ASSESSMENT REPORT
FRENIER PERLITE DEPOSIT
MAY 1, MAY 3, MAY 4 CLAIMS
MINING LEASE 24
CLINTON MINING DIVISION

Empire Valley, BC
NTS 92O/8W
Latitude 51° 20' 00'
Longitude 122° 21' 00'

Owners Agent: W.B. Kure
Operator: Absolut Resources Corp.
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Submitted To: Tanqueray Resources Ltd.
Submitted By: Terracon Geotechnique Ltd.
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1.0 INTRODUCTION

1.1 Summary

This assessment report on the Frenier Perlite deposit is submitted to the British Columbia Department of Energy Mines and Petroleum Resources for application of assessment work credit for the work done in 1994. The work includes geology, ore reserves, quarry design and some aspects of mining and processing. For convenience, support information is summarized in a set of appendices. All figures are presented in Appendix A and tables are collected in Appendix B.

The study focuses on recording the current status of the deposit, the calculation of perlite reserves and the quality of the perlite, and preliminary engineering that places emphasis on production economic in order to advance or accelerate production from the deposit. In addition to the above geological investigation work, the study addresses the potential for the development of additional perlite reserves on the property and in the vicinity of the claims and the current Mining Lease. The field work was done by E. Horne and L. Narvaez both employees of Terracon Geotechnique Ltd. a geological, mining consulting firm based in Calgary Alberta. The results of the recent investigative work indicates that the proven or drilled high quality perlite reserves for the deposit are in the order of 330,000 tonnes and that the practicality of marketing crude perlite to expansion facilities in Canada and the U.S.A. should be examined further.

1.2 Location and Access

The deposit, located in the Clinton Mining Division, Figure 1, is in the vicinity of the Empire valley ranch NTS 92O/8W. Latitude 51° 20' 30", longitude 122° 21' 00" west. The May 1 and May 3 claims occupy portions of Lots 309 and 1072 as illustrated on Figure 2. The Frenier perlite deposit is positioned north of the Higginbottom Creek ridge in proximity to a log cabin, owned by "Peter Caldwell" in the Southwest corner of Lot 309.

Access to the property is by road from Clinton, towards Gang Ranch on the west side of the Fraser River and hence south towards Brown Lake in the Empire valley area.

Access to the site from Brown Lake is via the Blackdome road to the Grinder Creek south turn-off road that ends at the Frenier Perlite deposit and "Caldwells cabin". This last section of road is 7 kilometres long and was built in 1983 by Aurun Mines Ltd. for access to the perlite deposit.

The total road distance from Clinton to the site is 140 kilometres. The best route to the site is from the Chasm turn-off 16 kilometres north of Clinton. From this point a well maintained gravel road runs northwest alongside Beaverdam Lake, White and Long Lakes and the Canoe Creek valley towards the "Gang Ranch", suspension bridge. This bridge, one of the few access points crossing the Fraser River in this region has a 12 tonne tandem axle weight restriction. Gross vehicle maximum rating is 29 tonnes. Other access being considered for transport of perlite from the deposit is the new forestry access road from Gang Ranch northwards across the Chilcotin River to Riske Creek on highway 20 a total distance of 90 kilometres from the site. The paved highway distance from Riske Creek to Williams Lake is 50 kilometres. Although the total distances for both routes are 140 kilometres the bridge structures on the Williams Lake route may provide some advantages for haulage. A more important consideration at this time is the location of potential crude perlite users. The access routes to the site are best illustrated on Figure 3.

1.3 Topography and Drainage

The perlite deposit occurs on a gently sloping, relatively clear area at an elevation of 1180 to 1270 metres AMSL.

Higginbottom Creek follows a northeast fault lineament and exposes the south limit of the known perlite deposit along steep cliffs. The vertical relief of the exposed perlite is at least 25 metres. The creek bed is 40 to 50 metres from the ridge crest.

In the vicinity of the perlite deposit Higginbottom Creek flows year round and hence provides a source of water. Direction of flow is southeast towards Lone Cabin Creek which drains into the Fraser River 6 kilometres to the east of the Lone Cabin, Higginbottom Creek juncture. Other intermittent creek drainage approximately 1

kilometre south of Higginbottom Creek runs east-west and joins Higginbottom Creek in proximity to the "Caldwell cabin".

1.4 Vegetation and Climate

The deposit area is generally well timbered with large pine. Grassland open meadows occur primarily in the vicinity of lots 309 and 1072 and in the south east corner of the May 3 claim. In the vicinity of the perlite deposit an open timberland situation predominates and heavy tree cutting requirements are minimized.

The climate is semi-arid with low snowfall and is generally considered to be conducive to year round mining and ore transport, although non-winter production may be the preferred approach.

2.0 PROPERTY DEFINITION

2.1 History of Property

Lawrence Frenier, a prospector from Clinton, BC discovered perlite on the property in 1949. The property was documented by W.W. McCammon and the British Columbia Department of Mines the same year.

During its history the property was staked by various individuals, most significantly in 1976 and again in 1982 when it was staked by J. Kruszewski and others. Test work was done on the property by Mountain Minerals in 1976 to 1977 and consulting geologist E. Meyers provided deposit information to the BC Ministry of Mines and Petroleum Resources in 1978.

In 1982 to 1983 Aurun Mines Ltd. acquired the property and initiated geological mapping, field expansion testing, bulk sampling and product pilot testing. As a consequence of the initial results, a field program encompassing test pits, trenches, diamond drilling, mapping and testing was completed at the end of 1983 in order to better defined the reserve limits. Feasibility studies resulted in a production decision in

1984, and perlite was mined on a limited scale from 1984 to 1987. The crude perlite was quarried on site, loaded and transported to Aurun's facilities in Aldergrove BC for crushing, sizing, drying, expanding and packaging. These plant facilities were later relocated to Surrey BC during April of 1986.

Receivership proceedings in 1987 resulted in closure of the operation and Mr. W. Kure obtained the interest of Aurun Mines Ltd. perlite claims from the receiver, 1991.

It is generally understood that the perlite operation of Aurun Mines Ltd. was a profitable operation and that the cause of the projects demise resulted from other unrelated ventures and difficulties.

Current studies by owner representative and the operator indicates that the project should be examined in more detail and this report in part examines the projects near term viability.

2.2 Status and Title of Claims

The property consists of a grouping of 50 units within four modified grid claims, one of which, May 2, was converted to a mining lease (ML24) in 1983.

The schedule of claims and lease is as follows:

Claim	Record Number	No. Units	Recording Date
May 1	208051	6	May 25, 2003
May 3	208132	18	September 20, 1994
May 4	208131	14	September 20, 1994
ML 24 (Map)	209455	12	May 23, 1995

All four tenures are grouped as the Perl Group, Event No. 3050694, recorded May 20th, 1994.

The current, on record, claim owners for ML 24 and May 1 are:

Name	Client Number	% Interest
William Brian Kure	114780	77.5625
Thomas Patrick Hanrahan	135318	21.4575
Roger Peter Nordick	119858	0.9800

Records for the May 3 and 4 claims indicate 100% ownership for W.B. Kure. The beneficial ownership is currently under the jurisdiction of W.B. Kure (Agent) and is subject to the option agreement with Tanqueray Resources Ltd./Absolut Resources Corp.

Key elements of the option agreement are to maintain the property in good standing and if possible advance the property to a production stage.

3.0 WORK PROGRAM

3.1 Summary of Work Performed

The scope of work for the 1994 program contained the following elements.

- Geological mapping, prospecting, field testing and sampling of the site for assessment credit.
- Confirm the geological mapping of the deposit, especially the quarry operation area and determine the size and shape of the abandoned quarry.
- Determine the quality of the perlite exposed in the pit or quarry and other exposed areas.
- Calculate perlite reserves for the site, with the deposit grade and tonnage in place to drill depths.

- Provide a quarry plan for 5 years of operation at 10,000 tonnes, expander feedstock, per year.

- Provide a conceptual site plan for buildings, infrastructure and stockpile or waste areas.

- Provide a brief description of the operation, mining methods, equipment requirements and number of employees.

According to the requirements the field program conducted over a three day period from August 31st to September 3rd consisted of the following.

Geological Mapping

Traverses were completed in areas of perceived outcrop on the May 1, 3 and 4 claims. The results of the geological mapping during these Belt Chain and Brunton compass traverses are plotted on the Geological Map, scale 1:10000 provided as Figure 10.

The objectives of the geological mapping were to locate perlite or altered perlite outcrops. Determine favourable volcanic host rocks such as rhyolitic or dacidic ignimbrites (welded tuffs) of Eocene age and to test perlite outcrop sites to determine expansion characteristics by using a hand held brazing torch. Other tasks were to collect appropriate samples of outcrop materials for later study and to obtain representative 10 kilogram samples of perlite from potential mine areas and stockpiles for testing at the facilities of potential perlite users.

The area of study has very little outcrop with the exception of the cliff area directly below the perlite deposit. Overall, the rock exposure over the total claim area is less than 1%.

Quarry Mapping on the "K" Perlite Zone

The quarry area was surveyed in by chain and Brunton compass using survey monumentation from the perimeter survey and control for the May 2 claim, completed

in 1983, to establish ML24. The main survey stations CP1, CP2, CP3 and CP4 were used for mapping control of the pit area and are plotted on the plans, Figures 5 and 9.

The quarry area was geologically mapped to establish the perlite - waste contacts, overburden stripping limits, alteration zones and structure. The alteration zones are generally highly silicified zones and therefore have a negative impact on the perlite quality. These alteration zones can and do occur within the mineable perlite.

Mapping and Testing of the "J" Perlite Zone

The "J" perlite zone was outlined in very brief form during the 1983 work program. The intent of the recent mapping was to establish the reserve potential at the "J" zone in the area of the cliff were there is no drill information. The program also field tested the outcrop area with a brazing torch and obtained a 10 kilogram sample for process testing to establish perlite quality and bulk sample test sites. The "J" zone was not previously bulk sampled.

Examination of the Perlite Stockpile

The in-pit perlite stockpile was evaluated in terms of perlite quantity and quality. The quality of perlite exposed on the current pit floor is also considered.

Perlite Reserves

The perlite reserves were calculated to accomplish the property evaluation and to assist further owner and operator studies. Previous reserve calculations by Aurun Mines (1983) are not available.

Quarry and Site Plan

A quarry plan outlining the pit limits and bench configuration for 5 years of operation at a rate of 10,000 tonnes, expander feedstock, per year is established and the ultimate pit design for the proven reserves is included. A site plan indicating the potential locations for waste dumps, stockpiles, and required infrastructure is also provided.

Mining and Processing

A description of the operation, mining methods equipment, process plant, personnel requirements and cost estimates including haulage are provided.

3.2 Procedures

Geological Mapping

The geological mapping was done by traversing along road cuts, steeply incised valleys and areas of high terrain were outcrop exposure was anticipated, along ridges. Control for the geological mapping was provided by contour maps, belt chain measurement and Brunton compass, and altimeter cross reference.

Perlite Testing

Field testing in perlite areas was accomplished by using a brazing torch. The test method provides an excellent appreciation for both the expansion characteristics and product colour. The test is done by exposing the perlite to open flame heat, plus 1600° F. If the sample contains good perlite expansion to "popcorn form" takes place in a matter of seconds. The product should be white and very low density (easily blown away). If the quality of material tested is satisfactory material can be ground up placed in a metal container and expanded for later density tests or alternates sampled for more determinate testing at a laboratory or perlite expansion facility.

4.0 TECHNICAL DATA AND PROGRAM RESULTS

4.1 Regional Geology and Structure

Eocene volcanic and sedimentary rocks of the Kamloops Group unconformably overlie the cretaceous Spences Bridge Group. The Eocene Kamloops Group which consists predominantly of volcanic rocks is approximately 1000 metres thick. The volcanic assemblage consists of three principal units, the lowermost Unit E1 consists of mafic to

dacidic vesicular flows, laminated flows and breccia. The second Unit E2 is placed at the first occurrence of rhyolite tuff interlayered with volcanic breccia and flows. The third Unit (E3) which is host to the perlite consists of quarts porphyry rhyolitic flows and welded tuffs (ignimbrite). The perlite at Higginbottom Creek appears to be intruded into the felsic volcanic assemblage of the Unit 3 which consist of lower grey to white rhyolitic tuff with layers of volcanic glass and grey to purple vesicular rhyolite flows. There are two separate massive coarse light grey perlite zones separated by welded rhyolite glassy tuffs or "fine perlite". The uppermost perlite zone is overlain by rhyolitic to rhyodacitic welded tuffs.

