ABN: 67 118 684 576

COBAR CONSOLIDATED RESOURCES LIMITED

Response to a Request of NSW Office of Water for Additional Information Issued on 8 February 2011

for the

WONAWINTA SILVER PROJECT

March 2011

Prepared by:

R.W. CORKERY & CO. PTY. LIMITED

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Prepared for:

Cobar Consolidated Resources Limited
ABN: 67 118 684 576
Level 4, 448 St Kilda Road
MELBOURNE VIC 3004

Telephone: (03) 9866 8613
Facsimile: (03) 9820 2586
Email: tshard@ccrlimited.com.au

Prepared by:

R.W. Corkery & Co. Pty. Limited
Geological & Environmental Consultants
ABN: 31 002 033 712

Brooklyn Office:
1st Floor, 12 Dangar Road
PO Box 239
BROOKLYN NSW 2083

Telephone: (02) 9985 8511
Facsimile: (02) 9985 8208
Email: brooklyn@rwcorkery.com

Orange Office:
62 Hill Street
ORANGE NSW 2800

Telephone: (02) 6362 5411
Facsimile: (02) 6361 3622
Email: orange@rwcorkery.com

Brisbane Office:
Level 19, 1 Eagle Street
BRISBANE QLD 4000

Telephone: (07) 3360 0217
Facsimile: (07) 3360 0222
Email: brisbane@rwcorkery.com

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R. W. CORKERY & CO. PTY. LIMITED

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FIGURES

ATTACHMENT 1

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1. INTRODUCTION

A development application for the development and operation of the Wonawinta Silver Project ("the Project") was lodged with Cobar Shire Council (Council) by Cobar Consolidated Resources Limited (CCR) on 22 December 2010. Accompanying the development application was an Environmental Impact Statement (EIS) prepared by R.W. Corkery & Co. Pty Limited (RWC).

On 8 February 2011, NSW Office of Water (NOW) issued a letter to Council requesting further information on several aspects of the proposed rehabilitation. Provision of the information requested in provide in Section 2.

2. ADDITIONAL INFORMATION ON WATER SUPPLY AND LICENSING

2.1 MCKINNON'S, MIRRABOOKA AND MANUKA BOREFIELDS

NOW wrote:

"There is uncertainty in the Environmental Impact Statement (EIS) as to the water supply sources for the' project. The EIS indicates water is available from the McKinnon's, Mirrabooka and the Manuka borefield, however as the EIS claims each borefield can individually produce all or a substantial component of the water requirements for the project, clarification is requested as to which borefield/s are required. ……

The Mirrabooka and Manuka borefields are unlicensed with no volumetric entitlement, and no pump test assessment has been provided to substantiate the reported 788ML/yr and 157ML/yr respectively, lf the proponent confirms the Mirrabooka or Manuka borefield as a water supply source for this project, the proponent will need to provide additional information to enable the Office to assess a transfer of licensed entitlement to these sites. ……

Upon review of this information the Office will be able to determine whether we would be supportive of a transfer of licensed water if requested by the proponent. Based on this assessment the Office would be able to determine GTAs for the proposed bores at the Mirrabooka or Manuka borefield which would need to be licensed prior to the format licence transfer process."

Response

It is the Applicant's intention to take water from the established and licensed McKinnon's Mine borefield until such time as further information is obtained on the Mirrabooka groundwater supply and assessment is completed on the impact of the proposed water extraction. The licence entitlement of this borefield (750ML) is sufficient to supply the water requirements of the proposed Wonawinta Silver Project ("the Project"). The McKinnon's Mine borefield would be used until such time as a replacement borefield closer to the Project Site becomes available.

The proposed Mirrabooka borefield has been identified in the EIS as a potential supplementary or replacement source of water. Initial test work completed on the "Mirrabooka" property has confirmed that groundwater appears to be available at sufficient yields to supply the nominated water demand of the proposed Wonawinta Silver Project ("the Project"). However, it is

acknowledged that sufficient test work and assessment of the proposed Mirrabooka borefield on local and regional hydrogeology has not been completed to enable the Proponent to make application to the NSW Office of Water (NOW) to assess and approve the transfer of licence entitlement.

