



**ANNUAL REPORT**

**RETENTION LICENCE RL 10/1988**

**MOINA**

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Perth  
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## **INTRODUCTION**

The owner of the tenement is Geotech International Pty Ltd ("Geotech"). That company has entered into an option agreement with Minemakers Limited ("Minemakers") and its wholly owned subsidiary Minemakers Australia NL.

Minemakers has been managing the project throughout the year.

## **WORK DONE**

### **1. ECONOMIC OVERVIEW**

The principal task to date has been to determine the optimal route to appraise this polymetallic and complex body of mineralisation. At current metal prices, within the old Comalco estimate (pre-JORC) of mineralisation there is over two billion dollars worth of metal.

Minemakers also reviewed the historic drill logs and their assays and considers that a doubling of an eventual resource tonnage compared with Comalco's 26Mt is a realistic target.

The potential of Moina is best illustrated from the fluorite viewpoint. Fluorite prices have remained strong after their 2005 surge based on decreasing Chinese product availability. If the Moina skarn were mined at 3 Mtpa over a 20 year mine life, and the current 18% fluorite grade is assumed to be maintained throughout the body, then at a 75% recovery, about 400,000t of fluorite would be produced annually.

This is around 8% of 2005 world production, as collated by the USGS, and over 15% of non-Chinese production.

However, based upon the ±1980 metallurgy, it is not yet certain that acid grade fluorspar can be produced in quantity. While tin and tungsten recovery has been previously attempted, it is known that tin recovery was poor.

There seems to have been no testwork done previously concerning recovery of magnetite and, in fact, very little assaying for iron at all. Also lacking is past work on sulphide recovery and the value of the metals therein.

### **2. SUMMARY OF MINEMAKERS POSITION**

This is best afforded by the Director's Overview of the Project, as prepared for a draft for Minemakers' recent Prospectus for its ASX Listing, as follows:

#### **"MOINA FLUORITE, TUNGSTEN AND MAGNETITE, TASMANIA**

Minemakers has an option to purchase 80% equity in RL8810 which hosts the deposits.

The Moina skarn hosts a very large polymetallic resource accumulation in skarn bodies. Based only on higher grade and relatively shallow fluorite intersections, then deemed suitable for an open-cut operation with a very low stripping ratio, a pre-JORC resource estimate of 26.5Mt @ 18% fluorite, 0.1% tungsten and 0.1% tin in a magnetite host was made. That restricted resource alone contains over \$2 billion of metal in-ground at current prices.

This is the largest known fluorite resource in Australia, containing about 1% of the world's known resources. The broad spaced drilling beyond the resource zone indicates general continuity of the mineralization and leads to a reasonable expectation that infill drilling by Minemakers may lead to a large increase of the current resource. There is considerable potential for additional recovery of magnetite iron ore, zinc, molybdenum, bismuth and gold, as well as for the discovery of sheeted tungsten and tin deposits below the main skarns.

## **COMMENTARY ON FLUORITE**

Also known as fluorspar, fluorite is predominantly used in the production of hydrofluoric acid and aluminium fluoride. The acid is the primary feedstock for the manufacture of almost all fluorine-bearing chemicals and is a key ingredient in the processing of aluminium and uranium. The remaining production is used in steelmaking, foundries, glassmaking and other areas. China has dominated world production, mining over half of world supply and, until recently, keeping prices low. However, it has subsequently cut export quotas and prices have increased sharply.

## **METALLURGY**

The metallurgical testwork dates back to the late 1970s. It found the skarn ore to be relatively refractory but, concentrating on fluorite, an acid grade product was able to be recovered. In light of the considerable price increases in all components of the Moina skarn, Minemakers will re-examine that testwork and will commission any new necessary work so as to determine the optimum circuit for maximization of net cashflow with respect to current metal prices, recoveries, and capital and operating costs.

## **MINEMAKERS' AIMS**

- Undertake the necessary metallurgical testwork for optimal circuit design.
- Drill out sufficient of the main deposit to at least JORC-compliant Indicated Resource status and to allow open-pit design optimization for, say, an initial 10 year operation.
- Assess the potential to market the bulk commodities magnetite, fluoritic magnetite and garnet, which would be in the tails after extraction of the fluorite, and the tungsten, tin and sulphides.
- Look to marketing the fluorite and tungsten to Asian consumers who are seeking to gain independence from the decreasing Chinese supply situation.
- Complete bankable feasibility study and, if economic, commission an open-cut mining and processing operation."