The area of the claims that has less than 1% exposed outcrop is considered to be underlain by Unit 3 Eocene volcanics as illustrated on the regional geology map, provided as Figure 4.

Major structural geology features for the area include the Fraser and Empire valley faults, the Higginbottom Creek fault lineament and other northeast to northerly lineamentation that may reflect volcanic feeder zones. It should be noted that the volcanic stratigraphy and the perlite trends for both perlite zones at Higginbottom Creek are north-south to slightly northeast the major dip trends are towards the down thrown or eastern blocks of the Empire valley and Fraser River faults.

4.2 Property Geology

Reconnaissance mapping conducted on the claims indicates that the exposed rock types belong to unit 3 of the Eocene Kamloops Group volcanics. The predominant rock type encountered consists of buff to white rhyolite flows and crystal tuffs that are glassy and perlitic in proximity to the main perlite zones and more crystalline in nature in all other areas of the claims.

Geological mapping traverses conducted along routes of potential outcrop encountered very limited data. The traverse locations that covered 20 line kilometres are illustrated with other geological data; outcrops, sample sites, and structural information on the 1:10000 scale geological map, provided as Figure 10.

The rock types encountered that are described in more detail on Table 1, consist of the following:

- Vesicular basalts and andesite.
- Rhyolite flows and rhyolite porphyries.
- Welded rhyolite tuffs (ignimbrites).
- Coarse grey perlite.
- Perlite breccia.
- Perlite alteration zones.

4.3 Economic Geology

The recognized principal economic mineral on the claims consists of perlite. The best known occurrence in the area occurs on the Frenier deposit that contains two relatively extensive perlite horizons which were named the "K" and "J" zones by Aurun Mines Ltd. in 1983. Both the "K" and "J" zones are comprised of relatively tabular deposits of coarse grey perlite that vary from 10 to 50 metres thick. The mapped lateral extent of the zones are 300 metres. ("J" zone) and 400 metres ("K" zone). Both zones tend to dip easterly at 30 to 50°. The host rock stratigraphy on the Frenier deposit consists of a lowermost vesicular rhyolite often containing limonitic alteration and amygdules of silica in the contact area with the lowermost "J" coarse perlite zone. This lower perlite zone grades into a siliceous perlite breccia and rhyolitic welded tuffs with some glassy perlite. The uppermost section of this tuff is altered to chert, clay and chalcedonic nodules with some remnant perlite structure that exhibits low expendability characteristics. This unit grades into the coarse grey perlite of the "K" zone the top of which again grades into a siliceous perlite breccia covered with rhyolitic welded tuffs with some glassy perlite. Noteworthy similarities is that both the upper and lower contact areas on both of the coarse grained perlite zones are similar with a lowermost clay silicate alteration zone and an uppermost silicified perlite breccia zone. This uppermost zone does contain significant perlite and exhibits some high expendability factors (13 to 15 times). In all instances the perlite contacts are gradational.

Other perlite occurrences in the area are cited, (reference Gunning D.F.), to occur in Lone Cabin Creek, 2.4 kilometres below the confluence with Higginbottom Creek and

in a high relief area approximately 1.5 kilometres east-northeast of the Frenier deposit. These sites could not be located during the recent field studies.

4.4 Mapping and Testing of the Perlite Zones

Both the "K" and "J" perlite zones were extensively examined and tested with a brazing torch. The investigation of the zones focused on the perlite exposed on the quarry pit floor that covers an area of 4,000 m^2 and the "J" and "K" zone outcrop areas along the Higginbottom Creek cliffs. The results of the perlite zone mapping is summarized below:

"K" Zone

- The quarry area that occupies approximately a third of the total coarse grey perlite of the "K" zone has been excavated to a depth of up to 3.5 metres from the original surface.
- Contamination from overburden material, although present, was minimized by the previous operators efforts to remove the shallow overburden cover prior to perlite excavation.
- Alteration zones that occur within the perlite exposed on the pit floor are most prevalent on the west side of the excavation and consist of narrow zones (10-20 cm) of highly silicified cherty horizons and lenses of agglomerated chalcedonic nodules and limonitic alteration.
- The west limit of the quarry area occupies a zone were the 1983 trenching results indicated proximity to perlite with abundant chert. This alteration zone occurs on the margin but within the current pit.
- A perlite stockpile area along the eastern limit of the quarry contains approximately 750 tonnes of perlite, loose, broken perlite on the pit floor accounts for an additional 750 tonnes of ready to load material.
- The perlite stockpile contains 3 to 5% siliceous contaminating material that was incorporated due to the mining equipments selectivity restrictions.
- The material on the pit floor and the stockpile has a high percentage of fine grained material. This is attributed to the dozing and track/tire action of the excavation and haulage equipment operating on the pit floor.

Two 10 kilogram composite samples were taken, one is representative of the stockpiled perlite and the other is representative of the pit material. The in-pit sample locations are indicated on the deposit plan submitted as Figure 5.

"J" Zone

The "J" zone coarse perlite deposit was largely ignored during the 1983 site investigation studies due to thicker overburden cover, steep terrain in the area of the main perlite and the shortage of early stage bulk sample test data.

The 1994 work program suggests that the "J" zone has excellent quality perlite with high expansion factors. This observation is supported by the limited 1983 drill hole information. The zone appears to be split by a narrow alteration horizons; more extensive trenching and drilling may widen the deposit towards the north, which could substantially increase the deposits reserves. A 10 kilogram composite sample for future testing was obtained from the south end of this zone. The channel sample locations are shown on Figure 5.

4.5 Perlite Quality Considerations

Perlite is described as a glassy volcanic rock that has the unusual characteristic of expanding as much as 20 times its original volume upon heating, within its softening temperature range due to the sudden loss of combined water. Owning to its low density, neutral pH, spherical habit, high strength, and white colour it has a number of industrial applications and generally commands high product prices.

Typically perlite must be near 100% volcanic glass (holohyaline) with a high 4 to 5%, hydrated water content. Devitrification due to ageing or mineral alteration is detrimental in terms of expendability factor, colour or chemical composition.

Perlite a chemical equivalent to a rhyolite normally contains 71 to 75% S_i0_2, 12.5 to 18% Al_20_3, 4 to 5 % K_20, 1 to 4% Na_20 and traces to 1% Fe_20_3 or other metal oxides.

Chemical testing on the Frenier perlite indicate that its composition is in the order of 71.5% SiO_2, 12.2% Al_2O_3, 3.9% K_2O, 2.4% Na_2O and 1.3% Fe_2O_3 with 4.1% hydrated water. Aurun Mines cites an average expendability factor of 22 times for an estimated reserve 450,000 tonnes. Field and laboratory data for the deposit indicate average expendability factor lower than the reported 22 times. The process plant performance data for the deposit is not available for field correlations with the 1983 data. Testing with a dried, annealed perlite crude is known to provide a more uniform and superior expanded product. Past production from the deposit has demonstrated that the expanded product has excellent colour and expansion characteristics. The product gained wide acceptability in the horticultural sector.

4.6 Frenier Perlite Types and Alteration

The perlite types of the Frenier deposit consist of the following:

- Coarse grey perlite normally with a massive blocky habit but also exhibiting splintery fracturing, typical of perlite.

- Perlite breccia or agglomeritic glass fragmental. Normally the breccia show some signs of alteration due to partial silicification as a result of differential cooling along boundaries of coarser glass fragments.

- Fine glassy perlite welded tuff. This material considered a waste product has matrix with 10 to 35% perlite.

5.0 MINEABLE RESERVES

5.1 Summary of Mineable Reserves

The total reported perlite reserves for the Frenier deposit are 449,000 tonnes. For mine planning purposes only the proven high quality reserves are considered. These proven reserves, 330,700 tonnes would provide perlite feedstock for at least 30 years operating at a rate of 10,000 tonnes per annum, assuming no fines losses. Expected fines losses

are discussed further in Section 5.5. A summary for the proven reserves is illustrated in Section 5.4 and a total reserve summary is provided in Table 2.

The perlite reserves for the Frenier deposit are calculated on the basis of cross-sections and plans produced in 1983 and updated in the field during the 1994 work program.

The reserve plan and cross-sections provided as Figures 5 to 8, of Appendix A are based on 1983 trench and diamond drill results. These trench and drill locations are readily identifiable in the field. The orebody interpretation is also supported by the most recent field mapping results and a complete review of the original data.

5.2 Methodology

The mineable reserves for the Frenier perlite deposit are based on planimetered areas on cross-sections or plan and incorporate reasonable projection distances between cross-sections, to depth or along the strike of the deposit.

The proposed quarry pit floor design is set at the maximum drill depth in perlite ore on each cross-section since the deposit is open at depth. The initial pit outline is determined by establishing a minimum operating width of 10 metres at the final pit floor depth and uses a maximum pit slope angle of 45°. This minimizes waste stripping volumes. This initial pit outline basis and labelled as "10 metre/45°" on Tables 2 and 3A, 3B. Subsequent to the initial pit design, in order to obtain additional ore with minimum stripping, a push-back to second ultimate pit wall with a pit slope of 45° on the pit hanging walls of the orebodies was proposed. This final pit wall is established using an arbitrary 1:1 stripping ratio (waste ore). The reserve basis for this second pit outline is labelled "ISR 1:1" on Tables 2 and 3A, 3B. The areas, projection distances volumes and tonnage are documented on tables 3A and 3B.

Once the optimum pit outlines were established, the volumes of the different material types were determined. The material types shown on plan and the cross sections are:

- **Overburden (Obd).** This unconsolidated material illustrated on the cross-sections consists of soil and glacial material. The depth of overburden was

determined during trenching, test pitting and drilling, and generally ranges from 0.5 to 3.0 metres in thickness.

- **Waste.** The term waste or waste rock is applied to all material that is currently not considered to be of perlite ore grade quality or overburden.

- **Coarse Grey Perlite (CgP).** This unit contains the best quality (highest expansion factor) perlite in the deposits. It generally refers to completely glassy perlite with a massive habit.

- **Perlite Breccia (PB).** This unit contains lower quality perlite with acceptable expansion factors and generally refers to material on the hanging wall that would be removed or stripped during mining of the coarse grey perlite. Since this material has some quality expansion factor data and the volumes are not excessive it has been included as a separate perlite reserve. The cut-off grade for incorporating this material into the reserves was an expansion factor of 15.

Conversions of perlite volumes to tonnes was done on the basis of a perlite in-situ specific gravity of 2.3. Swell factors for perlite are estimated to be in the order of 40 to 50%.

5.3 Basis for Reserve Categories

The reserve categories of Proven, Probable and Possible ore (Feedstock) are established on the following basis:

- Proven Category. This feedstock material has been blocked out by diamond drilling and surface trenching. On the Frenier deposit the drill spacing is 25 to 40 metres along strike and 20 to 30 metres perpendicular to the strike.

- Probable category, this feedstock category applies to rather limited portions of the deposit that are greater than 30 metres distant from drill data but have good quality surface dimensioned data from trenching, bulk sampling and other testing.

- Possible category, this feedstock material corresponds to perlite that been delineated by mapping without trenches or drill holes but does contain limited test data. This material is generally well exposed on the Higginbottom Creek section.

5.4 Waste-Ore Stripping Ratio

The mineable reserves and waste ore stripping ratios are tabulated below.

The total proven ore reserves include 43600 tonnes of perlite breccia which is not considered as high quality perlite but would require mining in the 1:1 incremental stripping ratio push-back mining scenario.

Mineable Reserves

	Proven Ore		Waste		Stripping Ratio Waste: Ore	Stripping Ratio Excluding Perlite Breccia
	CgP	PB	Obd	Rock		
Initial Pit 10 m/45°	258072	28604	9361	11903	0.07:1.0	0.13:1.0
Final Pit 1:1 SR	72670	14993	1485	9104	0.12:1.0	0.24:1.0
TOTAL:	330742	43597	10846	21007	0.09:1.0	0.15:1.0

Stripping ratio is cubic metres of waste per tonne of ore. If perlite breccia is excluded from the reserves the stripping ratios are substantially increased. Overall by open pit mining standards the stripping ratios are very low and favourable.

5.5 Reserve Losses

Recent conversations with J.A. Chapman, past president of Aurun Mines, indicate that losses of perlite feedstock were in the order of 50% due to the development of excessive fines (-20 mesh, U.S. Standard Sieve) after crushing, which was done at the expanding plant. Generation of fines can be attributed to mining, transportation, and comminution, however the percentage produced for each category (mining, transportation handling, and crushing) were not accurately determined.

Although perlite fines are not suitable for horticultural or aggregate products a market for the fines does exist. Uses for fine perlite include cryogenic and coated microsphere products that normally command high prices and represent significant market value.