Acknowledging that insufficient information is available for the Mirrabooka borefield to be granted a transfer of licence entitlement, the application is for the approval for the pipeline route. Installation and operation of the pipeline would be subject to approval of licence entitlement from NOW and licensing of groundwater extraction bores. By obtaining approval for the pipeline route, with operation subject to obtaining appropriate licences from NOW for the development and operation of the borefield, the necessity to make a subsequent application to modify the development consent (should it be approved) would be avoided.

The proposed "Manuka" borefield was identified in the EIS only as a possible future alternative to the McKinnon's Mine and Mirrabooka borefields. No assessment of a possible pipeline route has been completed and insufficient groundwater test work is available to confirm it as a viable source of water. Should the Applicant wish to progress this as a possible source of water to the Project, an application to modify development consent would be prepared containing information on the proposed route, ecological, heritage and other environmental considerations.

2.2 PIT DEWATERING

NOW wrote:

"*Section 4.3.5.3 of the EIS indicates dewatering will be required from the proposed pits and that application can be made under an exemption to the current NSW Inland Groundwater Shortage Zone Embargo for extraction of less than 10ML/yr. The Office advises that it may be possible to make an application under this exemption however it may not be appropriate. This is because the intent of the exemption is for activities of a short term nature (12 months) with low risk which don't need to be accounted for in the management of the local groundwater system. In contrast the proposed mine dewatering is likely to be an activity of an ongoing nature and it would be important for the proponent to secure a guaranteed licensed entitlement for this activity.*

Due to the low predicted groundwater inflow rates and minimal potential impact to adjacent users the Office does not require any further assessment information at this stage. However the proponent is advised that a licence under Part 5 of the Water Act 1912 will be required with adequate entitlement prior to interception of the water table and that the Office supports the concept of proposed compensatory measures defined in Section 4.3.4.2"

Response

NOW have slightly misinterpreted the information provided on possible dewatering requirements. Dewatering will not be an ongoing activity, rather the period during which groundwater could enter the mining operations would be a short term event corresponding to when the South Pit is mined below the groundwater table. The following clarifies the issue of possible mine dewatering requirements.

1. Groundwater is only likely to be encountered below 195m AHD within the South Pit.
2. The maximum depth of the South Pit is 193m AHD. The mining of the 2m of material below the groundwater table would not take more than 6 weeks to remove, after which the pit would be backfilled with waste rock removed from elsewhere within the South Pit or one of the other pits.

3. On this basis, dewatering would only be of a short term nature (in accordance with the requirements for the exemption), requiring dewatering of less than 10ML (also in accordance with the requirements for the exemption).

2.3 WATERCOURSE CROSSINGS - CONTROLLED ACTIVITY APPROVALS

NOW wrote:

"As detailed in the EIS a Controlled Activity Approval may be required under the Water Management Act 2000 for the activities of 1) pipeline crossing of watercourses, and 2) culverts and waterway crossings. To confirm if an approval is required and to determine general terms of approval where necessary the following information is requested:

- *Provide a map of suitable scale with the locations of proposed works within 40m of a watercourse clearly marked. As a starting point a watercourse can be defined as a blue line on the relevant topographic map.*
- *Confirm land ownership of each proposed work.*
- *Provide photographs of each location to represent the area of proposed works and the adjacent area which may be impacted.*
- *Description of works at each location, this is to include a design of the works and the requirement for excavation and disturbance at each site.*
- *An assessment of the impact of each of the works and outline the necessary management and mitigating measures.*

Upon receipt of the above information the Office may require additional information."

Response

With reference to the 1:50 000 scale topographic maps of the area, the potential water courses identified by blue lines along the alignment of the McKinnon's Pipeline Route, Project Site and Mirrabooka Pipeline Route were inspected. **Figure A** provides the locations of those watercourses (and stream order based on the topographic mapping) considered to carry water (although on most occasions the flow of water would be more akin to sheet flow than channelized flow). **Figures 1** to **18** (of **Attachment 1**) provide photos of each of the water courses.

