UNCHA LAKE PERLITE DEPOSIT

NTS MAP 93F/13E

May 2004

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EXECUTIVE SUMMARY

The Uncha Lake Perlite deposit is located 25 miles south of the Town of Burns Lake in north central British Columbia, 600 miles northwest of Vancouver. The deposit occurs on the northwest slope of Dayeezcha Mountain. The deposit is accessible year-round by well maintained roads. Eight mineral claims, known as the 'Day' Claims, cover the Uncha Lake deposit. Topography in the area is gently rolling terrain covered with glacial till and thick forest cover. The Uncha Lake Perlite deposit is an early stage exploration prospect.

The Uncha Lake Perlite layers occur within rhyolite flows of the Eocene aged Oosta Lake Group overlying sedimentary and volcanics of the Jurassic Hazelton Formation. The Oosta Lake Group consists mainly of felsic volcanic rocks and coarse clastic layers.

The Uncha Lake Perlite Prospect is considered to be of comparable quality and physical properties to the Frenier Deposit near Clinton, BC. The Frenier Deposit was a commercial deposit mined from 1983 through 1985 but due to access problems the mining was halted. The Francois Lake Perlite deposit, 14 miles south of Burns Lake, was formerly mined from 1949 to 1953 by Western Gypsum Products.

The Uncha Lake perlite has been tested to expand moderately well and exhibit perlitic structure in outcrop. Water loss on heating has been calculated to be approximately 3.2% on samples tested by CANMET from the Uncha Lake prospect area. The perlite layers ranges from 7.6 metres to 23 metres thick and can be traced in outcrops and from previous trenching for over 850 metres along the mountainside. It is considered to occur in significant quantities to warrant further exploration and potential mining. Preliminary resource estimate may be as much as 4 million tonnes of perlite in place for the Uncha Lake deposit. Further exploration by mapping, trenching, and drilling will provide better estimate of reserves and mineability.

UNCHA LAKE PERLITE DEPOSIT

1. Introduction

Perlite is a term applied to any hydrated volcanic glass of rhyolitic composition which when heated to temperatures greater than 510^{o}C will expand to form a white, porous, lightweight material. In its expanded form perlite is used as an insulating aggregate in plaster and concrete, in horticultural applications and as a filtering agent. Deposits are restricted to volcanic belts ranging in age from Tertiary to Quaternary. At present, all perlite consumed in British Columbia is imported from the United States.

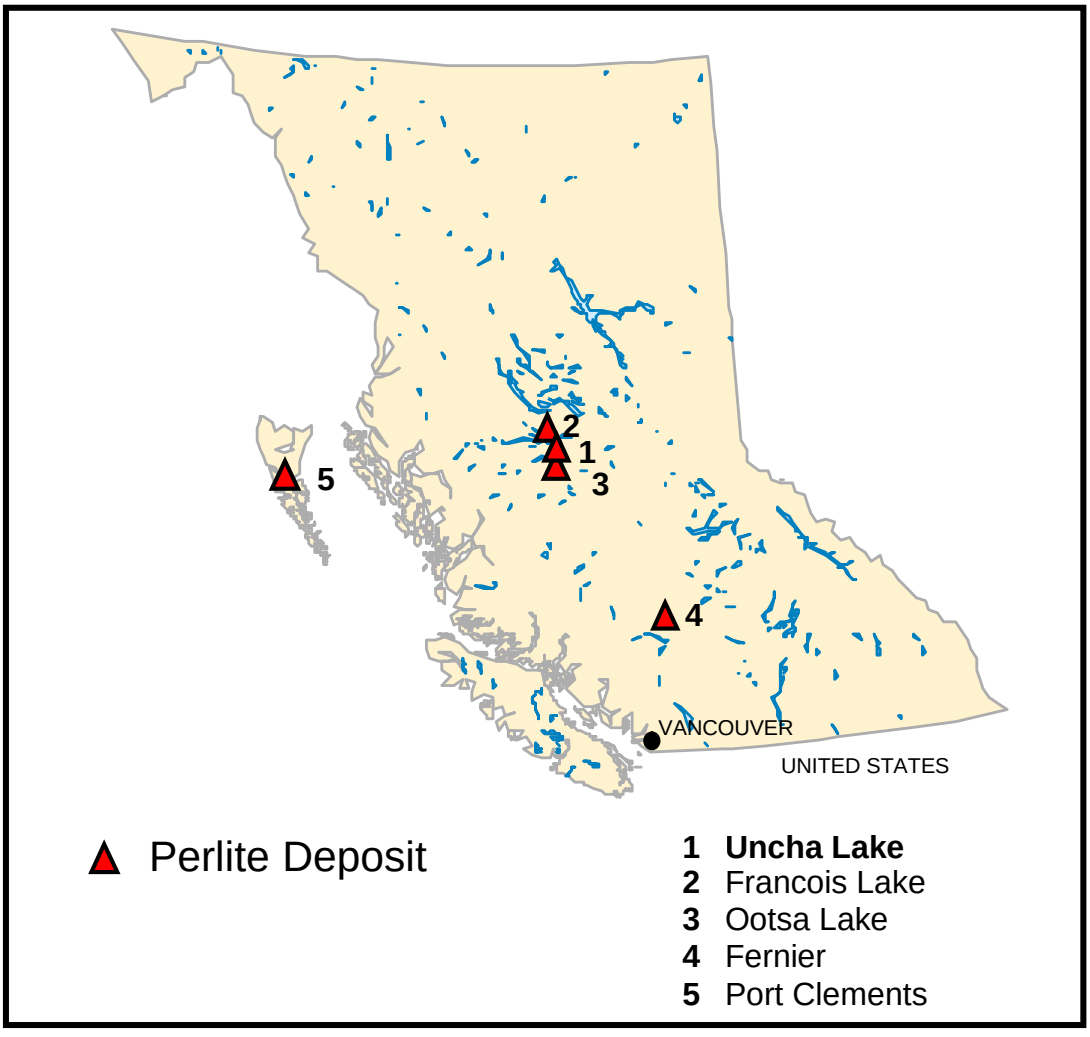


Figure 1: Perlite occurrences in British Columbia.

2. Location and Access

The Uncha Lake Perlite Deposit is located in the Omineca Mining Division within the 93F/13E NTS map sheet The Uncha Lake Perlite Deposit is located on the northwest slopes of Dayeezcha Mountain 25 miles south of the town of Burns Lake, British Columbia (Figure 2). The deposit is reached by taking the all-weather Highway 35 to the ferry terminal at Francois Lake, crossing the lake to the South Bank terminal and continuing on the BC Forest Service Road for approximately 12 miles to the Dayeezcha Mountain area. The Day Claims are located 4.5 miles directly south of Uncha Lake. The roads in the area are well maintained as logging companies are very active in the area. There is road access directly into the property (Figure 3).

Most of the area is very lightly settled, with some small towns along major rivers; major settlements include Burns Lake to the north, Houston, 55 miles to the northwest and Endako, 33 miles to the northeast. There is no settlement on or near the property. Rail transportation is accessible at the Town of Burns Lake.

