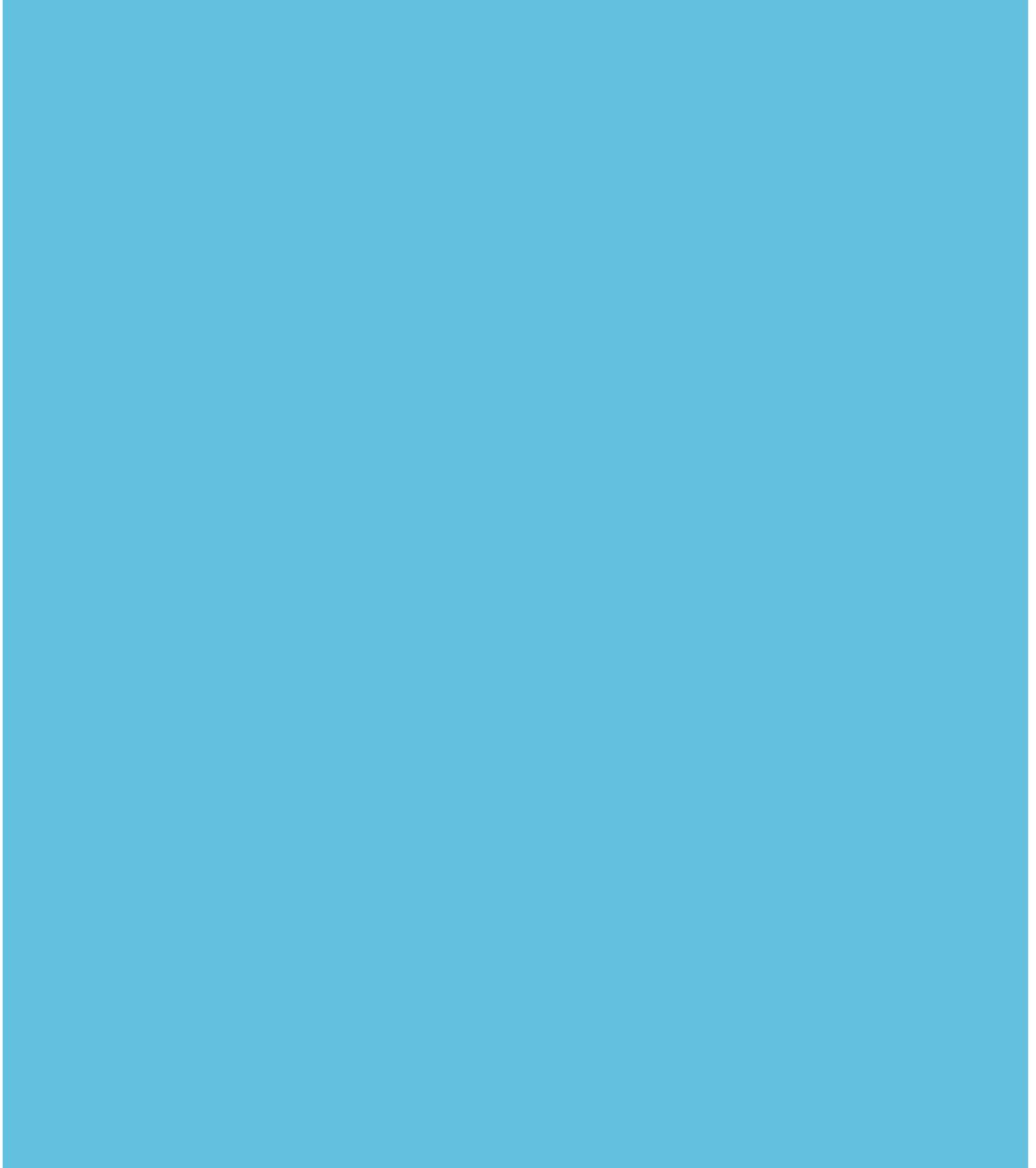


Appendix B



This page has been left blank intentionally.



Common Boundary Rehabilitation Plan

Bulga Coal Complex and Mount Thorley Warkworth

February 2013

633.10001

GSS Environmental a Division of SLR Consulting Australia Pty Ltd
(ABN 29 001 584 612) Effective 3 November 2012

