



EIS 1307

AB018176

Report : Woodsreef Mine Mill waste disposal for NSW

Department of Mineral Resources



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REPORT

**WOODSREEF MINE
MILL WASTE DISPOSAL**

Report prepared for
NSW Department of Mineral Resources
June 2000

EIS 1307



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REPORT

**Woodsreef Mine
Mill Waste Disposal**

for
NSW Department of Mineral Resources

DAMES & MOORE
Ref: 29139-009-371\REPORT\WOODSREEF REV-1.DOC
27 June 2000

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27 June 2000

Ref: SYD-29139\009_371\
REPORT\WOODSREEF REV-1.DOC

4th Floor Minerals & Energy House
29-57 Christie Street
St Leonards NSW 2059

Attention: Mr James Brisebois

Dear Sir

REPORT

Woodsreef Mine Mill Waste Disposal

Please find enclosed our report containing the results of a limited geotechnical, hydrogeological and environmental assessment conducted at the Woodsreef Mine. The assessment was conducted in accordance with our proposal dated 13 April 2000.

Thank you for giving us the opportunity to conduct this assessment. Please call me if you have any questions.

Yours faithfully
DAMES & MOORE

Graeme Nyland
Senior Principal

TABLE OF CONTENTS

	Page No.
1. INTRODUCTION.....	1
2. SCOPE OF SERVICES.....	1
3. GENERAL CONDITIONS	2
3.1 MILL.....	2
3.2 PITS	3
4. REGULATORY ISSUES	4
5. TECHNICAL ISSUES.....	5
5.1 ACCESS AND STABILITY	5
5.2 HYDROGEOLOGY	6
5.3 PAVEMENTS	7
5.4 COVER MATERIALS	8
6. DISPOSAL OPTIONS	9
7. DISPOSAL COST.....	11
8. CONCLUSIONS AND RECOMMENDATION	11
LIMITATIONS OF REPORT.....	13

LIST OF FIGURES

- 1 Site Plan

LIST OF PLATES

- 1 Access Ramp to South Pit (South)
2 Roadway Down to South Pit
3 South Pit Entry Point
4 Slide Debris on Road Down to South Pit (North), showing Entry Point
5 Road Down to South Pit (North)
6 Road from South Pit (North) to North Pit
7 North Pit Entry Point
8 North Pit

LIST OF APPENDICES

- Advice Received from EPA

REPORT
Woodsreef Mine
Mill Waste Disposal
for
NSW Department of Mineral Resources

1. INTRODUCTION

As part of their ongoing management of the derelict Woodsreef asbestos mine, The Department of Mineral Resources (DMR) is assessing options for increasing safety of the old Mill House, as well as improving the aesthetics of the area. The Mill presents a safety risk because it has open sumps at ground level and gaps in the concrete floor slabs at each level, and a health risk because asbestos fibres and concentrates are spread through the Mill and in packaging which has deteriorated. Also, the asbestos cement cladding of the Mill is deteriorating due to vandalism.

A proposal being considered is to remove asbestos from the Mill area and to contain the asbestos waste on site, possibly within an existing pit. This report presents the results of a limited assessment conducted to assist DMR in considering the proposal, specifically in the safe and environmentally sound disposal of the waste.

2. SCOPE OF SERVICES

The scope of services included:

- Undertake a site visit on 18 – 19 April 2000 to inspect pit walls and access roads, to observe features relevant to stability and pavement capacity;
- Inspection of water conditions in the pits, and review of relevant and available hydrogeological and water quality data;
- Review of file information held by DMR regarding pit geometry;
- Approximate calculation of volumes of pits from available site plans, and consideration of Mill disposal options;
- Inspection of potential encapsulation materials at or near the mine site;
- Liaison with Council, State Lands and EPA regarding requirements for necessary approvals;

- Preparation of a brief report addressing the above issues, including a recommendation for use of a pit and an estimated upgrading cost for budgeting purposes; and
- Discussion of the findings with DMR.

This report draws on information and opinions presented in “Woodsreef Mine, Hazard and Risk Assessment” (Dames & Moore, 1997) and “Woodsreef Asbestos Mine Report” (T & T Metal and Asbestos Services, 1999).

3. GENERAL CONDITIONS

The site layout is shown on **Figure 1**.