It is noted that survey and assessment of all proposed disturbance (including along the alignment of the proposed water pipelines) conducted by OzArk Environmental and Heritage Management (OzArk) determined that:

> *"All 1st order (Strahler) waterways are barely visible in the landscape in their natural form and they have no defined banks or aquatic vegetation. Where they are deeply incised they are most often in environments depleted of native ground covers due to commercial grazing of goats. Vegetation within 50m of a 1st order drainage line are terrestrial communities and have been mapped on Figures 8 to 11.*
>
> *No vegetation was assessed as aquatic in nature and the only groundwater dependant community are the River Red Gums along Sandy Creek. There is no habitat (Class 4 waterway 'no fish habitat') in these environments for dependant species.*

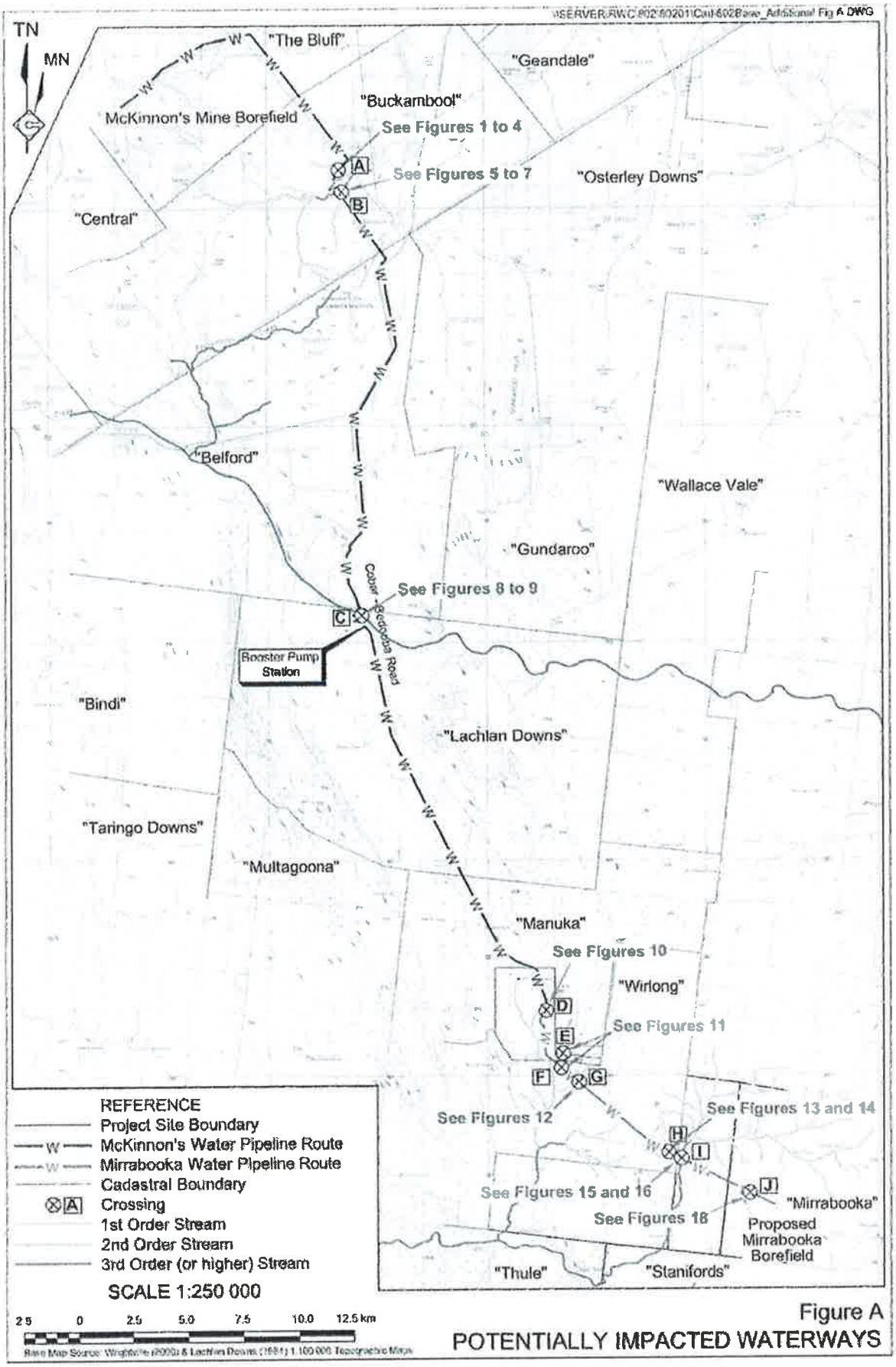

Figure A
POTENTIALLY IMPACTED WATERWAYS

There is only one 2nd order (Strahler) waterway within the Study Area, where the McKinnon's Water Pipeline route crosses Sandy Creek. Vegetation and ecological context of the two pipeline routes are discussed in more detail as follows."