Other significant perlite feedstock losses, non-fines related were in the order of 15% resulting in a final product yield of 85%. These losses were attributable to moisture dust and furnace waste (non-expanding material). The net feedstock loss, in the order 57.5% is not favourable and suggested improvements are discussed in the mining and processing sections of this report.

5.6 Reserve Grades

The reserve grades are established by averaging the drill hole expendability factors on each cross-section. Experience of Aurun Mines was that the expansion factors from the field data are conservative. Notwithstanding this experience the expandability factors used for the reserves is based on the drilled and trench laboratory test results.

The cut-off grade expansion factor applied to the reserves is 15. The average reserve expansion factor for the proven feedstock pit outline is estimated at 18.6 times.

6.0 MINE PLANNING

The current shape of the abandoned Aurun Mines Quarry, shown on Figure 5, indicates that approximately 8,000 tonnes of perlite has been removed from the pit area by previous mining activity. A stockpile at the site contains approximately 750 tonnes of this pit run material.

6.1 Ultimate Pit Design

The ultimate pit design shown on Figure 9 and the cross-sections, Figures 6 to 8, was required to establish a reasonable mining basis for the inclusion of the proven ore category into mineable reserves.

As briefly discussed in Section 5, the ultimate pit design considers two mining scenarios. The first scenario consists of mining to the bottom of the proven perlite zone (as established by drill depth) with a 45° pit slope. A critical restriction imposed on the design consists of a minimum 10 metre operating width at the bottom of the pit. In this scenario, the pit design results in the least amount of waste removal or stripping while maximizing recovered ore volumes.

The second scenario considers a push-back, or in other words, widening of the pit by stripping additional overburden and waste on the hanging wall side of the orebodies. A maximum incremental stripping ratio of 1:1 (waste to ore) was used to define the final limits of the eastern pit walls. This incremental pit limit also shown on the plan and cross-sections provided as Figures 6 to 9. The 1:1 incremental stripping is not based on economics and is preliminary, however the overall stripping ratio by including this increment is not significantly increased as shown in Section 5.4. The final ultimate pit also considers extension into areas of probable and possible ore and where the ore limits are shown to daylight onto Higginbottom Creek valley. During the design of the quarry the pit slope along the footwall of the orebody was whenever possible reduced from 45° to optimize ore recovery, minimize stripping and provide reduced contamination from footwall waste.

6.2 Five Year Mine Plan

The five year mine plan is based on a 10,000 tonnes per year of product material and estimated product losses of 50% due to fines (-20 mesh). This results in a required run of mine (ROM) production of 100,000 tonnes over a 5 year period. The pit design required to produce 100,000 tonnes of perlite using a 5 metre initial lift will require development of a pit of 250 x 35 metres. The pit outline for the five year mine the "K" zone orebody approximates the ultimate design for this deposit and is illustrated on Figure 9. The plan includes the design of a 5% ramp to elevation 1,230 metres and access to the "J" zone pit area.

6.3 Site Layout

The space requirements for facilities and storage were reviewed and the needs identified are as follows.

- Adequate separate stockpile areas for; (i) perlite feedstock (pit run), (ii) marginal quality perlite (expansion factor 13 to 15 times), and (iii) perlite fines generated from crushing and screening on site.
- Overburden dumps for future site reclamation.
- Waste rock dump sites.
- Plant site and laydown areas.

Space requirements for each of the above are estimated below:

Stockpile Areas: Stockpile sites for pit run material, estimated to be in the order of 3,000 to 5,000 tonnes will occupy an area of approximately 625 m^2. The site should be in proximity to the crushing facilities and is dynamic or temporary in nature.

Marginal Quality Perlite: Stockpile sites for lower quality perlite is anticipated to be minimal in the initial operating years. An area of 2,500 m^2 in proximity to the pit is considered adequate until waste stripping becomes a major factor.

Fine Perlite Stockpile: Space for fine perlite (-20 mesh material) generated by crushing is estimated at 50,000 tonnes over 5 years, or 50% of the Run of Mine material. Using a in-situ density of 2.3 and a bulking factor of 50% this translates or an area of 100 x 100 x 3 metres. It is anticipated that some fine perlite will become marketable in the future and therefore the stockpile site has been located near the plant for efficient storage and retrieval.

Waste Dumps: Sites for rock waste are again not a substantial requirement in the initial years of operation. However, once push-back stripping becomes necessary, long term

space requirements for waste will be in the order of 50,000 m^3, an area of 100 x 50 x 10 metres. Waste material can also be used for road improvements towards Grinder Creek and sub-base for stockpiles on the site.

Overburden Dumps: Overburden dump sites for potential reclamation soils are anticipated to be minimal. In most cases the overburden can be stockpiled along the pit margins for eventual reclamation.

Plantsite, Camp and Laydown Areas: The plant site will require space for loading crushing drying, screening, storage bins, fuel depot, propane tanks, diesel power generation, equipment repair and storage. The space allotted for the plantsite location is 2,500 m^2 metres on the east side of the "K" zone pit. The trailer camp can be located in the meadows adjacent to Higginbottom Creek which has road access, water and is removed from the operations. Site laydown areas will occupy a space of 625 m^2 adjacent to the plant site location.

7.0 MINING AND PROCESSING

It is proposed that the ROM perlite is crushed, dried and sized at the mine site location in order minimize the transportation of material that is below specification, high in water (moisture) and storage considerations.

7.1 Mining Requirements

Perlite, usually mineable by open pit methods is relatively brittle with a low strength and only requires ripping and loading by mobile equipment. Mining done on the Frenier deposit by Aurun Mines used a tracked loader with a ripper and produced at least 6,500 tonnes of perlite to Aurun's expanding facilities on the BC mainland. The amount of fines produced after mining, transportation, drying and crushing reduced the amount of readily marketable product by a reported one half. This implies that due to the softness of the material considerable effort should be placed on the reduction of comminution. On the mining side the creation of fines can be reduced by minimizing abrasion due to traffic or dozing material to a central area. In this sense consideration should be given

to loading with a backhoe, the use of jackhammers, light explosives and any other method that would reduce the generation of excessive fines. The use of a backhoe should also be considered from the viewpoint of ore selectivity. This increased selectivity would reduce the inclusion non expanding material into the feedstock. Multiple handling and stockpiling is also to be avoided.

7.2 Processing Requirements

Perlite feedstock processing essentially contains five key elements which are:

- crushing
- drying and annealing
- sizing
- storage and handling
- transportation

Sizing of the feedstock is a very critical aspect as it determines the end use of the expanded product. The normal size range (US standard Sieve) for perlite feedstock is 8 to 30 mesh. The principal market product in Canada are horticultural perlite, between 8 and 16 mesh and construction aggregate material, between 16 and 30 mesh. Material passing through 30 mesh size is suitable for other end use products that normally are not as readily marketable and have applications as fillers, filter aids, cryogenic uses, and specialty areas such as coated microspheres.

Details of product specifications are best summarized in D.F. Gunning's Perlite Market Study for British Columbia Open file 1994-21 (see references).

In order to produce 10,000 tonnes of expandable product a year with fines losses of 50% the plant will be required to process 20,000 tonnes of ROM perlite, resulting in a plant capacity of 25 tonnes per hour over 800 hours/per year (5 months).

Conceptual process plant equipment is anticipated to be the following:

- Front End Loader, Grizzly and Jaw Crusher system to reduce material to minus 1/2 inch.

- Hopper System and Rotary Drier capable of 475°F. A Vibrating Screen is also required to provide consistent flow of material to the drier.

- Dust Collecting System for ore drier dust. Direct disposal versus bag house and draft fan should be considered. Material collected in an air-lock system can be disposed of on-site.

- Hopper System and Hot Leg Bucket Elevator for silo storage of dried ore.

- Storage Silos to anneal dried ore, minimum estimated capacity 500 m^3.

- Secondary crusher, roll or vertical impact type, conveyors and multi deck vibrating or hummer screens for product classification.

- Conveyors and Multi Desk Screens (Vibrating or Hummer Systems). Suggested screen sizes are 8, 16, 20 and 30 mesh. The addition of a 30 mesh screen could significantly reduce the fines.

- Storage Silos for classified product.

7.3 Transportation

Processed feedstock from the site will be trucked to Williams Lake or Clinton, British Columbia for transhipment to expander plants in the BC Lower Mainland, or Edmonton. In order to maintain a dry product, the transport trailers must be covered or containerized. This also applies to any other further handling or storage.

8.0 CAPITAL AND OPERATING COSTS

8.1 Capital Costs

The capital cost for mining equipment and the ore processing plant to produce a perlite product for expansion is anticipated to be in the order of $300,000 to 5000,000 and

includes rail loading equipment and storage silos offsite principal capital items and anticipated costs are:

Item	Estimated Cost $ Canadian
Primary Crusher	30,000.00
Secondary Crusher	30,000.00
Conveyors & Hoppers	20,000.00
Dryer	20,000.00
Vibrating Screens	40,000.00
Ore Storage Silos (4)	40,000.00
Bucket Elevators (4)	20,000.00
Backhoe & Loader	50,000.00
Service Vehicles	15,000.00
Power Plant	30,000.00
Mine Camp and Office	20,000.00
Offsite Loading and Storage	25,000.00
Transportation and Assembly	60,000.00
TOTAL	400,000.00

Equipment requirements for haulage of perlite feedstock offsite is not included in the above estimates. It is assumed that mining would be a contract operation.

8.2 Operating Costs

Operating costs for contract mining and processing are projected at $25 to 30 / tonne while haulage costs to Williams Lake or Clinton also in the order of $25 to 30 / tonne resulting in a feedstock at railhead cost of $50 to 60 / tonne. Rail transport to expanding facilities in the Vancouver, Edmonton, Winnipeg, and Oregon areas range from $25 to

50 / tonne (short ton). This results in a total production cost, including delivering of $75 to $110 per tonne of perlite.

8.3 Manpower Requirements

The direct manpower requirements for production on-site are low. The mining operation will require 2 to 3 personnel and the plant operation 3 to 5 personnel. Personnel required to transport the perlite to expanding plants or truck haulage from the site to distribution points is not estimated and is anticipated to be done on a contract basis.

9.0 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

The main conclusions derived from the 1994 work program are:

- The Frenier perlite deposit has two tabular orebodies named the "K" and "J" perlite zones. The perlite in both zones is of high quality.

- The perlite, in both, the "K" and "J" zones is mineable by open pit methods. The mining requirements are not complex and operating costs will be relatively low.

- The ultimate pit designs for proven category of perlite reserves provides 330,000 tonnes of recoverable expander feedstock material. The total reserves for all ore categories are calculated at 449,000 tonnes. Indications are that the total reserves could be increased perhaps substantially, with additional work.

- The expansion factor grade for the reserves if 18.6 times. The perlite is of good quality (colour, brightness, bulk density) and gained market acceptance during its brief production history.

- Space availability for site infrastructure including stockpile areas, waste dumps and a process plant for crushing, drying and ore sizing is adequate.

- The site location, access and climate are conducive to efficient mining. Environmental impacts are minimal.

- The process requirements to produce perlite feedstock are crushing, drying screening and storage. The principal markable products are horticultural and construction aggregate.

- Processing of readily marketable perlite produces large volumes (up to 50%) of fine perlite which is not readily marketable. This factor imposes fine perlite losses, requires stockpiling and necessitates increased production rates for run of mine material.

- The feedstock products produced at the mine will require transportation to Clinton or Williams Lake, BC for subsequent rail or truck transport to perlite expander plants in Canada or the U.S.A.

- The five year mine plan to produce 50,000 tonnes of marketable perlite estimates mining and processing of 100,000 tonnes.

9.2 Recommendations

The following recommendations are made to further advance the status of the deposit.

- Samples of 5 to 10 kilogram size should be tested at the facilities of potential clients or users. The objectives of this testing should be to confirm product marketability and generate sufficient interest in the product to attain production or at least production trials.

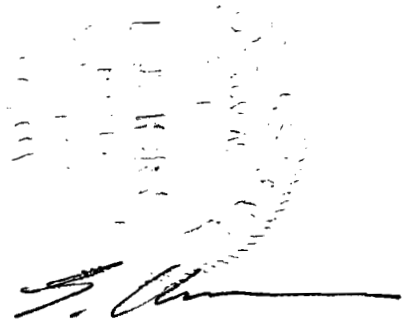
- Crushing, grinding and screening tests should be performed on run of mine ore to determine optimum comminution characteristics in order to minimize the impact of perlite fines produced from the process.

- Detailed capital and operating cost-estimates should be generated. Cost should include an on-site process plant and operating costs for mining, processing, and transportation.