3.1 MILL

The Mill building covers an area of approximately 0.7 ha, of which more than half is approximately 40m high consisting of 8 levels. The building consists of reinforced concrete suspended floor slabs, steel I beam columns, and corrugated fibro cladding.

A large amount of steel pipe ducting, hoppers and other equipment is still in place, or scattered around the Mill.

Asbestos materials requiring safe disposal include:

- Contents of approximately 150 drums believed to contain asbestos concentrates;
- Deteriorating bags of asbestos fibres;
- Fibres which are within ducting and hoppers;
- Soil containing asbestos fibres which has been dispersed in and around the Mill on floors and other surfaces;
- The corrugated asbestos cement (fibro) wall cladding which is deteriorating due to vandalism, potentially releasing more fibres; and
- Pallets of spare corrugated fibro panels.

If the Mill is demolished, the total disposal volume will depend on the amount of material which cannot be recycled and which requires either co-disposal with the asbestos or separate disposal.

Disposal of material other than asbestos cement or soil/asbestos fibres in the pits will require an assessment of potential pollutants, and may need to conform to different regulations than those discussed in Section 4.0. Very approximate estimates of the amounts of asbestos wastes are:

- 150m³ of drummed or bagged fibres and soil containing fibres, and loose soil with asbestos fibres; and
- 1700m² of corrugated asbestos cement sheeting and broken sheeting. The disposal volume as placed would depend greatly on the method of placement.

3.2 PITS

Mining has been from two major pits which are joined to form one large excavation. They are referred to as North Pit and South Pit. North Pit contains a long and narrow water body. South Pit is comprised of 3 separate and smaller water filled pits. Referred to herein as South Pit (North), South Pit, and South Pit (South). The approximate surface area of the water bodies are:

North Pit	3.5 ha	
South Pit N (North)	0.7 ha	(Wunderlich Pit)
South Pit	2 ha	(Central Pit)
South Pit (South)	0.3 ha	(Hardie Pit)

We have not been able to access any mine plans to enable the volume of the pits below water level to be calculated. The volume of each of the pits is far greater than the volume of the waste asbestos. Successful disposal will depend on the method of placement and ultimate water cover required.

4. REGULATORY ISSUES

There are a number of regulatory factors to be considered in disposing of the waste on site, discussed below. The site is owned by the State. While the Department of Land and Water Conservation has an interest in the site, it is likely that they would defer to BMR Derelict Mines Committee in management of the site.

Disposal of asbestos waste is regulated under clause 29 of the Waste Minimisation & Management Regulation 1999, and waste disposal facilities are licenced under Schedule 1 of the Protection of the Environment Operations Act. Advice from EPA Regional office in Armidale which clarifies the applicability of these regulations in the Woodsreef operation is attached. Some of the key results are:

- The pit is not a waste facility which would require a licence;
- The asbestos waste after disposal must be finally covered to a depth of at least 3m. The cover can be by water or soil; and
- Packaging, labelling and transporting conditions apply.

It is likely that a Development Application (DA) will be submitted to Barraba Council if demolition of the Mill is conducted in conjunction with the asbestos removal. It is then likely that Council will refer the DA to the Department of Urban Affairs and Planning (DUAP) and Environment Protection Authority (EPA) to assess whether the development constitutes Designated Development (in which case an Environmental Impact Statement will be required) or Integrated Development (in which case a number of parties may act as consent authorities). Based on preliminary discussions with the EPA, DLWC, and DUAP, it seems likely that the disposal would not constitute Integrated Development and that the Council would be the consent authority for the DA.

If clean up and disposal of the asbestos waste is being conducted as a separate exercise to the demolition, then the disposal exercise could come under the definition of Category 2 Remediation under "State Environmental Planning Policy No 55 – Remediation of Land" in which case it would not require Council consent, (though notice to Council would still be required). The disposal would not be classified as Category 2 if it is Designated Development, which in this case would mainly be determined by the volume of material being disposed and moved to cap the waste.

Based on the above, it is likely that no approvals will be required for disposal of asbestos wastes on site and in accordance with asbestos regulations. Should the operation be deemed "Designated Development", it is likely that Barraba Council will be the consent authority for the EIS.

