MUD TANK VERMICULITE PROJECT

TECHNICAL REVIEW AND VALUATION

Prepared on behalf of
IMDEX LIMITED

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Date : November 1999
Copies : Imdex Limited
Resource Service Group - Perth (5)

EXPLORATION, MINING & RESOURCE CONSULTANTS
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Resource Service Group ("RSG") was retained by Imdex Limited ("Imdex") to undertake a technical review and valuation of the Mud Tank vermiculite deposit situated approximately 160 kilometres by road northeast of Alice Springs in the Northern Territory of Australia.

The valuation was required by the board of Imdex in order to provide guidelines concerning the likely purchase price of the project. Imdex currently owns 25% of the project, and is considering the purchase of the remaining 75%.

There is a general lack of data to support a resource estimation at Mud Tank, and none of the resource figures quoted in this report are conformable to the AusIMM/JORC Code guidelines for the reporting and classification of mineral resources and ore reserves.

Similarly, the valuations quoted in this report are not compatible with the Valmin Code for the valuation of mineral properties.

As a consequence, the resources and valuations given in this report are for internal Imdex use only, and are not intended for public dissemination.

The Mud Tank vermiculite deposit consists of a series of lenses of mica-bearing rocks that form a concentric pattern around a carbonatite complex. The vermiculite has probably been formed from the alteration of biotite by a combination of hydrothermal and weathering processes.

Exploration has been carried out at Mud Tank for apatite, zircon and vermiculite by a combination of government agencies and private companies since the late 1940's. The most recent and consistent exploration for vermiculite was carried out by Clutha Minerals on behalf of the title holders, Blue Circle Southern Cement, from 1986 to 1988. The current mining operation is managed by Australian Vermiculite Industries ("AVI").

A resource was estimated by Clutha, consisting of approximately 2.0 million tonnes of in-situ vermiculite. AVI applied a 37.5% recovery rate to this figure, and state a resource of 750,000 tonnes of recoverable vermiculite. RSG believes that this resource estimate is fundamentally flawed and should not be used.

RSG has estimated a resource for the Mud Tank deposit using a similar, very simplistic, but more realistic approach. RSG estimates that a resource of approximately 120,000 tonnes of recoverable vermiculite is likely to exist at the Mud Tank deposit, assuming a 30% vermiculite grade and a 30% recovery.

Using this resource figure and a cashflow model supplied by AVI, a preferred NPV for the project of A$7.5 million was calculated.

Additional potential resources, which include other known lenses of vermiculite for which there are no drill data and the likely depth extensions to the known resources, are estimated to contain a possible 240,000 tonnes of recoverable vermiculite.

The heavily discounted value of these potential resources is estimated at A$500,000.

The total value of the resources at Mud Tank are therefore estimated to be approximately A$8.0 million. This value does not include the capital assets on site or elsewhere.
RSG considers that the Mud Tank mining operation requires optimisation at all levels in order to maximise profits for the shareholders, as well as to increase market share, both domestically and internationally. A number of recommendations are made in this regard.
1. **INTRODUCTION**

1.1 **SCOPE OF WORK**

Resource Service Group ("RSG") was commissioned by Mr David Quinlivan, the Managing Director of Imdex Limited ("Imdex"), to provide an independent technical review and valuation of the Mud Tank vermiculite deposit.

Specifically, RSG was requested to review and comment on the vermiculite resource present at the Mud Tank Project, and to provide a valuation, based on this resource in conjunction with a financial analysis of the project cash flow model. RSG was not requested to comment on the mining operation at Mud Tank, nor to make an evaluation of any of the other assets associated with the project.

Colin Jones of RSG conducted a one day site visit accompanied by Tim Carmody, Operations Manager at Mud Tank; David Quinlivan, Managing Director, Imdex; and John Kelly of Glenrowan Consultants.

Imdex currently owns 25% of Australian Vermiculite Industries Pty Ltd ("AVI"), the company established to operate the Mud Tank Project. Imdex is a listed company in Australia. The remaining 75% of the project is owned by Tennant Limited ("Tennant"), a private company based in Sydney. Imdex is considering the purchase of the shares of AVI held by Tennant, and requested an independent valuation of the Mud Tank Project to be used as a guideline for the likely purchase price.

