Assessment Report for the

KOH Claim Group

Fort Steele Mining Division
N.T.S. 82 G/14W
Latitude 49° 53' N, Longitude 115° 20' 05" W

for

Gwen Resources Ltd.
1595 Griffiths Place
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Submitted by:

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SUMMARY

Alkaline diatremes have been documented in a broad belt in the southern Cordillera of southeastern British Columbia. This belt is approximately 40 kilometres wide and extends from Fernie, B.C. to the Bush Arm of McNaughton Lake (Reservoir), northeast of Golden, B.C. The Cross kimberlite is a Permo-Triassic intrusive breccia located north of Elkford on the southeastern edge of this broadly defined northwest-trending belt of alkaline diatremes. The Joff Pipe is located on the western edge of this same belt east of Invermere and is considered to be either a kimberlite (Nassichuk et al. 1989) or an olivine melilitite (Pell 1987). The northern portion of this belt is located in the area west of the Columbia Icefields and consists of lamproites, including two diamond-bearing occurrences (Nassichuk et al. 1989).

The diatremes in the Rocky Mountain Alkaline Belt are comprised of alkaline mafic to ultramafic lithologies and include basaltic lamprophyres, lamproites, limburgites, olivine melilitites, basaltic kimberlite and true kimberlite (Pell 1985, 1986, 1987; Ijewliw 1986; Ijewliw and Schulz 1988; Nassichuk et al. 1989). Of particular significance to this program is the presence of diamond-bearing lamproites in a Phanerozoic mobile belt.

The KOH claims have been mapped in a brief manner in the course of previous programs (Pell 1994, 1987; Walker 1995, Grieve 1981). The 1995 field program consisted of helicopter assisted recovery of a large bulk sample (KOH 95-1 - 31.3 kg). The sample was comprised of diatreme float exposed above snow cover in the drainage immediately underlying the diatreme occurrence. In addition, representative samples were collected for petrography and geochemical analysis. Finally, several fly-bys were made of the eastern cliff face in an attempt to identify a reported second diatreme occurrence.
INTRODUCTION

Diatremes in the southern Cordillera are interpreted to have been intruded predominantly in the early Paleozoic yet contain zircon xenocrysts of Archean to early Paleozoic age. Crustal-type xenoliths are documented from many of the pipes (eg. Blackfoot, Summer, Cross and HP) as well as mantle-derived xenoliths such as pyroxenites, peridotites and eclogites. In addition to abundant "indicator minerals", at least 10 micro-diamonds have been reported and at least three recovered from heavy mineral separates from diatreme occurrences northeast of Golden, BC. Dia Met Minerals Ltd. further reports recovery of two macro-diamonds from the Mark and Jack diatremes.

Although these diatremes are contained within a Paleozoic mobile belt, recent geophysical programmes have identified underlying Proterozoic and Archean basement. More significant is recent identification of a large composite block of Archean craton, part of the Hearn Province, in southern Alberta which projects into eastern British Columbia (Ross et al. 1991).

The basement of the Alberta Basin has been recently correlated (Ross 1991) to stratigraphic and/or structural provinces identified in the Canadian Shield (Hoffman 1988), using U-Pb age determinations of basement exposures from drill core and aeromagnetic signatures (Ross et al. 1991). Exposures of basement gneisses in the southern Cordillera coupled with numerous other studies (eg. lithoprobe deep reflection seismic studies; geochronological and isotopic studies; aeromagnetic, gravity, and seismic refraction studies) demonstrate the presence of Proterozoic and Archean basement underlying miogeoclinal strata west of the Rocky Mountain Trench.

Canadian Shield exposures have been correlated from Saskatchewan and northwestern Alberta into the subsurface of Alberta. These "northeast-trending anomalies ... can be traced into the Cordillera and support the interpretation that North American cratonic basement projects westward beneath the Rocky Mountains, Rocky Mountain Trench and eastern part of the Purcell Anticlinorium" (Cook et al. 1991). Lithoprobe deep seismic reflection data has "... imaged a regionally extensive, west-facing transition (on the west side of the Monashee Mountains) from thick craton on the east to thin transitional, basinal or oceanic crust on the west ..." (Cook et al. 1991).