There is also a regulatory requirement that the disposal does not pollute a groundwater resource. It is also desirable and possibly required that it does not impact the water quality in the pits so that beneficial uses, such as use of the water in reworking of tailings, is not precluded. Potential pollution of the water would largely be a function of other materials co-disposed, and would not be likely to occur by disposal of bags containing asbestos.

WorkCover regulations such as use of licenced asbestos removal contractors would apply.

5. TECHNICAL ISSUES

5.1 ACCESS AND STABILITY

Access is available to the water level in all of the pits only via a cutting on the south side of the pits (**Figure 1**). Access from the top of the North Pit is not feasible without major earthworks because of a major failure and erosion of the benches. Further failure is expected in the future as there are large tensions cracks along the eastern wall.

Vehicle access to the water level in South Pit (South) was previously by a steeply inclined ramp on the north eastern side of the pit. While access by foot is possible, the ramp is narrow and has been deeply eroded (**Plate 1**). Restoration of this access is not feasible without major earthworks.

Vehicle access to the northern side of South Pit is relatively easy via an access road (ramp) on the eastern side of the pit (**Plate 2**). Erosion in this road is relatively easily repairable. The road occupies a relatively wide down ramp between the pit and the outer pit wall, and it is not likely to be affected by instability. Access is to a small "beach" area from where water has previously been extracted, as this is the easiest point of access to any of the water bodies. Near this beach there is a moderately strong serpentinite rock ledge about 4m, above the water level (**Plate 3**).

The access road to both the South Pit (North) and the North Pit passes to the western side of the South Pit, and is currently blocked by debris (**Plate 4**) from a rockslide and by erosion due to water

diversion by the slide. The slide has occurred by a bench failure towards the top of the pit wall, and the debris includes rock derived from the edge of the overlying North Western Rock Dump which has been undermined. The ramp is relatively wide in this location (**Plate 5**), and the access road could be repaired without major earthworks. Access is to a small beach area in the north eastern corner of South Pit (North).

The access ramp continues down to the south end of North Pit. While the ramp has a rough rocky surface and some 0.5m deep erosion gullies along the side of the road (**Plate 6**), it is relatively wide and could be relatively easily repaired. Access is to a wide rocky ramp, (**Plate 7**) which probably continues as a bench underwater, probably with a steep drop on its western side. **Plate 8** shows the water level in North Pit.

On the main access ramp from the access cutting south of the Mill to the North Pit, the only significant potential for major wall instability appears to be in the short length to the west of South Pit (North) near the existing slide. In the short term, the risk is judged to be relatively low, and cleaning of the debris would not be likely to instigate further slides.

5.2 HYDROGEOLOGY

Anecdotal evidence includes that the pits are expected to contain groundwater, that the water level has not varied significantly over time, that the water quality is good, and that dewatering of the pits was required during mining. No quantitative or verifiable data has been found regarding recharge type and rates to the pits or relationship to groundwater. The bedrock is expected to be tight within the pits, but there could be fracture zones as the mine occupies the Peel Fault zone. Observations made on site indicate:

- The existing water level in the South Pit and South Pit (South) appear similar, and are significantly (possibly about 15m) higher than the water level in South Pit (North). The level in South Pit (North) is significantly above that in North Pit. While the level in North Pit may represent the groundwater table, it is unlikely that the levels in the other pits do;
- No noticeable high water marks could be seen on the walls of the pits;
- Scours and drainage channels indicate that surface water flows into South Pit and South Pit (South), though no flows were observed;
- Pipes still in place indicate that water has previously been extracted from South Pit;

- There was a very noticeable flow of water into South Pit (North) from high on the wall on the south side, ie, closest to South Pit. It could not be seen if this flow was in a natural or man made pathway connecting the two pits. It is possible that a pipe drains South Pit to prevent overflow; and
- Water flow was occurring into North Pit via a seep in the wall in the access road on the south side. It also appears that there was seepage from high on the north west wall, possibly from beneath the rock dump.

A 1997 analysis of water from the North Pit indicates that the water is fresh (approximate total dissolved solids of less than 500mg/L). The water tastes fresh. No other analysis results are known.

5.3 PAVEMENTS

Distances from the Mill by the access road to each pit are approximately:

South Pit S	0.6 km
South Pit	0.9 km
South Pit N	1.3 km
North Pit	1.5 km

The road subgrade is mainly rock. Currently the road is:

- Blocked in one location by landslide debris and associated scouring;
- Blocked in several places by minor water diversion bunds;
- Cut by erosion channels up to 0.5 m deep in places;
- Has a rough rocky surface in places, especially on the descent to the North Pit; and
- Surfaced with some material high in asbestos near the Mill.