The valuation of the project is required by Imdex for internal purposes only and is not intended for public dissemination. The valuation in this report, as well as the report itself, are written with this in mind, and do not conform to the Valmin Code adopted by the AusIMM and the ASX. Therefore, this report does not contain detailed descriptions of the Mud Tank geology or the mining operation, and these aspects are summarised only for the sake of completeness. This report and the valuation it contains, are not to be released publicly, and are presented to Imdex as a guide only as to the likely value of the Mud Tank Project.

In addition, the current resource estimate at Mud Tank, as well as the lack of technical data pertaining to the estimate, would preclude a valuation that conforms to the Valmin Code. RSG has used all the available data to arrive at an estimate of the "fair market value" for the project given the current level of confidence in the resource.

1.2 **PERSONNEL**

The RSG personnel and their respective areas of responsibility for this project are listed below:

i) Colin Jones, Senior Consulting Geologist
   One day site visit to the Mud Tank project, data compilation and review, evaluation of geology and resources, final valuation, report preparation.

ii) Harry Warries, Senior Mining Engineer
    Financial analysis, NPV determination.
1.3 **DATA ACQUIRED**

The data acquired by RSG pertaining to the Mud Tank Project are listed below. The data were supplied mainly by Tennant from Sydney in hard copy format:


vi) Twelve manila folders containing results of various test work results, including crushing, screening, classification, beneficiation and exfoliation results.


viii) Cash flow spreadsheets from the Mud Tank operation for the 1998/99 financial year.
2. PROJECT BACKGROUND

2.1 PROJECT LOCATION

The Mud Tank vermiculite deposit is located approximately 160 kilometres northeast of Alice Springs in the Northern Territory of Australia. The project is easily accessible by a combination of sealed roads (the Stuart and Plenty Highways) and unsealed local tracks. Scheduled commercial flights into Alice Springs are available from most large regional centres in Australia. In addition, an airstrip suitable for light aircraft has been constructed on site at the project.

A railway line connects Alice Springs with the port of Adelaide approximately 1,200 kilometres to the south. This railway is the primary method of vermiculite transport from the mine to all markets.

2.2 EXPLORATION

The Mud Tank area was explored for apatite and zircon starting in the late 1940’s, mainly by the Bureau of Mines (BMR) and the Northern Territory Geological Survey. The area remains a popular zircon source for amateur fossickers.

The Mud Tank carbonatite complex was recognised in the late 1960’s, and the potential for economic vermiculite deposits was first suggested in 1970.

Exploration was undertaken by the agencies of the Northern Territory Government, Geopeko and Carpentaria Exploration Company. Exploration consisted of auger sampling, diamond drilling and interpretation of aerial photographs and satellite imagery.

The most recent and consistent exploration programme, aimed specifically at the vermiculite potential, was undertaken by Clutha Minerals Limited (Clutha), on behalf of the title holders, Blue Circle Southern Cement Limited (BCSC), from 1986 to the end of 1988. This work included costeaming, large diameter (750mm) auger drilling and the excavation of bulk samples for test work. The large diameter auger holes were restricted to a depth limit of only 27 metres.

AVI was formed in 1995, with the aim of developing the vermiculite deposit at Mud Tank, in order to supply both domestic and export markets with a high quality product.

2.3 GEOLOGY

Lenses of mica-rich rock known as “glimmerite” are found around the margins of the Mud Tank carbonatite complex at Zircon Hill, forming a roughly concentric zone around the hill. The carbonatite complex has intruded into rocks of the Strangways Metamorphic Complex along splays off a major structural lineament. The carbonatite complex is interpreted as a series of sills and dykes.

The glimmerite occurrences are made up of a combination of vermiculite and biotite. It is not known if the alteration of biotite to vermiculite was caused primarily by weathering processes, or by a combination of hydrothermal and weathering processes. If hydrothermal processes were involved, there may be potential for significant depth extension to the vermiculite lenses, but blasting of the fresh wall rock would be required to extract the ore.
Regardless, it seems clear that the good quality vermiculite zones at Mud Tank are associated with significant weathering, thus allowing the extraction of both vermiculite ore and waste rock without the need for blasting. In addition, the few (four?) diamond drill holes completed by the Department of Mines and Energy are the only source of geological information from below the depth of oxidation. RSG has sighted the logs of these holes, but the actual core has not been seen.