The presence of Proterozoic and Archean basement beneath the Cordillera has been interpreted based on many complementary lines of evidence. Ross et al. (1991) have correlated gneisses of the Canadian Shield with basement gneisses of the Alberta Basin while others (Armstrong et al. 1991, McDonough and Parrish 1991, Murphy et al. 1991, Parkinson 1991) have proposed a Canadian Shield origin for basement gneiss exposures in the Canadian Cordillera. Therefore, Canadian Shield gneisses extend into the subsurface of the Alberta Basin and extend beneath the Cordillera to at least the west edge of the Monashee Mountains, where transitional crust is interpreted to occur.
Therefore, diamonds have been recovered from two alkalic diatremes located in a Paleozoic mobile belt. The mobile belt consists of thrust sheets tectonically emplaced upon Archean and Proterozoic basement. Diatremes of the southern Cordillera appear to have intruded a composite Archean cratonic block correlated to the Hearne Province. Zircons recovered from diatremes in the Rocky Mountains have been interpreted as having been sourced, in part, from the mantle. It is therefore reasonable to expect the presence of diamonds with mantle-derived peridotite/eclogite nodules and zircons of Archean age.

Diamond Exploration Potential

Diatreme occurrences in the Rocky Mountains (in general) have silica deficient compositions, are potassium enriched, and have high MgO and TiO₂ content. Mineralogically, they contain olivine (partially to completely altered to calcite or serpentine), clinopyroxene (as xenocrysts and probably as phenocrysts), orthopyroxene, feldspathoids (including nepheline, melilite, leucite and sodalite) and spinels (chromite). "Kimberlite indicator minerals" have been found throughout the alkaline belt in many occurrences. One widely recognized kimberlite (Cross Creek) has been identified and documented while another (Joff - Shatch Mountain) has been identified as both a kimberlite and as an alkaline lamprophyre (olivine melilitite).

Diatremes, dykes and sills of lamproitic composition have been described at the northern end of this belt, west of the Columbia Icefields and northeast of Golden, B.C. (Ijewiwi and Schulze 1988). Several diamonds have reportedly been recovered from these lamproitic occurrences (JACK claims, 1 microdiamond and 1 macrodiamond recovered; MARK claims, 1 microdiamond recovered; Nassichuk et al. 1989) although not in economic quantities. In addition, Consolidated Ramrod Gold Corporation has reported recovery of one macro-diamond from each of two separate diatremes (interpreted to be kimberlites). Therefore, diamonds have been recovered from ultrapotassic occurrences in the southern Rocky Mountains, a mobile belt.

The Cross kimberlite is near the southern end of this belt of alkaline diatremes documented in the Rocky Mountains (Pell 1986, Ijewiwi 1986, Helmstaedt et al. 1987, Ijewiwi and Schulze 1988, Nassichuk et al. 1989) and has been dated using several methods (241 ± 5 Ma and 249 ± 12 Ma, Smith et al. 1988; 244 Ma, Grieve 1982). Emplacement ages have been estimated for other diatremes based on intrusive relationships and three intrusive episodes have been postulated; Ordovician-Silurian, Devonian-Mississippian and Permian-Triassic (Pell 1987). Supporting data has recently been published for kimberlitic lamprophyres and kimberlite in the Purcell Mountains west of Invermere. An emplacement age of 245 ± 2.4 Ma was determined for a kimberlite just north of Toby Creek (Pope and Thirlwall 1992).

The presence of alkaline occurrences which include lamproite and kimberlite, recovery of kimberlite indicator minerals, recovery of micro- and macro-diamonds, all of which are underlain by basement of Archean age is sufficient to warrant further exploration in the Quinn
Creek drainage to:

1) determine the diamond potential of these occurrences using an integrated exploration program including:
   a) soil sample geochemistry,
   b) whole rock geochemistry,
   c) heavy mineral and xenolith inclusion suites, and
   d) identification of kimberlitic indicator mineral suites.

2) identify additional occurrences of alkaline intrusives through mapping, prospecting and remote sensing, and

3) determine the possible presence and location of hidden diatremes in subsurface or under cover using geophysics.
LOCATION AND ACCESS

The KOH claim group consists of 6 2-post units located in the southern Rocky Mountains, approximately 65 kilometres northeast of the city of Cranbrook, B.C. The diatreme is located in the valley wall of an east-flowing tributary of Quinn Creek, south west of Swanson Peak at approximately 6660' (2030 m) on NTS mapsheet 82G/14W (latitude 49° 53' N, longitude 115° 20' 05" W; UTM 619050 E, 5526800 N) (see Figure 1 and 2). The exposure appears to have the dimensions of a pipe.