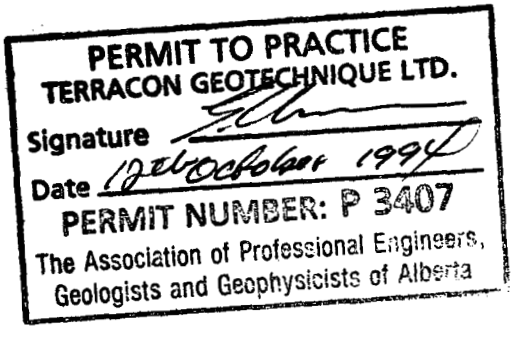
- Marketing studies and the procurement of supply contracts.

10.0 ITEMIZED COST STATEMENT AND REGULATORY FORMS

The assessment report title page and summary of work is included with a copy of the statement of work and the itemized cost statement in Appendix C. Total expenditures claimed for assessment credit on the May 1, 3 and 4 claims in 1994 are $8,800.



Emmett J. Horne, P.Geol.



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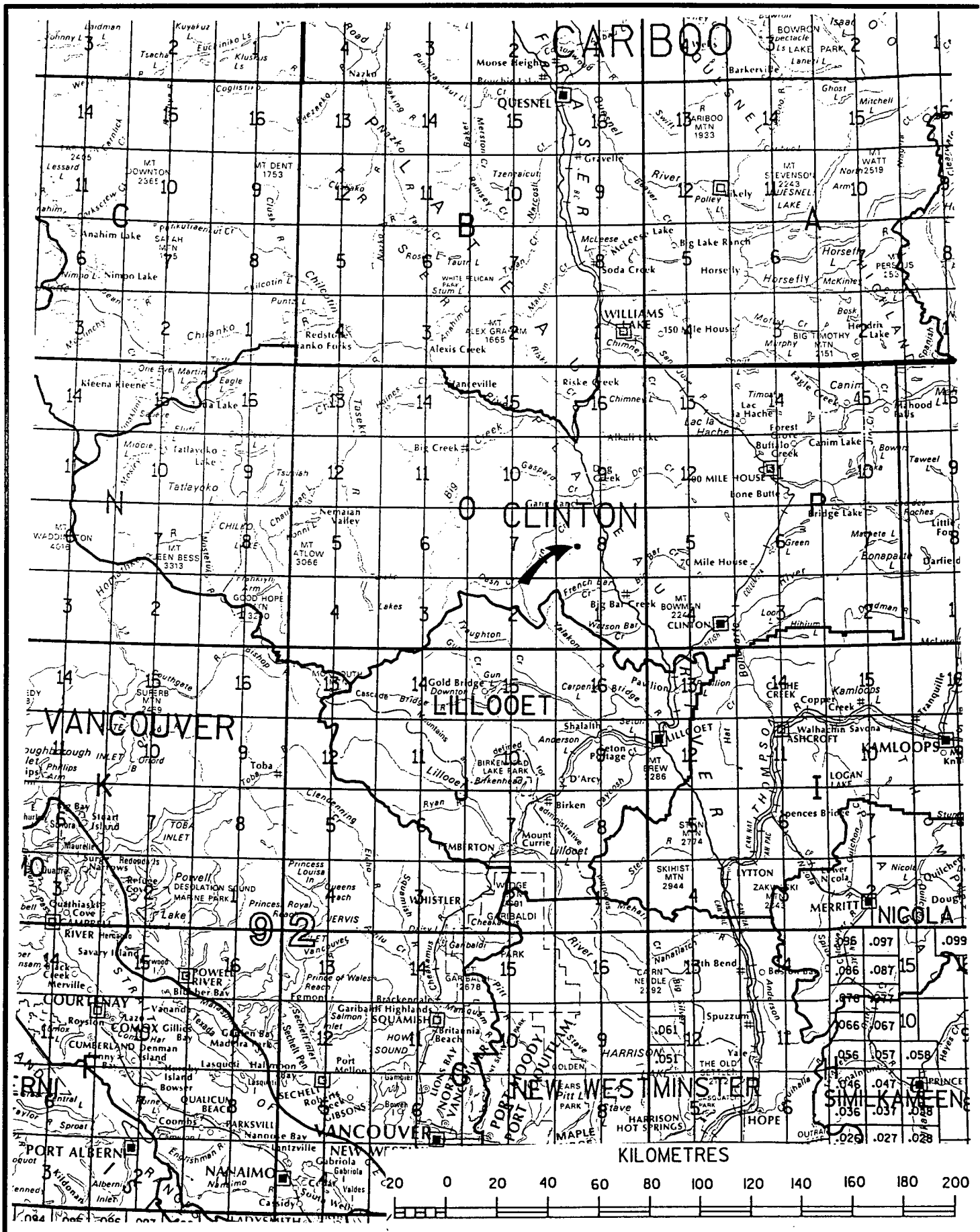
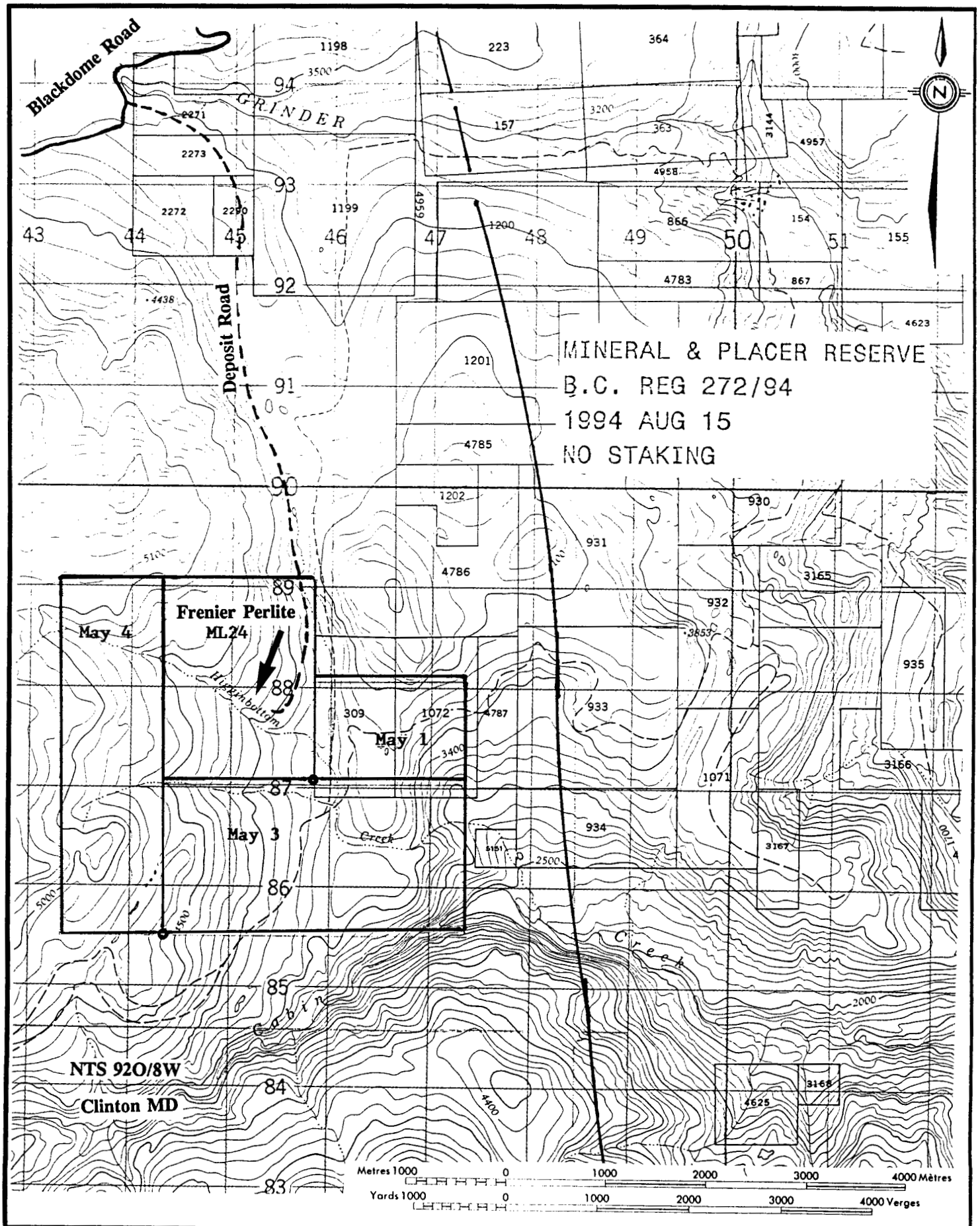
APPENDIX A

APPENDIX A

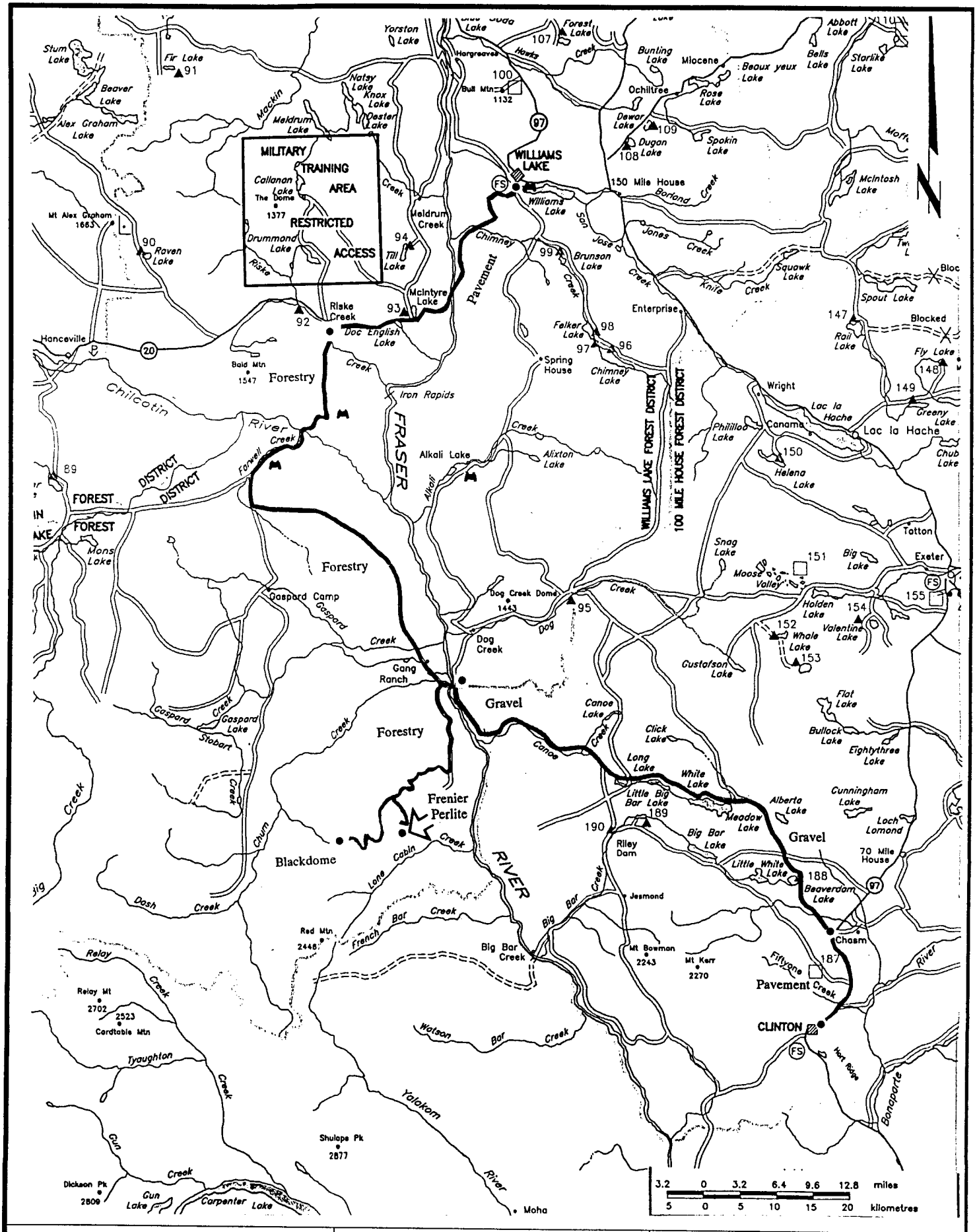
Figures and Maps



ASSESSMENT REPORT FRENIER PERLITE DEPOSIT	May 1, 3 and 4 Claims Mining Lease 24	INDEX MAP
TERRACON GEOTECHNIQUE LTD.	Scale: 1:2,000,000	Figure 1