The road pavement has been constructed generally by rolling and compacting of local clayey overburden soil over the top of the rock. This provides a smooth surface which could be slippery during wet weather (note that average annual rainfall in Barraba is only 687mm). In some locations, especially steeper areas, the road has been surfaced with a road imported fine river gravel. This has subsequently been eroded and washed off. This gravel would have improved trafficability on the inclined areas during wet weather.

Materials available for restoration and maintenance of the pavements include:

- Waste piles of rock on the flat area north of South Pit (South). This rock has become highly weathered over the years, and breaks down readily. It could be used for reshaping of the pavements (this soil may contain some asbestos);
- Small stockpiles of river gravel adjacent to the road in the same vicinity; and
- Quantities of fine river gravel which are on the north east side of the South Pit, and which have probably largely been derived from washing off of the surface of the road descent to the South Pit.

The river gravel can be used to surface areas of the road which could produce asbestos dust and to provide trafficability in steeper areas.

5.4 COVER MATERIALS

For on-land disposal, final soil cover of 3m depth would be required. This could be sourced from the irregular dumpings between the Mill and the South Pit and north of South Pit (South). This would also reduce the current visual impact of these stockpiles.

Very little vegetation growth has occurred on any of the areas of serpentine rock dumps or tailings. It was noted that on the plateau between the Mill and the South Pit there is some vegetation in the areas where the sandstone (overburden) dump is not covered by serpentine. Use of this material for surfacing of cover materials could assist growth of vegetation cover. Use of this material also ensures that there is no asbestos in the surface soil.

If soil cover is required over the asbestos placed under water, it could probably be better sourced from the waste rock dumps to facilitate placement.

6. DISPOSAL OPTIONS

Disposal into South Pit (South) would require the shortest amount of surface road maintenance but the most difficult placement, requiring a flying fox setup with a span of approximately 200 m and a long drop to the water. Disposal into South Pit (North) would be difficult because of the restricted beach area. Neither of these pits would appear to be the best option.

Disposal into South Pit is a feasible option provided the water depth is sufficient. Relevant factors are:

- The access road requires a relatively small amount of upgrading;
- The access road is unlikely to be affected by instability;
- There is both beach access and rock shelf access just above water level; and
- Dumping near the edge could impact water use from the pit.

Disposal into the side of this pit could be from a platform anchored to rock near the bank (which would require a steep bank underwater because material could not be placed far from the edge), a mobile conveyor which could place bags possibly 10 – 15 m from the bank, or a crane which could place material possibly 20-30m from the bank. Alternatively a barge, either tilting or fitted with a pallet crane, could be used to place the bags at any location in the pit.

Disposal into the North Pit is also a feasible option. Relevant factors are:

- The road access requires significant improvement;
- The haul distance from the Mill is longer than for South Pit;
- There is a small risk of further instability of the access road;
- There is rock over a ramp at water level;
- The flat area for turning near water level is limited;
- The water level is the lowest of any of the pits, and dumping in this pit could not impact water quality or useability of the other pits; and
- This is the largest pit.

Disposal into this pit would probably need to be by barge, and therefore could be at any location in the pit.

The water depth and bottom configuration is not yet known for any of the pits. Unless the pits have a very steep and deep drop off from the bank, dumping by barge would be preferred. This would allow placement at any location with a suitable depth and bottom profile.

If the water is shallow and there is doubt about maintenance of cover with a future drop in water level, the bags would need to be covered by soil. Control of soil placement over the bags could be difficult in placement from a barge unless there is favourable bottom contours. Placement from the bank would be preferred in this case.

If the water depth is sufficient to ensure that exposure is unlikely within a few years of placement, soil cover is not likely to be necessary because active wall erosion would mean that the bags would be covered by silt within a relatively short time period.

Disposal on land of the relatively small volume of asbestos waste is possibly feasible, but daily cover of 0.5m soil would be required. A disposal site could be constructed south of and close to the Mill, to minimise the haul distance and to utilise the existing waste piles in this area for cover. Final cover by sandstone soil to encourage plant growth and to eliminate the possibility of fibres in the surface soil is desirable. Disposal on land has a higher probability of the concentrated fibres being disturbed in the future than disposal under water does.