### **3. INDEPENDENT REVIEW**

Dr Tony Gifford, of Featherstone Consultants, completed his independent review of Moina as follows:

#### **"THE MOINA FLUORITE AND TUNGSTEN PROJECT**

##### **Location**

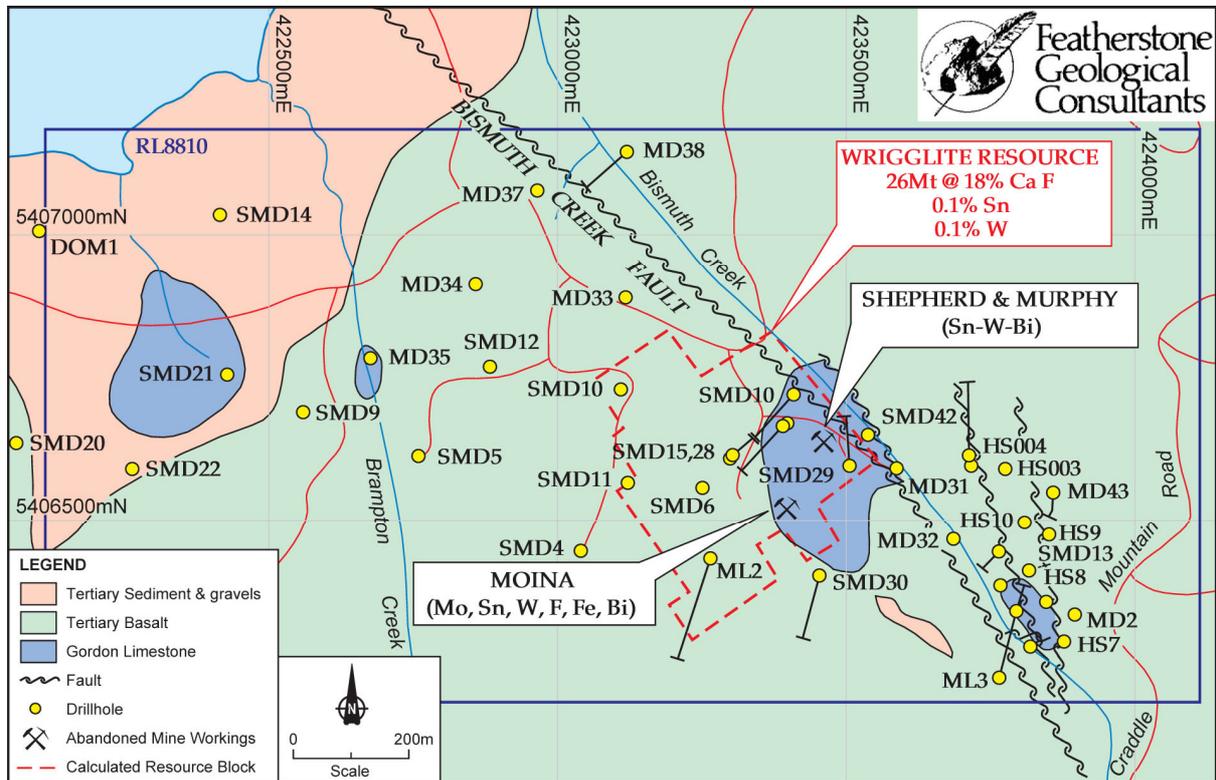
Retention Licence RL8810, "Moina" covers an area of 2 km<sup>2</sup> and is located 40km south west of Devonport, in the north west of Tasmania. Access to the tenement is via the sealed Cradle Mountain Road and thence by farm tracks. It lies on the Burnie 1:250,000 map sheet and the Arthur River 1:100,000 map sheet. The Cethana 1:25,000 geology map sheet covers the prospect but more detailed geology of the mines is presented on Map 9 (1:25,000) Geology of the Winterbrook – Moina Area, of the Geological Survey of Tasmania's Mt Read Volcanics Project 1989. The author visited this prospect in July 2005.

