826340

SHIMA RESOURCES LTD. PROPERTIES

TEXADA ISLAND, B.C.

Lot $49^{o}43$ N. Long. $124^{o}32'$ W.

N.T.S. BLOCK 92F - NE

BY

KEITH C. FAHRNI, P.ENG.

MARCH 15

1978

Report on Shima Resources Limited Properties

LIST OF CONTENTS

1. INTRODUCTION

Shima Resources Limited is a non reporting company registered in British Columbia with the objective of exploring and developing mineral claims. Principal holdings are on Texada Island.

This Island lies in the Strait of Georgia extending from 40 to 80 kilometers northwest of Vancouver. It lies off the mainland at a distance of from 5 to 10 kilometers and is reached by regular ferry service.

The block of mineral claims held by Shima lies close to the north end of the Island. A central point of the block, about half way between the villages of Vananda and Gillies Bay has a latitude of $49^{o}43$ north and longitude of $124^{o}32$ west.

The northern part of the island has relatively gentle topography. Access is simple by means of a well developed road system which was used for removal of timber and for mining and quarry work. A few marginal farms operate. At present the principal industries are limestone quarrying by four companies and logging by several small companies. Deep water shipping and loading facilities are available.

2. SUMMARY

The Shima block of mineral claims is a contiguous group of properties extending from the north east side of Texada Island across to the southwest side in a north-south trending strip about 3 kilometers wide and 7 kilometers long. The village of Vananda lies at the north-west corner and the village of Gillies Bay lies just beyond the south-east corner.

Rock exposure is good on the island with only light moss and soil coverage. Several large lakes occur and a number of smaller muskeg ponds lie in depressions. Fringes of sands and gravels occur near the ocean. Over the claim group the land rises gently from sea level at the north to a central plateau at an elevation of from 100 to 150 meters which extends over two thirds of the islands width. Continuing, the ground rises to about 300 meters then drops off sharply to the south shore.

Crown grant mineral claim surveys, land lot surveys and power line surveys provide a coordinated base for locating any work without difficulty. Good airphoto coverage has been provided by recent airsurveys commissioned by Texada Mines.

Geological interest in the north end of the island began some time before 1874 when the first reports of mining activity were made to the Minister of Mines of B.C. Since then many studies of rocks and minerals have been made by leading geologists. The early interest was inspired by outcroppings of copper minerals which contained gold and silver. Early in the century several small but high grade mines were operating, their production being sent by convenient sea lanes to smelters elsewhere on the coast. Some details of this production are given later in this report. Mining of the copper gold deposits continued to 1952 on an intermittent and still small basis. Subsequent to that period, the development and operation of Texada Mines has dominated the scene. It produced iron ore and a concentrate containing copper, gold and silver.

The detailed geological history of the island was described in Memoir No. 58 of the Geological Survey of Canada prepared by R.G. McConnel in 1914. Modern geological ideas and the expanded study base provided by Texada Mines workings have resulted in only minor changes to McConnel's report. His description of the old properties still provide a valuable aid to mining exploration.

The oldest rocks on the island, the basement volcanics which McConnel named Texada Group have been correlated with the Karmutsen Formation of Vancouver Island. McConnel's Marble Bay limestone is correlated with the Quatsino on Vancouver Island. Both are of late triassic age. All of the intrusive rocks appear to be part of the volcanic epoch since none intrude the few remnants of Jurrasic sandstones which occur on Texada Island.

The Shima mineral claim belt follows a band of limestone which crosses the island. The limestone lies conformably on top of the volcanics in an open synclinorium with occasional steep

bedding near its edges. The axial trend plunges gently to the north west but a series of north easterly striking block faults has successively raised the syncline going north so that varying widths of limestone are now shown at the surface. The faults are marked by offsets in the limestone - volcanic contact.

Intrusives range in composition from quartz diorite to diorite with various porphyry and andesitic dyke equivalents. The well defined east-west and north-south trends of the dyke system may be auxiliary to a north-east south-west compression component which has resulted in the synclinal folding of the limestone. Axial plane tension fractures provide controls for the emplacement of the larger diorite stocks. Mineral deposits are related to the intrusives.

