or localized detachment. Other lithologies in the District include silica breccias, jasperoids, and assorted (locally tuffaceous) volcanics. Minor, small, intrusive plugs and dikes of probable Tertiary age also occur in the area. Most of the present day surface is covered with colluvial slope wash and the canyons and narrow washes have alluvial fill of various thickness.

The Kiewit Historic Gold Zone, which is the subject of this report, is hosted within the Kiewit Structural Zone, traceable on surface for a distance of approximately 4km across the full length of the Kiewit Project Area and beyond. This structure trends north-north-easterly with a gentle westerly dip ranging 20-30 degrees, often occupying dip-slopes across the area. The Kiewit Historic Gold Zone comprises a 10m-50m thick, gently westerly dipping gold bearing oxidized quartz stockwork section in granodiorite. The Zone is mostly exposed on surface and occupies the dip-slope of Hangover Hill located at the southern part of the Kiewit Project Area. Projected western and northern extensions of the stockwork dip under Carboniferous Sedimentary rocks, although it is ultimately truncated by the Rodenhouse Fault located approximately 750m to the west of the area.

The Kiewit Gold Zone is part of a typical low-sulphidation gold bearing epithermal system. It is manifested as a zone of quartz and quartz-carbonate veining and stockworks within the more laterally extensive (4km long, up to 500m wide) Kiewit Structural Zone fault/fracture system which hosts epithermal quartz-carbonate- (adularia) veins. The Kiewit Structural Zone comprises a group of lithologies overlying a major fault zone that is manifested as a 1m-5m thick silica breccia unit in granodiorite. A basal 1m-2m thick quartz-carbonate vein overlies this basal silica breccia and is followed up-section by a fault-bounded interval of relatively unaltered granodiorite that forms the footwall of the stockworks. At some locations, this footwall granodiorite is absent and the stockwork zone is instead in fault contact with the basal quartz-carbonate vein. The footwall of the stockwork zone is defined by faulting, with a north-northeasterly trend and shallow westerly dip. The "footwall" fault appears to have developed after stockwork and served to juxtapose altered and mineralized

rocks of the Historic Gold Zone over relatively unmineralized and fresh granodiorite. The amount of displacement along this fault is unknown and the structure may be regarded as a detachment zone.

#### **1.4 Exploration Activities**

Since the 1980's, several mining companies have conducted various exploration activities within the Clifton-Gold Hill Mining district from drilling, geophysical studies, soil sampling, chip sampling to just general assessment of the District's potential. Upon entering into a JV agreement with Clifton in 2004, Dumont spent considerable time cataloging and digitizing data and information from Clifton's archives on the exploration activities. Most of the historic work previous to Dumont has not been completed to current QA/QC and chain-of-custody standards and is of marginal use for resource estimation without significant data verification.

Dumont actively explored the Clifton-Gold Hill District from 2004 to 2006. They obtained the historic drilling, sampling, mapping and geophysical data in Clifton files and developed electronic databases for each project area. The exploration work completed by Dumont comprises most of the data used for estimation of the current resource at the Kiewit project. Dumont's exploration work programs specifically for the Kiewit project was:

- Verification surface rock sampling and preliminary 1:2,000 mapping
- Verification diamond drilling of five core holes to confirm historic drill results reported by Goldstack Resources.
- A basal B-horizon soil sampling program was completed on a 50mx50m grid spacing covering a 2kmx2.5km area over the Kiewit Project Area .
- Semi-detailed (1:5000) surface mapping and sampling
- Drilling program on a 50m-100m spaced grid over the Historic Gold Zone. A total of 33 RC holes were completed (3479m) in 2004, an additional 16 core holes (1795m) and 6 RC (468m) were completed during 2005 and another 5 core holes (1,850m) in 2006.
- Intermittent surface rock sampling and 1:2000 mapping.
- A Gradient Array Resistivity (GAR) and Spontaneous Potential Gradient (SPG) geophysical survey was completed over the entire Kiewit Project Area, providing detailed grid coverage over an area measuring approximately 3.4kmx2.4km. The survey was contracted to Practical Geophysics of Spring Creek, NV.
- A number of topical analytical suites were prepared and submitted for analysis to Actlabs to address specific aspects of gold mineralization at the Historic Gold Zone. These included a suite of bottle roll cyanidation tests.

Since acquiring rights to the property, Desert Hawk has implemented their own exploration program headed up by Consulting Geologist, Stu Havenstrite. To date, most of the work has been rock chip and surface sampling to internally verify the Dumont data.

#### **1.5 Sample Preparation, Analyses**

Prior to Dumont, very little information is available on sample preparation, analyses, quality assurance/quality control (QA/QC) and security for most of the historic exploration programs conducted in the Clifton-Gold Hill Mining District and which has been compiled by Clifton Mining and Dumont. Dumont's programs are well documented and form the basis for the resource estimate within this report. However, Clifton maintains copies of most of the historic assay certificates from the various historic programs conducted since 1980.

Dumont carried out sampling campaigns that have included surface, RC and core samples. Samples were taken by local crews under the supervision of either a geologist of Dumont or one of their contractors. Approximately 1,215 surface samples were taken by Dumont contractors and 15,537 core samples from 65 drill holes, as of November 8, 2010. Sampling intervals were, in most cases, 2m, with local variations depending on vein geology to a minimum of 0.8m where structures were found. Detailed sampling was carried out at intervals directed by geological criteria.

Dumont established a sampling protocol followed through the drilling campaign that in summary includes: supervision by Dumont personnel, with the verification of core handling, recovery, core accommodation, and depth recording by the contractor; and core collection, measurement, core recovery, photographing, and sampling interval selection by Dumont geologists.

Detailed logging of the sample intervals is conducted once the core samples are sawed, with detailed descriptions and estimations of mineralogy and mineral content, hydrothermal alteration, veining, and fracturing. Assay intervals are divided in two equal parts by diamond saw, with most sampling conducted on 5 ft (1.52m) intervals..

One split was bagged for sampling and the remaining split retained for reference purposes. During Cane Springs and Clifton Shears drilling, mineralized or otherwise altered and faulted zones are identified and tagged as a priority and sampled first. As the core is split, the sample split is bagged and labeled immediately. All samples are kept in the possession of Dumont until picked up at the core warehouse by FedEx or UPS courier for transport to Activation Laboratories ("ActLabs) in Ancaster, Canada- a 4 to 6 day travel time or to Actlabs-Skyline Laboratories in Tucson, Arizona- a 2 day travel time. ActLabs is accredited to international quality standards through the International Organization for Standardization /International Electrotechnical Commission to ISO/IEC 17025 (this standard includes ISO 9001 and ISO 9002 specifications), CAN-P-1758 (Forensics) and CAN-P-1579 (Mineral Analysis).

## **1.6 QA/QC Procedures**

A check sample (QA/QC) program was applied to all drill core samples by Dumont and incorporated a standard reference control sample, a duplicate sample, and a blank. Standard reference control material was purchased by Dumont from the Nevada Bureau of Mines and Geology (NBMG) library. Two low-grade gold-silver references- NBM-2b (Jerritt Canyon) and NBM-4b (Mesquite) - were used in Dumont's QA/QC program. ¼ split of core is used for duplicate sample purposes. Commercially purchased washed silica sand was used as blanks. Dumont QA/QC protocol involves insertion of a blank, followed by the standard, and followed by a duplicate every 20<sup>th</sup> interval down the sample list. The duplicate was randomly selected as a ¼ split of a sample within two or three intervals from the insertion point. A similar check sample (QA/QC) program was applied to all surface rock and soil samples and incorporates at least one standard reference control sample and blank inserted into every shipment.

The general procedures used by Dumont for QA/QC checks included:

- Blanks, standards and duplicates
- Pulps and coarse rejects check assaying using multiple labs
- Drill hole twinning - RC-to-core
- Total hole repeat comparative assaying

The complete results of these QA/QC checks including correlation graphs and more detailed information on sampling at the Kiewit project are outlined in the Dumont report: *Geology of the Kiewit Historic Mineralized Zone* produced by Sabag, Trinder and Robinson, 2006.

## **1.7 Data Verification**

The author has only performed random checks comparing the digital data with hard copy records provided as PDF scans of the original documents from drilling logs and laboratory assay certifications. No significant problems or errors were found. A few inconsistencies in the electronic database were discovered with the modeling software which were simple typographic errors or transposition of some of the historic data entered.

The author has not done any independent sampling of the drill, soil or rock chip data used for this report but has accepted the results from A.C.A Howe and the Dumont archives. Dumont conducted an extensive and systematic check program of the original historic data supplied by Clifton Mining which includes assays from Goldstack, Kiewit Mining and other companies that have worked in the area and included within Dumont's various electronic databases. A.C.A Howe completed minor independent sampling. They collect a total of three ¼ core splits, and nine grab or rock chip samples for their 2003 report and 5 rock chip samples for their 2004 report. This work only verified the presence of low grade gold mineralization within 6 of the different project areas.

## **1.8 Mineral Processing and Metallurgical Testing**

Miscellaneous metallurgical testing has been conducted on various samples at the different properties in the district over the years. Major test work on the Kiewit project was completed by Kappes, Cassiday & Associates in 2007 using samples delivered to their Reno, Nevada facilities in 2006. Desert Hawk completed additional metallurgical testing in 2009 and 2010 with McClelland Laboratories in Sparks, Nevada to validate the previous work and for internal planning.

The 2006 Kappes, Cassiday & Associates work involved two composite samples taken from two HQ diamond Drill holes drilled by Dumont in 2005. A total of 17 boxes of core was used from hole 5KZDD06 representing 149 feet and 20 boxes from hole 5KZDD09 representing 182 feet. Kappes, Cassiday & Associates used this material to conduct:

- Head screen analyses
- Bond Crusher impact Tests
- Rock Densities
- Agglomeration Tests
- Cyanide Bottle Roll Leach Tests and
- Column Leach Tests

Desert Hawk completed metallurgical testing using McClelland Laboratories, Inc. in Sparks, Nevada in 2009 and the beginning of 2010. This work involved 2 bottle rolls tests and one column leach test.

The column leach test was completed on a 32 pound sample of Kiewit material assaying at 0.03 ounce gold per short ton and 0.04 ounce silver per short ton and crushed to 100 percent minus 1/8 inch with 80 percent minus 8 mesh. The test was run for 113 days and resulted in a gold recovery of 73.1 percent and a silver recovery of 47.3 percent.

## **1.9 Mineral Resource Estimates**

Robert Cameron Consulting generated a computerized block model for the mineral resource estimate. The block model grades were generated using ordinary Kriging. The Techbase computerized mine design package which is an industry accepted, commercially available software was used to generate the resource estimate. The stages undertaken for estimation were:

- The drill hole database was compiled and verified;
- Techbase was used to plot drill hole and topographic information for verification of location data;
- Geologic controls were established by generating a mineralized envelope;
- 1.5m composites generated for the drilling contained within the mineralized envelope;
- Variography analysis was conducted;
- Block grades were estimated using ordinary Kriging on the blocks within the mineralized envelope;
- Blocks were tagged and categorized as "Measured, Indicated or Inferred"; and
- Grade and tonnages were summarized.

The author believes that within the Historic Kiewit Gold Zone there are approximately 3.2 million short tons (2.9 million metric tonnes) of in-situ Measured and Indicated Mineral resource averaging 0.016 ounces of gold per ton and containing approximately 52,000 ounce of gold. In addition there are 2.2 million short tons of Inferred Mineral resource averaging 0.012 ounces of gold per ton containing approximately 26,000 ounces of gold. Table 1.1 and Table 1.2 summarize the in-situ tonnage and grade of the estimated Mineral Resources within the Historic Kiewit Zone.

| <b>Table 1.1<br/>Estimate of the Measured and Indicated Mineral Resource for the Kiewit Zone<br/>(Au cutoff of 0.2 g/t)</b> |                      |                 |                         |                       |                    |                          |
|---|----------------------|-----------------|-------------------------|-----------------------|--------------------|--------------------------|
| <b>Category</b>   | <b>Metric System</b> |                 |                         | <b>English System</b> |                    |                          |
|   | <b>Tonnes</b>        | <b>Au (ppb)</b> | <b>Contained Au (g)</b> | <b>Short Tons</b>     | <b>Grade (opt)</b> | <b>Contained Au (oz)</b> |
| Measured  | 1,133,000            | 603             | 684,000                 | 1,249,000             | 0.0176             | 22,000                   |
| Indicated   | 1,750,000            | 526             | 920,000                 | 1,929,000             | 0.0156             | 30,000                   |
| <b>Total</b>  | <b>2,883,000</b>     | <b>556</b>      | <b>1,604,000</b>        | <b>3,178,000</b>      | <b>0.0164</b>      | <b>52,000</b>            |

| <b>Table 1.2<br/>Estimate of the Inferred Mineral Resource for the Kiewit Zone<br/>(Au cutoff of 0.2 g/t)</b> |                      |                 |                         |                       |                    |                          |
|---|----------------------|-----------------|-------------------------|-----------------------|--------------------|--------------------------|
| <b>Category</b>   | <b>Metric System</b> |                 |                         | <b>English System</b> |                    |                          |
|   | <b>Tonnes</b>        | <b>Au (ppb)</b> | <b>Contained Au (g)</b> | <b>Short Tons</b>     | <b>Grade (opt)</b> | <b>Contained Au (oz)</b> |
| Inferred  | 1,966,000            | 405             | 796,000                 | 2,167,000             | 0.0120             | 26,000                   |

### 1.10 Environmental and Permits

The Clifton-Gold Hill Property is located in an historical mining district that has existing disturbances and mine wastes. The Property is also adjacent to, and uphill from, the Dugway Proving Grounds and Air Force Gunnery Range that is deemed an environmentally insensitive area.

All permits for the Property are currently held by, and are the responsibility of, Desert Hawk who is responsible for all licenses and permits required for their operations and exploration. Desert Hawk will, under the terms of the lease, reclaim any new or previous disturbance if re-disturbed, and post additional reclamation bonds if required. Currently Desert Hawk has posted bonds totaling \$124,700 to cover the exploration, mining and milling permits that they hold.

To date, the exploration and mining within the Clifton controlled area in the mining district has been small scale (historic surface disturbance has been less than 5 acres) which has required minimal environmental studies and permitting. As Desert Hawk move the Kiewit project into production, it will require more stringent permitting and review as the project will probably impact 150+ acres. With much of the potential mining activities involving unpatented BLM claims, an Environmental Assessment (EA) or and Environmental Impact Statement (EIS) will be required to extract minerals from these claims. Desert Hawk reports that the BLM has indicated that an EA should be sufficient for the currently proposed Kiewit operations and has retained JBR Environmental Consultants, Inc. (JBR) for the work.

### **1.11 Interpretation and Conclusions**

The author made a review of available information derived from the extensive database of previous exploration work on Desert Hawks holdings in the Clifton-Gold Hill Mining District. This information included geophysical studies, geological and sampling reports, drill logs, and assay results. Exploration activities have included detailed soil geochemistry, topographic satellite mapping, geophysical surveys, and geological and structural mapping.

From the review of Desert Hawk's geological information, as well as the sampling and assaying procedures and QA/QC protocols within the Historic Kiewit Gold Zone provided from Dumont's archives, it was concluded that:

- The geological basis for exploration and drilling is of very good quality and has proven effective.
- The statistical analyses of Dumont's check sampling versus Dumont geologic sampling shows very good correlation values.

Consequently, the results reported are viewed acceptable and therefore sampling by Dumont is considered reliable.

As of May 2011, 82 drill holes had been completed in the Kiewit area and included in the electronic database. Dumont drilled a total of 65 holes: 26 diamond drill holes and 39 reverse circulation holes. The remaining 17 holes (1 DDH and 16 RC) were drilled by Goldstack in a previous exploration project at the property.

Geological, exploration, and drilling information has identified a mineral resource in the Historic Kiewit Gold Zone which was the primary subject of this report.

The author believes that within the Historic Kiewit Gold Zone there are approximately 3.2 million short tons (2.9 million metric tonnes) of in-situ Measured and Indicated Mineral resource averaging 0.016 ounces of gold per ton (and containing approximately 52,000 ounce of gold. In addition there are 2.2 million short tons of Inferred Mineral resource averaging 0.012 ounces of gold per ton containing approximately 26,000 ounces of gold.

## 1.12 Risk Factors

- **Robert Cameron Consulting Has Not Audited the Sampling Data or Conducted Independent Sampling:** The author has accepted the drilling data, sampling data, and metal analyses as presented by Desert Hawk for this report. The exploration and sampling data used was collected and the electronic database was generated by Dumont which has no affiliation with Desert Hawk but had entered a JV agreement with Clifton Mining who supplied Desert Hawk with the data as part of their lease agreement. Robert Cameron Consulting has reviewed the Dumont QA/QC work and has spot checked the electronic database from the PDF scanned copies of the assay certificates provided and believes it is acceptable for the current resource estimate. *Low Risk*
- **Bulk Density Measurements:** Robert Cameron Consulting believes that additional bulk density measurements are required for the Kiewit area to better estimate the actual tonnage of the in-situ material. Historic estimates in the region have typically used a specific gravity of 2.7 while this study used the average of the two samples sent to Kappes, Cassidy & Associates for metallurgical testing, or 2.535. Robert Cameron Consulting believes this is probably a conservative value and views it as *Low Risk* but believes additional work is warranted.
- **Permits and Water Rights:** The current mine license and permits have been issued based on the small disturbance required for current exploration program. While permits and water rights are sufficient for the current work that Desert Hawk is involved with at the property, these items will need to be considered by Desert Hawk as they move the project into pre-feasibility stage which with additional drilling and surface disturbance may require additional licensing. *Low Risk*.
- **Environmental Permitting:** The Kiewit resource estimated in this report sits on unpatented federal mining claims. Desert Hawk will need to complete an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) in order to develop this mineral resource and bring it into production. Desert Hawk reports that the BLM has indicated an EA should be sufficient for the project. The property is adjacent to, and uphill from, the Dugway Proving Grounds and Air Force Gunnery Range that is deemed an environmentally insensitive area which should be a favorable factor. However, as with most environmental permitting, there still is a risk of a favorable outcome and decision by the political entities overseeing the review. If a full EIS is required, it typically will require 3 to 4 years for this sort of project. *Medium Risk*.

## 1.13 Exploration Potential

Both the Kiewit Area and the other project areas have an excellent exploration potential. The historic soil samples and rock chip programs were conducted when gold prices were below \$400 per ounce. As a result, most of the previous exploration programs have ignored much of the soil and rock chips as historically they were looking for a deposit with an average grade of 1 to 2 grams per metric tonne.

Currently Desert Hawk's consulting Geologist is working on sampling the outcrop extending North-Northeast from the Historic Kiewit Gold Zone and Rainbow hill. Preliminary results from this program show many of these samples are in excess of 0.2 g/t which is the expected break-even cutoff for the Kiewit area at a gold price of \$1,500 per ounce. Along this alteration zone is several old historic mine workings, indicating potential mineralization. Successful exploration of this area could significantly increase the tonnage of the potential mining operations.

In addition, many of the rock chips and float samples taken from the surface exploration in the Kiewit Midzone and South Zones show potentially economic grades. More work is needed to fully evaluate

the Kiewit area based on gold prices over \$1,500 per ounce and if successful could also increase resources within the Kiewit project.

The Clifton shears area which is south of the Kiewit zone had historic reserves verified by the author based on historic chip sampling of the veins and within old mine workings back in November 2000. Table 1.3 is extracted from that report and it illustrates the potential for additional mineral resources within this area of the Desert Hawk holdings. Additional exploration and verification is need at the Clifton Shears area as the estimate shown is based on historic sampling without the necessary QA/QC work and chain-of-custody that is currently expected for NI 43-101 compliant mineral resource estimates. The author would caution that this tonnage has a uncertainty as to their existence and economic and legal feasibility and it cannot be assumed that all or any part will ever be upgraded to a NI 43-101 compliant mineral resource category.

| Category  | Tons           | Ag<br>(opt) | Ounces<br>Ag     | Au<br>(opt)  | Ounces<br>Au  | Pb<br>(%)   |
|---|----------------|-------------|------------------|--------------|---------------|-------------|
| Measured  | 107,178        | 8.41        | 901,597          | 0.045        | 4,802         | 5.09        |
| Indicated   | 474,122        | 8.15        | 3,905,133        | 0.051        | 21,824        | 5.22        |
| <b>Total</b>  | <b>581,300</b> | <b>8.05</b> | <b>4,806,730</b> | <b>0.050</b> | <b>26,626</b> | <b>5.20</b> |
| Extracted from: <i>Update of Behre Dolbear Report PJ96-24</i> (Cameron, 2000)                               |                |             |                  |              |               |             |
| The Mineral Resource categories stated above are not compliant to current NI 43-101 standards for reporting |                |             |                  |              |               |             |

Like the Clifton shears, the Cane Springs, IBA, Breccias areas and other Desert Hawk holdings in the Clifton-Gold Hill District have a significant number of soil and surface sampling all indicating low grade mineralization. Desert Hawk needs to take the old data and systematically re-interpret and develop exploration programs to investigate the low-grade potential of these areas.

### 1.14 Recommendations

Robert Cameron Consulting recommends that Desert Hawk initiate two simultaneous programs at the Kiewit project. The first program should be the continued geological investigation and sampling of the Kiewit area both to the south and to the north. The second program is to begin the background work to bring the Kiewit resource into production.

Further general geologic investigations should be conducted at both the Kiewit area and other areas explored with past programs. Kiewit South, Midzone and north of Rainbow Hill should be systematically surface sampled and drilled to assess the low grade-bulk tonnage potential. The historic soil and chip sample databases for the various areas in the Clifton-Gold Hill Mining District should be merged and contoured to provide targets where additional sampling and drilling should be conducted.

In parallel with this program Desert Hawk will need to begin a program aimed towards bring the Kiewit resource into production. This will require an EA or EIS for the Kiewit project and the pre-feasibility level design for the mine, leach pad and ADR plant. As the resource is contained on unpatented Federal mining claims, the BLM will require either an EA or EIS before any extraction will



be able to take place in the current resource area. Desert Hawk reports that the BLM has indicated that an EA should be sufficient for the project. Additional drilling is recommended for the fringes of the area which should also be coordinated with the extended exploration for the Kiewit zone.

A budget for 2011 to 2014 for the recommended work plan is presented in Table 1.4.

| <b>Table 1.4</b>                                |                     |
|---|---------------------|
| <b>Budget for recommended Work 2011 to 2014</b> |                     |
| <b>Item</b>                                     | <b>Cost</b>         |
| General District Exploration                    | \$4,000,000         |
| Additional Kiewit Exploration                   | \$6,250,000         |
| EA/EIS Studies and Assembly                     | \$4,000,000         |
| Engineering Consulting                          | \$500,000           |
| Additional Metallurgical Studies                | \$750,000           |
| Prefeasibility Study                            | \$1,250,000         |
| Permitting                                      | \$500,000           |
| Condemnation Drilling and Assaying              | \$1,000,000         |
| Office and Admin                                | \$800,000           |
| Corporate Overhead                              | \$4,400,000         |
| <b>Total</b>                                    | <b>\$23,450,000</b> |

Included in the above outlined work, the author would recommend that the following items be considered and completed:

- **Data organization:** The 50 GB of electronic files and data should be better organized for general reference. The miscellaneous drilling, soil sampling and rock chip databases for the different property areas should be consolidated. District wide contours of the soil samples and chip samples should be plotted.
- **Database audit:** Desert Hawk should have a complete independent audit of the consolidated database to ensure correct data entry from the historic records.
- **Independent sampling and assaying:** Desert Hawk is completing an in-house sampling and assaying program to internally validate the Dumont programs. This work lacks a lot of the QA/QC if the sampling is to be used for future estimates. Some independent work will be required for NI 43-101 filings with complete chain-of-custody records. As Desert Hawk proceeds with their exploration program, independent sampling and assaying should be automatically built into the budgets and programs.
- **QA/QC Protocols :** The current internal verification program lacks formal QA/QC protocols. Desert Hawk needs to establish a full QA/QC and chain-of-custody protocol for their on-going surface verification and exploration program. These should include insertion of blank, standards and duplicates.

## 2.0 INTRODUCTION

Robert Cameron Consulting was retained by Desert Hawk Gold Corporation (Desert Hawk) to prepare an Independent Mineral Resource Estimate and Technical Report on their Kiewit project in the Clifton-Gold Hill Mining District, near Gold Hill, Utah. Robert Cameron Consulting assigned Dr. Robert Cameron to this project and as author of this report. Dr. Robert Cameron meets the criteria to act as a Qualified Person under Canadian National Instrument 43-101 *Standards of Disclosure for Minerals Projects*.

Desert Hawk has acquired the rights to explore and to produce from a total area of approximately 33 square miles or 21,000 acres within the Clifton-Gold Hill District. The majority of the exploration and mining rights held by Desert Hawk Gold Corporation are under lease and sublease agreements from Clifton Mining which have been obtained from 4 primary entities:

- Clifton Mining Company
- Woodman Mining Company
- Moeller Family Trust
- Dumont Nickel, Inc,

Desert Hawk is in the process of revising their exploration, operational and financial planning for the Kiewit and other properties contained within their holdings in the Clifton-Gold Hill Mining District but, to date, has not yet finished their detailed mine, operational planning and final financial analysis.

The purpose of this report is to provide an estimation of the mineral resources at the Kiewit and/or other properties within the holdings that complies with Canadian National Instrument 43-101 *Standards of Disclosure for Mineral Projects*.

The majority of the information and data contained in this report was derived from 12 DVD's provided to Robert Cameron Consulting by Desert Hawk Gold Corporation provided to them by Dumont Nickel. The DVD's contain roughly 50 GB of data with 18,000 files in 2,000 different folders. Most of the information is maps, historic reports and memos, drill hole data, geophysical data, soil sampling programs, rock chip sampling programs, permitting information and miscellaneous information compiled by Dumont Nickel during their exploration tenure at the property.

The Qualified Person, Dr. Robert Cameron, in preparing this report, visited the Kiewit site and Gold Hill properties from April 18 to April 19, 2011 and again on June 8, 2011. Dr. Robert Cameron, Ph.D., also carried out a review and assessment of exploration work and mineral resource estimations made by previous operators at the property and compiled by Dumont and its consultants. This report is based on the database, geological interpretation, and historic information provided to Robert Cameron Consulting by Desert Hawk and its staff.

### 2.1 Abbreviations, Units and Conversion Factors

This report frequently mixes SI and English units. All coordinates are specified in meters. The author has tried to specifically state units associated with all numbers presented. The term Ton refers to short tons (2000 pounds) and the term tonne is a metric tonne. All currency is specified in United States dollars (US\$) unless otherwise stated.

Table 2.1 is a list of abbreviations and Table 2.2 is the conversion factors used for this report.

| <b>Table 2.1<br/>List of Abbreviations</b> |   |
|--|---|
| <b>Abbreviation</b>                        | <b>Meaning</b>  |
| gpt or g/t                                 | grams per tonne                                       |
| Opt  | troy ounces per short ton                             |
| gpt or g/t                                 | Grams   |
| Kg   | Kilogram  |
| tonnes or t                                | metric tonnes   |
| ton  | short ton (2,000 pounds)                              |
| Ppm  | parts per million                                     |
| Ppb  | parts per billion                                     |
| M  | Meters  |
| Km   | Kilometers  |
| In   | Inches  |
| Ft   | Feet  |
| Au   | Gold  |
| Ag   | Silver  |
| CIM  | Canadian Institute of Mining Metallurgy and Petroleum |
| QA/QC                                      | Quality Assurance/Quality Control                     |
| EA   | Environmental Assessment                              |
| EIS  | Environmental Impact Statement                        |

| <b>Table 2.2<br/>Conversion Factors</b> |                          |
|---|--------------------------|
|   | 1 Troy oz = 31.1034768 g |
|   | 1 opt = 34.28572 g/t     |
|   | 1 foot = 0.3048 m        |

### 3.0 RELIANCE ON OTHER EXPERTS

The information and data contained in this report, or used in its preparation, relies on the information that was published in past technical reports produced by Behre Dolbear, Robert Cameron Consulting Dumont Mining, their consultants and other sources listed in Section 27. Information used in producing this report was also, in part, provided by the following Desert Hawk staff and consultants for the Gold Hill properties.

- President of Desert Hawk, Mr. Rick Havenstrite, P.E.
- Consulting Geologist, Mr. Stu Havenstrite
- North American Exploration, Mr. Oren Gatten

The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to Robert Cameron Consulting at the time of preparation of this report;
- Assumptions, conditions and qualifications as set forth in this report; and
- Data, reports, and opinions supplied by Desert Hawk and other third party sources.

The author has made an effort to validate the information provided and used for this report when possible. Robert Cameron Consulting was provided with information and reports developed by the previous holders of the property and their consultants. Robert Cameron Consulting followed standard professional procedures in preparing the contents of this report, which is based in part on details, information and assumptions provided in the historic exploration records. Robert Cameron Consulting, therefore, cannot guarantee the correctness of all of the information supplied, but, to the extent of its investigation and within the scope of the work, Robert Cameron Consulting believes that the report contained herein is substantially correct.

The author has relied on the observations and work of Dumont mining for the Regional and Property Geology in Section 7.0. While most of the information has been extracted and modified as needed from Dumont's A.C.A. Howe International Reports No. 854 and 862 and other Dumont reports, the author has verified from field observations and his own research the information presented.

Information on property holdings, lease agreements and legal status of property title was provided by Desert Hawk. Robert Cameron Consulting has not researched title to the Gold Hill properties and Robert Cameron Consulting does not express any opinion in connection with title. Hence, Robert Cameron Consulting has relied on Desert Hawk's representation of the ownership of the property titles, mining claims, licenses to produce, and transfer of permits from Dumont Mining, the previous operator. No attempt was made to confirm the legality of licenses conferring the rights to mine, explore, and produce silver and other metal products and accordingly, the Qualified Person disclaims any responsibility or liability in connection with such information or data. The author is not qualified to express any legal opinion with respect to the property titles and current ownership and possible encumbrance status, and therefore, disclaim direct responsibility for such titles and property status representations.

## 4.0 PROPERTY DESCRIPTION AND LOCATION

### 4.1 Location

The Desert Hawk properties cover most of the historic Clifton-Gold Hill Mining District located in Tooele County, northwest Utah, in the Deep Creek Mountains. This area is approximately 190 miles west-southwest of Salt Lake City, Utah and 30 miles south of the town of Wendover, on the Utah-Nevada border as shown in Figure 4.1.