A critical component of the geology of the deposit is the recognition and differentiation of the various types of mica present. The “black mica” is probably primary unaltered amphibole and biotite, unsuitable for exfoliation. The quality of vermiculite, in terms of exfoliation properties, is estimated visually depending on colour and grain size in the pit prior to extraction. The colour and grain size of the vermiculite are strongly controlled by faulting and weathering.

Although the depth of oxidation is critical in terms of vermiculite formation, ore extraction and resource estimation, there are very little reliable data on this aspect of the deposit.

Most lithologies are covered by a layer of overburden that rarely exceeds 1.5 metres in thickness, and is usually less than 1 metre thick. The overburden consists of alluvial and aeolian sands, overlying a zone of calcrete formed from the weathering of the carbonate-rich host rocks.

Vermiculite grades are estimated by AVI staff on site at between 25% and 70% vermiculite by volume. The average grade of ore extracted is estimated by AVI personnel at approximately 30% vermiculite by volume overall. There is no asbestos or any other fibrous material present in the Mud Tank ore.

### 2.4 Mining and Processing

The Mud Tank vermiculite ore is extracted from a shallow pit (Pit A), using an excavator to rip and load both ore and waste. The ore is carted a short distance to the processing plant, and the waste is taken to the waste dumps.

Ore is passed through a grizzly to screen the oversize material, which is then stockpiled. Screened ore is then dried and screened further, to extract both oversize (+4mm) and undersize (-300 microns), both of which are stockpiled.

The screened ore is then passed through a secondary drier prior to size classification via six wind tunnels. The final product is a concentrate of 95% to 99% vermiculite, separated into size fractions as follows:

<table>
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<tr>
<th>Grade</th>
<th>Size Range</th>
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<tbody>
<tr>
<td>i)</td>
<td>Grade 3 2.2 – 4.0mm</td>
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<tr>
<td>ii)</td>
<td>Grade 2 1.1 – 2.2mm</td>
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<tr>
<td>iii)</td>
<td>Grade 1 0.5 or 0.7 to 1.1mm</td>
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<tr>
<td>iv)</td>
<td>M5 500 to 300 microns</td>
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<tr>
<td>v)</td>
<td>M7 700 to 300 microns</td>
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</tbody>
</table>

Grade 4 is made up of flakes greater than 4mm, but the production of this size fraction at Mud Tank is problematic due to the high stone content of the concentrate. The greatest bulk of vermiculite concentrate produced at Mud Tank is in the Grade 1 size range.
The vermiculite product is then bagged into one tonne bags for transport.

Vermiculite product is currently being produced at a rate of approximately 8,000 tonnes per annum. AVI estimates an overall recovery of saleable vermiculite from vermiculite ore of approximately 30%. This recovery may be increased to approximately 50% if the undersize fraction from the primary screening process can be used to produce M7 grade product. Current plant capacity is reported to be approximately 18,000 tonnes per annum.

The Mud Tank operation does not have a current mine plan or production schedule, mainly due to the lack of a comprehensive resource estimate and consequent reserve statement.

2.5 TRANSPORT AND MARKETS

As with most industrial minerals, the production rates and price obtained for the product are highly dependent on individual customers. The marketing and promotion of vermiculite in Australia is therefore very important for the future viability of the Mud Tank Project. There are no other domestic producers of vermiculite in Australia, and AVI is therefore able to offer the product domestically at cheaper rates than its main competitors from South Africa. AVI has a number of sale agreements in place with a variety of vermiculite consumers.

Higher prices can be obtained for the coarser particle size fractions, as exfoliation of the larger particles results in a more valuable product.

Domestic vermiculite production in Australia is estimated at 8,000 tonnes per annum, compared with approximately 800,000 tonnes per annum worldwide consumption. Increasing market share by AVI will depend on successful marketing of vermiculite as a substitute for other products such as perlite, and in new applications. The Palabora vermiculite mine in South Africa produces over 200,000 tonnes of vermiculite annually, and this operation is a potential threat to an increasing market share for Mud Tank vermiculite.