A gravity survey has been recently completed for Shima Resources and some details are provided later in the report. Several positive gravity anomalies were found which may be related to mineralization directly or indirectly. The broader aspect of the gravity survey suggests that the limestone formation may have a "W" cross section with a broad thinner section in the centre flanked by deeper keels toward the edges. The economic significance of this structural interpretation of the gravity survey is not yet understood and further study and testing will be required.

The Texada Mines underground operation which was shut down about a year ago still shows reserves amounting to 660,000 tons which is divided between eight stoping areas of the mine. Copper content is quite variable. Some earlier figures (1968) show additions to the ore reserve varying in copper grade from .08% in Midway to .54% in Leroy No. 2. Evidently most of the ore bodies which were mined have extensions below the deepest level of the present mine. Reopening the mine would require a completely new ore transporation system.

3. CONCLUSIONS AND RECOMMENDATIONS

It is recommended that Shima arrange to proceed with a preliminary program of core drilling to test the two most prominent

anomalies detected by the gravity survey. Funds in the amount of $62,000 should be arranged to carry out approximately 1,000 meters of core hole drilling.

The analysis of the broader aspects of the gravity survey should continue.

No consideration should be given to the Texada Mines potential at this time except insofar as the workings might provide access to the floor of the limestone basin at its south end.

Yours truly

Keith C. Fahrni

Keith C. Fahrni, P.Eng.
7011 Angus Drive
Vancouver, B.C.

March 15, 1978.

4. REPORT

401. HISTORY OF TEXADA ISLAND MINING

Texada Island was the site of some of the earliest mining on the west coast of Canada. By 1886 it was recognized by G.M. Dawson of the Canadian Geological Survey that the north end of the island carried most of the better showings. Interest was in copper and gold. Iron ore was recognized on the south shore but except for some limited shipments for flux it remained until much later to be developed. The four copper-gold mines which were yielding production early in the century were Marble Bay, Little Billy, Copper Queen and Cornell all of which were within a kilometer of one another near the settlement of Vananda on the north shore. All lay well within the Marble Bay limestone belt. A large number of lesser prospects, some with limited production were found. Many are in the limestone but some are in the Texada volcanics being related to thin limestome horizons or quartz vein systems. Intrusions in the way of diorite stocks and dykes of porphyry and andesite are related to all the showings. Skarn minerals of garnet calcite wollastonite diopside or epidote often act as gangue for chalcopyrite. Galena, sphalerite and molybdenite are less common associations. The details of the geology of various properties are available in the reference reports.

The following tabulation is prepared from information supplied by B.C. Department of Mines from their record of production.

MINE	IRON ORE (METRIC TONS)	COPPER (KG)	SILVER (K.G.)	GOLD (K.G.)
Marble Bay		6,789,380	12,622	1,555
Little Billy		819,100	1,198	363
Copper Queen		32,417	75	10
Cornell		1,368	2,194	471
Texada	21,980,280	25,432,021	23,645	887

402. SHIMA RESOURCES

During recent years as interest in mining small deposits lagged, mineral claims on Texada Island were accumulated by Ideal Cement Co. who operated quarries on the island. With the shut-down of Texada Mines in 1976 and the take-over of many of their assets by Ideal, title to those mineral claims were added. As a result in 1977 Ideal Cement found itself in possession of the mineral rights to over 126 claims of various categories. These claims covered a belt extending completely across the island and they included most of the claims with records of metal production. Messrs. Margetts and Jacques with some associates organized a small non reporting company which they named Shima Resources and an arrangement was made with Ideal to take over those claims by a lease agreement in exchange for escrow shares. Shima's objective is to explore these and other mineral properties in an attempt to develop profitable metal mining operations. The legal agent for Shima is Brawner Speton & Phillips of Vancouver. The claims under control of Shima are listed in the appendix to this report in Section 91.