The claims can be accessed by driving up the Bull River Road to the Quinn Creek Road. Drive approximately 20 km up the Quinn Creek Road and then 2 km along Goat Creek (4 wheel drive trail).

PHYSIOGRAPHY AND CLIMATE

The KOH claim group is located on the west side of Quinn Creek in the main ranges of the Rocky Mountains. Relief in the area varies from 1,463 metres (4,800 feet) along Quinn Creek to more than 2,713 metres (8,900 feet) on the mountain peaks to the south west. Vegetation in the area consists primarily of coniferous trees with undergrowth comprised largely of slide alder.

The claims are located east of the Rocky Mountain Trench and are subject to heavier precipitation than farther west in the Trench. As a result, heavy snow fall limits access along Quinn Creek and therefore access to the claims. The property is available for geological exploration from May to late October.
CLAIM STATUS

The KOH claim group consists of 6 2-post claims (see Figure 3), staked in accordance with existing government claim location regulations. Significant claim data are summarized below:

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<th>Claim Name</th>
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Total: 6

*After 1995 assessment credit applied.
HISTORY

The KOH diatreme was identified by geologists working for Cominco Ltd. following discovery of the Cross Creek kimberlite, northwest of Elkford, BC in 1976 (Roberts et al. 1980). At least 41 additional alkaline occurrences have been identified in the drainages of the Bull, White and Albert Rivers. The KOH diatreme was one of these occurrences identified and was initially staked by Cominco Ltd. for further examination. The claims were subsequently dropped after a limited sampling program as it did not have a kimberlitic composition.

Pell (1985, 1986, 1987) subsequently described several of the alkaline occurrences in the Rocky Mountain Alkaline Belt. Ultramafic xenoliths reportedly recovered from diatremes in the area (Blackfoot, Summer and Cross) include: chromite nodules, hornblende clinopyroxenite, dunite and hornblendite. In addition, xenoliths of eclogitic nodules have also been reported. Pell (1987), describing the Bull River intrusions, stated that "... the matrix of these breccias is not magmatic; they are crater-facies tuffisitic breccias". Furthermore, the diatreme is one of a number of diatremes within the Rocky Mountain Alkaline Belt and may be similar to the Russell Peak and Shatch Mountain occurrences (i.e. kimberlitic) or the Blackfoot occurrence which was interpreted as an alkaline lamprophyre, specifically an olivine melilitite, primarily due to the presence of plagioclase feldspar.

The Blackfoot pipe has been described by several authors (Pell 1987, 1985, Ijewliw 1986, Nassichuk et al. 1989) and has been classified as an alkaline lamprophyre, a limburgite, an olivine melilitite, an alkali basalt and as a sheared basaltic breccia. Of particular significance is the conclusion by Pell (1987) that the Blackfoot diatreme is very similar to the Russell Peak and Shatch Mountain occurrences. Nassichuk et al. (1989) recently interpreted the Joff pipe (one of the Shatch Mountain occurrences) to be a kimberlite. Therefore, it is possible that further study may indicate that the KOH diatreme (spatially associated with the Blackfoot diatreme) may be of kimberlitic composition or of kimberlitic affinity.
REGIONAL GEOLOGY

Stratigraphy (summarized from Leech 1958)

Cambrian-Ordovician

M'Kay Group

The exposed section of the M'Kay Group in the Quinn Creek valley is at least 4000 feet (1220 metres) thick. The total thickness is unknown as the base is not exposed. There are two main divisions documented within the M'Kay Group, a lower recessive shale dominated section and an upper resistant cliff-forming limestone. At least 1500 feet (457 metres) of the lower division is exposed, consisting of thin-bedded shales. The upper limestone dominated section is approximately 2500 feet (762 metres) thick. The boundary between the Upper Cambrian and the Lower Ordovician is located in the upper part of the lower subdivision. The M'Kay Group is overlain with apparent conformity by the Ordovician Glenogle Formation.

Lower to Middle Ordovician

Glenogle Formation

The Glenogle Formation is a distinctive black graphitic shale, siltstone and limestone unit more than 500 feet (152 metres) thick. In the Quinn Creek area it contains a succession of limestone beds resembling parts of the M'Kay Group. The Glenogle Formation contains abundant fossils, most notably straight limbed graptolites. The Glenogle Formation is overlain by the Wonah Formation.