##### **History**

The area has been prospected since the early 1860s. James "Philosopher" Smith discovered alluvial gold in the Forth River, a galena vein near the Devon Mine, and galena near the mouth of Claude Creek. Galena veins were discovered at Round Mountain in 1878 and subsequently worked on a small scale. Between 1885 and 1887 several gold discoveries were made causing an exploration boom. In 1891 tin and tungsten ores were located on Dolcoath Hill. In 1893, the largest mine, the Shepherd and Murphy Tin and Tungsten Mine, which lies within RL8810, was discovered and worked almost continuously until 1919 when fire destroyed the mill. Various other small orebodies were found subsequently but their output was insignificant. These various bodies of mineralization show a zonal distribution relative to the granite stock outcropping at Dolcoath Hill, with tin-tungsten-bismuth-molybdenum ores in and adjacent to the granite, passing outwards to tin ores carrying sulphides and gold, to gold-copper ores, and to silver-lead ores, in that general sequence. Total production from the Shepherd and Murphy Mine was 559t tin, 24t wolframite, 72.5t metallic bismuth; and from the Round Hill Mine was 4,767t lead, 389,679oz silver, 1,320oz gold. Production records for the field are incomplete but the total production is estimated to be 8,300oz of gold, 393,000oz of silver, 5,008t of lead, 76.8t bismuth, 581t tin, 340.5t wolframite (Jennings 1965).

##### **Regional Geology**

RL 8810 is underlain by a thin sequence of Ordovician sediments. The Ordovician sedimentary package is a graded sequence of shallow water marine sediments with Roland Conglomerate at the base, overlain by medium to coarse grained Moina Sandstone, which in turn is overlain by Gordon Limestone. These three formations are conformable, gradational, and relatively thin, typically being in the range 50m to 150m thick. The sedimentary package dips gently north and has been lightly folded with fold axes trending NW sub parallel to the Bismuth Creek Fault. The sediments have been disrupted by a number of NW trending normal faults, principal of which is that Bismuth Creek Fault. Tenement and geological information are presented in Figure 1.



**Figure 1 Moina Tenement and Geology Map**

The Ordovician sediments are underlain in part by Cambrian volcanics and were intruded in Upper Devonian times by the Dolcoath Granite. A 2km wide stock of this leucogranite outcrops 3km to the east of Moina with an average composition of 40% orthoclase, 35% quartz, 20% plagioclase, 5% biotite. Gravity data indicates a west trending spine of this granite underlies RL 8810 at depths of less than 1km. Drilling has revealed that beneath Moina the granite has been metasomatically altered to greisen. A Tertiary erosion surface, characterised by cemented gravels (graybilly) is patchily developed on the Ordovician sediments. Tertiary basalts, which are variably magnetic, cover substantial sections of the tenement area.

A large zone of hydrothermal alteration was associated with this granite spine. It caused dominantly iron and fluorine metasomatism of the Gordon Limestone and of calcareous beds in the Moina Sandstone and resulted in the formation of the Moina Skarn. These fluids were accompanied by variable amounts of tin, tungsten, bismuth, and molybdenum, which were fractionated from the granite; and by some precious metals and base metals either from the granite or leached from the Cambrian volcanics that lie between the sediments and the granite. This metasomatism resulted in a pocket of higher grade metamorphism turning the limestone to marble, the sandstone to quartzite, and indurating the conglomerate.

The Moina Skarn, with its associated tin-tungsten-fluorine veins and greisen, has been deposited in the roof of the Dolcoath Granite where it replaced Ordovician sediments. The skarn occurs as a thick horizontal plate roughly 1km in its longest dimension and up to 100m thick. It is separated from the granite's upper near horizontal contact by about 200m of the Moina Sandstone and replaces parts of the Gordon Limestone. The plumbing system for the mineralizing fluids was probably a series of east-west trending tension fractures, now tin-tungsten-quartz veins, associated with the major NW trending Bismuth Creek Fault and named the Shepherd and Murphy Vein Swarm. Emplacement of the granite was at shallow depths, probably less than 3km.