The vermiculite is transported by road or rail in one tonne bags from Alice Springs to the port of Adelaide. Transport to the various exfoliating facilities close to the end markets is usually by a combination of ship and road.
3. RESOURCES

3.1 CURRENT RESOURCES

A resource for the Mud Tank deposit has been estimated by Peter Temby, who supervised the exploration and evaluation work for Clutha. This estimate stated that there are approximately 2 million tonnes of vermiculite available in the ground. AVI has applied a 37.5% recovery rate to this tonnage, and therefore state that the resource at Mud Tank is equivalent to approximately 750,000 tonnes of saleable vermiculite.

It should be stressed that this resource estimate does not conform to the AusIMM/JORC code for the reporting of mineral resources and ore reserves, and classification of this resource in accordance with the JORC is therefore not possible.

The resource was estimated based on the exploration results, using the following methods:-

i) Estimate area of each lens of vermiculite ore.

ii) Estimate depth of oxidation based on actual drilling or by correlation with water table in nearby Marktree Creek.

iii) Calculate volumes of lenses using figures obtained above.

iv) Convert volumes to tonnages using an in-situ bulk density of approximately 2.6 tonnes per cubic metre.

v) Calculate tonnage of available vermiculite by assuming 45% recovery from in-situ tonnage (resulting in approximately 2 million tonnes of available vermiculite).

This resource estimate has a number of fundamental flaws, including the following:-

i) The bulk density used for the vermiculite ore is too high at 2.6 tonnes per cubic metre. RSG considers that for oxidised material, a bulk density of 1.8 tonnes per cubic metre is more appropriate. The bulk density of vermiculite ore at the Hillview vermiculite deposit has been determined at 1.7 tonnes per cubic metre. No data have been seen that document any test work or sampling undertaken aimed at determining the actual bulk densities of the in-situ ore or waste at Mud Tank.

ii) No allowance of the actual grade of the deposit has been made. Vermiculite grades were apparently estimated visually as a percentage vermiculite by volume. These estimates are not recorded on any of the drill logs scrutinised by RSG to date. The application of a 45% recovery rate by Temby, as well as the estimate of a 30% grade (and recoveries of either 30% or 25%) by AVI appear to be arbitrary estimates with no detailed technical support.

iii) It appears that the calculation of tonnages of vermiculite ore have been carried out using a bulk density that is approximately that of the specific gravity of vermiculite (2.6 tonnes per cubic metre). A recovery factor of 45% was then applied to that tonnage. This approach assumes that the grade of the vermiculite ore is 55% vermiculite.

iv) The exfoliation characteristics of much of the deposit are not known.

3.2 RSG RESOURCE STATEMENT

RSG has used a similar, but more realistic, approach in an attempt to estimate the likely vermiculite available at Mud Tank. It should be stressed that the figures quoted in the following sections are not resource estimates that are conformable to the JORC/AusIMM code, and they are not to be quoted publicly. The resource stated here is designed to provide the board of Index with an indication of the quantity of vermiculite that may be readily available in the short term.
The following resource estimation methods were used:-

i) Use previously estimated areas of each vermiculite lens.

ii) Estimate depth of oxidation for each lens by averaging depths obtained in each auger hole on that particular lens.

iii) Estimate average thickness of overburden on each lens from the relevant drill logs.

iv) Calculate volumes of each lens of vermiculite ore based on figures obtained above.

v) Calculate a tonnage by using a nominal bulk density of 1.8 tonnes per cubic metre.

vi) Apply 30% by volume vermiculite grade to obtain estimate of vermiculite content in each lens, assuming a constant bulk density of 1.8 tonnes per cubic metre.

vii) Apply 30% recovery rate to obtain recoverable amount of vermiculite in each lens.