ASSESSMENT REPORT FRENIER PERLITE DEPOSIT	May 1, 3 and 4 Claims Mining Lease 24	CLAIM LOCATION MAP
TERRACON GEOTECHNIQUE LTD.	Scale: 1:50,000	Figure 2



ASSESSMENT REPORT FRENIER PERLITE DEPOSIT	May 1, 3 and 4 Claims Mining Lease 24	SITE ACCESS MAP
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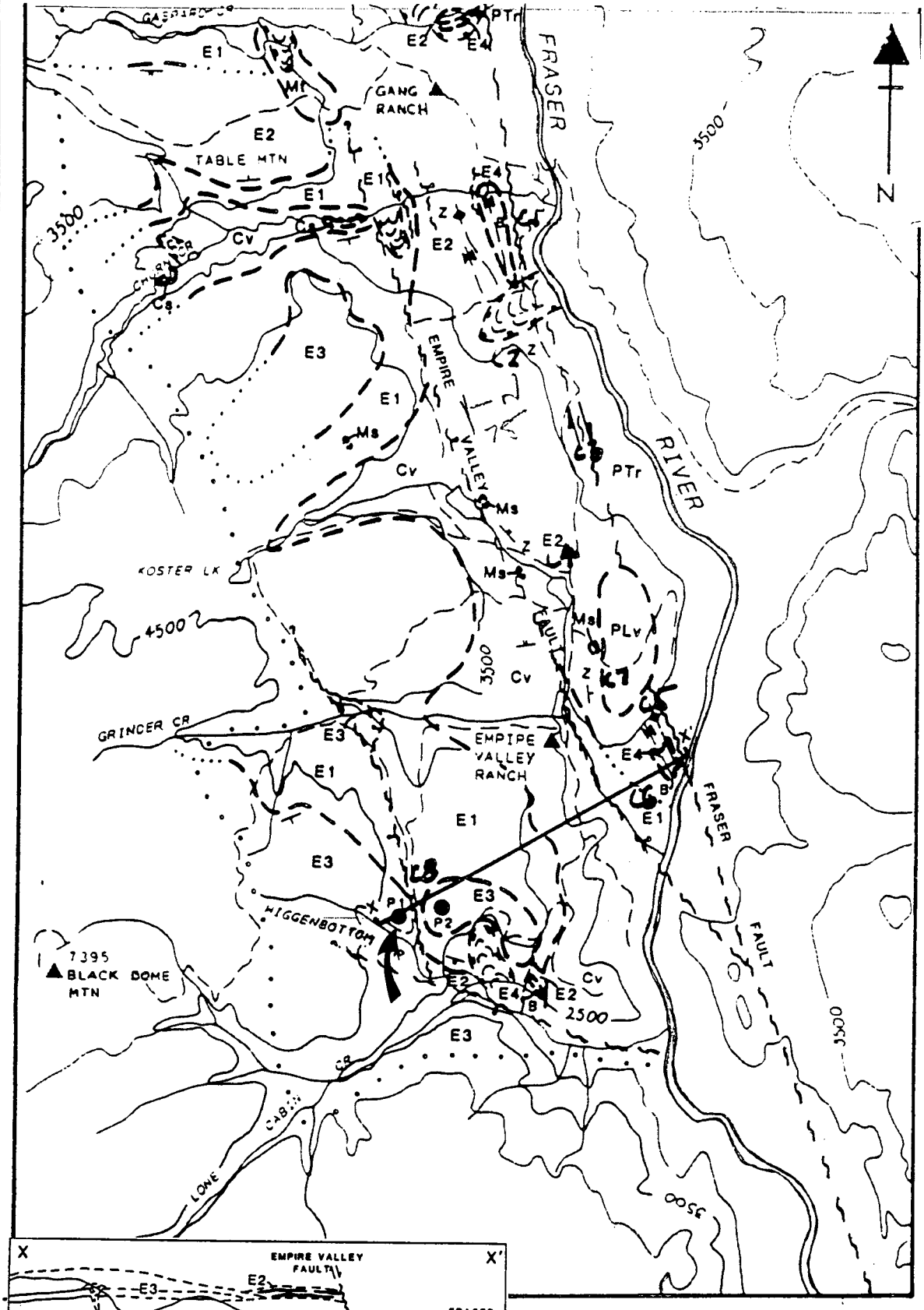
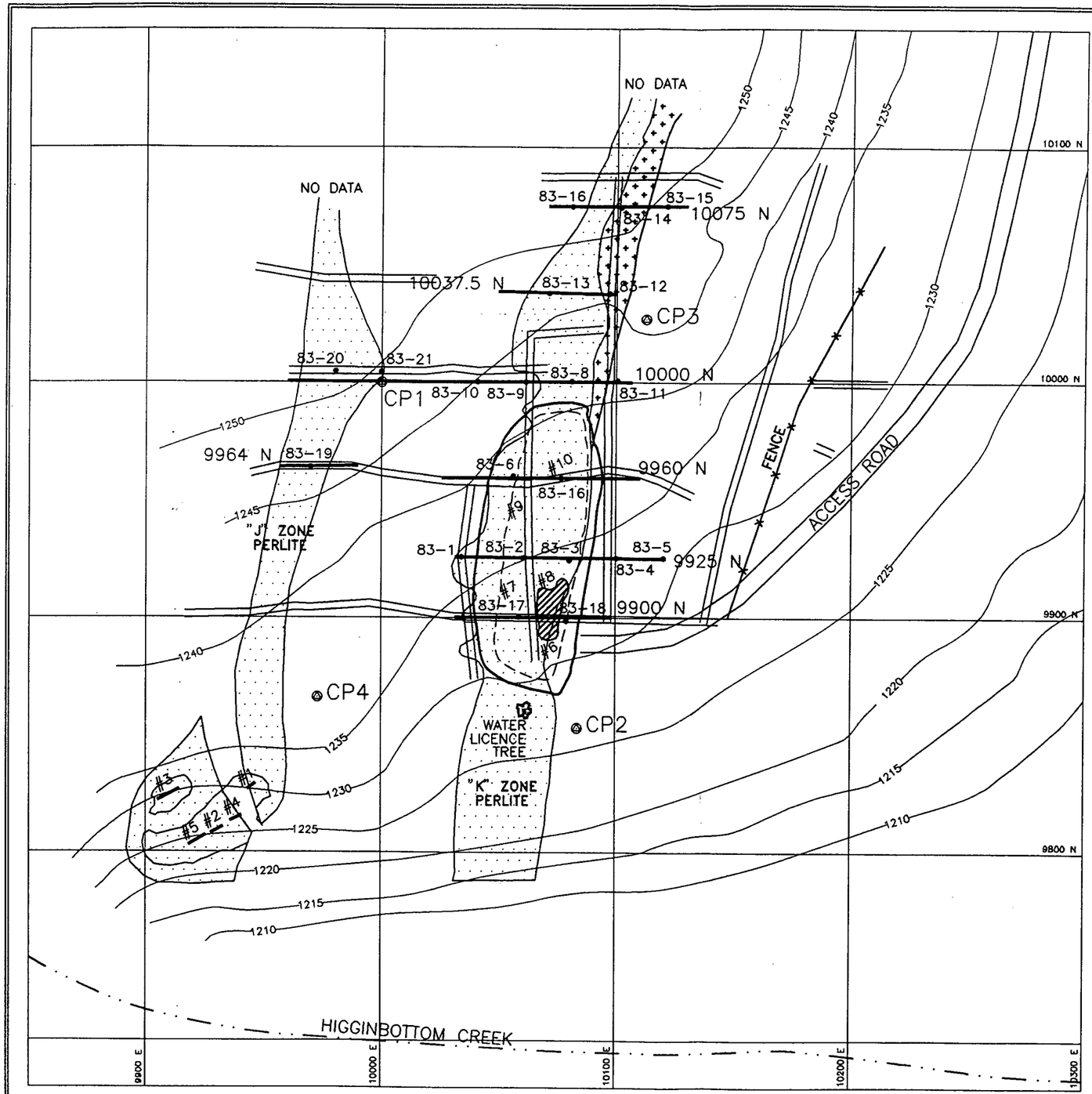


From: Geological Fieldwork 1988 paper 1989-1 (BC, EMPR)

ASSESSMENT REPORT FRENIER PERLITE DEPOSIT	May 1, 3 and 4 Claims Mining Lease 24	REGIONAL GEOLOGY
TERRACON GEOTECHNIQUE LTD.	Scale: As Shown	Figure 4



-N-

LEGEND

- Survey Control Station
- Contours in metres ASL
- 83-5 Drill Hole 1983
- Trench 1983
- #3 Sample Points 1994
- Cross-Section Location
- Coarse Grey Perlite
- Perlite Breccia
- Stockpile
- Current Pit Outline (Crest and Toe)

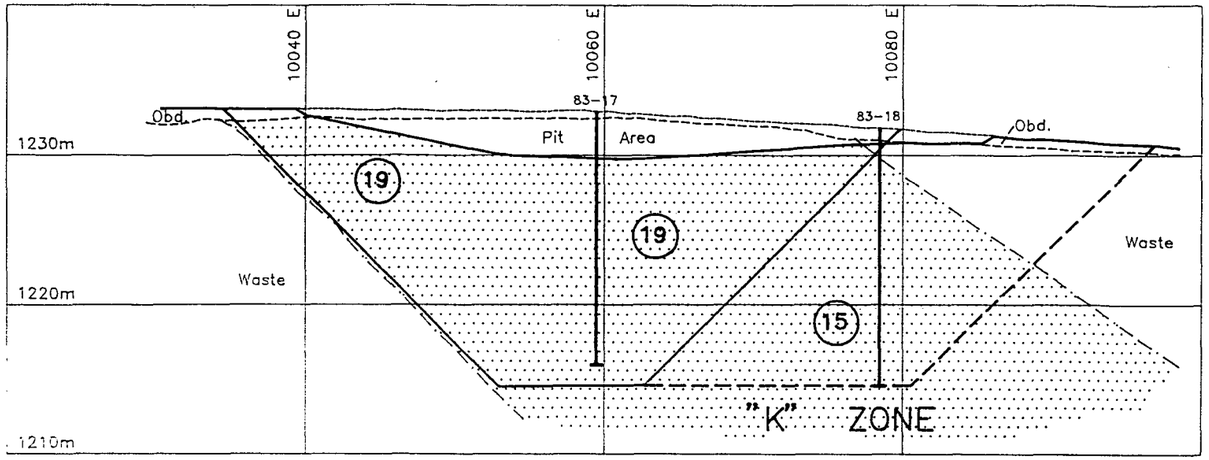
NOTE:
Elevations corrected to Topographic Map NTS 920 8/W
Control Point CP1 elevation is 1250 metres ASL

SCALE

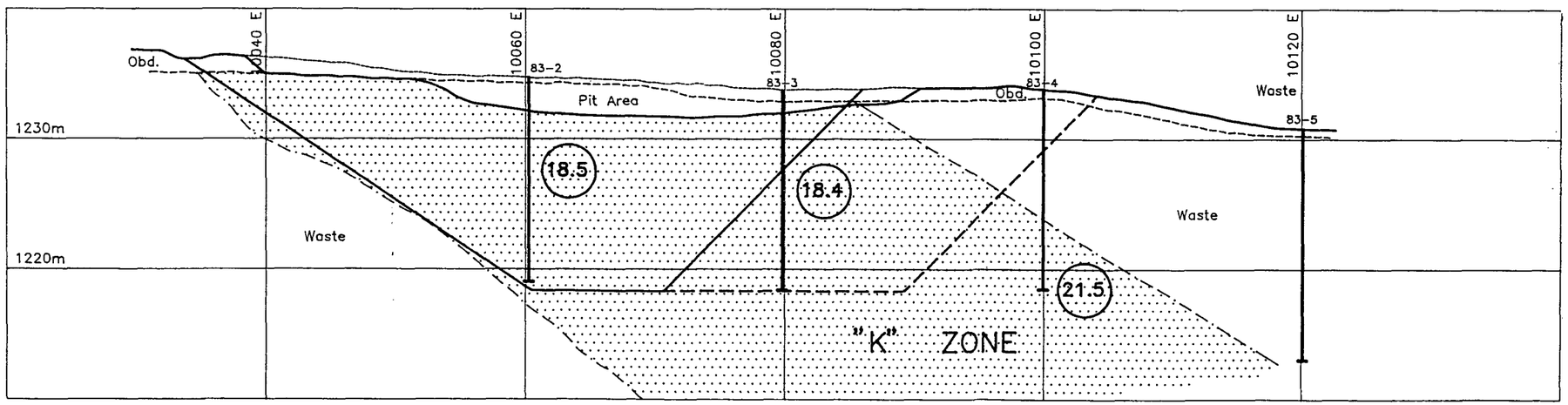
0 10 50 100m

CONTOUR INTERVAL 100m

ASSESSMENT REPORT FRENIER PERLITE DEPOSIT	May 1, 3 and 4 Claims Mining Lease 24	PLAN VIEW FRENIER PERLITE DEPOSIT
TERRACON GEOTECHNIQUE LTD.	Scale: 1:2,000	Figure 5