3. Topography

The Uncha Lake Prospect lies on the Nechako Plateau, the northernmost subdivision of the Interior Plateau (Holland, 1976). The property is located in low and rolling terrain which generally lies between 900 to 1150 metres elevation (Figures 4 and 5). The area is thickly forested with pine and bedrock is obscured by extensive drift cover. Tipper (I963) noted that over 90 per cent of the Nechako River map area is drift covered. Till and glacio-fluvial outwash are the predominant cover materials.

Outcrop is concentrated mostly on ridge crests and steep slopes. Extensive clear cut logging in the area and road building has generated additional exposures and increased access. A satellite photo of the area (Figure 6) demonstrates the active clear cutting by forestry companies. The area is known as the ‘Lake District’ as there are abundant small lakes created due to the subdued topography and

relatively poor drainage of the Nechako Plateau. Mineral exploration in these areas has been generally hampered by the extensive drift cover and poor exposure. The Day Claims are situated along the shallow sloped northwest face of Dayeezcha Mountain.

4. Tenure

All claims are recorded, in the name of Harold R. Oppelt, on February 11th, 2004. The property consists of 8 two-post claim units named Day #1 through Day #8 (Tenure # 408048 though 408055). A claim location map, provided in map pocket, is an adequate representation of the property outline.

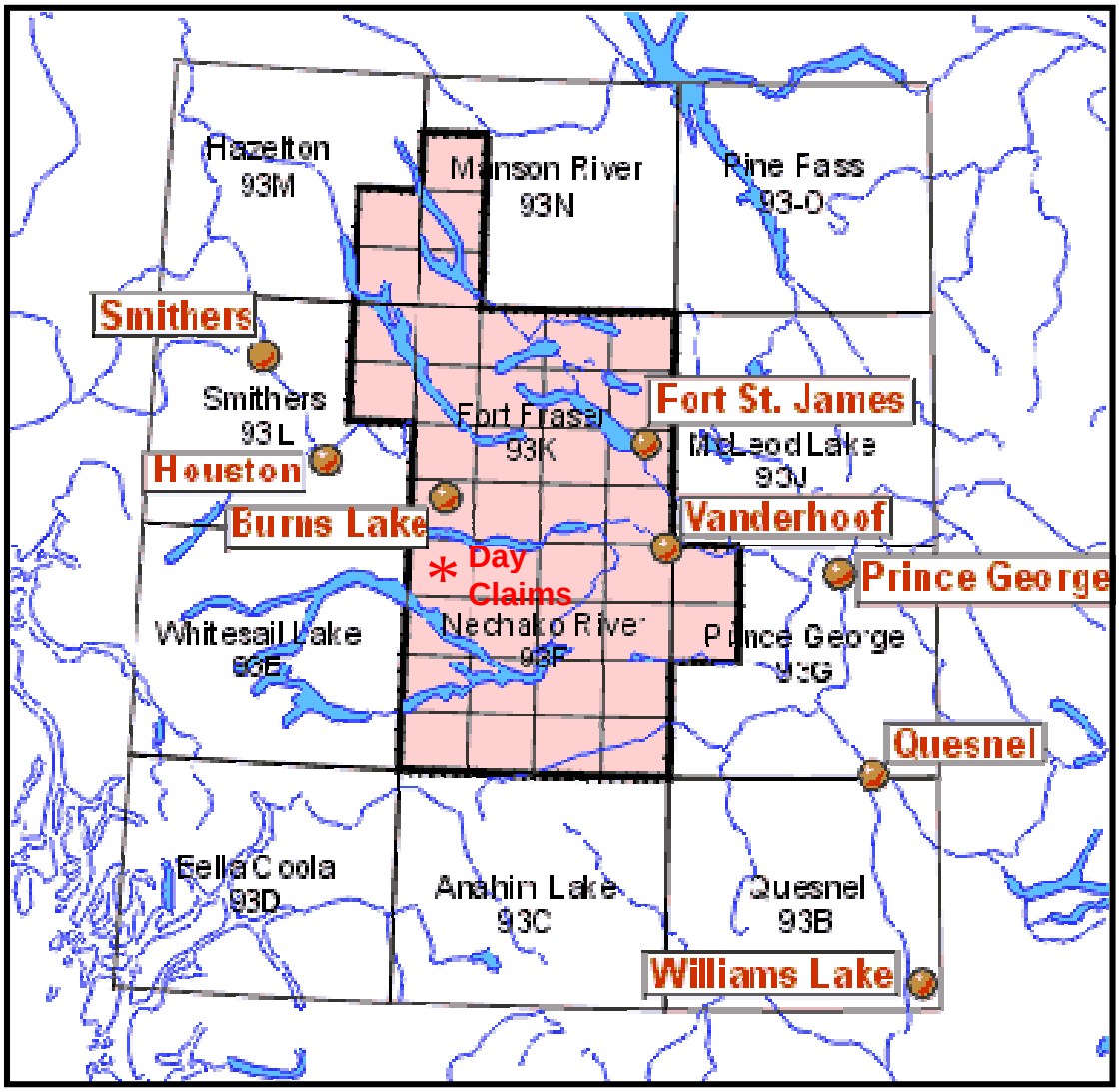


Figure 2: The Nechako Plateau within the Intermontane Belt of northwestern British Columbia.