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	PURPOSE	1
1.2	SCOPE OF THE CBRP	1
1.3	CONSENTS, AUTHORISATIONS AND LICENCES.....	3
1.3.1	<i>Ramp 22 Dam Development Approval</i>	<i>3</i>
1.4	LAND OWNERSHIP AND LAND USE.....	4
1.4.1	<i>Common Boundary Agreement</i>	<i>5</i>
1.5	STAKEHOLDER CONSULTATION	5
1.5.1	<i>Consultation with the DTIRIS</i>	<i>5</i>
2.0	PROPOSED OPERATIONS.....	5
2.1	PROJECT DESCRIPTION	5
2.2	ACTIVITIES OVER THE TERM OF THE CBRP	6
2.2.1	<i>Construction</i>	<i>6</i>
2.2.2	<i>Clearing and Topsoil Stripping Rehabilitation Areas (Rehabilitation Disturbance)</i>	<i>6</i>
2.2.3	<i>Overburden Dumping.....</i>	<i>6</i>
2.2.4	<i>Rehabilitation</i>	<i>7</i>
3.0	ENVIRONMENTAL ISSUES MANAGEMENT	8
3.1	RISK ASSESSMENT.....	8
3.2	RISK MANAGEMENT.....	8
3.2.1	<i>Surface Water</i>	<i>8</i>
3.2.2	<i>Erosion and Sedimentation.....</i>	<i>8</i>
3.2.3	<i>Operational Noise.....</i>	<i>10</i>
3.2.4	<i>Air Quality</i>	<i>10</i>
3.2.5	<i>Aboriginal Heritage.....</i>	<i>10</i>
3.2.6	<i>Ecology.....</i>	<i>11</i>
4.0	POST MINING LAND USE.....	11
4.1	REGULATORY REQUIREMENTS.....	11
4.2	POST-MINING LAND USE VISION	15
4.2.1	<i>Final Land Use</i>	<i>15</i>
4.3	COMMON BOUNDARY REHABILITATION OBJECTIVES.....	15
5.0	REHABILITATION PLANNING.....	15
5.1	DOMAIN SELECTION	15
5.2	DOMAIN REHABILITATION OBJECTIVES.....	16
5.3	PERFORMANCE CRITERIA AND INDICATORS.....	17
5.4	REHABILITATION PHASES.....	17
5.4.1	<i>Landform Establishment.....</i>	<i>17</i>
5.4.2	<i>Growth Media Development</i>	<i>20</i>
6.0	REHABILITATION IMPLEMENTATION	22

6.1	FINANCIAL RESOURCES AND TIMING FOR REHABILITATION.....	22
6.2	REHABILITATION STATUS AT CBRP COMMENCEMENT.....	22
6.3	PROPOSED REHABILITATION ACTIVITIES DURING THE TERM OF THIS CBRP	22
6.4	REHABILITATION SUMMARY TABLE	23
7.0	REHABILITATION MONITORING, MAINTENANCE AND VERIFICATION.....	24
7.1	MONITORING	24
7.2	MAINTENANCE	24
7.3	VERIFICATION	24
8.0	REVIEW AND IMPLEMENTATION.....	24
8.1	REVIEW.....	24
8.2	IMPLEMENTATION	25
9.0	REFERENCES	26

TABLES

TABLE 1:	MTW APPROVALS, LEASES AND LICENCES RELEVANT TO THE COMMON BOUNDARY	3
TABLE 2:	BCC APPROVALS, LEASES AND LICENCES APPLICABLE TO THE COMMON BOUNDARY	4
TABLE 3:	DISTURBANCE AND OVERBURDEN DUMPING SCHEDULE.....	7
TABLE 4:	POST MINING LAND USE REGULATORY REQUIREMENTS.....	11
TABLE 5:	PRIMARY AND SECONDARY DOMAINS.....	15
TABLE 6:	DOMAIN REHABILITATION OBJECTIVES	16
TABLE 7:	LANDFORM ESTABLISHMENT	18
TABLE 8:	GROWTH MEDIA DEVELOPMENT.....	21
TABLE 9:	COMMON BOUNDARY REHABILITATION AND DISTURBANCE 2013 - 2016	22
TABLE 10:	SUMMARY OF FORECAST REHABILITATION DURING THE CBRP TERM.....	23
TABLE 11:	RESPONSIBILITIES FOR IMPLEMENTATION OF THE CBRP	25

FIGURES

FIGURE 1 –	LOCALITY PLAN	2
------------	---------------------	---

REHABILITATION MAPS

FIGURE 2 –	DOMAINS AT THE COMMENCEMENT OF THE CBRP
FIGURE 3A –	MINING AND REHABILITATION – STAGE 1 2013
FIGURE 3B –	MINING AND REHABILITATION- STAGE 2 - 2013
FIGURE 3C –	MINING AND REHABILITATION – STAGE 1 2013
FIGURE 3D –	MINING AND REHABILITATION- STAGE 2 - 2014
FIGURE 3E –	MINING AND REHABILITATION – STAGE 4 2014
FIGURE 3F –	MINING AND REHABILITATION- STAGE 5- 2014
FIGURE 3G –	MINING AND REHABILITATION – STAGE 6 2015

FIGURE 3H – MINING AND REHABILITATION – STAGE 6 2015

FIGURE 3I – MINING AND REHABILITATION – STAGE 6 2016

FIGURE 4 – FINAL LANDFORM

APPENDICES

APPENDIX 1 – COMMON BOUNDARY AGREEMENT

APPENDIX 2 – COMMON BOUNDARY INTERIM EROSION AND SEDIMENT CONTROL PLAN

APPENDIX 3 – COMMON BOUNDARY FINAL LANDFORM DRAINAGE DESIGN

APPENDIX 4 – RAMP 22 DAM CONCEPT DESIGN

ABBREVIATIONS

ACHMP	Aboriginal Cultural Heritage Management Plan
ACHMS	Aboriginal Cultural Heritage Management System
AHD	Australian Height Datum
ARI	Annual Recurrence Interval
BCC	Bulga Coal Complex
BCM	Bulga Coal Management Pty Ltd
BSO	Bulga Surface Operations
C&A	Coal and Allied
CBRP	Common Boundary Rehabilitation Plan
CCL	Consolidated Coal Lease
CEMP	Construction Environmental Management Plan
CL	Coal Lease
CMA	Catchment Management Authority
CMS	Construction Method Statement
DA	Development Application
DECC	Department of Environment and Climate Change
DP&I	Department of Planning and Infrastructure
DRE	Division of Resources and Energy
DTIRIS	Department of Trade and Investment, Regional Infrastructure and Services
EA	Environmental Assessment

