

**EL 32 / 2001**  
**SCOTIA**  
**NORTH EAST TASMANIA**

**ANNUAL REPORT**

**FOR THE YEAR ENDING**

**19<sup>TH</sup> APRIL 2007**

**VOLUME 1**

**VAN DIEMAN MINES PTY LIMITED**

**30<sup>TH</sup> February 2006**

**PREPARED BY:**

Neil R. Kinnane - Director  
Exploration and Development

## OVERVIEW

In late 2004 Van Dieman Mines (VDM) commenced a re-assessment of the Mineral Holdings database and as part of that work began to compile all available drilling data into a GIS database. This enabled VDM to update drilled resources contained within the Scotia and Lochaber leads and led to the Company's pegging and application for ML 15M / 2004. That tenement encompasses the southern section of the alluvial tin bearing leads that lie within Crown Land to the north and west of the Ringarooma River north of Gladstone township.

The company has recently acquired further drilling data resulting from work conducted by MRT during the period 1902 to 1917. In the previous year the drill logs annotated on those old maps (they comprise the bulk of those data) were converted to metric units. Since then acquisition of old titles maps has enabled VDM to locate that old drilling onto their new GIS map base. Company staff continue to try to locate features depicted on those old maps and in particular a regional map prepared by P.B. Nye, Government Geologist, 1932 (MRT FILE UR1932A\_17\_44). Once located those features will be accurately located using DGPS survey techniques and the Nye plan features added to current map bases. Old workings, drill holes, test pits, water races, dams and workings are being continuously added to the database.

The Company has completed three trial geophysical surveys. GPR (Ground Penetrating Radar) technique was unsuccessfully trialed over selected sections of the Scotia Lead that lie within ML 15M / 2004 and in areas peripheral within EL 32 / 2001. Results of those works are appended here. In addition shallow refraction and total field magnetometer surveys were also undertaken. Those results are also appended.

During the year VDM made application to take a bulk sample from the tailings heaps at the old Dorset Tin Shed site. That work was approved and in line with Departmental environmental requirements the company contracted a Flora and Fauna survey of the site. The sample was collected and moved to a stockpile at an old dredge pond near Taylor's Workings. That sample is currently being processed. The tailings site has been rehabilitated in line with advice from the consultant, Andrew Welling.

The Company is continuing to conduct field activities within the tenement. A critical review of the geophysical surveys will be undertaken during the first quarter of the next year. Rehabilitation at the tailings shed site will be monitored on an ongoing basis and GPS survey work continued.

**VOLUME 1  
TABLE OF CONTENTS**

1.0	INTRODUCTION	1
2.0	LOCATION AND ACCESS	2 - 5
3.0	EXPENDITURE STATEMENT	6
4.0	HISTORICAL BACKGROUND	7 - 11
5.0	GEOLOGY	12 - 25
5.1	REGIONAL SETTING	12 - 15
5.2	LOCAL GEOLOGY	16
5.3	RECENT EXPLORATION	17 - 25
6.0	GEOPHYSICAL SURVEYS	26 - 32
6.1	GROUND PENETRATING RADAR	26 - 27
6.2	REFRACTION SEISMIC	27 - 30
6.3	TOTAL FIELD MAGNETICS	31
6.4	DISCUSSION OF RESULTS	32
7.0	BULK SAMPLING	33 - 35
7.1	ENVIRONMENTAL ASSESSMENT	33
7.2	SAMPLE TECHNIQUES	33 - 35
8.0	PROPOSED WORK PROGRAMS	36
9.0	CONCLUSIONS	37
10.0	BIBLIOGRAPHY	38

**VOLUME 1  
LIST OF FIGURES**

		<b>PAGE</b>
FIGURE 1	LOCATION PLAN (AIR PHOTO BASE)	3
FIGURE 2	LOCATION PLAN (TOPOGRAPHIC BASE)	4
FIGURE 3	LOCATION PLAN (SATELLITE PHOTO BASE)	5
FIGURE 4	GEOLOGICAL PLAN OF EL 32 / 2001	14
FIGURE 5	DRILL HOLE LOCATION PLAN	15
FIGURE 6	DOONE'S WORKINGS DRILL HOLE LOCATIONS	18
FIGURE 7	DOONE'S WORKINGS - DRILL CROSS SECTIONS "A"	19
FIGURE 8	DOONE'S WORKINGS - DRILL CROSS SECTIONS "B"	20
FIGURE 9	DRILL CROSS SECTION, 1902 DRILL PROGRAM	21
FIGURE 10	LOCATION OF GPR TRAVERSES AT SCOTIA	28
FIGURE 11	LOCATION OF SEISMIC & MAGNETIC SURVEYS AT SCOTIA	30
FIGURE 12	PILOT PLANT TREATMENT FLOWSHEET	34

---

**VOLUME 1  
LIST OF TABLES**

TABLE 1	REGIONAL GEOLOGICAL SETTING, MAJOR GEOLOGICAL UNITS	13
---------	--	----

**VOLUME 1  
LIST OF PHOTOGRAPHS**

		<b>PAGE</b>
PHOTO 1	DORSET TIN SHED TAILS SITE PRIOR TO EXCAVATION	22
PHOTO 2	DORSET TIN SHED SITE FOLLOWING EXCAVATION	23
PHOTO 3	LOCATION OF STOCKPILE AREA	24
PHOTO 4	CURRENT TREATMENT PLANT	25
PHOTO 5	TIN / SAPPHIRE / SPINEL PLANT CONCENTRATES	35

---

**VOLUME 2 - APPENDICES  
TABLE OF CONTENTS**

		<b>PAGE NO</b>
11.0	APPENDICES	1 - 111
11.1	REPORT ON NATURAL VALUES OF SOIL STOCKPILE AT SCOTIA MINE LEASE.	<i>1 - 3</i>
11.2	GEOPHYSICAL SURVEY, GROUND PENETRATING RADAR ENDURANCE AND SCOTIA MINE SITES.	<i>4 - 38</i>
11.3	GPR PROFILES SCOTIA	<i>39 - 111</i>

---

VOLUME 3 - APPENDICES  
TABLE OF CONTENTS

	PAGE NO
11.0 APPENDICES	1 - 35
11.4 GEOPHYSICAL SURVEY, SEISMIC & TOTAL MAGNETIC FIELD SURVEYS, ENDURANCE AND SCOTIA MINE SITES.	1 - 33
11.5 CULTURAL HERITAGE FEATURES (PLAN)	34 - 35

---

## LIST OF ELECTRONIC FILES

FILE NAME	CONTENTS
<b>EL322001_200702_01_Report.doc</b>	<b>Main Report, Volume 1</b>
<i>EL322001_200702_01_Report.pdf</i>	<i>Main Report, Volume 1</i>
<b>EL322001_200702_02_Appendix.doc</b>	<b>Appendix, Volume 2</b>
<i>EL322001_200702_02_Appendix.pdf</i>	<i>Appendix, Volume 2</i>
<i>EL322001_200702_03_Appendix.pdf</i>	<i>Volume 2, GPR Report</i>
<i>EL322001_200702_04_Appendix.pdf</i>	<i>Volume 2, GPR Profile 1</i>
<i>EL322001_200702_05_Appendix.pdf</i>	<i>Volume 2, GPR Profile 2</i>
<i>EL322001_200702_06_Appendix.pdf</i>	<i>Volume 2, GPR Profile 3</i>
<i>EL322001_200702_07_Appendix.pdf</i>	<i>Volume 2, GPR Profile 4</i>
<i>EL322001_200702_08_Appendix.pdf</i>	<i>Volume 2, GPR Profile 5</i>
<i>EL322001_200702_09_Appendix.pdf</i>	<i>Volume 2, GPR Profile 6</i>
<i>EL322001_200702_10_Appendix.pdf</i>	<i>Volume 2, GPR Profile 7</i>
<i>EL322001_200702_11_Appendix.pdf</i>	<i>Volume 2, GPR Profile 8</i>
<b>EL322001_200702_12_Appendix.doc</b>	<b>Appendix, Volume3</b>
<i>EL322001_200702_12_Appendix.pdf</i>	<i>Appendix, Volume 3</i>
<i>EL322001_200702_13_Appendix.pdf</i>	<i>Volume 3, Seismic Report</i>
<i>EL322001_200702_14_Appendix.pdf</i>	<i>Volume 3, Seismic App1A</i>
<i>EL322001_200702_15_Appendix.pdf</i>	<i>Volume 3, Seismic App1B</i>
<i>EL322001_200702_16_Appendix.pdf</i>	<i>Volume 3, Seismic App1C</i>
<i>EL322001_200702_17_Appendix.pdf</i>	<i>Volume 3, Seismic Lines</i>
<i>EL322001_200702_18_Appendix.pdf</i>	<i>Volume 3, Line Location</i>
<i>EL322001_200702_19_Appendix.pdf</i>	<i>Volume 3, Refraction</i>
<i>EL322001_200702_20_Appendix.tiff</i>	<i>Volume 3, Tomography</i>
<i>EL322001_200702_21_Appendix.tiff</i>	<i>Volume 3, Time Interval</i>
<i>EL322001_200702_22_Map.jpeg</i>	<i>Volume 3, Historical Plan</i>

## 1.0 INTRODUCTION:

The tenement encompasses a large tract of the Great Northern Plain lying immediately adjacent and to the north of the Ringarooma River. Alluvial tin / sapphire targets within the tenement include a number of subsidiary leads that are postulated to flow into the main Scotia - Lochaber Lead. These include Newhaven, Mallinson's, Doone's and Richards & Murray's that lie to the west of the main lead. In the north western section of the tenement field work has been concentrated on defining the limits of old workings such as Taylor's, Beltz and McGregor's and old drill hole locations peripheral to those workings.

VDM is continuing to update its GIS database. Recent acquisition of old drill records and drill hole location plans, circa 1916, have been added and location of those onto the modern map base is complete. More recent exploration in the same areas during the period 1958 to 1980 has now also been added to the database. Those data indicate that a shallow alluvial tin resource exists around and to the north and north-west of McGregor's Workings and to the north east of Taylor's and the Beltz Workings. Those alluvials are apparently of younger Tertiary age as they appear to overly a suite of tin bearing Tertiary marine and terrestrial sediments located at the southern edge of the Great Northern Plains Tertiary marine embayment

The geophysical surveys met with limited success. A shallow and thin subsurface ferricrete horizon caused major interference to both GPR and seismic survey methods although the effect was more severely exhibited in seismic data. Large eucalypt trees severely disrupted the GPR method and made interpretation of basement and the overlying Tertiary sequence all but impossible. Total field magnetics met with some success and a second survey was completed over a selected section of the Scotia Deep lead.

A bulk sample collected from the old Dorset Tin Shed site has been stockpiled and is in the process of being treated. Results of that work will be reported in the next report.

Results of the ongoing GPS survey work, in particular of cultural heritage features is included here.

