

4/86

ECONOMIC GEOLOGY

of

BEAR 4 CLAIM

49°59'N; 119°<sup>32</sup>39'W.

NTS: 82E/13E; 82L/4E

Bluegrouse Mtn: 10KM NNW of Kelowna  
Vernon Mining Div., British Columbia  
(April 17, 1985)

by

N.C. Lenard, P. Geol., P. Eng.  
Consulting Geologist, Westbank, B.C.

Field Work Done: July 12, 1984  
April 14, 15, 1985 -

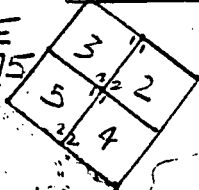
Owner: N.C. Lenard

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**13,586**

Bond Gp. Clms.

BLUE  
1512/1575



LCP  
BEAR 4  
1757

DAWN # 300  
1728

Bluehawk Mine

BEAR 3  
1636

DAWN # 100  
1517

DAWN # 200  
1727

Dawn Gp.:  
Tillicum GML

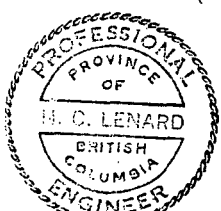
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BEAR CREEK  
PARK

- FRONTISPIECE -

To Accompany Report on the  
Bear 4 Claim  
Vernon Min.Div., B.C. by  
N.C. Lenard, P. Geol., P. Eng.  
April 17, 1985



Ex. Date Dec. 31/1985

Okanagan Lake Elev. 1123m (3684ft.)

City of Kelowna

Rose  
Valley  
L.

Westside

MINERAL PLACER RESERVE  
OC 1247, 83-07-21  
NO STAKING

John Moore

M.P.W.

## CONTENTS

	Page
Summary & Conclusions	1
Introduction	1
Location and Access	1
Property and Ownership	2
Work History	2
Geology	2,3
Outcrop Descriptions	4
Budget for Work Program	5
Expenditures	6
Certification	7
References	8
Illustrations:	
Fig. 1 Location Claim Map	Frontispiece
Fig. 2 Property, Geology, Prospects	in Pocket

ECONOMIC GEOLOGY OF BEAR 4 CLAIM

SUMMARY & CONCLUSIONS:

A prospective gold-silver belt along a batholith contact trends northwesterly across Bear 4 claim. It has potential for gold quartz lodes and stockworks developed:

- a) in fault structures of the quartz diorite rim of the pluton; and,
- b) in faulted dioritic plugs that intrude Cache Creek beds near the batholith contact.

Further prospecting and exploration are warranted in three anomalous areas on the property.

INTRODUCTION:

Reconnaissance geology of roadcut rock exposures was carried out by the writer on the Bear 4, 8-unit claim to map structural controls for mineral deposits along the contact of Cache Creek beds and a granitic pluton. The old Blue Hawk gold-silver mine's host diorite plug is about 700m south of this contact, about 2 Km southeast of Bear 4 claim.

Evaluation is based on data derived by belt chain and compass tied to roads and landscape features, done on July 12, 1984, and on April 14 and 15, 1985.

The subject batholithic pluton trends northerly on the west side of Okanagan Lake for 14 miles (12.8 Km) from Bear Creek, averaging 3 miles (4.8 Km) width.

LOCATION & ACCESS:

This property is in the west summit area of Bluegrouse Mountain at an elevation of 1100-1200m (3600-3937 ft.). It is across Okanagan Lake from Kelowna about 10 Km, or about 30 Km by road. Access by auto is over logging roads north of Bear Creek road, which is reached from Highway 97 at the westside turnoff, about one mile west of the Kelowna bridge. Fair to good forest access roads span the claim.

PROPERTY & OWNERSHIP:

Bear 4 claim borders the north edge of Bear 3 claim, flush with the west edge of Bear 3. Its north border area extends north onto NTS map 82L/4E. The southeast corner post (2S 4E) is a common post marking the legal corner of Dawn 100 claim.

<u>Claim</u>	<u>Units</u>	<u>Record No.</u>	<u>Tag. No.</u>	<u>Record Date</u>	<u>Owner</u>
Bear 4	8	1757	77700	Apr. 18, 1984	N.C. Lenard
Bear 3	18	1636	11768	Nov. 25, 1983	N.C. Lenard
Dawn 100	12	1517		June 1, 1983	Tillicum GML

In the field, the legal corner post of Dawn 100 claim is about 650m east of the declared location, and is about 1225m east of that shown on the government staking sheet. A local mining inspector recently confirmed that the Dawn 100 overlaps the prior-held Bear 3 claim and Blue Hawk Mine.