Middle or Upper Ordovician

Wonah Formation

The Wonah Formation appears to concordantly overlie the Glenogle Formation, however it is actually an unconformable contact as it apparently rests on different levels of the Glenogle Formation at different locations. The Wonah Formation is a quartzite unit approximately 200 feet (61 metres) thick with the upper part comprised of calcareous sandstone.

Upper Ordovician-Silurian

Beaverfoot-Brisco Formation
The Beaverfoot-Brisco Formation consists of an apparently continuous succession of dolomite and subordinate limestone which appears to lie concordantly above the Wonah Formation. It is in contact with the Wonah Formation to the northeast and the Glenogle Formation to the south and west of the claim group. Although the contact with the Wonah locally appears to be concordant and/or transitional, especially where the upper Wonah Formation is calcareous and the lower Beaverfoot-Brisco Formation is sandy, the contact must be an unconformity. The presence of a basal conglomerate in the Beaverfoot-Brisco Formation provides the best evidence for the presence of an unconformity as the distribution of the conglomerate is erratic and thickness changes are sudden, interpreted as evidence of local relief during deposition. The conglomerate and associated sandstones are unsorted, consisting of M'Kay Group limestone and shale fragments and chert in a muddy matrix. Fragments range from 3 to 8 inches (7.6 to 20 centimetres) in size.

The upper Brisco Formation is lithologically similar to the underlying Beaverfoot Formation and cannot be distinguished by lithology alone. The total thickness of the combined Beaverfoot-Brisco Formation is approximately 1800 feet (549 metres) in the Top of the World area to the southwest. Dolomite, present in beds 1 to 10 feet thick (0.3 to 3 metres), ranges from light to dark on fresh surface and weathers mainly grey but may also be white, buff or brown. Limestone beds, 1 to 10 feet thick (0.3 to 3 metres), are dark on fresh surface and generally weather to a mottled grey colour. Blebs and lenses of chert are present throughout the sequence. Between 10 to 15 feet (3 to 4.5 metres) of black graptolitic shale and limestone may be present at the top of the unit. Graptolites in this section differ from those present in the Glenogle Formation in that the majority of them are preserved in circular coils as opposed to the straight limbed variety present in the Glenogle Formation.

Devonian

Basal Devonian Unit

The basal Devonian unit is characterized by dolomites, sandy dolomites and dolomitic shales that weather buff, yellow, brown, red or purple. Sandstone is usually present at the base of the section and varies from white siliceous quartzite to brightly coloured heterogeneous sandstones. Conglomerates are locally present.

In the Quinn Creek area the basal beds are comprised of white quartzite and calcareous sandstone up to 100 feet (30 metres) thick. These beds are non-conglomeratic and are overlain by 90 to 150 feet (27 to 46 metres) of buff or grey weathering, fine-grained dolomite, locally silty or sandy, in beds up to 3 feet (1 metre) thick.
Structure

Contraction during the Columbian and Laramide orogenies resulted in a series of northeast vergent thrust faults and folds with the development of a regional foliation. The strata hosting the KOH occurrence were juxtaposed against the Borgeau Thrust to the east by the Bull River-Gypsum Thrust (Pell 1987). The Lussier River Thrust is present to the west and was thrust over the Bull River-Gypsum Thrust. The Bull River-Gypsum Thrust apparently dies out to the north where its displacement is taken up by the Simpsons Pass Thrust, which lies inboard (east) of the Mons Thrust (which carries the lamproites north of Golden, BC). Therefore, in a palinspastic restoration, the lamproites of the Golden area were outboard (west) of the Bull River occurrences which were themselves outboard (west) of the Cross Creek kimberlite(s) (Pell 1987).

The Quinn Creek syncline is an isoclinal syncline with its western limb overturned. The local trend of the fold axis is horizontal and the axial plane dips 45° to 65° to the west. The valleys of Blackfoot and Quinn Creeks have been eroded into the Devonian core of the syncline. The eastern limb of the syncline is characterized by several small scale faults but none appear to have significant offset.