## 2.0 LOCATION AND ACCESS:

The tenement is centered approximately 4 km northwest of the Township of Gladstone and encompasses the south and south eastern section of the Great Northern Plains. The Ringarooma River bounds the area to the south. The centroid of the area is located at 583,000mE; 5,469,000mN AMG. See Figures 1, 2 and 3.

Access is via a track from the Cape Portland Road north to the site of the old Dorset Tin Shed site on the Great Northern Plains. From that point the track splits with diversions along the Ringarooma River west to Aberfoyle Hill and east past the old Government dam to the Rushy Lagoon boundary fence.

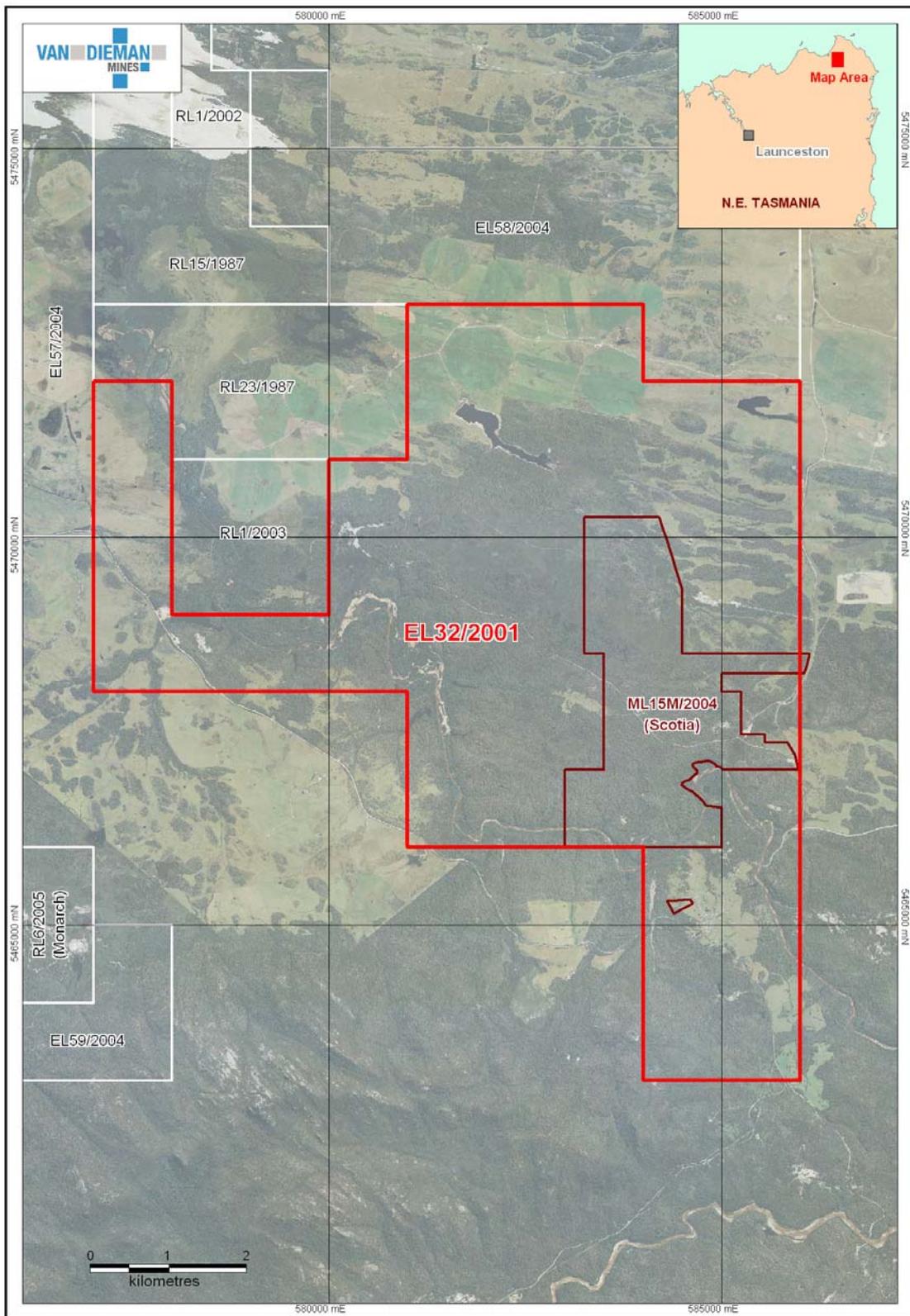


Figure 1 - Tenement Location Map (on aerial photography)

VDIMap0610-021

FIGURE 1 - LOCATION PLAN  
AIRPHOTO BASE

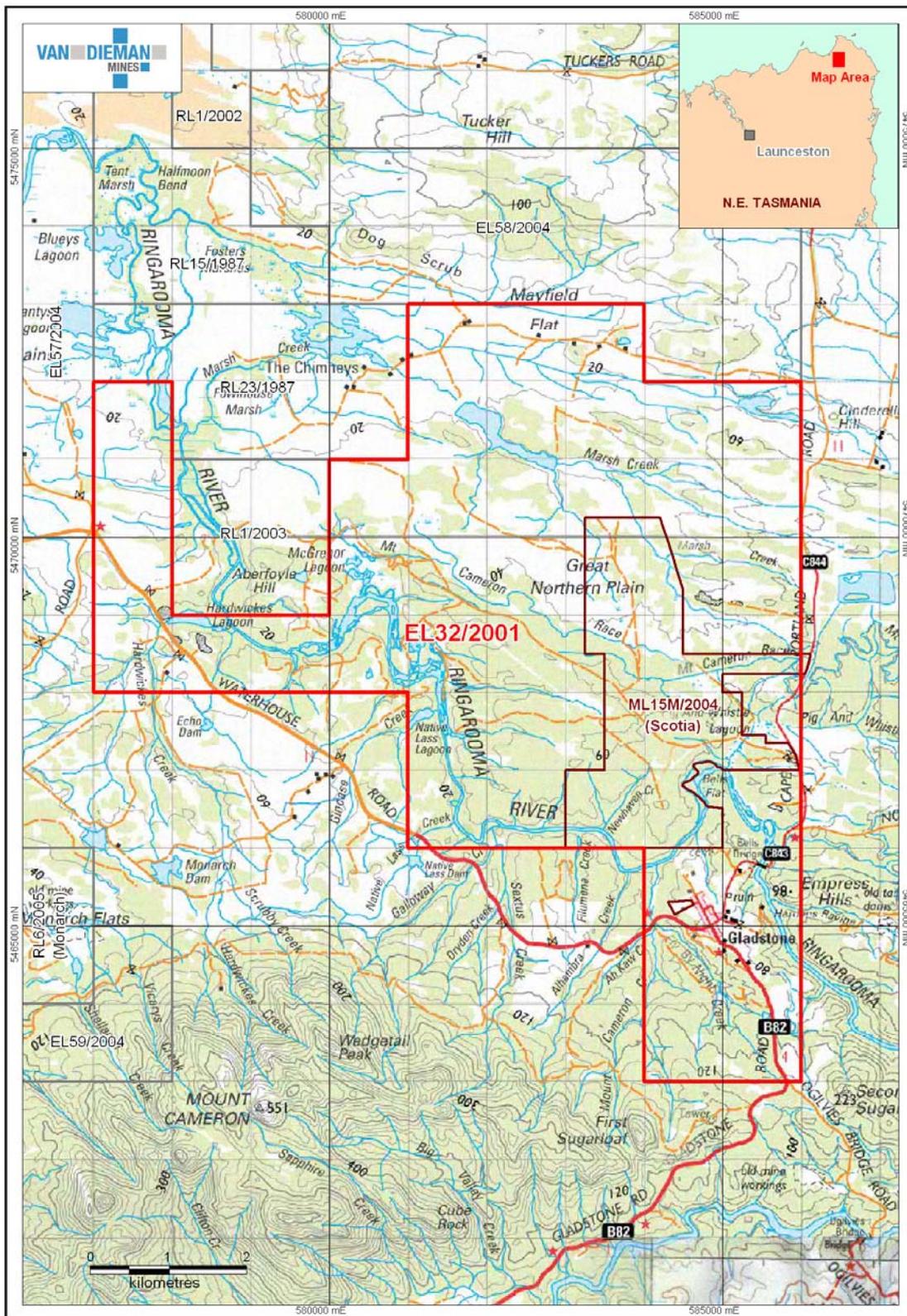


Figure 2 - Tenement Location Map (on 100K topography)

VDMmap0610-022

**FIGURE 2 - LOCATION PLAN  
TOPOGRAPHIC BASE**

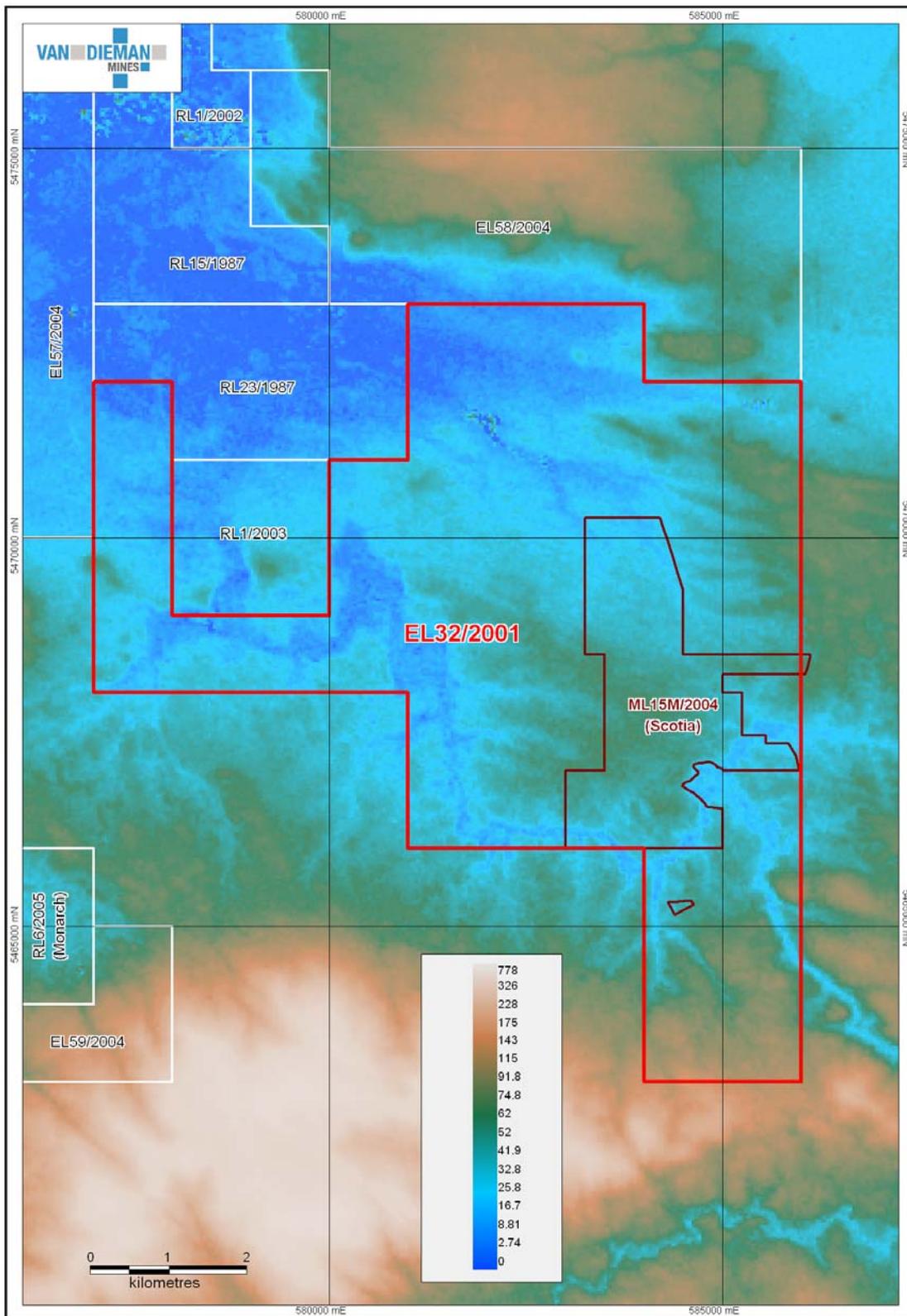


Figure 3 - Tenement Location Map (on SRTM elevation image)