403. ECONOMIC CONSIDERATIONS

Although the production from Texada Island can be fairly well documented there is no way of measuring the return from the mines in relation to development money spent. Many changes of ownership took place and in some cases (Copper Queen) lessors operated on a non reporting basis. Shipments which were made were carefully sorted to bring the grade to a maximum to meet freight and smelter costs. For a few years a smelter operated at Vananda and from 1946 to 1952 a floatation mill operated at Little Billy. The later copper gold and silver production from Texada mines was secondary to the iron ore production. The early shipments to outside smelters might be considered more as measurers of the economics of the times as to shipping and smelting costs rather than representing the average worth of the mine.

In order to compare the production from the properties, gross values have been calculated based upon present day prices in $US at the following rates:

Copper - $0.56 per lb.

Silver - $4.87 per troy ounce

Gold -$175.00 per troy ounce

which by conversion to metric measure at the rate of 2.205 lbs per kilogram and 32.15 troy ounces per kilgram gives the following equivalents

Copper	$	1.23	per kg.
Silver	$	156.57	per kg.
Gold	$	5626.25	per kg.

In the table below the two periods of production of Little Billy represent the earlier shipping period and the later floatation mill period. The early Texada production came from the Prescott ore body where high grade copper occurred at the surface. The later Texada production was in conjunction with the iron mining. The copper and precious metal per ton figure is per ton of iron concentrate produced which would be about 50% of the ore actually mined. The table shows comparative copper silver gold values of different ores.

MINE	YEARS OF PRODUCTION	PRODUCTION METRIC TONS	GROSS VALUE AT TODAYS PRICES TOTAL $US	$US/MTON
MARBLE BAY	1899 - 1929	285,029	19,076,962	66.93
COPPER QUEEN	1907 - 1917	750	107,302	143.07
CORNELL	1897 - 1919	40,686	4,677,307	114.96
LITTLE BILLY	1897 - 1916	5,712	484,569	84.83
LITTLE BILLY	1948 - 1952	47,693	2,753,766	57.74
TEXADA	1900 - 1921	733	68,649	93.65
TEXADA	1961 - 1976	21,980,280	39,976,261	1.82
TOTAL SHIPPED	1899 - 1921	332,910	24,414,789	73.33

These ores all occurred in similiar geological settings although host rocks were variable. With a large proportion of the floor of the limestone still unexplored between Cornell and Texada Mines there is a good probability that

a dozen or more similiar mineral agregations exist. The problem will be to locate them.

If other mineral occurrences can be spotted some of the economic aspects that would favour their development to a profitable operation are as follows:

1. The occurrence of tight, strong ground which would permit mining with modern mechanized equipment.
2. The tendency for mineral showings to improve with depth, possibly permitting insignificant surface showings to act as leads to better mineral below.
3. The favourable economic aspects of Texada Island such as good transportation, developed water and power services and community infrastructure.
4. The promise of improvement in government regulation and taxes which will assist financing.
5. A favourable environmental situation where waste rock may be saleable and land use is limited.

Some unfavourable aspects which would work against the development of economically successful mines are as follows:

1. The tendency for skarn bodies to be pipe-like, occurring at the intersections of steeply dipping structures. Both exploration for such bodies and development of them would be expensive.
2. The high current labour rates for mine work and the labour intensive kind of mining which would likely be involved.

404. RECENT EXPLORATION

The operating advantages of Texada Island have long been recognized and repeated efforts have been made to develop the old prospects into profitable mines. A few new discoveries have been made. The favoured prospects have been those properties located in limestone which have some evidence of skarn development. Magnetite which became the principal economic mineral at Texada mines is often but not invariably found in skarn. Its properties permit its detection even though covered,

by measuring the distortion it produces in the earth's magnetic field by means of a magnetometer. The concept is that magnetite will act as an indicator mineral to help locate the more valuable copper gold silver mineral concentrations or locate other magnetite concentrations which may be valuable. Following this concept magnetometer surveys have been applied to the entire area by means of high flying airplanes, helicopters and at ground level using magnetometers of different sensitivities. No significant new showings have been found. A survey of Little Billy area was made by Ideal Basics in 1974 and some core drilling was done. Texada Mines ran their latest airborne survey in 1972 and followed up with ground geology and magnetometer surveys with some drilling but little of interest was found.