The results of the resource estimate on vermiculite lenses that contain drill holes are listed below:-

i) **Western Lens**
   - Area: 17,500 square metres.
   - Depth of oxidation: 19.39 metres.
   - Thickness of overburden: 1.08 metres.
   - Thickness of vermiculite ore: 18.28 metres.
   - Volume of vermiculite ore: 315,000 cubic metres.
   - Tonnage of vermiculite ore: 567,000 tonnes of ore.
   - Assume 30% by volume grade: 170,100 tonnes of vermiculite.
   - Assume 30% recovery: 51,030 tonnes (say 50,000 tonnes) of recoverable vermiculite.

ii) **Southern Lenses (one, two and three)**
   Using an identical series of steps, the resource estimate for these lenses totals approximately 70,000 tonnes of recoverable vermiculite.

iii) **Other Lenses**
   The Northern, Central and Eastern Lenses have been roughly outlined by costeining, but no drill hole data are available.

   A similar approach to resource estimation was used as described above. The depth of oxidation and thickness of overburden were determined by obtaining the average figures from all drill holes on the Southern and Western Lenses.

   A total potential resource of approximately 60,000 tonnes of recoverable vermiculite was estimated at a 30% recovery. This figure increases to 90,000 tonnes of recoverable vermiculite, if a 50% recovery rate is assumed.

iv) **Total Resources**
   The resources for those lenses that contain drill holes total approximately 120,000 tonnes of recoverable product. If the recovery is increased to 50% of the vermiculite ore available, the estimated tonnage of recoverable (saleable) vermiculite is increased to approximately 190,000 tonnes.

The figures quoted above are those used in the NPV calculation.

The total potential amount of saleable vermiculite contained in the lenses for which there are no drill hole data available is estimated at approximately 60,000 tonnes (at 30% recovery), or 90,000 tonnes (at 50% recovery).

These figures were not used in the NPV calculation, but were used as geological potential in the final valuation.
The RSG resource estimation methodology should be viewed as a minimum resource. RSG is not prepared to attempt to classify these resources according to the JORC/AusIMM code. A great deal of work is required at the Mud Tank deposit in order for robust resource estimates to be made.
4. FINANCIAL ANALYSIS AND NPV CALCULATION

The costs and cash flow used in this valuation were supplied by AVI. The projected costs supplied by AVI were also used. The prices of vermiculite obtained by AVI from its customers over the financial year were averaged in order to produce the NPV. For the 1998/99 financial year, approximately 70% of the vermiculite from Mud Tank was sold internationally. A 10% discount rate was used to reflect the uncertain nature of the resources available, as well as the projected demand for vermiculite.

The results of the financial analysis and base case NPV determinations are presented in Tables 4.1.1 and 4.1.2 for an annual production rate of 10,000 tpa and 15,000 tpa respectively. The sensitivity studies are presented in summary form in Table 4.1.3.

The most significant aspects of the financial analysis are listed below:-

i) The margins obtained for selling vermiculite internationally are significantly less than the margins obtained for domestic sales.
ii) The operating and transport costs supplied by AVI appear reasonable and are taken as read.
iii) The NPV is very sensitive to the prices obtained for vermiculite sales.

The sensitivity of the project was evaluated by varying the following parameters:-

i) Total recoverable vermiculite used is 120,000 tonnes (30% recovery) or 190,000 tonnes (50% recovery).
ii) Annual production rates of 10,000 tonnes and 15,000 tonnes of vermiculite per annum were used.
iii) The average selling price obtained for one tonne of vermiculite was adjusted down by 10%.
iv) The proportion of vermiculite sold domestically or internationally was varied from 50:50 to 60:40 (60% sold internationally).

At a production rate of 10,000 tonnes per annum, based on a resource of 120,000 tonnes of recoverable vermiculite, and assuming that 40% of the vermiculite is sold domestically, an NPV of approximately A$7.5 million is obtained over a twelve year mine life.

At a production rate of 15,000 tonnes per annum, based on a resource of 120,000 tonnes of recoverable vermiculite, and assuming that 40% of the vermiculite is sold domestically, an NPV of approximately A$8.5 million is obtained over an eight year mine life.

A value must also be placed on the potential resources at Mud Tank. The current resources are poorly defined, and the exfoliation characteristics of the vermiculite over much of the deposit are not known. The recoverable tonnage of vermiculite estimated in this report can be considered conservative, given that the depth of oxidation can reasonably be expected to occur at greater depths than indicated. Drilling is required to establish this.