VDMmap0611-003

FIGURE 3 - LOCATION PLAN  
SATELLITE IMAGE BASE

### 3.0 EXPENDITURE STATEMENT:

Expenditure for the period of nine months ending 31<sup>st</sup> March 2007 is quoted below as no final figures for the year to 31<sup>st</sup> March 2007 were available at the time of preparation of this report.

Expenditure	Period Ending 31 <sup>st</sup> December 2006	\$79,751.00
-------------	--	-------------

Accrued Expenditure	Period Ending 31 <sup>st</sup> December 2006	\$428,283.00
---------------------	--	--------------

(Indicates an expenditure in excess of the statutory requirement)

#### 4.0 HISTORICAL BACKGROUND:

Alluvial tin was first worked in the general area in about the early 1880's. During the period from 1880 to about 1920 alluvial workings were developed along the northern bank of the Ringarooma River from Scotia, Lochaber, Mallinson's, Doone's, Richards and Murray's in the south. In the central section and again along the northern bank of the River workings were developed at Black Duck, Wainwright's and Richardson's. In the north and north-west very extensive workings were developed at Aberfoyle, McGregor's, Beltz, Taylor's, Canary and the Roy areas.

More specifically historical details of old works include:

#### THE NORTHERN WORKINGS

##### A. ABERFOYLE WORKINGS:

Alluvial tin was first worked in the Aberfoyle area in the early 1880's. For a number of those early years the main workings were controlled by the Aberfoyle Company and peripheral workings such as the Boomerang and Sea-Shell were operated by You Hen and other Chinese miners. The company has recently located several Chinese dwelling and camp areas along the south western edge of the Aberfoyle workings.

In 1906 the New Aberfoyle Company commenced operations and was succeeded in 1909 by the Aberroe Tin Mining Co. N. L. The latter group did not register its operations until 1912. Mining continued until around 1916 at which time many of the working faces were connected resulting in three main worked cuts; the Eastern, the Main and the Western or Curnow's workings.

There are no production records for the early production years up to 1906. From 1906 to 1916 the New Aberfoyle and Aberroe companies produced some 129.3 tons of concentrate with peak production of 22 tons occurring in 1910.

Development of these deposits was limited by water supply and operating hydraulic head. Water races were developed from the Boobyalla River and across the Ringarooma River by an inverted siphon system and from the Mt Cameron Water Race.

It is doubtful if any further development occurred at Aberfoyle after 1916 probably due to a large fall in tin prices after 1918.

B. MCGREGOR'S WORKINGS:

Working probably commenced at McGregor's around the same time as at Aberfoyle. Few records have been obtained however the earliest Departmental work appears to have occurred in 1902 with the drilling of four holes, Government Line 6, in the floor of the McGregor open cut. In addition to this program, in 1917 the Department (Roach's Drilling) put down a further 127 drill holes to the south and the west of the workings.

Nye (1932) reported that Mallinson worked ground close to those holes and is reported to have recovered some 37 tons of tin from the ground he worked. Nye reports that this equates to a return of 1.5 lb / cubic yard.

The McGregor workings appear to have been developed by means of a series of tails races along the eastern edge of the deposit. Mallinson and several others who also worked the area appear to have used a power plant (probably steam driven) to operate nozzles and an elevator.

C. BELTZ WORKINGS:

This large worked area immediately north east of McGregor's was first developed by H. Beltz in about 1911 as ML's 7037/M, 7038/M and 7092/M. Beltz operated for a number of years and the workings were taken over by Ogilvie and Packett who continued until the water supply was cutoff in 1922.

In 1917 the Department (Roach) put down 39 drill holes in the vicinity of these workings and at the time of the Nye inspection in 1932 some of those holes had been worked away. The mine appears to have been developed using water from the No. 1 Government Dam using a long pipe column. Working ceased when the water was cut-off in 1922.

D. WORKINGS BETWEEN BELZ & CANARY:

Nye listed three small workings just to the south east of Beltz workings. The main working was developed by Taylor in about 1913 and the other two appeared to be small workings developed on either side of a short creek by Chinese diggers. The latter workings probably pre-dated Taylor. The current workings described as "Taylor's" are now far larger than those mapped by Nye and appear to have encompassed and expanded the old Chinese workings. The ground was worked using water from the No. 1 Government Dam.

E. CANARY WORKINGS:

These consist of three mine faces of which the largest is the Roy face. They appear to have been developed early in the local mine development process as Nye (1932) stated that the workings were abandoned and Twelvetrees (1901) stated that the workings were "unremunerative".

## THE CENTRAL WORKINGS

A. RICHARDSONS WORKINGS:

These were situated within lease 9997/M and were probably developed around 1905 to 1906. The mine was worked using water from the Black Duck Dam which derived its water from the Mt Cameron Water Race.

Four small workings are located just north of Richardson's along the edge of the high bank of the Great Northern Plain. In 1917 the Department (Roach) put down a line of five drill holes east of the southernmost of those workings. Results were disappointing and the workings were not extended to the east.

B. WAINWRIGHT'S WORKINGS:

These workings were apparently developed within lease 9998/M around 1906 and take the form of a long narrow open cut apparently following a section of tin bearing valley infill.

### C. BLACK DUCK WORKINGS:

These workings, developed to about 6 metres in depth are located on an alluvial terrace immediately east of the Ringarooma River. The workings were abandoned by 1899 and workings were not resumed after that date. The ground was bored by the Department (Roach) in 1917 however the plan and results appear to have been lost.

## THE SOUTHERN WORKINGS

### A. DOONE WORKINGS:

Included in this section are the Doone, Richards & Murray's and Cross workings. The Doone mine appears to have been developed before 1885 and was actively working during the period 1893 to 1898, there are no records of production. The Richard's and Murray's mine was developed later, around 1917 and work continued on that deposit for several years until the closure of the water race in 1922. There is no reference to the Cross workings which appear to be an easterly extension of the main Doone Lead.

Five small workings exist south of the Doone Lead and include Watt's Workings situated immediately adjacent to the Ringarooma River. These workings were apparently developed in a recent terrace of the river and commenced around 1916.

## REGIONAL

The main workings appear to have been abandoned around 1922 when the water race was closed. After that period the area underwent a number of phases of exploration including:

After 1922 most work in the region was drill based, specifically:

- 1935 - Austral Malay drilled on the Great Northern Plains just north of Aberfoyle;
- 1955 - 56 - Dorset Tin Dredging investigated the area and drilled north and east of Aberfoyle looking for a dredge path onto the Great Northern Plains;
- 1958 - Rio Tinto Exploration drilled in the region but generally west and east of Aberfoyle
- 1966 - Utah development conducted regional auger drilling in the general area and it is believed conducted some backhoe pitting near Aberfoyle;

- 1967 - The Mines Department drilled a line of holes just north of Aberfoyle from the Delta Workings eastward to the Scoloch Lead;
- 1971 - Portland Holdings carried out pitting and auger drilling in the immediate vicinity of the old alluvial workings:

Sea-Shell Workings	7 Channeled pits; 1 Auger holes; and 2 Percussion drill holes.
Curnow's Workings	2 Channeled pits; and 1 Percussion drill hole.
Aberfoyle Hill	3 Pit samples; and 3 Percussion drill holes.

Portland Holdings reported some excellent grades however their testing was not sufficient to define further resources or the directions in which the alluvial leads were trending.

- 1978 - Preussag Australia conducted work in the region including several lines of drill holes one of which was located just north of the Aberfoyle workings.

Mineral Holdings conducted bulk testing at Aberfoyle and at Taylor's in 2001.

## 5.0 GEOLOGY

Since acquiring tenure to this property VDM has continued to reassess the regional geological setting particularly as it pertains to the alluvial deposition during the Tertiary period. Construction of a Tertiary basement map has confirmed the presence of a major marine embayment to the north of the tenement. The main Scotia - Lochaber Leads flow into this embayment in the vicinity of Mayfield Flats.

### 5.1 REGIONAL SETTING

It is not proposed to provide a detailed description of the older geological unit, a brief outline of the nature of each major unit is provided, in tabulated form, Table 1 and a geological map as Figure 4.

The tabulation sets out the significance of each unit. It is the Tertiary units, in particular the basal sections, that are of economic significance as they contain the heavy mineral concentrations; cassiterite, tantalite, gold and sapphire being the most economically important.

The Tertiary marine embayment is a significant local feature and appears to have hosted a number of regressive and transgressive phases during the Tertiary period. The presence of the embayment is supported by drill data, those data being encompassed in Annual reports for RL's 15 and 23 / 1987, by previous gravity geophysical surveys (Shell Exploration Bouguer Gravity, 1981) and by aeromagnetic data.