(p. A7-105 of *Appendix 7* of the EIS)

The following provides information on the location and land ownership of each of the water courses, along with a description the water course and proposed works to be undertaken.

McKinnon's Water Pipeline Route

Three water course crossings have been identified and inspected.

- **Crossing A** (see **Figures 1** to **4** of **Attachment 1**). Located on Lot 864 DP761940 (Western Lands Lease [WLL] 2811) leased by BJE AG Pty Ltd ("Buckambool").

  A channel of approximately 3m to 4m deep and 10m to 15m wide has been formed by ephemeral flows following heavy rainfall. The soil and subsoil layer has been eroded to the stony channel base. Fencing maintained across the channel suggests that the intensity of flow is only moderate.

  It is proposed to suspend the pipeline across the channel using caternary wire across the entire channel.

  Given that no earthworks are proposed within the channel itself, with suspension of the pipe to be undertaken without disturbance to the stream bed, there would be no impacts associated with construction. The pipeline would be regularly inspected for signs of damage or leaks with water pumping ceased immediately and remedial works undertaken if evidence of damage or leakage is noted.

- **Crossing B** (see **Figures 5** to **7** of **Attachment 1**). Located on Lot 864 DP761940 (Western Lands Lease [WLL] 2811) leased by BJE AG Pty Ltd ("Buckambool").

  A channel of approximately 1m to 2m deep and 5m to 10m wide has been formed by ephemeral flows following heavy rainfall. The soil and subsoil layer has been eroded to the stony channel base. Fencing maintained across the channel suggests that the intensity of flow is only moderate.

  It is proposed to suspend the pipeline across the channel using caternary wire across the entire channel.

  Given that no earthworks are proposed within the channel itself, with suspension of the pipe to be undertaken without disturbance to the stream bed, there would be no impacts associated with construction. The pipeline would be regularly inspected for signs of damage or leaks with water pumping ceased immediately and remedial works undertaken if evidence of damage or leakage is noted.

- **Crossing C** (see **Figures 8** and **9** of **Attachment 1**). Sandy Creek crossing within the road reserve of Cobar-Bedooba Road (SR 13). SR 13 is a local road maintained by Cobar Shire Council.

  Two distinct channels cross Cobar Bedooba Road, with the depth of each channel between 1m and 2m deep. Each channel is forded by SR 13, with no impedance of flow.

  A channel of approximately 1m to 2m deep and 5m to 10m wide has been formed by ephemeral flows following heavy rainfall.

The vegetation identified on **Figures 8** and **9** (of **Attachment 1**) was recorded by OzArk as *Cobar Peneplain Red Gum and Bimble Box Woodland and Lachlan Red Gum Open Forest*. Ozark also note that the concentration of tree hollows within this vegetation is the highest quality and density (1 to 3 per hectare) found over the areas surveyed (Project Site and pipeline routes).

CCR proposes to bury the pipeline 1m below the base of the Sandy Creek channels. Earthworks would be undertaken within the table drain of SR 13 at least 3m from forest vegetation. As noted in the EIS, the trench for laying the pipeline would be constructed approximately 1.2m deep and 0.6m wide using trenchers, mini-excavators and/or backhoes. The area of impact associated with the trench construction would be limited to the width of the equipment used, i.e. <4m wide. Generally, no more than 200m of the trench will be open and unprotected at any one time. The length of time required to construct the trench and lay the pipe would be less than 2 days and would be planned with reference to short and moderate term weather forecasts, i.e. when probability of rain is minimal. On laying of the pipeline, the trench would be immediately filled in and compacted to minimise the potential for erosion.

The depth of the pipeline (1m below the channel base) is sufficiently deep such that erosion of the channel bed will not expose the pipeline leading to possible damage and/or rupture.

Given the minimal earthworks required, the very short construction time, avoidance of vegetation, lack of aquatic or fish habitat and commitment of CCR to limit both the impact footprint and construction time, construction and operation of the pipeline across Sandy Creek would have minimal and temporary impact on Sandy Creek.

- **Crossing D** (see **Figure 10** of **Attachment 1**). Located on Lot 3632 DP766014 (Western Lands Lease [WLL6238) currently leased by S.H. & N.J. Mosely (with lease to be transferred to Cobar Consolidated Resources Limited on receipt of development consent) ("Manuka").