Figure 4.1 Location Kiewit Property, Tooele County, N.W. Utah (from ACA Howe, 2003)

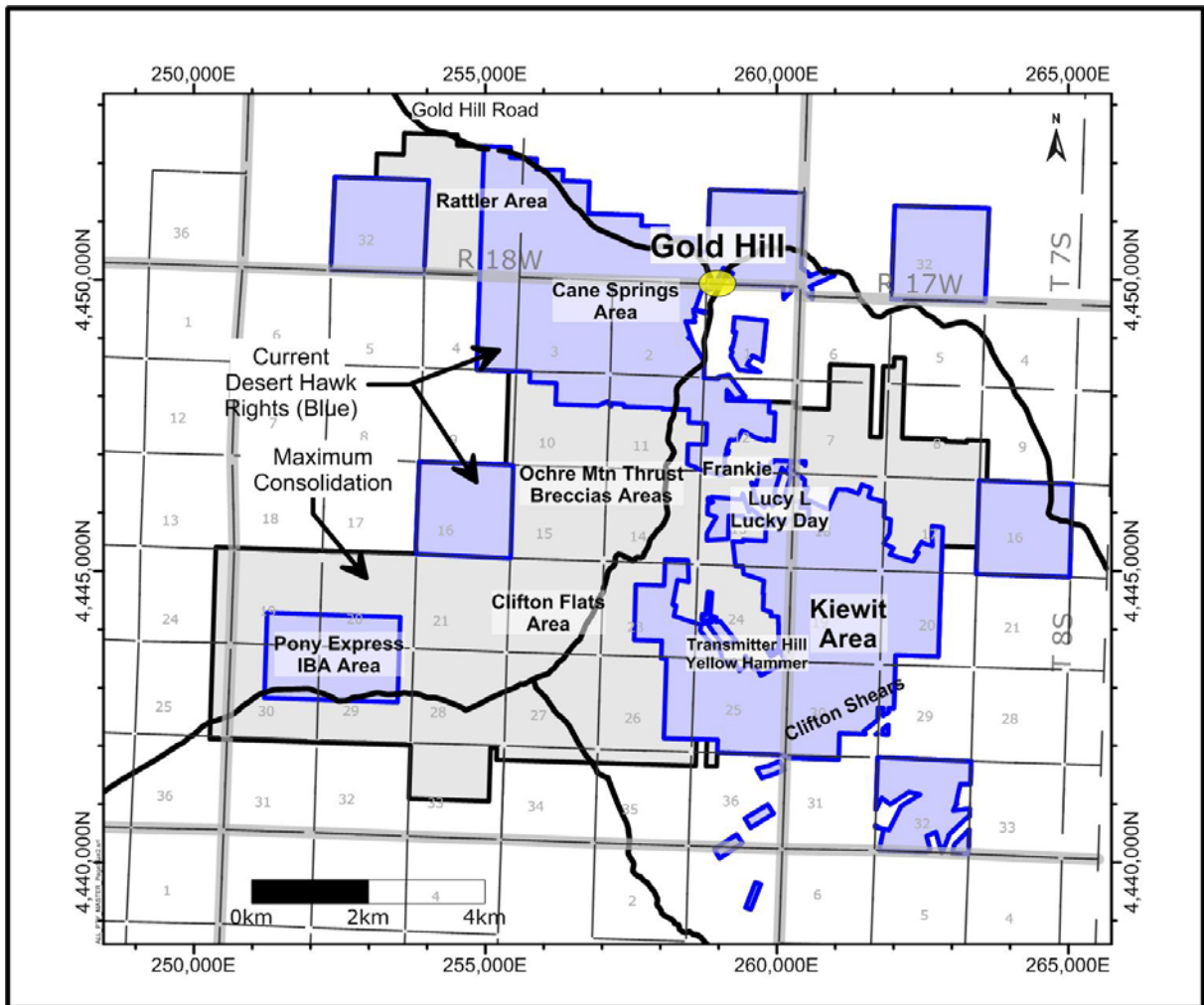
## 4.2 Property Overview

The Desert Hawk Gold Hill property which includes the Kiewit project consists of a two primary leases containing sub-leases for exploration and mining rights on the property held by Clifton Mining and the Moeller Family Trust. The package consists of approximately 342 unpatented Lode and placer BLM claims, 42 patented claims and 5 State of Utah Mineral Leases. This comprises an area of roughly 12,050 acres with the ability to obtain additional area from Clifton Mining who holds roughly 21,000 acres in the District. Figure 4.2 shows the Desert Hawk project area shaded in blue with the maximum consolidation area shown in grey. (The maximum consolidation area combines the rest of the holdings of Clifton Mining, the Moeller Family Trust and other parties in which Clifton or Desert Hawk is currently pursuing acquisition of mining rights). Most of the land holdings for the Gold Hill property are located in T7S R17W, T7S R18W, T8S R17W and T8S R18W in the State of Utah.

The Kiewit project which is the main subject of this report is only a part of the larger Desert Hawk holdings in the district. Other areas of significant exploration potential within the Desert Hawk Holdings are noted on Figure 4.2 and include:

- Rattler
- Cane Springs
- Transmitter Hill
- Clifton Shears
- Yellow Hammer
- Clifton Flats
- IBA or Pony Express
- Ochre Mountain Thrust
- Breccias
- Frankie Mine
- Lucy L
- Luck Day Knob

The Kiewit project is approximately centered at Latitude 40° 07' 00" North, Longitude 113° 49' 40" West UTM Zone, 12T with NAD27 CONUS Datum, which is approximately 4 miles southeast of the old mining town of Gold Hill, Utah. Gold Hill consists of a half dozen homes with electrical power, water and telephone lines. (All of the geospatial information used by Desert Hawk is referenced in UTM coordinates relative to UTM Zone 12T with NAD27 CONUS Datum. The maps and databases used for this report and Desert Hawk's work were consolidated during 2002-2003 by Dumont from State of Utah and BLM digital GPS product libraries using UTM Zone 12T with NAD27 CONUS Datum. Although the State of Utah and the BLM has since migrated to NAD83, no changes have been made to the extensive database produced by the former operator, Dumont at the property.)



**Figure 4.2 Desert Hawk Gold Minerals Land Holdings**

The Kiewit project area itself consists of four separate exploration areas labeled: Rainbow Hill, Mid-zone, the Kiewit Historic Gold Zone (or Hangover Hill) and the Kiewit South Zone. Figure 4.3 shows the Kiewit project area and its exploration areas in relation to the town of Gold Hill.



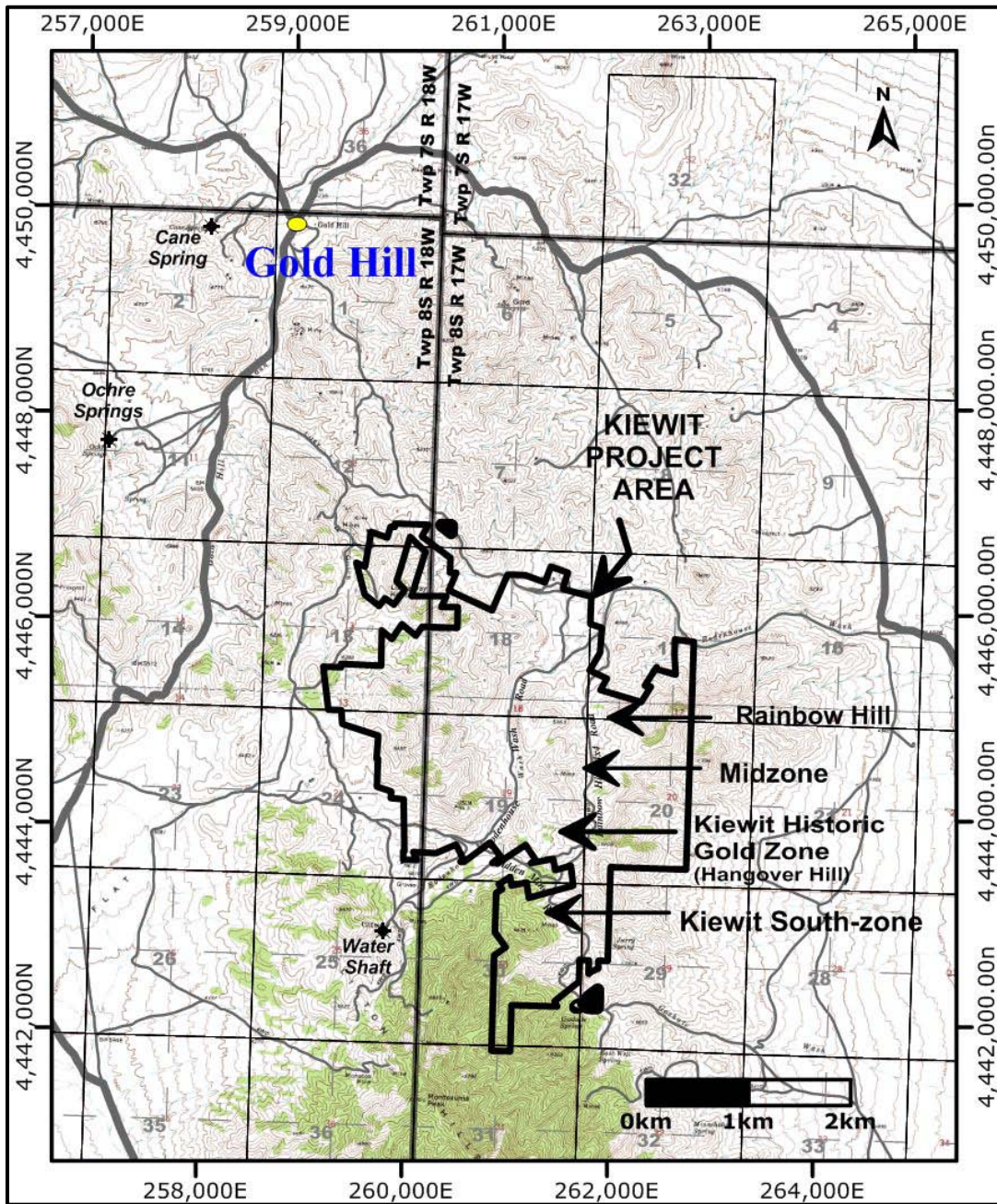


Figure 4.3 Kiewit Project Areas

### 4.3 Property Ownership

The following information on the property has been provided by Desert Hawk and Clifton. The author has reviewed and discussed property titles and property title opinions with Desert Hawk and Clifton but, has relied upon their representation. The author is not qualified to express any legal opinion with respect to the property titles, current ownership and possible encumbrance status, and therefore, disclaim direct responsibility for such titles and property status representations.



From 2002 to 2006 Dumont assembled a property package consisting of approximately 33 square miles or 21,000 acres of State of Utah Mineral Leases, Patented Claims and Unpatented federal claims for exploration and exploitation in the Clifton-Gold Hill Mining District. The Property is a combination of several mineral properties that are held separately by Utah-based Clifton Mining Company ("Clifton"), the Woodman Mining Company ("Woodman"), an affiliate corporation controlled by Clifton, and by Dumont Mining Company ("Dumont"), a Utah-based wholly-owned subsidiary of Dumont Nickel. The mineral properties were subject to the terms of an Option/JV Agreement (the "Utah JV"), dated December 6, 2002, between Dumont, Clifton and Woodman, under Dumont's operatorship, but held and maintained by their respective owners on behalf of the Utah JV. Additional projects or properties acquired by any of the parties within a 5-mile envelope around the Property became subject to the terms of the Utah JV.

The property package assembled by the under the Dumont-Clifton JV agreement represents 4 square miles originally held by Clifton-Woodman and 29 square miles of additional land staked or acquired by Dumont. Dumont held 781 BLM claims and 5 ten-year mineral leases and Clifton held 68 BLM claims, 27 patented claims, 2 ten-year mineral leases while Woodman held 10 patented claims.

Late in 2006 and 2007, Dumont elected to end their exploration efforts in the Clifton-Gold Hill area and, at that time, the property rights of Dumont's holdings reverted to Clifton and Woodman after Dumont fulfilled their reclamation obligations for exploration disturbance as per their JV agreement.

In 2009, Desert Hawk entered into a Lease and Sublease agreement to acquire the rights to explore and exploit minerals from the 33 square miles within the Clifton and Woodman holdings. In addition they also entered into an agreement with The Moeller Family Trust for mining rights on their 13 patented and 3 unpatented mining claims and any possible future acquisitions by the Trust in the Clifton-Gold Hill area.

In addition, Clifton has also included its 250 ton per day gold mill (Cactus Mill), related equipment near Gold Hill and a few of its houses and facilities in Gold Hill for use by Desert Hawk as part of the lease agreement.

Figure 4.2 shows the Land Position of Clifton Mining and Moeller Family Trust around the town of Gold Hill within the Clifton-Gold Hill Mining District which is indicated by the shaded area. The portion of this land currently under lease agreement with Desert Hawk is shaded in blue. A full listing of the claims and leases under the Desert Hawk agreement is contained in Appendix A.

#### **4.4 Royalties**

Desert Hawk Gold has a production royalty obligation on all properties that it has rights to explore and exploit. Table 4.1 outlines the NSR production royalty for the Clifton and Woodman agreement. On the State of Utah Mineral Leases, these NSR royalties are in addition to any payment to the State of Utah. The NSR production royalty for the Moeller Family Trust agreement was modified in 2010 and it is shown in **Error! Reference source not found.**

| <b>Table 4.1<br/>Desert Hawk Royalty Structure</b> |                      |                    |
|--|----------------------|--------------------|
| <b>Metal</b>                                       | <b>Selling Price</b> | <b>NSR Royalty</b> |
| Base Metals  | NA                   | 4%                 |
| Gold   | < \$800 / oz         | 2%                 |
|  | \$800-\$999          | 4%                 |
|  | \$1000-\$1249        | 8%                 |
|  | \$1250-\$1499        | 12%                |
|  | >= \$1500            | 15%                |
| Silver   | < \$12.00 / oz       | 2%                 |
|  | \$12.00 - \$14.99    | 4%                 |
|  | \$15.00 - \$19.99    | 8%                 |
|  | \$20.00 - \$24.99    | 12%                |
|  | >= \$25.00           | 15%                |
| Kiewit Property                                    |                      | 6%                 |

| <b>Table 4.2<br/>Moeller Family Trust Royalty Structure</b> |                      |                    |
|---|----------------------|--------------------|
| <b>Metal</b>  | <b>Selling Price</b> | <b>NSR Royalty</b> |
| Base Metals and Silver                                      | NA                   | 6%                 |
| Gold  | < \$800 / oz         | 2%                 |
|   | \$800-\$999          | 4%                 |
|   | \$1000-\$1249        | 8%                 |
|   | \$1250-\$1499        | 12%                |
|   | >= \$1500            | 15%                |
| Silver  | < \$12.00 / oz       | 2%                 |
|   | \$12.00 - \$14.99    | 4%                 |
|   | \$15.00 - \$19.99    | 8%                 |
|   | \$20.00 - \$24.99    | 12%                |
|   | >= \$25.00           | 15%                |

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

### 5.1 Access

The Kiewit Project Area is reached by taking Alternate 93A south from Wendover a town on the Utah and Nevada border. Approximately 24.5 miles south of Wendover take the Ibapah Road turnoff and then travel southeast on this road for approximately 17 miles to the Gold Hill Road turn-off. The Ibapah Road is a paved two-lane road that services the settlements of Ibapah and Goshute situated southwest of the Project Area. The Gold Hill Road leads to the town of Gold Hill, approximately 12 miles from the turnoff.

The Gold Hill road is a well-groomed, all-weather gravel road. The project area can be reached either from Gold Hill to its north, or from the Pony Express Canyon Road to its south by a series of roads and trails which, though unmaintained, are generally in good condition and easily negotiable by 4-wheel drive vehicles. Figure 5.1 shows the local access to the property from Wendover.

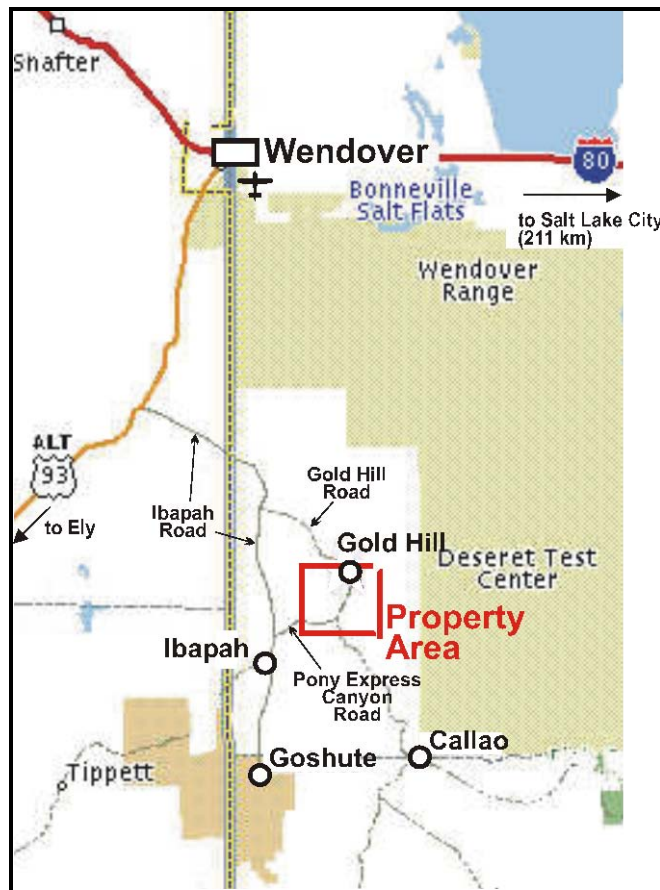


Figure 5.1 Access to the Gold-Hill properties (from ACA Howe, 2003)

## **5.2 Climate**

The climate is typical of middle latitude, semiarid lands where evaporation potential exceeds precipitation throughout the year. The Sierra Nevada Mountain Range (Sierras) to the west effectively limits the flow of Pacific moisture into the Great Basin. The climate of the Clifton-Gold Hill area is that of the Basin and Range: typically arid with hot, dry summers and cold, dry winters. Annual precipitation averages 12 inches. Approximately half of this amount falls between February and May. Rainfall during the summer and early fall is in the form of severe thunderstorms and showers. During the winter snowfall is generally light and seldom reaches depths of more than a foot though snowstorms can be expected between the months of October and May.

## **5.3 Local Resources**

The town of Gold Hill is a very small town with a limited population of less than 20. Groceries, shopping, fuel, etc. are typically purchased in Wendover which is approximately 55 miles from Gold Hill.

## **5.4 Infrastructure**

The Desert Hawk Kiewit Project is located in the middle of a historic mining district and is only a few miles from Gold Hill. Gold Hill is a small town consisting of a few full time residents and the Clifton Mining Cactus mill. There are full communications (including telephone, cell reception and high speed internet) and utilities in the town of Gold Hill which is adequate to service a small mine and heap leach operation. Gold Hill town site is on the Utah electrical power grid and a power transmission-line follows the county road approximately 2.5 miles east of Kiewit Historic Gold Zone. Currently there are no utilities at the Kiewit area.

Domestic water for the town of Gold Hill is piped from Ochre Springs approximately 2 miles southwest of Gold Hill.

A limited skilled mine and mill workforce is already located in the area to run the Cactus mill. The property is in close proximity to Wendover where additional workforce is available and where many mine and industrial suppliers typically service other mines in the area.

## **5.5 Physiography**

The Clifton-Gold Hill Property lies in the east central part of the Great Basin section of the Basin and Range province and is characterized by highly dissected hills of relatively low relief. The town of Gold Hill just north of the Property has an elevation of approximately 5,321' a.s.l. The area is bounded on the east by the Great Salt Lake Desert (elev. 4,300'), on the north by Dutch Mountain (elev. 7,735'), on the west by the Clifton Flat (elev. 6,600') and on the south by Montezuma Peak (elev. 7,369'). The relatively low hills surrounding the ghost town of Clifton at the south end of the Property merge westward into the Ochre Mountains that have an elevation of 7,541'.

The soils and vegetation of the Clifton-Gold Hill area are those typical of the Basin and Range consisting of sagebrush and grasslands. The soils generally are well drained. The vegetation is abundant sagebrush with sparse trees. Figure 5.2 contain two photographs showing the typical terrain and vegetation of the area.



**Figure 5.2 Clifton-Gold Hill District Typical Terrain and Vegetation**



## 6.0 HISTORY

### 6.1 Early Clifton-Gold Hill Mining History

Historically, the Gold Hill area has had extensive mining activity dating back to the late 1800's. Around 1857, galena-rock samples attracted the attention of California settlers travelling through Overland Canyon or the Pony Express Canyon Road (see Figure 5.1) with some staying to prospect for minerals. As a result the town of Clifton and the Clifton-Gold Hill Mining Districts were established. Placer gold was discovered in Gold Hill in 1858, but prospectors were hindered by repeated Indian attacks and the area was abandoned.

In 1872, a lead smelter was constructed at Clifton and 1,500 tons of high-grade lead-silver ore were treated. The smelter at Clifton was moved to Gold Hill in 1874 where an additional 500 tons of ore from the Western Utah Copper Company were treated. The mining boom in Gold Hill began in 1892 when Col. J.F. Woodman built a new mill and smelter at Gold Hill and extracted some US \$300,000 in gold and silver ore between 1892 and 1896. El-Shatoury and Whelan (1970) report that the Cane Springs Consolidated Gold Mining Company built an amalgamating mill for treating ores mined from the Cane Springs and Alvarado mines. It is likely that this mill and the one constructed by Col. Woodman are one and the same. The mill was in operation for 23 months between 1892 and 1895. The average grade of ore treated in the mill is reported to have averaged \$20-30 per ton in gold. Total reported net receipts from bullion and concentrate from the Cane Springs Mine are reported to be \$117,900.

A 1920 report estimates the district's gross ore production between 1892 and 1917 was \$951,800 in gold, silver, copper, and lead (The Mining House, 1991). Some 3,000 residents lived in Gold Hill and Clifton during this time. Tungsten production in the district began in 1912 with commencement of the Lucy L Mine. El-Shatoury and Whelan (1970) estimate that approximately 500 tons of ore; grading 1% scheelite (tungsten) was produced from the mine. Significant amounts of gold and bismuth were also reportedly extracted. Tungsten was also produced from the Reaper and Yellow Hammer mines. Production began at these two mines in 1914 and 1917. Both were operated largely for the strategic requirement of tungsten during the world wars.

The Second World War seriously impacted precious metal mining in the district. Gold and silver mining ceased altogether during the Second World War as the few remaining miners focused on producing strategic metals such as tungsten and arsenic for the war effort. Arsenic production in the district began in with the outbreak of WWI. Arsenic was then used for pesticides in the cotton fields of the south. Two former copper producers, Western Utah Copper Company's Gold Hill Mine and the U.S. Smelting, Refining and Mining Company's U.S. Mine produced arsenic between 1923 and 1925. Both mines shut down in 1925 due to low arsenic prices. The U.S. Mine reopened during World War II with production estimated to have been 98,724 tons grading 15.2% arsenic.

Nolan (1935) began a geological study of the Gold Hill area in 1925 after topographic surveying of the area had been completed. The report was published in 1935 as U.S. Geological Survey Professional Paper 177. This comprehensive report is considered to be one of the definitive works on the area. The district remained largely dormant during the period following the Second World War to the mid-1970's primarily because the highly fragmented land tenure precluded any serious regional-scale study or exploration, and low metals prices.

Additional historic information of the major mines within the Clifton-Gold Hill District can be found in either Nolan (1935) or Lee (A.C.A Howe, 2003). Some of the historic major producers in the District included:

- The Cane Springs Mine (1892-1935)
- Clifton Shears (late 1800's to early 1900's) – includes numerous tunnels, pits and shafts including the Hidden Mine, Southern Confederate, Yellow Cougar, etc.
- Alvarado Mine
- Frankie Mine
- Heart-Smelter Tunnel
- Monocco Mine

## **6.2 More Recent District Exploration Activities**

(The following history has been provided by Clifton Mining and was mostly extracted from Lee (A.C.A Howe, 2003) and Trinder (2004)).

Since the 1980's, several mining companies have conducted various exploration activities within the Clifton-Gold Hill Mining district from drilling, geophysical studies, soil sampling, chip sampling to just general assessment of the mineral potential. Some of the more prominent companies involved in the district during this period include:

- Cambior
- Cameco. USA
- Felmont Oil
- Goldstack Resources
- Bear Creek Mining
- Pegasus Gold Corp.
- Asarco
- Noranda
- Plexus Mining
- Kiewit Mining
- Superior Oil
- Kennecott
- Anaconda
- Barrick-Mercur
- Placer Dome
- Phelps Dodge
- Homestake

During 1980 and 1981, American Consolidated Mining Company ("ACMC"), the predecessor affiliate of Clifton began consolidating the fragmented land holdings in the Gold Hill area with the intent to assemble a sizeable, contiguous property package on which to conduct regional-scale exploration. ACMC assembled a near-contiguous, 7,000 acre, property package of approximately 45 patented claims and 299 unpatented claims that included the Yellow Hammer, Reaper, and Lucy L mines, the Bridge Veins, Beryllium Veins, Kiewit Zone and Clifton Shears.

In 1981, ACMC completed an extensive IP survey over the Clifton Shears, which readily identified the shears (Clifton, 1993).

In 1983, A portion of the Clifton property was optioned to LG Trading Company in 1983 (Clifton, 1993). A total of 4,219 feet of diamond drilling was completed by the LG Trading Company in the

lower Clifton area in what was labeled the Atlantis Vein area. One hole, 2,001 feet in length, reportedly intersected numerous quartz-carbonate veins at depth. No assay work was completed on the core but visual inspection of the core reportedly showed the presence of a broad zone of prophylic alteration extending to a vertical depth of 1,730 feet.

In 1984 Superior Oil Company conducted a limited VLF-EM ground survey consisting of 295 stations at 100ft intervals on their Hog claims in the Little Valley area. The purpose was to attempt to define mineralization intersected in their drill hole 83-4. The survey lines were extended to the southwest to cover the Ochre Mountain thrust.

In 1984, ACMC conducted a leach test of material from the Clifton Shears using a leach pad constructed in the lower Clifton area (Clifton, 1993). Approximately 3,000 tons of material from various mine dumps, the Herat Mine-Smelter Tunnel, and lower Clifton veins (100 Foot Shaft Vein, 30 Foot Shaft Vein and others) was leached. The leach test concluded that area material is amenable to leaching.

In 1989, ACMC completed 28-inclined reverse circulation drill holes to depths of 185-350 feet in the granodiorite (Clifton, 1993). Sampling reportedly returned 0.03-0.1 oz. Au/T over the length one of the holes (250 feet). These grades were obtained using a Wilfrey table. Fire assay returned negligible results.

In 1991, The Mining House (1991) completed a review of the historical records and exploration potential of the properties for ACMC.

From 1992 to 1997, Kennecott conducted an exploration program over the IBA claim group in the Pony Express Canyon area to locate a porphyry copper target based on soil anomalies.

In 1992 Goldstack Resources Ltd ("Goldstack") optioned the property and commissioned Dighem Surveys to complete an airborne geophysical survey over the area and G.J. Gossan (1992) to conduct an independent review of the of the properties on their behalf. Gossan (1992) recommended exploration programs for a number of ACMC's properties and showings including the Yellow Hammer and Reaper mines, the Bridge veins, Kiewit Zone and the Clifton Shears. Goldstack conducted reconnaissance work over much of the property area and also defined a gold resource at the Kiewit Zone.

In 1993 ACMC transferred portions of its property, the Herat Mine-Smelter Tunnel and Clifton Shears, to Clifton Mining Company, a Utah-based company formed for the purpose of funding and developing the two areas. Clifton began exploration of the Clifton Shears with an aim to bringing the larger of the shear veins into production.

Goldstack eventually dropped its option following a decline in metal prices in 1993. During 1996 and 1997, cost overruns and burdening debt at ACMC's Yellow Hammer operation forced ACMC to give up ownership of its properties to its creditors.

### **6.3 History of the Kiewit Project**

The Desert Hawk Kiewit project lies within the Kiewit Structural Zone discovered in 1962 by Vanguard Research Company while exploring for beryllium in the Clifton-Gold Hill District. Rock chip sampling by Vanguard returned gold grades ranging from 0.02 oz Au/ton to 16 oz Au/ton. Out of 62 samples, 13 returned gold contents between 0.1 to 0.88 oz Au/ton and 3 returned >1.0 oz Au/ton. A review of pertinent exploration activity over the Kiewit Historic Gold Zone and vicinity is as follows:



During 1980 and 1981, American Consolidated Mining Company ("ACMC") assembled a nearly contiguous, 7,000 acre, property package from the fragmented land holdings in the Gold Hill area with the intent of assembling a sizeable, contiguous property package on which to conduct regional scale exploration. The claims included the Yellow Hammer, Reaper, and Lucy L mines, the Bridge Veins, Beryllium Veins, the Clifton Shears and the Kiewit Historic Gold Zone and vicinity.

In 1990, ACMC optioned the area known as the Kiewit Historic Gold Zone to the Peter Kiewit Company which carried out regional sampling and mapping as a follow-up to work conducted by Vanguard Research Company in 1962 and ACMC in 1989.

In 1992, Goldstack Resources Ltd ("Goldstack") optioned most of ACMC's claims and commissioned Dighem Surveys to complete an airborne geophysical survey over the area. G.J.Gossan (1992), commissioned to conduct an independent review of the properties, recommended exploration programs for a number of ACMC's properties and showings, including the Kiewit Historic Gold Zone). Goldstack completed surface sampling, mapping, 16 reverse circulation drill holes, and one diamond drill hole on the Historic Kiewit Zone. All 17 drill holes returned "anomalous" gold grades.

Some of the more significant drill results from Goldstack's work are summarized by consultants Behre Dolbear & Company (1996) in a review of historical exploration data. Behre Dolbear concluded that the zone had potential for 5+ million tons of mineralized material at grades between 0.02-0.04 ounces gold per ton. Behr Dolbear also concluded that many of Goldstack's holes were incorrectly oriented as a result of insufficient geological information and control and that many of the holes were drilled down the dip of mineralized thrust zones.

In 1993, ACMC transferred portions of its property to its affiliate Clifton Mining Company. Subsequently both ACMC and Goldstack unsuccessfully attempted to acquire additional holdings.

Goldstack dropped its option in 1993 following a decline in metal prices.

During 1996 and 1997, ACMC was forced to give up ownership of its properties due to fiscal problems. ACMC was also forced to give up ownership of the Kiewit Historic Gold Zone and vicinity to IMM-Dworkin Holdings Ltd under a settlement.

In December 2002, Clifton Mining Company and Woodman Mining Company, an affiliate under Clifton's control, optioned their collective Properties in the Clifton-Gold Hill Mining District to Dumont.

In 2002 and 2003, Dumont directly acquired, by staking, additional BLM lode claims in the District and in the vicinity of the Kiewit Historic Gold Zone.

In December 2003, Dumont acquired the 82 claims comprising the Kiewit Historic Gold Zone and vicinity from IMM-Dworkin Holdings Ltd.

In 2008, Clifton Mining obtained rights to Dumont's unpatented mining claims, State of Utah mineral lease and other acquisitions as a result of the termination of the JV agreement by Dumont.

## **7.0 GEOLOGICAL SETTING AND MINERALIZATION**

*Adapted from the Geological Setting section in the A.C.A. Howe report #854, Lee (2004) and the District and Kiewit Project Area Geology section in the Geology of the Kiewit Historic Mineralized Zone report Sabag, Tinder and Robinson, 2006*

### **7.1 Regional Geology**

The Desert Hawk Clifton-Gold Hill Property lies in the east central part of the Great Basin section of the Basin and Range province. In eastern Nevada and western Utah the Great Basin is characterized by north-south trending fault-block ranges composed primarily of Paleozoic carbonate assemblage rocks that comprise the Cordilleran Geosyncline. The Great Basin is bounded on the west by the mid-Paleozoic Antler Orogenic Belt, on the south by the Las Vegas shear zone, and on the east by the Colorado Plateau.

The geology and metallogeny of the Great Basin- including that of the Gold Hill- area are inexorably tied to the tectonic evolution of the Great Basin. Two principle facies of the Cordilleran Geosyncline are recognized. The miogeosyncline assemblage in Utah and Nevada consists of a thick sequence of Paleozoic limestone, dolomite, clean sandstone and minor shale. Within and west of the Antler Orogenic Belt, Paleozoic shales, wacke, chert and volcanic comprise the eugeosynclinal assemblage. East of the geosyncline in the central Wasatch Range and on the Colorado Plateau, the miogeosynclinal carbonate sequences are drastically thinned and discontinuous.

The Paleozoic sections of the miogeosyncline, eugeosyncline and adjacent shelf areas are obscured by major thrust faults that have displacements in the order of tens of miles. Eugeosynclinal rocks have been thrust over miogeosynclinal rocks in western and central Nevada, and miogeosynclinal rocks have been thrust over thin shelf facies in southeastern Nevada and western Utah. The present-day geographic distribution of the various rock assemblages does not represent their distribution at the time of deposition.

#### **7.1.1 Paleozoic (543-248 Ma) Tectonic Events**

Sedimentation in the Cordilleran miogeosyncline began before the appearance of Cambrian fossils and continued with little or no orogenic interruption or disruption through to the Jurassic. Present-day Utah was the western edge of North America at that time. The eastern portion of the state was a low plain with little relief and sedimentation in the miogeosyncline was dominated by the precipitation of dolomite during the Ordovician and Silurian, and limestone during the Mississippian. The Oquirrh basin developed in northwestern Utah during the Mississippian and within it large quantities of limestone were deposited, including the Ochre Mountain Limestone, which underlies much of the project area.

Only one, very local, distinct angular unconformity is known- the Stansbury Anticline- that formed during the Devonian in north-central Utah. From very late Devonian time to late Pennsylvanian the Antler Orogeny to the west affected sedimentation in Nevada and western Utah by bringing in clastic sedimentation in the form of wackes and siltstones.

#### **7.1.2 Mesozoic (251-65 Ma) Tectonic Events**

Triassic (or early Jurassic) sediments represent the last depositional events in the Cordilleran miogeosyncline. During Middle Triassic time, marine waters withdrew as a result of Antler Orogeny

deformation (rising mountains) in the west. During the Early Jurassic, ongoing deformation and regional metamorphism in the western part of the miogeosyncline effectively shifted areas of sedimentation eastward onto the Colorado Plateau. The Triassic-Jurassic boundary is marked by eolian sand deposits that accumulated in the miogeosyncline that are known as the Navajo Sandstone. Ancient sand dunes from this formation are well exposed at Checkerboard Mesa in Zion National Park in the south.