WORK HISTORY:

The writer knows of no documented work or mineral showings on the subject ground, except for lapsed claims on the southwest sector with no work recorded (Site A, fig.2). That locale appears to be structurally anomalous, warranting detailed prospecting.

GENERAL GEOLOGY:

The property is on the western border of the Shuswap metamorphic terrane, a broad region of old sedimentary belts and granitic plutons. Gold prospects in quartz veins occur on the west side of Okanagan Lake from Vernon sparsely south to the subject area. Mineralization usually consists of minor amounts of base metals, bismuth tellurides, pyrite, and some freemilling gold.

LOCAL GEOLOGY:

Bedrocks of the property are Permian age, Cache Creek meta-sediments and andesites intruded by a quartz-dioritic-bordered batholith of Jura-Cretaceous age. Inferred Tertiary age quartz prophyry dykes and quartz veins occupy some fault openings in step with occasional lamprophyre dykes. Intrusive plugs of basic diorite through quartz diorite dot the frontal Permian contact belt, inferred offshoots from the pluton and

potential hosts for quartz veins.

Glacial drift obscures much of the property, with outcrops best seen in roadcuts and on high ridges.

#### STRUCTURAL GEOLOGY:

Highlights of local structural features include:

- (1) A summit high that trends across the property from a large domal feature in the northeast sector to another in the southwest area. These are inferred cupola features: the southwest high (A) may be a projection from the pluton, or a blind stock satellite and locus for mineralized veins. Silicified, disturbed tuff beds at Site A support this idea.
- (2) At site C, a markedly linear pond is on the western shoulder of the eastern dome, and may mark a shear fault worth exploring onto Bear 4 claims.
- (3) A 1m-wide lamprophyre dyke in a faulted contact of diorite/Cache Creek beds occurs with a series of WNW-trending parallel draws that may represent faults along the hidden pluton front.

#### ECONOMIC GEOLOGY:

Albitized and pyritized wallrocks accompany gold quartz lodes in this area but pyritic albitite or quartz albitite veins alone are often barren of gold and silver. Quartz porphyry intrusives are not necessarily auriferous either, but mark structural fabric.

From preliminary appraisal of the Bear 4 outcrops compared to the Bluehawk mine area geology, prospective gold-bearing structures should be sought in the areas A,B,C, (Fig.2) between and along roads 2 and 3 on the map. Geochemical analyses of soils and rocks should be done, with follow-up or concurrent VLF-EM and mag surveys carried out over these three locales to locate gold-potential host structures in plugs or plutonic contacts. Float quartz or hydrothermally altered wallrock float could be key guides to such structures.

PETROLOGY OF ROADCUT OUTCROPS

ROAD 1:

Sample No.

1. No outcrops or fresh float occur on the claim roadcut, but a ridge of andesite, laced by minor veinlets of marble, trends uphill onto the southwest corner of Bear 4 claim from road 1, map site 1.

ROAD 2:

Rusty weathering andesite with marble veinlets outcrop below the following sampled sites.

Sample No.

1. Diorite, fine crystalline-medium crystalline, part pyritic, rusty weathering; minor Andesite inliers occur for 200m uphill.
2. Lamprophyre dyke, medium grey, vertical, 1m wide, strike 164° Az.; Wallrocks: marble-ized Andesite on south; crushed and sheared Diorite on north with minor quartz veinlets.
3. Diorite: fine crystalline-medium crystalline, light tone, slightly pyritic, rusty weathering.

ROAD 3:

Sample No.

1. Quartz Diorite float, angular to sub-angular; medium crystalline, fresh.
2. (a) Granodiorite float, medium crystalline, angular fragments, fresh.  
(b) Granodiorite float, rusty, porphyritic, angular to part rounded.

ROAD 4:

Sample No.

1. Quartz Diorite, fine grained-medium grained, fractured, slightly rusty on fractures (N. edge Bear 4, on claim line).
2. As above, more fractured, brecciated: slightly rusty fracture planes (25m N of 1)
3. (a) Quartz Diorite, medium grained, slightly rusty weathering  
(b) Diorite float, fine grained, medium dark grey minor veinlets white aplite.
4. Outcrop in pit: Quartz Diorite, coarse grained, light tone, fairly fresh.