* Uncha Lake Perlite Prospect

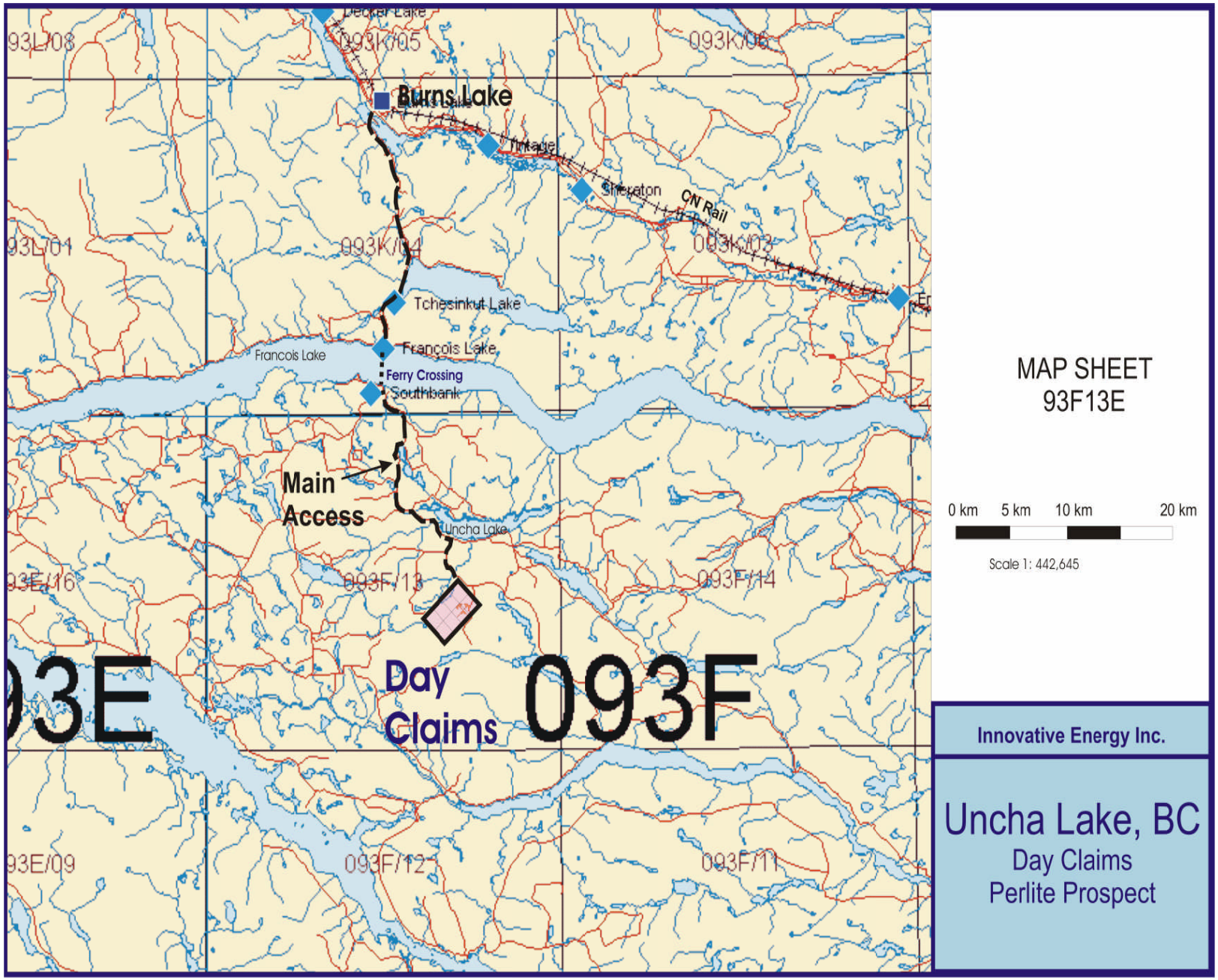


Figure 3: Location of Day Claims, 4.5 kms south of Uncha Lake.

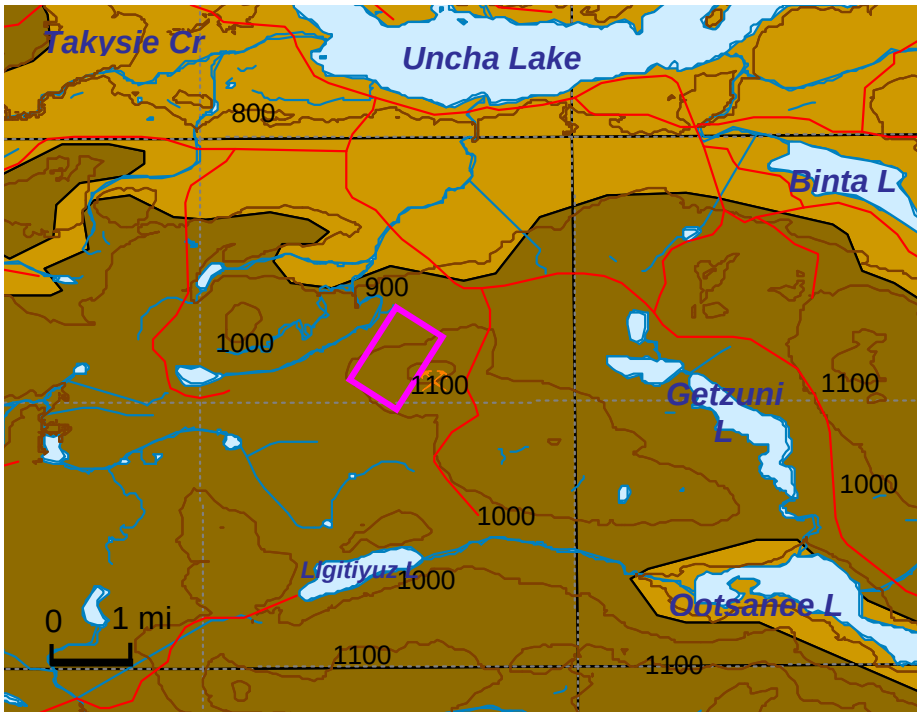


Figure 4: Surface elevation contours in meters of the Uncha Lake area.

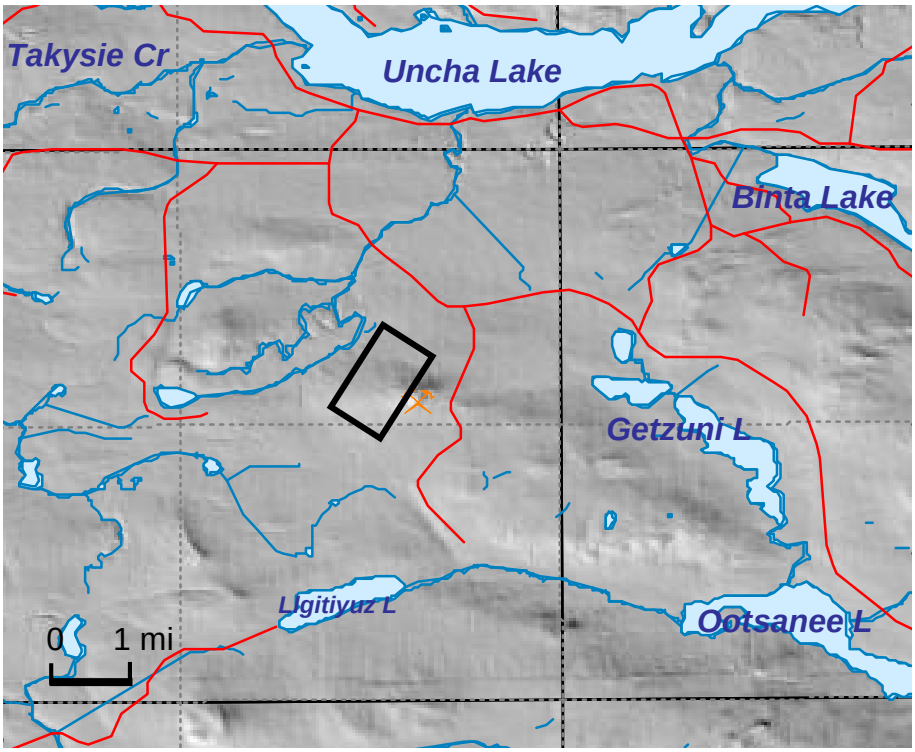


Figure 5: Hillshade relief map of the Nechako River Plateau Area. Lack of shading indicates relatively low relief for area.