During the Middle to Late Jurassic, a broad, shallow back-bulge basin, the Arapien Basin, developed in central Utah. The basin was covered by a shallow sea, tidal flats, sabkhas (flat evaporating pans), and coastal sand dunes (Twin Creek and Pruess Formations in northern Utah; Twin Creek, Arapien, and Twist Gulch Formations in central Utah; Carmel, Entrada, Curtis, and Summerville Formations in east-central and southern Utah), and later, by broad, low-elevation river floodplains (Stump and Morrison Formations in northern Utah, Morrison Formation in central and southern Utah, among others).

By Late Jurassic to Early Cretaceous, Utah was mostly a fore-bulge high (the Sevier Orogenic Belt), the result of major thrust faulting and folding occurring across western Utah that marked the beginnings of the Sevier Orogeny. East of the thickened crust that resulted from the thrust faulting a wide foreland basin formed that was deep enough to be flooded by the ocean. During much of the Late Cretaceous, a wide interior seaway ran north-south across North America from what is now the Arctic Ocean to what is now the Gulf of Mexico. Syn-orogenic sedimentation off the Sevier Orogenic Belt into the foreland basin produced an unconformity beveled across much of the Jurassic strata. Volcanic activity during this time was closely associated with metalliferous mineralization in the Property area.

The Sevier Orogeny is characterized by large-scale décollement thrust faulting from west to east along westward dipping thrust faults with displacements of up to 25 to 30 miles, or, in some cases, more than 50 miles. The folding and thrusting associated with the Sevier Orogeny was largely restricted to the Paleozoic and Mesozoic sedimentary cover and is known as 'thin-skinned' tectonics since only the overlying sedimentary cover (or skin) of the craton is deformed. The Sevier Orogeny peaked during the Late Cretaceous when most of the major thrust plates were emplaced. In general, thrust plates in the eastern part of the Sevier Orogenic Belt weren't moved as far as western plates. Eastern plates also tended to be thinner and deformed into folds of smaller amplitude between wider spaced thrust faults than the thicker western plates.

Syn-orogenic sedimentation also peaked during the Late Cretaceous. Sediments deposited in the foreland basin of the Sevier Orogeny grade eastward from coarse conglomeratic beds (exposed along Interstate 180) into fluvial sandstones and shales, coastal-plain and deltaic deposits and finally into shallow-marine sands, muds, and clays (parts of the Mancos Shale of central and southern Utah, and most of the Frontier Formation and the Hilliard Shale north of the Uinta Mountains).

### **7.1.3 Tertiary (65-1.8 Ma) Tectonic Event**

By the end of the Late Cretaceous, the eastern portion of Utah was covered by an inland sea stretching from the Gulf of Mexico to the Arctic. Paleocene erosion and sedimentation from the west filled the inland sea to the east. Tertiary strata of the eastern Great Basin and adjacent Colorado Plateau can be subdivided into three major groups. The oldest is composed of non-volcanic continental sediments- scattered Paleocene and Eocene fluvial and lacustrine deposits. The middle group consists of widespread intermediate to acidic volcanics, chiefly ignimbrites of Late Eocene, Oligocene and Early Miocene age. The youngest group, Miocene to recent, is a heterogeneous collection of discontinuous clastic units, volcanic-rich sediments, volcanics, and lacustrine sediments.

Thrusting in the Sevier Orogenic Belt had virtually ceased by the time the Laramide Orogeny began east of the Sevier Belt in the late Cretaceous and Early Cenozoic. Rather than folding and thrusting, the Laramide Orogeny generally involved the uplift of great blocks of crystalline basement along east dipping reverse faults. The Sevier Orogeny defines a deformational event that took advantage of weak bedding planes in thick Paleozoic and Mesozoic sedimentary assemblages. Compression (shortening) of the crust was manifested tens of miles eastward along the weak sedimentary layers, producing "thin-skinned" thrust faulting of the overlying sedimentary strata. By contrast, crustal shortening during the Laramide Orogeny produced "basement-cored" uplifts because the thin sedimentary rock in uplifted areas did not easily "decouple" from the basement rock, having been "locked" together by the thrusts and folds from the previous orogeny. Because Laramide deformation involves deeper parts of the crust, the style of orogeny is known as "thick-skin" tectonics. The Uinta Arch, which intersects the Sevier Orogenic Belt almost at a right angle and divides the Sevier thrust belt into the Wyoming Salient in the north and the Charleston-Nebo Salient in the south, is one of the basement uplifts closely involved with the deformation of the Cordilleran Geosyncline. Large intermontane basins formed between the uplifted blocks allowing for the formation of lakes such as Lake Flagstaff and Lake Uinta.

During the Oligocene, tectonic forces began to change from a compressional regime to an extensional one. The beginning of extensional activity throughout western Utah marked the beginning of extensive volcanic activity as well. Oligocene igneous activity produced intrusive rocks in northern Utah, the intrusions that form the Henry, La Sal, and Abajo Mountains in southern Utah, and volcanoes in southwestern Utah. The majority of Utah's copper is thought to be associated with an Oligocene-age intrusion in the Bingham Mining District, west of Salt Lake City.

Continued extension during the Miocene resulted in faults changing from reverse and thrust faults to normal faults that effectively separated uplifted mountain blocks from down-dropped basins to form the Basin and Range topography. It is believed that the volcanic activity during this time was closely associated with metalliferous mineralization in Dutch Mountain area just north of the project area.

#### **7.1.4 Quaternary (1.8 Ma - Present) Tectonic Events**

The Pleistocene was characterized by extensive glacial activity in the Uinta Mountains and several other mountain ranges throughout the state. During this time, a giant fresh-water body called Lake Bonneville was also formed. At present, basin and range faults continue to be active. Volcanism was commonplace in western Utah as recently as 660 years ago. The Great Salt Lake and Great Salt Lake Desert are all that remain of ancient Lake Bonneville.

### **7.2 Project Geology and Mineralization**

The Kiewit Structural Zone is in the southeastern part of the Clifton-Gold Hill Mining District in the east central part of the Great Basin section of the Basin and Range province. In eastern Nevada and western Utah the Great Basin is characterized by north-south trending fault-block ranges composed primarily of Paleozoic carbonate assemblage rocks that comprise the Cordilleran Geosyncline. The Great Basin is bounded on the west by the mid-Paleozoic Antler Orogenic Belt, on the south by the Las Vegas shear zone, and on the east by the Colorado Plateau.

The Gold Hill area hosts lithologic units ranging from Cambrian in age through to the Quaternary including six Paleozoic sedimentary formations of Carboniferous-age from the Cordilleran miogeosyncline that underlie the property area (Nolan, 1935). Geology of the Clifton-Gold Hill Mining District is dominated by a large Jurassic granodiorite stock intruding Carboniferous sedimentary package consisting of carbonates (limestone and dolomite) and lesser clastic sequences notably shale and quartzite. The contact between the granodiorite and sediments is clearly intrusive at many

localities, though it is locally less obvious and is a post intrusive fault contact or localized detachment. Other lithologies in the District include silica breccias, jasperoids, and assorted (locally tuffaceous) volcanics. Minor, small, intrusive plugs and dikes of probable Tertiary age also occur in the area.

Most of the present day surface is covered with colluvial slope wash and the canyons and narrow washes have alluvial fill of various thickness.

The Ochre Mountain Thrust is dominant in the western half of the District, presenting an "upper" and "lower" plate configuration, with localized complex over thrusting.

Prior to Dumont's work, the most comprehensive geological mapping for the District is that by Nolan dating back to 1935. This publication provides good descriptive detail of localities, geological units, historic mines and structures (Nolan 1935). More recent geological correlation across the north half of the District is that by J.P. Robinson (Robinson 1993) which augments Nolan 1935, with a more "modern" nomenclature of formations and lithologies with some attempts to harmonize the same with geologic nomenclature from neighboring Nevada.

Geology and exposures over the Kiewit Historic Gold Zone are dominated by stockworked and veined granodiorite. A thin section of overlying sedimentary rocks are, however, present overlying the northern part of the Gold Zone. The stockworked material consists of a number of phases which are regarded as a lithologic package for the veining hosting the Gold Zone.

Nolan (1935) recognizes the Ochre Mountain Limestone as a stratigraphic equivalent of the Great Blue Limestone in central Utah. The significance of this is the fact that to the east, the Oquirrh Formation hosts the polymetallic replacement deposits at the Bingham Mine and the Great Blue Limestone hosts disseminated gold deposits at the Mercur Mine. Mapping by Nolan (1935) shows the Clifton-Gold Hill project to be underlain the Ochre Mountain Limestone, Manning Canyon and Oquirrh formations. The Ochre Mountain Limestone is by far the most significant, volumetrically speaking, of the three units within the property. Two large igneous bodies intrude the sediments: an Oligocene quartz-monzonite in the northern part of the property and a Jurassic granodiorite in the southern part as shown in Figure 7.1.

### **7.2.1 Ochre Mountain Limestone - *Mo***

The Mississippian-age Ochre Mountain Formation is the oldest sedimentary unit exposed in the Kiewit project area. The Formation is generally thick bedded to massive limestone, dark bluish-grey to blue grey on fresh and weathered surfaces (Robinson, 1993). The Ochre Mountain Limestone is primarily a finely crystalline, massive, micritic limestone. Stringers of thin (less than 3"), light grey to black chert are locally abundant, particularly in the lower portions of the unit. Thin beds of fine-grained arenite and shale that weather pink or pale-yellow are interbedded with the limestone. Outcrops are generally highly fractured and riddled with calcite veins. Bleaching and silicification of the limestone is widespread. Recrystallization of the limestone to massive, white, coarsely crystalline marble (marblization) is common near the intrusions.

Contact-metasomatic skarn alteration of the limestone is also common near the intrusions, identifiable by light-green calc-silicate assemblages consisting of micaceous andalusite hornfels, diopside-actinolite-garnet, and wollastonite-spadaite. Within the property area the thickness of the Ochre Mountain Limestone is estimated to be up to 450 meters. The lower contact of the Ochre Mountain Limestone is commonly a sub-horizontal fault, possibly the Ochre Mountain Thrust Fault or a low-angle normal fault (Robinson, 1993). The result is that within the property area, the Ochre Mountain Limestone occurs as roof pendants atop the Jurassic granodiorite.

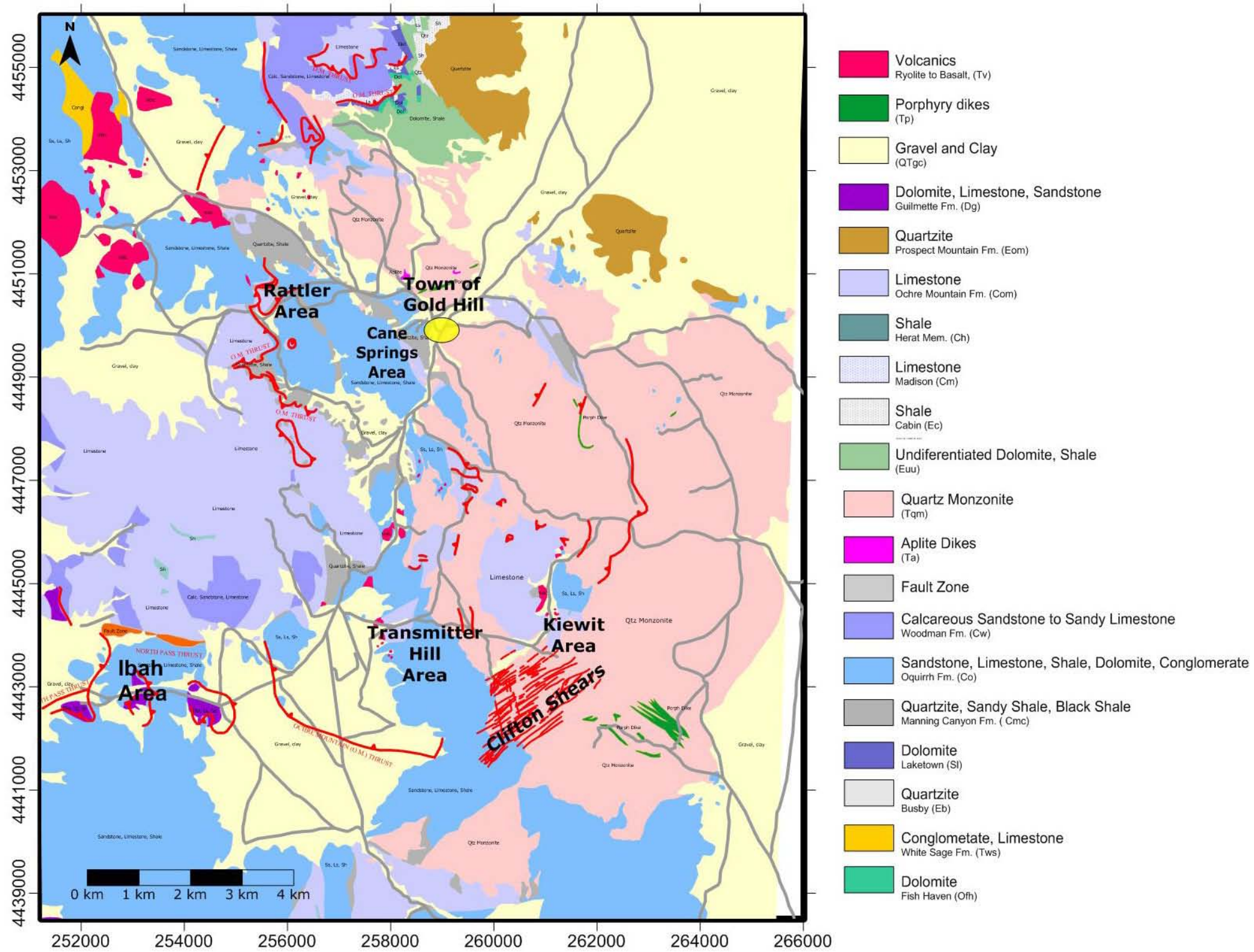


Figure 7.1 Geologic Map of Clifton-Gold Hill District (after Nolan, 1935)

Bleaching and silicification of the limestone is widespread particularly near the intrusions. The lower contact of the Ochre Mountain Limestone is commonly a sub-horizontal fault, possibly the Ochre Mountain Thrust Fault or a low-angle normal fault in the Gold Hill Quadrangle and as such, the true thickness of the unit has yet to be determined (Robinson, 1993).

### **7.2.2 Jasperoid-Silica-Breccia**

Jasperoid-silica-breccias occur throughout the property and are most abundant in carbonate strata, particularly the Ochre Mountain Limestone. The breccias can be seen as linear outcrops along the flanks of hills. The linearity suggests some form of structural control to the origin of the breccias.

Outcrops are usually dark red to black in color (gossanous in appearance), brecciated and vuggy, and contain clasts of unaltered rock. Barite veining within the breccias is also common and best observed in the extensive breccia outcrops of the Enterprise area. Plate 5.1 shows the breccias.

The age of the breccias is unknown. Robinson (1990) interprets them to be a late tectonic feature since there appears to be little relation to bedding. The Mining House (1991) further proposes that the possible structural controls behind the origin of the breccias may also control the more widespread silicification of the Ochre Mountain Limestone. According to Dumont, the breccias are known to locally carry gold.

### **7.2.3 Manning Canyon Formation (Chainman Shale - *Mc*)**

The Upper Mississippian-age Chainman Shale overlies the Ochre Mountain Formation and is composed of quartzite, shale, and intercalated limestone. The Chainman Shale described by Robinson (1993) is equivalent to the Upper Mississippian-Pennsylvanian-age Manning Canyon Formation described by Nolan (1935). The Chainman Shale is a known favorable host to gold mineralization in Nevada.

The Manning Canyon Formation consists of quartzite, shale and intercalated limestone. Due to weathering, quartzite is usually all that remains in outcrop. The quartzite is typically fine to very finegrained, siliceous, dark grey or black. The shale is black, carbonaceous and fissile. Locally the shale develops a slaty cleavage parallel or sub-parallel to bedding and displays a lustrous slip lineation along cleavage planes. The limestone is dark grey, micritic, and thinly bedded. The formation is also known to carry lenses of pebble conglomerate containing clasts of limestone and quartzite. Hornfelsic alteration of the shale is common near the intrusives. In the property area the thickness of the limestone is estimated to be 150 meters.

In the Kiewit area, the Chainman Shale quartzite and shale are present only in very limited outcrop, and are seen as small blocks overlying the Ochre Mountain Limestone west of Rodenhouse Wash. Drilling conducted by Dumont in Rodenhouse Wash has intersected intervals of shale up to 65 meters thick.

### **7.2.4 Oquirrh Formation (Ely Limestone - *Fe*)**

The Ely Limestone overlies the Chainman Shale along a Mississippian-Pennsylvanian unconformity and comprises a heterogeneous unit of limestone, dolomite and sandstone. Robinson interprets that the upper portion of the Ely Limestone is represented in the Kiewit area and comprises cliff forming, thick bedded to massive, coarsely crystalline, dolomitic limestone which is light to dark grey on both fresh and weathered surfaces. The Pennsylvanian-age Ely Limestone described by Robinson (1993) is equivalent to the Oquirrh Formation described by Nolan (1935).



The Oquirrh Formation consists primarily of thin beds of intercalated limestone, dolomite and sandstone. The thick limestone member identified by Nolan (1935) in the western facies is not present in the property area. The limestone is typically a light grey biosparite with local dark grey micritic sections. Dark grey to black chert stringers commonly crosscut the limestone sections. The dolomite is generally coarsely crystalline, thickly bedded, and limey. Sandstone sections are typically fine to medium-grained, calcareous, poorly consolidated, and generally structureless.

The Oquirrh Formation is assumed to conformably overlie the Manning Canyon Formation though this contact has not been observed. In the property area the thickness of the Oquirrh Formation is estimated to be 425 meters.

### **7.2.5 Jurassic Granodiorite - *Grd***

The granodiorite is massive, medium to coarse-grained, and variable in composition from granodiorite to quartz-monzonite. There appear to be distinct quartz-rich and quartz-poor phases within the intrusive giving rise to the suggestion that one intrusive may in fact be several intrusives, possibly of different ages (Robinson, 1993). Immediately adjacent to shears or veining, the granodiorite may exhibit a dark-green alteration that is propylitic in appearance. Documented alteration of the intrusive includes chloritization, sericitization, propylitization, and silicification associated with quartz-carbonate flooding.

### **7.2.6 Oligocene Quartz-Monzonite**

The quartz-monzonite pluton is considerably smaller than the Jurassic granodiorite and occurs in the northern part of the Property. The quartz-monzonite is typically white-pink, medium to coarse-grained and locally porphyritic. Feldspars commonly exhibit a white, chalky appearance due to deuteric alteration.

### **7.2.7 Volcanics**

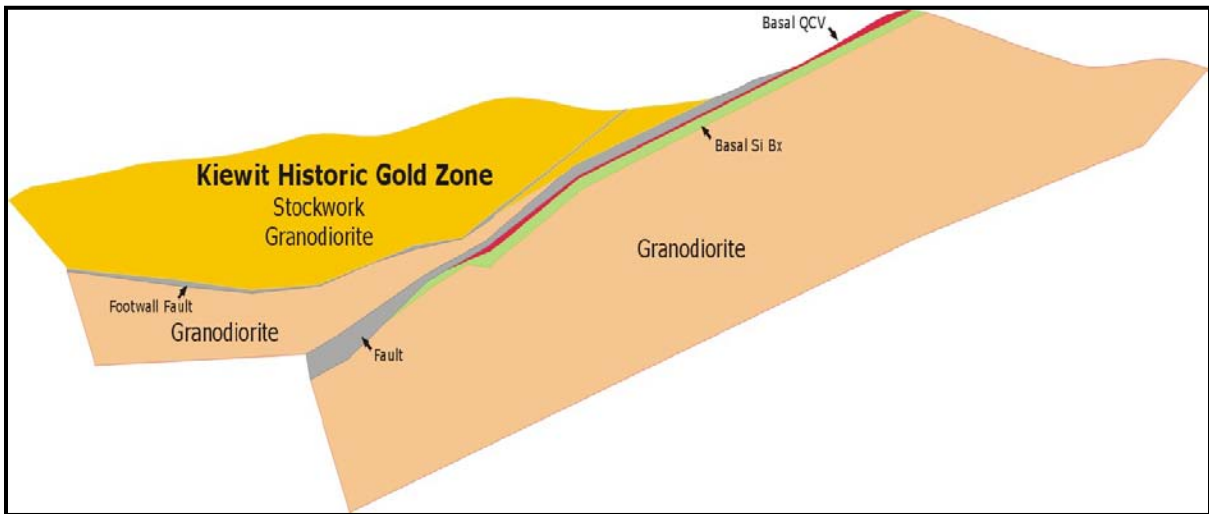
Tertiary felsic to mafic volcanics can be found locally within the property area and include Miocene basalts and felsic to intermediate Miocene (Oligocene?) pyroclastics that are possibly related to the quartz-monzonite. Purple-brown outcrops of the pyroclastics (tuffs and breccias) can be seen along the flanks of the Rodenhouse Wash. Outcrop of basalt occur along the Rodenhouse and Gold Hill washes. Outcrop exposure on the Property is generally good and quite extensive. Noticeable coloration differences of the soil also allow for identification of contacts and, in some instances, lithology from a distance.

## **7.3 Kiewit Geology**

The Kiewit Historic Gold Zone is hosted within the Kiewit Structural Zone, traceable on surface for a distance of approximately 4km across the full length of the Kiewit Project Area and beyond. This structure trends north-north-easterly with a gentle westerly dip ranging 20-30 degrees, often occupying dip-slopes across the area.

The Kiewit Historic Gold Zone comprises a 10m-50m thick, gently westerly dipping gold bearing oxidized quartz stockwork section in granodiorite as shown in Figure 7.2. The Historic Zone is mostly exposed on surface and occupies the dip-slope of Hangover Hill located at the southern part of the Kiewit Project Area. Projected western and northern extensions of the stockworks dip under Carboniferous Sedimentary rocks, although it is ultimately truncated by the Rodenhouse Fault located approximately 750m to the west of Hangover Hill.



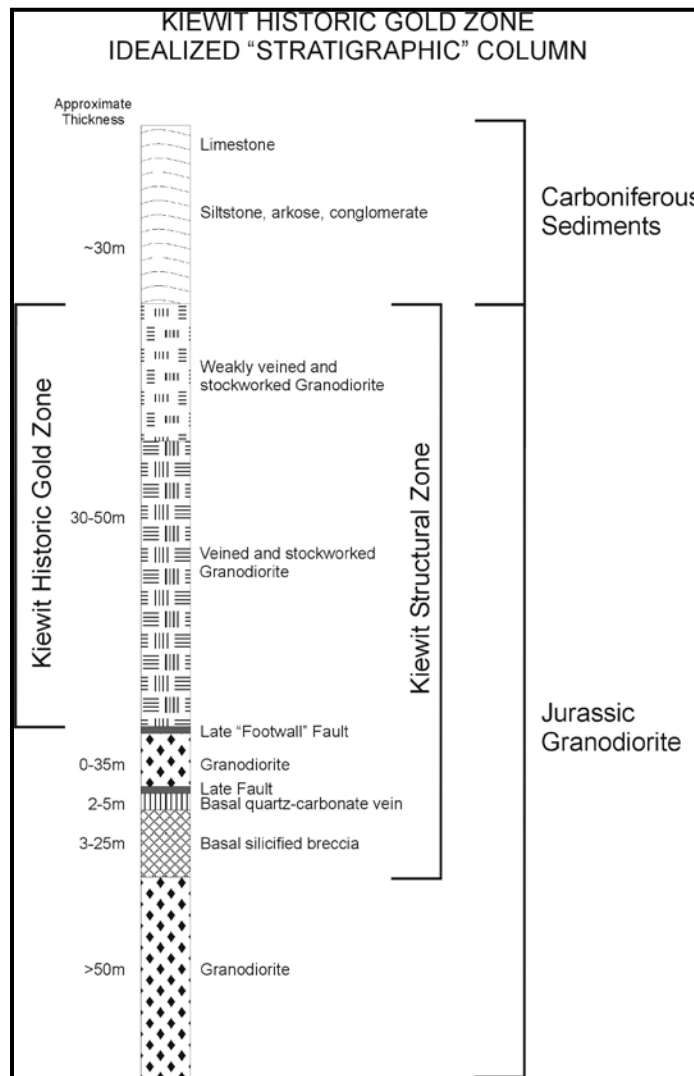


**Figure 7.2 Generalized Cross-Section – Kiewit Historic Gold Zone**  
(From Sabag, Tinder and Robinson, 2006)

The Kiewit Gold Zone is part of a typical low-sulphidation gold bearing epithermal system. It is manifested as a zone of quartz and quartz-carbonate veining and stockworks within the more laterally extensive (4km long, up to 500m wide) Kiewit Structural Zone fault/fracture system which hosts epithermal quartz-carbonate- (adularia) veins.

At the Kiewit Historic Gold Zone, the Kiewit Structural Zone comprises a group of lithologies overlying a major fault zone that is manifested as a 1m-5m thick silica breccia unit in granodiorite as shown in Figure 7.3. A basal 1m-2m thick quartz-carbonate vein overlies this basal silica breccia and is followed up-section by a fault-bounded interval of relatively unaltered granodiorite that forms the footwall of the stockworks section above. At some locations, this footwall granodiorite is absent and the stockwork zone is instead in fault contact with the basal quartz-carbonate vein.

Regardless of whether the footwall granodiorite is present or not, the footwall of the stockwork zone is defined by faulting (clay-rich, with or without gouging), with a north-northeasterly trend and shallow westerly dip. This “footwall” fault overlies, and sub parallels, the “basal” quartz-carbonate vein and silica-breccia of the Kiewit Structural Zone. The “footwall” fault appears to have developed after stockwork and served to juxtapose altered and mineralized rocks of the Historic Gold Zone over relatively unmineralized and fresh granodiorite. The amount of displacement along this fault is unknown and the structure may be regarded as a detachment zone.



**Figure 7.3 Kiewit Area Idealized Stratigraphic Column**  
(From Sabag, Tinder and Robinson, 2006)

At the Kiewit Historic Gold Zone, the host granodiorite is weakly to intensely veined and stockworked by quartz and quartz-carbonate- (adularia) in the hanging wall of the north-northeast trending shallow westerly dipping "basal" quartz-carbonate-adularia vein and silicified breccia of the Kiewit Structural Zone. Gold grades are higher within the Kiewit Historic Gold Zone where vein/veinlet volume is significant, (increased vein density and vein thickness) and a good quartz stockwork is developed.

The stockwork zone comprises argillic-propylitic granodiorite with randomly oriented to anastomosing veinlets, as well as veins with variable mix of white to grey chalcedony/quartz and white to beige carbonate (and adularia). The veins are commonly less than 2cm wide but larger veins with apparent thickness up to 1m or greater are present on surface and in diamond drill core. The larger veins display typical epithermal style open space fillings and have variable textures including massive, patchy (cockade) and crustiform, colloform bands/laminae up to 2cm thick. Locally, partially to completely silica replaced pseudo-acicular carbonate textures within crustiform bands and bladed-lattice carbonate textures are observed in weathered outcrop exposures. These carbonate textures

are indicative of boiling (Dong et al., 1995). The smaller veins and veinlets in the stockwork are more massive and generally more quartz-rich.

Previous literature from the area makes considerable reference to presence of adularia in the veins. No adularia has, however, been identified by Dumont geologists in the field. Presence of adularia is nonetheless supported by Dumont's analyses of vein material which commonly report 0.5% more potassium, suggesting presence of some potassic mineralogy. Historic microscopic work has identified adularia within the larger veins in the Kiewit Structure (Griffitts, 1965; El-Shatoury and Whelan, 1970).

The mineralized stockwork is reported by Dumont to generally contain up to 30 randomly oriented veinlets and veins per meter or 30% of the rock volume. The highest gold grades are also reported by Dumont to generally be associated with the larger veins or where vein density is greatest which suggests that the gold mineralization is spatially associated with the quartz-carbonate veins.

Although occasionally some veins are traceable on surface for distances of up to 10m-20m, with the exception of the basal quartz-carbonate vein and associated silica breccia described above, larger veins observed at and within the Kiewit Historic Gold Zone lack the strike length and thicknesses typically observed further north in the Kiewit Structural Zone between Rainbow Hill and the north rim of Rodenhouse Wash.

The base of the Kiewit Structural Zone, characterized by the distinct "basal" silicified breccia and associated "basal" quartz-carbonate vein, is present as resistant, vuggy silica caps occurring on hilltops immediately east of the Kiewit Historic Gold Zone outcrop area (261840E, 4443535N; 261890E, 4443780N and; 261795E, 4443910N) and in subsurface drill intersections. The "basal" quartz-carbonate vein appears to be younger than the "basal" silicified breccia, however, their spatial and temporal relationship to the mineralized stockwork is uncertain.

Figure 7.4 below is Dumont's detailed geologic mapping in the Kiewit project area.



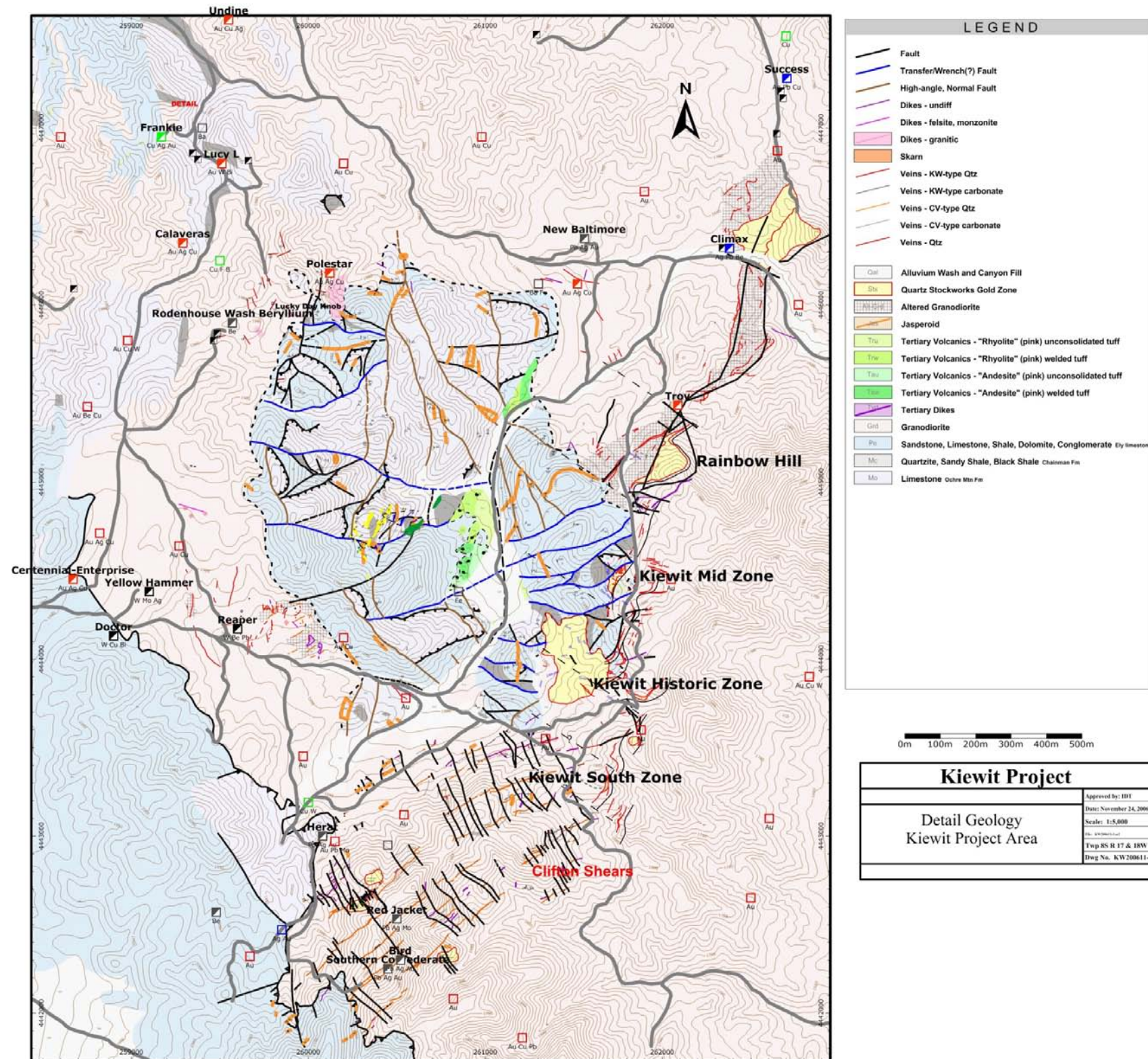


Figure 7.4 Kiewit Area Detailed Geologic Mapping

## 8.0 DEPOSIT TYPES

The Gold Hill Mining District boasts 43 historical mines and workings, 123 showings, and has produced gold, silver, copper, bismuth, lead, zinc, tungsten, arsenic, molybdenum, cobalt and beryllium over a 70 year period beginning in the late 1800's through to end of the Second World War. The total historical production from the district is essentially unknown though many estimates are presented in the literature.