There are two anticlines, one on either side of the Quinn Creek syncline. The Coyote-Quinn Creek anticline lies immediately to the west and it too is overturned with a local horizontal fold axis. The anticline to the east is a broad structural feature with a locally horizontal fold axis. The anticline comprises the range east of Quinn Creek - Blackfoot Creek and west of the upper reaches of the Bull River. It is structurally more complex than the anticline and syncline to the west, having numerous small, second order folds. The KOH diatreme intrudes the Coyote-Quinn Anticline, east of the Quinn Creek syncline.

Age

An approximate age of at least post Early Silurian, the youngest age of the observed host rock, was assigned to the Blackfoot occurrence (Nassichuk et al. 1989), based on stratigraphic and structural evidence. The diatreme "... cuts indiscriminately upwards through its host without being bent, severed or offset as the dip of the bedding (of the host lithologies) changes". Based on the above observation the author interpreted it was intruded after the Columbian orogeny (i.e. the age of the Blackfoot was later than 98 Ma and possibly as late as the climax of the Laramide orogeny in the Early Tertiary (60 Ma)).

Based on stratigraphic relationships, Helmstaedt et al. (1988) interpret most of the diatremes to have been intruded prior to deposition of Devonian strata. Several of the diatremes are in sharp contact with the basal Devonian unconformity, indicating deposition prior to the unconformity. At least three distinct intrusive events have been proposed for diatremes of the southern Rocky
Mountains (Helmstaedt et al. 1988, Pell 1987), namely during Ordovician, Ordovician-Silurian and Permian-Triassic time.

Pell (1987) describes interbedded tuffisitic bedded epiclastic and/or pyroclastic lithologies interbedded with host limestones of the Ordovician-Silurian Beaverfoot-Brisco Formation at the margins of the intrusion. An emplacement age of approximately 440 to 435 Ma is postulated, "... related to extension and/or rifting along the western continental margin that produced and deepened the basin into which the miogeoclinal succession was deposited".

Parrish and Reichenbach (1991) sampled seven of the pipes in the southern Rocky Mountains (Jack, Mark, Mike, HP, Cross, Blackfoot and Joff) in an attempt to determine the age of emplacement of these diatremes. U-Pb dating of zircon grains failed to establish a magmatic age of intrusion for the diatremes. However, a wide range of dates were obtained, ranging from Archean (2.7-2.6 Ga, 2.37 Ga) and Early Proterozoic (1523-2058 Ma, 1850-1920 Ma, 1907-1923 Ma) to Paleozoic (954 Ma, 530 Ma, 470 Ma, 440 Ma). Possible sources proposed for xenocrystic zircons include gneisses of the western Canadian Shield, basement beneath the Alberta Basin, basement rocks exposed in the Cordillera and intrusives associated with orogeny or rifting.

Rb-Sr dating on phlogopite separates from the HP pipe (ultramafic lamprophyre) northeast of Golden returned dates of 348 ± 7 Ma and 391 ± 12 Ma and a K-Ar date of 396 ± 10 Ma. This corresponds to a Devonian - Mississippian age of intrusion. The Cross pipe (true kimberlite) returned a Rb-Sr (phlogopite) date of 244 Ma (Grieve 1982), 241 ± 5 Ma (Smith et al. 1988) and a Rb-Sr whole rock age of 249 ± 12 Ma. A kimberlite in the Purcell Mountains of British Columbia returned a Rb-Sr phlogopite-apatite mineral pair age of 245 ± 2.4 Ma (Pope and Thirlwall 1992). These dates indicates a Permian - Triassic age of emplacement.

At this time the age of emplacement of the KOH diatreme is uncertain. However, it would seem that an age of between 98 Ma and 60 Ma is unreasonable. An age closer to 245 Ma is more probable based on age dating determined for several of the intrusives in the Rocky Mountain Alkaline Belt, coeval with an age of emplacement of 245 ± 2.4 Ma for the Toby Creek kimberlite.
LOCAL GEOLOGY

The pipe is exposed over 70 metres on the west side of Goat creek at an elevation of approximately 6560' (2030 m). The exposure is roughly circular in outline and is present in the core of a small gully. Host strata can be seen to the immediate north of the occurrence and appear to pass beneath the diatreme, suggesting a pipe-like body. Two separate phases have been documented intruding hosts strata interpreted to be Ordovician-Silurian Beaverfoot-Brisco Formation. Macrocysts (xenocrysts?) of olivine, spinel and chrome diopside as well as granitic and altered ultrabasic xenoliths have been reported.