The main body of skarn is zoned and consists of :-

- A top zone of a granular garnet-pyroxene-vesuvianite-fluorite skarn overlying the other units. This unit is relatively enriched in boron;

- The main skarn ("wrigglite") of fluorite – magnetite - vesuvianite (cassiterite - scheelite - adularia) and having a characteristic, fine grained (less than 0.2mm), rhythmic, finely layered, contorted structure;
- Within and near the base of the main skarn a granular, pale green pyroxene skarn occurs as thin units (less than 5cm) consisting of diopside – hedenbergite with very minor amounts of fluorite and garnet;
- A wollastonite-rich skarn may be present in places and can be a useful marker. It is probably derived from a silty/sandy facies of the limestone and consists of over 80 % by volume of wollastonite with small amounts of garnet, pyroxene, vesuvianite, and fluorite;
- A basal zone of granular garnet-pyroxene-vesuvianite-fluorite skarn;

However the skarn is essentially variable depending on local factors that controlled the metasomatism. A number of distinctly different skarn types are found in limited quantities in other areas where metasomatic conditions varied. The two most notable are the pyrrhotite skarn and the sphalerite skarn. The former consists of medium to fine grained pyrrhotite, magnetite, fine grained actinolite/chlorite, and minor fluorite; the latter of granular to massive andradite garnet with minor diopside containing conspicuous bands of closely spaced lenses of sphalerite with quartz.

The various skarn units can carry up to 25% (by weight) fluorite; 0.6% tin, 0.5% tungsten, 0.2% beryllium, 27.5% zinc, and 4.5 g/t gold. Tin, beryllium, and iron values increase toward the upper part of the skarn sequence but zinc, copper, and molybdenum values are erratic. Secondary zinc-copper-indium-cadmium-gold-sulphide-amphibole alteration of the primary fluorine-tin-beryllium oxide skarn is related to the Bismuth Creek Fault. When the primary wrigglite skarn is altered, tin is largely lost from that part of the skarn.

The hydrothermal fluids that extensively skarned the Gordon Limestone resulted in the formation of a number of known significant mineral deposits, including :-

- The Shepherd & Murphy vein swarm, consisting of a set of E - W near vertical veins containing tin-tungsten-bismuth-molybdenum mineralisation.
- The fluorite-magnetite "wrigglite deposit" in the basal section of the Gordon Limestone west of the Bismuth Creek Fault.
- The zinc-bismuth-gold mineralization in the Hugo Skarn east of the Bismuth Creek Fault where the Hugo Thrust, which strikes E-W and dips north at 30°, has removed the top of the skarn and thrust older sediments over the top of the skarn.
- The auriferous pyrrhotite skarn west of the Shepherd & Murphy Mine.

### **Previous Exploration**

Although a considerable amount of historical exploration has been carried out in the district since mineralization was first discovered in 1878 it is only the more recent work (and for which reports are available) that contains relevant data. With respect to the Moina Skarn deposits there are reports of a number of drilling programmes that have been mounted on the area since 1970.

The Mount Lyell Mining and Railway Co. Ltd. (Mt Lyell) drilled three holes near the Shepherd and Murphy Mine in 1970-71. These holes were drilled to test for extensions to the known lodes previously worked at the mine and were drilled depressed at 50-55°. No significant mineralized veins were intersected. Wrigglite was intersected in holes ML2 and ML3A but it was not recognized as a fluorite rich skarn so was not split and analysed. The core from this

drilling was later made available to Comalco Ltd (Comalco) and was re-logged, sampled, and analysed.

The Tasmanian Department of Mines drilled three holes in 1972-3 and the core logs, analyses, etc. were reported. In addition to the results produced by the Mines Department, Comalco carried out further analyses on pulps supplied to them by the Department. These holes were numbered DOM1, 2, & 3. Only DOM1 is currently relevant lying on the boundary of RL 8810 (Figure 1).

Basic data on the holes drilled during the 1970s is presented in Table 1. Hole collars are referenced by MGA co-ordinates.