In the property area the potentially economic mineralization exhibits a close spatial relation to the Jurassic granodiorite intrusive body, with ore bodies localized within fracture zones in the granodiorite or in the contact zone between the intrusive and surrounding carbonate strata of the Ochre Mountain Limestone and Oquirrh Formation. The close spatial relationship suggests the granodiorite may have been the source of metal bearing hydrothermal fluids.

El-Shatoury and Whelan (1970) identify three distinct types of economic mineralization within the district. These are:

- Contact Metasomatic Deposits
- Vein-Shear Deposits
- Replacement Deposits

### 8.1 Contact Metasomatic Deposits

This type of deposit is localized within carbonates at or near the Jurassic granodiorite contact (skarns). Examples of this type of deposit are the Cane Springs, Alvarado, and Frankie mines. In these deposits, the potentially economic mineralization closely accompanies calc-silicate alteration of the limestone and includes gold, pyrite, chalcopyrite, malachite, bornite, covellite, molybdenite, scheelite, and minor galena (Au, Cu, Mo, W, Pb). Typical alteration minerals include wollastonite, tremolite-actinolite, grossular garnet, tourmaline, and diopside

### 8.2 Vein-Shear Deposits

Two types of vein deposits are recognized in the Gold Hill area: quartz-carbonate-adularia and quartz. Quartz-carbonate-adularia veins are largely restricted to within the Jurassic granodiorite body. Examples of this vein type are the Clifton Shears, Climax Mine, and the Beryllium Veins in the Rodenhouse Wash area. The veins generally strike north-easterly, dip steeply, and typically vary in thickness from a centimeter to 2-3 meters. Continuity along strike is good, with some veins having been traced across distances of up to 2 kilometers.

The potentially economic mineralization in these deposits includes sphalerite, galena, and silver (Zn, Pb, Ag) and, in the case of the Rodenhouse Wash-area veins, beryllium. Robinson (1993) suggests the beryllium-bearing veins are Miocene in age thereby implying that the veins are not related to the granodiorite in origin. Quartz veins are widespread and not restricted to any particular lithology. Examples include the Lucy L deposit. Economic mineralization typically includes scheelite, pyrite, chalcopyrite, bismuth and gold (W, Cu, Bi, Au) with secondary hematite and magnetite.

### 8.3 Replacement Deposits

This type of deposit is divided into two sub-types: limestone hosted and intrusive-hosted.

Limestone-hosted type deposits may be found in either fractured but unaltered, silicified, hematized, or brecciated units. Economic mineralization may include any of the series of silver, arsenopyrite, galena, sphalerite, chalcopyrite, pyrite, pyrrhotite, and tetrahedrite. Where oxidized, a variety of arsenate minerals may be present. Examples of this kind of deposit are the Herat Mine-Smelter Tunnel, the U.S. Mine, and Gold Hill Mine.

Intrusive-hosted replacement deposits consist of scheelite, molybdenite, chalcopyrite, pyrite, copper-oxides and abundant magnetite mineralization (W, Mo, Cu). Gangue mineralogy consists of actinolite, perthite, garnet, apatite, tourmaline, and quartz. Examples of this kind of deposit are the Yellow Hammer and Reaper deposits.

#### **8.4 Apparent Zonation of Mineralization**

El-Shatoury and Whelan (1970) describe an apparent 5-zone arrangement to mineralization in the Gold Hill area. They differentiate the zones on the basis of the following metal associations: tungsten, molybdenum-copper, copper, copper-gold, copper-lead-arsenic, and lead-zinc-gold zones. Each zone represents progressively lower-temperature and pressure mineral assemblages that developed sequentially as the granodiorite intrusive cooled.

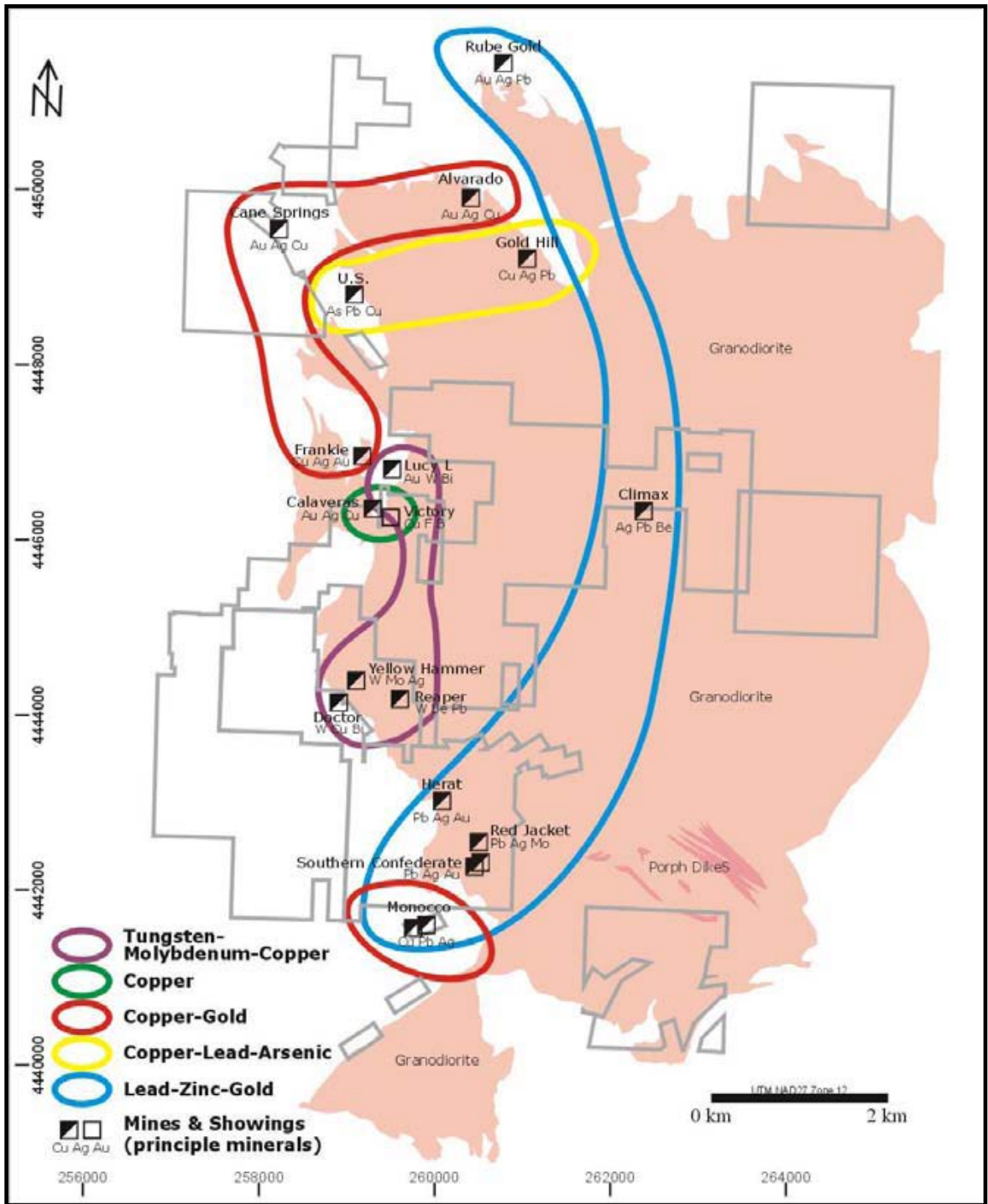
- The tungsten-molybdenum-copper zone occupies a narrow belt that includes the Yellow Hammer, Reaper, Frankie and Lucy L mines. The zone coincides with a belt of normal faulting (see also Section 5.2, points 4 and 5), which may have represented the conduits through which the Jurassic granodiorite was intruded.
- The tungsten-molybdenum-copper zone grades into the copper zone with the loss of scheelite and molybdenite. The zone occupies an area just west of the core zone. Ore minerals typically include chalcopyrite and pyrite in a gangue of tourmaline, garnet, perthite and actinolite.
- The copper-gold zone is contact-metasomatic in nature with mineralization consisting of gold and chalcopyrite within calc-silicate assemblages. Deposits within this zone include the Cane Springs and Alvarado mines.
- The copper-lead-arsenic zone is represented by replacement deposits such as the U.S. Mine, Gold Hill Mine and Herat Mine.
- The fifth zone is characterized by a lack of copper and predominance of lead, zinc, and gold. Deposits within this zone include the Rube and Climax mines, and the Clifton Shears.

The zonation is crude and approximate and considerable overlap exists between the zones. Several explanations for these overlaps and other irregularities in the zones have been presented. El-Shatoury and Whelan (1970) summarize the explanations:

- Overlapping of zones resulting from two or more intrusive-magmatic centers;
- Retreat or advance of intrusive-magmatic centers;
- Deposition in a single area from different mineralizing events. For example, cyclic or periodic fracturing of the granodiorite body might allow hydrothermal fluids to flow into an area previously mineralized by high-temperature minerals (Nolan, 1935).
- 

The description of a zonation and the explanations put forth in the literature to explain irregularities in the zones and their overlap, underscore the belief that the Jurassic granodiorite intrusive was the source of metal-bearing hydrothermal fluids and is directly related to the genesis of deposits in the area. Robinson (1993) places a Late Jurassic to post-Late Jurassic age on mineralization within the property area.





**Figure 8.1 Zonation of Mineralization in the Clifton-Gold Hills District**  
 (Adapted from El-Shatory and Whelan, 1970 – extracted from A.C.A Howe report #854)

## 9.0 EXPLORATION

Since the 1980's, several mining companies have conducted various exploration activities within the Clifton-Gold Hill Mining district from drilling, geophysical studies, soil sampling, chip sampling to just general assessment of the District's potential. Upon entering into a JV agreement with Clifton in 2004, Dumont spent considerable time cataloging and digitizing data and information from Clifton's archives on the exploration activities which was provided to the author. Most of this work is instructional and useful for planning; however, most of the historic work has not been completed to current standards and is of marginal use without significant verification for acceptable resource estimation.

### 9.1 Dumont Exploration Work

Dumont actively explored the Clifton-Gold Hill District from 2004 to 2006. They obtained the historic drilling, sampling, mapping and geophysical data in Clifton files and developed electronic databases for each project area.

Dumont's exploration work programs specifically for the Kiewit project were:

- Verification surface rock sampling and preliminary 1:2,000 mapping were completed during March 15-21, 2004 over the Kiewit Historic Gold Zone (Hangover Hill area) and Rainbow Hill area.
- Verification diamond drilling of five core holes was completed (468m) over the Kiewit Historic Gold Zone (Hangover Hill area) in April 2004 to confirm historic drill results reported by Goldstack Resources.
- A basal B-horizon soil sampling program was completed during March-April, 2004, on a 50mx50m grid spacing covering a 2km x 2.5km area over the Kiewit Project Area (including the Historic Gold Zone). Follow-up soil sampling was completed during July-August, 2004 and November 2004 resulting in a coverage area of approximately 5kmx1-2km.
- Follow-up semi-detailed (1:5000) surface mapping and sampling was completed during May-July, 2004, and a working geological model formulated by August 2004, to guide subsequent exploration of the Historic Zone and projected extensions.
- Orientation geophysical survey was completed in August 2004, comprising Gradient Array Resistivity (GAR) and Spontaneous Potential gradient (SPG) surveys over two test lines crossing the Historic Gold Zone to investigate its geophysical response. The results augmented historic airborne geophysical data for the area.
- An extensive drilling program was completed in 2005, which included 50m-100m spaced grid drilling over the Historic Gold Zone, in addition to other exploratory drilling of projected extensions over the Midzone and Rainbow Hill. The program commenced in February 2005 with RC drilling, but ultimately was necessarily completed with a coring rig, given numerous mechanical problems with the RC rig on contract. A total of 33 RC holes were completed (3479m) during February-May, 2005, and an additional 16 core holes (1795m) were completed during May-June, 2005.
- Intermittent follow-up surface rock sampling and 1:2000 mapping continued during April-May, 2005 at the Kiewit Historic Gold Zone /Hangover Hill area.
- A Gradient Array Resistivity (GAR) and Spontaneous Potential Gradient (SPG) geophysical survey was completed over the entire Kiewit Project Area, providing detailed grid coverage



over an area measuring approximately 3.4km x 2.4km. The survey was contracted to Practical Geophysics of Spring Creek, NV.

- A number of anomalies identified by the GAR/SPG Geophysical survey over the west flank of the Historic Gold Zone (to the west of the Rodenhouse Wash) were tested with a drill program commencing with RC drilling in December 2005. The RC drill was necessarily replaced with a core rig in February 2006, after many problems due to bad ground or subsurface water. The drill program was completed in April 2006, after completing 6 RC holes (827m) and 5 core holes (1850m). Four of the RC holes (433m) were completed during the program to test geological features at Rainbow Hill and Kiewit South (these drill programs are beyond the scope of this report and are summarized in Dumont's report on the Exploration Activity at the greater Kiewit Project Area, 2006).
- A number of topical analytical suites were prepared and submitted for analysis to Actlabs during 2005 and 2006 to address specific aspects of gold mineralization at the Historic Gold Zone. These included a suite of bottle roll cyanidation tests completed in May-September, 2005, which returned very favorable results.

Dumont's drilling, rock sampling, soil sampling and ground geophysics grids are illustrated in Figure 9.1 below.

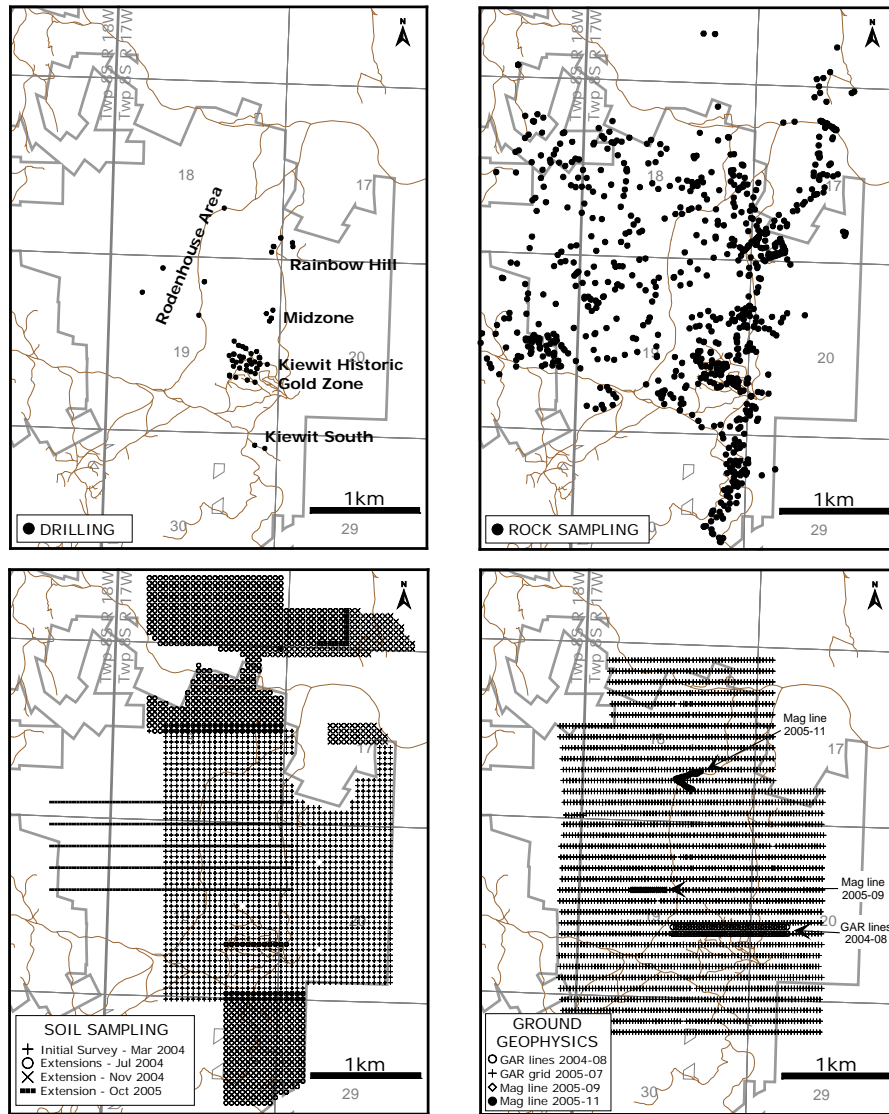


Figure 9.1 Dumont's exploration grid of the Kiewit project

### 9.1.1 Surface Rock Sampling Programs 2004-2005

Verification surface rock sampling and preliminary 1:2,000 mapping were completed during the period March 15-21, 2004 over the Kiewit Historic Gold Zone (Hangover Hill area) and Rainbow Hill areas. The work was conducted to confirm historic analytical results and to assist in the definition of drill targets.

In all, approximately 920 rock samples have been collected over the Kiewit Project Area including approximately 150 over the Kiewit Historic Gold Zone. All surface samples were analyzed for gold by fire assay and cuts from the pulps were checked and analyzed for multi-elements by INA/ICP. In addition, three small sample suites were submitted for whole rock analysis. Thin section slabs were cut from a suite of hand specimens though thin section preparation and related study was not completed.

### 9.1.2 Soil Sampling Programs 2004-2005

A basal B-horizon soil sampling program was completed during March-April, 2004, on a 50m x 50m grid spacing covering a 2kmx2.5km area over the Kiewit Project Area (including the Historic Gold Zone). A total of 1,876 samples were collected and analyzed for 48 elements by INA/ICP, including gold, silver, base metals, barium, and a spectrum of trace metals. The area sampled was subsequently expanded to the north and to the south in July-August 2004 and November 2004 to capture new localities of interest identified by ongoing mapping. As it stands, soil geochemical database coverage for the Kiewit Project Area comprises 3,021 samples characterizing a 5km x 1-2km area at 50m x 50m sample spacing.

As part of soil sampling completed to the west of the Kiewit Historic Gold Zone in 2005, (west of Rodenhouse Wash), five sample traverses were extended eastward to cross over the Historic Gold Zone. The samples were analyzed by INA/ICP - 48 elements in addition to analyzing sample splits by Enzyme Leaching, a selective leaching technique.

### 9.1.3 Geophysical Surveys 2004-2005

In August, 2004, orientation Gradient Array Resistivity (GAR) and Spontaneous Potential Gradient (SPG) surveys were completed along two east-west test lines over the Historic Gold Zone to investigate whether the Zone had geophysical expression which could help to trace its projected extensions beneath sedimentary cap rocks to the north and west. This work was carried out by Practical Geophysics of Spring Creek, NV, under the direction of R. Fox. The survey was conducted along two 1,098 m (3,600 ft) parallel lines spaced 60 m (200 ft) apart with 30 m (100 ft) station spacing.

Practical Geophysics was retained again in 2005 to complete a broader Gradient Array Resistivity (GAR) and Spontaneous Potential Gradient (SPG) on a grid measuring approximately 3.4 km N-S by 2.4 km E-W. This work was completed in June 2005. The survey was conducted along 100m spaced E-W lines at a 30m station spacing.

Results from the grid survey are summarized in a report by Practical Geophysics. The report identifies resistivity and SPG anomalies and zoning that suggest the presence of a structurally controlled zone of intense argillic alteration, with outlying perimeter veined sulphides and silicification (high Resistivity with high SPG values) and interior veined sulphides coincident with the intense argillic alteration (low Resistivity with high SPG values). The zone of intense argillic alteration measures about 1600 meters N-S and from 120 to 320 meters E-W (5200 by 400-1000 feet respectively) **Error! Reference source not found.** shows the Contoured Gradient array resistivity as produced for Dumont by Practical Geophysics.

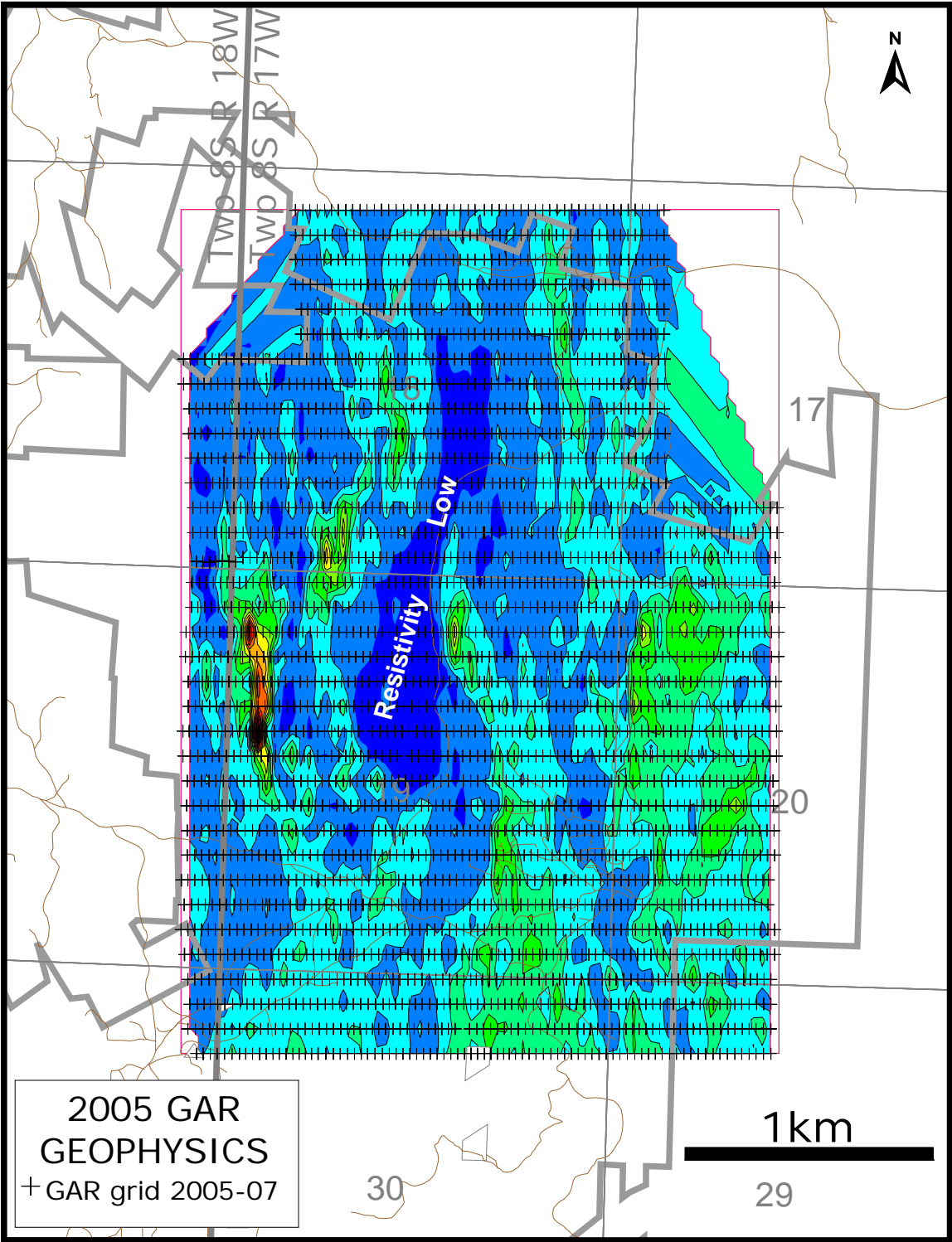


Figure 9.2 Contoured Gradient Array Resistivity of the Kiewit Project

## 10.0 DRILLING

At the Kiewit project Goldstack and Dumont conducted drilling programs to assess the mineral potential of the area. Goldstack completed 1 diamond drill hole (DDH) and 16 reverse circulation holes (RC). Dumont during their tenure at the property completed 26 diamond core holes and 39 reverse circulation drill holes. These have been entered into an electronic database and the drill logs, assays, collar locations and down hole surveys were provided from the Dumont archives for this study.

Other companies exploring the Clifton-Gold Hill Mining District also completed a variety of drill holes as part of their exploration work. The drilling data that Dumont was able to retrieve from Clifton's archives have been entered into various databases supplied to the author. However, the author did not review the little information that exists on these holes concerning sampling, labs, etc. as they are not currently the subject of this review. Table 10.1 summarizes the major Goldstack and Dumont drilling programs in the Kiewit area.

| Company      | Program Year | Number of Holes |           | Length (m)   |
|--------------|--------------|-----------------|-----------|--------------|
|              |              | RC              | DDH       |              |
| Goldstack    | 1993         | 16              | 1         | 1,743        |
| Dumont       | 2004         | 0               | 5         | 468          |
| Dumont       | 2005         | 33              | 16        | 2,622        |
| Dumont       | 2005-2006    | 6               | 5         | 2,677        |
| <b>Total</b> |              | <b>55</b>       | <b>27</b> | <b>7,510</b> |

### 10.1 Goldstack Drilling

Goldstack drilled the Historic Kiewit Gold Zone in 1992. They drilled 1 diamond drill hole and 16 reverse circulation holes. The drill logs and assay data for these holes were entered into the electronic database by Dumont from the paper records in Clifton's files.

The Goldstack drilling program is not documented to the extent is expected for modern resource and reserves estimates. As such Dumont's program was in part designed to twin and verify the Goldstack data in areas that reported anomalous gold values.

### 10.2 Dumont Drilling

#### 10.2.1 2004 Program

In April 2004, Dumont continued its data verification program at the Kiewit project with a diamond drill program consisting of five HQ holes totaling 1,535 feet (467.8 m, holes 4KZ-01 to 4KZ-05). The purpose of the drilling program was to test and confirm the subsurface distribution and style of gold mineralization encountered in surface outcrops by Dumont and previous investigators, and that documented from RC and diamond drill holes completed by Goldstack Resources in 1992. In addition to verifying historic data, the drill program also tested for continuity of gold mineralization down-dip and beneath mineralized outcrops down slope from drill set-ups.

Three of the holes were drilled as a fence and from a single drill set-up near previous Goldstack hole KZ-06. The remaining two holes were drilled as a second fence from a second set-up nearby. Dumont holes 4KZ-01, 4KZ-04 and 4KZ-05 were located to twin (confirm) Goldstack holes KZ-6, KDD-1 and KZ-13, respectively.

Dumont concluded that comparative grades from this work demonstrate that while the grade of individual intercepts per Goldstack's work are often different than those from Dumont's twin holes, there is good agreement between grades when averaged over the entire length of the mineralized stockwork zone.

The 2004 drilling was contracted to Dynatec Drilling Inc., of SLC, Utah. It commenced on April 16, 2004, and was conducted on a 24hr basis (two 12hr shifts, 7d/wk), to its completion on April 29, 2004.

### **10.2.2 Drilling Program 2005-2006**

An extensive drilling program was completed in 2005 by Dumont, commencing in February 2005, which completed grid 50m-100m spaced grid drilling over the Historic Gold Zone, in addition to other exploratory drilling of projected extensions over the Midzone and Rainbow Hill.

The program commenced in February 2005 with RC drilling. The RC portion of the drilling program consisted of thirty-three (33) 4.75-inch diameter RC holes totaling 3,479.3m (11,415ft). The drill was mobilized to the area on February 4, 2005, and collared the first hole (5KZRC-001) on February 6th, 2005. The final hole, 5KZRC-033, was completed on May 20, 2005. The drill crew consisted of driller, drill-helper and sampler, augmented by a Dumont rig geologist and sampler. The holes were drilled using a 4.75-inch centre-return hammer and work was conducted on a single 10hr daily shift, six days per week. The drilling was contracted to Dynatec Drilling Inc., SLC, Utah (Dynatec was bought out by Major Drilling America, Inc. partway through the program).

The RC holes were in most part drilled "dry". Holes were sampled in their entirety on a 5ft interval, taking two 3kg-4kg samples per interval (split at the rig), one of which was sent for assay and the other archived in Dumont's sample archive trailer in Gold Hill..

Twenty-four of the RC holes (5KZRC-001 through 5KZRC-0024) were drilled at the Kiewit Historic Gold Zone. The remaining holes tested the Rainbow Hill area (4 holes: 5KZRC-029 to 032) and Midzone area (5 holes: 5KZRC-025 to 028 and 033).

The purpose of the drilling program was to test and confirm the style, subsurface distribution and potential extensions of gold mineralization sampled on surface and in drilling by Dumont and that reported by Goldstack Resources (1992).

In anticipation of advancing the Historic Zone toward early resource estimation, special efforts were made to twin certain RC holes with subsequent core drilling. In this regard, Dumont RC hole 5KZRC-001 twinned previous Dumont diamond drill hole 4KZ-03, and Dumont RC holes 5KZRC-003, 5KZRC-009 and 5KZRC-031 were subsequently twinned by Dumont diamond drill holes 5KZDD-06, 5KZDD-09 and 5KZDD-13, respectively. Efforts were also made to test mineralization between holes by drilling select holes oriented down-dip of the mineral zone. Two core holes were also subsequently set aside (unsplit) for future metallurgical test work.

The RC rig was replaced with a HQ diamond drill rig on May 17, 2005, to complete the balance of the drilling program. Major Drilling America, Inc. (formerly Dynatec Drilling Inc.) mobilized to the drill area on May 17<sup>th</sup>, 2005, and collared the first core hole (5KZDD-06) on May 20, 2005.

16 HQ core holes, totaling 1,795.4 meters, were completed by June 16, 2005. Fifteen (15) of the core holes were over the Kiewit Historic Gold Zone area (5KZDD-06 to 12 and 14 to 21); and one (1) hole was completed at Rainbow Hill (5KZDD-13) to re-drill and twin an RC hole (5KZ-RC-031) lost in a quartz vein. Dumont holes 5KZDD-06, 5KZDD-09 and 5KZDD-13 twinned Dumont RC holes 5KZRC-003, 5KZRC-009 and 5KZRC-031 respectively.

In the winter 2005-2006, the Kiewit RC drill program consisted of six (6) 4.75-inch diameter RC holes totaling 826.6 meters (2,712 feet). Holes were drilled using a 4.75-inch standard hammer and crossover sub. The drilling contractor was Harris Exploration Drilling and Associates Inc. of Escondido, CA. and work was generally conducted on a 10-hour per day, six days per week schedule. The RC drill crew consisted of driller, drill-helper and sampler, augmented by a Dumont rig geologist/supervisor.

Two (2) holes were completed in the Rodenhouse Wash area (5KZRC-034 and 6KZRC-035); two (2) holes were completed at the Kiewit South area approximately 750m south of the historic Kiewit area (6KZRC-036 to 037); and two (2) holes were completed at Rainbow Hill (6KZRC-038 to 039). The purpose of the drilling program was to test and confirm the style, subsurface distribution and potential extensions of gold mineralization sampled on surface and in RC and diamond drill holes completed by Dumont (2005) at Rainbow Hill.

The 2006 diamond drill program consisted of 5 HQ/NQ core holes totaling 1,850 meters (6,069 feet). The drilling contractor was Major Drilling America Inc. and work was conducted on a 24-hour per day basis (two 12-hour shifts), seven days per week. The purpose of the drilling program was to test for the potential of porphyry-style mineralization at depth within an area of coincident low GAR resistivity, low aeromagnetic response, volcanic/subvolcanic rock outcropping and argillic altered granodiorite in Rodenhouse Wash.

### **10.3 Drill Hole Surveys**

Down hole drill hole surveys were completed using a variety of methods. The orientation of the RC holes were determined with a surface compass and inclinometer. For the diamond drill holes the initial azimuth and dip were generally determined by a surface compass and inclinometer with the down holes surveys by either Flexit Digital Multishot<sup>®</sup> equipment or Decidamp Photo equipment. Collar locations were surveyed using GPS equipment. Figure 10.1 shows the collar locations in the Historic Kiewit Gold Zone.