EEC	Endangered Ecological Community
EMP	Environmental management Plan
EMS	Environmental Management System
EPA	Environmental Protection Authority
EPBC	Environmental Protection and Biodiversity Conservation Act 1999
EPL	Environment Protection Licence
ESC	Erosion and Sediment Control
ESCP	Erosion and Sediment Control Plan
GDP	Ground Disturbance Permit
ITP	Inspection Test Plan
LMP	Landscape Management Plan
MBCM	Million bank cubic metres
ML	Mining Lease
MOP	Mining Operations Plan
MTO	Mount Thorley Operations
MTW	Mount Thorley Warkworth
NIA	Noise Impact Assessment
NSW	New South Wales
OEH	Office of Environment and Heritage
PA	Project Approval
RTCA	Rio Tinto Coal Australia
SMTA	Singleton Military Training Area
WML	Warkworth Mining Limited
XCN	Xstrata Coal NSW

1.0 INTRODUCTION

Mount Thorley Warkworth (MTW) is an amalgamation of two separate joint venture coal mining operations, majority owned and managed by Coal & Allied Operations Pty Limited (C&A), which in turn is managed by Rio Tinto Coal Australia (RTCA).

These two mines, Mt Thorley Operations (MTO) and Warkworth Mining Limited (WML), were integrated into one operation in February 2004 to form MTW. MTW is located approximately 14 kilometres (km) southwest of Singleton, in the upper Hunter Valley of New South Wales (NSW).

The Bulga Coal Complex (BCC) comprises two coal mining operations; Bulga Surface Operations (BSO) and Bulga Underground Operations. BCC is located immediately south of MTW, approximately 12km southwest of Singleton, and is majority owned by Xstrata Coal Australia and managed by Bulga Coal Management Pty Ltd (BCM) (refer to **Figure 1**).

MTW and BCC share a common boundary between Coal Lease (CL) 219 (MTW) and Mine Lease (ML) 1547 (BCC). MTW and BCC propose to develop a shared overburden emplacement area located across the eastern section of the common boundary referred to as the 'Common Boundary' (**Figure 1**: Location Plan). The Common Boundary is required by both MTW and BCC to provide sufficient capacity for out of pit overburden emplacement to provide for continuation of mining activities as currently approved.

Both BCC and MTW propose to alternately dump overburden in staged dumping sequence to construct an integrated final landform for the Common Boundary, consistent with the regulatory requirements and statutory approvals for both MTW and BCC.

1.1 Purpose

This Common Boundary Rehabilitation Plan (CBRP) has been prepared at the direction of the Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS) to be consistent with the requirements of the approved Mining Operations Plans (MOPs) for both BSO and MTW, and to form an appendix to both the current MTW and BSO MOPs.

This plan documents the proposed operational and environmental management activities for the Common Boundary for the period 2013 to 2016.