  An area of sheet wash flow to be crossed by the Main Access Road and Mirrabooka Water Pipeline (if constructed) approximately 250m south of the proposed Processing Plant and Office Area.

  As noted in the EIS, it is proposed to install a concrete box / pipe culvert at this location. The culvert would be designed to provide for flows generated by a 1 in 20 ARI rainfall event. As noted in the EIS (*p. 4-11*), both culverts would be constructed with inlet and outlet protection in the form of rock lining with competent rock >80mm. Engineering design plans for the culvert would be supplied with a controlled activity approval application to NOW following the issuing of development consent. Construction of the culverts would be undertaken in accordance with an Erosion and sediment Control Plan (ESCP) prepared for the mine site.

  The water pipeline would be buried within a trench at least 0.6m below surface. The proposed trenching and pipeline laying works would be as described for Crossing C, i.e. impact minimised to trench construction and equipment access with construction and rehabilitation completed within 1 day. The vegetation of the areas to be affected is described by OzArk as *Poplar Box - Gum-barked Coolibah*

- *White Cypress Pine shrubby woodland mainly in the Cobar Peneplain Bioregion*, with impacts on remnant trees and shrubs to be avoided.

Given that no defined channel exists and the minimal earthworks proposed, the impact associated with the proposed works across this 'watercourse' would be negligible.

- **Crossings E and F** (see **Figure 11** of **Attachment 1**). Crossing E is located on Lot 3632 DP766014 (Western Lands Lease [WLL6238) currently leased by S.H. & N.J. Mosely (with lease to be transferred to Cobar Consolidated Resources Limited on receipt of development consent) ("Manuka"). Crossing F is located on Lot 3633 DP766015 (Western Lands Lease [WLL6239) leased by K.G. McDougall ("Wirlong").

  A poorly defined channel exists for this 1st order stream. Crossing E would be traversed by the Main Access Road and it is proposed to install a concrete box / pipe culvert at this location. The culvert would be designed to provide for flows generated by a 1 in 20 ARI rainfall event. As noted in the EIS (*p. 4-11*), both culverts would be constructed with inlet and outlet protection in the form of rock lining with competent rock >80mm. Engineering design plans for the culvert would be supplied with a controlled activity approval application to NOW following the issuing of development consent. Construction of the culverts would be undertaken in accordance with an Erosion and sediment Control Plan (ESCP) prepared for the mine site.

  Crossing F would be traversed by the Mirrabooka Water Pipeline with the pipeline be buried within a trench at least 0.6m below surface. The proposed trenching and pipeline laying works would be as described for Crossing C, i.e. impact minimised to trench construction and equipment access with construction and rehabilitation completed within 1 day. The vegetation of the impacted area is described by OzArk as *Bimble Box Flats Woodland*, with disturbance to remnant trees avoided.

  Given that the minimal earthworks proposed, and commitment to avoid periods of rainfall for construction, the impact associated with the proposed works across this 'watercourse' would be negligible.

- **Crossings G and H** (see **Figures 12** to **14** of **Attachment 1**). Located on Lot 3633 DP766015 (Western Lands Lease [WLL6239) leased by K.G. McDougall ("Wirlong").

  Areas of sheet wash flow to be crossed by the Mirrabooka Water Pipeline. There is no defined channel for either of these 1st order 'watercourses'.

  The proposed trenching and pipeline laying works would be as described for Crossings E and F, i.e. impact minimised to trench construction and equipment access with construction and rehabilitation completed within 1 day. The vegetation of the areas to be affected is described by OzArk as *Bimble Box Flats Woodland*, with impacts on remnant trees and shrubs to be avoided.

  Given that no defined channel exists and the minimal earthworks proposed, the impact associated with the proposed works across this 'watercourse' would be negligible.

- **Crossing I** (see **Figure 15** and **16** of **Attachment 1**). Located within Bedooba State Conservation Area on Lot 3636 DP766018 (Crown land).

A very shallow channel (<0.5m deep) exists for this 2nd order stream to be traversed by the Mirrabooka Water Pipeline (if constructed).

The proposed trenching and pipeline laying works would be as described for Crossings G and H, i.e. impact minimised to trench construction and equipment access with construction and rehabilitation completed within 1 day. The vegetation of the areas to be affected is described by OzArk as *Bimble Box Flats Woodland*, with impacts on remnant trees and shrubs to be avoided.