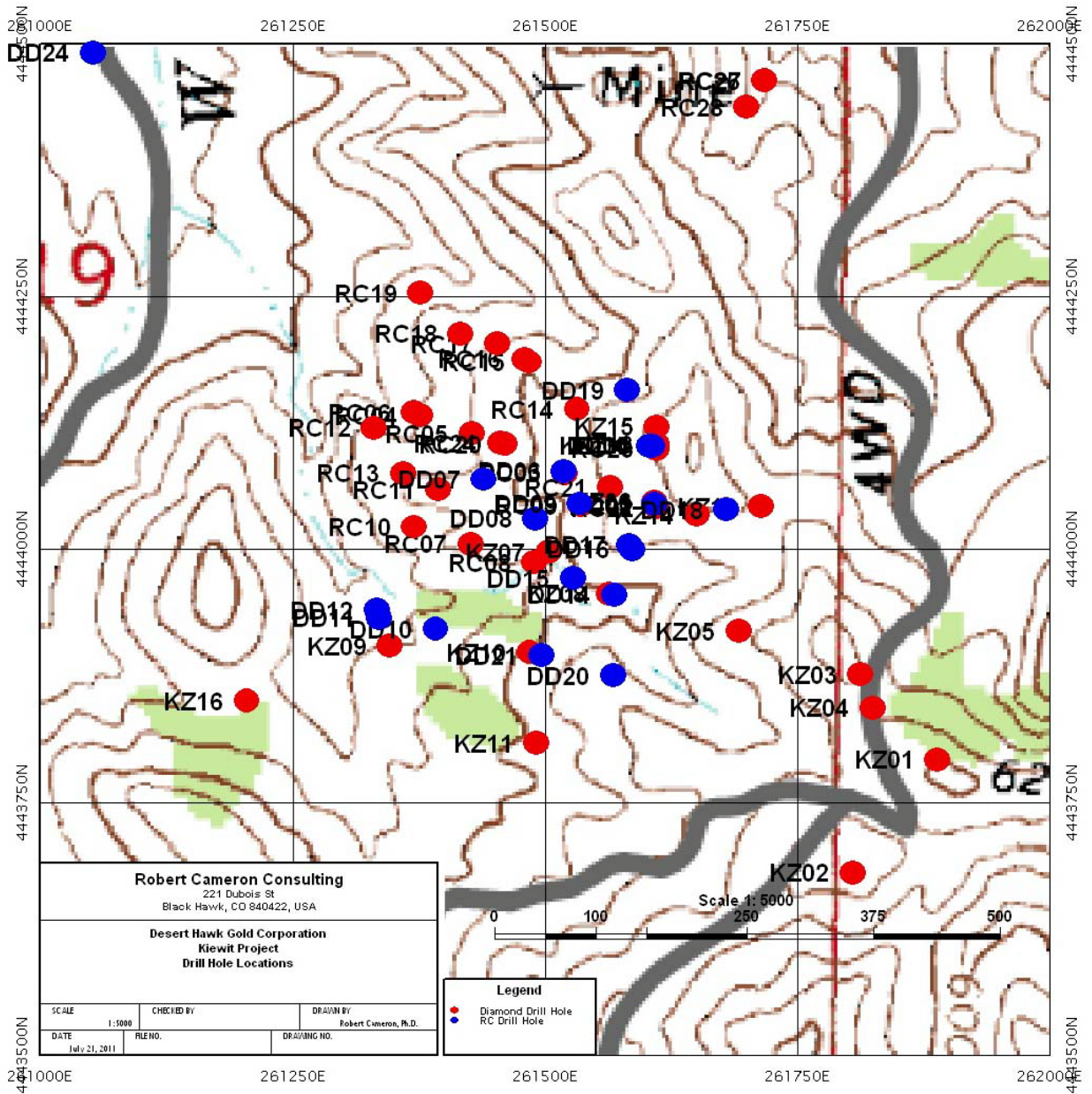


Figure 10.1 Drill Hole Location Map in the Historic Kiewit Zone



## 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The author visited the core-logging and storage facility that was used by Dumont Nickel for their work at the Kiewit property from 2003 to 2006. The facility currently houses the core and RC samples collected by Dumont. As no drilling work was being conducted by Desert Hawk during the time of the site visit, the author has relied upon the work completed by A.C.A. Howe International Limited for Dumont Nickel in 2004 and Dumont internal reports for the information presented in this section. If completed as described by the independent consultant A.C.A. Howe, the author believes that the sample preparation, analyses and security meet acceptable industry practices at the time the work was being conducted.

The following section has been mostly extracted from the A.C.A. Howe 2004 report and Dumont internal reports with minor revisions to reflect any current changes observed by the author. In general, Dumont implied a fairly comprehensive sampling program utilizing reputable labs with reasonable security measures for their exploration work if implemented as stated in the documents.

### 11.1 Logging Facility

During Dumont's tenure at the Gold Hill site, they maintained a core-logging facility located on the Tooele County airport grounds in Wendover, on the Utah side of the town. The facility includes a separate core splitting and sawing room, field supply storage rooms and sufficient floor space for logging tables and racks to hold over 21,000 feet of HQ core boxes as shown in Figure 11.1. Desert Hawk is currently in possession of the building and it contains the core, RC chips and coarse rejects from Dumont's exploration at the Gold Hill properties. Desert Hawk anticipates using these facilities for logging and splitting core and RC chips for their future drilling activities. The Logging Facility in Wendover was also utilized for logging and shipment of RC drilling samples.



**Figure 11.1** Dumont's core logging, cutting and storage facility in Wendover  
(from A.C.A Howe, 2004)

### 11.2 Core Drilling

#### 11.2.1 Core Handling & Security

During drilling, core was removed from the drill site daily by Dumont geologists and brought to the Wendover core-logging facility where the core was washed and down-hole marker blocks measured, relabeled to metric and core recoveries calculated. All drill core was digitally photographed prior to splitting by saw and the photographs are part of the Dumont database currently in Desert Hawk's possession.

### **11.2.2 Core Logging & Sampling**

The drill core was laid out in sequential order on working benches to facilitate geologic core-logging and sample interval marking. Aluminum tags were then placed at the start and end points of sample intervals. Core descriptions including rock type, alteration, structure, mineralization and vein density/percentage were logged directly into digital spreadsheets. Sample intervals were generally decided on the basis geologic contacts, alteration and/or a maximum sample length of about 5 feet (1.52m) and a minimum sample length of about .8 feet (0.25m). Sample lengths were measured and recorded in a spreadsheet database. After logging, the down-hole sample spreadsheet database showing the sample interval lengths and sample numbers were checked to verify the data entry.

### **11.2.3 Sample Splitting & Collection**

The core was then split by way of a 14" diameter core saw located in an isolated area of the core warehouse. The saw area was ventilated with two box fans positioned in separate windows. One fan was used to exhaust dust and water vapor and the other to intake fresh air. Fresh water was used as a cooling/lubricating fluid and was delivered directly from tap to saw by a garden hose. Used water was decanted to remove the majority of sludge, then drained outside the warehouse.

One split was bagged for sampling and the remaining split retained for reference purposes. During Cane Springs and Clifton Shears drilling, mineralized or otherwise altered and faulted zones are identified and tagged as a priority and sampled first. As the core is split, the sample split is bagged and labeled immediately. All samples are kept in the possession of Dumont until picked up at the core warehouse by FedEx or UPS courier for transport to Activation Laboratories ("ActLabs) in Ancaster, Canada- a 4 to 6 day travel time or to Actlabs-Skyline Laboratories in Tucson, Arizona- a 2 day travel time. ActLabs is accredited to international quality standards through the International Organization for Standardization /International Electrotechnical Commission to ISO/IEC 17025 (this standard includes ISO 9001 and ISO 9002 specifications), CAN-P-1758 (Forensics) and CAN-P-1579 (Mineral Analysis).

The Dumont regional grid soil sampling surveys conducted over the Kiewit Project, IBA Project, Silica Breccia Projects as well as other areas were subcontracted out to North American Exploration Inc., a geotechnical services company based in Kaysville, Utah. A typical soil sample consisted of 300-500 g of C-horizon material, collected consistently from a 10" depth. Coarse, pebbly material was removed by hand and the remaining material screened to -80 mesh. Soil samples were further screened by ActLabs and analyzed via Instrumental Neutron Activation.

## **11.3 RC Drilling**

### **11.3.1 RC Handling & Security**

Dumont RC Samples were collected, bagged and labeled at the drill site by the drill contractor's sampler under the onsite supervision of a Dumont geologist. Samples are taken daily to Dumont's warehouse where they are sorted, grouped and catalogued. Wet samples are allowed to drain by placing on wooden pallets.

### **11.3.2 RC Logging & Sampling**

RC drill cuttings are sampled at 5-foot or 10-foot intervals. The RC cuttings are either discharged from the cyclone directly into a Gilson splitter or are captured in 5-gallon buckets as they discharge from the cyclone and then are placed in the splitter. The sample is passed through the Gilson splitter to reduce the total sample volume to approximately 3-4kg (6-8lbs).

A “duplicate” split was also collected for analysis every 20th sample interval (i.e. every 100 or 200-feet) to be submitted as an analytical duplicate.

The Dumont’s general sampling scheme for RC drilling programs is presented in Figure 11.2. An archive sample was not collected and detailed interlab check assaying of duplicate pulps and rejects was not completed. A more rigorous sampling and duplicate sampling scheme utilized on Dumont’s 2005 RC program at the Kiewit Historic Gold Zone and is presented in detail in *Geology of the Kiewit Historic Mineralized Zone* produced by Sabag, Trinder and Robinson, 2006.

Samples are placed in pre-labeled Hubco Protexo cotton muslin cloth bags with drawstrings. Samples are labeled in a similar manner as for drill core with the exception that the final 3 to 4 digit numeric code of the sample label designates the bottom of the sample interval in imperial units (feet). The sample-numbering scheme is presented on the following page.

If groundwater is encountered, a rotary wet splitter is used. When drilling wet, a rotary wet splitter produces two samples. Inserting and/or removing cover-plates in the segmented rotary wheel controls the volume of the sample. (If the volume collected is too large, it may be necessary to pass the drill cuttings collected at the rotary splitter through the Gilson splitter but this procedure is undesirable as it can create sample integrity problems.)

The samples are organized into analytical Lots for pick-up by American Assay and Environmental Laboratories (AAL) for sample preparation and fire assay. AAL crushes and pulverizes the samples at its sample preparation facility in Elko, Nevada, and forwards the pulps for assay to its Reno facility. Duplicate pulps or rejects, as the case may be, are forwarded by AAL to Actlabs or other check assay labs for additional analytical work and check assaying.

All bagged samples remain in the possession of Dumont until they are picked up at the warehouse by the AAL service vehicle.

#### **11.4 QA/QC PROCEDURES**

A check sample (QA/QC) program was applied to all drill core samples by Dumont and incorporated a standard reference control sample, a duplicate sample, and a blank. Standard reference control material was purchased by Dumont from the Nevada Bureau of Mines and Geology (NBMG) library. Two low-grade gold-silver references- NBM-2b (Jerritt Canyon) and NBM-4b (Mesquite)- were used in Dumont’s QA/QC program. ¼ split of core is used for duplicate sample purposes. Commercially purchased washed silica sand was used as blanks. Dumont QA/QC protocol involves insertion of a blank, followed by the standard, and followed by a duplicate every 20<sup>th</sup> interval down the sample list. The duplicate was randomly selected as a ¼ split of a sample within two or three intervals from the insertion point. A similar check sample (QA/QC) program was applied to all surface rock and soil samples and incorporates at least one standard reference control sample and blank inserted into every shipment.

The general procedures used by Dumont for QA/QC checks included:

- Blanks, standards and duplicates
- Pulps and coarse rejects check assaying using multiple labs
- Drill hole twinning - RC-to-core
- Total hole repeat comparative assaying

The complete results of these QA/QC checks including correlation graphs and more detailed information on sampling at the Kiewit project are outlined in the Dumont report: *Geology of the Kiewit Historic Mineralized Zone* produced by Sabag, Trinder and Robinson, 2006.

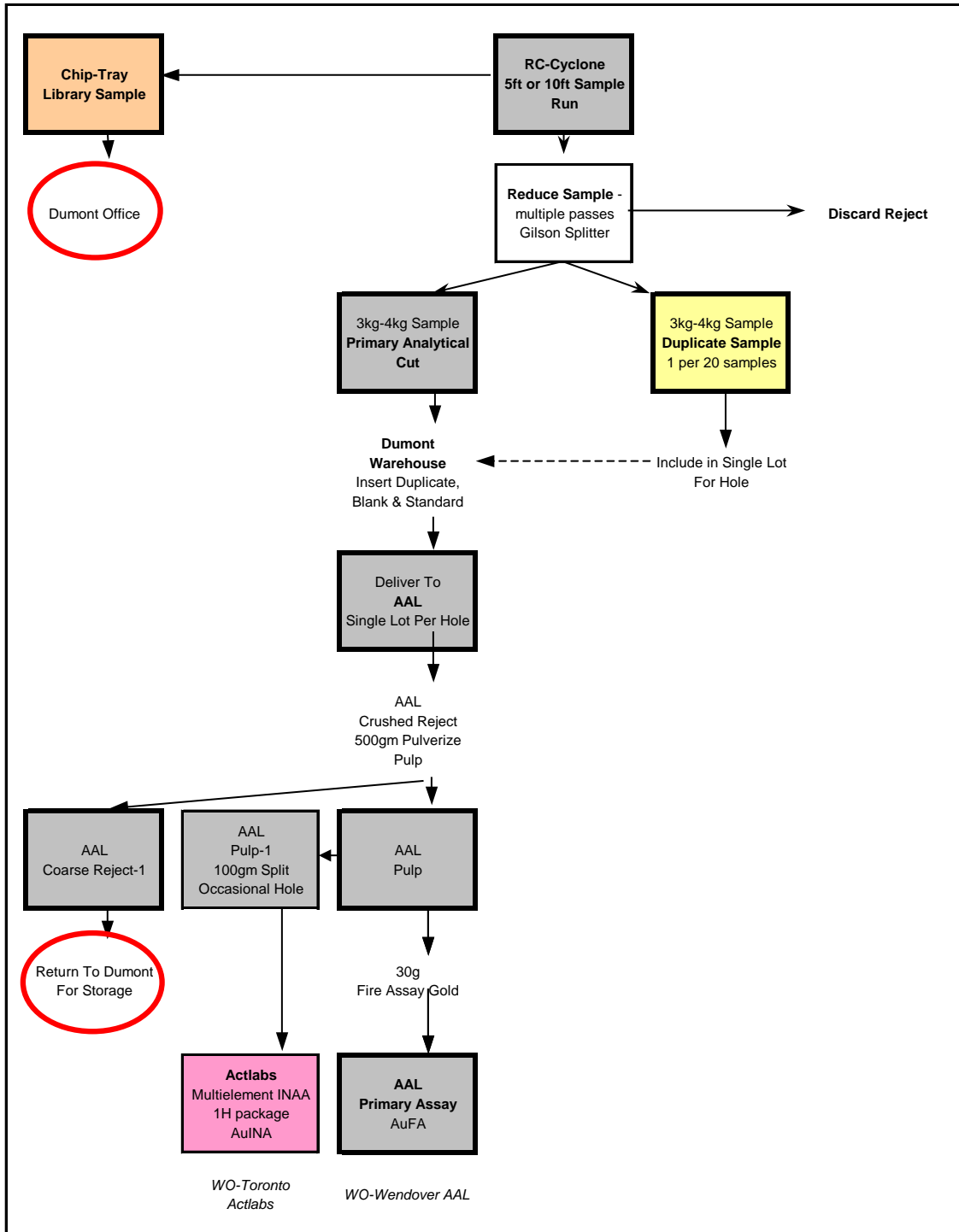


Figure 11.2 General RC Handling Procedures

## 12.0 DATA VERIFICATION

The author has only performed random checks comparing the digital data with hard copy records provided as PDF scans of the original documents from drilling logs and laboratory assay certifications. No significant problems or errors were found. A few inconsistencies in the electronic database were discovered with the modeling software which were simple typographic errors or transposition of some of the historic data entered.

The author has not done any independent sampling of the drill, soil or rock chip data used for this report but has accepted the results from A.C.A Howe and the Dumont archives. Dumont conducted an extensive and systematic check program of the original historic data supplied by Clifton Mining which includes assays from Goldstack, Kiewit Mining and other companies that have worked in the area and included within Dumont's various electronic databases. A.C.A Howe completed minor independent sampling. They collect a total of three ¼ core splits, and nine grab or rock chip samples for their 2003 report and 5 rock chip samples for their 2004 report. This work only verified the presence of low grade gold mineralization within 6 of the different project areas.

Desert Hawk's consulting geologist, Stu Havenstrite, is in the process of sampling and assaying soils and rock samples in the Kiewit project and other exploration areas within the Desert Hawk property for their own internal review. The author has been provided with partial results of this work as it is still on-going.

## 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Miscellaneous metallurgical testing has been conducted on various samples at the different properties in the district over the years. Major test work on the Kiewit project was completed by Kappes, Cassiday & Associates in 2007 using samples delivered to their Reno, Nevada facilities in 2006. Desert Hawk completed additional metallurgical testing in 2009 and 2010 with McClelland Laboratories in Sparks, Nevada to validate the previous work and for internal planning.

### 13.1 Kappes, Cassiday & Associates Work

The 2006 Kappes, Cassiday & Associates work involved two composite samples taken from two HQ diamond Drill holes drilled by Dumont in 2005. A total of 17 boxes of core was used from hole 5KZDD06 representing 149 feet and 20 boxes from hole 5KZDD09 representing 182 feet. Kappes, Cassiday & Associates used this material to conduct:

- Head screen analyses
- Bond Crusher impact Tests
- Rock Densities
- Agglomeration Tests
- Cyanide Bottle Roll Leach Tests and
- Column Leach Tests

A 5-kg sample of the as-received core from each drill hole was generated from randomly selected pieces. These samples were sent to Hazen Research, Inc, for Bond Low-energy Impact tests. The bond work index for 5KZDD06 was 9.38 kWhr/t and for 5KZDD09 was 9.48 kWhr/t.

Rock densities were completed on 10 randomly selected core pieces from each individual hole using ASTM method C914-95. The reported densities were 2.55 g/cm<sup>3</sup> and 2.52 g/cm<sup>3</sup> for holes 5KZDD06 and 5KZDD09 respectively.

Agglomeration tests were completed on four 2-kg portions from the 5KZDD09 sample. The material was crushed to 100% minus 0.25 inches and the tests were conducted utilizing cement additions of 0, 4, 8 and 12 pounds of cement per short ton of material.

Cyanide bottle roll leach tests were completed on each of the drill holes. The material was dry pulverized to 100% minus 150 mesh Tyler (80% minus 200 mesh Tyler). Drill hole 5KZDD06 showed 88% extraction of the gold and 41% extraction of the silver. Drill hole 5KZDD09 showed 91% extraction of the gold and 55% extraction of the silver. Completed details on procedures, head grades, cyanide consumptions, etc. can be found in their report.

Five column leach tests were conducted. Two from drill hole 5KZDD06 at: 100% minus 2.00 inches and 100 % minus 0.75 inches. Three test were conducted on 5KZDD09 at: 100% minus 2.00 inches, 100% minus 0.75 inches and 100% minus 0.25 inches. The columns were all allowed to actively leach for a period of 42 days.

For hole 5KZDD06, gold extraction varied from 25 to 42 percent and silver extraction from 8 to 18 percent. The sodium cyanide consumption varied from 0.33 to 0.95 pounds of NaCN per short ton and hydrated lime from 2.00 to 2.01 pounds of hydrated lime per short ton.

For hole 5KZDD09, gold extraction varied from 34 to 59 percent and silver extraction from 15 to 31 percent. The sodium cyanide consumption varied from 0.43 to 1.11 pounds of NaCN per short ton and hydrated lime from 2.00 to 2.01 pounds of hydrated lime per short ton.

### **13.2 McClelland Laboratories Work**

Desert Hawk completed metallurgical testing using McClelland Laboratories, Inc. in Sparks, Nevada in 2009 and the beginning of 2010. This work involved 2 bottle rolls tests and one column leach test.

The bottle roll tests were performed on (1) as received material in which 80 percent minus ½ inch and (2) crushed material with 100 percent minus ¼ inch with 80 percent minus 10 mesh. Gold recovery was 32.9 percent in 96 hours for the as received uncrushed material and 62.3 percent for the material crushed to minus ¼ inch. NaCN consumptions were at 0.15 pounds per short ton for both tests and Lime requirements were 5.1 and 3.4 pounds per short ton respectively. Silver recoveries were not reported in this testwork due to the low silver content of the sample.

A column leach test was completed starting late in 2009 and early 2010 using a 32 pound sample of Kiewit material assaying at 0.03 ounce gold per short ton and 0.04 ounce silver per short ton and crushed to 100 percent minus 1/8 inch with 80 percent minus 8 mesh. This test was run for 113 days and resulted in a gold recovery of 73.1 percent and a silver recovery of 47.3 percent.

## 14.0 MINERAL RESOURCE ESTIMATES

Historically, there have been several resource estimates for the Historic Kiewit Gold Zone. The latest was completed by Mr. John Reddick of Reddick Consulting Inc. for Dumont in 2006 to support a scoping study. He states: "*This report was produced to help Dumont determine the general scope and scale of gold mineralization at the Kiewit Property for internal planning purposes. It does not meet the requirements of a Independent Technical Report as outlined under NI 43-101 and the figures relating to gold mineralization produced in this report should not be considered as Resource Estimates as defined by the CIM Definition Standards on Mineral Resources or Mineral Reserves as adopted by the CIM Council in 2004.*"

Robert Cameron Consulting was requested to provide a mineral resource estimate for the Kiewit Gold Zone that was compliant to CIM Definition Standards on Mineral Resources as adopted by the CIM Council in 2004. After reviewing the drilling information provided from Dumont and Clifton Mining's archives, the author is of the opinion that the key elements such as the drill hole data, QA/QC protocols and results, sampling methods, sampling preparation and sample security have been completed in a manner acceptable for NI 43-101 compliant resource estimates if conducted in the manner that the archive information presents. Hence, the author has completed a mineral resource estimate of the Historic Kiewit Gold Zone based on that information using the following procedures.

### 14.1 Capping of Assay Grades

It is a common practice to cap high-grade gold assays to eliminate over estimation of metal content due to outliers, the lack of high-grade continuity between drill holes, and structural controls of high-grade intersects. Capping of assay grades was performed at a value of 4.0 g/t based on the statistical analysis of the raw assay data which in effect eliminated only 2 outliers. Robert Cameron Consulting believes this is an appropriate capping value for the current block model estimate but additional work is needed if more drilling within the zone becomes available.

The higher-grade mineralization in Kiewit was constrained by the grade envelope and limiting the influence of single composite values. After grade estimation was performed, the model was checked for over-estimation of total metal content. A slight underestimate bias was seen which validated the capping value selected.

### 14.2 Bulk Density Determination

The bulk density work used for the resource estimate was the work completed by Kappes, Cassidy & Associates during the metallurgical testing on two of the drill cores from the Kiewit area. Rock densities were completed on 10 randomly selected core pieces from each individual hole using ASTM method C914-95. The reported densities were 2.55 g/cm<sup>3</sup> and 2.52 g/cm<sup>3</sup> for holes 5KZDD06 and 5KZDD09 respectively. The average of 2.535 g/cm<sup>3</sup> was used for this estimate. The author could not find any additional bulk density testing within the electronic database supplied although more data is talked about in the historic reports. The author believes additional bulk density measures should be taken for future work.

### 14.3 Electronic Database

Dumont mining generated several computerized database in Microsoft Excel® to store the geologic data for the Kiewit project. These files include both historic data as well as the information collected by their own exploration program.



Copies of the electronic database was supplied to Robert Cameron Consulting for review on the DVD's supplied by Desert Hawk for this review. The database files contains:

- Drill Hole Locations and down hole surveys;
- Assays; and
- Geologic Logs.

Robert Cameron Consulting did not perform a complete database audit but spot checked the accuracy of the data entered into the database from a few select drill logs and found no errors. Robert Cameron Consulting believes that the database contains sufficient data and content to estimate mineral resources at the Kiewit Project.

Additional files were supplied with the USGS Digital Elevation Model (DEM) gridded topography for the 7.5-minute USGS maps covering the Clifton-Gold Hill Mining District. These files are were used to model the topography in the Kiewit project area. All of the geospatial information supplied is referenced in UTM coordinates relative to UTM Zone 12T with NAD27 CONUS Datum. The maps and databases used for this estimate were consolidated by Dumont from the State of Utah and BLM digital GPS product libraries using UTM Zone 12T with NAD27 CONUS Datum. These files use metric coordinates and hence, the models developed also used metric coordinates and measurements.

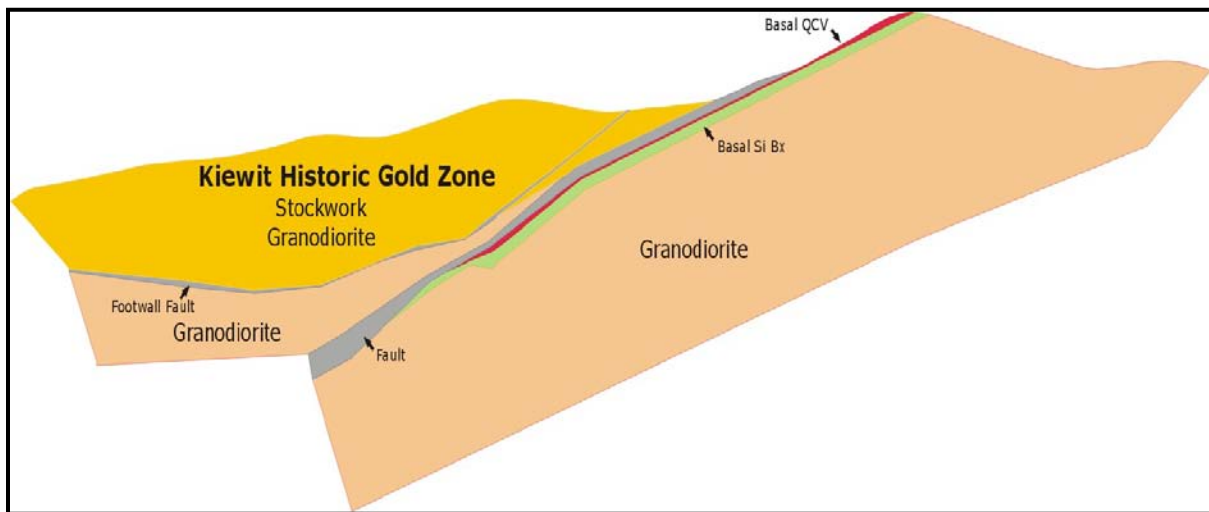
#### **14.4 Estimation Procedures**

Robert Cameron Consulting generated a computerized block model for the mineral resource estimate. The block model grades were generated using ordinary Kriging. The Techbase computerized mine design package which is an industry accepted, commercially available software was used to generate the resource estimate. The stages undertaken for estimation were:

- The drill hole database was compiled and verified;
- Techbase was used to plot drill hole and topographic information for verification of location data;
- Geologic controls were established by generating a mineralized envelope;
- 1.5m composites generated for the drilling contained within the mineralized envelope;
- Variography analysis was conducted;
- Block grades were estimated using ordinary Kriging on the blocks within the mineralized envelope;
- Blocks were tagged and categorized as "Measured, Indicated or Inferred"; and
- Grade and tonnages were summarized.

#### **14.5 Mineralized Envelopes**

The mineralization of interest in the Historic Kiewit Gold Zone is contained in the stockwork granodiorite bounded by a low angle fault. Typically, gold grades drop to less than .05 g/t on the footwall side of the fault. The geological interpretation allows the treatment of the mineralized zone as an envelope, which was used to limit the estimation of the grade model as shown in Figure 14.1.



**Figure 14.1 Generalized Cross-Section – Kiewit Historic Gold Zone**  
(From Sabag, Tinder and Robinson, 2006)

The process began by examining each drill hole and marking the start and end of the assays defining a 0.1 g/t (100 ppb or 0.003 ounce per short ton) grade envelope. Next, the lower and upper boundaries for the grade envelope were modeled from the defined intersections. Then cross sections were plotted oriented along the drilling lines (azimuth of roughly 280 degrees) showing gold grades, lithology and the modeled grade envelope. Adjustments were then made as necessary.

The drill hole database contained the drill holes from both the Dumont and Goldstack drilling programs. The Goldstack holes were used as a guide by Robert Cameron Consulting for developing the grade envelopes; however, as discussed by Reddick, 2006 Dumont's not all of the Goldstack holes were appropriate for resource estimation. As a result, the Goldstack data was not used for resource estimation.

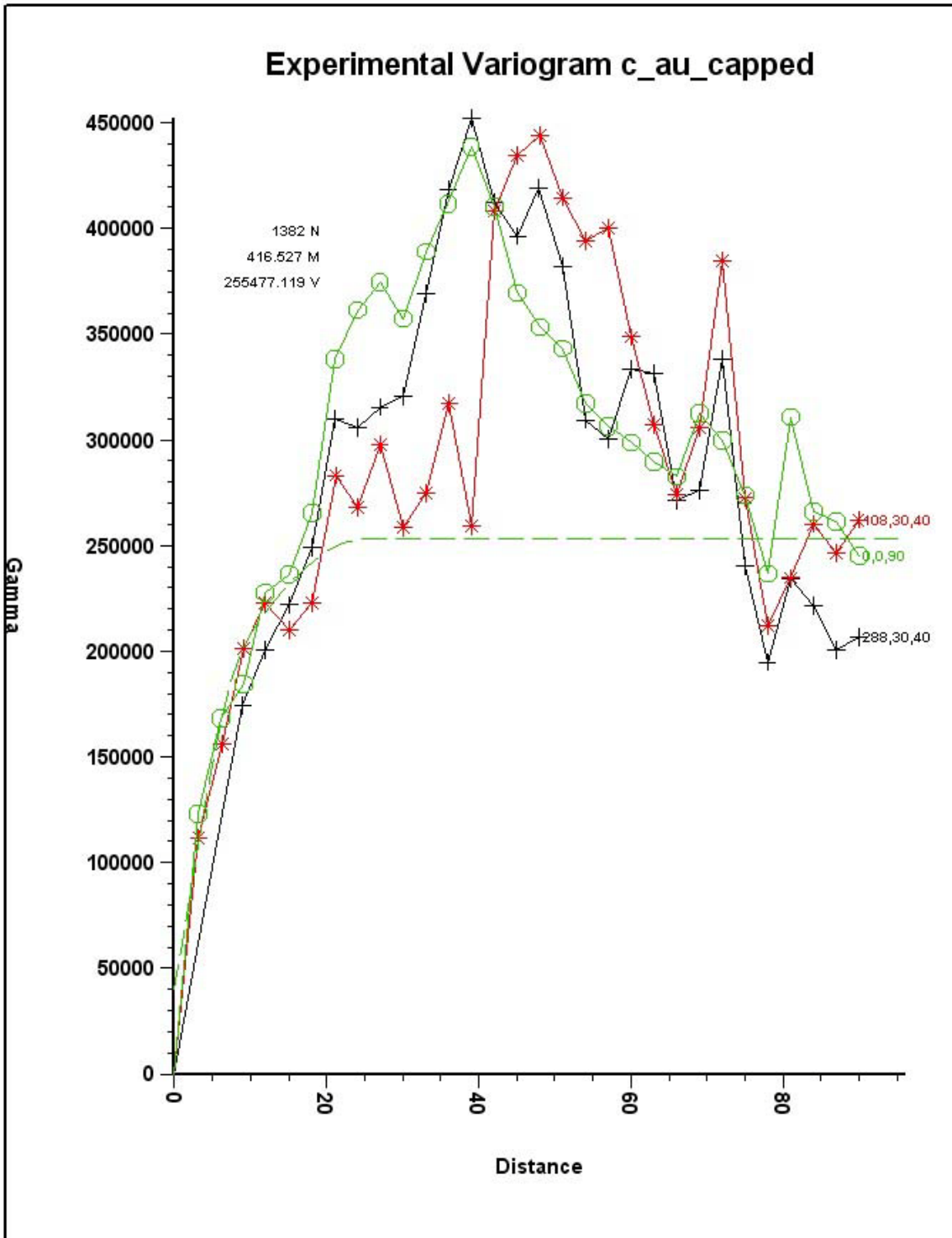
## 14.6 Compositing

All assays including assays less than 100 ppb within the grade envelope were then tagged to be used for the modeling work. As the drilling coordinates and assay from and to fields in the database were specified using meters, Robert Cameron Consulting used meters and grams per metric tonne for all estimation work.