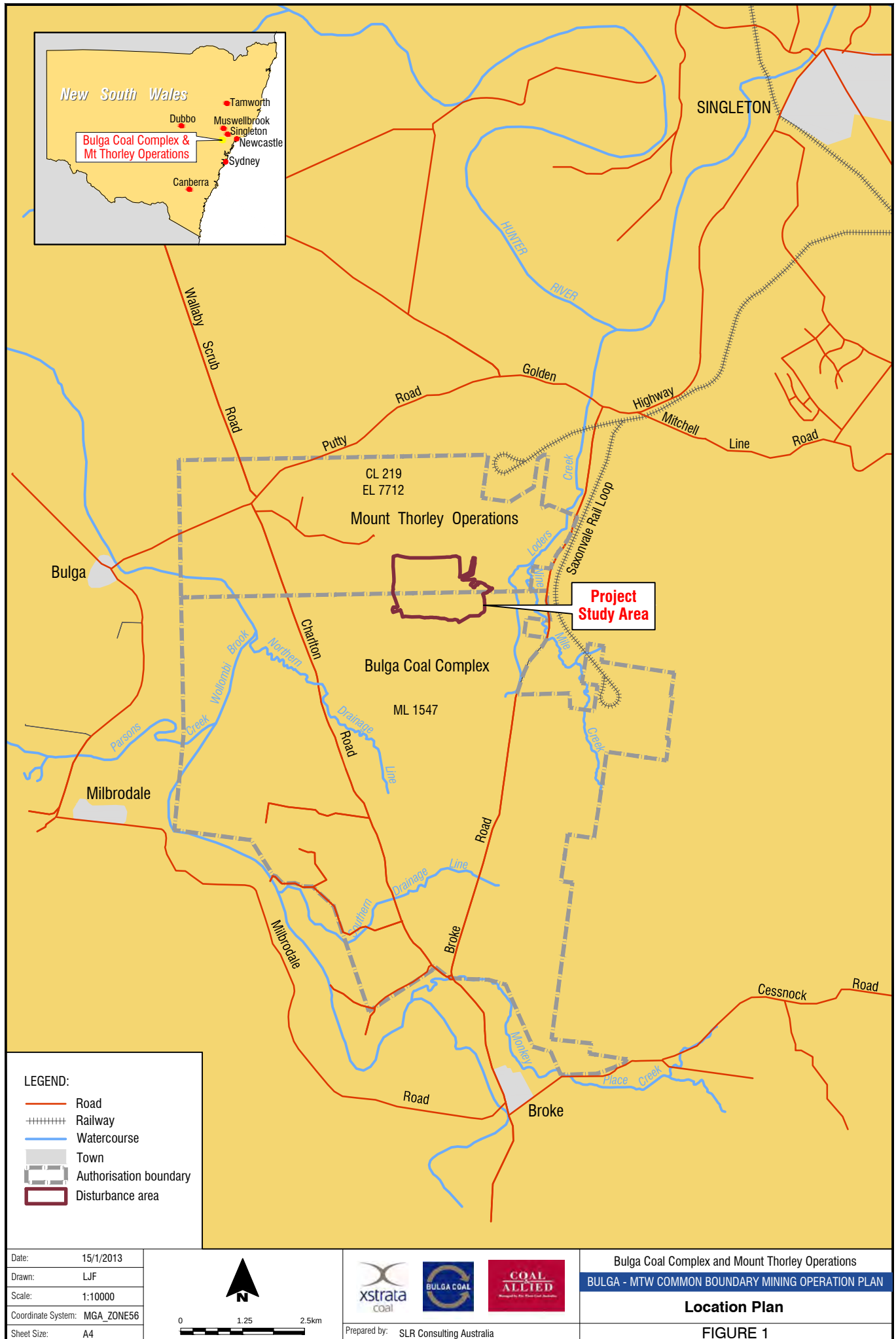
This plan:

- Describes the activities associated with the Common Boundary project during the period of this CBRP;
- Develops and document the environmental management responsibilities and actions associated with operational activities and rehabilitation works specific to the Common Boundary; and
- Describes and displays (in the form of a series of rehabilitation maps consistent with the statutory MOP Rehabilitation Maps) the staged disturbance and rehabilitation phase sequence and final landform proposed for the Common Boundary.

1.2 Scope of the CBRP

MTW and BCC have consulted with the DTIRIS regarding the scope of this plan. Subsequently, this CBRP has been prepared to be consistent with the objectives of the *Working Draft MOP Guideline* (DTIRIS 2012). The scope of this plan includes the operational and environmental management activities associated with:

- Construction and operation of ancillary infrastructure required for the Common Boundary including water management structures for operations and the final landform;



- Overburden emplacement activities by MTW and BCC at the Common Boundary; and
- Rehabilitation works to be undertaken by MTW and BCC for:
 - Landform Establishment (including surface drainage features); and
 - Growth Media Development rehabilitation phases.

The period for this CBRP is four years. Active dumping is expected to be undertaken for approximately three years.

1.3 Consents, Authorisations and Licences

BSO operates under Development Approval (DA) 41-03-99 (as modified). The Department of Planning and Infrastructure (DP&I) is currently assessing an application to modify DA 41-03-99; the Western Mining Limit Modification (Modification 7). Development approval for the Common Boundary project is addressed in the Modification 7 application.

MTW operates under two development consents; Development Approval (DA) 34/95 (as modified) (MTO) and Project Approval (PA) 09_0202 (Warkworth). The proposed final landform and land use for the Common Boundary is consistent with the final landform and landuse as approved under DA 34/95

Consents, authorisations and licences applicable to the Common Boundary are listed in **Tables 1 and 2** below.

1.3.1 Ramp 22 Dam Development Approval

The Common Boundary project will require construction of a sediment dam at the eastern perimeter of the Common Boundary footprint (refer to **Figure 3a** and **Section 3.2.2**). The Ramp 22 Dam has not been considered in BCC's Modification 7 application. Subsequently, BCC are preparing an application to modify DA 41-03-99 to construct and operate the Ramp 22 sediment dam.

Table 1: MTW Approvals, Leases and Licences relevant to the Common Boundary

Approval / Licence	Description	Issued	Expires
Mount Thorley			
DA 34/95 (as modified)	Development Approval (Section 75W)	22 June 1996	22 June 2017
CL 219	Coal Lease	23 Sept 1981	23 Sept 2023
(Part) ML 1547	Mine Lease	Registered to 31 Dec 2015	
EPL 24	Environment Protection Licence	Review due 7 March 2014	
EPL 1976	Environment Protection Licence	Review due 16 Sept 2014	
Warkworth			

PA 09_0202	Project Approval (Section 75J)	03 Feb 2012	31 March 2013
EPBC 2002/629 v3	EPBC Act Approval	19 Nov 2004	25 Feb 2039
CCL 753	Consolidation Coal Lease	17 Feb 2002	17 Feb 2023
ML 1412	Mine Lease	11 Jan 1997`	10 Jan 2018
ML1590	Mine Lease	27 Feb 2007	26 Feb 2028
EPL 1376	Environment Protection Licence	Review due 1 Nov 2014	