Given that the minimal earthworks proposed, and commitment to avoid periods of rainfall for construction, the impact associated with the proposed works across this 'watercourse' would be negligible.

- **Crossing J** (see **Figure 15** and **16** of **Attachment 1**). Located on Lot 1351 DP766090 (Western Lands Lease [WLL6235) currently leased by J.B. and D.M. Betts ("Mirrabooka").

  No defined channel exists for this 'watercourse' which appears to flow towards the tank adjacent to the Mirrabooka homestead. The Mirrabooka Water Pipeline (if constructed) would traverse this 1st order stream.

  The proposed trenching and pipeline laying works would be as described for Crossing I, i.e. impact minimised to trench construction and equipment access with construction and rehabilitation completed within 1 day. The vegetation of the areas to be affected is described by OzArk as *Bimble Box Flats Woodland*, with impacts on remnant trees and shrubs to be avoided.

  Given that the minimal earthworks proposed, and commitment to avoid periods of rainfall for construction, the impact associated with the proposed works across this 'watercourse' would be negligible.

2.4 MONITORING BORES

NOW wrote:

"*The Office advises that monitoring bores must be licensed under the Water Act 1912 and there is currently an exemption in the NSW Inland Groundwater Shortage Zones Embargo which allows for applications to be made for this purpose. It is expected that the number and location of monitoring bores will not be finalised until finalisation of the groundwater management plan, hence any GTAs issued for this type of licence will need to require further detail upon application of the licence/s. The proponent will need to ensure that all existing monitoring bores are licensed under the Water Act 1912.*

Response

The Applicant acknowledges the requirement to licence monitoring bores, the locations of which will be determined as part of the preparation of a Groundwater Management Plan for the Project. The Applicant has committed to consulting with NOW in the development of a Groundwater Management Plan. **Figure B** provides an indicative illustration of proposed groundwater monitoring bore locations.