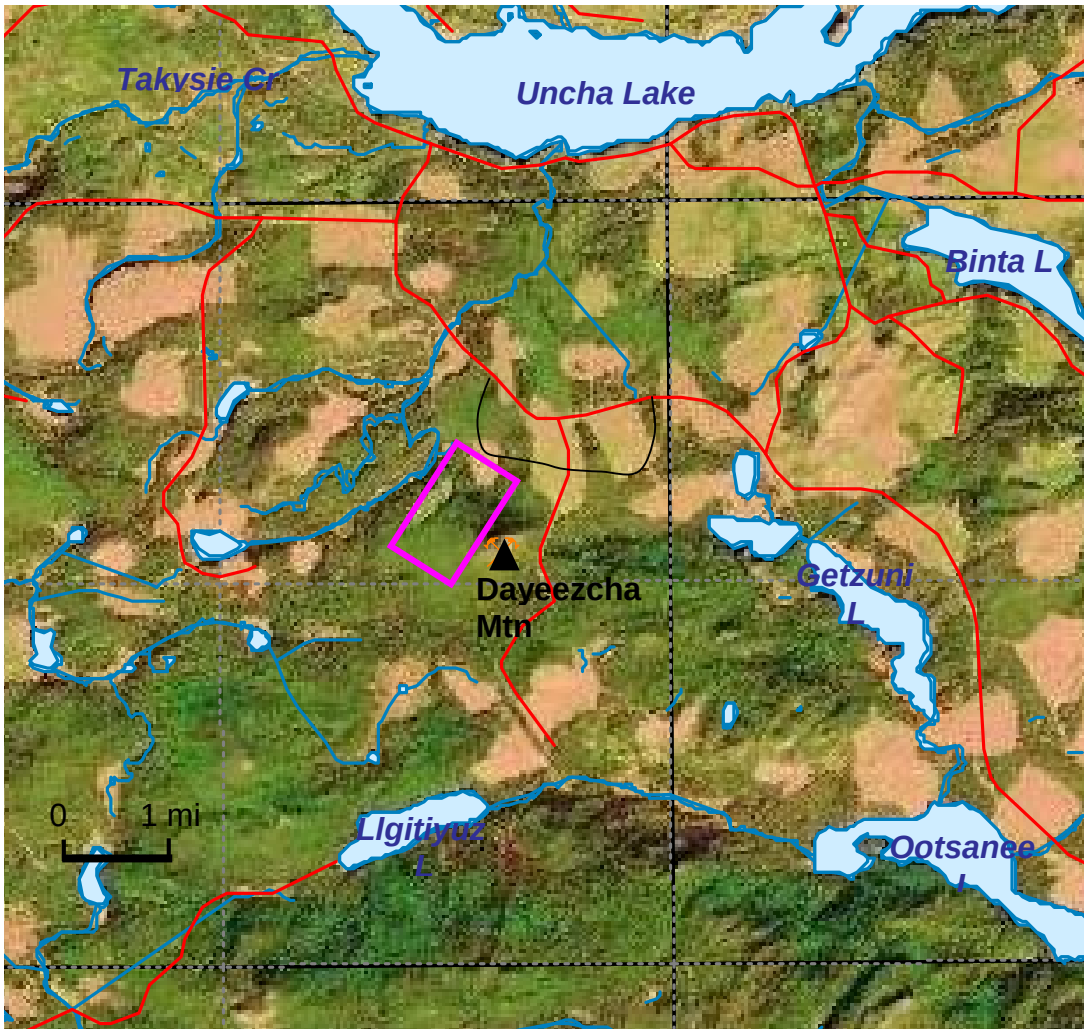


Figure 6: Satellite photograph of the Uncha Lake area on the Nechako Plateau. Red lines indicate access roads.

Figure 7: Photos of access into Uncha Lake perlite occurrence.

5. Geological Description

5.1 Regional Geology

The prospect area lies within the Nechako River NTS map sheet 93F and is entirely within the Nechako Basin of the Intermontane Belt. The Nechako River area comprises part of the Stikinia terrane. The Nechako Basin is a Mesozoic forearc basin, bounded by the Skeena Arch to the north, the Fraser River Fault System to the east, and the Yalakom Fault System and Coast Mountain plutons to the west and south. The Nechako Basin formed when Middle Jurassic terrane collisions created the Skeena Arch, which separated the Nechako Basin from the Bowser Basin to the north. Compressional and transform tectonics throughout the Cretaceous caused bordering uplands to shed clastic debris into the Nechako Basin. Strike slip faulting during the Tertiary laterally displaced surrounding terranes and numerous volcanic events mantled much of the basin with basaltic flows.

The stratigraphic succession within the study area is comprised of volcanic and sedimentary rocks of the Lower to Middle Jurassic Hazelton Group, intruded by Late Jurassic, Late Cretaceous and Tertiary felsic plutonic rocks. These are overlain by Eocene volcanics of the Ootsa Lake Group, Oligocene and Miocene volcanics of the Endako Group, and Miocene-Pliocene basalt flows.

The potential of the region to host different styles of mineral deposits has been recently recognized in the area. The Nechako Basin has the potential to host epithermal Au-Ag deposits (Uduk Lake), porphyry-related structurally hosted Au-Ag and base metals, stratabound precious metal and base metal, coal and even oil and gas seeps. The Nechako area contains 68 recorded mineral occurrences. Of these 7 are industrial mineral occurrences, 54 are base and precious metal occurrences and one coal occurrence.

5.2 Local Geology

The Uncha Lake Perlite deposit occurs within the Oosta Lake Group of Eocene age. The Oosta Lake Group is comprised of mainly felsic volcanic rocks and their epiclastic derivatives.

5.2.1 Oosta Lake Group

Eocene continental volcanic rocks of the Ootsa Lake Group are sporacially exposed throughout the area from the Nechako River to the west side of Francois Lake (Figure 2). Diakow and Mihalynuk (1987) recognized six lithologic divisions in the Ootsa Lake Group, which comprises a differentiated succession of andesitic to rhyolitic flows and pyroclastic rocks. Sedimentary rocks, although not common, are interspersed throughout the Oosta Lake sequence.

Potassium-argon ages of approximately 50 Ma have been obtained from Ootsa Lake rocks (Diakow and Koyanagi, 1988). Interest in the precious metal potential of the Ootsa Lake Group has increased in recent years. The Wolf and Clisbako prospects ace epithermal gold-silver occurrences currently under exploration. The Wolf prospect is hosted by felsic flows, tuffs and subvolcanic porphyries, and is a low-sulphur silicified stockwork deposit (Andrew, 1988). The Clisbako prospect is hosted by Eocene basaltic to rhyolitic tuffs, flows and volcanic breccias exhibiting intense silicification and argillic alteration. Gold mineralization in both areas is associated with low-sulphide quartz stockwork zones. The Clisbako prospect has been interpreted to be a high-level volcanic-hosted epithermal system similar to those in the western United States (Dawson, I99I; Schroeter and Lane, 1992). Perlite occurrences have been described by White (1989) in deposits at Francois Lake and at Uncha Lake.