Other geophysical survey methods have been tried from time to time with indifferent results and no mines found. Electromagnetic surveys were run over several prospects by contractors to Texada Mines in 1971. In 1956 electromagnetic equipment supplemented geology and ground magnetometer in a survey of the central limestone belt by Coolbaugh for Ideal Basics. A local prospecting syndicate which holds several claim groups, some being new discoveries uses an SP meter as one of their prospecting aids, reading spontaneous polarization currents in the earth.

405. EXPLORATION CONCEPT

From a review of geological history of the area as described by various investigators and with consideration of modern marine geology findings the following hypothesis of mineral occurrence formation is set up to provide a base for exploration.

1. During Triassic time the thick sequence of the Texada formation of lava flows, tuffs and breccias was laid down on the sea floor. Near the top as volcanic activity subsided layers of limestone were deposited marking periods of quiescence between lava outpourings. The thickest of these was the Marble Bay limestone.

2. As a late phase of the volcanic activity the Texada formation with the Marble Bay limestone was disturbed with folding faulting and brecciation along a northwest trending axis accompanied by the intrusion of diorite stocks dykes and sills in upwardly branching systems.
3. Residual magmatic solutions followed the dyke and fracture systems to convert intrusives, limestone and volcanics into skarn and to deposit iron in magnetite bodies.
4. The circulation of sea water through the fractured sea floor volcanics, energized by the hot spots of diorite intrusion, picked up metals and silica and dropped them when the hot springs encountered the limestones and skarns to form the mineral deposits.
5. A later period of disturbance and intrusion resulted in the emplacement of post ore dykes.
6. Subsequent uplift and recent glacial erosion has brought some of the mineralized rocks to the present ground surface.

From the propositions of the geological hypothesis above it appeared that if it were possible to map the floor of the limestone over the area of the claims, other diorite intrusive centres might be identified which would lead to the discovery of new bodies of mineralization.

406. GRAVITY SURVEY

In considering exploration methods the difference of specific gravity between rock types was considered. It was found by tests by Ager and Associates that contrasts were as follows:

ROCK TYPE	NO. OF Samples	MEAN DENSITY g/cc
Limestone	19	2.76
Volcanics	11	2.90
Diorites Dykes	4	2.89
Skarn	2	4.10

The contrast between limestone and volcanics or diorite was considered to be great enough to permit definition by gravity survey methods and certainly any skarn deposits of size would show up as positive gravity anomalies.

In October of 1977 a contract for a gravity survey of the claim area was placed with C.A. Ager and Associates, geophysicists with offices at 15423 - 34th Avenue, Surrey, B.C. Field work was carried out during November and December and the report was received at the end of January. The Ager gravity map showed well defined regional trends and nine points of anomalous high readings were found. Survey line spacing was 400 meters and stations were 60 meters apart. Results were encouraging for such an open sample grid, particularly since three of the highs corresponded with known skarn areas at Little Billy Mine, Copper Queen Mine and an area of diorite north west of Texada Mine.

407. FOLLOW-UP CHECKING OF ANOMALIES

On the recommendation of Mr. Ager detailed field checks at the surface were made over each anomalous area of positive gravity. This work was carried out by the writer during the month of February. Four of the total of nine gravity anomalies were found to have rocks present which were of abnormal specific gravity and which alone could account for the anomaly. Of the five remaining anomalies two corresponded with points where extensive prospecting by diamond drilling had already been carried out by others and one was a small anomaly close to quarry workings. The remaining two areas have unexplained high gravity values.

408. PARTICULAR AREAS OF INTEREST FROM GRAVITY SURVEY

The five anomalous areas which were detected by the gravity survey which appear to have some chance of developing into interesting mineral prospects are listed below. They are shown in order of proposed testing, with the most favourable being considered first. Descriptions are as follows:

40801. LITTLE BILLY

The survey shows a low anomaly over the old mine workings and in addition a much larger anomaly was found about 400 meters south east of the old shaft, an area beyond the limits of exploration carried out from the mine workings. The examination of surface rocks showed presence of a large re-entrant in the regional diorite contact with at least two smaller dyke intrusions intersecting. An old surface cut beside the highway shows a little skarn and copper stain. The area is accessable by road and no residences are in the immediate vicinity. A water supply is available from a nearby pond.