7. DISPOSAL COST

T & B Metal and Asbestos Services (1999) has estimated the cost of collection and bagging of the asbestos waste from around the Mill at approximately \$550,000, including removal of the fibro sheeting from the Mill. The additional cost of disposal is likely to be relatively small, consisting of:

- Minor upgrading of the road to the South Pit by repairing washouts;
- For disposal in the North Pit, removal of slide debris, repair of washouts, and covering of rock over a further approximately 600 m of access road;
- Haulage of asbestos filled bags from the Mill to the disposal site; and
- Mobilisation of placement equipment, eg. crane or barge.

Estimated costs are:

South Pit	\$40,000
North Pit	\$60,000

Additional costs of road maintenance would depend largely on weather conditions during the operation.

8. CONCLUSIONS AND RECOMMENDATION

Based on the scope of services conducted, the following conclusions and recommendations are made:

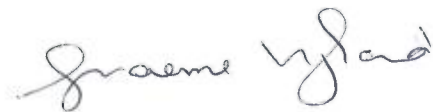
- Disposal of the asbestos wastes in a pit under water is feasible from a regulatory viewpoint;
- Subject to discussion with Barraba Council, it is possible that the disposal could be conducted under a notification of category 2 Remediation under SEPP 55, not requiring consent;
- Soundings of water depths should be conducted at least in South Pit and the southern end of North Pit, both of which are feasible disposal locations;
- Access to South Pit requires relatively little access road upgrading;
- Disposal into South Pit could be achieved from the bank, eg by crane, provided there is sufficient water depth near the bank;

- Disposal into either pit could be accomplished by barge. This would allow more flexibility in selection of disposal locations, and would allow placement in the deepest part of the pit;
- Materials for access road upgrading are available on site;
- The hydrogeology of the area is not well known. Disposal in the North Pit would preclude any possibility of impacting future water use from South Pit;
- The cost of disposal of the wastes within a pit is relatively low, at approximately \$50,000, compared to the cost of cleaning the Mill and bagging the waste, estimated at \$550,000; and
- Unless the South Pit has a very deep and favourable bottom profile, disposal into the North Pit is preferred because it precludes any possibility of diminishing the useability of the water resource in the South Pit. Also, as the water in the North Pit is at a lower elevation than South Pit, the wastes would be less likely to be exposed in a long drought. A greater rate of natural sedimentation is also likely in the North Pit.

* * *

Limitations, Figure 1, Plates 1-8, and the Appendix, advice received from EPA, are attached and complete this report.