Table 2: BCC Approvals, Leases and Licences applicable to the Common Boundary

Approval / Licence	Description	Expires
DA 41-03-99 (as modified)	Development Approval	2025
ML 1547	Mine Lease	4 April 2017
ML 1494	Mine Lease	20 Sept 2027
(Part) CL 219	Coal Lease – Sublease from MTW	23 April 2017
ML 1674	Mine Lease	22 March 2033
CL 224	Coal Lease	23 Dec 2023
EL 5461	Exploration Licence	2 April 2013
EL 5277	Exploration Licence	6 April 2010(application to renew made to DTIRIS)
A447	Assessment Lease	30 Dec 2013
A450	Assessment Lease	30 Dec 2013
EPL 563	Environment Protection Licence	Anniversary Date: 20 July. Review Due: 21 Dec 2016

1.4 Land Ownership and Land Use

The Common Boundary project lies wholly within the Singleton Shire Council area. WML and MTO, and BCC, own the majority of the land within the MTW and BCC mines respectively. The majority of land adjoining the two mines is privately owned freehold land. Schedules of land ownership are available in:

- MTW MOP Appendix A (Development Consent DA09_0202: Appendix 1); and
- BSO MOP Appendix 3: Schedule of Land Ownership.

1.4.1 Common Boundary Agreement

MTW and BCC have implemented a boundary agreement (the Common Boundary Agreement) that facilitates both mines optimising coal recovery and operations along the boundary between CL 219 and ML 1547. The Common Boundary Agreement stipulates that BCC and MTW will identify and document tenement requirements for each party to undertake future filling within the Common Boundary footprint within this Common Boundary Rehabilitation Plan. BCC and MTW agree that during each stage of works (construction, active dumping and rehabilitation works) each party will amend their Colliery Holdings Boundary to ensure that all operational areas within the Common Boundary footprint are encompassed within the Colliery Holdings Boundary of the mine undertaking the activity. **Figures 3a to 3i** reflect the changes to the Colliery Holdings Boundary to reflect access and tenement arrangements for each operational stage of the Common Boundary project.

1.5 Stakeholder Consultation

Extensive stakeholder engagement regarding the Common Boundary was undertaken by both sites during recent consent modification approval processes. Activities associated with the Common Boundary project and the proposed final landform was addressed in BCC's Western Mining Limit Modification (DA 41-03-99 Mod 7). The proposed final landform for the Common Boundary area is also addressed in MTW's recent modification, DA 9_0202 Mod 7.

Specific consultation undertaken for the preparation of this MOP is listed below.

1.5.1 Consultation with the DTIRIS

Meeting 20/09/2012 and 14/11/2012

A meeting was held on 20/09/2012 between BCC (Paul Amidy), MTW (Bill Baxter) and the DTIRIS (Greg Summerhayes) to discuss the Common Boundary project and the DTIRIS' expectations regarding environmental management and rehabilitation for the Common Boundary. A further meeting was held on the 14/11/2012 with both Greg Summerhayes and Simon Lund regarding the modified final landform.

2.0 PROPOSED OPERATIONS

2.1 Project Description

As outlined in **Section 1.0**, the Common Boundary project constitutes a shared overburden emplacement area straddling the common mine lease boundary between MTW and BCC (**Figure 1**). The overburden emplacement area and associated infrastructure (including access ramps and surface water infrastructure) will be developed on rehabilitated land disturbed for previous mining activities (refer to **Figure 2**). The Common Boundary project will provide both MTW and BCC sufficient capacity for out of pit overburden emplacement for continuation of mining activities as currently approved.

The Common Boundary project, including construction, operations and rehabilitation works is anticipated to be four years, and be completed by 2016. As described in **Section 1.2**, the Common Boundary project will conclude at the successful completion of Growth Media Development rehabilitation phase for all areas within the Common Boundary sub-lease boundary. Rehabilitation works for ecosystem establishment and development will be undertaken by MTW and BCC independently in accordance with each site's approved MOP.

Staged clearing and topsoil stripping of previously rehabilitated land (dehab) and the staged dump sequencing, is summarised in **Table 3**.

2.2 Activities over the term of the CBRP

By agreement, BCC and MTW will:

- Construct infrastructure (surface water management infrastructure and access ramps) for the Common Boundary;
- Clear and strip topsoil from previously rehabilitated spoil dumps within the Common Boundary (where appropriate);
- Alternately dump overburden in accordance with an agreed dump sequencing schedule; and
- Rehabilitate the Common Boundary in accordance with the methodology and performance criteria described in this plan.

2.2.1 Construction

Construction activities associated with the Common Boundary project include:

- Construction of access ramps for both BCC and MTW (refer to **Figures 3a and 3b**); and
- Constructing surface water management infrastructure.

Subject to approval, BCC propose to construct an additional sedimentation dam (see **Figure 3a**: proposed Ramp 22 Dam) to capture dirty water runoff from the Common Boundary footprint during dumping and rehabilitation phases. It is proposed to retain this dam in the final landform as a clean water dam for potential use as a farm dam. The proposed Ramp 22 Dam concept design is appended to this plan (**Appendix 4**).