RSG considers that the resource base at Mud Tank can be increased significantly by undertaking the appropriate exploration and test work programmes. There is, however, no guarantee that the demand for vermiculite will increase significantly in the short term.
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### TABLE 4.1.2
MUD TANK VERMICULITE PROJECT
NPV DETERMINATIONS - ANNUAL PRODUCTION RATE OF 15,000 tpa

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<th>ITEM</th>
<th>UNIT COST</th>
<th>UNIT</th>
<th>YEAR</th>
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</table>

**Costs**

- **Mining Costs** [$/t] 130: 975,000, 1,300,000, 1,950,000, 1,950,000, 1,950,000, 1,950,000, 1,950,000
- **Freight A’l’aide** [$/t] 71.00: 213,000, 284,000, 426,000, 426,000, 426,000, 426,000, 426,000
- **Freight Int** [$/t] 96.00: 432,000, 576,000, 864,000, 864,000, 864,000, 864,000, 864,000
- **Sub Total** 645,000, 1,290,000, 1,950,000, 1,950,000, 1,950,000, 1,950,000, 1,950,000
- **Royalty Domestic** [$/t] 5: 15,000, 20,000, 30,000, 30,000, 30,000, 30,000, 30,000
- **Royalty International** [$/t] 20: 90,000, 120,000, 180,000, 180,000, 180,000, 180,000, 180,000
- **Sub Total** 105,000, 210,000, 300,000, 300,000, 300,000, 300,000, 300,000
- **Total** 230.00 [$/t]: 1,725,000, 3,450,000, 5,175,000, 5,175,000, 5,175,000, 5,175,000, 5,175,000

**Revenue**

- **Domestic** [$/t] 380.00: 1,140,000, 1,520,000, 2,280,000, 2,280,000, 2,280,000, 2,280,000, 2,280,000
- **International** [$/t] 320.00: 1,440,000, 1,920,000, 2,880,000, 2,880,000, 2,880,000, 2,880,000, 2,880,000
- **Total** 2,580,000, 3,440,000, 5,160,000, 5,160,000, 5,160,000, 5,160,000, 5,160,000

**Cashflow**

- **Discount Factor** [10%]: 0.95, 0.85, 0.77, 0.69, 0.62, 0.56, 0.50
- **Present Value** [$/]: 855,000, 1,140,000, 1,710,000, 1,710,000, 1,710,000, 1,710,000, 1,710,000

| NPV | 8,523,375 | TOTAL | 8,523,375 | 8,523,375 | 8,523,375 | 8,523,375 | 8,523,375 | 8,523,375 |

F:\Projects\Index\pr_257-0-64_991111_01.doc 11 Resource Service Group-Perth 181190 3:14PM
### TABLE 4.1.3

MUD TANK VERMICULITE PROJECT

**SENSITIVITY STUDIES**

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<th>Mine Life</th>
<th>Import</th>
<th>Export</th>
<th>Avg Product Price</th>
<th>NPV at 10% DR</th>
<th>Mining Costs</th>
<th>Freight</th>
<th>Total Royalty</th>
<th>Total</th>
<th>Annual Revenue</th>
<th>Annual Cashflow</th>
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<td>[tpa]</td>
<td>[yr]</td>
<td>[%]</td>
<td>[%]</td>
<td>[A$/t]</td>
<td>[A$/t]</td>
<td>[A$]</td>
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<td>532,500</td>
<td>720,000</td>
<td>1,252,000</td>
<td>37,500</td>
</tr>
</tbody>
</table>
At a 30% recovery, there is likely to be more than 60,000 recoverable tonnes of vermiculite present at Mud Tank, in the lenses not considered in the NPV calculation. This equates to some 750,000 tonnes of ore. It is also likely that the current resource contained in all lenses can be increased by defining the actual depth of oxidation.

Assuming that additional resources can be defined that equate to a recoverable vermiculite content of some 240,000 tonnes, or twice the amount used in the NPV calculation, an NPV of between A$15 million and A$17 million can be expected.

Discounting this figure to account for the unknown potential resource tonnages and grade, as well as the unknown exfoliation characteristics of the vermiculite, it is reasonable to apply a range of 2% to 4.5% of the total estimated NPV.