In hand sample, the rock consists of angular to sub-rounded, variably altered xenoliths and xenocrysts in a buff coloured aphanitic matrix. Xenoliths are up to 3 cm in long dimension and include limestone, light grey chert, black argillite, mafic volcanics (basalt) and serpentinized ultramafic inclusions.

The mafic volcanics are medium to dark green to black in colour and have variable phenocryst/inclusion content. Phenocrysts include pyroxene, feldspathoids or sericitized plagioclase and a few appear vuggy (one inclusion appears scoriaceous). One mafic xenolith has a light coloured rind developed which may represent interaction and alteration with the matrix or a chilled margin of the matrix against the xenolith. The former interpretation is favoured as there appears to be a distinct contact with gradational alteration toward the interior of the xenolith.

Two variably altered ultramafic xenoliths are present and are interpreted to be serpentinized pyroxenite nodules. One has a dark green rind around a medium green core and is interpreted as a basaltic rind around a slightly to moderately serpentinized amphibolite (after pyroxene). The second nodule consists of a medium green weathering, greasy looking monomineralic mass interpreted as a moderately to strongly serpentinized pyroxenite (enstatite).

There are at relatively abundant apple green coloured, subhedral xenocrysts having at least one cleavage. These are tentatively identified as chrome diopside xenocrysts.

The host rock consists of subhedral to anhedral, dark coloured phenocrysts in a buff coloured aphanitic matrix. The phenocrysts are <1mm in long dimension. Olivine, pyroxene and ilmenite were tentatively identified as the mafic minerals. A translucent, fine grained, brittle phase was noted in the matrix and although no cleavage was noted, it was interpreted as nepheline rather than quartz due to its brittle nature.

The Quinn pipe has been classified as both a limburgite and an alkali basalt by various authors. The absence of feldspar and the presence of nepheline would support an interpretation as limburgite.
1994-95 PROGRAM

A total of one man-day was spent on the property to gather a representative sample from the diatreme. On October 15, 1995, helicopter assisted sampling was undertaken, consisting of detritus immediately downslope of the exposed outcrop. A 31.3 kg sample of diatreme material was collected for geochemical analysis, petrography and recovery of heavy mineral fraction.

While in the valley, the helicopter was also utilized in an attempt to locate and identify a second diatreme occurrence reported to occur in the cliff immediately to the east. Several fly-bys were made with no success.
RESULTS

A description of a representative hand sample of the diatreme occurrence is as follows:

KOH 95-1 - light phase

The light phase is grey - buff - yellow weathering and light grey on fresh surface. There are abundant angular to lesser sub-rounded sedimentary xenoliths <1 mm to 3 cm in size. No igneous or definite volcanic xenoliths were identified. The sedimentary suite is mainly limestone with some black slate, lesser quartzite and some hematitic and greenish clasts of unknown affinity. Also some coarser grained autoliths were noted. Trace sulphides present. No xenocrysts noted.

KOH 95-1 - dark phase

This sample appears to be a true diatreme. The weathered surface is brown-green with red and the fresh surface is dark - medium green. The rock is foliated. There are abundant small xenoliths, 1.5 cm average and mainly subrounded to rounded. Volcanic xenoliths, lapilli and some green-yellow altered glass were identified. The volcanic xenoliths are dominantly green, some reddish in colour. No ultramafic xenoliths were identified, but euhedral altered mafic crystals (hornblende, pyroxene) were identified in lapillls and rarely as xenocrysts. Rare chromite spinel was identified.

The bulk sample was processed for recovery of indicator minerals subsequent to submission of the Statement of Work and will be discussed in a subsequent report.
CONCLUSIONS AND RECOMMENDATIONS

At least 50 diatremes are known to be present within the Rocky Mountains of southeastern British Columbia. To date, diamonds have been documented from four separate diatremes (Jack and Mark diatremes north of Golden and the Ram 5 and Ram 6.5 northwest of Elkford). There is a definite possibility that further work on the diatremes documented in the Rocky Mountains Alkaline Belt (including the KOH) will result in the identification of additional diamond-bearing occurrences. However, regardless of their diamond potential, the fact that they originated in the lower levels of the crust or from within the mantle suggests these occurrences have also have potential to host Rare-Earth Element (REE) and/or Platinum Group Element deposits. Furthermore, having intruded the crust from mantle depths and being comprised of a high proportion of carbonate and volatiles may also have been conduits through which fluids passed, precipitating precious and base metals.