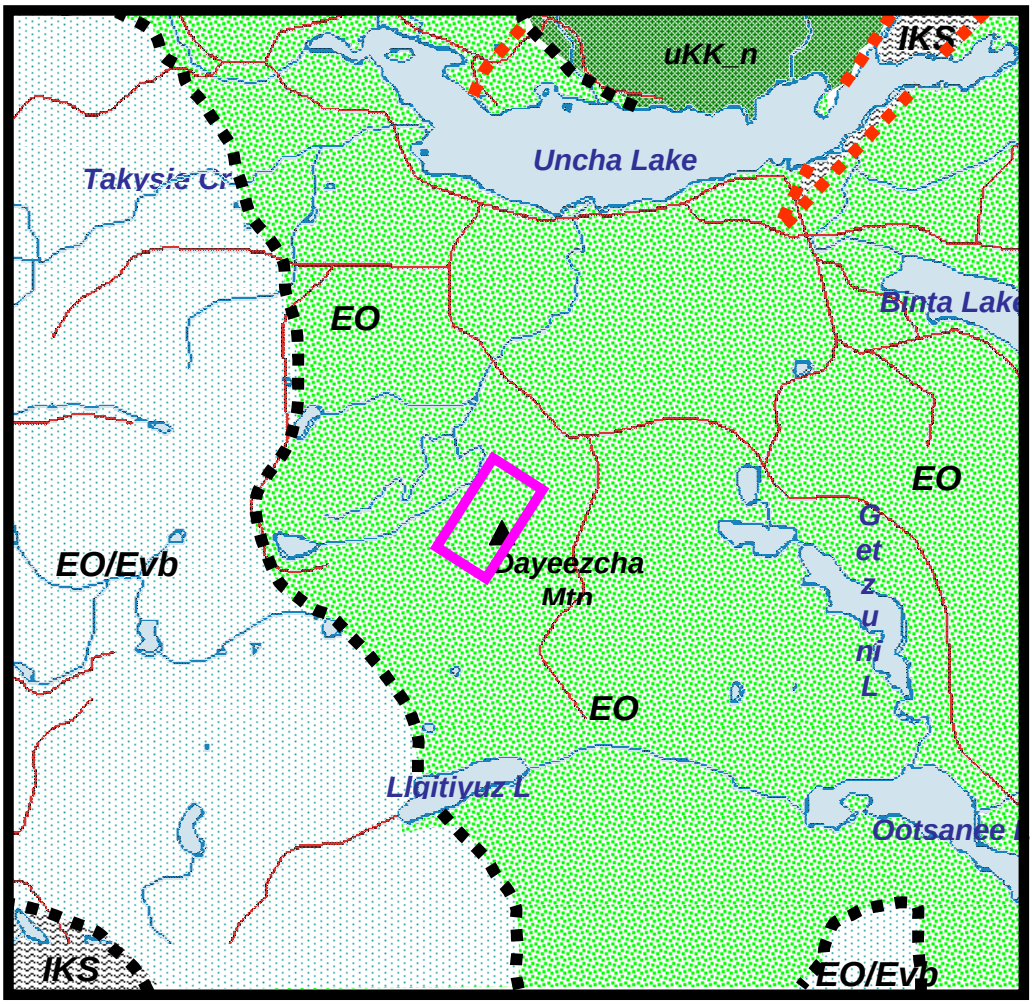


Figure 8: Generalized bedrock geology of the Uncha Lake, BC area and the Day Claims. The Uncha Lake perlite showing, on the Day Claims, occurs within rhyolite flows of the Eocene Ootsa Lake Group on the northwest flank of Dayeezcha Mountain.

5.2.2 Uncha Lake Prospect Geology *(MINFILE 93F 026)*

The Uncha Lake Perlite Showing on the Day Claims occurs within rhyolotic flows of the Oosta Lake Group on Dayeezcha Mountain. The perlite is interbedded within light to dark grey porphyritic rhyolite layers which are 2.0 to 9.0 metres thick. The perlite is light grey to pale greenish-grey with some perlitic glass occurrences. The perlite generally dips 10 to 30 degrees south and is 7.6 to 23.0 metres thick. A bedrock geology map (Figure 7) of the Uncha Lake area illustrates the extent of the Eocene age Oosta Lake Group. The Oosta Lake Group is bounded on the west by basaltic volcanics of the Late Eocene to Oglicoene Endako Group.

5.2.3 History and Previous Work

Originally staked in 1953 by C.S. Powney and J. Rasmussen of Fort St. James and their associates, the Uncha Lake perlite prospect has been explored by trenching and limited laboratory processing tests. British Columbia Minister of Mines reports indicate that in 1955, Technical Mines Consultants Limited exposed nineteen trenches at approximately 150 foot intervals exposing over 8000 feet of bedrock (Figure 8). Six mineable perlite layers along a zone 850 metres long and 500 metres wide were exposed. Depth of overburden increases to the northeast making further trenching impractical. The company reported that the layers are "irregular in width and attitude, lying interbedded in a folded series of rhyolites striking generally northeast and dipping about 70^{o} to the southeast". The last trench to the southwest end of the workings exposed “three strong layers of perlite”. Evidence at the time indicated that the zone extends several hundred feet farther to the southwest.

James (1955) reports the maximum exposed width of at least two layers exceeds 45 metres, and that in some places interbedded rhyolite is sufficiently narrow to permit practical open-pit mining of two or more layers from one pit. Currently the property is inactive and the old trenches are partially filled.

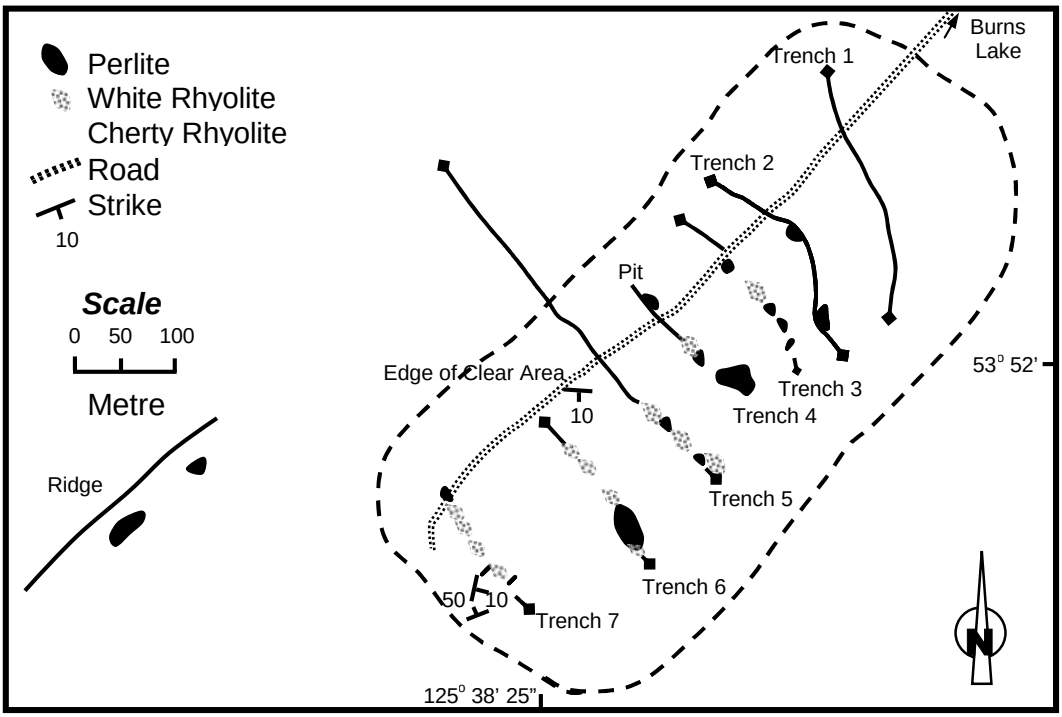


Figure 9: Location of perlite outcrops at Day Claims and previous trenching.

5.2.4 Description of Deposit

Figure 8 shows the distribution of perlite outcrops in the prospect area and the rock types. Past company records are not available so the following description is based on field observations only.