It is anticipated that the Ramp 22 Dam will be constructed and operational within 12 months of commencement of dumping. Subsequently, interim erosion and sediment controls will be implemented to manage dirty water runoff from disturbed areas prior to the construction and commissioning of Ramp 22 Dam including a temporary sediment dam to be constructed in the valley void (**Figure 3a**).

Proposed construction of water management infrastructure is discussed further in **Sections 3.2.1 and 3.2.2**.

2.2.2 Clearing and Topsoil Stripping Rehabilitation Areas (Rehabilitation Disturbance)

Approximately 148ha of previously rehabilitated land will be disturbed for the Common Boundary project. Previously rehabilitated areas are displayed in **Figure 2**. Rehabilitation disturbance for each year of the Common Boundary project is summarised in **Table 9**. Where overburden will be emplaced on previously rehabilitated land; topsoil will be assessed (and where appropriate) stripped and stockpiled ahead of dumping for re-use in rehabilitation.

2.2.3 Overburden Dumping

The Common Boundary emplacement area will accommodate approximately 42 million bank cubic metres (MBCM) of overburden. **Table 3** shows the forecast annual volumes of overburden dumping and topsoil stripping. The disturbance and overburden dumping staging is displayed on **Figures 3a to 3i**.

Dump sequencing has been developed to:

- Provide (approximately) equivalent dump volumes to MTW and BCC; and
- Provide for both MTW and BCC to undertake dumping to meet their respective mine planning needs.

Each dump stage will be undertaken to facilitate commencement of the following stage(s) in accordance with each mine's mine plan. For example, Stage 4 operations (**Map 3d**) will prioritise completing dumping within ML1547 to facilitate BCC dumping over the ML1547 area in Stage 6 (**Map 3f**) as per the proposed dump sequence (i.e. year 2014).

Table 3: Disturbance and Overburden Dumping Schedule

Material	Unit	BCC				MTW			
Material	Unit	2013	2014	2015	2016	2013	2014	2015	2016
Overburden	Mbcm	10.9	9.9	0	0	0.5	11.0	10.6	0
Stripped Topsoil	cm	49700	0	0	0	62800	47600	0	0

2.2.4 Rehabilitation

The primary objective of rehabilitation for the Common Boundary is to construct an integrated final landform for the Common Boundary, consistent with the regulatory requirements and statutory approvals for both MTW and BCC. MTW and BCC propose to create one continuous landform, rehabilitated with similar native vegetation communities. A significant benefit of this strategy will be to remove the existing 'valley void' along the shared lease-line, that would remain if the two mines dump independently to the shared mine lease boundary.

The final landuse objective of the Common Boundary project is aligned with the primary rehabilitation objective of both MTW and BCC; to enhance native vegetation and fauna habitat linkages and create a north/south conservation corridor linking MTW, BCC and existing native vegetation at the Singleton Military Training Area (SMTA) to the south.

Rehabilitation will be undertaken progressively when active dumping is complete in a specific area.

Rehabilitation Responsibilities on the Other Mine's Land

By agreement, regardless of the location of an area with respect to the mine lease boundary, the mine that undertakes the final active dumping operation in a given area will be responsible for:

- Shaping and constructing surface drainage structures (Landform Establishment rehabilitation phase); and
- Topsoil emplacement, topsoil and spoil amelioration, and (where required) stabilisation with sterile cover crops (Growth Media Development phase of rehabilitation).

Where final dumping is undertaken by either MTW or BCC in a given area on the other mine's land, specifications for shaping, surface drainage structures, topsoil emplacement and amelioration will be developed to reflect the Landform Establishment and Growth Media Development rehabilitation commitments of the mine that owns the land. Specifications for particular elements of rehabilitation works, such as spoil amelioration, will be developed and agreed in accordance with the Current MTW and BSO MOPs and consider variables such as soil and spoil characterisation and final land use objectives.

Following verification that all works in the area have been undertaken in accordance with the agreed specifications, responsibility for the area reverts to the mine lease holder, to progress rehabilitation in accordance with the mine's approved MOP. Further discussion on rehabilitation methodology and specifications for Landform Establishment and Growth Media Development is provided in **Sections 5.5.1 and 5.5.2**.

3.0 ENVIRONMENTAL ISSUES MANAGEMENT

3.1 Risk Assessment

Generally, environmental risks associated with the proposed MTW and BCC activities have been identified in recent environmental risk assessment workshops undertaken by the mines including:

- MTW 2012 – 2016 Broad Brush Risk Assessment; and
- BCC 2012 Environment and Community Broad Brush Risk Assessment.

Additional environmental risks specific to the Common Boundary project were identified in an Environmental Broad Brush Risk Assessment (BBRA) workshop held on 7th December 2012 with key personnel from BCC, MTW and GSSE.

3.2 Risk Management

Environmental risk will be managed in accordance with the MTW and BCC approved Environmental Management Systems (EMSs), Environmental Management Plans (EMPs) and regulatory requirements. Where works are undertaken by either MTW or BCC on the other mine's land, all operational controls will be in accordance with the EMPs and regulatory requirements of the mine leaseholder.

