883270

→GEM

Apr. '07

***A SUMMARY OF THE UNDERGROUND SAMPLING OF THE GEM ADIT AND GEOLOGICAL RECONNASSAINCE SURVEYS OF THE GEM MOLYBDENUM (TUNGSTEN) DEPOSIT*** ***Dan Cardinal,*** *P.GEO.* *NOVEMBER, 2005*

## *A. Introduction:*

*(Page 1/6)*

*The 2-post Apex mineral claim and the surrounding syndicate-owned claims, located near the headwaters of Clear Creek, cover a geologically complex, multi-phase mineralized environment.*

*Historically, the area has experienced exploration activities dating back to the early 1900s, these activities are outlined in a recent (September 12, 2005) summary report documented by M. McClaren, P.Geo. Based on past exploration programs, molybdenum has been the key exploration target. However, in a recent (September, 2005) reconnaissance survey carried out by McClaren and experienced prospector, D. Heino, find gold was panned from tailings of the Gem Adit. Gold colours were also panned from the headwaters of Spuzzum Creek – near the Clear Creek-Spuzzum Creek divide. Fine gold was also noted in a quartz float obtained near the Bailey showing. Additionally, scheelite was noted to occur in some of the samples collected.*

*It was therefore decided by Saturn Minerals Inc., optioner of the Apex claims, to undertake a detail sampling program of the Gem Adit underground workings and conduct surface reconnaissance surveys of the adjacent area. The program was orientated toward investigating of auriferous-bearing mineralization and moly-tungsten potentials. The work was conducted between October 29$^{th}$ to November 4$^{th}$, 2005.*

## *B. Objective and Procedures:*

*The objective of the program was to attempt to determine, both underground and surface, the occurrence and potential association of gold and tungsten with the previously defined molybdenum mineralization.*

*To achieve this objective, the Gem Adit was initially surveyed using compass and chain with sample stations established at 4 foot intervals along the south wall of the adit. Continuous chip samples were taken where possible. As well, the entire adit was 'lamped' with a UV lamp. Due to inclement weather, limited reconnaissance surface mapping and sampling was conducted. Samples were collected of any quartz structures encountered and silt samples were also collected from any streams encountered. GPS-UTM co-ordinates were observed at sample points – when possible. Maps supplied by Saturn Minerals where invaluable for carrying the underground and surface reconnaissance programs.*

## *C. Bedrock Geology:*



*The overall bedrock geology has been fairly well documented by previous exploration companies. The area is underlain by a complex sequence of intrusives consisting of: granite, granodiorite to quartz diorite phases. These rocks are in turn, intruded by late stage, Miocene-age quartz monzonite porphyry – referred to as the 'Gem Stock'. The granitic rocks intrude into high grade metamorphic series of biotite gneiss and banded feldpathic-biotite orthogneiss.*

*The Gem Stock also forms part of a breccia phase composed of quartz monzonite porphyry fragments. Flanking the eastern boundary of the breccia stock is a mixed or mélange breccia consisting of fragmented granite, granodiorite, quartz diorite, greenstone, cherty rhyolite and gneiss.*

*Added to this complex sequence are late stage mafic (andesitic) and felsic (rhyolitic) dykes.*

## *D. Observations:*

### *D.1 Underground Sampling*

*Gem Adit:*

*The Gem Adit consists of 490 feet (149.4m) of underground workings, which runs on a easterly direction cross-cutting various rock units. From the portal, for about the first 100 feet (30.5m), is a light creamy coloured (part argillic alteration), medium grain, biotite granite. It hosts a number of cross-cutting, narrow (1-2mm), oxidized micro-fractures. These fractures are filled with hairline-like, miro-veinlets of quartz-molybdenite mineralization. Out side of the portal and on the weathered surface of the granite, these more weather resistant quartz-moly fractures standout as sub-paralleling, rib-like textures. These textures have also been mapped by others as sheeted quartz veins. The author has also noted these textures along other parts of the canyon walls of Clear Creek while conducting reconnaissance mapping.*