Composites were generated using all of the assay intervals within the 0.1 g/t mineral envelope. This mineral envelope includes the lower grade internal waste or assays less than 0.1 g/t as mining will probably be a bulk tonnage open pit operation with limited selectivity. The composite lengths generated for this study were 1.5 meters in length. Assays were capped at a maximum of 4000 ppb (4 g/t or 0.117 opt) A total of 1,492 composites were generated from the assays for further analysis.

## 14.7 Variography

A key to the geostatistical estimation of the mineralized material is the variogram, a mathematical representation of the degree of correlation between samples versus distance and direction. Variograms were calculated for the capped gold composites. The variograms were limited to those samples inside the mineralized envelope. The experimental variograms calculated for the Historic Kiewit Gold Zone is shown in Figure 14.2.



**Figure 14.2 Gold Variograms**

Robert Cameron Consulting calculated variograms for a series of directions before selecting the set of three orthogonal directions showing the greatest continuity. The solid lines represent the experimental variogram, which is calculated from the data. The dashed lines show the variogram

model, which was selected to fit the data with a smooth curve. They utilized a nested three parameter model involving one nugget model and two spherical models. All directions shows relative equal continuity, which is expected in a stock work granodiorite without much structural controls. The parameters for the individual nested models used for the final modeled variograms are shown in Table 14.1.

| <b>Table 14.1<br/>Variogram Model Parameters</b>   |        |                       |                       |                       |
|--|--------|-----------------------|-----------------------|-----------------------|
| Model  | Sill   | Major Axis Range (ft) | Semi-Major Range (ft) | Minor Axis Range (ft) |
| Nugget   | 40000  |                       |                       |                       |
| Spherical  | 110000 | 10                    | 10                    | 10                    |
| Spherical  | 105500 | 25                    | 25                    | 25                    |
| Major Axis Oriented N72W with 30° Dip (positive dip is downward)<br>Semi-Major Axis at N18E<br>Minor Axis at N72W -60° Dip |        |                       |                       |                       |

#### 14.8 Block Model Parameters

A three-dimensional block model was chosen as the numerical model to represent the deposit in order to estimate the resources and reserves at the Kiewit Project. The modeled region selected is the area of closely-spaced exploration drilling. The block model is 1,000m x 1,100m ft x 210m and contains 6,160,000 blocks. Table 14.2 shows the major parameters which define the block model in 3D space.

| <b>Table 14.2<br/>Block Model Parameters</b> |                  |          |           |           |               |
|--|------------------|----------|-----------|-----------|---------------|
|  | Number of blocks | Size (m) | Min       | Max       | Distance (ft) |
| Columns (E-W)                                | 200              | 5.0      | 261,000   | 262,000   | 1,000         |
| Rows (N-S)                                   | 220              | 5.0      | 4,443,500 | 4,444,600 | 1,100         |
| Levels                                       | 140              | 1.5      | 1,690     | 1,900     | 210           |

The Kiewit block model was created with 5m x 5m x 1.5m blocks. The 1.5m vertical size was used to more accurately match the blocks to the grade envelope and surface topography in the area.

All blocks inside the 0.1 g/t grade envelope were tagged to be estimated. The gold grades for each tagged block were then estimated by Ordinary Kriging, a geostatistical technique using only those assays within the grade envelope .

#### 14.9 Kriging Details

The gold grades for each block inside the mineralized zone were estimated from the assay values within the mineralized zone, using Ordinary Kriging. An estimation strategy was designed to estimate the blocks through a series of successively increasing search radii. These were set at 50%, 100%, and 200% of distances approximating the variogram range. The minor axis of the search ellipse was

set at 15m and the resulting search ellipse dipped at 20 degrees at an azimuth of 288 degrees to better match the sloping structure of the deposit.

At each set of distances, the strategy required different minimum samples. Pass 1 required at least 4 composites, pass 2 required 3 while pass 3 only required 1 composite allowing extrapolation around the fringes of the drilling. The maximum composites allowed for grade estimation remained constant at 20. No more than two sample composites from any single drill hole was allowed to prevent vertical averaging for each drill hole. The practical effect of this limit was to make sure that each block in the interior of the deposit was estimated as an interpolation between at least two drill holes, rather than extrapolating from a single drill hole. The initial search radius at half the variogram range helps to preserve the short-range variability of the mineral deposit, while also limiting the influence of any single drill hole. Expanding the search a step at a time introduces additional data only when needed to estimate a block.

#### 14.10 Block Model Results

Global estimation results from the Kriging work are reported in Table 14.3. It summarizes the estimated material in the block model showing grade and tonnage above selected gold values measured in ounces per ton. Tonnage was calculated using a density of 2.535 g/cm<sup>3</sup> which is the average density determined for the material by Kappes, Cassiday & Associates during the metallurgical testing. This simple summary includes all mineralized material within the mineralized envelope without consideration of metal prices or other economic factors. The table shows the number of tonnes, average grade and metal content in both metric and imperial units available at a series of cutoffs.

| <b>Au<br/>Cutoff<br/>(g/t)</b> | <b>Metric</b>          |                     |                    | <b>Imperial</b>     |                     |                    |
|--------------------------------|------------------------|---------------------|--------------------|---------------------|---------------------|--------------------|
|                                | <b>Tonnes<br/>(Mt)</b> | <b>Au<br/>(g/t)</b> | <b>Au<br/>(kg)</b> | <b>Tons<br/>(M)</b> | <b>Au<br/>(opt)</b> | <b>Au<br/>(oz)</b> |
| 0.1                            | 7.39                   | 0.375               | 2,774              | 8.15                | 0.0109              | 89,200             |
| 0.2                            | 4.85                   | 0.495               | 2,399              | 5.35                | 0.0144              | 77,100             |
| 0.3                            | 3.30                   | 0.612               | 2,018              | 3.63                | 0.0179              | 64,900             |
| 0.4                            | 2.34                   | 0.720               | 1,684              | 2.58                | 0.0210              | 54,200             |
| 0.5                            | 1.66                   | 0.830               | 1,381              | 1.83                | 0.0242              | 44,400             |
| 0.6                            | 1.13                   | 0.967               | 1,092              | 1.24                | 0.0282              | 35,100             |

#### 14.11 Block Model Checks

Robert Cameron Consulting plotted and reviewed the cross-sections with drilling data to compare block estimates with the composites. We also performed independent manual calculations of selected block grades to verify the estimated grade and tonnages. Selected cross sections of the block model can be found in Appendix B.

#### 14.12 Kiewit Resource Categorization

Definitions of the various categories of mineral resources and minerals reserves under NI 43-101 Technical Report requirements are shown below:

### **Mineral Resources**

*The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of technical, economic, legal, environmental, socio-economic and governmental factors. The phrase 'reasonable prospects for economic extraction' implies a judgement [sic] by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. A Mineral Resource is an inventory of mineralization that under realistically assumed and justifiable technical and economic conditions might become economically extractable. These assumptions must be presented explicitly in both public and technical reports.*

### **Inferred Mineral Resource**

*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 drill holes.*

### **Indicated Mineral Resource**

*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 drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.*

### **Measured Mineral Resource**

*A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and 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 drill holes that are spaced closely enough to confirm both geological and grade continuity.*

For the Kiewit block model, the confidence of the estimated grades was determined based on distance and on the number of different drill holes used to estimate that grade. Each block was tagged with a numeric code based on the information as to a potential resource category. The general rules for tagging the blocks are:

- Blocks within the mineralized envelope, and with at least 4 composite samples from the two closest drill holes within ½ of the total variogram range for the gold composites for the major and semi-major axis and the variogram range of the first nested structure for the minor axis (12.5m x 12.5m x 10m) were considered “Measured”.
- Blocks within the mineralized envelope, and with at least 3 composite samples from the two closest drill holes within the total variogram range for the gold composites for the major and semi-major axis and the variogram range of the first nested structure for the minor axis (25m x 25m x 10m) were considered “Indicated”.
- Blocks within the mineralized envelope, with at least 1 composite samples within twice the total variogram range for the major and semi-major axis and twice the variogram range of the first nested structure for the minor axis (50m x 50m x 20m) were considered “Inferred.”

### 14.13 Mineral Resource Estimate

The Measured and Indicated Mineral Resource estimate for the Historic Kiewit Gold Zone is listed in Table 14.4. The Inferred Mineral Resource estimate is listed in Table 14.5.

| <b>Table 14.4</b>  |                  |                  |                 |                         |                   |                    |                          |
|--|------------------|------------------|-----------------|-------------------------|-------------------|--------------------|--------------------------|
| <b>Estimate of the Measured and Indicated Mineral Resource at various cutoffs</b>                        |                  |                  |                 |                         |                   |                    |                          |
| <b>Cut-off (g/t)</b>   | <b>Category</b>  | <b>Tonnes</b>    | <b>Au (ppb)</b> | <b>Contained Au (g)</b> | <b>Short Tons</b> | <b>Grade (opt)</b> | <b>Contained Au (oz)</b> |
| 0.1  | Measured         | 1,377,000        | 524             | 721,000                 | 1,518,000         | 0.0152             | 23,000                   |
|  | Indicated        | 2,719,000        | 391             | 1,062,000               | 2,997,000         | 0.0113             | 34,000                   |
|  | <b>Sub-Total</b> | <b>4,096,000</b> | <b>435</b>      | <b>1,783,000</b>        | <b>4,515,000</b>  | <b>0.0126</b>      | <b>57,000</b>            |
| 0.2  | Measured         | 1,133,000        | 603             | 684,000                 | 1,249,000         | 0.0176             | 22,000                   |
|  | Indicated        | 1,750,000        | 526             | 920,000                 | 1,929,000         | 0.0156             | 30,000                   |
|  | <b>Sub-Total</b> | <b>2,883,000</b> | <b>556</b>      | <b>1,604,000</b>        | <b>3,178,000</b>  | <b>0.0164</b>      | <b>52,000</b>            |
| 0.3  | Measured         | 889,000          | 701             | 623,000                 | 980,000           | 0.0204             | 20,000                   |
|  | Indicated        | 1,184,000        | 660             | 781,000                 | 1,305,000         | 0.0192             | 25,000                   |
|  | <b>Sub-Total</b> | <b>2,073,000</b> | <b>677</b>      | <b>1,404,000</b>        | <b>2,285,000</b>  | <b>0.0197</b>      | <b>45,000</b>            |
| 0.4  | Measured         | 692,000          | 801             | 554,000                 | 763,000           | 0.0236             | 18,000                   |
|  | Indicated        | 880,000          | 767             | 675,000                 | 970,000           | 0.0227             | 22,000                   |
|  | <b>Sub-Total</b> | <b>1,572,000</b> | <b>782</b>      | <b>1,229,000</b>        | <b>1,733,000</b>  | <b>0.0231</b>      | <b>40,000</b>            |
| 0.5  | Measured         | 534,000          | 904             | 483,000                 | 589,000           | 0.0272             | 16,000                   |
|  | Indicated        | 644,000          | 882             | 568,000                 | 710,000           | 0.0254             | 18,000                   |
|  | <b>Sub-Total</b> | <b>1,178,000</b> | <b>892</b>      | <b>1,051,000</b>        | <b>1,299,000</b>  | <b>0.0262</b>      | <b>34,000</b>            |
| 0.6  | Measured         | 416,000          | 1,006           | 418,000                 | 459,000           | 0.0283             | 13,000                   |
|  | Indicated        | 456,000          | 1,023           | 467,000                 | 503,000           | 0.0298             | 15,000                   |
|  | <b>Sub-Total</b> | <b>872,000</b>   | <b>1,015</b>    | <b>885,000</b>          | <b>962,000</b>    | <b>0.0291</b>      | <b>28,000</b>            |
| Tonnes, Tons, and Contained Au rounded to nearest thousand after conversion - difference due to rounding |                  |                  |                 |                         |                   |                    |                          |

| <b>Cut-off<br/>(g/t)</b> | <b>Category</b> | <b>Tonnes</b> | <b>Au<br/>(ppb)</b> | <b>Contained<br/>Au<br/>(g)</b> | <b>Short<br/>Tons</b> | <b>Grade<br/>(opt)</b> | <b>Contained<br/>Au<br/>(oz)</b> |
|--------------------------|-----------------|---------------|---------------------|---------------------------------|-----------------------|------------------------|----------------------------------|
| 0.1                      | Inferred        | 3,297,000     | 300                 | 991,000                         | 3,634,000             | 0.0088                 | 32,000                           |
| 0.2                      | Inferred        | 1,966,000     | 405                 | 796,000                         | 2,167,000             | 0.0120                 | 26,000                           |
| 0.3                      | Inferred        | 1,223,000     | 503                 | 615,000                         | 1,348,000             | 0.0148                 | 20,000                           |
| 0.4                      | Inferred        | 767,000       | 594                 | 456,000                         | 845,000               | 0.0178                 | 15,000                           |
| 0.5                      | Inferred        | 486,000       | 680                 | 330,000                         | 536,000               | 0.0205                 | 11,000                           |
| 0.6                      | Inferred        | 257,000       | 805                 | 207,000                         | 283,000               | 0.0247                 | 7,000                            |

Tonnes, Tons, and Contained Au rounded to nearest thousand after conversion - difference due to rounding

Robert Cameron Consulting believes that the tonnage and grades presented in Tables 14.4 and 14.5 conform to CIM definitions for Measured, Indicated and Inferred Mineral Resources.

Desert Hawk currently has estimated that currently the total mining and heap leach costs will be under \$8 per short ton. Assuming a selling price of \$1,500 per ounce of gold and an average heap leach recovery of 80 percent, Robert Cameron Consulting estimates that the break-even cutoff grade for the area will be around 0.2 g/t and recommends that the current in-situ resource be summarized at a cutoff of 0.2 g/t.

#### **14.14 Resource Conclusions and Recommendations**

The author believes that within the Historic Kiewit Gold Zone there are approximately 3.2 million short tons (2.9 million metric tonnes) of in-situ Measured and Indicated Mineral resource averaging 0.016 ounces of gold per ton and containing approximately 52,000 ounce of gold. In addition there are 2.2 million short tons of Inferred Mineral resource averaging 0.012 ounces of gold per ton containing approximately 26,000 ounces of gold.

The above estimates are based on limited information and limited bulk density measurements. Deposits of this type require closer-spaced sampling to confirm both grade and geologic continuity. The middle of the deposit has very good drilling density however, as the edges are less defined primarily since Dumont was exploring when the gold price was under \$400 per ounce and was not interested in defining anything less than approximately 0.6 g/t. Hence, better classification and additional tonnage may be found within the Kiewit project with drilling targeted at the lower grade mineralization. The density of the drilling needs to be increased around the fringes of the current target. The following is a list of recommendations for future resource estimates.

- **Additional Drilling to Upgrade Resource** – The Historic Kiewit Gold Zone should be drilled on at least a 25m × 25m spacing to upgrade the estimate within the geologic interpretation of the stock work granodiorite hosting the gold mineralization. Robert Cameron Consulting believes that with the current elevated gold prices, that additional low grade tonnage might be delineated with additional drilling.
- **Additional Variography** – A complete variography study should be completed after additional drilling and sampling have been done. The variography used to determine the search ellipsoids used for this estimate was highly variable, and a lot of geologic inference



was used to set the estimation parameters. Additional work is needed to confirm the parameters used for grade estimation and to move the resources into a higher resource categorization.

- **3D Wire Frame** – The wire frame model of the mineralization is adequate for the Mineral Resource estimate presented; however, the author would caution that deposits of this type tend to be highly irregular, and as infill drilling takes place, a more reliable 3D wire frame and geologic interpretation will be required for future estimation work. Future wire frame models should model the bounding fault on the west side of the area. The current model did not extrapolate into this area and the modeling was not currently required to limit the estimation.
- **Metal Prices** – As gold price continue to change, the cut-off should be modified to reflect the expected recovery.
- **Recoveries** – Additional metallurgical analysis should be completed to give better estimates of the expected heap leach recoveries. These will be required as Desert Hawk moves the project to a pre-feasibility engineering level.
- **Additional Maps** – Maps should be prepared presenting the district wide relationship of the approximate elevation of tops and bottoms of mineralization in each hole. Maps of district wide soil and rock chip sampling programs should be developed.

#### **14.14.1 Drilling Recommendations for the Historic Kiewit Gold Zone**

The author recommends an additional six to eight RC holes in the Historic Kiewit Zone to improve the understanding of the variability of the low grade resource around the fringe of area. Two should be drilled on Dumont section 10+225N which is internal to the deposit, three on the west to explore continuation and extension toward the west and three to explore the extension of the low grade zone towards the south. Once these are drilled, then Desert Hawk needs to plan additional infill drilling or expansion drilling to upgrade the resource.

## 15.0 MINERAL RESERVE ESTIMATES

Not Applicable

## 16.0 MINING METHODS

Desert Hawk is beginning engineering and technical studies to examine mining in the Historic Kiewit Gold Zone. The following information has been provided from the 2006 Dumont Scoping Study. This section has been extracted by the author from selective sections of the Fax memos sent to Dumont and personal discussions with Desert Hawk engineers. This section currently only provides the conceptual plan envisioned for the project. Additional engineering, permitting and technical studies will be required by Desert Hawk for the Kiewit project prior to any mining activities.

The resource calculated in this report for the Historic Kiewit Gold Zone is a shallow, near surface, deposit and can be mined using a traditional open pit, truck and shovel type operation. In 2006, Dumont commissioned a scoping level mine design and cost estimate for the area completed by Fred A Leonard of Winnemucca, Nevada to provide order-of-magnitude estimates of the cost, staffing requirements and concept of mining the Kiewit resource for future planning. The 2006 scoping study anticipates a stripping ratio of around 1.05:1 for the Kiewit material at a gold price of \$500 per ounce.

The mining operations are envisioned to be accomplished by open pit methods utilizing heavy mobile equipment. The material will be drilled and blasted before excavation and drill cuttings will be sampled and assayed for gold content to delineate ore and waste boundaries. ANFO will be used as the primary blasting agent as dry blast holes are expected. Primary blasts would occur every 2 to 3 days. A powder factor of roughly 0.6 to 0.65 lbs. per bank cubic yard is expected.

The Leonard study assumes that the mine will produce approximately 2,500 short tons per year using two ten hour shifts.

### 16.1 Mining Equipment

The Leonard study involved using a CAT 990 or CAT 988 Front End Loader with an 11 or 8 year bucket respectively. The front end loaders will load into CAT 773 (60 tons) or CAT 769 (40 tons) off-road haulage trucks. Table 16.1 is the projected equipment list utilizing the CAT 988 loaders with the CAT 769 trucks.

| Number of Units | Description                   |
|-----------------|-------------------------------|
| 1               | Drilltech 25K blasthole drill |
| 2               | CAT 988 FEL w/ 8yard bucket   |
| 6               | CAT 769 40 ton haulage trucks |
| 1               | CAT D8T dozer with ripper     |
| 1               | CAT 140 Grader                |
| 1               | Water Truck (4,000 gal)       |
| 1               | Fuel/Lube Truck               |
| 3               | Pickups                       |
| 2               | Minivans                      |

## **16.2 Mine Staff**

Leonard estimated that this mining operation would require 6 people for supervision, engineering, ore control and administration. An additional 28 employees would be needed to conduct the actual mining operations using two shifts per day.

## **16.3 Comments - Mining**

Robert Cameron Consulting believes that this is a reasonable mining concept for the estimated resources. Desert Hawk will need to complete at least a pre-feasibility level study on the property prior to mining the resource. The author would also recommend that Desert Hawk consider contract mining of the Kiewit zone because of the small tonnage and anticipate short mine life.

## **17.0 RECOVERY METHODS**

Desert Hawk is beginning engineering and technical studies to examine recovery of gold from the resource within the Historic Kiewit Gold Zone. The following information has been extracted from the 2006 Dumont Scoping Study. This section has been provided by the author from selective section of the Fax memos sent to Dumont and from personal discussions with Desert Hawk engineers. Additional engineering, permitting and technical studies will be required for the Kiewit project.

The column leach test completed by Kappes, Cassiday & Associates suggests that the gold and silver in the Historic Kiewit Gold Zone material will be suitable for a typical heap leach extraction and recovery. The gold is expected to be extracted using a Sodium cyanide leach solution with the pregnant solution feed into typical ADR (Adsorption-Desorption-Recovery) extraction plant. The ADR plant will move gold and silver from solution onto activated carbon followed by stripping of the carbon, electrowinning of the metal and then smelting into doré for shipment.

Desert Hawk envisions that the leach operation will require a site of approximately 65 to 100 acres for the leach pad, ADR Carbon Plant, Crushing, Screening and Agglomeration plant, feed stockpiles, storage ponds, power distribution and miscellaneous storage facilities. It is expected that the heap leach pad will be divided into five 60 by 250 meter cells for solution control and be capable of four- 6 meter lifts each. The site of the leach pads and ADR plant is still being investigated by Desert Hawk although, they have reported to the author to have begun permitting negotiations with the State of Utah.

### **17.1 Water Requirements**

Makeup water requirements for the leaching operations have been estimated at approximately 58 gallons per minute for an estimated annual consumption of approximately 30.2 million gallons. Potable water consumption has been estimated at roughly an additional 6.8 million gallons per year.

### **17.2 Process Flow Sheet**

Figure 17.1 is a conceptual flow sheet produced by Leonard (2007) of the recovery process envisioned for the Kiewit material.

### **17.3 Comments – Recovery Methods**

After reviewing the Kappes, Cassiday & Associates' report, Robert Cameron Consulting believes that based on the current data, this is a reasonable approach for gold recovery from the Historic Kiewit Gold Zone resource. Desert Hawk is in initial discussions with the Utah Department of Environmental Quality on permitting the heap leach pads. Additional pre-feasibility and engineering work is still required for the pad design, ADR plant and associated facilities.

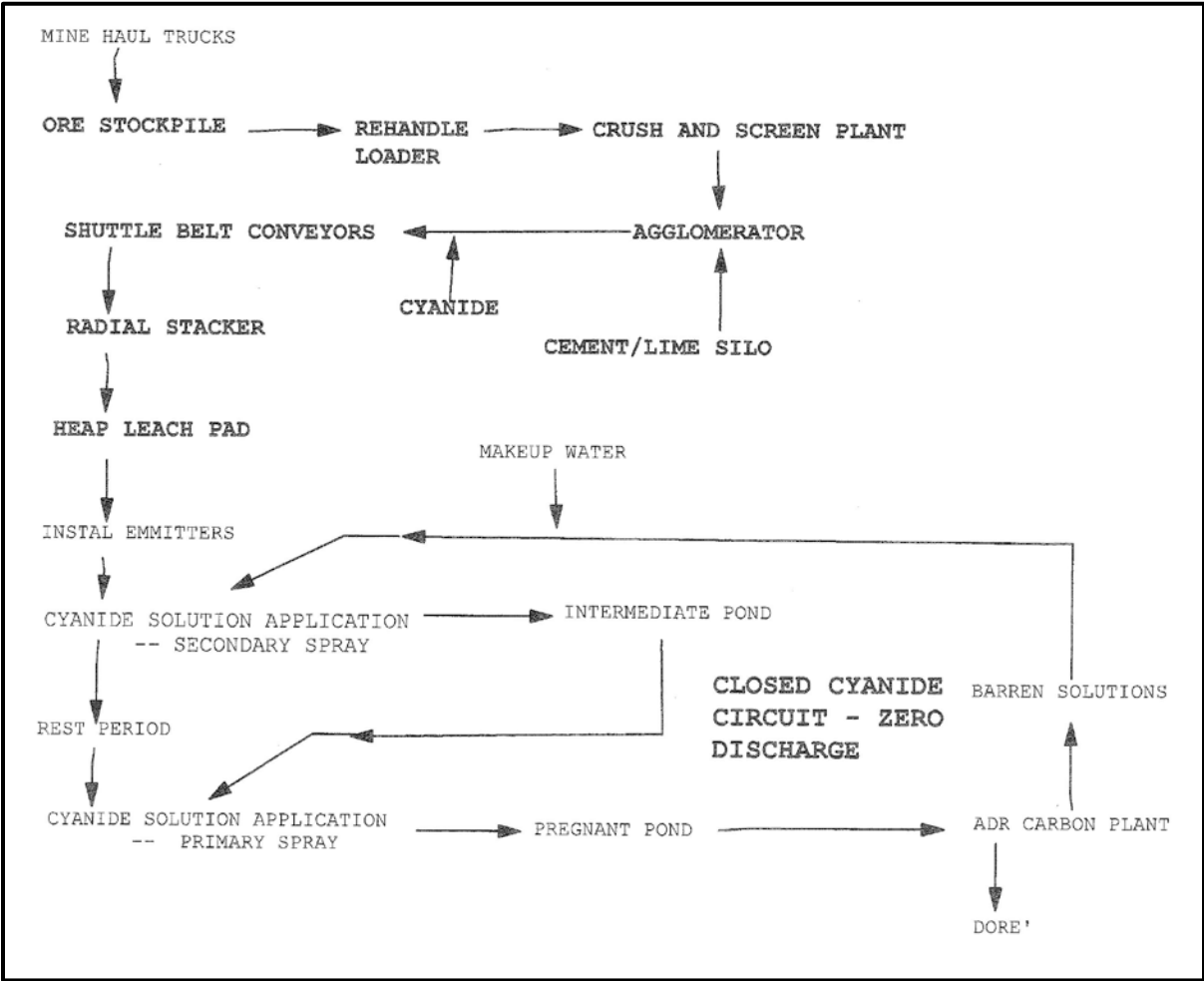


Figure 17.1 Process Flow Sheet

## **18.0 PROJECT INFRASTRUCTURE**

Not Applicable

## 19.0 MARKET STUDIES AND CONTRACTS

Not applicable



## **20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT**

The Clifton-Gold Hill Property is located in an historical mining district that has existing disturbances and mine wastes. The Property is also adjacent to, and uphill from, the Dugway Proving Grounds and Air Force Gunnery Range that is deemed an environmentally insensitive area.

All permits for the Property are currently held by, and are the responsibility of, Desert Hawk who is responsible for all licenses and permits required for their operations and exploration. Desert Hawk will, under the terms of the lease, reclaim any new or previous disturbance if re-disturbed, and post additional reclamation bonds if required. Currently Desert Hawk has posted bonds totaling \$124,700 to cover the exploration, mining and milling permits that they hold.

To date, the exploration and mining within the Clifton controlled area in the mining district has been small scale (historic surface disturbance has been less than 5 acres) which has required minimal environmental studies and permitting. As Desert Hawk move the Kiewit project into production, it will require more stringent permitting and review as the project will probably impact 150+ acres. With much of the potential mining activities involving unpatented BLM claims, an Environmental Assessment (EA) or and Environmental Impact Statement (EIS) will be required to extract minerals from these claims. Desert Hawk reports that the BLM has indicated that an EA should be sufficient for the currently proposed Kiewit operations and has retained JBR Environmental Consultants, Inc. (JBR) for the work.

### **20.1 Federal Regulatory Requirements & Permitting (U.S. Bureau Of Land Management)**

Bureau of Land Management ("BLM") regulations stipulate that, as long as any exploration/mining operations are limited to an area within five acres, there are no requirements to perform an extensive environmental assessment or compose a Plan of Operation ("PoO"). Typically a PoO would consist of a reclamation plan and bond.

The BLM has shifted some of its land management and authority to state agencies such as the Utah Division of Oil, Gas, and Minerals.

To mine the Kiewit area, Desert Hawk will mine on their federal unpatented mining claims. Prior to conducting mining on Federal lands they will be required to go through the NEPA process involving either an Environmental Assessment or an approved Environmental Impact Statement. Desert Hawk reports that the BLM has indicated that an EA should be sufficient for the currently proposed Kiewit operations and has retained JBR Environmental Consultants, Inc. (JBR) for the work which generally can be completed in less than one year. However, if Desert Hawk is required to submit a full EIS, they should allocate 3 to 4 years for the EIS and subsequent BLM approval before mining on federal lands. The current political views of the Administration of the Department of Interior and Department of Agriculture on mining on Federal Lands could increase the time to complete an EIS and for Desert Hawk to receive BLM approval for mining at the Kiewit project.

## **20.2 State Regulatory Requirements & Permitting (Utah Division of Oil, Gas, and Mining)**

The Utah Division of Oil, Gas, and Minerals (“DOG M”) shares authority with the BLM to stipulate and enforce environmental protection measures in the area. Clifton has operated under a mining and milling permit from the DOGM. The DOGM currently holds reclamation bonds in the form of a Certificates of Deposit payable to the DOGM for a total of \$124,700, which Desert Hawk submitted for any mining, milling and exploration disturbance (or re-disturbance). Historically Clifton’s and other exploration operations in the District have never exceeded the 5-acre limit at any one time and have therefore not been a concern for the DOGM. Permit requirements have, consequently, been few and simple. Should, however, future operations exceed the 5-acre limit, additional permitting and reclamations bonds may be required by the DOGM.

Air and water quality division personnel from the Utah Department of Environmental Quality have reportedly visited Clifton’s operations and not required any permitting (The Mining House, 1991). This will change should Desert Hawk bring the Kiewit area into production. Air, water, Storm Water Pollution Prevention Plan (SWPPP) NPDES discharge permits will be required as Desert Hawk increases the size and scope of their exploration and mining activities in the area.

## **20.3 Tooele County Regulatory Requirements & Permitting**

The land surrounding the Clifton Mill has been re-zoned to allow milling and processing to occur in compliance with county ordinances. Clifton has obtained a County Conditional Use Permit that primarily refers to the maintenance of air quality and avoidance of adverse drainage by milling operations. Insofar as exploration/mining activities on other areas of the Property is concerned Howe is unaware of any county regulations or requirements.

## **20.4 Current Permits**

According to the Desert Hawk staff, the company has all permits required for exploration. They also have a Utah “Small Mine” permit which allows the exploitation and disturbance of up to 5 acres which was obtained for the mining conducted this spring at the Yellow Hammer project. Table 20.1 lists Desert current permits for the project.

| <b>Table 20.1<br/>Direst Hawk Current Permits</b>   |               |                      |                      |               |
|---|---------------|----------------------|----------------------|---------------|
| <b>Project</b>  | <b>Agency</b> | <b>Permit</b>        | <b>Permit #</b>      | <b>Status</b> |
| Kiewit  | DOGM/BLM      | Exploration          | E/045/0140           | Approved      |
| Kiewit  | DEQ           | Ground Water         | UGW450011            | Approved      |
| Kiewit  | Ut State Eng. | Water Right          | A78790/18-735        | Approved      |
| Kiewit  | ATF           | Blasting             | 9-UT-045-33-4D-00457 | Approved      |
| Kiewit  | DOGM          | Reclamation          | M/045/0078           | Final Review  |
| Kiewit  | BLM           | Mine Plan            | 3809U8734,UTU011     | Pending?      |
| Kiewit  | Utah          | Air Quality          | Pending DOGM         | Approval      |
|   |               |                      |                      |               |
| Yellow Hammer   | DOGM          | Exploration          | E/045/0162           | Approved      |
| Yellow Hammer   | DOGM          | Small Mine           | S/045/0076           | Approved      |
|   |               |                      |                      |               |
| Cactus Mill   | DOGM          | Large Mine           | M/045/0049           | Approved      |
| Cactus Mill   | BLM           | Mine Plan            | UTU-73999            | Approved      |
| Cactus Mill   | DEQ           | Ground Water         | UGW450011            | Approved      |
| Cactus Mill   | Tooele Co     | Conditional Use      | 0040-95              | Approved      |
| Cactus Mill   | DOGM          | Acid Amendment       | M/045/0049           | 3rd Review    |
| Cactus Mill   | BLM           | Acid Amendment       | UTU-73999            | Dead          |
|   |               |                      |                      |               |
| State Lease   | Utah Trust    | Clay Lease/Pad Liner | ML51712-MP           | Approved      |
|   |               |                      |                      |               |
| Project   | Tooele Co     | Business License     | 12-110               | Approved      |
| Project   | Utah          | Division of Corps    | 737-8396-0143        | Approved      |
| Project   | Federal       | Tax ID               | 82-0230997           | Approved      |
| Project   | Utah          | Professional Eng     | 342789-2202          | Approved      |
| Project   | Utah          | XRF Assay Gun        | # Pending            | Approved      |
| Project   | Utah /Tax     | Dept of Commerce     | no Number            | Approved      |
| DOGM – UT Division of Oil, Gas and Mining<br>BLM – US Bureau of Land Management<br>DEQ - Utah Department of Environmental Quality<br>ATF – US Bureau of Alcohol, Tobacco, Firearms and Explosives |               |                      |                      |               |

## 20.5 Water Rights

The preliminary estimates show that makeup water requirements for the proposed leaching operations have been estimated at approximately 58 gallons per minute for an estimated annual consumption of approximately 30.2 million gallons. Potable water consumption for the mine and leaching operations has been estimated at roughly an additional 6.8 million gallons per year.

