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**TECHNICAL SUMMARY**  
**PETRO-CANADA ASTRO CLAIMS**

672528

**White Lake Basin Area - British Columbia**

During the autumn of 1977, in the course of a regional geochemical reconnaissance for uranium, Bradford D. Pearson, a consulting geologist from Richmond, B.C., detected the presence of unusually high values of that element in soils and waters within and adjacent to volcanic rocks and intrusives of the Eocene White Lake Basin in the southern Okanagan valley. Pacific Petroleum Ltd. optioned 70 claims which Pearson had staked and expanded the group to 861 claim units. The group comprised most of the open ground in the triangle between Keremeos, Oliver and Kaleden peripheral to the White Lake Astrophysical Observatory, as well as a block west of the Penticton Indian Reserve stretching north to the Allen Grove area.

During the following three field seasons, Pacific (later Petro-Canada Inc.) carried out detailed geochemical sampling of water, soil, silt and rock within and around these claims, ran a variety of radiometric and magnetic studies and some induced polarization work, carried out drilling to establish stratigraphic relations, to depths of as much as 1,500 feet, and prepared a series of geological maps based on the distribution of outcrops within the area. Initial work was directed by Dr. R.B. Rowe, who prepared detailed statistical evaluations of all geochemical results, which involved analyses for uranium, copper, molybdenum, fluorine and pH. The analyses themselves were carried out by Loring Laboratories of Calgary. The second and third field seasons were directed by G. Salazar who transferred all analytical work to MinEn Laboratories of North Vancouver. Analytical work was expanded to include thorium.

Mr. Salazar made a single precious metal analysis in the course of his work. It was taken from an exposure of gossanous chert and assayed 54 ppm silver. No assay was made for gold. The imposition of the uranium moratorium by the provincial government ended all further work on Petro-Canada's exploration program in the Okanagan, which by that time amounted to \$542,527.00.

Petro-Canada withdrew entirely from active mineral exploration in 1985. When the uranium moratorium expired in February 1987, the company offered its properties to developers who had expertise to further explore and to develop them for potentially economic targets. Chief on the list were gold and silver.

Several blocks of ground within the White Lake Basin have attracted interest and have been optioned since the ground became open for work. The basin has had a history of production of precious metals, which have risen markedly in value over the past few years. The Fairview Camp, owned by Comico and Asarco, bounds the southern margin. The Dusty Mac deposit, just east of the south end of Skaha Lake, was an open-pit silver operation within White Lake volcanics. Preproduction reserves, as listed by Dr. B.N. Church of the B.C. Department of Mines, were 67,790 tons grading 0.23 oz. Au and 4.97 oz. Ag.

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There have been numerous small workings in other parts of the basin. Most recently, Inco announced an intersection of 41' grading 0.26 oz. Au in rhyolitic tuffs just north of Okanagan Falls. Four other intersections have been announced since that time, at least one of comparable length and grade.

The resemblance to other nearby Eocene basins has been widely noted. The Republic graben in Washington, south of the Boundary country, has produced gold at various periods since the turn of the century. Veins occur in andesite flows, rhyodacite tuffs and associated sediments close to the western fault boundary of the graben. Total production to 1967 is estimated to have exceeded 2,500,000 tons and \$50,000,000.00 (much of it at \$20.67 Au), but records were not kept for much of the period. (Full, R.P. and Grantham, R.M., Graton-Sales Volume, Ore Deposits of the United States 1933-1967, AIME)

The Chiwaukum graben near Wenatchee, Washington, hosts the new Cannon Mine of Breakwater Resources and Asamera Minerals. Reserves at the commencement of production were listed as 5.2 million tons grading 0.214 oz Au and 0.40 oz. Ag. Mineralization is found within silicified ledges of Eocene lake and stream sediments which contain intrusions of rhyodacite porphyry. (See L.E. Ott et al, Gold '86 Symposium Proceedings Volume, Toronto.)

Numerous structural, stratigraphic and lithological features are common to these Eocene basins which obviously represent extremely good exploration bets, especially since the use of large-scale heap-leaching techniques has revolutionized the extraction of very low grade, hitherto uneconomic deposits.

It is significant that the White Lake Basin has not been thoroughly explored for precious metals in the light of the recent remarkable advances in geophysical instrumentation and a growing theoretical understanding of the mechanisms and chemistry of precious metal deposition. The alienation of much of the lands by the uranium moratorium during a major part of the period of high precious metals prices has certainly been responsible for much of this neglect.

The association of gold with uranium and a number of base metals has been recognized in several world-class discoveries. The Olympic Dam copper-uranium-gold deposit in Australia may be one of the world's largest copper deposits. Gold occurs in significant amounts in the Jabiluka, Cluff Lake and Collins Bay uranium deposits in the Alligator River and Athabasca Basin deposits.

These occurrences indicate the possibility of certain common factors in the transport and depositional mechanisms for uranium and precious metals, among them high oxygen fugacity, soluble sulfide complexes and low-salinity

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water-carbon dioxide phases. (E.M. Cameron, 1988, Geology, v. 16, p. 109-112.) The demonstrated presence of precious metals here in the White Lake basin is an indication that such conditions prevailed at one time.

Twenty claims are still available for farmout. Petro-Canada's database is available for inspection to interested parties. Note should be taken of the fact that fluorine and molybdenum analyses compiled by this work may serve as useful guides to prospective areas. To a lesser extent, copper and uranium results may also be of value.

AVAILABLE CLAIMS

<u>CLAIM</u>	<u>NO. OF UNITS</u>	<u>MAP N.T.S.</u>	<u>RECORD DATE</u>	<u>RECORD NO.</u>	<u>GROSS ACRES</u>
Astro 10	4	82 E 5/W	Mar. 9/77	222	248 -
Astro 11	6 10	82 E 5/W	Mar. 9/77	223	372
Astro 12	12	82 E 5/W	Mar. 9/77	224	744
Astro 13	20 42	82 E 5/E	Mar. 9/77	225	1240 -
Astro 14	15 57 57	82 E 5/E	Mar. 9/77	226	930 -
Astro 16	20	82 E 5/W	Mar. 9/77	228	1240 -
Astro 17	20	82 E 5/E	Mar. 9/77	229	1240 -
Astro 18	20 117	82 E 5/W	Mar. 9/77	230	1240
* Astro 19	10 127	82 E 4/E	Mar. 3/80	1014	620
Astro 22	9 126 136	82 E 4/E	Mar. 3/80	1015	558
* Astro 26	18	82 E 4/W	Mar. 9/77	238	1116
* Astro 27	18 172	82 E 4/E	Mar. 9/77	239	1116
<del>Astro 32</del>	20	82 E 5/E	Mar. 9/77	244	1240
Astro 33	20	82 E 5/E	Mar. 9/77	245	1240
Astro 34	20 186 232	82 E 5/E	Mar. 9/77	246	1240
Astro 35	3	82 E 5/E	Mar. 9/77	247	186
Astro 36	3	82 E 5/E	Mar. 3/80	1016	186
Astro 38	6 198 244	82 E 5/E	Mar. 9/77	250	372
* Astro 45	20	82 E 5/E	Mar. 9/77	257	1240
Astro 53	18 216 262	82 E 5/W	Jan. 5/79	617	1116

Annual assessment work requirement is \$200/unit.  
 Approximately 62 acres/unit.

\* under Negotiation June 13/88