Yours faithfully
DAMES & MOORE



Graeme Nyland
Senior Principal

LIMITATIONS OF REPORT

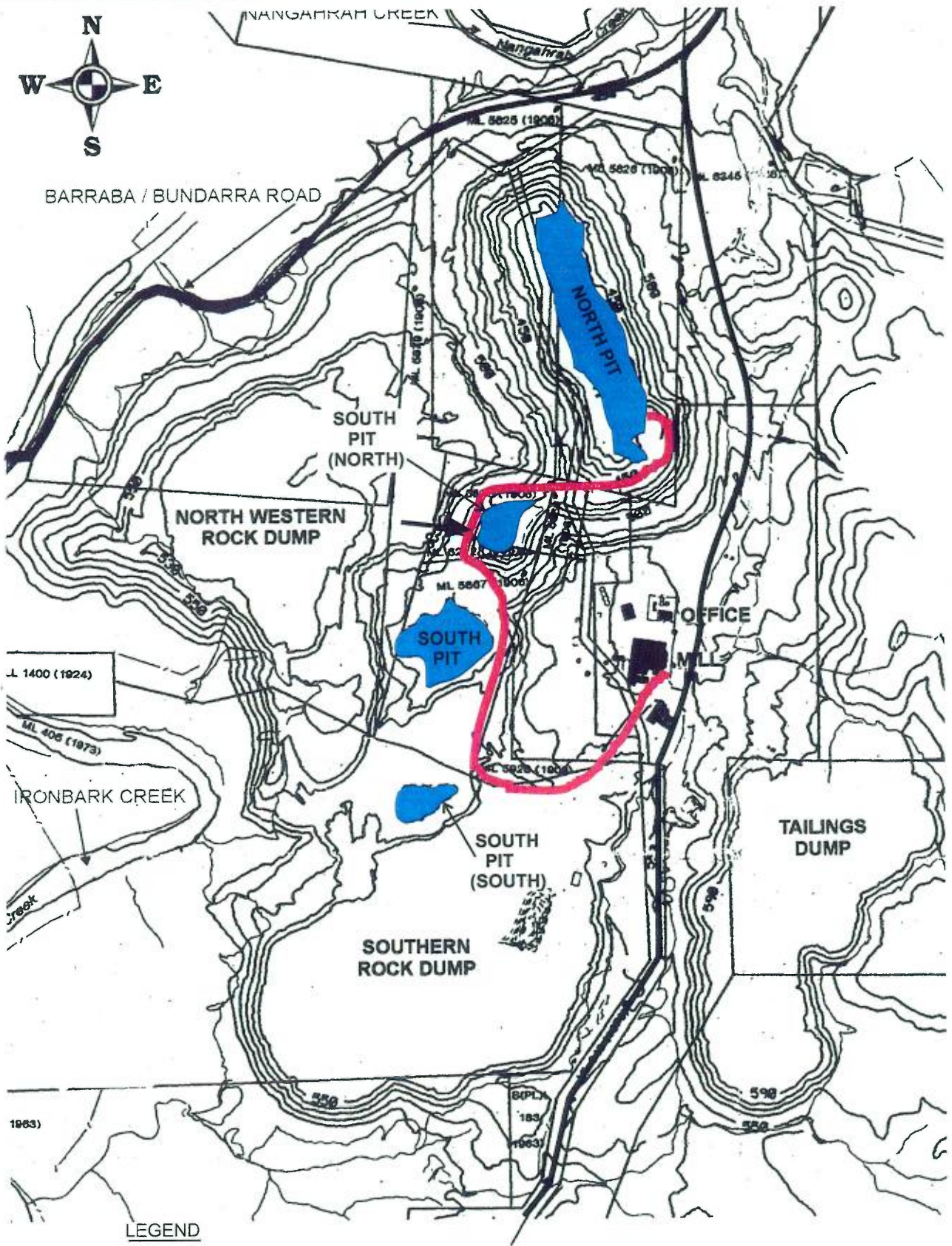
We have prepared this report for the use of **NSW Department of Mineral Resources** in accordance with generally accepted consulting practice. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report has been prepared for the use of the client, based on the scope of services. It may not contain sufficient information for purposes of other parties or for other uses.

The conclusions and recommendations included in this report are based on the limited scope of services, on readily available information, and on opinions provided by personnel in government departments contacted in this assignment. Their opinions and the opinions expressed in this report do not constitute legal advice. Cost estimates provided are approximate only and are not based on contractor quotes.



Figures



BARRABA / BUNDARRA ROAD



LEGEND

-  ACCESS ROAD FROM MILL
-  SLIDE LOCATION

DEPARTMENT OF MINERAL RESOURCES
WOODSREEF MINE
BARRABA, NSW

SITE PLAN



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FILE:FIG1.cdr
DATE:9/6/00
REVISION:0

29139-009-371

FIGURE 1

Plates



PLATE 1.
ACCESS RAMP AND SOUTH PIT (SOUTH)



PLATE 2.
ROADWAY DOWN TO SOUTH PIT

JOB No: 29139-009-371
FILE: DMR-PL1_2.DWG
DATE: 23/06/00

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PLATE 3.
SOUTH PIT ENTRY POINT



PLATE 4.
**SLIDE DEBRIS ON ROAD DOWN TO SOUTH PIT (NORTH),
SHOWING ENTRY POINT**

JOB No: 29139-009-371
FILE: DMR-PL3_4.DWG
DATE: 23/06/00

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PLATE 5.
ROAD DOWN TO SOUTH PIT (NORTH)



PLATE 6.
ROAD FROM SOUTH PIT (NORTH) TO NORTH PIT

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FILE: DMR-PL5_6.DWG
DATE: 23/06/00

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PLATE 7.
NORTH PIT ENTRY POINT



PLATE 8.
NORTH PIT

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FILE: DMR-PL7_8.DWG
DATE: 23/06/00