**TABLE 1**  
**Moina Drill Hole Locations**  
**Mt Lyell, Mines Department, and Comalco**

Year Drilled	Hole Number	MGA Co-ords		Angle of Hole	Total Depth (m)
		E	N		
1970	M/ML1A	422128	5407280	50° to 180°	265.5
1970	M/ML 2	421775	5407135	50° to 192°	335.3
1971	M/ML 3A	423283	5406855	54° to 12°	260.3
1972	DOM 1	422713	5406885	Vertical	325
1976	SMD 4	423053	5406425	Vertical	109.25
1976	SMD 5	422743	5406635	Vertical	81.15
1976	SMD 6	423329	5406615	Vertical	102.5
1976	SMD 7	423383	5406715	Vertical	71.5
1976	SMD 8	422283	5406315	Vertical	60.8
1976	SMD 9	422543	5406705	Vertical	129.7
1976	SMD 10	423148	5406671	Vertical	117.5
1976	SMD 11	423238	5406533	Vertical	120
1976	SMD 12	422907	5406635	Vertical	123.5
1976	SMD 13	423833	5406455	Vertical	182.25
1976	SMD 14	422403	5407055	Vertical	194 (Strat)
1977	SMD 15	423349	5406687	Vertical	116.12
1977	SMD 16	423793	5406385	Vertical	171
1977	SMD 17	421883	5406593	Vertical	74.15
1977	SMD 18	Mt Jacob			
1977	SMD 19	Mt Jacob			
1977	SMD 20	422417	5406507	Vertical	94.75
1977	SMD 21	422657	5406777	Vertical	155.25
1977	SMD 22	422253	5406605	Vertical	110
1977	SMD 23	422617	5406145	Vertical	37
1978	SMD 24	423753	5406520	75° to 215°	Abandoned
1978	SMD 25	423753	5406520	65° to 215°	Abandoned
1976	SMD 26	424313	5405685	Vertical	202
1976	SMD 27	424113	5405785	Vertical	73
1978	SMD 28	423293	5406665	65° to 40°	101
1978	SMD 29	423483	5406645	60° to 360°	122
1979	SMD 30	423453	5406435	50° to 180°	126
1979	SMD 31	423733	5405660	Vertical	41

Comalco mounted a drilling programme in 1976-7 which was mainly aimed at delineating the extent of the wrigglyite skarn. These holes are prefixed SMD and are detailed in Table 1. Holes were therefore located as close as physically practical to magnetic highs. An initial pre-JORC estimate of the resource was made in Askins 1978(c) which was :

Askins 1978 15.5Mt at 18% fluorite, 0.1% tin, 0.1% tungsten.

Later drilling (SMD 20-23) was designed to test IP anomalies possibly due to massive pyrrhotite-cassiterite mineralization. The programme of 25 holes included two holes drilled at Mt Jacob and Holes SMD 24 & 25 were angled holes targeting mineralization associated with the Bismuth Creek Fault but encountered very difficult drilling conditions and had to be abandoned. Holes SMD 26 to SMD 31 were drilled on specific targets or to elucidate geophysics. Samples from Comalco drilling were analysed for : fluorine, tin, tungsten, bismuth, molybdenum, beryllium, copper, lead, zinc, cadmium, silver, gold, yttrium, scandium, and manganese.

In 1979 Comalco undertook a revised estimation of the fluorite and magnetite resource in the main wrigglyite skarn. The diamond drill holes considered in this study are detailed in Table 2. The revised estimate was made on the basis of the extra drilling and a more refined interpretation of the geology.

**Table 2**  
**Weighted Average Grades of Intersections in the Main Skarn**

Hole No.	From (m)	To (m)	Interval (m)	Fluorite (%)	Tin (ppm)	Tungsten (ppm)	Remarks
ML 2	43.3	50.4	7.1	17.8	c.800	c.400	Bulked sample analysis
	50.4	61.0	10.6	11.6	c.1400	c.150	
	61.0	82.9	21.9	19.2	c.1500	c.800	
	43.3	82.9	39.6		1350	540	
SMD 6	22.75	83.05	60.30	17.6	1400	910	
	22.75	67.70	44.95	19.5	1540	930	
SMD 7	1.00	55.00	54.00	20.9	1450	1030	
SMD 10	38.75	88.50	49.75	17.6	1320	535	0.35m interval of rich vein excluded
	38.75	76.00	37.25	19.2	1300	500	
SMD 11	31.00	74.00	43.00	16.9	1525	1020	1.35m interval of no core excluded
	31.00	60.70	29.70	19.4	1540	1010	
SMD 15	33.00	105.00	72.00	18.0	1470	1250	
SMD 28	29.00	90.60	61.60	20.3	1740	940	
	90.60	101.00	10.40	10.1	1110	560	
	29.00	101.00	72.00	18.8	1650	890	
SMD 29	0.00	23.25	23.25	20.8	2180	2260	

All intervals except for SMD 29 are approximate "true thicknesses".