A description of each follows:

Perlite is intercalated with light to dark grey porphyritic and sometimes cherty rhyolites and ranges in colour from brown to medium grey to black to pale green (Figure 10). It often has a good pearly lustre but when exposed for periods of time tends to break down into 2 to 3-centimetre subangular fragments. Uncha Lake perlite expands moderately well when heated with a hand-held propane torch often as rapidly as samples from the Frenier deposit. Glassy occurrences of perlite have a definite perlitic structure and on weathering crumbles along the perlitic cracks to a granular aggregate.

Figure 10: Photo of perlite occurrence at Trench #4.

Perlite is exposed in trenches south of the access road but not enough bedrock is exposed to determine whether these occurrences represent a single unit. Overburden varies from a few inches to several feet through the property (Figure 11). Significantly, fresh, medium grey perlite is exposed along a ridge west of the trenched area. Structural information is limited but exposures in trenches indicate the host rhyolite strikes northeast and dips steeply southwest.

Figure 11: Photo of Perlite occurrence at Trench #2.

Rhyolite, in sharp contact with perlite, ranges from white to dark grey in colour. The rhyolite is a very hard, very fine grain volcanic flow unit which can form ledges and small outcrops up to 25 feet in diameter (Figure 12). Both white and grey varieties contain 1 to 7-centimetre bands of darker "cherty" quartz (chalcedony?) or patches, up to 3 centimetres across, of light green silica possibly indicative of hydrothermal alteration. Rhyolite is occasionally porphyritic with I to 5-centimetre rectangular phenocrysts of potassium feldspar in a fine-grained matrix. Flow banding is evident in some occurrences of the white rhyolites. Near the southern end of the access road siliceous angular fragments, 5 to 7 centimetres across, are observed in rhyolite. A black, very hard, porphyritic rhyolite with rectangular phenocrysts of potassium feldspar occurs at the south-east portion of Trench #6 near the edge of the cleared area.

Figure 12: Photo of white rhyolite. Note flow banding steeply dipping southeast; occurrence along access road between Trench #4 and #5.

6. Uncha Lake Perlite Physical Properties

6.1 Physical Properties

In 1989, CANMET conducted testing of rock samples from various known perlite properties in British Columbia to assess the potential for perlite resources. The samples were subjected to three tests. Tests included the determination of water loss when heated to 800^{o} C (Figure 13); the second determined the softening temperature of the samples (Figure 14); and the third was a measurement of the change in bulk density due to expansion (Figure 15). All perlite occurrences were successfully tested for expansion. The graphs below provide a comparison of the samples tested. It should be noted that the Uncha Lake perlite samples compare favourably to the Frenier deposit and Francois Lake, the only expanding perlite deposits that have been previously mined in BC.

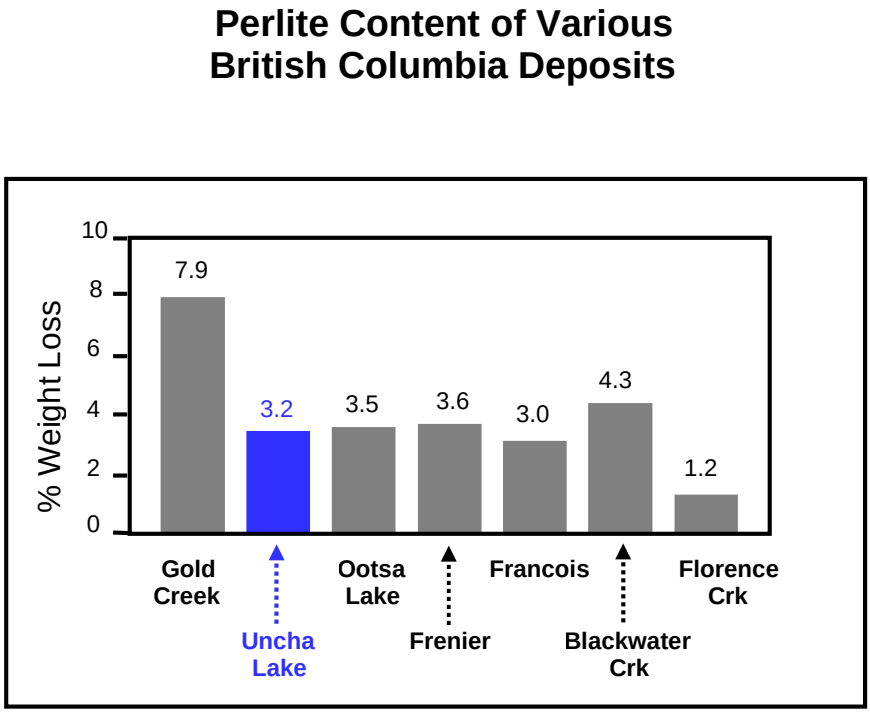


Figure 13: Histogram showing perlite content of samples from Gold Creek, Uncha Lake, Frenier, Francois Lake, Blackwater Creek and Florence Creek.
Taken from EMPR Geological Fieldwork 1990, Paper 1991-1.

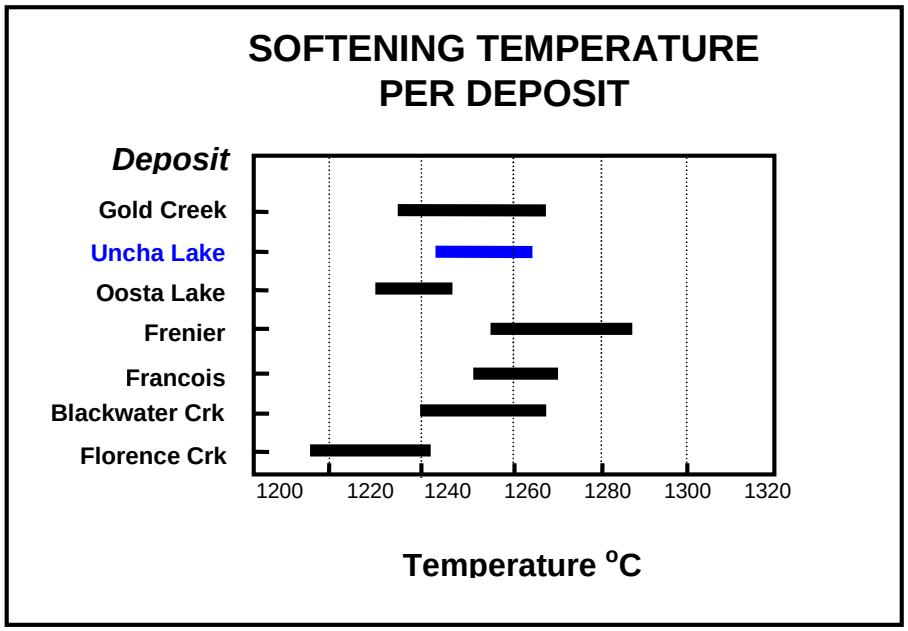


Figure 14: Softening temperatures of perlite samples from Gold Creek, Uncha Lake, Oosta Lake, Frenier, Francois Lake, Blackwater Creek and Florence Creek.
Taken from EMPR Geological Fieldwork 1990, Paper 1991-1.