The availability of sufficient quantities of processing water is critical to the success of the proposed gold extraction at the Kiewit project. All waters in Utah are public property. A “water right” is a right to divert (remove from its natural source) and beneficially use water. In order for Desert Hawk to obtain water rights for mining and processing at the Kiewit project they will need to file an “Application of Appropriation” with the Division of Water Rights.

The process is reported to typically take 8 to 12 months and the detailed steps to the application process can be found at the website for the Division of Water Rights and are summarized below::

- An Application to Appropriate Water is filed with the Division.
- The application is advertised and protests may be received and a hearing may be held.
- The State Engineer renders a decision on the application based upon principles established in statute and by prior court decisions.
- If the application is approved, the applicant is allowed a set period of time within which to develop the proposed diversion and use water. When the diversion and use are fully developed, the applicant retains the services of a professional engineer or land surveyor who files "proof" documentation with the Division showing the details of the development.

Upon verification of acceptably complete proof documentation, the State Engineer issues a Certificate of Appropriation, thus "perfecting" the water right.

if there is no documented beneficial use of the water, the rights will expire after a specified time (commonly less than five years). Hence, Desert Hawk will need to time their application to coincide with the startup of the leach pad and their planned utilization of the water.

Desert Hawk has applied for and received a 1 CFS ground Water Right from the State of Utah for the Kiewit project (WR 18-735). In addition, they have a contractual agreement with Clifton Mining which allows them an additional 0.4 CFS. The author believes this should be sufficient for the current planned operations but will need to be monitored and adjusted as needed.

## **21.0 CAPITAL AND OPERATING COSTS**

Not Applicable

## 22.0 ECONOMIC ANALYSIS

Not Applicable

## **23.0 ADJACENT PROPERTIES**

Not Applicable

## **24.0 OTHER RELEVANT DATA AND INFORMATION**

Not Applicable



## 25.0 INTERPRETATION AND CONCLUSIONS

The author made a review of available information derived from the extensive database of previous exploration work on Desert Hawks holdings in the Clifton-Gold Hill Mining District. This information included geophysical studies, geological and sampling reports, drill logs, and assay results. Exploration activities have included detailed soil geochemistry, topographic satellite mapping, geophysical surveys, and geological and structural mapping.

From the review of Desert Hawk's geological information, as well as the sampling and assaying procedures and QA/QC protocols within the Historic Kiewit Gold Zone provided from Dumont's archives, it was concluded that:

- The geological basis for exploration and drilling is of very good quality and has proven effective.
- The statistical analyses of Dumont's check sampling versus Dumont geologic sampling shows very good correlation values.

Consequently, the results reported are viewed acceptable and therefore sampling by Dumont is considered reliable.

As of November May 2011, 82 drill holes had been completed in the Kiewit area and included in the electronic database. Dumont drilled a total of 65 holes: 26 diamond drill holes and 39 reverse circulation holes. The remaining 17 holes (1 DDH and 16 RC) were drilled by Goldstack in a previous exploration project at the property.

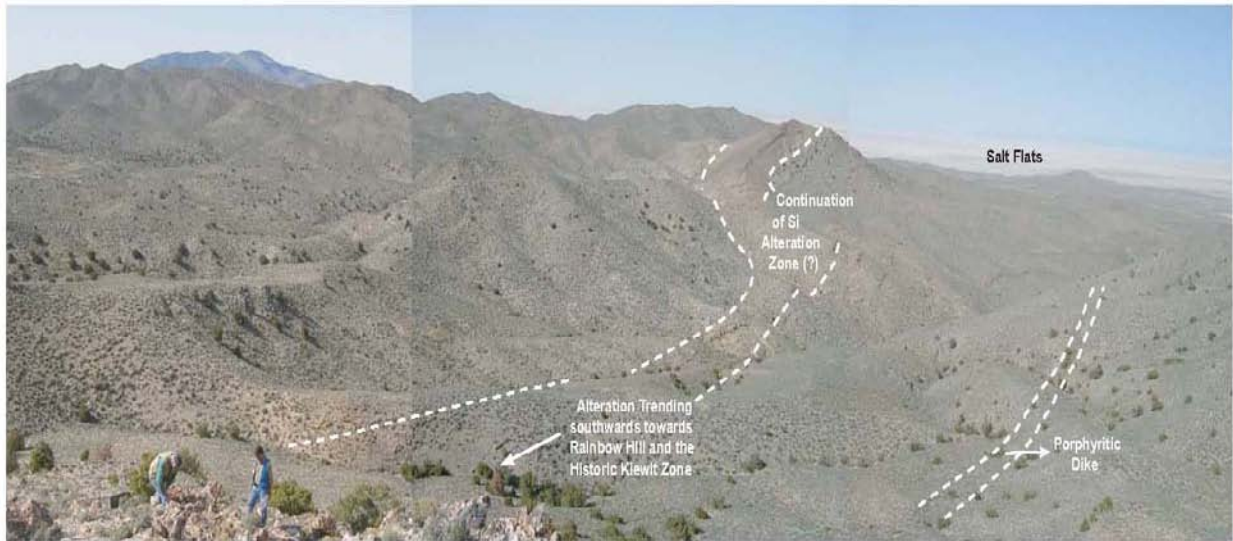
Geological, exploration, and drilling information has identified a mineral resource in the Historic Kiewit Gold Zone which was the primary subject of this report.

The author believes that within the Historic Kiewit Gold Zone there are approximately 3.2 million short tons (2.9 million metric tonnes) of in-situ Measured and Indicated Mineral resource averaging 0.016 ounces of gold per ton (and containing approximately 52,000 ounce of gold. In addition there are 2.2 million short tons of Inferred Mineral resource averaging 0.012 ounces of gold per ton containing approximately 26,000 ounces of gold.

### 25.1 Exploration Potential

Both the Kiewit Area and the other project areas have an excellent exploration potential. The historic soil samples and rock chip programs were conducted when gold prices were below \$400 per ounce. As a result, most of the programs have ignored much of the soil and rock chips as historically they were looking for a deposit with an average grade of 1 to 2 grams per metric tonne.

Currently Desert Hawk's consulting Geologist is working on sampling the outcrop extending North-Northeast from the Historic Kiewit Gold Zone and Rainbow hill as shown in Figure 25.1. Preliminary results from this program show many of these samples are in excess of 0.2 g/t which is the expected break-even cutoff for the Kiewit area at a gold price of \$1500 per ounce. Along this alteration zone is several old historic mine workings, indicating potential mineralization. Successful exploration of this area could significantly increase the tonnage of the potential mining operations.



**Figure 25.1 Exploration Potential North of Rainbow Hill**  
(from A.C.A. Howe report #862, 2006)

In addition, many of the rock chips and float samples taken from the surface exploration in the Kiewit Midzone and South Zones show potentially economic grades. More work is needed to fully evaluate the Kiewit area based on gold prices over \$1200 per ounce and if successful could also increase resources within the Kiewit project.

The Clifton shears area which is south of the Kiewit zone had historic reserves verified by the author based on historic chip sampling of the veins and within old mine workings back in November 2000. Table 25.1 is extracted from that report and it illustrates the potential for additional mineral resources within this area of the Desert Hawk holdings. Additional exploration and verification is need at the Clifton Shears area as the estimate shown is based on historic sampling without the necessary QA/QC work and chain-of-custody that is currently expected for an NI 43-101 compliant mineral resource estimates. The author would caution that this tonnage has a uncertainty as to their existence and economic and legal feasibility and it cannot be assumed that all or any part will ever be upgraded to an NI 43-101 compliant mineral resource category.

| <b>Table 25.1<br/>Historic Estimate of Measured and Indicated Resources Clifton Shears<br/>(November 2000)</b> |                |                     |                      |                     |                      |                   |
|--|----------------|---------------------|----------------------|---------------------|----------------------|-------------------|
| <b>Category</b>  | <b>Tons</b>    | <b>Ag<br/>(opt)</b> | <b>Ounces<br/>Ag</b> | <b>Au<br/>(opt)</b> | <b>Ounces<br/>Au</b> | <b>Pb<br/>(%)</b> |
| Measured   | 107,178        | 8.41                | 901,597              | 0.045               | 4,802                | 5.09              |
| Indicated  | 474,122        | 8.15                | 3,905,133            | 0.051               | 21,824               | 5.22              |
| <b>Total</b>   | <b>581,300</b> | <b>8.05</b>         | <b>4,806,730</b>     | <b>0.050</b>        | <b>26,626</b>        | <b>5.20</b>       |
| Extracted from: <i>Update of Behre Dolbear Report PJ96-24</i> (Cameron, 2000)                                  |                |                     |                      |                     |                      |                   |
| The Mineral Resource categories stated above are not compliant to current NI 43-101 standards for reporting    |                |                     |                      |                     |                      |                   |

Like the Clifton shears, the Cane Springs, IBA, Breccias areas and other Desert Hawk holdings in the Clifton-Gold Hill District have a significant number of soil and surface sampling all indicating low grade mineralization. Desert Hawk needs to take the old data and systematically re-interpret and develop exploration programs to investigate the low-grade potential of these areas.

## 25.2 Risk Factors

- **Robert Cameron Consulting Has Not Audited the Sampling Data or Conducted Independent Sampling:** The author has accepted the drilling data, sampling data, and metal analyses as presented by the Desert Hawk for this report. The exploration and sampling data used was collected and the electronic database was generated by Dumont which has no affiliation with Desert Hawk but had entered a JV agreement with Clifton Mining who supplied Desert Hawk with the data as part of their lease agreement. Robert Cameron Consulting has reviewed the Dumont QA/QC work and has spot checked the electronic database from the PDF scanned copies of the assay certificates provided and believes it is acceptable for the current resource estimate. *Low Risk*
- **Bulk Density Measurements:** Robert Cameron Consulting believes that additional bulk density measurements are required for the Kiewit area to better estimate the actual tonnage of the in-situ material. Historic estimates in the region have typically used a specific gravity of 2.7 while this study used the average of the two samples sent to Kappes, Cassidy & Associates for metallurgical testing, or 2.535. Robert Cameron Consulting believes this is probably a conservative value and views it as *Low Risk* but believes additional work is warranted.
- **Permits and Water Rights:** The current mine license and permits have been issued based on the small of disturbance required for current exploration program. While permits and water rights are sufficient for the current work that Desert Hawk is involved with at the property, these items will need to be considered by Desert Hawk as they move the project into pre-feasibility stage which with additional drilling and surface disturbance may require additional licensing and bonding. *Low Risk*.
- **Environmental Permitting:** The Kiewit resource estimated in this report sits on unpatented federal mining claims. Desert Hawk will need to complete an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) in order to develop this mineral resource and bring it into production. Desert Hawk reports that the BLM has indicated an EA should be sufficient for the project. The property is adjacent to, and uphill from, the Dugway Proving Grounds and Air Force Gunnery Range that is deemed an environmentally insensitive area which should be a favorable factor. However, as with most environmental permitting, there still is a risk of a favorable outcome and decision by the political entities overseeing the review. If a full EIS is required, it typically will require 3 to 4 years for this sort of project. *Medium Risk*.

## 26.0 RECOMMENDATIONS

Robert Cameron Consulting recommends that Desert Hawk initiate two simultaneous programs at for the Kiewit project. The first program should be the continued geological investigation and sampling of the Kiewit area both to the south and to the north. The second program is to begin the background work to bring the Kiewit resource into production.

Further general geologic investigations should be conducted at both the Kiewit area and other areas explored with past programs. Kiewit South, Midzone and north of Rainbow Hill should be systematically surface sampled and drilled to assess the low grade-bulk tonnage potential. The historic soil and chip sample databases for the various areas in the Clifton-Gold Hill Mining District should be merged and contoured to provide targets where additional sampling and drilling should be conducted.

In parallel with this program Desert Hawk will need to begin a program aimed towards bring the Kiewit resource into production. This will require an EA or EIS for the Kiewit project and the pre-feasibility level design for the mine, leach pad and ADR plant. As the resource is contained on unpatented Federal mining claims, the BLM will require either an EA or EIS before any extraction will be able to take place in the current resource area. Desert Hawk reports that the BLM has indicated that an EA should be sufficient for the project. Additional drilling is recommended for the fringes of the area which should also be coordinated with the extended exploration for the Kiewit zone.

Robert Cameron Consulting has developed a budget for 2001 to 2014 for the recommended work plan and it is presented in Table 26.1

| <b>Item</b>                        | <b>Cost</b>         |
|------------------------------------|---------------------|
| General District Exploration       | \$4,000,000         |
| Additional Kiewit Exploration      | \$6,250,000         |
| EA/EIS Studies and Assembly        | \$4,000,000         |
| Engineering Consulting             | \$500,000           |
| Additional Metallurgical Studies   | \$750,000           |
| Prefeasibility Study               | \$1,250,000         |
| Permitting                         | \$500,000           |
| Condemnation Drilling and Assaying | \$1,000,000         |
| Office and Admin                   | \$800,000           |
| Corporate Overhead                 | \$4,400,000         |
| <b>Total</b>                       | <b>\$23,450,000</b> |

Included in the above outlined work, the author would recommend that the following items be considered and completed:

- **Data organization:** The 50 GB of electronic files and data should be better organized for general reference. The miscellaneous drilling , soil sampling and rock chip databases for the different property areas should be consolidated. District wide contours of the soil samples and chip samples should be plotted.
- **Database audit:** Desert Hawk should have a complete independent audit of the consolidated database to ensure correct data entry from the historic records.
- **Independent sampling and assaying:** Desert Hawk is completing an in-house sampling and assaying program to internally validate the Dumont programs. This work lacks a lot of the QA/QC if the sampling is to be used for future estimates. Some independent work will be required for NI 43-101 filings with complete chain-of-custody records. As Desert Hawk proceeds with their exploration program, independent sampling and assaying should be automatically be built into the budgets and programs.
- **QA/QC Protocols:** The current internal verification program lacks formal QA/QC protocols. Desert Hawk needs to establish a full QA/QC and chain-of-custody protocols for their on-going surface verification and exploration program. These should include insertion of blank, standards and duplicates.

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## **28.0 DATE AND SIGNATURE PAGE**

The undersigned prepared this Technical Report, titled "Independent Technical Report and Resource Estimate for the Desert Hawk Kiewit Project, Gold Hill, Utah, USA," dated 31 August 2011.

The format and content of the report are intended to conform to Form 43-101F1 of National Instrument 43-101 (NI 43-101) of the Canadian Securities Administrators.

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Robert Cameron

31 August 2011



## CERTIFICATE OF QUALIFICATIONS

Robert Cameron, Ph.D.

I, Robert E. Cameron, Ph.D., MMSA QP, do hereby certify that:

1. I am a consulting Resource and Reserve Specialist doing business as Robert Cameron Consulting at the address of 200 Dubois Street, Black Hawk Colorado, USA, 80422.
2. I am a Qualified Person – No. 01357QP of the Mining and Metallurgical Society of America.
3. I am a graduate of The University of Utah with a B.S., M.S. and Ph.D. degrees in Mining Engineering.
4. I have practiced my profession since 1977. My relevant experience for the purpose of the Technical Report is: Acting as a consulting resource and reserve specialist for 30 years specializing in the due diligence review, computerized mine design, mine optimization, geostatistical review and resource and reserve audits of a wide variety of minerals.
5. I have read the definition of “Qualified Person” as set out in Canadian National Instrument 43-101 *Standards of Disclosure for Mineral Properties* (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 preparation of the Independent Technical Report and Resource Estimate for the Desert Hawk Kiewit Project, Gold Hill, Utah, USA, dated 31 August 2011 (Technical Report).
7. I have personally visited to the properties that are the subject of this report.
8. I am independent of Desert Hawk Gold Corporation, as set out in Section 1.5 of Canadian National Instrument 43-101.
9. I have read Canadian National Instrument 43-101 and the Technical Report has been prepared in compliance with Canadian National Instrument 43-101 and Form 43-101F1.
10. 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.
11. I consent to the filing of this Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public.

Dated this 31<sup>st</sup> day of August 2011

Robert E Cameron, Ph.D., MMSA 01357QP

**APPENDIX A**

**PROPERTY LIST**

| <b>Unpatented Millsite Claim</b> |                 |
|----------------------------------|-----------------|
| <b>UMC#</b>                      | <b>Name</b>     |
| 317839                           | Cactus Millsite |

| <b>Unpatented Load Claims</b> |             |
|-------------------------------|-------------|
| <b>UMC#</b>                   | <b>Name</b> |
| 317850                        | Clifton #7  |
| 317851                        | Clifton #8  |
| 317852                        | Clifton #9  |
| 317853                        | Clifton #10 |
| 317854                        | Clifton #11 |
| 317855                        | Clifton #12 |
| 317856                        | Clifton #13 |
| 317857                        | Clifton #14 |
| 317858                        | Clifton #15 |
| 317859                        | Clifton #16 |
| 317860                        | Clifton #17 |
| 317861                        | Clifton #18 |
| 317862                        | Clifton #19 |
| 317863                        | Clifton #20 |
| 317864                        | Clifton #21 |
| 317865                        | Clifton #22 |
| 317866                        | Clifton #23 |
| 317867                        | Clifton #26 |
| 317868                        | Clifton #27 |
| 317869                        | Clifton #27 |
| 317870                        | Clifton #28 |
| 317871                        | Clifton #29 |
| 317872                        | Clifton #30 |
| 369132                        | Flat #293   |
| 369133                        | Flat #294   |
| 369134                        | Flat #295   |
| 369135                        | Flat #296   |
| 369136                        | Flat #297   |
| 317878                        | Flat #309   |
| 335440                        | Flat #309   |
| 317879                        | Flat #310   |
| 317880                        | Flat #311   |
| 317881                        | Flat #312   |

| <b>Unpatented Load Claims</b> |             |
|-------------------------------|-------------|
| <b>UMC#</b>                   | <b>Name</b> |
| 317882                        | Flat #313   |
| 317883                        | Flat #314   |
| 335441                        | Flat #314   |
| 317884                        | Flat #323   |
| 335442                        | Flat #323   |
| 317885                        | Flat #324   |
| 317886                        | Flat #325   |
| 317887                        | Flat #326   |
| 317888                        | Flat #326   |
| 317889                        | Flat #327   |
| 317890                        | Flat #328   |
| 317891                        | Flat #329   |
| 317892                        | Flat #330   |
| 335443                        | Flat #330   |
| 369137                        | Flat #341   |
| 369138                        | Flat #342   |
| 369139                        | Flat #343   |
| 369140                        | Flat #344   |
| 369141                        | Flat #345   |
| 371931                        | Flat #347   |
| 371932                        | Flat #347   |
| 369285                        | Flat #501   |
| 369286                        | Flat #502   |
| 194358                        | Flat #503   |
| 193364                        | Flat #504   |
| 193357                        | Flat #505   |
| 355781                        | CGC #1      |
| 355782                        | CGC #2      |
| 355783                        | CGC #3      |
| 355784                        | CGC #4      |
| 355785                        | CGC #5      |
| 355786                        | CGC #6      |
| 355787                        | CGC #7      |
| 355788                        | CGC #8      |
| 355789                        | CGC #9      |
| 355790                        | CGC #10     |
| 355791                        | CGC #11     |
| 355792                        | CGC #12     |
| 369095                        | CGC #45     |
| 369096                        | CGC #46     |

| <b>Unpatented Load Claims</b> |                     |
|-------------------------------|---------------------|
| <b>UMC#</b>                   | <b>Name</b>         |
| 369097                        | CGC #47             |
| 369112                        | CGC #88             |
| 369113                        | CGC #89             |
| 369114                        | CGC #90             |
| 369115                        | CGC #91             |
| 369118                        | CGC #204            |
| 355837                        | CGC #290            |
| 355838                        | CGC #291            |
| 355839                        | CGC #292            |
| 355840                        | CGC #299            |
| 355841                        | CGC #299            |
| 355842                        | CGC #300            |
| 355843                        | CGC #301            |
| 355844                        | CGC #301            |
| 369120                        | CGC #302            |
| 369121                        | CGC #305            |
| 369122                        | CGC #306            |
| 369123                        | CGC #307            |
| 355849                        | CGC #308            |
| 355850                        | CGC #315            |
| 369124                        | CGC #316            |
| 369125                        | CGC #317            |
| 369126                        | CGC #318            |
| 369127                        | CGC #319            |
| 369128                        | CGC #320            |
| 369129                        | CGC #321            |
| 355857                        | CGC #322            |
| 355858                        | CGC #331            |
| 359375                        | GHM #1              |
| 359376                        | GHM #2              |
| 359377                        | GHM #3              |
| 317838                        | Centennial Fraction |
| 317840                        | Glenda #1           |
| 317841                        | Glenda #2           |
| 317842                        | Glenda #3           |
| 317843                        | Glenda #4           |
| 317844                        | Glenda #5           |
| 317845                        | Glenda #6           |
| 317846                        | Tower #1            |
| 317847                        | Tower #2            |

| <b>Unpatented Load Claims</b> |             |
|-------------------------------|-------------|
| <b>UMC#</b>                   | <b>Name</b> |
| 369295                        | Tower #3    |
| 369296                        | Tower #4    |
| 369297                        | Tower #5    |
| 369298                        | Tower #6    |
| 371933                        | Tower #7    |
| 371934                        | Tower #8    |
| 317901                        | IP6         |
| 317903                        | IP7         |
| 317904                        | IP8         |
| 317905                        | IP9         |
| 317906                        | IP10        |
| 317907                        | IP11        |
| 317908                        | IP12        |
| 317909                        | IP13        |
| 369142                        | IP14        |
| 317911                        | IP14        |
| 317912                        | IP14        |
| 369913                        | IP15        |
| 317914                        | IP15        |
| 317915                        | IP18        |
| 317916                        | IP19        |
| 317917                        | IP20        |
| 317918                        | IP20        |
| 317919                        | IP21        |
| 317920                        | IP22        |
| 317921                        | IP22        |
| 317922                        | IP23        |
| 317923                        | IP24        |
| 317924                        | IP25        |
| 317925                        | IP26        |
| 317926                        | IP27        |
| 317927                        | IP28        |
| 317928                        | IP29        |
| 317929                        | IP30        |
| 317930                        | IP31        |
| 317931                        | IP32        |
| 317932                        | IP33        |
| 317933                        | IP34        |
| 317934                        | IP35        |
| 317936                        | IP39        |

| <b>Unpatented Load Claims</b> |             |
|-------------------------------|-------------|
| <b>UMC#</b>                   | <b>Name</b> |
| 317937                        | IP40        |
| 317938                        | IP41        |
| 317940                        | IP43        |
| 317942                        | IP45        |
| 317945                        | IP47        |
| 369143                        | IP50        |
| 369144                        | IP51        |
| 317948                        | IP53        |
| 317949                        | IP54        |
| 317954                        | Pearl #5    |
| 317977                        | Pearl #177  |
| 317978                        | Pearl #178  |
| 317999                        | Pearl #209  |
| 369185                        | Pearl #210  |
| 318001                        | Pearl #211  |
| 369186                        | Pearl #214  |
| 369187                        | Pearl #215  |
| 369188                        | Pearl #216  |
| 369189                        | Pearl #218  |
| 369190                        | Pearl #219  |
| 369191                        | Pearl #220  |
| 318009                        | Pearl #222  |
| 318010                        | Pearl #222  |
| 369197                        | Pearl #235  |
| 369198                        | Pearl #236  |
| 369199                        | Pearl #237  |
| 369200                        | Pearl #238  |
| 369201                        | Pearl #239  |
| 369202                        | Pearl #240  |
| 369203                        | Pearl #241  |
| 369204                        | Pearl #242  |
| 369205                        | Pearl #243  |
| 369206                        | Pearl #244  |
| 369207                        | Pearl #245  |
| 369208                        | Pearl #246  |
| 371747                        | Pearl #266  |
| 371748                        | Pearl #267  |
| 318033                        | Pearl #268  |
| 318034                        | Pearl #269  |
| 318035                        | Pearl #270  |

| <b>Unpatented Load Claims</b> |             |
|-------------------------------|-------------|
| <b>UMC#</b>                   | <b>Name</b> |
| 318036                        | Pearl #275  |
| 318037                        | Pearl #276  |
| 369213                        | Pearl #288  |
| 369214                        | Pearl #289  |
| 369215                        | Pearl #290  |
| 369216                        | Pearl #291  |
| 369217                        | Pearl #292  |
| 369218                        | Pearl #293  |
| 318048                        | Pearl #294  |
| 318049                        | Pearl #295  |
| 318050                        | Pearl #296  |
| 318051                        | Pearl #301  |
| 318052                        | Pearl #302  |
| 369219                        | Pearl #321  |
| 369220                        | Pearl #321  |
| 369221                        | Pearl #322  |
| 369222                        | Pearl #322  |
| 369223                        | Pearl #323  |
| 369224                        | Pearl #324  |
| 371749                        | Pearl #325  |
| 369225                        | Pearl #325  |
| 318065                        | Pearl #333  |
| 318066                        | Pearl #333  |
| 318067                        | Pearl #334  |
| 318068                        | Pearl #334  |
| 318069                        | Pearl #335  |
| 369226                        | Pearl #346  |
| 318075                        | Pearl #353  |
| 318076                        | Pearl #354  |
| 318077                        | Pearl #355  |
| 318078                        | Pearl #356  |
| 318079                        | Pearl #357  |
| 318080                        | Pearl #365  |
| 318081                        | Pearl #366  |
| 318082                        | Pearl #367  |
| 318104                        | Pearl #438  |
| 370041                        | DMC #1      |
| 370042                        | DMC #2      |
| 370043                        | DMC #3      |
| 370044                        | DMC #4      |



| <b>Unpatented Load Claims</b> |             |
|-------------------------------|-------------|
| <b>UMC#</b>                   | <b>Name</b> |
| 370045                        | DMC #5      |
| 370046                        | DMC #6      |
| 370048                        | DMC #8      |
| 370050                        | DMC #10     |
| 370051                        | DMC #11     |
| 370053                        | DMC #13     |
| 370055                        | DMC #15     |
| 370057                        | DMC #17     |
| 370063                        | DMC #23     |
| 370064                        | DMC #24     |
| 370065                        | DMC #25     |
| 370066                        | DMC #26     |
| 370067                        | DMC #27     |
| 370068                        | DMC #28     |
| 370069                        | DMC #29     |
| 370070                        | DMC #30     |
| 370071                        | DMC #31     |
| 370157                        | DMC #153    |
| 370358                        | DMC #154    |
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| 370360                        | DMC #156    |
| 370361                        | DMC #157    |
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| 370363                        | DMC #159    |
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| 370366                        | DMC #162    |
| 370367                        | DMC #163    |
| 370368                        | DMC #164    |
| 370369                        | DMC #165    |
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| 370371                        | DMC #167    |
| 370372                        | DMC #168    |
| 370373                        | DMC #169    |
| 370395                        | DMC #191    |
| 370396                        | DMC #192    |
| 370397                        | DMC #193    |
| 370398                        | DMC #194    |
| 370399                        | DMC #195    |
| 370400                        | DMC #196    |

| <b>Unpatented Load Claims</b> |             |
|-------------------------------|-------------|
| <b>UMC#</b>                   | <b>Name</b> |
| 386897                        | DMC #458    |
| 386898                        | DMC #459    |
| 386899                        | DMC #460    |
| 386900                        | DMC #461    |
| 371973                        | DMC #462    |
| 371974                        | DMC #463    |
| 371975                        | DMC #464    |
| 371976                        | DMC #465    |
| 371977                        | DMC #466    |
| 371978                        | DMC #467    |
| 386901                        | DMC #476    |
| 371979                        | DMC #478    |
| 371980                        | DMC #479    |
| 371981                        | DMC #480    |
| 369258                        | CB #1       |
| 369259                        | CB #2       |
| 369260                        | CB #3       |
| 369261                        | CB #4       |
| 369262                        | CB #5       |
| 369263                        | CB #6       |
| 369264                        | CB #7       |
| 369265                        | CB #8       |

| <b>Unpatented Placer Claims</b> |                   |
|---------------------------------|-------------------|
| <b>UMC#</b>                     | <b>Name</b>       |
| 406909                          | Clifton Placer 1  |
| 406910                          | Clifton Placer 2  |
| 406911                          | Clifton Placer 3  |
| 406912                          | Clifton Placer 4  |
| 406913                          | Clifton Placer 5  |
| 406914                          | Clifton Placer 6  |
| 406915                          | Clifton Placer 7  |
| 406916                          | Clifton Placer 8  |
| 406917                          | Clifton Placer 9  |
| 406918                          | Clifton Placer 11 |
| 406919                          | Clifton Placer 12 |
| 406920                          | Clifton Placer 13 |
| 406921                          | Clifton Placer 14 |
| 406922                          | Clifton Placer 15 |

| <b>Unpatented Placer Claims</b> |                   |
|---------------------------------|-------------------|
| <b>UMC#</b>                     | <b>Name</b>       |
| 406923                          | Clifton Placer 16 |
| 406924                          | Clifton Placer 17 |
| 406925                          | Clifton Placer 18 |
| 406926                          | Clifton Placer 19 |
| 406927                          | Clifton Placer 20 |
| 406928                          | Clifton Placer 21 |
| 406929                          | Clifton Placer 22 |
| 406930                          | Clifton Placer 23 |
| 406931                          | Clifton Placer 24 |
| 406932                          | Clifton Placer 25 |
| 406933                          | Clifton Placer 26 |
| 406934                          | Clifton Placer 27 |
| 406935                          | Clifton Placer 28 |
| 406936                          | Clifton Placer 29 |
| 406937                          | Clifton Placer 30 |
| 406938                          | Clifton Placer 31 |
| 406939                          | Clifton Placer 32 |
| 406940                          | Clifton Placer 33 |

## Utah Mineral Leases

### State Trust Lands Description

Utah State Lease For Metalliferous Minerals: Mineral Lease No. 47181  
 Twp 8S, R18W, SLB&M, Section 2: Lots 1,2,3,4,5,6,7,8,9,10,S1/2NW1/4, SW1/4, SW1/4SE1/4  
 Date Issued: August 14, 1992 Total Area - 532.77 acres

### State Trust Lands Description

Utah State Lease For Metalliferous Minerals: Mineral Lease No. 48981  
 Twp 7S, R18W, SLB&M, Section 36: W2NW4, SE1NW4, NW4SW4  
 Date Issued: November 25, 2008 Total Area - 160 acres

### State Trust Lands Description

Utah State Lease For Metalliferous Minerals: Mineral Lease No. 48984  
 Twp 8S, R17W, SLB&M, Section 16 Partial Acres 640.00  
 Twp 8S, R17W, SLB&M, Section 32 Partial Acres 424.52 Lots 1-16, N2NW4  
 Total Area - 1064.52 acres

**State Trust Lands Description**

Utah State Lease For Metalliferous Minerals: Mineral Lease No. 49282  
 Twp 7S, R18W, SLB&M, Section 36: Lots 1-9 S2NE4, NW4NE4, NE4NW4  
 Total Area - 412.42 acres