Both terrestrial and marine sediments are represented in the Tertiary profile at Aberfoyle and the area including McGregors, Beltz and Taylor's workings may also host sediments with a marine association. The Scotia and Lochaber Lead channels appear, in their upper sections (the southern end), to contain only terrestrial sediments, gravels, boulder deposits and sands and clays. In the northern section above Stinking Creek the channel broadens as it approaches the embayment and at this location there may be a marine component present in the sediment profile

**TABLE 1**  
**REGIONAL SETTING - MAJOR GEOLOGICAL UNITS**

AGE	UNIT	DESCRIPTION	SIGNIFICANCE
DEVONIAN - CARBONIFEROUS	Blue Tier Batholith	Porphyritic fine to coarse grained granite / adamellite and biotite-hornblende granodiorite	Forms the tin rich Mt. Cameron Massif and basement around the southern edge of the Tertiary marine embayment. Locally may be a source of tin.
JURASSIC	Dolerite	Dolerite	Forms a resistant basement outcrop and is the bounding feature of the eastern edge of the Tertiary marine embayment. Sporadic outcrops may occur resting on granite basement along the southern edge of the embayment
ORDOVICIAN TO DEVONIAN	Mathinna Beds	Quartzwacke turbidite sequence locally hornfelsed adjacent to granite bodies	Forms basement in sections near Aberfoyle and Monarch and its low weathering resistance may lead to the development of tin rich Tertiary channels cut into the unit
TERTIARY	Unnamed	Sands, clays and gravels, locally bouldery. Lignite zones at some localities. Some evidence of ferricrete and silcrete development	Basal layers are generally tin (cassiterite) enriched, locally of economic significance. Also known to contain gold, sapphire, rutile, zircon and ilmenite
QUATERNARY	Unnamed	Highly variable: sands, clays, peats. Aeolian dune deposits. Swamps and marshy deposits	Locally represent overburden zones over Tertiary tin bearing alluvial deposits. Some recent gravels may be tin bearing

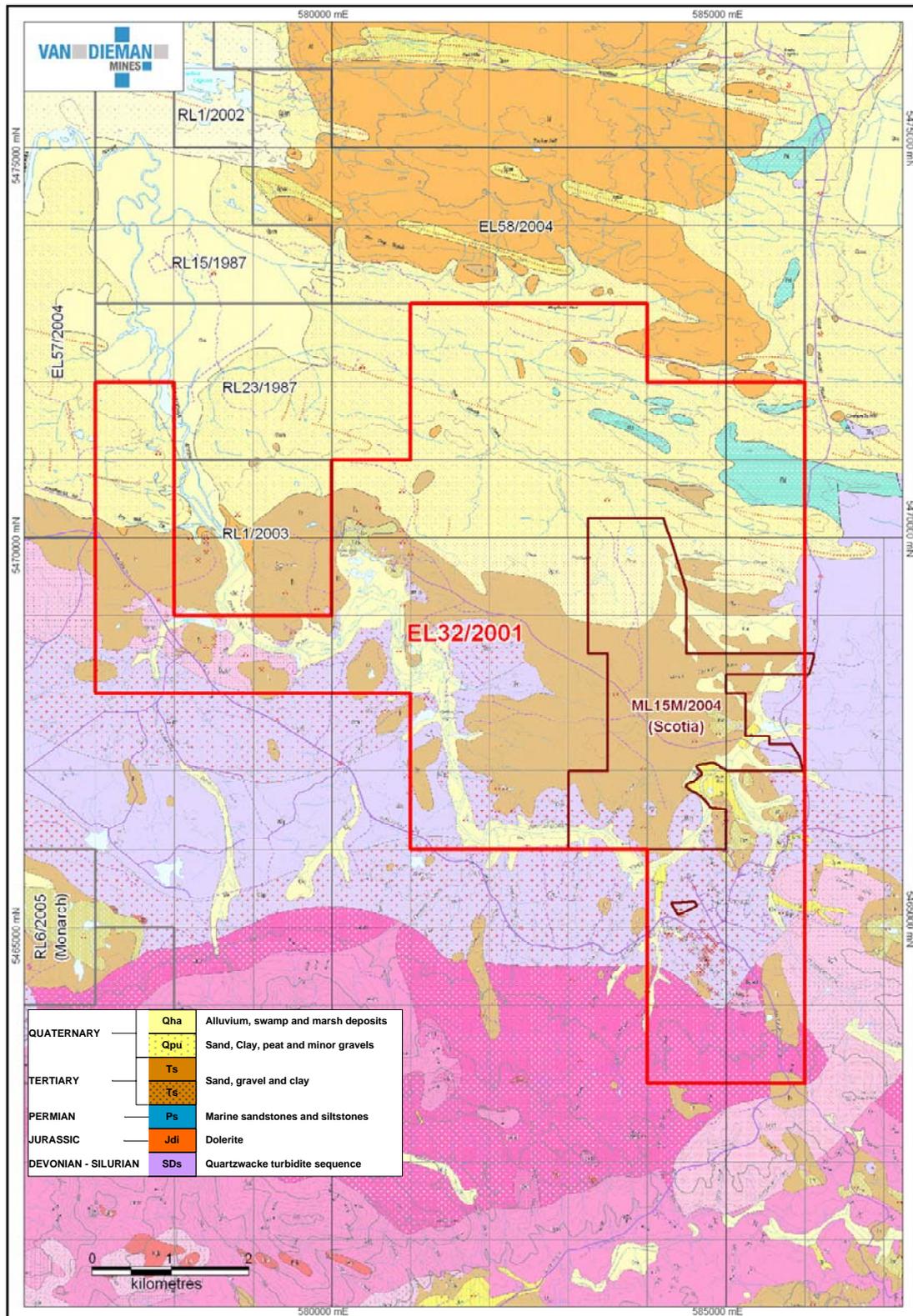


Figure 4 - Tenement Location Map (on 25K regional geology)

VDMmap0611-004

FIGURE 4 - GEOLOGICAL PLAN OF EL 32 / 2001

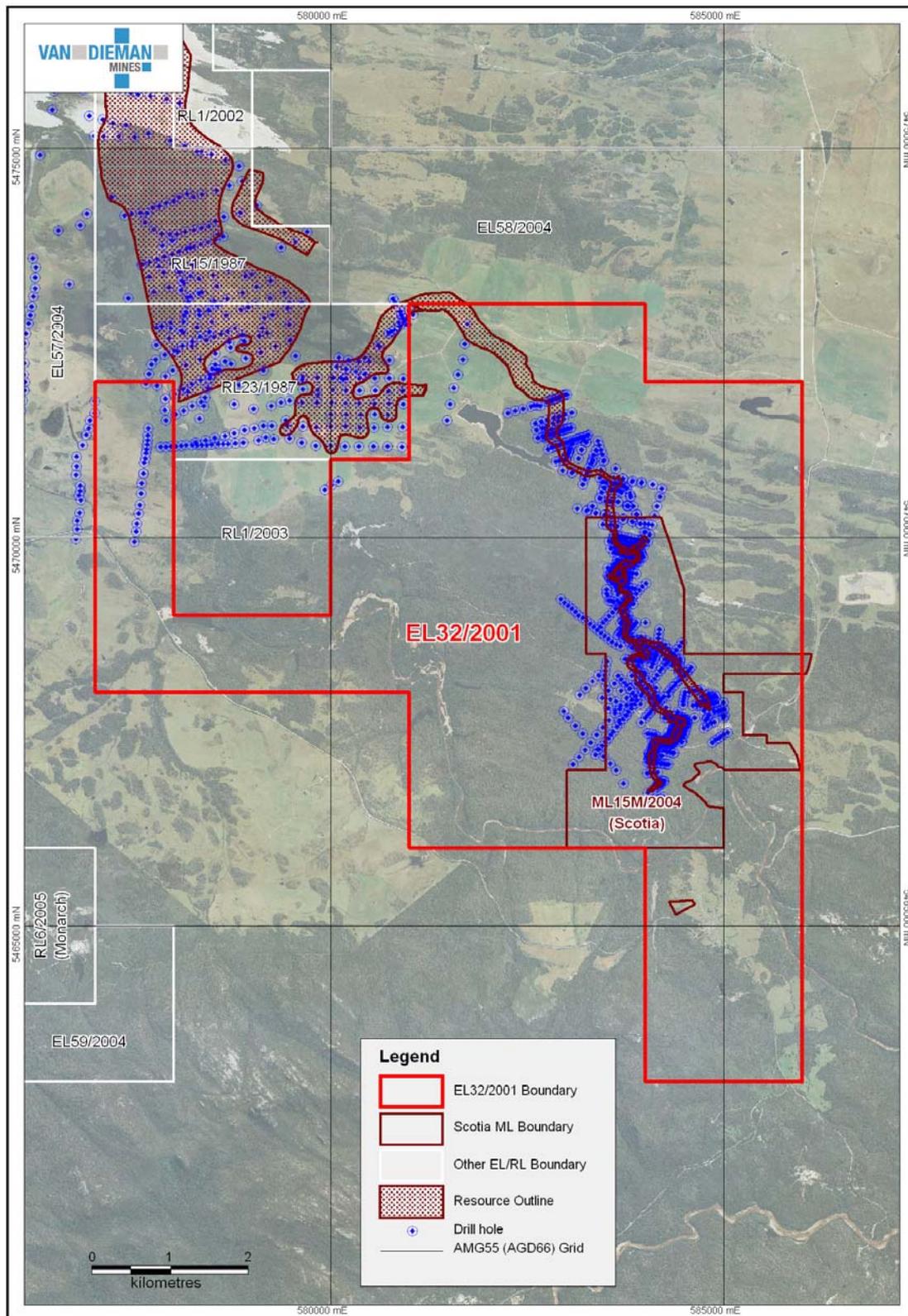


Figure 5 - Ore Resource and Drill Hole Location Map

VDMmap0611-005

**FIGURE 5 - DRILL HOLE LOCATION PLAN  
SCOTIA AND LOCHABER LEADS**

## 5.2 LOCAL GEOLOGY:

P. B. Nye in his 1932 report on the restoration of the Mt Cameron Water Race probably provides the most comprehensive and detailed description of the local geology of the area currently encompassed by EL 32 / 2001. It is not proposed to detail the settings for old workings now encompassed by ML 15M / 2004. This has detail has been provided in previous reports.

The Tertiary sediment sequence is, on a regional basis, relatively consistent in its nature although there is a marked increase in white to yellowish sandy horizons in the northern section of the tenement. These deposits are interpreted as marine in nature. Generally the sequence consists of:

0 to 0.5 m	Sandy soils usually humic and vegetation rich.
0.5 to 1.0 m	Cemented gritty sands and clayey sands
5.0 to 15.0 m	Granitic based sandy clays and clayey sands with gritty and pebbly horizons
1.0 to 5.0 m	Gravelly sands, gravels, clay horizons often containing abundant coalified wood, vegetation fragments and lignite.
1.0 to 5.0 m	Coarse gravels and bouldery sediments interspersed with sandy grits and sands, this layer is usually tin rich.
Basement	Variable, either Mathinna Bed metasediments, decomposed granite or dolerite.

Currently it is very difficult to accurately determine the sequences in any of the worked areas and much of the current knowledge base is derived from old reports or old drill logs. Slumping of pit walls, heavy vegetation re-growth and general pit degradation help to mask most of the exposures. Similarly exposures in the floors of most pits are poor and only rarely are floors and / or basement exposed.