BUDGET ESTIMATE FOR WORK PROGRAM: BEAR 4

This estimate is based on daily mobilization (1½ hr. round trip) and use of local contractors where feasible. It is subject to firm bids.

1. Geochemical, rock and soil	\$ 1,000.00
2. Assays	750.00
3. VLF EM and Magnetometer surveys	3,000.00
4. Prospect and map geology on grid	2,500.00
5. Transportation	500.00
6. Stripping, blasting	2,500.00
7. Administration	5,000.00
	<hr/>
	15,250.00
Contingencies @ 15%	2,287.50
	<hr/>
TOTAL	<u><u>\$17,537.50</u></u>

Depending on results, a follow-up program could include detailing of chemical and geophysical anomalies, and projection of any mineralized structures that are found.

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EXPENDITURES

Personnel

N.C.Lenard, P.Geol., 3 days @ \$400. \$1,200.00  
(July 12, 1984; April 14,15, 1985)

Transportation

Auto - 4 days @ \$25. 100.00

Report Preparation

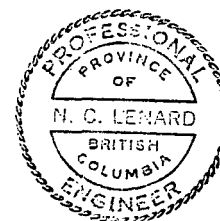
N.C.Lenard, P.Geol. 1 day @ \$400 400.00  
Drafting: 3 hr. @ \$15. 45.00  
Typing, Reproduction, binding 60.00

TOTAL DISBURSEMENTS \$1,805.00  
=====

I certify that the above statement is an accurate representation of expenditures made for the geological survey of the Bear 4 claim conducted on July 12, 1984 and April 14 and 15, 1985.

*N. C. Lenard*

N.C.Lenard, P.Geol., P.Eng.



Ex. Date Dec. 31/1985

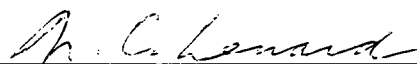
-CERTIFICATION-

I, Neall Curtis Lenard, of the settlement of Westbank in the Province of British Columbia do hereby certify:

1. that I am a consulting geologist with an office mailing address of Box 863, Westbank, British Columbia V0H 2A0;
2. that I graduated from the University of British Columbia with a Bachelor of Arts Degree in 1949 (Honours Geology);
3. that I have practised my profession continuously for thirty-five years;
4. that I am the sole owner of the subject Bear 4 mineral claim;
5. that the statements made in this report are based on personal examination of the claim on July 12, 1984, and April 14 & 15, 1985, and, on a study of published and unpublished reports on the property area;
6. that I am a member of the Associations of Professional Engineers of British Columbia and Alberta;
7. that no legal survey has been conducted over the subject mining properties, and, therefore, in accordance with the mining laws of the appropriate jurisdiction in which such properties could be in doubt; and,
8. that I attended an extension short course on Exploration Geochemistry at the University of Calgary in 1970; and, a short course in Mining sponsored by the Northwest Mining Association at Spokane, Washington in April, 1981.

DATED AT: The Settlement of Westbank, in the Province of British Columbia, this seventeenth day of April, 1985.



  
Neall Curtis Lenard, P.Eng., P.Geol.

REFERENCES

Geological Survey, Canada

- Cairnes, C.E. 1937 Paper 37-21: Kettle River Area  
Jones, A.G. 1959 Mem. 296: Vernon Map Area  
Reinecke, L. 1915 Mem. 79: Beaverdell Map Area