**State Trust Lands Description**

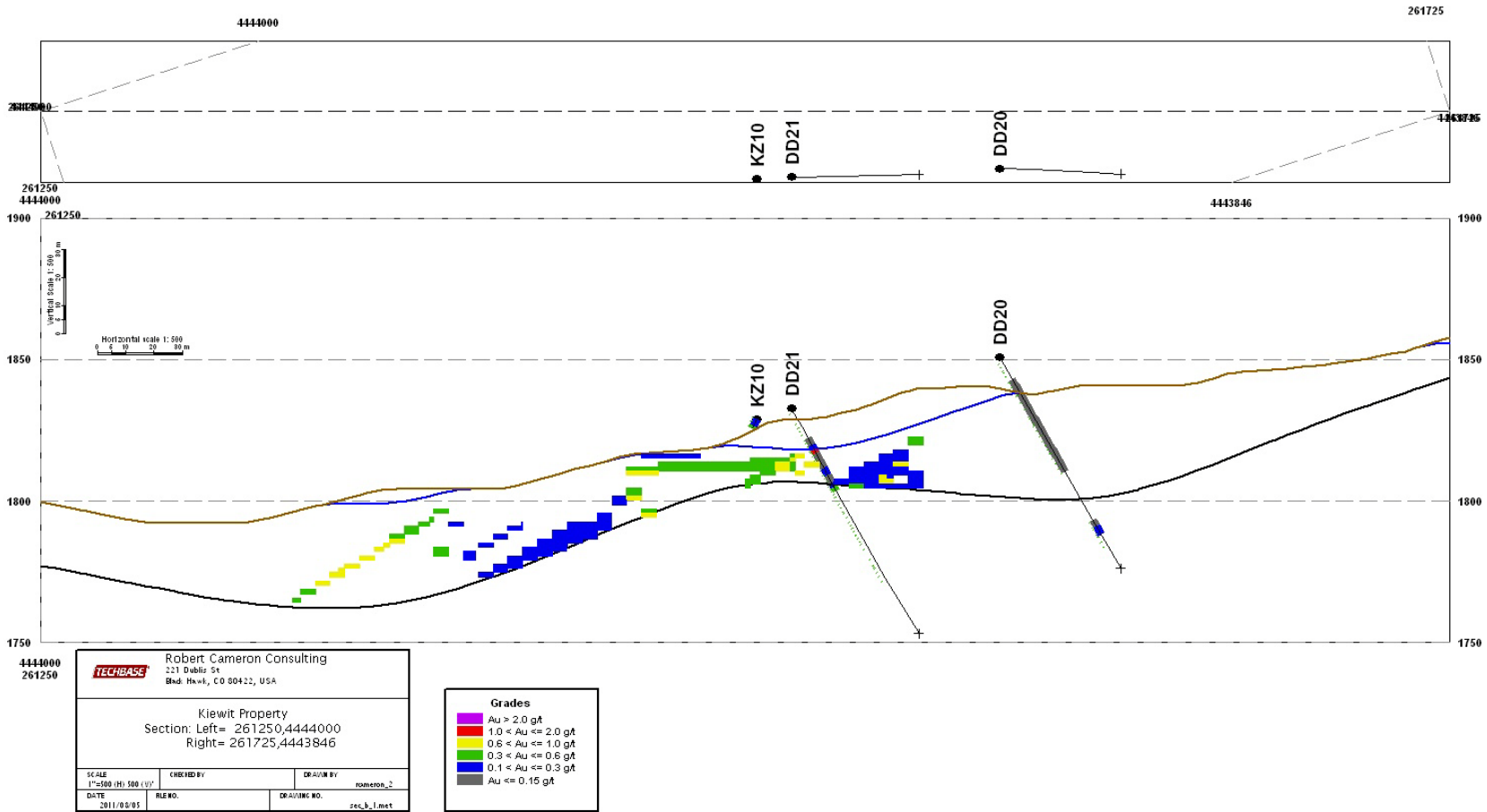
Utah State Lease For Metalliferous Minerals: Mineral Lease No. 47277  
 Twp 8S, R18W, SLB&M, Section 36  
 Total Acres 640, Date issued unknown

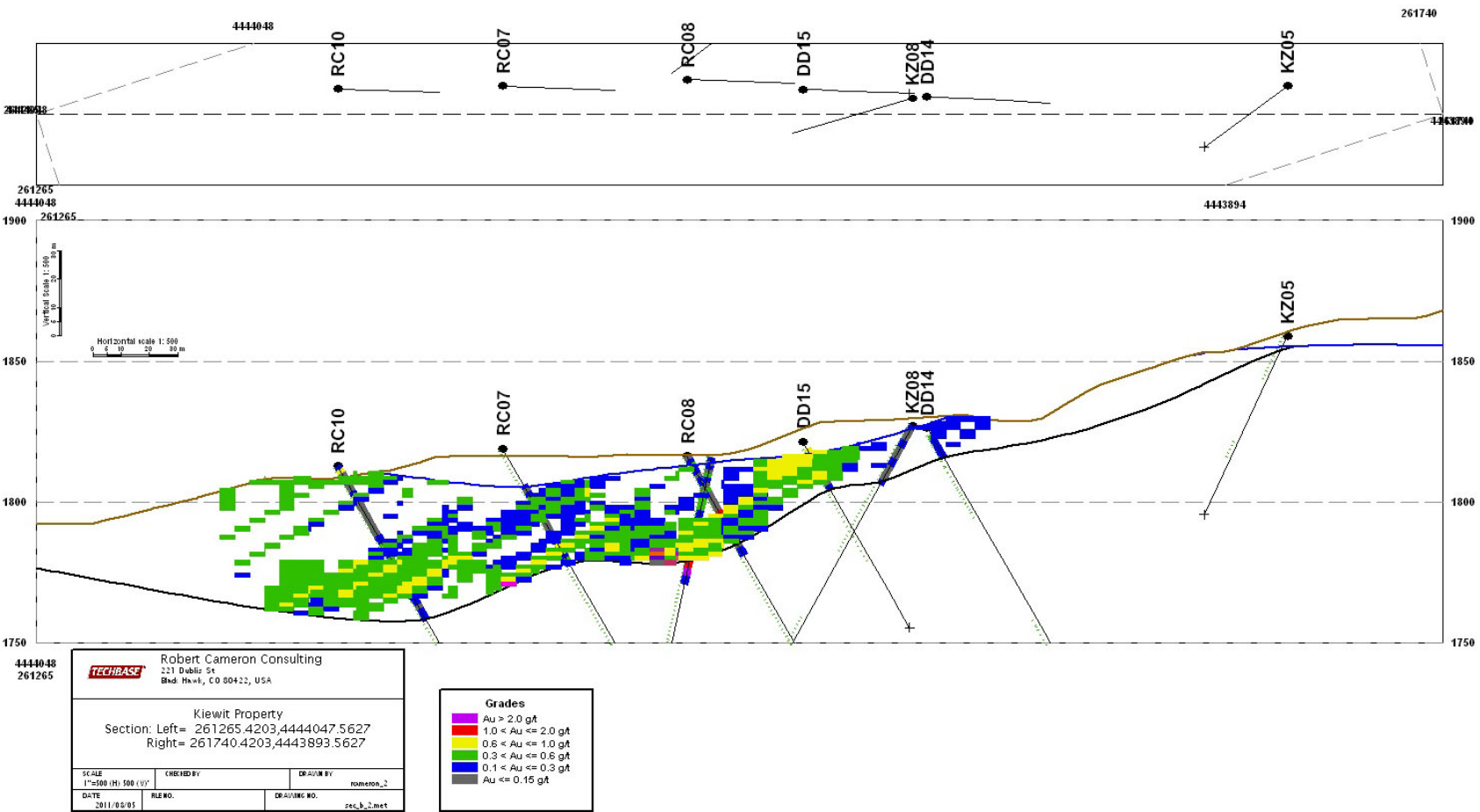
| Patented Claims       |                  |       |                  |  |         |
|-----------------------|------------------|-------|------------------|--|---------|
| Patented Claim Name   | State Property # | Lot # | Mineral Survey # | Meridian, Twp, Rng, Sec<br>(As per State Tax Commission) | Acreage |
| Clifton Mining        |                  |       |                  |  |         |
| Sunshine              | 22477            |       | 67               | 26 0080S 0180W 025                                       | 8.559   |
| Ibapah                | 22484            |       | 47               | 26 0080S 0180W 025                                       | 19.310  |
| Calendar              | 22491            |       | 68               | 26 0080S 0180W 025                                       | 17.450  |
| Columbia              | 22490            |       | 43               | 26 0080S 0170W 30  | 19.900  |
| Iron                  | 22483            | 10    | 46               | 26 0080S 0180W 019                                       | 19.610  |
| Neptune               | 22479            | 4     | 40               | 26 0080S 0180W 036                                       | 19.380  |
| Herat Lode            | 22485            | 3     | 39               | 26 0080S 0180W 025                                       | 18.640  |
| Black Hawk/Red Jacket | 22492            |       | 6173             | 26 0080S 0180W 013                                       | 33.453  |
| Albany                | 22494            |       | 3354             | 26 0080S 0180W 024                                       | 17.101  |
| George E.             | 22476            |       | 4375             | 26 0080S 0170W 30  | 16.788  |
| Mt. Vernon            | 22480            | 30    | 66               | 26 0080S 0180W 025                                       | 16.386  |
| Democrat              | 22489            | 32    | 68               | 26 0080S 0180W 025                                       | 18.170  |
| Atlantis              | 22493            | 8     | 44               | 26 0080S 0170W 019                                       | 16.670  |
| Juniper               | 22482            | 21    | 57               | 26 0080S 0170W 019                                       | 15.894  |
| Fleet Wing            | 22487            | 6     | 42               | 26 0080S 0170W<br>019; 30                                | 15.000  |
| Elephant              | 22488            | 29    | 65               | 26 0080S 0180W 036                                       | 10.928  |
| Lost Treasure Lode    | 22481            | 5     | 41               | 26 0080S 0180W 025                                       | 18.281  |
| George Washington     | 22486            |       | 70               | 26 0080S 0180W 025                                       | 12.600  |
| Southern Confederate  | 22478            |       | 64               | 26 0080S 0180W   | 6.820   |
| Paymaster #2          | 24961            |       | 55               | 26 0080S 0170W 019                                       | 20.661  |
| New Baltimore         | 24964            |       | 4389             | 26 0080S 0180W 018                                       | 9.246   |
| Laura                 | 49419            |       | 56               | 26 0090S 0180W 001                                       | 10.330  |
| Geronimo              | 49420            |       | 53               | 26 0080S 0180W 036                                       | 20.660  |
| Filmore               | 49421            |       | 3550             | 26 0090S 0180W 001                                       | 18.595  |
| IOU & UO ME           | 49422            |       | 54               | 26 0080S 0170W 030                                       | 19.559  |
| Monocco               | 48281            |       | 58               | 26 0080S 0180W 036                                       | 18.356  |
| Maintanoma            | 4172             |       | 4393             | 26 0080S 0180W 024                                       | 15.867  |

| <b>Patented Claims</b>        |                         |              |                         |   |                |
|-------------------------------|-------------------------|--------------|-------------------------|---|----------------|
| <b>Patented Claim Name</b>    | <b>State Property #</b> | <b>Lot #</b> | <b>Mineral Survey #</b> | <b>Meridian,Twp, Rng, Sec<br/>(As per State Tax Commission)</b> | <b>Acreage</b> |
| Woodman Mining                |                         |              |                         |   |                |
| Cane Spring Lode              | 48907                   |              | 50                      | 26 0080S 0180W 002  | 17.220         |
| Cane Spring #2                | 48908                   |              | 4387                    | 26 0080S 0180W 002  | 4.922          |
| Newton Albert Lode & Millsite | 48905                   |              | 51A & 51B               | 26 0080S 0180W 002  | 23.588         |
| Imperial                      | 18790                   |              | 4388                    | 26 0080S 0180W 002  | 19.973         |
| Frankie                       | 18791                   |              | 63                      | 26 0080S 0180W 012  | 19.043         |
| Bonnemort                     | 48906                   |              | 49A                     | 26 0080S 0180W 012  | 18.874         |
| Lucky Jim                     | 48909                   |              | 59                      | 26 0070S 0180W 036  | 16.940         |
| Alvorado                      | 48910                   |              | 59                      | 26 0070S 0180W 036  | 15.670         |
| Ethel                         | 48911                   |              | 59                      | 26 0070S 0180W 036  | 20.470         |
| Emma #2                       | 48912                   |              | 59                      | 26 0070S 0180W 012  | 16.890         |
| Moeller Family Trust          |                         |              |                         |   |                |
| Cosmopolitan                  | 24965                   |              | 4382                    | 26 0080S 0180W 024  | 20.056         |
| Copperopolis                  | 40523                   |              | 4382                    | 26 0080S 0180W 024  | 17.437         |
| Yellow Hammer                 | 40524                   |              | 4382                    | 26 0080S 0180W 024  | 20.210         |
| Centennial                    | 40525                   |              | 5151                    | 26 0080S 0180W 024  | 20.660         |
| <b>Total</b>                  |                         |              |                         |   | <b>706.167</b> |

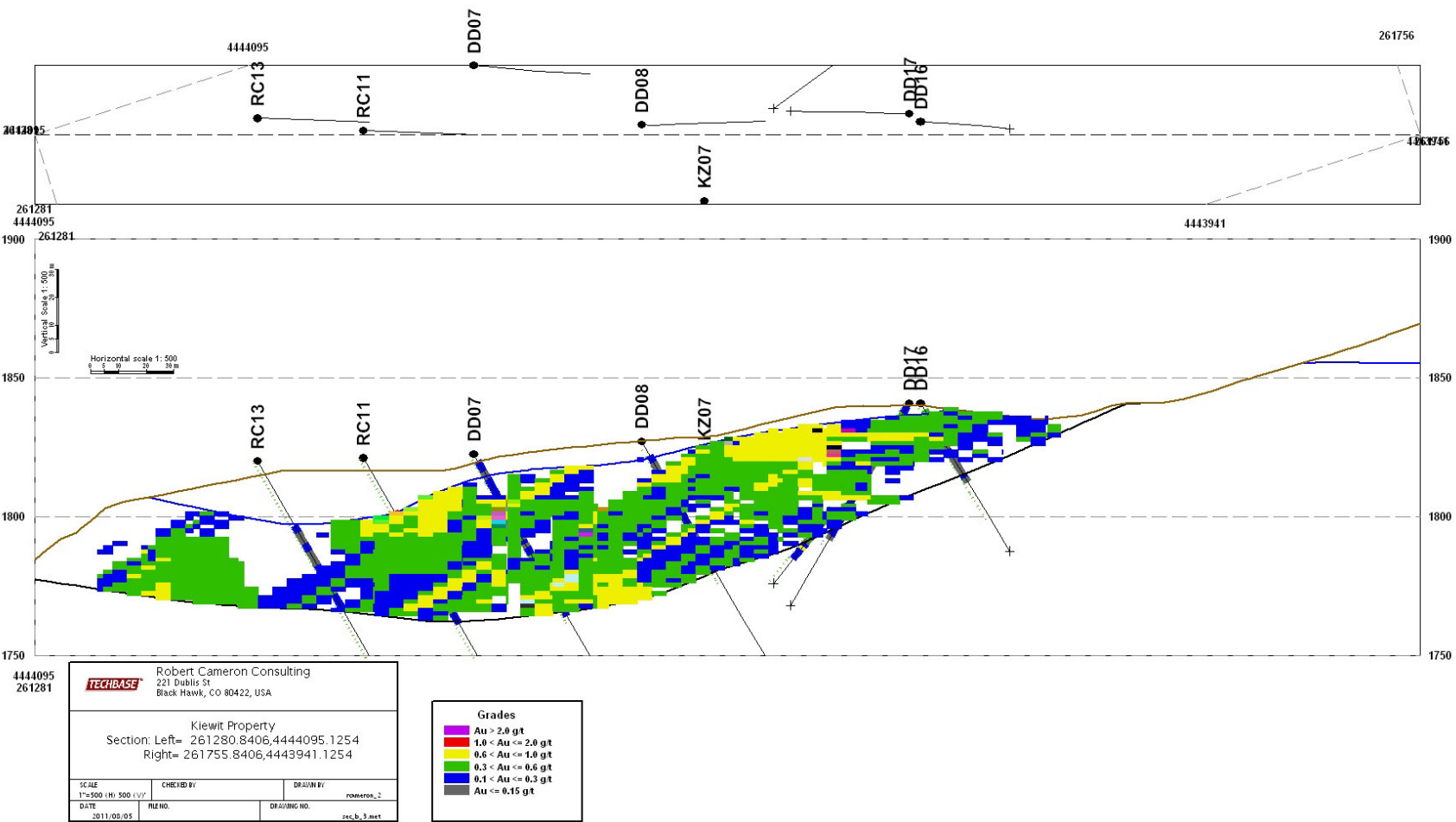
## **APPENDIX B**

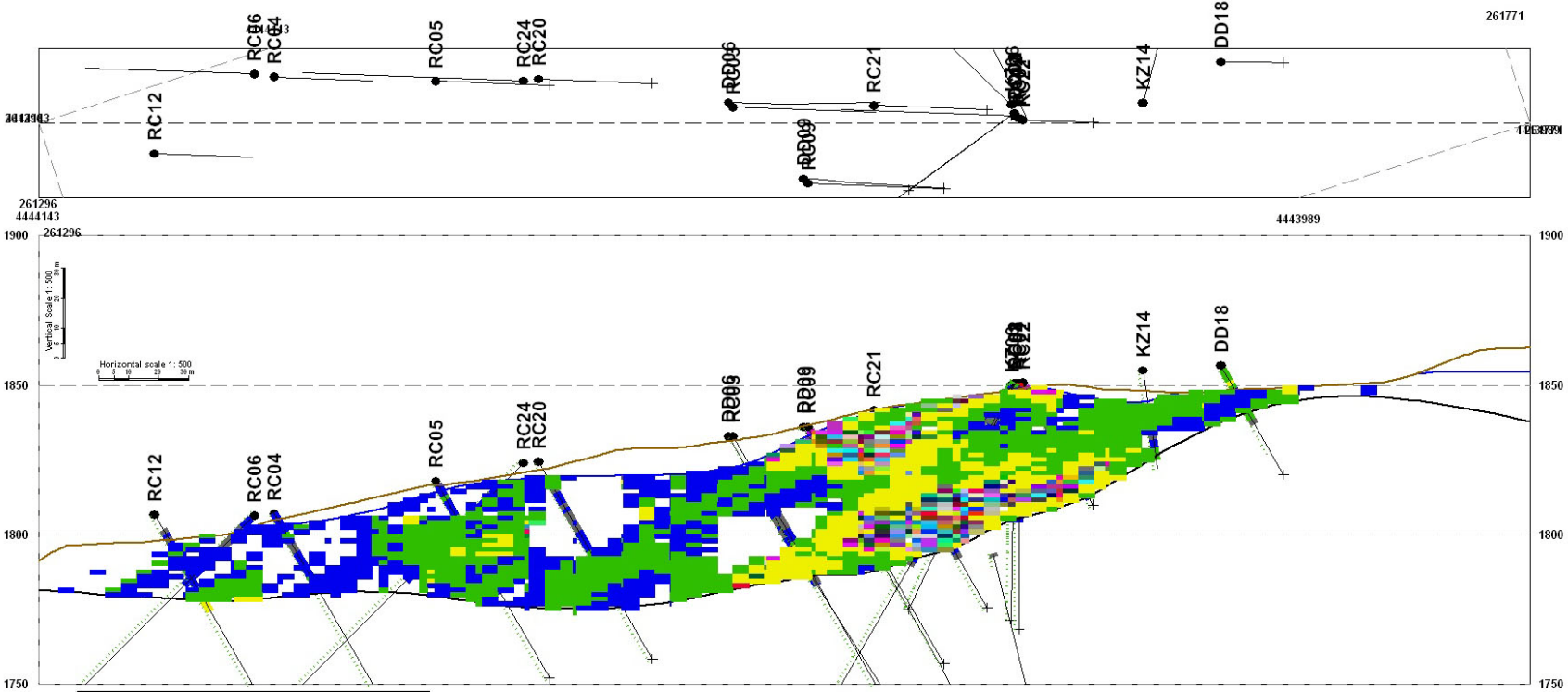
### **BLOCK MODEL CROSS SECTIONS**





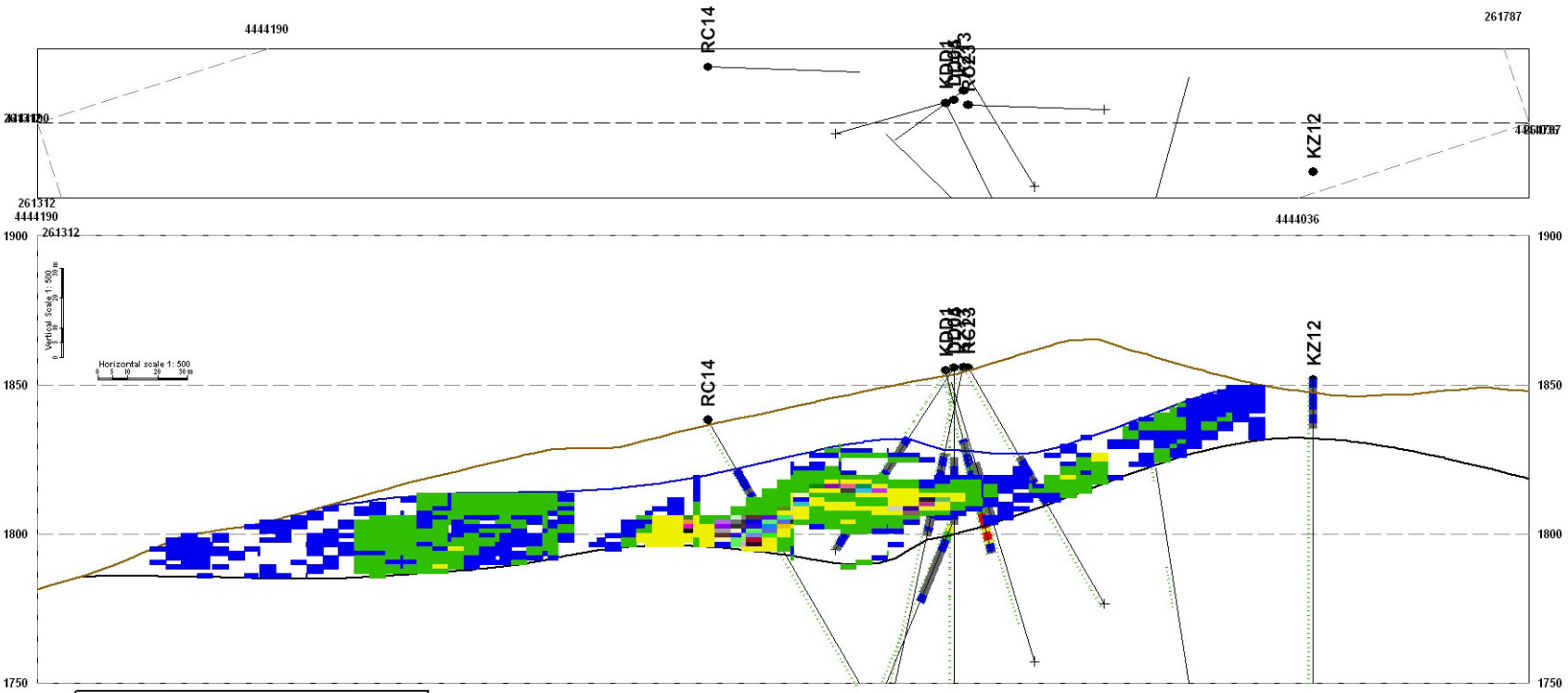






|   |            |             |
|---|------------|-------------|
|   |            |             |
| Robert Cameron Consulting<br>221 Dublin St<br>Black Hawk, CO 80422, USA                       |            |             |
| Kiewit Property<br>Section: Left= 261296.2609,4444142.6881<br>Right= 261771.2609,4443988.6881 |            |             |
| SCALE   | CHECKED BY | DRAWN BY    |
| 1"=500 (H), 500 (V)   |            | romeron, J  |
| DATE  | FILE NO.   | DRAWING NO. |
| 2011/08/03  |            | rac_b_4.met |

| Grades |                     |
|--------|---------------------|
| ■      | Au > 2.0 g/t        |
| ■      | 1.0 < Au <= 2.0 g/t |
| ■      | 0.6 < Au <= 1.0 g/t |
| ■      | 0.3 < Au <= 0.6 g/t |
| ■      | 0.1 < Au <= 0.3 g/t |
| ■      | Au <= 0.15 g/t      |



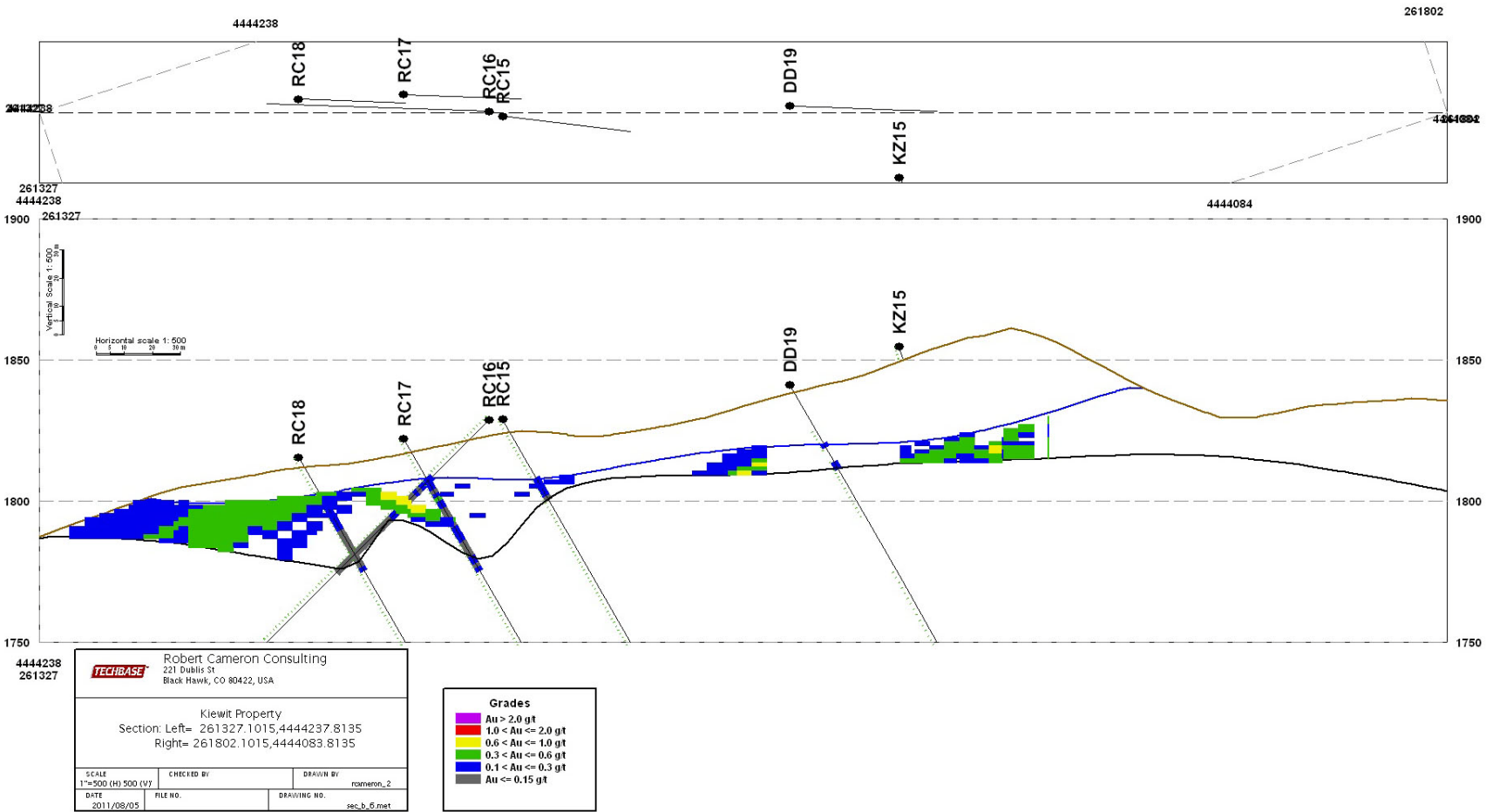
4444190  
261312

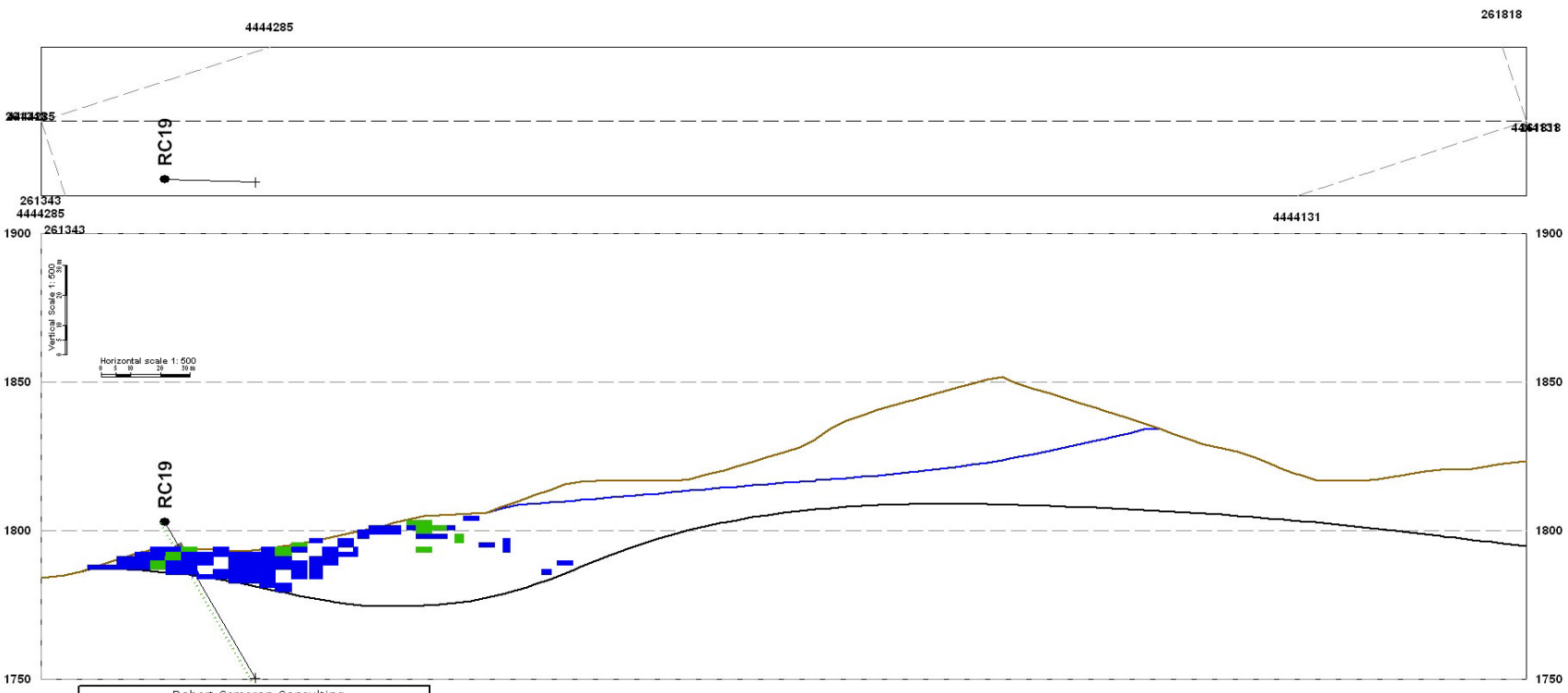
**TECHBASE** Robert Cameron Consulting  
221 Dublin St  
Black Hawk, CO 80422, USA

Kiewit Property  
Section: Left= 261311.6812,4444190.2508  
Right= 261786.6812,4444036.2508

|                                |            |                            |
|--------------------------------|------------|----------------------------|
| SCALE<br>1"=500' (H), 500' (V) | CHECKED BY | DRAWN BY<br>romeroc_2      |
| DATE<br>2011/05/05             | FILE NO.   | DRAWING NO.<br>rec.b_5.met |

| Grades |                   |
|--------|-------------------|
| ■      | Au > 2.0 gt       |
| ■      | 1.0 < Au ≤ 2.0 gt |
| ■      | 0.6 < Au ≤ 1.0 gt |
| ■      | 0.3 < Au ≤ 0.6 gt |
| ■      | 0.1 < Au ≤ 0.3 gt |
| ■      | Au ≤ 0.15 gt      |





|                    |            |   |  |
|--------------------|------------|---|--|
|                    |            | Robert Cameron Consulting<br>221 Dublin St<br>Black Hawk, CO 80422, USA                       |  |
|                    |            | Kiewit Property<br>Section: Left= 261342.5218,4444285.3762<br>Right= 261817.5218,4444131.3762 |  |
| SCALE              | CHECKED BY | DRAWN BY  |  |
| 1"=500 (H) 500 (V) |            | romeron_2   |  |
| DATE               | FILE NO.   | DRAWING NO.   |  |
| 2011/08/05         |            | sec_b_7.met   |  |

| Grades |                    |
|--------|--------------------|
| ■      | Au > 2.0 gt        |
| ■      | 1.0 < Au <= 2.0 gt |
| ■      | 0.5 < Au <= 1.0 gt |
| ■      | 0.1 < Au <= 0.6 gt |
| ■      | Au <= 0.15 gt      |