### 5.3 RECENT EXPLORATION:

Over the past year VDM has continued to conduct DGPS survey pick-up of cultural heritage features including old drill holes, old workings and associated test pits, tracks, water races and dams. These features have been added to the company GIS database.

#### A. DOONE'S WORKINGS:

These workings are located west of the old Scotia workings (now ML 15M / 2004) on what Nye postulated as being a buried channel running parallel to, and north of, the current Ringarooma River. See Figure 6, 7 and 8. Outlines of old workings depicted on Figure 6 are approximate and are currently being accurately surveyed by the company. Drilling indicates the presence of two channels. One is a shallow channel, depicted on Line 3, Hole 12 and Line 4, Holes 21 and 22. This area appears to have been mined post drilling and now lies along the northern edge of Richard's and Murray's workings.

North of this location the basement drops away very rapidly and while this is interpreted to be a deeper channel, the channel is only really visible in results from Line 3 at location Hole 15. This deeper ground failed to yield any significant tin values. It is possible that the base of this postulated channel lies still further north of the drilled zone and may trend more north east toward Line 5, 1902 drilling. See Figure 9.

Only five holes recorded any tin values. All holes were sampled as "Whole of Hole" thus it is difficult to assess if any of the deeper ground carried tin in the gravel and wash zones immediately overlying basement. Grades of +100 gm / m<sup>3</sup> for "Whole of Hole" elsewhere in the Scotia region are indicative of basal grades of around 1,000 gm / m<sup>3</sup>.

The line of drill holes put down by the Mines Department in 1902, Line 5, are located at approximately right angles to the Doone's channel postulated by Nye. There are indications within that series of holes that the Doone's system turns and runs north eastwards to join the main Scotia system just south of the Scotia - Lochaber Lead junction. Six drill holes are proposed to test the northern and north eastern extension of the postulated deeper channel.

The VDM crew are currently investigating the old pits; Doone's, Richards & Murray's and the Cross pit to determine if a bulk sample of the face is possible.

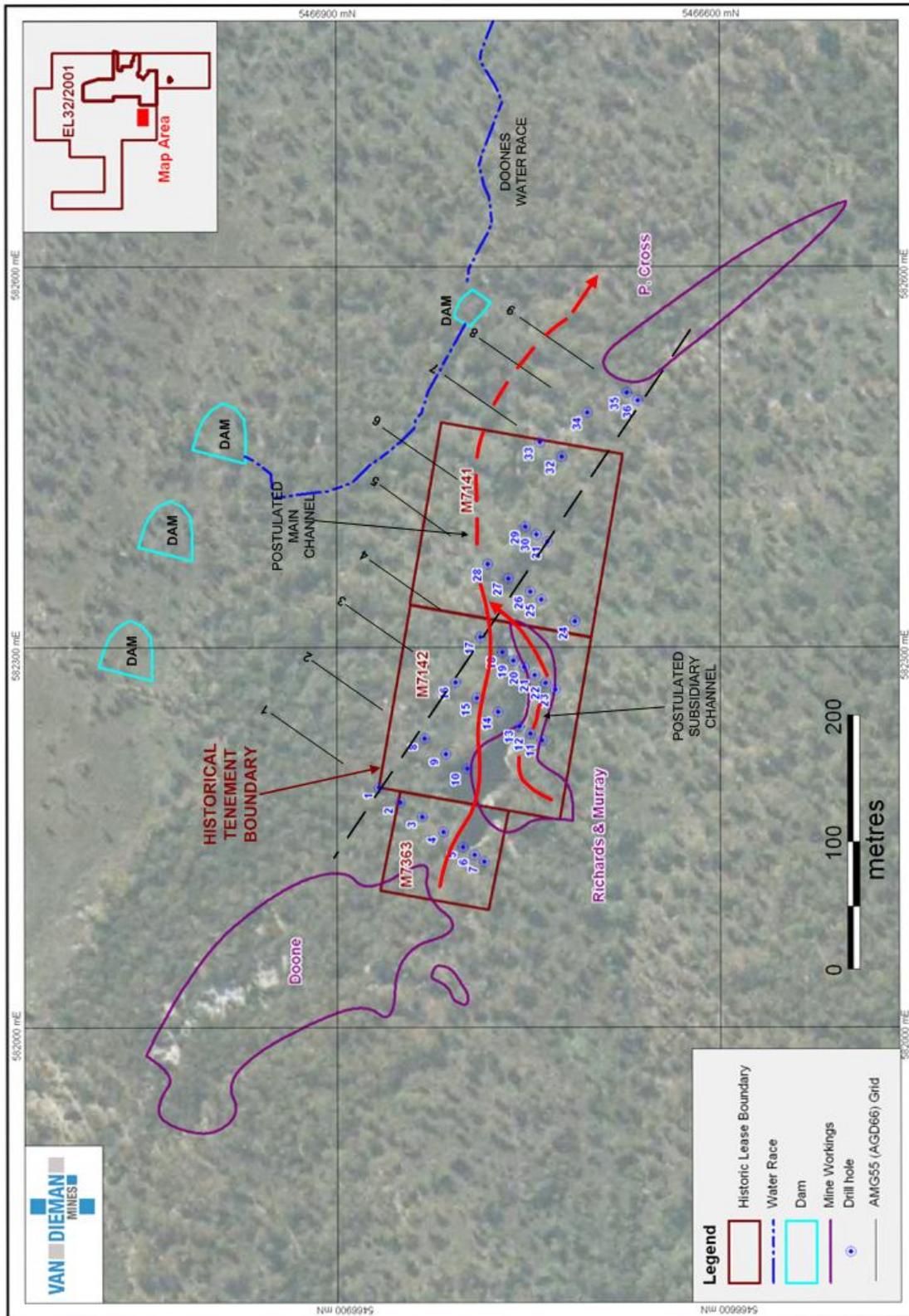


Figure 6. Doone Area - Historic Tenements and Drilling

FIGURE 6 - DOONE'S WORKINGS - DRILL HOLE LOCATIONS

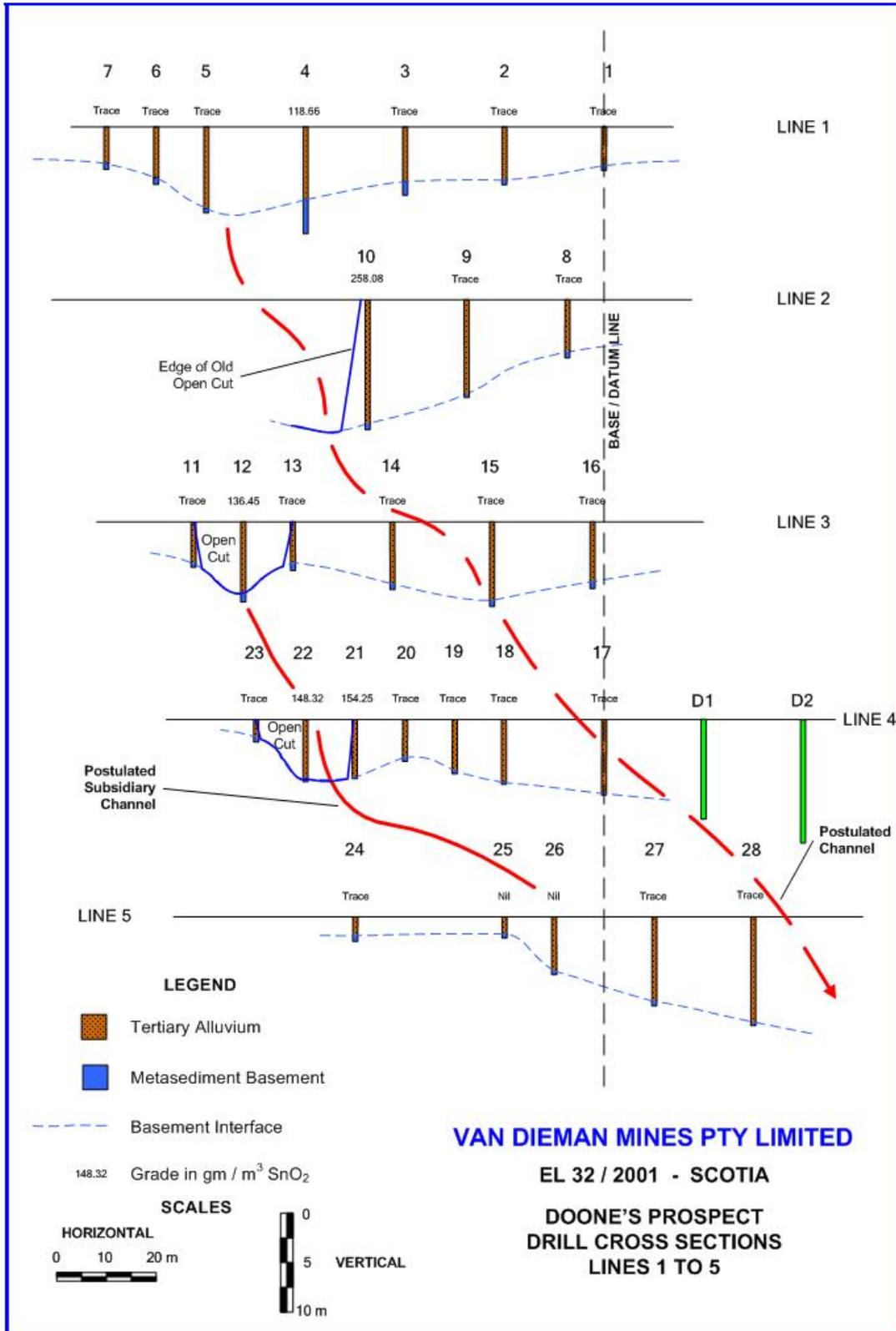


Figure 7 - Doone's Workings - Drill Cross Sections "A"

FIGURE 7 - DOONE'S WORKINGS - DRILL CROSS SECTIONS "A"