In summary, geochemical analyses from diatremes in the immediate vicinity confirm an ultramafic affinity, including kimberlites. Furthermore, ultramafic nodules of mantle origin and kimberlithic indicator minerals (i.e. clinopyroxenes, pyrope garnets, ilmenites and chromites) have been reported. At present, it is not clear where these intrusives originated relative to the diamond stability field. It is particularly significant that diamond-bearing lamproites north of Golden restore palinspastically outboard of the KOH occurrence. Furthermore, the one widely accepted kimberlite in the Rocky Mountains (and additional diamond-bearing kimberlite(s) of the ICE property) restore to the east. Finally, K.L. Currie regards the diamond potential of the Rocky Mountains alkaline province as good for the following reasons:

"(i) The alkaline rocks clearly came up through continental crust. (ii) The alkaline (rocks) have diverse compositions and ages. Both these conditions are necessary, but not sufficient. Likewise, it is not sufficient to demonstrate "kimberlithic" chemistry, unless the appropriate xenocrysts are present (chrome diopside, pyrope, magnesian ilmenite) ... it has not been demonstrated that any Cordilleran kimberlite or lamproite-like rocks have passed through the diamond stability field. It seems to me that the appropriate P-T determination (from indicator minerals or thermobarometry) is essential ..." (K.L. Currie, pers. comm. 1993).

The Rocky Mountains in this area are underlain by Archean basement for which an age of 3.2 billion years has been determined, consistent with ages of peridotitic diamonds determined world-wide (3.3 billion years - Levinson et al. 1992, Kirkley et al. 1992). Zircons recovered from several diatremes in the Rocky Mountains have been determined to have Archean ages. Most important of all, the most reliable diamond indicator mineral, diamonds, have been recovered from pipes which were both inboard and outboard of the KOH diatreme. Furthermore, gem quality and near gem quality macro-diamonds have recently been documented by Consolidated Ramrod Gold Corporation from their ICE property, only 25 kilometres to the east.
Despite limited preliminary results of the program to date, a follow-up program of thorough mapping and prospecting with trenching and drilling is recommended subject to availability of exploration capital. Trenching, possibly with blasting, would enable the collection of a large sample of pristine material for determination of diamond content with greater confidence. Drilling is recommended upon favourable geochemical results, in terms of a kimberlitic indicator (heavy mineral) and/or xenolith suite. Drilling would allow delineation of the orientation, configuration and extent of the diatreme with depth. Furthermore, samples may be obtained from regions below the crater facies. A preliminary budget has been prepared for the above work and is presented below.

**PROPOSED BUDGET**

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<th>Pre-Field</th>
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<td>Field Program</td>
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<tr>
<td>Post-Field</td>
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**TOTAL:** $84,700
REFERENCES


Appendix A

Statement of Qualifications
STATEMENT OF QUALIFICATIONS

I, Richard T. Walker, of 1916 - 5th Street South, Cranbrook, BC, hereby certify that:

1) I am a graduate of the University of Calgary of Calgary, Alberta, having obtained a Bachelors of Science in 1986.

2) I obtained a Masters of Geology at the University of Calgary of Calgary, Alberta in 1989.

3) I am a member in good standing with the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

4) I am a member of good standing with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

5) I am a consulting geologist and Principal with the firm Dynamic Exploration Ltd., with offices at 1916-5th St. S., Cranbrook, British Columbia.

6) I am the author of this report which is based on work performed on the property on October 15, 1995.

7) I hold at present 114,500 common shares of Gwen Resources Ltd.

Dated at Cranbrook, British Columbia this 6th day of March, 1996.

Appendix B

Statement of Expenditures
STATEMENT OF EXPENDITURES

The following expenses were incurred on the BULL claim group for the purpose of geological exploration on October 15, 1995.

PERSONNEL
   R. Walker, P.Geo. 0.5 days x $400 / day $ 200

HELICOPTER
   Bighorn Helicopters $ 409

FIELD SUPPLY
  1.0 man-days x $20.00/day $ 20

REPORT/REPRODUCTION
   R. T. Walker, P.Geo.: 0.5 days x $400.00/day $ 200

TOTAL EXPENDITURES: $ 829
Appendix C

Program-Related Documents