The MTW and BSO MOPs summarise the risk management approach, and relevant EMPs, for each key risk area such as operational noise, flora and fauna and air quality. For further information regarding general risk management requirements associated with the Common Boundary refer to the MTW and BSO MOPs and EMPs.

Environmental risks that are specific to the Common Boundary (as identified in the Common Boundary BBRA) require supplementary controls in addition to those described in the mines' EMPs. Additional risk management controls have been developed in this plan and are summarised in the sections below. These additional risk management measures are required to address potential cumulative impacts of the Common Boundary project activities and to clearly define the responsibilities of MTW and BCC in the shared Common Boundary footprint.

The additional risk management measures described in this plan are intended to complement the existing site EMPs, and maintain consistency with the objectives and requirements of both MTW and BCC EMPs and corporate standards.

3.2.1 Surface Water

Although the Common Boundary project proposes to infill the existing valley void between the sites, there is minimal change in the total catchment area reporting to Loders Creek from either the MTW or BCC mines. However additional surface water management measures have been developed in this plan to manage water quality discharge from areas disturbed by the Common Boundary project, and address surface water drainage for the Common Boundary final landform.

The conceptual final landform drainage layout is displayed in **Figure 4**. The Final Landform Drainage Design (**Appendix 3**) provides locations and sizes / capacities for all proposed ESC structures required for MTW and BCC to meet regulatory and approval requirements.

Surface water management for disturbance areas is discussed in the following section.

3.2.2 Erosion and Sedimentation

Erosion and sediment control at the Common Boundary will be managed in accordance with the requirements of:

- Rio Tinto Environmental Standard E10 – Water Use and Quality Control;
- C&A Environmental Procedure 7.1 – Water Management;
- MTW Erosion and Sediment Control Plan;
- XCN STD ANN 0077 – Erosion and Sediment Control; and
- BCC Erosion and Sediment Control Plan.

Potential offsite water pollution due to dirty water runoff from the Common Boundary during dumping is considered a key risk during the Common Boundary Project. Existing sedimentation dams for the existing partially rehabilitated catchment are inadequate to manage surface water runoff for the disturbed catchment during operations.

MTW and BCC will implement additional erosion and sediment controls (ESC) for operational stages of the project to manage runoff in accordance with the MTW and BCC Erosion and Sediment Control Plans and EPL conditions (EPL 1976 and 563).

Runoff from the Common Boundary catchment currently reports to two existing sedimentation dams located downstream of the project footprint (Refer to **Figure 2**). As outlined in **Section 1.3.1** BCC are applying to modify DA 41-03-99 to approve constructing the Ramp 22 Dam to capture dirty water runoff from the maximum projected area of disturbance. Ramp 22 Dam will be constructed to provide capacity to manage surface water runoff from the Common Boundary footprint in accordance with regulatory requirements and RTCA / XCN corporate standards.

Interim Erosion and Sediment Control Plan

As outlined in **Section 2.2.1**, commencement of dumping is anticipated prior to the construction of Ramp 22 Dam. An interim Erosion and Sediment Control Plan (ESCP) has been developed to manage erosion and sedimentation prior to the anticipated completion of Ramp 22 Dam (**Appendix 2**). The objective of the interim ESCP is to minimise the potential discharge of sediment laden or saline runoff to downstream waters during mining by implementing best management practices.

The interim ESCP has been developed to:

- Meet the requirements of the development consents for both the BSO and MTW;
- Meet the requirements of *Managing Urban Stormwater: Soils and Construction (the Blue Book), Volume 1 and Volume 2E – Mines and Quarries* (Landcom, 2004 and Department of Environment and Climate Change (DECC), 2008);
- Meet the requirements of the EPL No. 568 and EPL No. 1976, particularly with regards to total suspended solids;
- Describe the location, function, and capacity of interim ESC structures; and
- Provide an effective monitoring and maintenance program specific to the Common Boundary.

The interim ESCP includes drawings to specify the type and location of ESC structures for Stages 1 to 3 of the Common Boundary project. This is anticipated to address all ESC requirements up to completion of the proposed Ramp 22 Dam. The interim ESCP will be reviewed in 12 months and, if required, additional ESC measures will be developed in the event that the Ramp 22 Dam is not completed prior to the completion of the Stage 3 dumping operation (**Figure 3c**).

3.2.3 Operational Noise

BCC engaged specialist acoustics consultants (Global Acoustics Pty Ltd) to undertake a Noise Impact Assessment (NIA) for the Bulga Open Cut Western Mining Limit Modification Environmental Assessment (Modification 7 EA) (refer to the Modification 7 EA, Section 6.2.5). The NIA modelled cumulative noise impacts generated by simultaneous operation at BCC and MTW mines, including planned activities at the Common Boundary.

The NIA modelling of the worst case scenario for simultaneous operations (during unfavourable meteorological conditions) predicts that the likelihood of MTW and BCC operations resulting in a daytime exceedance at the nearest residential receivers (Bulga Village) is highly unlikely. The modelling predicts there is potential for minor night time exceedances of the cumulative noise criterion.