The resource estimate was prior to the establishment of the JORC Code. Only the wrigglite skarn to the west of the Bismuth Creek Fault was considered. The estimated resource was :-

Askins 1979 26.5Mt at 18% fluorite, 0.1% tin, 0.1% tungsten. Cut-off grade 10% fluorite.

Overburden/wrigglite Ratio limited to less than 2.5: 1

giving an overall ratio of overburden/wrigglite of 1:3

Under the JORC Code Featherstone considers that this would probably be classified as an Inferred Resource. For this estimate the density of wrigglite was taken as 3.3 and the density of the basalt overburden as 2.5. This deposit is probably the largest single fluorite resource in Australia. Additional drilling has been carried out since this estimate was made but no new estimate of this resource has been calculated.

The Shell Company of Australia Ltd (Shell) entered into a joint venture with Comalco in 1980. At this time the Shell metals division went under the name Acacia Resources Pty Ltd and in 1984 became Billiton Ltd. Exploration commenced in July 1980 consisting mainly of DC drilling (holes MD 32-43). These holes are detailed in Table 3.

**TABLE 3**  
**Moina Drill Hole Locations**  
**Shell and CRAE**

<b>Year Drilled</b>	<b>Hole Number</b>	<b>MGA Co-ords</b>		<b>Angle of Hole</b>	<b>Total Depth (m)</b>
		<b>E</b>	<b>N</b>		
1980	MD 32	423713	5406485	Vertical	152.4
1981	MD 33	423093	5406905	Vertical	163.6
1980	MD 34	422843	5406935	Vertical	196.0
1980	MD 35	422643	5406815	Vertical	161.4
1980	MD 36	423243	5407305	Vertical	170.5
1980	MD 37	422933	5407085	Vertical	176.6
1980	MD 38	423093	5407185	70° to 222°	263.1
1980	MD 39	422713	5406645	Vertical	260.4
1981	MD 40	423393	5406735	45° to 222°	158.0
1981	MD 41	423393	5406775	45° to 222°	150.7
1981	MD 42	423573	5406685	Vertical	208.0
1981	MD 43	423803	5406625	Vertical	325.0
1987	MO 1	424423	5406655	Vertical	80
1987	MO 2	423893	5406385	Vertical	130.5

Shell's exploration is detailed in a number of reports from 1979 to 1983 and focussed its attention on the tin/tungsten potential of the skarns.

**Table 4**  
**Tin-Tungsten Potential of the Main Skarn**

<b>Drill Hole No.</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Tin (Sn) ppm</b>	<b>Tungsten (W) ppm</b>
SMD 4	63.87	95.90	27.53	1320	840
	0.00	95.90	95.90	380	240
SMD 6	21.35	101.00	79.65	1100	960
	0.00	101.00	101.00	860	750
SMD 7	0.00	45.35	45.35	1630	740
SMD 10	38.75	76.00	37.25	1680	670
	0.00	76.00	76.00	820	330
SMD 11	31.00	74.00	43.00	1450	960
	0.00	74.00	74.00	840	560
SMD 15	33.00	103.00	70.00	1500	1270
	0.00	103.00	103.00	1020	860
SMD 28	17.70	90.60	72.90	1680	850
	0.00	90.60	90.60	1350	680
SMD 29	0.00	83.50	83.50	850	1760
MD 40	10.00	85.20	75.20	1360	950
MD 41	0.00	28.50	28.50	1560	820

Open pit potential of the main skarn was then estimated by Shell as :-

(1981) 16Mt @ 0.14% Sn, 0.10% W.