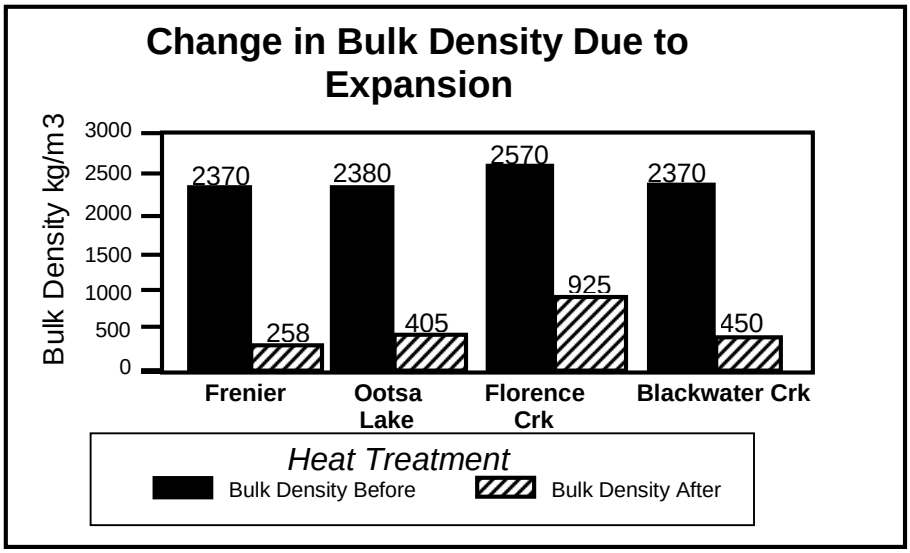


Figure 15: Bar chart indicates the change in bulk density observed due to expansion of perlite samples from Fernier, Oosta Lake, Blackwater Creek and Florence Creek. Uncha Lake sample is comparable to the Frenier and Oosta Lake deposits.
Taken from EMPR Geological Fieldwork 1990, Paper 1991-1.

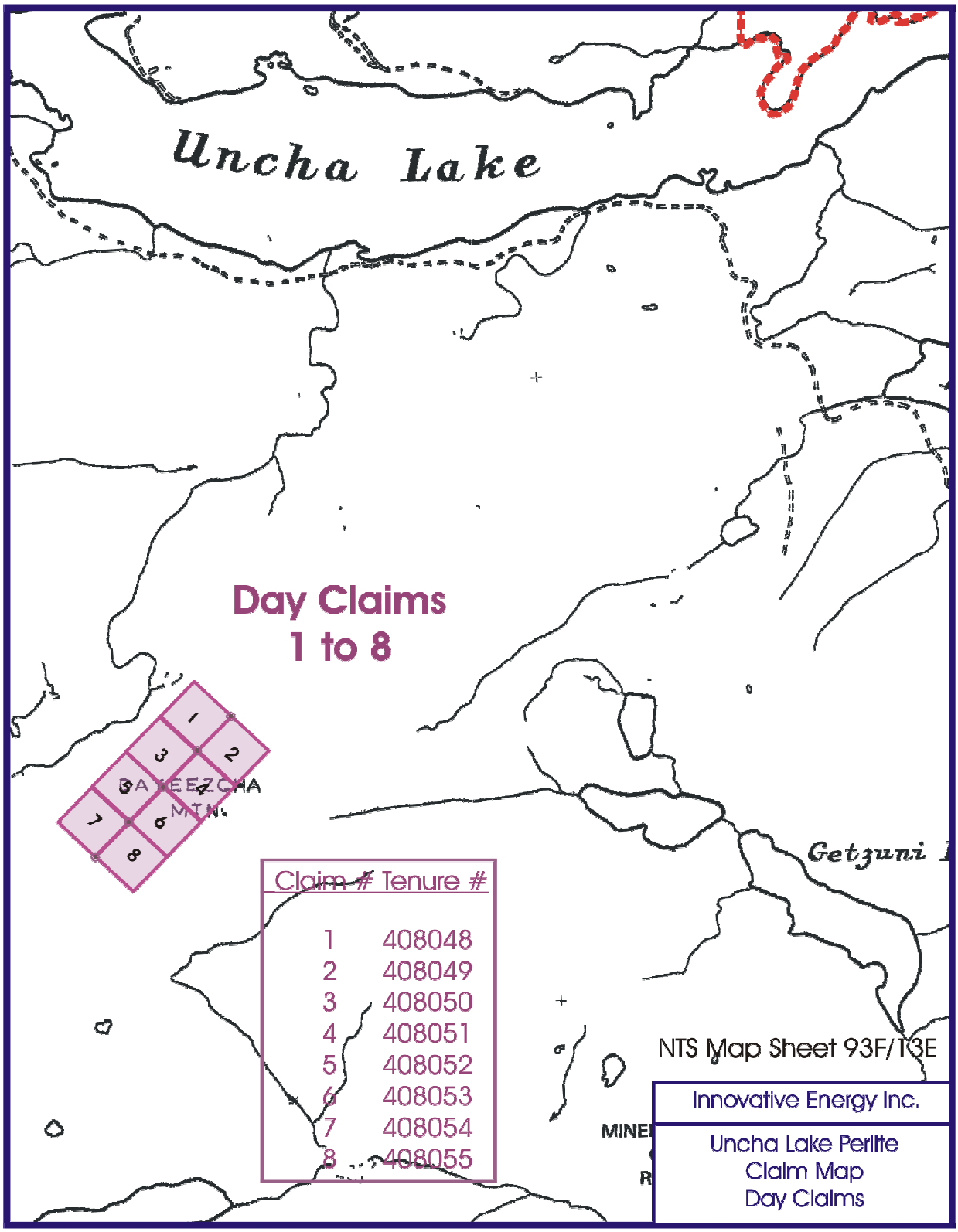
7. Conclusions and Recommendations

Previous exploration efforts on the Uncha Lake property indicate the presence of perlite within rhyolite flows of the Eocene-aged Oosta Lake Group. Systematic trenching had been undertaken on the property tracing perlite exposures for approximately 850 metres along the northwest slope of Dayeezcha Mountain. The perlite layers are between 7.5 metres and 23 metres thick and appear to be intercalated with porphyritic rhyolite flows and tuffs. The perlite rock exhibits definite perlitic structure and on weathering crumbles along the perlitic cracks to a granular aggregate. Testing by CANMET indicates the Uncha Lake Perlite has a moderate well expansion rating, water loss content of 3.2% and a softening temperature range of 1240 to 1260^{o}C.

Additional geologic mapping is required to complete the historical property scale mapping. This would also yield a better understanding of structural geology and stratigraphy. Systematic trenching is recommended to expose the perlite due to the overburden layer. Assuming favourable results are obtained from preliminary work, diamond drilling of perlite occurrences would aid in assessing reserve potential and continuity of perlite layers. The excellent access provided by logging activity in the area would allow for significant cost savings related to mobilization and road construction.