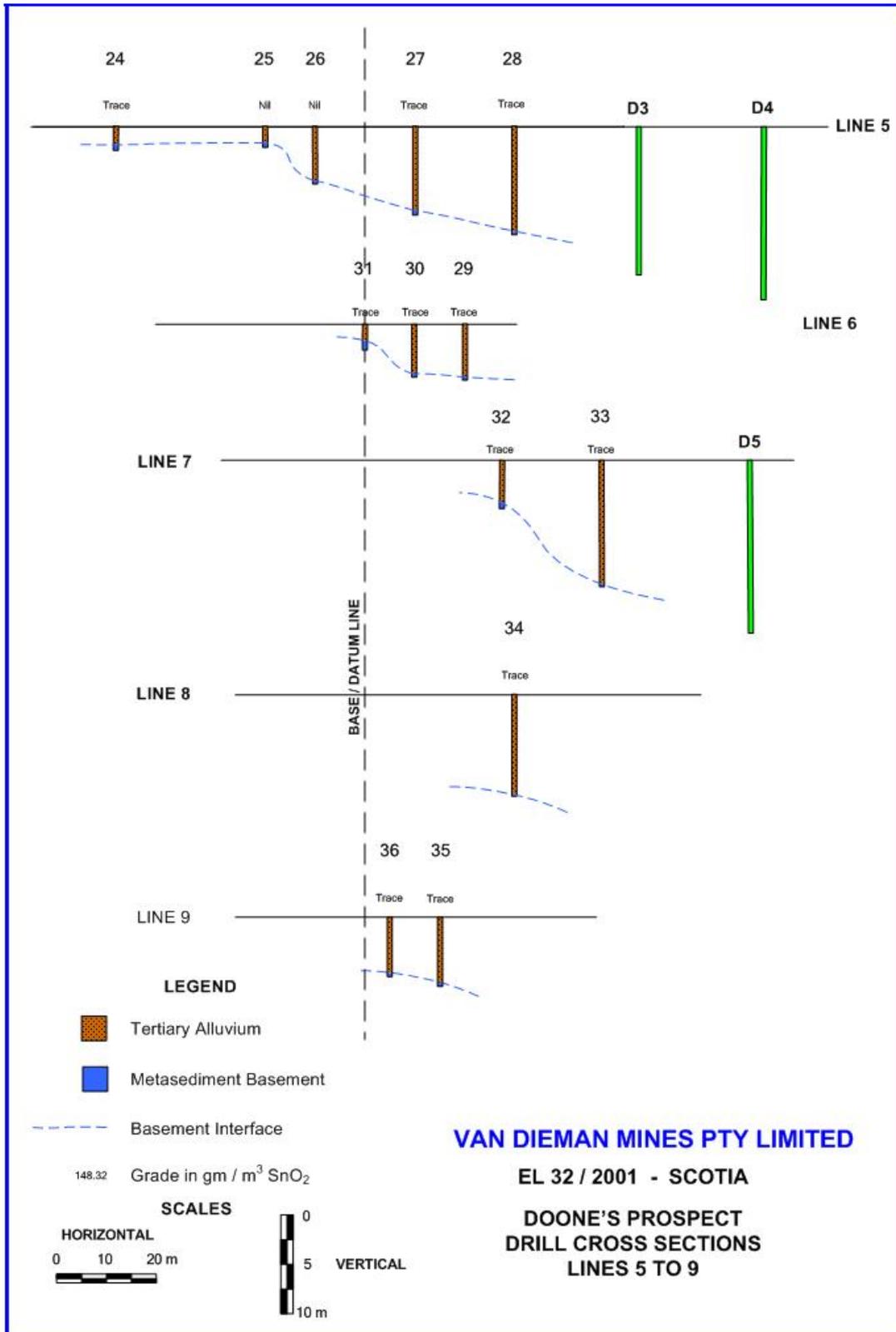


Figure 8 - Doone's Workings - Drill Cross Sections "B"

FIGURE 8 - DOONE'S WORKINGS - DRILL CROSS SECTIONS "B"

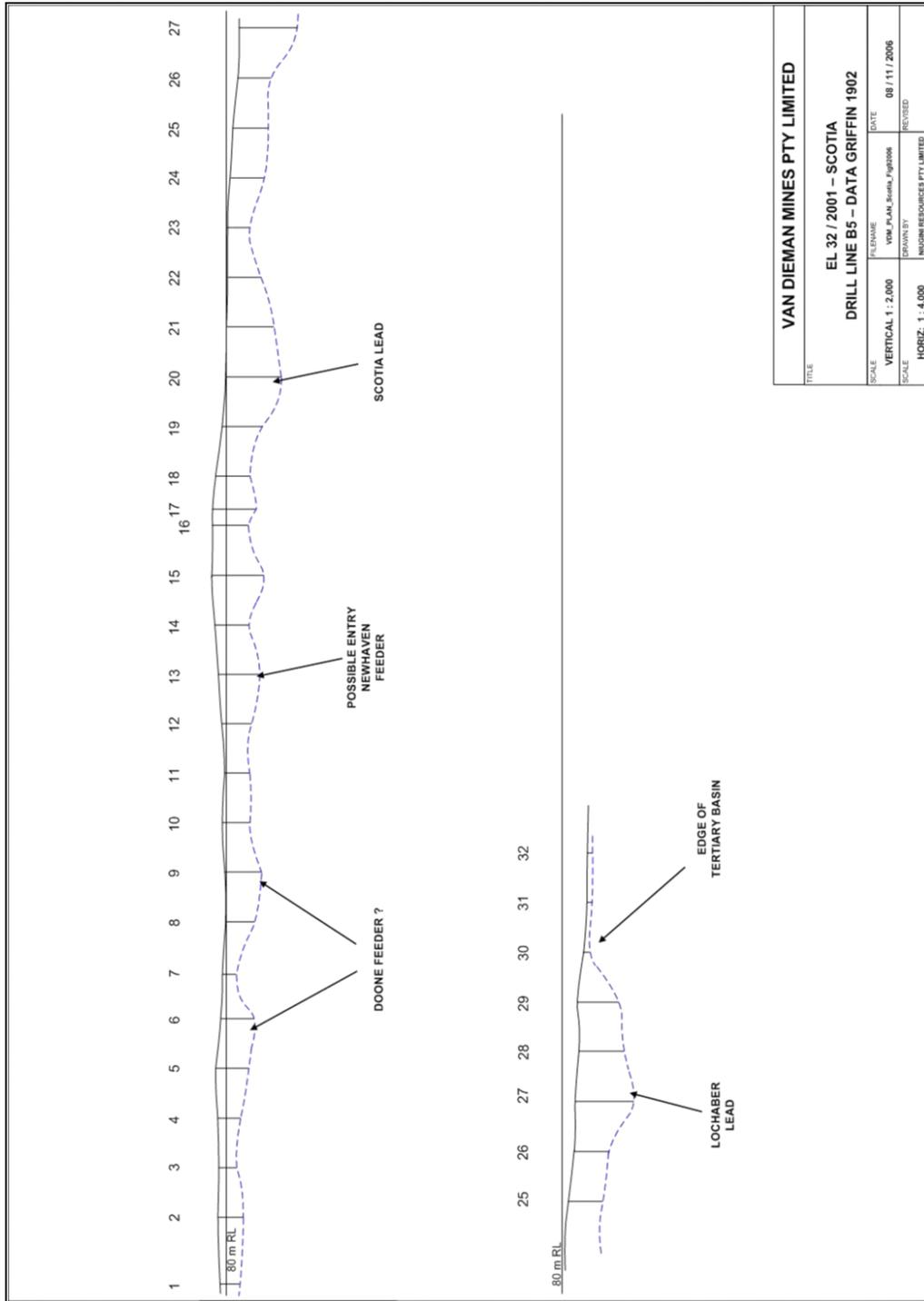


FIGURE 9 - DRILL CROSS SECTION, 1902 DRILL PROGRAM

**B. DORSET TIN SHED BULK SAMPLE:**

A bulk sample of the tailings located at the old Dorset Tin Shed site has been collected and stockpiled. Prior to excavation the site (Photo 1) was surveyed by Andrew Welling, Natural Resource Consultant who concluded that:



**PHOTO 1 - DORSET TIN SHED TAILS SITE PRIOR TO EXCAVATION**

A copy of the Welling report appears as Appendix 10.1.



**PHOTO 2 - DORSET TIN SHED SITE FOLLOWING EXCAVATION**

The sample was trucked locally to an area of old dredge tailings adjacent to an old dredge pond not far from the entrance to Taylor's Workings. Photo 3. At the time of preparation of this report processing off that stockpile was well advanced, results will be reported in the next annual report.



PHOTO 3 - LOCATION OF STOCKPILE AREA



PHOTO 4 - CURRENT TREATMENT PLANT

## 6.0 GEOPHYSICAL SURVEYS:

During late 2006 Alpha Geoscience Pty Limited of Sydney conducted three geophysical surveys on site at Scotia. The first survey comprised two techniques; GPR (Ground Penetrating Radar) and shallow refraction seismic. The second survey comprised a repeat of seismic plus a Total Magnetic Field survey.

### 6.1 GROUND PENETRATING RADAR SURVEY:

A total of six GPR survey lines were run within the EL and the adjoining Scotia ML where a large number of drill holes provided basement and lithologic controls.

The following outlines the field procedures deployed during the survey.

- a. The individual instrument components were assembled and tested;
- b. The odometer was loaded with a full roll of cotton and calibrated;
- c. The cotton was secured around local vegetation at the line start and every 50 metres to eliminate dragging and stretching;
- d. A GPS waypoint was recorded at the centre of the antenna start and end point and at any major deviations from a straight line;
- e. The data was filtered and evaluated on-the-fly for quality and consistency;
- f. The raw data was saved to the GPR acquisitioning Monitor for detailed processing and documentation; and
- g. Data was processed using MALA Ground Vision GPR Processing Software.

The following steps were taken in the processing of the data:

- a. Data was downloaded from the data logger and merged with the GPS positions;
- b. Data was checked for integrity;
- c. Data was checked for data spikes and drop-outs;
- d. The following filters were applied
  - DC Filter
  - Time-Varying Gain
  - Background removal / Average Value Subtraction
  - Contrast Filter; and
- e. The resulting image was printed in hard copy and electronic copy.

The GPR signal is subject to significant attenuation and does not penetrate deeply enough to reach the expected basement level. Thus, a comparison with the available borehole information in regards to basement level is not possible. The depth penetration for both antenna frequencies is clearly limited by highly conductive sediments and/or ground water. Considerable clay horizons are registered in several of the Endurance boreholes.

Pyrite is mentioned in several borehole logs. Significant fluctuations in the groundwater level are expected to have occurred due to past mining operations. This may have oxidised that Pyrite and caused parts of the groundwater to become relatively acidic and conductive. Groundwater testing at Scotia has, however, failed to report any such occurrences of acid groundwater.