About 5.5Mt of this material would be available free of overburden with a possible 9.2Mt lying mainly under basalt overburden. This pre-JORC estimate would probably be considered to be an Inferred Resource under current JORC Code practice.

In the year to June 1982 exploration was focussed on a number of other targets within the JV area and generally outside the area which is now RL8810. Exploration was following up on targets established by geochemical and geophysical surveys, including TEM, and continuing work on areas of interest. Early in 1983 just over half of EL 7/74 was relinquished (224 km<sup>2</sup> of the total 405 km<sup>2</sup>). At this time exploration was focussed on Wattle Valley and Black Bluff. No more targets were located and exploration moved to the Cambrian Volcanics in the Mt Jacob area. In July 1984 a further 60 km<sup>2</sup> of the licence was relinquished covering the Liena and Wattle Creek areas.

In 1987 the area of the remaining portion of EL 7/74 covered the Moina Skarn and surrounding ground. CRAE turned its attention to the gold potential of the skarns and veins. As well as collating old results twenty five drill holes were re-sampled for gold and two new DC holes were drilled (DD87 M 01 & 02). These holes failed to intersect significant

mineralization. Better gold values are restricted to the sphalerite and pyrrhotite skarns - Funnel 1988.

Some of the better drill intersections were : -

Pyrrhotite Skarn

8m @ 1.5 g/t gold from 96m in SMD9.

Sphalerite Skarn

3m @ 2.18 g/t gold from 146.6m in LM3A.

16m @ 0.86 g/t gold from 86m in SMD13

7.1m @ 0.79 g/t gold from 65.5m in SMD16

9.5m @ 0.73 g/t gold from 81.5m in SMD24

15.0m @ 0.7 g/t gold from 190m in SMD39

The oxide facies fluorite skarn gives irregular spotty values in the range 0.2 g/t to 0.4 g/t gold in the eastern section of the body.

On the 22<sup>nd</sup> October 1998 Retention Licence 8810 of 2 km<sup>2</sup> was granted to Shell and CRAE covering the main skarn area at Moina. This licence is a holding tenement and has no work commitment. It is renewable in three year terms.

In September 1993 a joint venture with Goldstream Mining NL (Goldstream) and Titan Resources NL (Titan) commenced over that portion of RL 8810 lying east of the Bismuth Creek Fault. Goldstream and Titan also held EL20/94 which surrounded RL 8810.

The Goldstream - Titan interest was focussed on the zinc and gold potential of the Hugo Skarn adjacent to, and to the east of, the north westerly striking Bismuth Creek Fault. In this area a wedge of skarn lies between the steeply dipping Bismuth Creek and Eastern Faults which converge to the south. The skarn is also cut by other faults that include the steeply dipping, north westerly striking, Central Fault and the E-W striking, gently north dipping Hugo Fault.

The Hugo Skarn is mineralogically complex containing fluorite, magnetite, bismuthinite, molybdenite, sphalerite, gold, scheelite, and cassiterite. Of particular interest were several zones of significant zinc mineralization with some gold.

Two drill holes from the Comalco programme in 1976 intersected the Hugo Skarn. In 1993-94 Goldstream and Titan drilled four DC holes (HS01-HS04) for 790m to further define the mineralization. Holes HS03 and HS04 failed to intersect skarn due to faulting.

**Table 5  
Drilling of the Hugo Skarn**

<b>Year Drilled</b>	<b>Hole Number</b>	<b>MG A Co-ordinates (m) Easting Northing</b>		<b>Angle of Hole</b>	<b>Total Depth (m)</b>
1976	SMD 13		5406455	Vertical	182.25
1976	SMD 16	423793	5406385	Vertical	171
1994	HS 01	423843	5406395	Vertical	152.0
1994	HS 02	423763	5406455	Vertical	157.4
1994	HS 03	423793	5406615	Vertical	196.6
1994	HS 04	423713	5406645	Vertical	297.7
1995	HS 05	423843	5406285	Vertical	141.4
1995	HS 06	423763	5406418	Vertical	151.1
1995	HS 07	423883	5406310	Vertical	132.5
1996	HS 08	423816	5406436	Vertical	144.3
1996	HS 09	423844	5406483	Vertical	150.0
1996	HS 10	423808	5406519	Vertical	147.3
1996	HS 11	423806	5406402	Vertical	135.0

In 1994-95 three more DC holes for 425m were drilled to the south of the area covered by drilling to that time. HS 05 was mainly in Moina Sandstone with the 11.3m from 65.8m in skarn underlain by metasomatised sandstone with a swarm of mineralized quartz veins. A skarn intercept of 100.2m from 30.0m containing an intercept of 83m @ 0.15 g/t gold is reported in HS 06 with anomalous tin and tungsten. Hole HS 07 lay to the east of Eastern Fault and was entirely within Moina Sandstone. The basic data on these drill holes is given in Table 5.