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Appendix

Advice Received from EPA



"Smith Simon
(Armidale)"
<SmithSs@epa.nsw.gov.au>

06/06/00 05:12 PM

To: "graeme_nyland@urscorp.com" <graeme_nyland@urscorp.com>
cc: "James BRISEBOIS (E-mail)" <briseboj@minerals.nsw.gov.au>, Gara Bill <garab@epa.nsw.gov.au>, Roberts Greg <RobertsG@epa.nsw.gov.au>, Dutailis David <DutailisD@epa.nsw.gov.au>

Subject: Disposal of Asbestos Waste from Woodsreef mill building

Graeme,

As discussed I have sought answers about requirements for disposing of asbestos waste at Woodsreef.

1. Development Consent.

Barraba Council is the best organisation to give you advice about its LEP, what is or isn't permitted and what may require consent. As far as I can tell the activity does not trigger any of the definitions of thresholds in the Protection of the Environment Operations Act.

I am not sure about the Designated Development/Schedules in the Environmental Planning and Assessment Act. The Department of Urban Affairs and Planning would be your best people to talk to and I'd suggest Mr Peter Adrian, Deputy Regional Director, Western Regions on 02 9391 2339 would be a good contact.

The consequence is that even if the development is scheduled it will probably not be integrated development.

2. Landfill Licence/Waste Facility

Schedule 1 of the Protection of the Environment Operations Act, defines those premises that require a licence. The section on Waste Facilities has the following exemption (asbestos is classified as "industrial"):

(1) A waste facility that is of any one or more of the following classes:

(a)
hazardous, industrial, Group A or Group B waste processing facilities, being waste facilities that treat, process or reprocess hazardous waste, industrial waste, Group A waste or Group B waste (or any combination of those types of waste), except those:

(i) that only treat, process or reprocess sewage, or gases specified as Dangerous Goods Class 2 in the 6th edition of the Australian Code for the Transport of Dangerous Goods by Road and Rail, in force as at 1 January 1998, or

(ii) that only treat, process or reprocess waste that is generated on site,

(b)
hazardous, industrial, Group A or Group B waste disposal facilities, being waste facilities that dispose of hazardous waste, industrial waste, Group A waste or Group B waste (or any combination of those types of waste), except those:

(i) that only lawfully discharge waste into a sewer, or

(ii) that are located outside the Sydney metropolitan area or the extended regulated area and:

(A) where the only hazardous, industrial, Group A or Group B waste that is disposed of is asbestos waste, or

(B) are operated by a local authority and where the only hazardous, industrial, Group A or Group B waste that is disposed of is asbestos waste, liquid grease trap waste or clinical waste,

That is: the pit is exempt from the from the definitions of a waste facility requiring a licence.

3. Disposal of Asbestos.

Clause 29 of the Waste Regulations contain the provisions relating to

transport and disposal of asbestos waste.

Transport would need to meet parts (3) and (4).

In terms of disposal, Part 5 (a) and (b) are the 2 critical parts.

(a) if there are any planning requirements and they are satisfied, the pit can lawfully accept the waste.

(b) burial can be under water so long as the rest of the requirements are met ie 5(c), (d) and (e).

29 Special requirements relating to asbestos waste

(1) This clause applies to any activity that involves the transportation, collection, storage, or disposal of any type of asbestos waste, regardless of whether the activity is required to be licensed.

(2) A person who carries on an activity to which this clause applies must comply with the requirements specified in this clause in relation to the activity concerned.

Maximum penalty: 200 penalty units in the case of a corporation, 100 penalty units in the case of an individual.

(3) The requirements relating to the transportation of asbestos waste are as follows:

(a) any type of asbestos waste must not be transported unless it is conveyed in a covered leak-proof vehicle so as to prevent any spillage or dispersal of the waste,

(b) if asbestos waste that is in the form of stabilised asbestos waste in bonded matrix is to be transported and the waste is not stored in a bag in accordance with subclause (4) (c), the waste must be wetted before it is transported,

(c) any vehicle used to transport any type of asbestos waste must be cleaned before leaving the landfill site at which the waste is disposed of so as to ensure that all residual asbestos waste is removed from the vehicle.