CROSS-SECTION 9900 N



CROSS-SECTION 9925 N

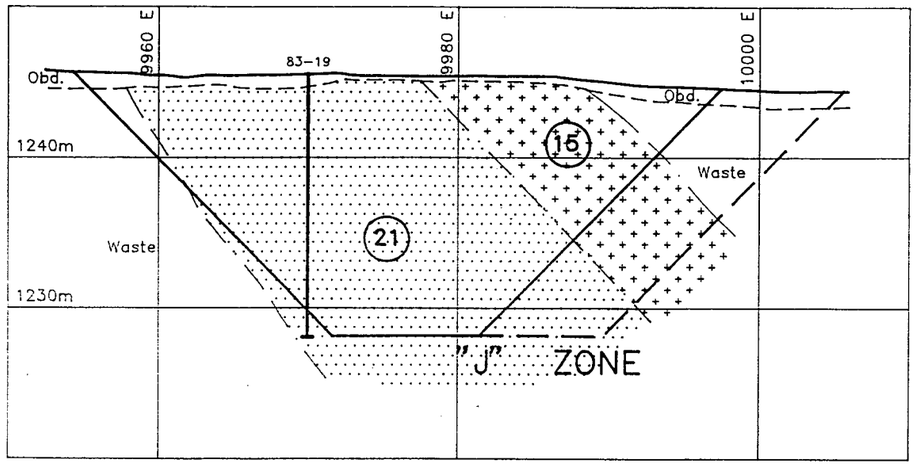
LEGEND

- Pit Outline 10 metre/45°
- Incremental 1:1 SR Pit Outline
- (16) Expansion Factor
- 83-10 Diamond Drill Hole
- Original Surface
- Perlite Contacts
- Coarse Grey Perlite
- Perlite Breccia
- Obd. Overburden

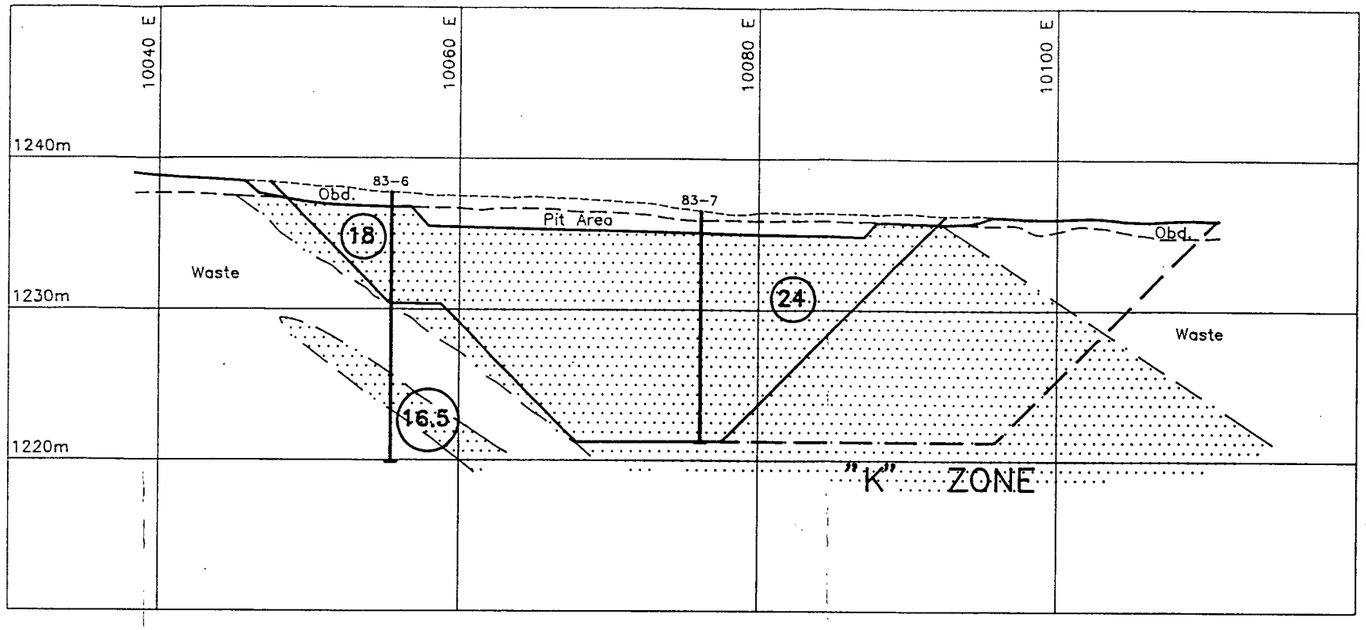
ASSESSMENT REPORT FRENIER PERLITE DEPOSIT	May 1, 3 and 4 Claims Mining Lease 24	PERLITE RESERVE CROSS-SECTIONS
TERRACON GEOTECHNIQUE LTD.	Scale: 1:400	Figure 6

LEGEND

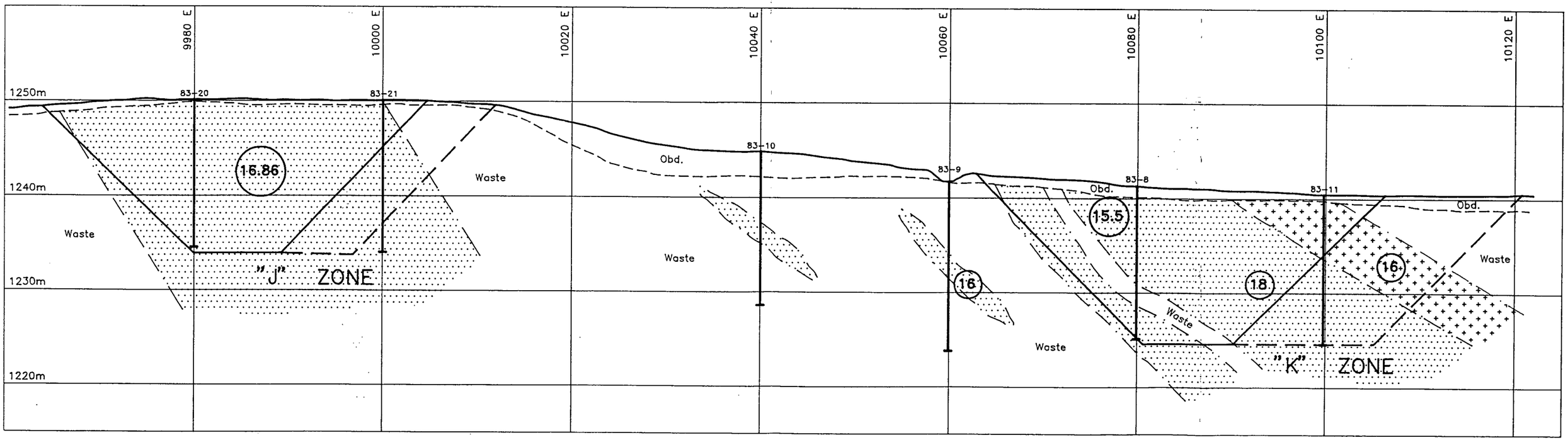
- Pit Outline 10 metre/45°
- Incremental 1:1 SR Pit Outline
- (16) Expansion Factor
- 83–10 Diamond Drill Hole
- Original Surface
- Perlite Contacts
- Coarse Grey Perlite
- Perlite Breccia
- Obd. Overburden