*The remaining 390 feet (118.9m), is an alternating sequence consisting of: granodiorite, quartz diorite, which is sometimes associated with large fragments of a dark green, fine grain, mafic rock (which appears to be in part diabasic) and bands of biotite and feldspathic gneiss. Much of the 390 feet is cut by irregular quartz veins ranging in width from about 1 inch (2cm) to 1 foot (0.3m). Majority of the veins host molybdenite either as rosettes occurring along both the footwall and hangingwall or, as narrow seams within the veins. Sometimes, while sampling the walls, fine fractures carrying only flakes of disseminated moly without any quartz can be found, hosted in one or more the rock units noted above.*

*At about 300 feet (91.5m) from the portal is a quartz structure carrying significant amount of molybdenite mineralization. This is probably the same vein that is referred to*

*in previous reports as the 'No. 1 Vein'. The author believes this is also the same vein structure that can be delineated on surface and which, the author refers to as the 'Gem Structure'.*

*During the sampling of the adit, an important ore-bearing tungsten mineral, scheelite, was discovered using a UV lamp, and is found to be directly associated with the molybdenite. It should be noted though, that not all molybdenite is associated with scheelite. There are sections of the adit where moly veins occur that scheelite is either absent or is weak. However there are sections, in particular, a 150 foot (45.7m) interval where a significant amount of scheelite was found. Along this area the walls 'lit up' with a fluorescent blue.*

*D. Heino collected samples of moly-tungsten mineralization as well as the moly-quartz structures. These samples were pulverized and panned for possible visible gold. The pan concentrates were examined under a binocular microscope but gold was visibly absent. Additional samples were also taken from the adit tailings and panned for gold. No identifiable gold was present. However, the pan concentrates contained numerous grains of tungsten.*

***D.2 Surface Mapping and Sampling:***
*Gem Structure:*

*The author was able to conduct a brief reconnaissance survey of the canyon walls along Clear Creek, prior to the first snow fall. This initial mapping traverse was conducted going upstream from camp for approximately 2 km, toward Quartz Creek. Either side of the canyon walls were examined in detail just along the upper talus-bedrock boundary. The walls primarily consist of granite and granodiorite. An important quartz structure, referred to by the author as the 'Gem structure', was identified cutting across both canyon walls. It strikes north-northeast and is steeply dipping. The structure is traceable for at least 1km along strike and the vein varies in width from 0.5m to at least 1.0m. This vein is believed to be same (No. 1 Vein) intersected in the adit as noted above. The structure is well mineralized with molybdenite. The moly occurs along the footwall and hanging wall of the quartz vein or as numerous narrow (1mm) seams within the quartz. Four (4) samples were obtain along strike of the vein (G-001 to G-004). Tungsten was also identified with the quartz-moly structure. It should be noted that due to the poor satellite reception, GPS readings were not possible, however all sample points are marked with bright orange flagging and also plotted on an aerial photo map.*

*It is important to note that numerous rib-like, sheeted micro-quartz veinlets were observed adjacent to the Gem Structure. It was also observed that as you traverse away from the structure or distal to mineralized system, the veinlets or sheeted veins tend to decrease in number. For example, by the time Mac Creek is reached the rib-like texture in the bedrock is rare to absent. This observation was also noted when approaching the camp area, going the opposite direction. It would appear that the Gem structure has a*

*mineralized area of influence, with a stronger zone of moly-tungsten mineralization occurring proximal to the structural system. This mineralized area of influence would appear to be between 200m-300m on either side of the structure.*

*Ore Creek Structure:*

*A brief reconnaissance survey was conducted up Ore Creek. Numerous, large quartz-biotite-pegmatite boulders were noted along the lower reaches of the creek. At a point where the creek begins to turn westerly, just beyond the Bailey showing, accessibility becomes almost impassable due to water falls and the creek narrows to a tight canyon. Here, the bedrock consists mostly of feldspathic orthogneiss. Several quartz veins cross-cutting the gneiss host molybdenite and were chip sampled (G-006) by the author. A successful GPS reading was obtained at this site: E591754; N5507426 – elev. 906m.*

*It is of interest to note that coarse (2-3cm), dark-reddish garnet crystals were also observed along part of the creek bed, hosted in the orthogneiss.*

*Several metres past the Bailey showing and opposite side of the creek, is a narrow north-northeast striking structure represented by a steep narrow gully. The author refers to this structure as the 'Ore Creek structure'. Several very large angular boulders occur near the base of the gully and immediately adjacent to Ore Creek. A number of these boulders are heavily mineralized with molybdenite and chalcopyrite occurring along fractures. Some of the fractures carry only chalco with no moly, while other fractures contain mostly moly with little to no chalco. It is evident that some of the mineralized boulders cleaved-off the face of the structure and deposited at the base of the gully. A sample (G-007) of one of the well mineralized boulders carrying moly-chalco, was collected by the author.*