In 1995-96 a further four DC holes were drilled for 576m. HS 08 was drilled 25m SW from SMD 13 to validate results from that hole. In fact the results suggest that grades of gold and sulphides vary over relatively short distances and considerably denser drilling would be required to define a resource. HS 09 intersected only Moina Sandstone and was therefore located just east of the Eastern Fault. HS 10 was collared about 85m north of HS 08 and was interpreted as indicating that the Hugo Thrust dips more steeply than the skarn and therefore cuts out more and more of the skarn to the north. This indicates there is little potential for significant thicknesses of skarn to the north.

**Table 6  
Gold, Zinc, Bismuth, Potential of the Hugo Skarn**

<b>Hole No.</b>	<b>Vertical Intercept (m)</b>	<b>Gold Grade (g/t)</b>	<b>Zinc Grade (%)</b>	<b>Bismuth Grade (%)</b>
SMD 16	13.0	0.47	4.4	0.05
	Inc. 6.7	0.66	6.8	0.07
HS 11	12.0	0.64	3.3	0.07
	Inc. 6.0	1.15	3.9	0.09
SMD 13	16.65	c. 0.86	8.63	
	Inc. 2.5m		19.0	
HS 08	17.0	1.34	6.7	0.10
	Inc. 9.0	2.34	8.9	0.16

The Hugo Skarn has a N-S dimension of approximately 130m and an E-W dimension of 50m and its upper surface lies about 60m below surface in the south increasing to 90m in the north. In 1997 these companies made an estimate of the Hugo Skarn mineralization as being in the range 250,000t to 300,000t at approximately 0.8 g/t gold, 5% zinc, 0.07% bismuth. The significant intersections are presented in Table 6. Featherstone believes that

considering the geology of this body of skarn the available data on it is insufficient to calculate a resource complying with the current JORC Code.

## **Metallurgical Studies**

A number of metallurgical investigations have been undertaken on the Moina Skarn mineralization but Featherstone is not qualified to assess the results. The skarn is very fine grained and it was reported that a cost effective treatment could not be discovered at that time. The mineral content of the skarn has a substantial value and it is understood that Minemakers intends to advance metallurgical studies into various treatment options.

## **Planned Exploration**

Minemakers plans to undertake additional drilling of the main deposit to allow a JORC compliant Indicated Resource to be established. Concurrently a review of the previous metallurgical work would be made to guide additional metallurgical studies to develop a cost effective treatment process.

Minemakers exploration budget is \$100,000 to \$200,000 for Year One and \$80,000 to \$200,000 for Year Two.

## **Summary of the Moina Fluorite Project**

While the project is referred to as a fluorite project because it based on a very large fluorite resource the tenement is located in a significant metallogenic province and contains several different styles of mineralization containing different metals and minerals. The large fluorite resource was uneconomic due to the expensive treatment suggested by metallurgical studies in the 1980s. Minemakers intends to investigate different avenues of treatment for the production of fluorite but will also be looking at other metal production opportunities that exist at Moina.”

## **PLANNED PROGRAMME**

Although resources cannot yet be defined at a JORC-compliant level, there is no doubt that Moina hosts sufficient mineralisation for a long-term mining and processing operation should Project economics be sufficiently positive.

Hence Minemakers has determined that the following programme should be initiated.

1. Generation of suitable material for metallurgical testwork – preferably by a diamond drilling programme.
2. Assessment of all previous metallurgy so as to determine the testwork that is still required to complete studies on ALL of the potentially recoverable minerals.
3. Initiation of other required elements of a feasibility study such as the environmental, social and infrastructure components.