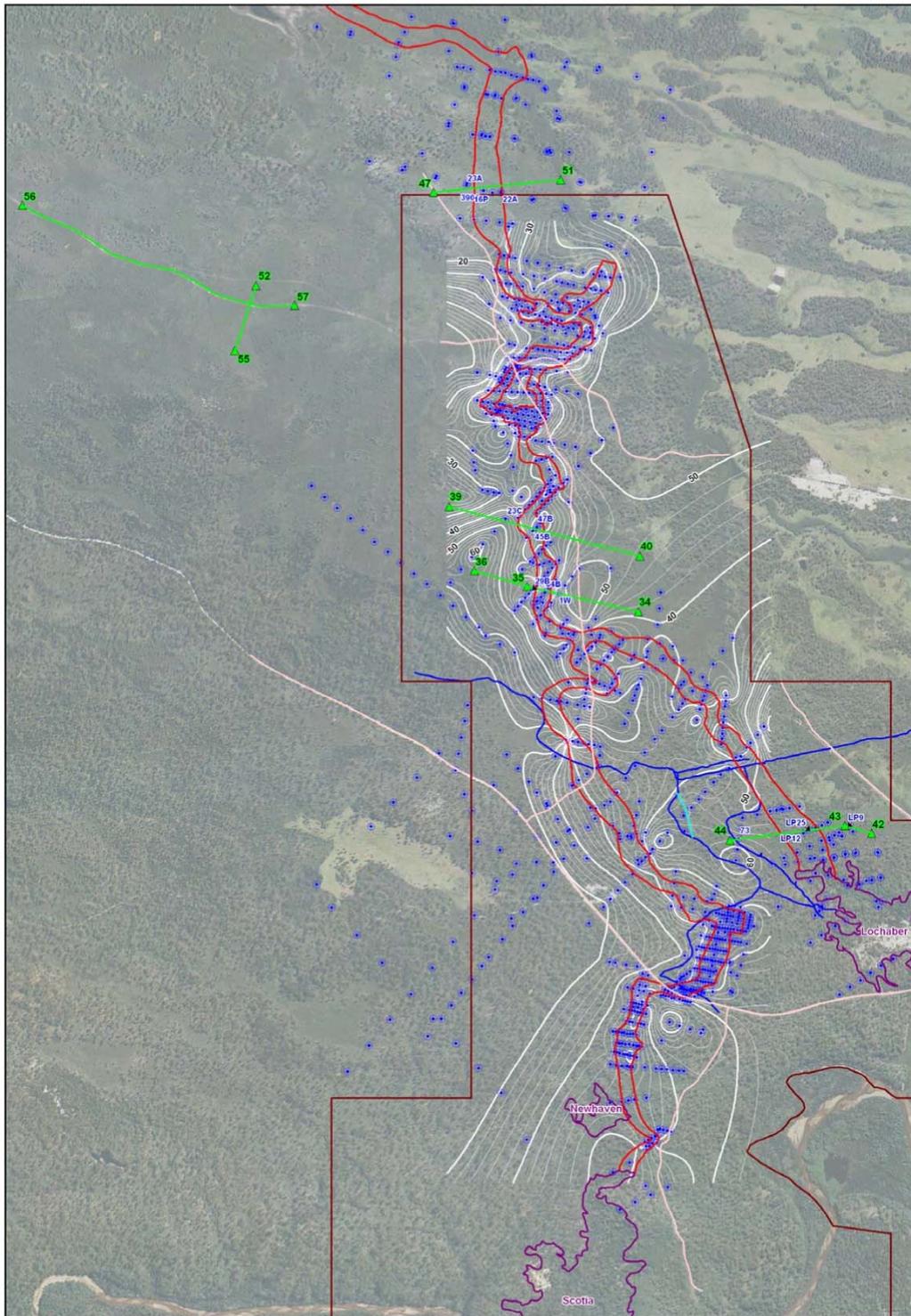
In addition the profiles recorded in more heavily forested areas at Scotia indicate a scattering effect that compounded by the attenuation detailed above makes meaningful interpretation of the profiles impossible. The resolution of the 100MHz antenna is observed to be better than the 25MHz, which is expected. Furthermore, the 100MHz data is less affected by tree scattering due to the lower power of the antenna.

Alpha conclude that due to the relatively high conductivity of the sediments/ground water and the presence of large trees that cause scatter of data that the Ground Penetrating Radar Technology would not be effective in mapping the deep lead deposits at the Scotia.

## 6.2 REFRACTION SEISMIC SURVEY:

Two lines were selected at Scotia however due to time restraints only one line was surveyed.

The site selected was set out over a previously drilled section line the area selected was dry, with a hard packed clay pan. The site is heavily vegetated with a mix of large solid trees and relatively dense undergrowth. Some areas had very dense tea tree vegetation, which was almost impossible to penetrate. Recent bushfires had cleared some areas, which improved access.



Scotia - Depth to Basement Contour Map with GPR test survey lines

VDMap0608-020

**FIGURE 10 - LOCATION OF GPR TRAVERSES AT SCOTIA  
(Basement Contours in White)**

The following steps were taken in the processing of the data:

- a. Data was downloaded from the seismograph;
- b. Data was checked for integrity;
- c. First arrivals were picked;
- d. Refraction modeling was performed;
- e. Tomographic modeling was performed;
- f. The resulting image was printed in hard copy and electronic copy; and
- g. Reflection processing was performed.

The data from all energy sources is of reasonable quality, with the shotgun appearing to give less high frequency noise. This is of interest, as the explosive source would normally be expected to return the best results.

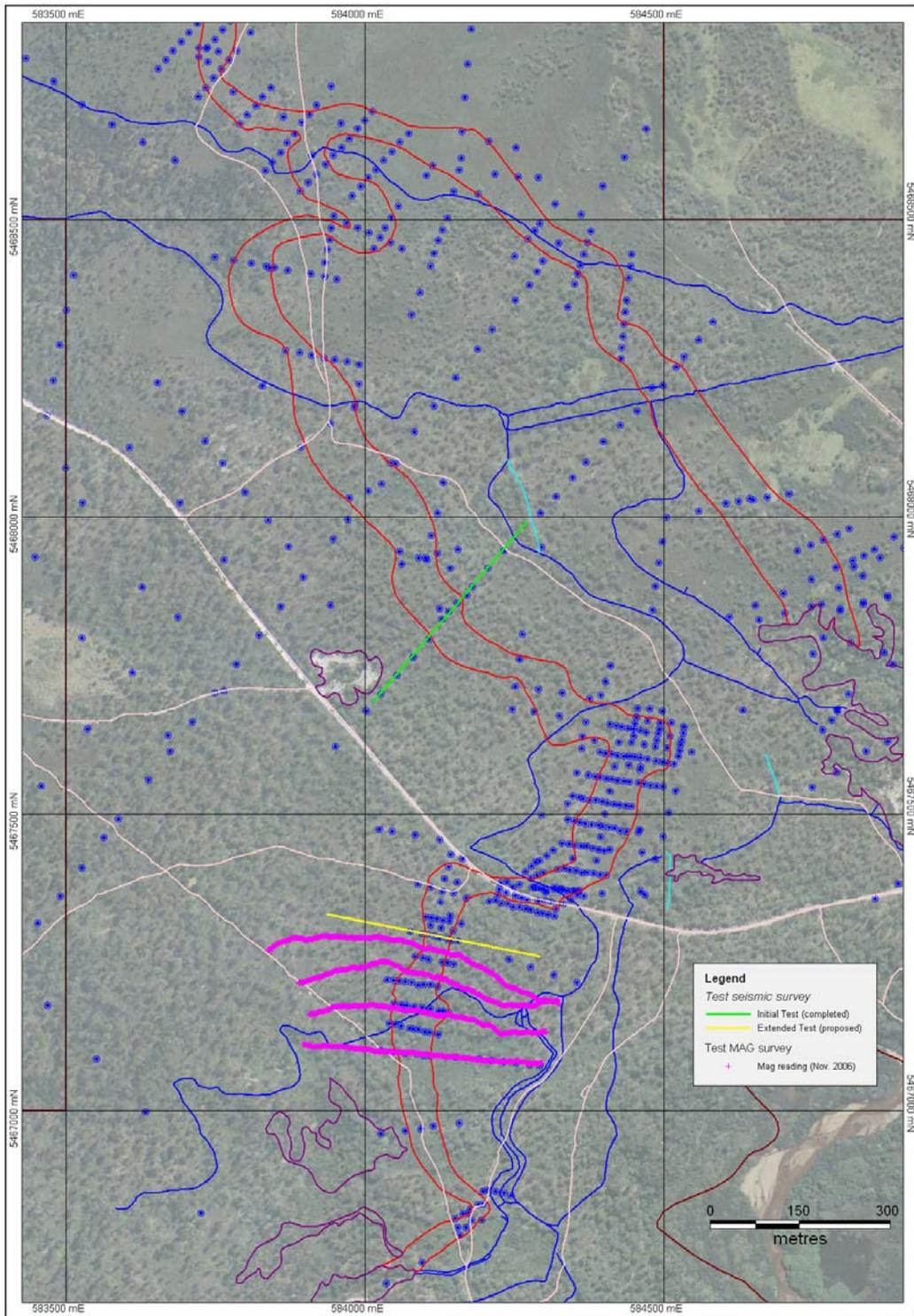
Reflection processing of the data was undertaken however the fold of the data was too low to alleviate the strong ground roll and enable the removal of refractions from the data. A possible reflector is present in the Scotia line, but with the low fold of the data and the strong ground roll it is likely to be an artifact of the processing.

The interpretation of the current refraction data set is in agreement to previous seismic work conducted on this site. The current testing program revealed a layered model, with velocities that are similar to those found by Longman in the survey conducted in 1969. However this investigation did not define the unweathered basement material.

At the Scotia site where the top of the weathered basement has been defined, correlation with the results of drilling is fair. Seismic tomography has enabled isovelocity regions to be mapped. This demonstrates the presence of regions displaying steeply increasing velocity with depth. This technique has enabled a layer to be defined that correlates in part to the borehole results.

Increasing the fold of the data by employing different acquisition geometry, increased shot offsets with more internal shots, may enable processing as seismic reflection data, as well as refraction data.

The use of a shotgun seismic source proved to be successful with good coupling and good energy transmission being achieved.



Scotia - 2006 Test Seismic and MAG surveys

VDMap0612-002

FIGURE 11 - LOCATION OF SEISMIC AND MAGNETIC SURVEYS

### 6.3 TOTAL FIELD MAGNETIC SURVEY:

At the Scotia site the total field magnetic survey was conducted along four lines, as shown on Figure 10.

The following outlines the field procedures deployed during the magnetic survey:

- a. The individual instrument components were assembled and tested;
- b. GPS waypoints were recorded at one second intervals along the magnetic data lines;
- c. The data was filtered and evaluated on the fly for quality and consistency;
- d. The raw data was saved to the Magnetometers Data logger for positioning of the data points; and
- e. Post collection processing was carried out in our Sydney office.

The following steps were taken in the processing of the data:

- a. Data was downloaded from the data logger;
- b. Data was checked for integrity;
- c. Data was checked for data spikes and drop-outs;
- d. Data was gridded and plotted using Surfer Software; and
- e. The resulting image was printed in hard copy and electronic copy.

The limited survey undertaken at the Scotia site indicates a subtle anomaly. The anomaly trends in the direction of the inferred deep lead in the portion of the site surveyed. With a measured response of two nT the anomaly proved to be the result of a deep lead, but may also be the result of localized near surface processes.

The Scotia site appears to have mineralization associated with the deep leads that has a, albeit it subtle, response that will enable the surface mapping of the deep leads on this site.