*It is quite probable that the sheeted veins noted at the Bailey showing as well as the moly-quartz veins sampled by author along the creek bed, are related to the Ore Creek structure. This is similar to the sheeted veins observed along the Gem structure. However, the mineral assemblage in the Ore Creek structure appears to be somewhat different. Here, the structure hosts copper-moly (Au) mineralization. The structure also tends to host more iron sulphides. A sample (G-008) taken by the author from one of the mineralized boulders contains siliceous, skarn-like alteration hosting sulphides consisting of: pyrite, pyrrhotite and chalcopyrite.*

*D. Heino also collected a sample of loose mud and debris from the base of Ore Creek structure. This sample was later panned and noted to carry some fine gold colours. One of the colours was isolated in the pan and observed with the binocular microscope. It exhibited a fine crystalline morphology.*

***E. Other Interesting Side Observations:***

*Clear Creek carries numerous boulders of which, majority are locally derived. The boulders consist of quartz monzonite porphyry, monzonite breccia, mélange (mixed) breccia, various types of granites and gneiss. The creek also carries quartz boulders some of which are heavily mineralized with molybdenite. Majority of these mineralized quartz boulders are believe to be derived from the Gem structure.*

*It was therefore decided to traverse Clear Creek one dark night, for approximately 100m upstream from camp, with UV lamps to test for potential of tungsten-bearing boulders. It proved to an entertaining bit of exercise to see numerous boulders 'light up' with a fluorescent blue. It is quite probable that many of these tungsten-bearing boulders are derived from the Gem structure mineralized-area of influence.*

*Drill core stored near the camp was also tested with the UV lamp. Unfortunately, due to the dilapidated nature of the core boxes, only sections of the quartz monzonite porphyry were visible for examination. Little to no scheelite was detected. This would seem to correlate well with the previous the assays of the core, which show negligible values of moly in the monzonite. It also strengthens the theory that moly mineralization is closely associated with tungsten.*

*With regards to gold potential occurring within this complex system, the GSC (G.M. Dawson and later Eardley) allude to "gold associated with molybdenite occurs at the headwaters of Spuzzum Creek" (M. McClaren). This is supported by recent panning of gold colours by D. Heino near the headwaters of the creek. Also, M. McClaren and the author noted quartz-hosted copper mineralization in this area which, may be related to the gold reported by the GSC and the colours panned by Heino.*

***D. Interim Conclusion:***

*The claims are underlie a large, geologically complex mineralized system.*

*An important ore-bearing tungsten mineral -scheelite - has been discovered on the claims, directly associate with the molybdenum mineralization.*

*The mineralized system is both micro and macro structurally controlled.*

*Clear Creek forms major northeast-southwest striking structure, which may have had roll in the early stages of the development of hydrothermal events, this still can be observed to day - an active hydrothermal hotsprings occurs just a few kilometers away immediately adjacent to the creek .*
*The Gem and Ore Creek structures are mineralized systems that host somewhat different mineral assemblages. The Gem structure predominately hosts moly-tungsten*

*mineralization where as the Ore Creek structure hosts mainly copper-moly with potential gold.*

*The structures suggest to have an area of mineralized influence. The zone of mineralization and amount of silification (sheet veins) appear to be stronger proximal to the system and gradually decrease away, distal to the system.*