CROSS–SECTION 9964 N

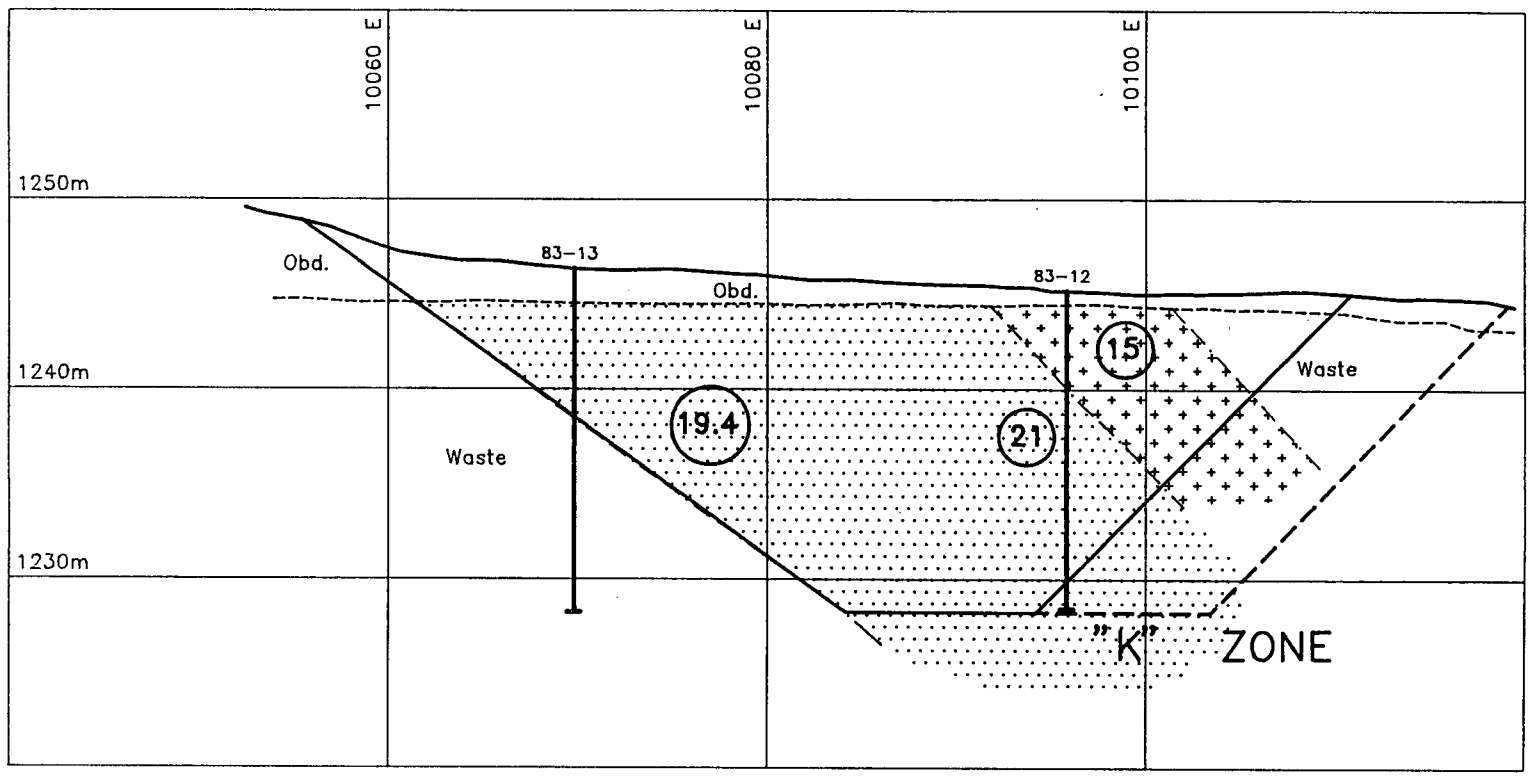


CROSS–SECTION 9960 N

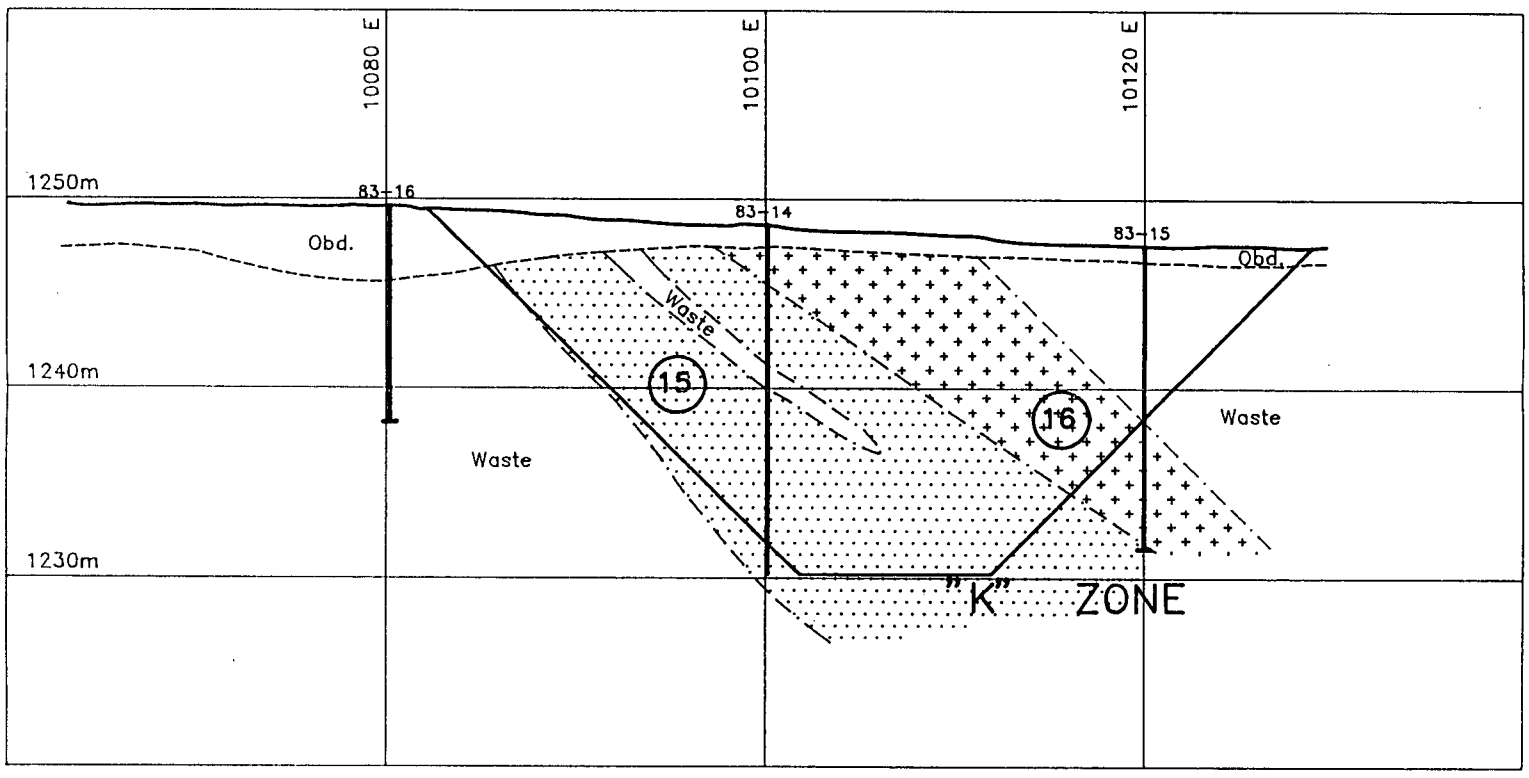


CROSS–SECTION 10000 N

ASSESSMENT REPORT FRENIER PERLITE DEPOSIT	May 1, 3 and 4 Claims Mining Lease 24	PERLITE RESERVE CROSS–SECTIONS
TERRACON GEOTECHNIQUE LTD.	Scale: 1:400	Figure 7



CROSS-SECTION 10037.5 N

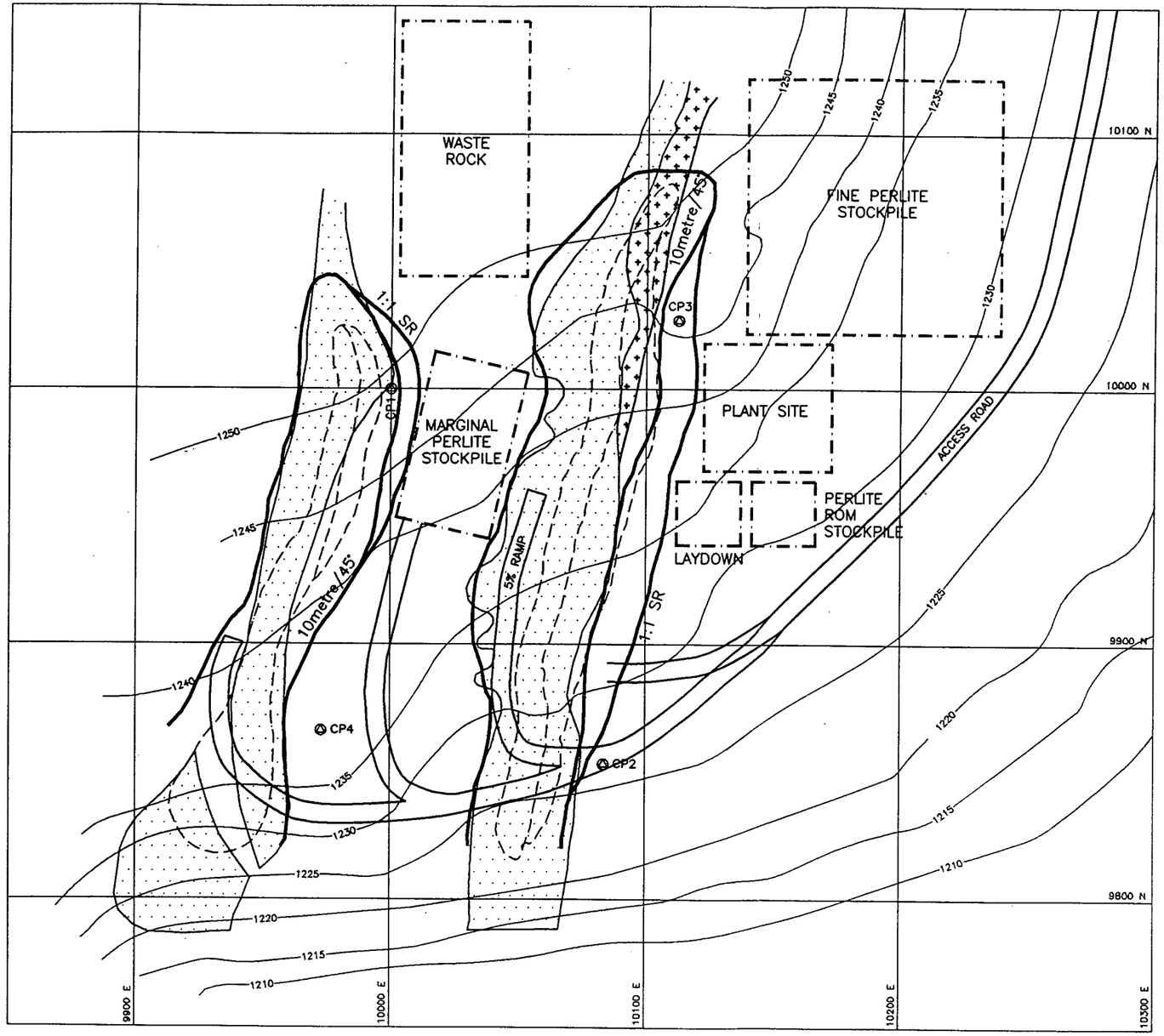


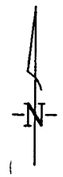
CROSS-SECTION 10075 N

LEGEND

- Pit Outline 10 metre/45°
- Incremental 1:1 SR Pit Outline
- (16) Expansion Factor
- 83-10 Diamond Drill Hole
- Original Surface
- Perlite Contacts
- Coarse Grey Perlite
- Perlite Breccia
- Obd. Overburden

ASSESSMENT REPORT FRENIER PERLITE DEPOSIT	May 1, 3 and 4 Claims Mining Lease 24	PERLITE RESERVE CROSS-SECTIONS
TERRACON GEOTECHNIQUE LTD.	Scale: 1:400	Figure 8





LEGEND

- Pit Crest
- Pit Toe
- Coarse Grey Perlite
- Perlite Breccia
- Infrastructure Location

NOTE: The 5 year Mine Plan mines a 5 metre lift (Elevation 1230 approx.) to the Ultimate Pit Limit (10 metre/45°) North of the 9900 N mine access

SCALE

0 10 50 100m

CONTOUR INTERVAL 5m

ASSESSMENT REPORT FRENIER PERLITE DEPOSIT	May 1, 3 and 4 Claims Mining Lease 24	PROPOSED QUARRY AND SITE LAYOUT
TERRACON GEOTECHNIQUE LTD.	Scale: 1:2,000	Figure 9

APPENDIX B

APPENDIX B

Tables

Table 1
Field and Hand Specimen Descriptions

Map Identification		Orientation	Description of Outcrop & Hand Specimen
Area	Claim		
94-1	May 3	Strike Az. 045 dip 55° SE Joints Az. 260/ 80-85 S Az. 190/75 W	Dacitic to Andesitic feldspar porphyry, medium to light grey, very fine grained holocrystalline rock with greenish brown alteration patches (flow banding) and 15% mycrophenocrysts of feldspar 0.5 - 1.5 mm size.
94-2	May 3		As above devoid of phenocrysts and partly hypocrystalline, rock exposure is minimal resulting from uprooted tree.
94-3	May 1		White rhyolite quartz porphyry, hypocrystalline with grey quartz phenocrysts (0.25 - 2.5 mm size) and 3 - 10% maftic lapilli and ash fragments (1.0 - 5.0 mm).
94-4	May1/ML24		White porcellainous hyalopilitic rhyolite with 3-5% smoky quartz micophenocrysts, 0.2-0.5 mm size. Welded tuff with micro-laminar near flat lying glassy banding.
94-5	May 4	Poorly Exposed	Vesicular basalt and light grey microcrystalline andesite, very poor outcrop, (may be float).
94-6	ML24	Poorly Exposed	Flow banded light buff to rusty rhyolite with 3% smoky quartz microphenocrysts, groundmass is predominantly holocrystalline.
94-7	ML24		Vesicular Rhyolite (basal unit to lowermost perlite zone), light buff to white interlayered rhyolite fragmentals. The rhyolite has large vesicles (0.5 to 10.0 m) partly lined with silica and clay minerals. The unit often contains intense limonite alteration and has aphanitic matrix that varies from buff to apple green in colour. The unit is predominantly holocrystalline with strong indications of devitrification (chert and chalcedony).
94-8	ML24	Strike Az. 020 dip 40° E Tabular bedding joints	White porcellaneous rhyolite welded fluff with 3 to 5% smoky quartz microphenocrysts. The unit is hypocrystalline with occasional patches of glassy perlite.
94-9	ML24	near creek bottom Strike 025 Az. dip 40° E	Hyalopilitic, near holohyaline medium grey rhyolite porphyry with 10% less than 0.5 mm vesicles and up to 20% crystallites.
94-10	ML24	Quarry	Varicoloured buff and green alteration zones and "thunder egg" chalcedonic nodules occupy 3 to 5% of same pit areas and form elongated zones up to 1.0 metres wide and 10 metres long.
94-11	ML24		Perlitic lens in rhyolite flow between J and K zones. Good expansion characteristics.