The value of the potential resources that may or may not become mineable reserves is therefore estimated to fall within the range of A$300,000 and A$765,000.

The total estimated value for the Mud Tank vermiculite resource is therefore as follows:

i) **Lowest value**
   - NPV of A$7.5 million
   - Resource potential value of A$300,000
   - Total A$7.8 million

ii) **Highest Value**
   - NPV of A$8.5 million
   - Resource potential value of A$765,000
   - Total A$9.3 million

iii) **Preferred Value**
   - NPV of A$7.5 million
   - Resource potential value of A$500,000
   - Total A$8.0 million

The following points concerning this valuation should be noted:

i) The non-mineral assets held by AVI are not included in this valuation.
ii) This valuation does not comply with the Valmin Code as adopted by the AusIMM.
iii) This valuation was prepared for Imdex internal purposes only.
iv) Strictly speaking, AVI has no defined mining reserve, no mine plan and no production schedule. The value of the resource at Mud Tank is therefore negligible apart from the perceived potential. For this reason, the valuation presented here is not compatible with the Valmin Code.
v) RSG believes that this valuation represents a "fair market value" given the current level of geological knowledge.
5. DISCUSSION

The Mud Tank vermiculite deposit is undoubtedly large and capable of producing a high quality product. Currently, however, the project does not have any defined resources or mining reserves, and, consequently, there is no detailed mine plan or production schedule.

In order to maximise the value of the deposit, and to provide customers with a guaranteed supply of vermiculite at a constant quality and grain size, the Mud Tank operation needs to be optimised at all levels.

A close-spaced RAB drilling programme would rapidly define the amount of vermiculite-bearing ore available, as well as the actual depth of oxidation and the thickness of overburden. Some diamond drill holes will be required to confirm the RAB data, particularly in terms of in-situ bulk densities, mica types and grain sizes, and to provide samples for test work. A resource estimate conformable to the classification guidelines of the AusIMM/JORC Code should then be possible.

Bulk samples taken from various parts of the deposit would provide sufficient material to carry out detailed test work, resulting in quantified exfoliation and other physical characteristics of the ore over the entire deposit. An exfoliation plant on site may be required for this work, given the doubtful quality of previous test work carried out at external facilities. Following pit optimisation studies, this work would enable a robust ore reserve estimate to be made. It will also allow the demonstration of exfoliation characteristics to potential customers.

As with most industrial minerals, the demand for vermiculite, and the ability of AVI to supply customers as well as source new markets, are crucial to the success of the operation. Once the mining reserve is defined, a detailed mine design and production schedule can be formulated and demonstrated, which will satisfy customer requirements whilst maximising the profitability of the mining operation. This can be achieved by scheduling mining from different areas of the deposit in order to blend a product that meets a particular customer's demands. A detailed stockpiling schedule can also be formulated to assist in this regard.

Recovery of saleable vermiculite can be increased substantially by devising methods to recover the screen undersize currently being stockpiled. Similarly, the grizzly oversize stockpile could be sent to the processing plant by commissioning the appropriate crushing circuit to break down the agglomerations of ore.

Given that the coarser grades of vermiculite are more valuable than finer grades, it may be more profitable to increase the production rate at Mud Tank such that the majority of vermiculite sold is in the coarser grade range. Finer grades can be stockpiled and produced later in the life of the mine or in response to specific customer requests.

All of the issues raised above can be quantified by a relatively simple programme of resource definition, operational optimisation and market research.
6. RECOMMENDATIONS

The following recommendations are made regarding the optimisation of the Mud Tank vermiculite mining operation:

i) Complete resource definition drilling programmes.

ii) Undertake resource estimate.

iii) Complete comprehensive and representative test work programme on bulk samples. Commission an exfoliation testing plant on site for this work, and for ongoing quality control.

iv) Undertake pit optimisation and pit design studies.

v) Define Proven and Probable Reserves, using physical characteristics of the vermiculite as well as grade.

vi) Increase the current rate of recovery by utilising grizzly oversize and primary screen undersize.

vii) Conduct extensive market research and financial analysis.

viii) Formulate production and stockpiling schedules in response to market demand.