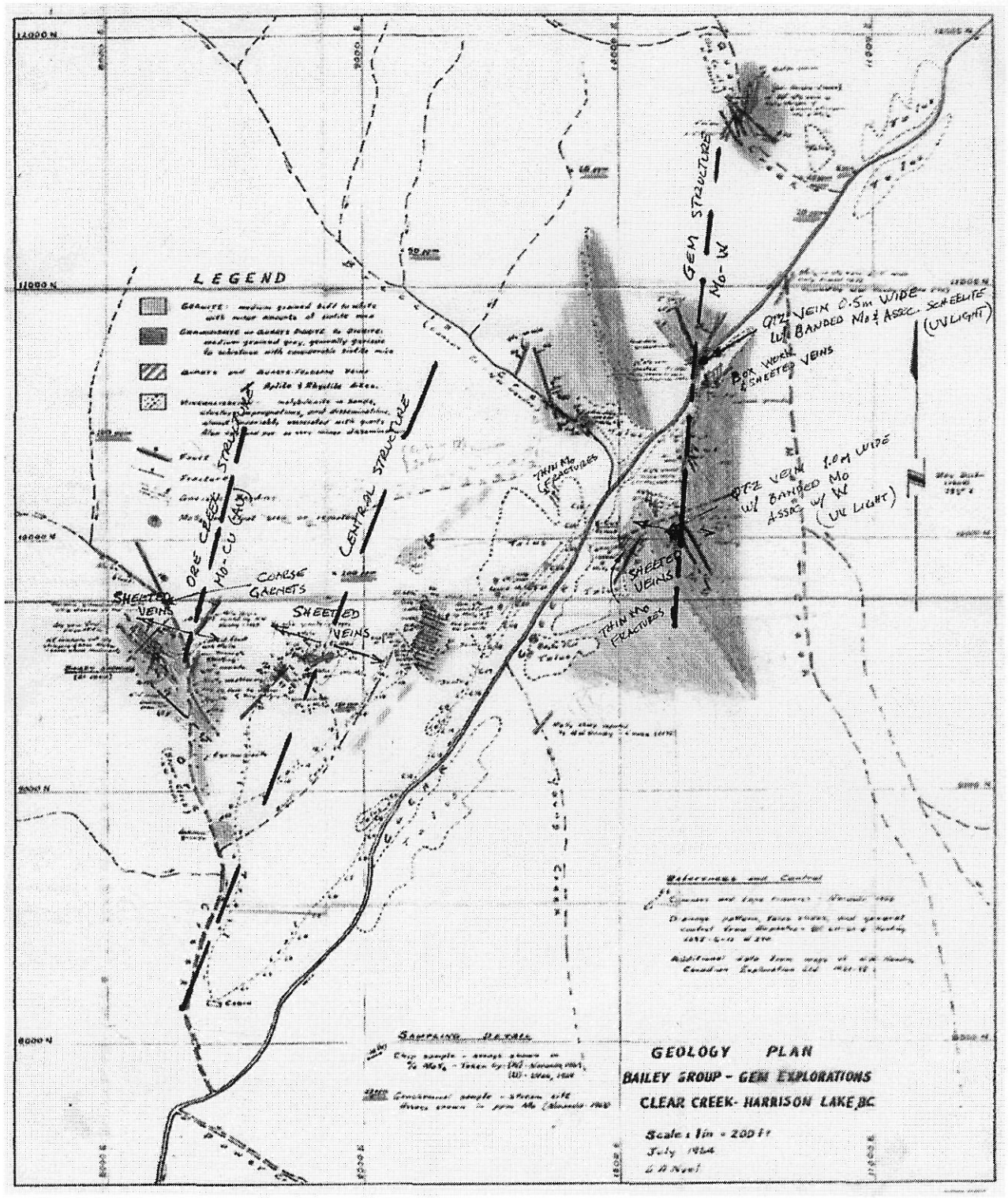
*Other such mineralized potential ore-bearing structural systems are likely to be discovered as future detail mapping and sampling are carried out.*

*The quartz monzonite porphyry may have played a key roll in introducing and mobilizing hydrothermal mineralized solutions into the structures, acting as channel ways.*