40802. BASIC 11 M.C.

This anomalous area lies about one kilometer south of the Vananda - Gillies Bay highway and two kilometers north of Texada Mines near the centre of the limestone belt. The area corresponds with a moderate negative magnetic zone. Surface examination showed that much of the area of the gravity anomaly lies beneath a small muskeg lake at the foot of a steep limestone bluff. Detailed re-analysis by Mr. Ager failed to change the anamolous character of the gravity readings at this location.

No residences or farms occur in this area. Access is by an old logging road which skirts the east side of the pond. Some clearing of fallen timber is all that would be required to open the road to traffic for service for testing.

40803. IC NO. 3 M.C.

This small anomaly lies 800 meters south-east of the Little Billy anomaly (section 40801 above). The gravity anomaly corresponds with a small but positive distortion of the earth's magnetic field which would suggest the presence of a magnetite bearing diorite intrusion. The anomaly lies close to the rim of a limestone quarry. The surface exposures at this anomaly have not been examined.

40804. COPPER QUEEN MINE

A small gravity anomaly was found on the line which crosses about 50 meters south east of the Copper Queen Shaft. Old records of exploration at the Copper Queen are incomplete but indications are that a north westerly plunge of outcropping mineralization inclined exploration in that direction so that untested ground may lie south east of the shaft under the gravity anomaly.

This area lies 500 meters south of the old Little Billy mine workings and is connected to it by an exploration tunnel. The area is about 400 meters south west of the Little Billy gravity anomaly. Several residences lie in the vicinity on the high road to Gillies Bay which crosses the anomaly.

40805. TEXADA MINES NW DIORITE ZONE

This anomalous area on the most southerly line surveyed shows high residual gravity values which correspond with an area of outcrop of a diorite stock. It is less than 400 meters from the most northerly surface workings of Texada Mines. The area corresponds with a magnetic anomaly. An exploration program in that area involved the drilling of fourteen drill holes in 1968 by Texada Mine crews. Some skarn and mineralization was located but results were apparently insufficiently encouraging to continue the program.

This area is not complicated with residences or other operations. While not very far laterally from Texada Mines surface workings it lies at appreciably higher elevation. It can be most conveniently reached from the north by a logging road extending 2.5 kilometers from the Ideal Cement haulage road. Some clearing of fallen timber is required for access by vehicles.

409. PROPOSALS FOR WORK

It is recommended that a preliminary drill program be carried out to test the two most prominent gravity anomalies detected by the survey as follows:

1. Little Billy Anomaly - line 2S 2940W to 3120W.
   Six holes as shown on accompanying sketch totalling 900 meters (Map 506).
2. Basic 11 M.C. Anomaly - Line 12S 3120W to 3300W.
   Two holes as shown on accompanying sketch totalling 100 meters. (Mapy 507)

It is recommended that analysis of the gravity data be continued to see whether basin floor trends can be deduced which would provide other drilling targets.

410. ESTIMATION OF COSTS

The proposed drill program should be with a machine and equipment capable of drilling to 300 meters using AQ wireline equipment. This size of equipment drills a 48 millimeter hole and raises a 27 millimeter diameter core in a removable core barrel.

Cost of drilling including mobilization, demobilization and all drilling and crew costs is estimated to be $60 per meter. No contracts have been called. Costs for the program would be as follows:

Little Billy	- 900 meters at $60	$54,000
Basic II	- 100 meters at $60	6,000
Survey, core logging and plotting		2,000
	TOTAL COST	$62,000

Time required for the above program would be about one month, allowing 50 meters per day plus moving and setting up time.

Keith C. Fahrni, P.Eng.
Geological Consultant,
7011 Angus Drive,
Vancouver, B.C.