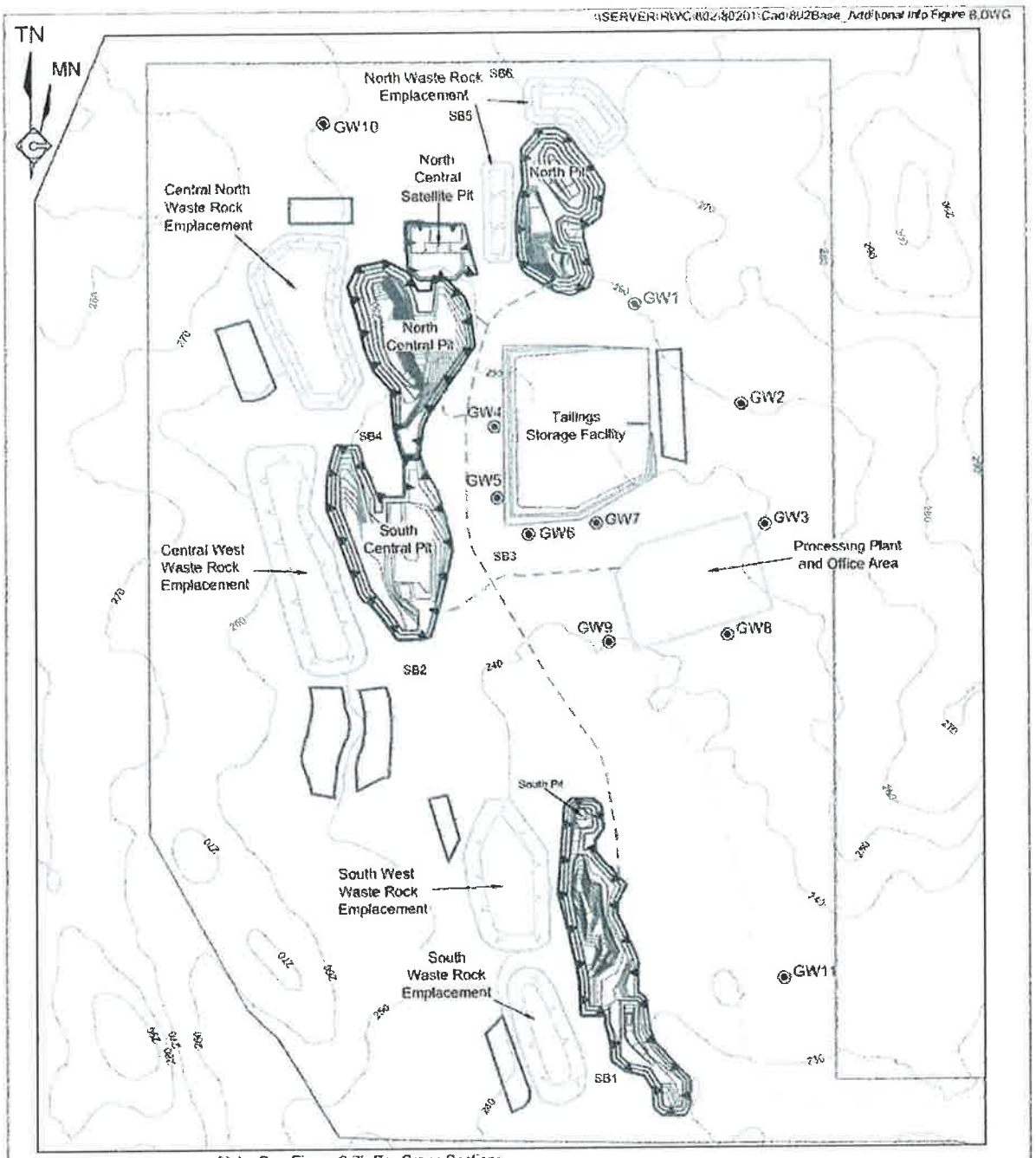

Figure B
INDICATIVE GROUNDWATER MONITORING PLAN

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Attachment 1

Figures 1 to 18 of Water Course Crossings

Prepared by

Brian Micke (Wonawinta Silver Project Manager)

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Figure 1. Northernmost watercourse crossing (1 of 3) looking north along the proposed route.

Figure 2. Northernmost watercourse crossing (1 of 3) looking south along the proposed route.

Figure 3. Northernmost watercourse crossing (1 of 3) looking west upstream.

Figure 4. Northernmost watercourse crossing (1 of 3) looking east downstream.

Figure 5. McKinnons pipeline route watercourse crossing (2 of 3) looking northwesterly.

Figure 6. McKinnons pipeline route watercourse crossing (2 of 3) looking westerly upstream.

Figure 7. McKinnons pipeline route watercourse crossing (2 of 3) looking south.

Figure 8. Sandy Creek crossing (3 of 3) along SR13 Cobar-Bedooba Road looking south.

Figure 9. Sandy Creek crossing (3 of 3) along SR13 Cobar-Bedooba Road looking north. The two distinct channels can be seen here with a widely dispersed waterflow, as was observed this year. It is proposed that this watercourse be crossed by the water pipeline buried at a depth of 1.0 metres.

Watercourses along the Proposed Mirrabooka Pipeline Route

There were seven watercourses identified along the proposed Mirrabooka pipeline route, although two appear to be duplicated (shown in Figure 11).

Figure 10. Area of sheetwash flow (1 of 7) about 250 m south of the process plant site. No special treatment required at this site.

Figure 11. Second watercourse identified on the project site (2 and 3 of 7 on the Mirrabooka pipeline). No special treatment required at this site.

Figure 12. Second watercourse identified on the Mirrabooka pipeline route (4 of 7 on the Mirrabooka pipeline). No special treatment required at this site.

Figure 13. Third watercourse identified on the Mirrabooka pipeline route (5 of 7 on the Mirrabooka pipeline). No special treatment required at this site. Looking WNW.

Figure 14. Third watercourse identified on the Mirrabooka pipeline route (5 of 7 on the Mirrabooka pipeline). No special treatment required at this site. Looking ESE.

Figure 15. Fourth watercourse identified on the Mirrabooka pipeline route (6 of 7 on the Mirrabooka route). No special treatment required at this site. Looking WNW in Bedooba State Forest.

Figure 16. Fourth watercourse identified on the Mirrabooka pipeline route (6 of 7 on the Mirrabooka pipeline). No special treatment required at this site. Looking ESE towards the centre of the Bedooba State Forest.

Figure 17. Historic telephone alignment along the road and fenceline through Bedooba State forest. The telephone was last used about the late 1970's by the Betts' family of Mirrabooka Station.

Figure 18. Fifth watercourse identified on the Mirrabooka pipeline route (7 of 7 on the Mirrabooka pipeline). No special treatment required at this site, which is adjacent to the tank very close to the Mirrabooka homestead.

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