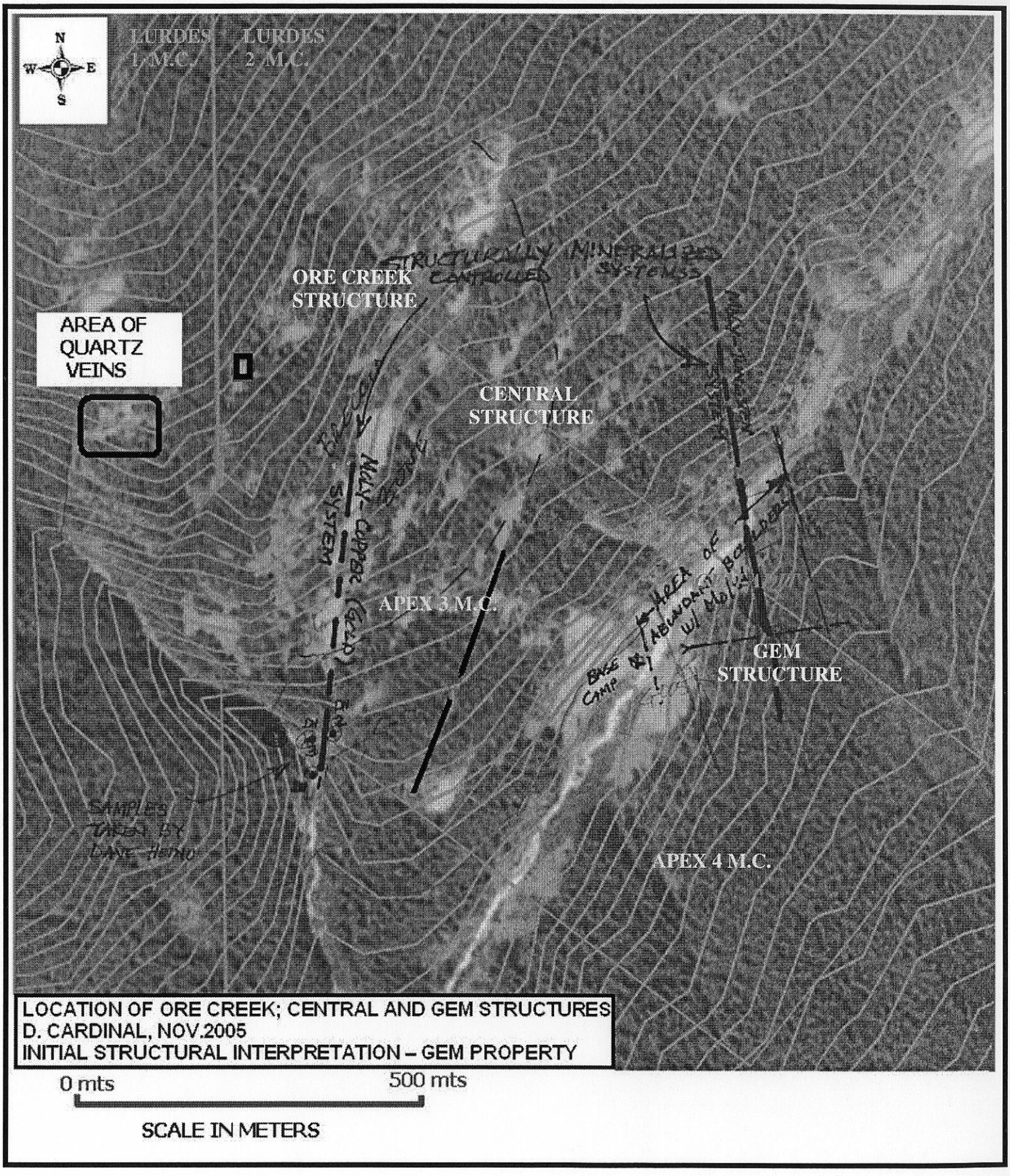
*There is potential for discovering gold mineralization peripheral or distal to the moly-tungsten zone. This is indicated by the gold-quartz float found near the Baily showing and the fine crystalline morphological gold panned from the Ore Creek structure.*

*Any future drilling should be orientated to testing the mineralized structures.*

***Dan Cardinal,*** *P.GEO.*




**LOCATION OF ORE CREEK; CENTRAL AND GEM STRUCTURES IN RELATION TO QUARTZ VEIN SYSTEMS:** D. CARDINAL NOV. 2005


N
W
E
S
LURDES 1 M.C.
LURDES 2 M.C.
ORE CREEK STRUCTURE
STRUCTURALLY CONTROLLED
MINERALIZED SYSTEMS
AREA OF QUARTZ VEINS
CENTRAL STRUCTURE
MAIN ORE CREEK SYSTEM
APEX 3 M.C.
AREA OF ABUNDANT BOULDERS
BASE CAMP
GEM STRUCTURE
SAMPLES TAKEN BY DAVE HENO
APEX 4 M.C.
LOCATION OF ORE CREEK; CENTRAL AND GEM STRUCTURES
D. CARDINAL, NOV.2005
INITIAL STRUCTURAL INTERPRETATION – GEM PROPERTY
0 mts
500 mts
SCALE IN METERS