Table 2
Reserve Summary

Reserve Category	Perlite Zone	Basis		Cross Section	Plan Outline	Coarse Perlite	Expansion Factor	Perlite Breccia	Expansion Factor	Waste m³	Overburden m³
Proven (Drilled)	"K" Zone	10 metre/45°		9900N		41,348	19.0				170
				9925N		28,327	18.5				191
				9660N		31,147	21.0				
				10000N		30,713	17.0	3,875	16.0		1,853
				10037.5N		33,870	20.0	5,685	13.0	714	2,398
				10075N		21,614	15.0	9,780	16.0	3,456	2,707
			SUBTOTAL			187,019	18.6	19,340	15.7	4,170	7,319
Proven (Drilled)	"J" Zone	10 metre/45°		9964N		35,725	21.0	9,264	15.0	7,541	1,178
				10000N		35,328	17.0			192	864
			SUBTOTAL			71,053	19.0	9,264	15.0	7,733	2,042
Proven (Drilled)	"K" Zone	ISR 1:1		9900N		20,723	17.0				
				9925N		14,806	18.5				
				9960N		17,450	21.0				
				10000N		8,791	18.0	5,830	16.0	3,081	
				10037.5N		3,319	20.0	3,744	13.0	2,205	
			SUBTOTAL			65,089	18.7	9,574	15.6	5,286	
Proven (Drilled)	"J" Zone	ISR 1:1		9964N		3,933	21.0	5,419	15.0	2,090	1,485
				10000N		3,648	17.0			1,728	500
			SUBTOTAL			7,581	19.1	5,419	15.0	3,818	985
Probable Category	"K" Zone	10 metre/45°			9820-9870N	57,960	19.0			not	not
	"J" Zone	10 metre/45°			9800-9865N	22,425	18.0			included	included
			SUBTOTAL			80,385	18.7				
Possible Category	"K" Zone	10 metre/45°			9820-9870N	10,350	18.0			not	not
	"J" Zone	10 metre/45°			9800-9865N	27,600	18.0			included	included
			SUBTOTAL			37,950	18.0				
			TOTAL			449,077	18.7	43,597	15.5	21,007	10,846

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Frenier Perlite Terracon

Table 3A
Perlite Reserve Calculations (Proven Category)

Location, Category and Basis	Cross-Section	Material Type	Area m²	Projection Distance (Metres)	Volume m³	Density	Tonnes	Grade Exp. Factor
"K" Zone	9900N	Obd	23.0	42.5	170.0			
Proven Reserves		C. Perlite	62.0	42.5	17,977.5	2.3	41,348.0	19.0
(Drilled)								
Basis: 10 metre/45°	9925N	Obd	6.5	29.5	191.0			
		C. Perlite	417.5	29.5	12,316.0	2.3	28,327.0	18.5
	9960N	Obd	Nil	Nil	Nil	Nil	Nil	Nil
		C. Perlite	366.0	37.0	13,542.0	2.3	31,147.0	21.0
	10000N	Obd	47.5	39.0	1,853.0			
		C. Perlite	342.4	39.0	13,354.0	2.3	30,713.0	17.0
		Perlite B.	43.2	39.0	1,685.0	2.3	3,875.0	16.0
	10037.5N	Obd	64.8	37.0	2,398.0			
		Waste	19.3	37.0	714.0			
		C. Perlite	398.0	37.0	14,726.0	2.3	33,870.0	20.0
		Perlite B.	66.8	37.0	2,472.0	2.3	5,685.0	13.0
	10075N	Obd	56.4	48.0	2,707.0			
		Waste	72.0	48.0	3,456.0			
		C. Perlite	268.5	35.0	9,397.0	2.3	21,614.0	15.0
		Perlite B.	121.5	35.0	4,252.0	2.3	9,780.0	16.0
"K" Zone	9900N	Waste	83.0	42.5	3,527.0			
Proven Category		C. Perlite	212.0	42.5	9,010.0	2.3	20,723.0	17.0
Basis: (ISR 1:1)								
	9925N	Waste	78.4	29.5	2,313.0			
		C. Perlite	209.0	29.5	6,165.0	2.3	14,806.0	18.5
	9960N	Obd	12.9	37.0	477.0			
		Waste	60.4	37.0	2,235.0			
		C. Perlite	205.0	37.0	7,587.0	2.3	17,450.0	21.0

Table 3A
Perlite Reserve Calculations (Proven Category)

Location, Category and Basis	Cross-Section	Material Type	Area m²	Projection Distance (Metres)	Volume m³	Density	Tonnes	Grade Exp. Factor
	10000N	Waste	79.0	39.0	3,081.0			
		C. Perlite	98.0	39.0	3,822.0	2.3	8,791.0	18.0
		Perlite B.	65.0	39.0	2,535.0	2.3	5,830.0	16.0
	10037.5N	Waste	59.6	37.0	2,205.0			
		C. Perlite	39.0	37.0	1,443.0	2.3	3,319.0	20.0
		Perlite B.	44.0	37.0	1,628.0	2.3	3,744.0	13.0
	10075N							
"J" Zone	9964N	Obd	24.8	47.5	1,178.0			
Proven Category		Waste	12.6	47.5	7,541.0			
Basis: 10 metre/45°		C. Perlite	327.0	47.5	15,532.5	2.3	35,725.0	21.0
		Perlite B.	84.8	47.5	4,028.0	2.3	9,264.0	15.0
	10000N	Obd	21.6	40.0	864.0			
		Waste	4.8	40.0	192.0			
		C. Perlite	384.0	40.0	15,360.0	2.3	35,328.0	17.0
"J" Zone	9964N	Obd	10.2	47.5	485.0			
Proven Category		Waste	44.0	47.5	2,090.0			
Basis: ISR 1:1		C. Perlite	36.0	47.5	1910	2.3	3933	21.0
		Perlite B.	49.6	47.5	2356	2.3	5419	15.0
	10000N	Waste	43.2	40	1728			
		C. Perlite	91.2	40	3648	2.3	8390	17.0

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Frenier Perlite Terrac

Note: C. Perlite is Coarse Grey Perlite
Perlite B is Perlite Breccia
Obd is Overburden.

Table 3B
Perlite Reserves Probable & Possible Categories

Location	Material Type	Geometry of Zone (Metres)				Volume m^3	Density	Tonnes	Grade Exp. Factor
		Location	Width	Length	Depth				
"K" Zone Probable Category Basis: 10 metre/45°	C. Perlite	9820N to 9870	35	60	12	25,200	2.3	57,960	19.0
"J" Zone Probable Category Basis: 10 metre/45°	C. Perlite	9800N to 9865	15	65	10	9,750	2.3	22,425	18.0
"K" Zone Possible Category Basis: 10 metre/45°	C. Perlite	9790N to 9820	30	30	5	4,500	2.3	10,350	18.0
J" Zone Possible Category Basis: 10 metre/45°	C. Perlite	9800N to 9865	30	80	5	12,000	2.3	27,600	18.0

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Note: C. Perlite is Coarse Gery Perlite

APPENDIX C

APPENDIX C

Assessment Report Title Page and Summary; Statement of Work,
Itemized Cost Statement & Statement of Qualifications

Appendix C

1.0 ITEMIZED COST STATEMENT

1.1 Wages

Personnel, number of days worked and rates are reported as field and office hours.

Field Hours

E. Horne, P.Geol.		
August 31st to September 3rd	40 hours @$90.00	$3,600.00
L. Narvaez, Civil Engineer		
August 31st to September 3rd	40 hours @$46.00	$1,840.00

Office Hours

L. Nichols, P.Eng., P.Geol.	1.5 hours @$110.00	$ 110.00
E. Horne, P.Geol.		
September 6th to September 20th	10 hours @$90.00	$ 900.00
K. Kuchling, P.Eng.		
September 6th to September 20th	2 hours @$86.00	$ 172.00
L. Narvaez, Civil Engineer		
September 6th to September 20	10 hours @$46.00	$ 460.00
SUB-TOTAL		$7,082.00

1.2 Transportation (Field Cost)

Costs for a 4 wheel drive jeep wagoner for 4 days August 31st to September 4th including gasoline are $ 400.00

1.3 Camp Supplies, Sustenance and Field Equipment $ 500.00

1.4 Report Preparation

E. Horne	13 hours	90	$1,170.00
L. Narvaez	4 hours	46	$ 184.00
Word Processing	9 hours	32	$ 288.00
reproduction, printing & supplies			$ 50.00
			$1,692.00

TOTAL COST:	$ 9,674.00
AMOUNT CLAIMED:	$ 8,800.00

The client approved expense for the 1994 work program deliverables is $8,200.00. The actual expenses incurred are $13,366.00 (more hours). The amount claimed for assessment credit is only $8,800.00

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2.0 STATEMENT OF QUALIFICATIONS

2.1 Professional Certification (E. Horne)

I, Emmett J. Horne of the city of Calgary in the Province of Alberta do certify the following.

- I graduated with a B.A. (Hours Equivalent) in geology from the University of Saskatchewan, Saskatoon in 1967. I also completed one year post graduate year in 1970.

- I am both an employee and principal of Terracon Geotechnique Ltd. a consulting firm incorporated since 1983.

- I am a member of the Canadian Institute of Mining and Metallurgy, The Association of Professional Engineers, Geologists and Geophysicists of Alberta (Professional Geologists) and a Professional Engineer of the Province of British Columbia (Professional Geoscientist).

- This report is based on my understanding of the properties as a result of experience obtained on the site from 1983 to 1986 and the recent site field work and investigative studies concluded in Calgary and Vancouver.

- I have no direct or indirect interest in any of the subject properties.

- That to the best of my knowledge the acquisition of data and the expenditures claimed for the performance of work as presented in this report is correct.

Emmett J. Horne
Professional Geoscientist
(No. 20305)
September 19th, 1994

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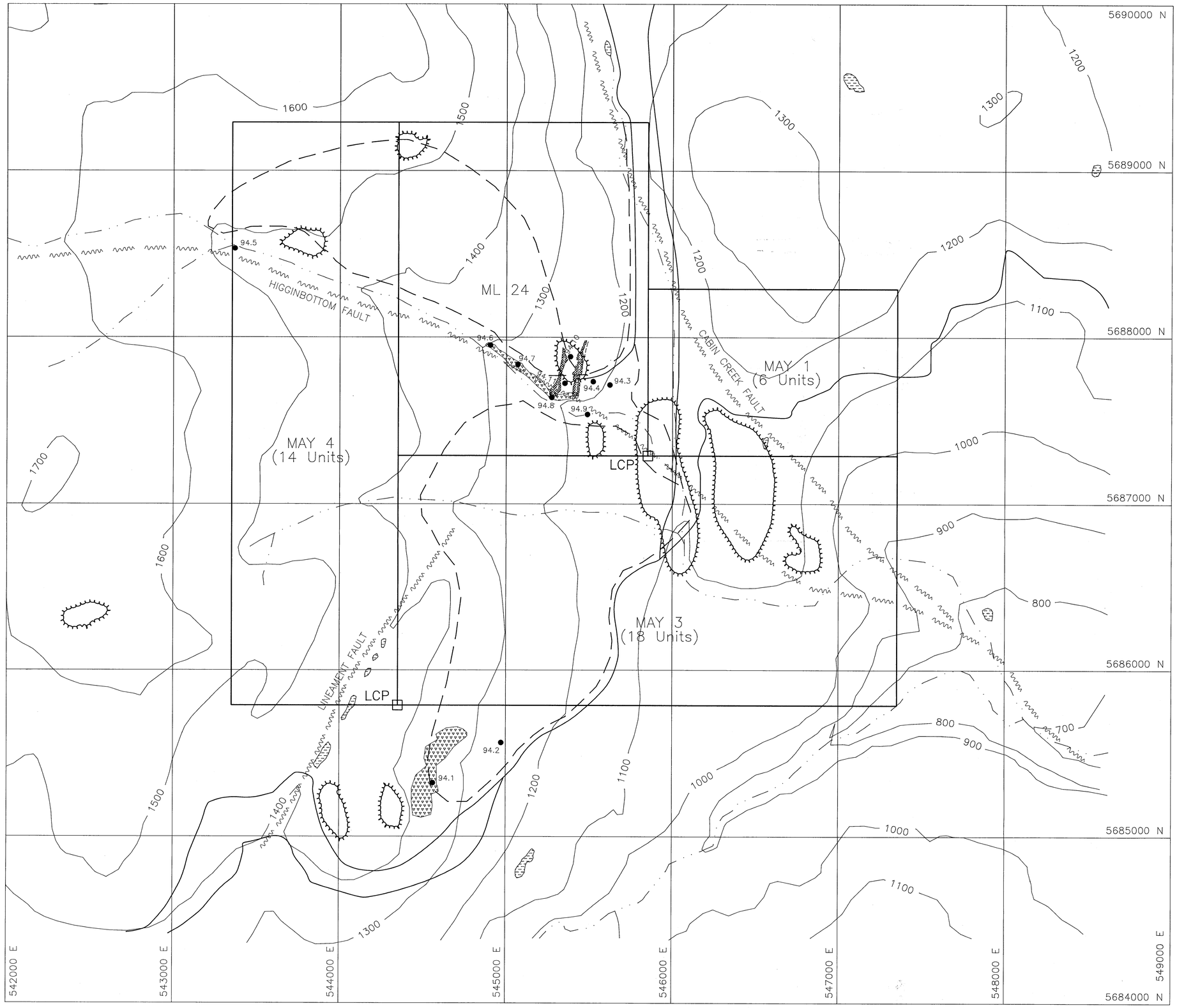

GEOLOGICAL FEATURES

- Outcrop
- Fault
- Perlite Deposit
- 94.1 Rock Sample Location
- Traverse

Topographic & Claim Features

- Contours in metres (ASL)
- LCP Legal Corner Post
- Creek
- Water Pond
- Clearing
- Road

Base map enlarged from NTS 920/8W Topographic Sheet, contours coverted to metric.

SCALE

0 100 500 1000m

CONTOUR INTERVAL 100m

23,572

GEOLOGICAL BRANCH
ASSESSMENT REPORT

ASSESSMENT REPORT FRENIER PERLITE DEPOSIT	May 1, 3 and 4 Claims Mining Lease 24	GEOLOGICAL MAPPING AND SAMPLE LOCATIONS
TERRACON GEOTECHNIQUE LTD.	Scale: 1:10000	Figure 10