(4) The requirements relating to the collection and storage of asbestos waste are as follows:

(a) asbestos waste that is in the form of asbestos fibre and dust waste must be covered in such a manner as to prevent the emission of any dust,

(b) asbestos waste that is in the form of asbestos fibre and dust waste must not be collected and stored except in accordance with the following procedures:

(i) the waste must be collected and stored in impermeable bags,

(ii) each bag must be made of heavy duty low density polyethylene of at least 0.2 mm thickness, and have dimensions of no more than 1.2 m in height and 0.9 m in width,

(iii) each bag must be sealed by a wire tie, and contain no more than 25 kg of waste,

(iv) each bag must be marked with the words ``CAUTION ASBESTOS'' in letters of not less than 40 mm and which comply with Australian Standard AS 1319-Safety Signs for the Occupational Environment,

(c) if asbestos waste in any form is stored in a bag, the following

procedures must be followed:

- (i) the bag must be placed in a leak-proof container that is used only for the purposes of storing asbestos waste, and
- (ii) the container must be marked with the words ``DANGER-ASBESTOS WASTE ONLY-AVOID CREATING DUST'' in letters of not less than 50 mm and which comply with Australian Standard referred to in paragraph (b) (iv), and
- (iii) the container must have a close-fitting sealed cover so as to prevent any spillage or dispersal of the waste,
- (d) asbestos waste in any form must not be stored except in accordance with the following procedures:

- (i) the waste must be stored in a secure area so as to prevent entry by unauthorised persons and to prevent the risk of environmental harm,
- (ii) the waste must, if it is practicable to do so, be stored separately from other types of waste,
- (e) if asbestos waste that is in the form of stabilised asbestos waste in bonded matrix is stored otherwise than in a bag in accordance with paragraph (c), the following procedures must be followed:
 - (i) if it is practicable to do so, the waste must be wetted so as to prevent the emission of any dust,
 - (ii) in wetting the asbestos waste, care must be taken to ensure that the wetting process does not cause any emission of dust or lead to any discharge of polluted water,
 - (iii) the waste must be kept covered at all times.

(5) The requirements relating to the disposal of asbestos waste are as follows:

- (a) asbestos waste in any form must be disposed of only at a landfill site that may lawfully receive the waste,
- (b) disposal of asbestos waste in any form must be by way of burial,
- (c) before disposal of the asbestos waste, arrangements must be made with the occupier of the landfill site for the purposes of ensuring that the asbestos waste will be covered:
 - (i) initially to a depth of at least 0.5 m, and
 - (ii) finally to a depth of at least 1 m (in the case of stabilised asbestos waste in bonded matrix) or 3 m (in the case of asbestos fibre and dust waste) beneath the planned final land surface of the landfill site,
 - (d) the asbestos waste must:
 - (i) be disposed of in accordance with the arrangements under paragraph (c), and
 - (ii) be buried to the initial depth on the same day it is received at the landfill site,
 - (e) in disposing of asbestos waste in any form at a landfill site, the waste must:
 - (i) be

unloaded in such a manner as to avoid the creation of dust,
and

(ii)

not be compacted before it is covered, and

(iii)

not come into contact with any earthmoving equipment at any
time.

(6) asbestos waste in any form to be used as
road making material.

A person must not cause

penalty units in the case of a corporation, 100
penalty units in the case of an individual.

Maximum penalty: 200

(7) waste means any waste that contains
asbestos as defined in the Waste Guidelines.

In this clause, asbestos

4. Other recommendations.

We would suggest that the depth of the water and the shape or the
storage area needs to be determined and that the water balance was such
that cover is maintained during excessive dry times.

As an added precaution we would recommend that if the waste material was
placed carefully in the appropriate part of the pit that it be covered
with soil or waste rock to ensure that it remains in place and is not
accidentally disturbed during subsequent activity.

It would be worth looking at the hydrogeology to determine if the pit
intercept groundwater and allows asbestos waste to accede to the
surrounding groundwater. The concern is that asbestos may contaminate
groundwater or any surface water immediately connected to it.

The presence of the Peel fault and subsequent fracturing may complicate
the story. It may be worth comparing the relative risks of placing
asbestos in the pit compared to the probability of asbestos movement
compared to the risks of current asbestos movement in surface and ground
water within the current configuration.

Hope this clarifies the situation. Please ring if you have any further
questions.

Regards
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