#### 6.4 DISCUSSION:

The GPR geophysical technique was not found to be satisfactory. The presence of the surface ferricrete horizon, high subsurface conductivity and the interference caused by large trees rendered results impossible to interpret. The ferricrete horizon is not present throughout all of the region however subsurface conductivity is regionally too high to allow the use of GPR. Large trees, eucalypts, are also a major problem and while not present in all areas are generally widespread enough to cause significant problems on all traverses attempted.

Seismic met with some success. Again surface ferricrete did cause difficulties however there appears to be reasonable correlation between old drill data and the seismic profiles, This type of survey appears more suited to the northern section of the tenement where ferricrete development is less widespread.

The success of total field magnetics is problematic. A subtle 2 nT anomaly broadly was located over the Scotia Deep Lead, the anomaly width is slightly wider than the actual lead. The technique is relatively inexpensive and coverage is rapid. The company may look to an expanded survey on a more regional basis including the known Lead location as a method to determine possible locations of subsidiary leads and gutters.

## 7.0 BULK SAMPLING:

### 7.1 ENVIRONMENTAL ASSESSMENT:

Following receipt of the approval to test from MRT the company retained the services of Andrew Welling, Natural Resource Consultant to prepare a short study and report on the Flora and fauna values of the site. See Photos 1 and 3. As a result of his field study welling concluded that:

*“No threatened species were recorded on the stockpile and given the small amount of vegetation to be disturbed it provides no significant fauna habitat. The processing of the stockpile will require the removal of all the vegetation. This will have no significant impact on the natural values of the areas as all species occurring on the stockpile are common and widespread in the area”.*

The company subsequently excavated the tailings pile and has commenced rehabilitation of the site. Initial rehabilitation was hindered by the protracted dry period of weather between September 2006 and February 2007. Rehabilitation is ongoing.

### 7.2 SAMPLING TECHNIQUES:

The company used an 8 tonne excavator to load the tailings onto two trucks. Those vehicles transported the material a short distance to a stockpile location. The site was rehabilitated using a D4 bulldozer to level the area and allow for drainage.

The stockpile site was located beside an old dredge pond on a tailings deposit derived from the old Taylor’s workings. Minor re-growth consisting was cleared from that site prior to stockpiling.

The treatment plant used to process the sample is now on site and operating. The flowsheet appears as Figure 11.

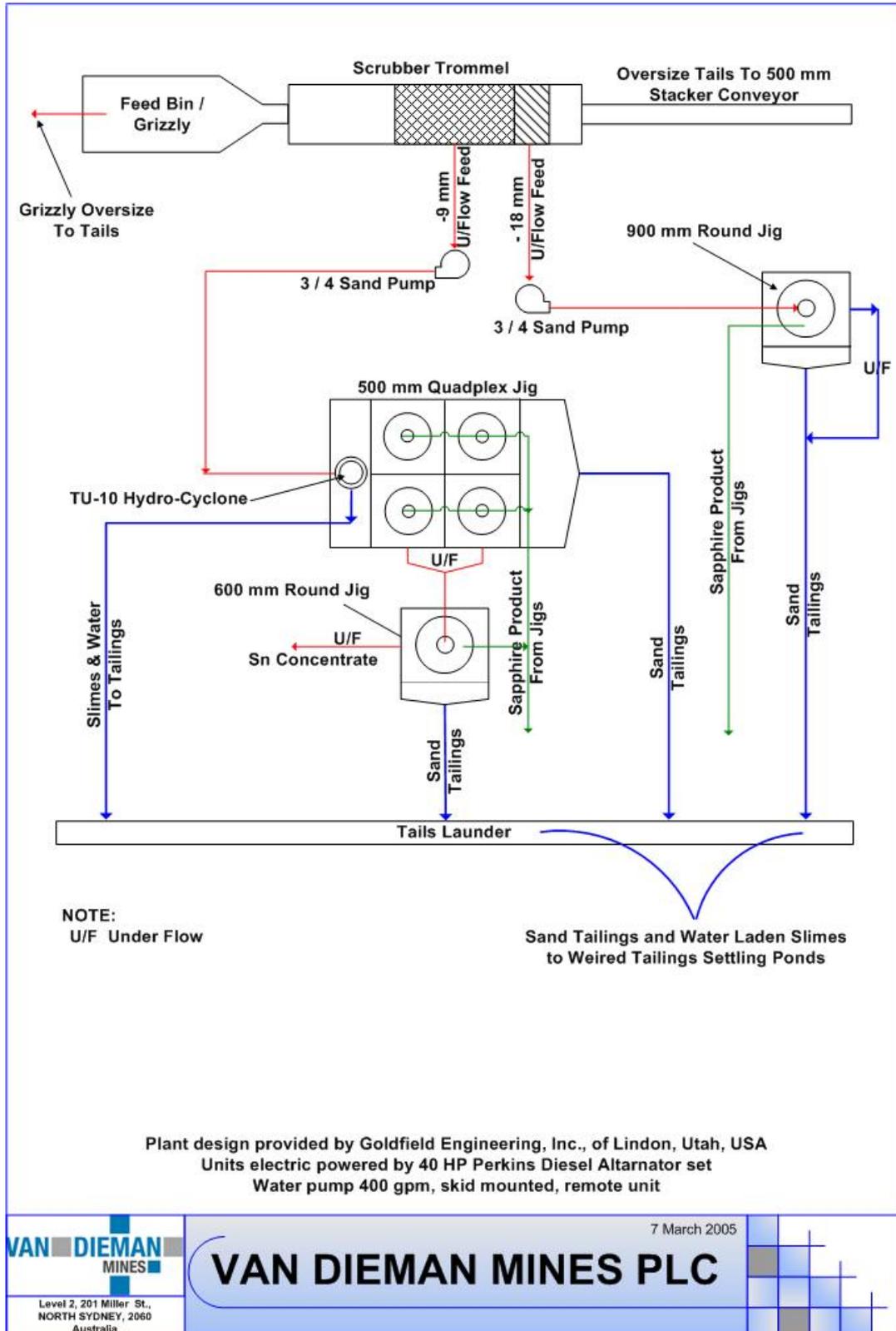


FIGURE 12 - PILOT PLANT TREATMENT FLOWSHEET

Concentrates produced by the plant (See Photo 5) are currently being stockpiled in 200 litre drums and will be batch upgraded across a Wilfley 5000 concentrating table at the company's Campbell Street, Gladstone facility.



PHOTO 5 - TIN / SAPPHIRE / SPINEL PLANT CONCENTRATES

## 8.0 PROPOSED WORK PROGRAMS:

Heavy mining re-growth in the areas peripheral to Doone's and the associated workings has made DGPS field work difficult, that work is ongoing. Proposed work programs include:

- a. Continue to try to locate old drill records, in particular drilling by WANEX about 1972 if those data can be located in the Departmental archives;
- b. Continue current DGPS survey of old workings to pick up accurately pit boundaries, location of bedrock outcrops, bedrock type and bedrock RL. The latter will be added to the regional bedrock database;
- c. Plan and make application for (subject to availability of a suitable rig) a five hole drill program around Doone's workings, specifically:

LINE	HOLE NUMBER	DEPTH M
Line 4	D1	10.0
	D2	12.5
Line 5	D3	15.0
	D4	17.5
Line 6	D5	17.5
<b>TOTAL PROPOSED</b>		<b>72.5</b>

- d. Review the possibility of gaining access to old pits to bulk sample the face. If access is possible and a suitable bulk sample site can be located make application for permission to collect samples for treatment.
- e. Complete processing of the tailings samples and report data.
- f. Extend work in the McGregors - Aberfoyle area to include possible shallow pitting and sampling.
- g. Trial a regional total field magnetic survey.

## 9.0 CONCLUSIONS:

Current drilling costs prohibit the drilling of large numbers of fence lines of holes as has been done in the past exploration campaigns. The ability of VDM to create a database of GIS information and to use that database to create a Tertiary bedrock map of the tenement will, it is hoped, make definition of prospective economic zones easier. The ability to transfer geophysical data to this information suite is also critical to the location of possible tin bearing leads and subsidiary or feeder leads.

The complex nature of the sequence, particularly in the GNP fringe areas, that is, a mixing of marine and terrestrial sedimentation, has, to date confused interpretation. Recent interpretation of the old departmental drilling indicates that many of the larger pits may have been developed to exploit a thin surface veneer of tin bearing gravels and that the pits were never excavated to depths that would expose the older palaeo tin deposits.

VDM believes a significant shallow economic tin resource can be delineated to JORC standard in the zone immediately north of the old worked areas at McGregor's and Beltz and across to the Aberfoyle area within RL 1 / 2003 between the marine embayment of the Great Northern Plain proper and the areas of shallow basement fringing that embayment.

The geophysical surveys met with limited success. Large trees, the presence of a near surface ferricrete zone and sub-surface conductivity zones hindered collection and interpretation of the GPR and seismic data. Total field magnetics met with some success however such survey needs to be expanded to determine if the subtle anomaly interpreted by Alpha to be the deep lead can be sustained.

Bulk testing is continuing, the pilot plant is, despite an extremely dry summer, continuing to process the tin shed stockpile. Preliminary results are encouraging with both tin and sapphire concentrates being recovered.

## 10.0 BIBLIOGRAPHY:

Baster, L. R, 1972. Preliminary Report on the Dorset Dredge Project, Tasmania.

Unpub. Wanex Mining Pty. Ltd. Report

Baster, L. R, 1971 - 72. Drill Logs - Dorset tin Division.

Unpub. Wanex Mining Pty. Ltd. Report

Duncan, D. McP, 2003. An Application for a Retention Licence at Aberfoyle Hill as a 'Flow On' Application from EL 38 / 1997.

Duncan, D. McP. and Rhodes, L. J. EL 38/1997 - Aberfoyle Hill.

Annual Reports on Exploration to March, 1999, 2000 and 2001.

Duncan, D. McP., Kinnane, N. R., and Rhodes, L. J. EL 38/1997 - Aberfoyle Hill. Annual Report on Exploration to March 2002.

Dunne, W. T. 1978. Ringarooma Joint Venture Northern Tasmania - Australia.

Assessment of the Project Area and Recommendations for Stage 1 Exploration and Drilling.

Preussag Australia Proprietary Limited.

Kinnane, N. R. 2000. Assessment, Great Northern Plains Project. NE Tasmania.

Niugini Resources Pty Limited.

Leaman, D. E. 1974. Summary of Geophysical Work, Gladstone Area.

Tech. Report, Tasmanian Department of Mines.17, p88.

Nye, P. B. 1932. Report on the Proposed Restoration of Syphon at Site of Old No. 6 Syphon, Mt Cameron Water Race.

Unpublished Report 17, 1932A, Tasmanian Department of Mines.

Nye, P. B. 1970. Geological report on the Great Northern Plains and the Alluvial Deposits Therein.

Unpublished Report to Portland Holdings Pty., Ltd.

Roach, H. 1916 - 1917, Historical Drill Records

Tasmanian Department Of Mines