B.C. Min. of Energy, Mines, Petr. Resources

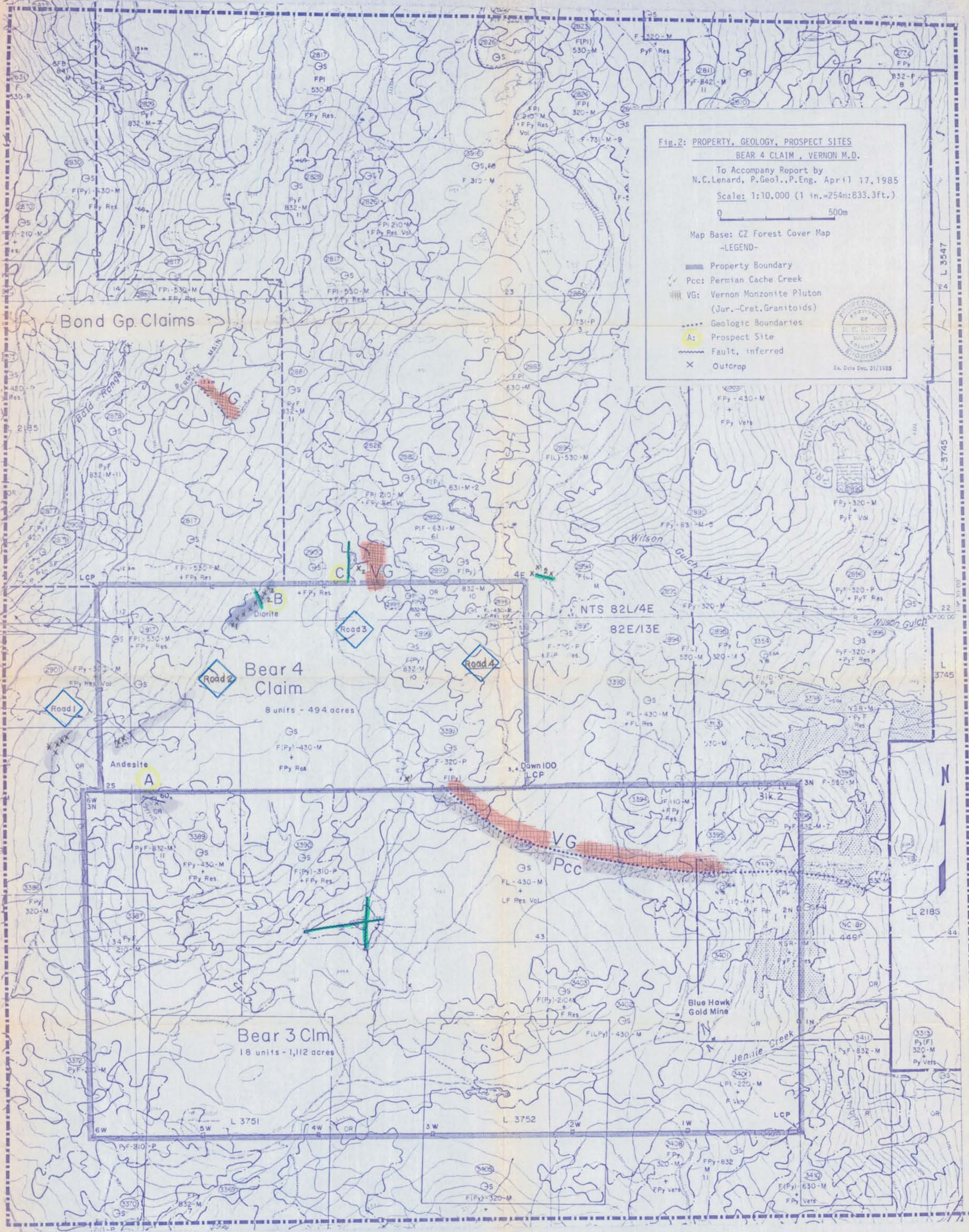
Paper 1983 - 1: Beaverdell Camp:

Geological Field work 1982 p. 227-249

Assessment Reports -

N.C Lenard, P. Eng., Dec. 21, 1981 No. 100-9074

N.C.Lenard, P. Eng., Apr. 18, 1984



**Fig.2: PROPERTY, GEOLOGY, PROSPECT SITES**  
**BEAR 4 CLAIM, VERNON M.D.**  
 To Accompany Report by  
 N.C. Lenard, P. Geol., P. Eng. April 17, 1985  
 Scale: 1:10,000 (1 in. = 254m: 833.3ft.)  
 0 500m  
 Map Base: CZ Forest Cover Map  
 -LEGEND-  
 ■ Property Boundary  
 ✓ Pcc: Permian Cache Creek  
 ▨ VG: Vernon Monzonite Pluton  
 (Jur.-Cret. Granitoids)  
 - - - - - Geologic Boundaries  
 A: Prospect Site  
 - - - - - Fault, inferred  
 X Outcrop  
 PROFESSIONAL  
 REGISTERED  
 GEOLOGIST  
 N. C. LENARD  
 1000 W. 10th St.  
 Winston-Salem, N.C. 27157  
 Lic. No. 1000  
 Exp. Date Dec. 31/1985

Bond Gp. Claims

Bear 4 Claim

8 units - 494 acres

Bear 3 Claim

18 units - 1,112 acres