Appendix 1

Claim Location Map and Tenure Details


Uncha Lake
Day Claims
1 to 8
1
2
3
4
5
6
7
8
BAYEEZCHA
MTN.
Getzuni
MINE
R
Claim # Tenure #
1 408048
2 408049
3 408050
4 408051
5 408052
6 408053
7 408054
8 408055
NTS Map Sheet 93F/13E
Innovative Energy Inc.
Uncha Lake Perlite
Claim Map
Day Claims

Uncha Lake Project

Project	Ownership	Claim Name	Tenure Number	Map Number	Expiry Date	Mining Divsion	Tag Number
Uncha Lake	HR Oppelt	Day 1	408048	93F13E	Feb 11, 2005	Omineca	721791
Uncha Lake	HR Oppelt	Day 2	408049	93F13E	Feb 11, 2005	Omineca	721792
Uncha Lake	HR Oppelt	Day 3	408050	93F13E	Feb 11, 2005	Omineca	721793
Uncha Lake	HR Oppelt	Day 4	408051	93F13E	Feb 11, 2005	Omineca	721794
Uncha Lake	HR Oppelt	Day 5	408052	93F13E	Feb 11, 2005	Omineca	721795
Uncha Lake	HR Oppelt	Day 6	408053	93F13E	Feb 11, 2005	Omineca	721796
Uncha Lake	HR Oppelt	Day 7	408054	93F13E	Feb 11, 2005	Omineca	721797
Uncha Lake	HR Oppelt	Day 8	408055	93F13E	Feb 11, 2005	Omineca	721798

Appendix 2

Geological Mapping

And

Sample Descriptions

May 2004

UNCHA LAKE PERLITE DEPOSIT OUTCROP / TRENCH DESCRIPTIONS

Trench #	Map Point	Elev	UTM Easting	UTM Northing	Sample #	Photo #	Description
1	3	955	325745	5971517	-	-	Trench all deep cover; no exposures
2	4	962	325621	5971396	-	13	**Start** of Trench #2
2	36	956	325623	5971388	2.3	46,47	**Perlite**; Dark green, very friable, pearly luster, v. large crystal face; dug small trench.
2	5	974	325637	5971372	-	-	**Ryholite**;2' wide outcrop very hard white rhyolite
2	6	955	325666	5971341	-	-	**Rhyolite**; End of white rhyolite from above outcrop
2	7	966	325681	5971361	2.1	19	**Perlite**; dk grey to brown, pearly luster; v. friable to white powder; dug small 2' pit goes up for ~20 feet up trench then lose it due to cover.
2	8	1038	325709	5971292	-	-	Possible float?; ultra hard v.f.g. rhyolite; dark olive color; cherty; conchoidal fracture
2	9	1007	325693	5971292	2.2	20,21	**Perlite**; Near end of trench; dk green rhyolite; semi-pearly luster; v. friable turns to powder as sample 2.1; dug two holes along trench same material for 30 ft or more.

Trench #	Map Point	Elev	UTM Easting	UTM Northing	Sample #	Photo #	Description
3	10	972	325498	5971301		14, 15	**Start** of Trench #3
3	11	975	325505	5971289	3.1	24	**Perlite**; pearly luster; dk green large crystal faces; v. friable turns to white powder; dug small pit to see exposure
3	12	989	325520	5971271		25	No outcrop; only float; Gerry took sample here; dug small holes no rock in place
3	13	993	325532	5971258	3.2	26,27	**Perlite;** dk to med green large crystal faces; v. friable turns to white powder; looks slightly cherty; grades laterally down slope into more friable dk green large crystal material as in sample 3.1; dug trench for 15 – 20 ft in same material; Photo 27 is photo of trench of same material; appears bed continues for >40 ft; upslope of trench is an outcrop of v. hard rhyolite (Map Point 14).
3	14	995	325541	5971245	-	28	**Rhyolite**; outcrop, very hard, dark grey, v.f.g.; outcrop 10 ft in diameter; ledge forming
3	15	991	325551	5971236	3.3	-	**Rhyolite**; v.f.g. siliceous cherty; light grey in color, very hard; conchoidal fracture; outcrop 3 ft in diameter
3	16	992	325562	5971215	-	-	**Rhyolite**; siliceous appearance, v hard; outcrop 10 ft in diameter; same material as Map Point #14
3	17	997	325580	5971204	-	-	**Rhyolite**; same as above; outcrop is 20 ft in diameter
3	18	996	325594	5971195	-	29	**Rhyolite**; same as above; outcrop is 7 ft in diameter; marks **END** of Trench
3	19	999	325610	5971186			Upper road 15m south of end of Trench 3

Trench #	Map Point	Elev	UTM Easting	UTM Northing	Sample #	Photo #	Description
4	20	979	325432	5971265	-	16,17, 30	**Start** of Trench #4 @ Road bed
4	21	985	325434	5971248	4.1	31	**Perlite**; dk. green large crystal face, very friable as in trench #3; dug hole to find exposure; sample point is about 30 ft from start of trench; perlite bed may occur for more than 60 ft along trench.
4	22	992	325452	5971218		32	**Rhyolite**; very hard, not friable; outcrop; same material as Map Point 18
4	23	999	325479	5971191		33	**Rhyolite**; very hard material same as above.
4	24	1005	325508	5971146	4.2	34,35,36,37	**Perlite**; semi-pearly luster, large crystal faces, dark green; turns to white powder; not as friable as other trench samples; moderately hard to break; test individual pieces for any change in expansion; material seems to present until end of trench; weathers to a med brown sand; sand is abundantly present for 90 ft; possible extension of this material is the sand piles; 3 photos (35-37) of sandy material.
4	25	1013	325522	5971118	-	-	**End** of Trench #4; same material as above
Lower Roadcut	26	985	325369	5971209	-	-	**Rhyolite**; on access road towards Trench #5; v. hard rhyolite, v.f.g., not friable; outcrop is 5 ft in diameter; lots of float around
Lower Roadcut	27	993	325331	5971183	-	38	**Rhyolite**; on access road towards Trench #5; v.f.g.; flow banding in rhyolite

Trench #	Map Point	Elev	UTM Easting	UTM Northing	Sample #	Photo #	Description
5	28	993	325318	5971175	5.1	39,40	**Start** of Trench; Rhyolitic; conglomeratic looking, coarse crystalline; purple colored; outcrop 5' in diameter; Photo 40 of roadbed looking northeast.
5	29	1001	325321	5971125	-	41	**Rhyolite;** off trench area; large outcrop >25 ft in diameter of v. hard, light grey to purple color, v.f.g.; flowbanding dips 70^{o} SE
5	30	1002	325357	5971122	-	-	**Rhyolite**; as above; 15 ft diameter outcrop
5	31	1008	325385	5971078	-	42	Pit; open pit filled with water; Must have taken bulk sample from this pit. 50m east of here is a small trench dug by backhoe for sampling in perlite; Possible perlite occurrence towards end of Trench #5.
5	32	1007	325417	5971046	-	-	**End** of Trench.

Trench #	Map Point	Elev	UTM Easting	UTM Northing	Sample #	Photo #	Description
6	35	1005	325228	5971069	-	-	**Start** of Trench #6, very swampy.
6	34	1009	325327	5970974	6.1	44, 45	**Obsidian;** black with large phenocrysts of feldspar, large crystal faces; off trench area; large outcrop >25 ft in diameter of v. hard.
6	33	1007	325349	5970951	-	43	**End** of Trench