Generally, potential noise impacts will be managed in accordance with:

- Rio Tinto Environmental Standard E6 – Noise and Vibration Control;
- C&A Environmental Procedure 9.1 Noise;
- MTW Noise Management Plan; and
- BCM Noise Management Plan.

Additionally, MTW and BCC will manage operations to mitigate potential cumulative noise impacts by allocating day time and night time dumping locations to minimise exposure of night time dumping locations (where possible) and/or shielding dumping above RL 125 m.

3.2.4 Air Quality

Air quality will be managed in accordance with relevant MTW and BCC management plans and standards as listed below:

- Rio Tinto Environmental Standard E2, Air Quality Control;
- C&A Environmental Procedure 8.2 – Dust Management – Mobile Equipment; and
- Bulga Air Quality Monitoring Program.

Control measures to minimise dust generation resulting from the Common Boundary project include:

- Disturb only the areas required for overburden dumping and associated infrastructure;
- Use water carts to manage dust areas on access ramps;
- Reshape, topsoil and rehabilitate completed overburden areas as soon as practicable; and]
- Seed overburden emplacement areas that will be inactive for a period in excess of 3 months with sterile cover crops.

3.2.5 Aboriginal Heritage

Aboriginal cultural heritage at the Common Boundary will be managed in accordance with:

- Rio Tinto Environmental Standard E9 – Land Use Stewardship;
- Rio Tinto Aboriginal Cultural Heritage Management System (ACHMS);
- C&A Environmental Procedure 2.1 – Cultural Heritage Management; and

- MTW Aboriginal and Cultural Heritage Management Plan (ACHMP);

BCC will undertake an Aboriginal Archaeological Investigation as part of the environmental assessment to support the application to modify DA 41-03-99 for the Ramp 22 Dam. The Ramp 22 Dam will require disturbing previously undisturbed land within CL 219 only. Accordingly, MTW will manage any Aboriginal Heritage issues identified in the archaeological investigation in accordance with the MTW ACHMS and ACHMP.

Any Aboriginal Heritage management and mitigation measures associated with the Ramp 22 Dam construction will be incorporated into a Construction Environmental Management Plan (CEMP) and implemented using the site Ground Disturbance Permit (GDP) system.

3.2.6 Ecology

Flora and Fauna at the Common Boundary will be managed in accordance with:

- Rio Tinto Environmental Standard E9 – Land Use Stewardship;
- C&A Environmental Procedure 5.1 – Disturbance and Rehabilitation
- C&A Environmental Procedure 10.2 – Flora and Fauna

An ecological assessment for the Ramp 22 Dam will be undertaken to support the application to modify DA 41-03-99. Any ecological management and mitigation measures recommended in the ecological assessment will be incorporated into the CEMP and site GDP.

4.0 POST MINING LAND USE

4.1 Regulatory Requirements

The regulatory requirements specific to the Common Boundary post-mining land use are summarised in Table 4.

Table 4: Post Mining Land Use Regulatory Requirements

Source	Area	Requirement
MTW		
PA 09_0202 Schedule 3 Condition 33	Rehabilitation Areas	Vegetation to be established, with the restoration of at least 2,114 ha of Central Hunter Grey Box-Ironbark Woodland and/or Central Hunter Ironbark-Spotted Gum-Grey Box Forest EECs.
PA 09_0202 Schedule 3 Condition 34	Rehabilitation Areas	By the end of July 2012, unless the Director-General agrees otherwise, the Proponent shall update the biodiversity offset strategy referred to above, in consultation with the Department, EPA and CMA, to the satisfaction of the Director-General. The updated strategy must include the specific details on the Additional Biodiversity Offset Area, and include the additional land to be added to the Southern Biodiversity Area under condition 53 of schedule 3 (see Figure 12 of Appendix 6).
PA 09_0202 Schedule 3 Condition 35	Rehabilitation and Biodiversity Areas	The Proponent shall ensure that the biodiversity offset strategy and/or rehabilitation strategy is focused on the re-establishment of: (a) the following endangered ecological communities:

		- Warkworth Sands Woodland; - Central Hunter Grey Box–Ironbark Woodland; and - Central Hunter Ironbark–Spotted Gum–Grey Box Forest; and (b) habitat for threatened fauna species, including the: - Regent Honey Eater, Swift Parrot, Glossy Black Cockatoo, Brown Treecreeper, Diamond Firetail, Grey-crowned Babbler, Hooded Robin, Little Lorikeet, Varied Sittella, Spotted Harrier, and Speckled Warbler; and - Eastern Bent-wing Bat, Eastern Freetail Bat, Large-eared Pied Bat, Little Bentwing Bat, Large-footed Myotis and Squirrel Glider.
PA 09_0202 Schedule 3 Condition 36	Rehabilitation and Biodiversity Areas	By the end of March 2026, unless the Director-General agrees otherwise, the Proponent shall commission suitably qualified, experienced and independent persons - whose appointment has been approved by the Director-General - to undertake an audit of the revegetation of the rehabilitation area to the satisfaction of the Director-General. This audit must: (a) include consultation with OEH and DRE; (b) assess the performance of the Central Hunter Grey Box–Ironbark Woodland and/or Central Hunter Ironbark–Spotted Gum–Grey Box Forest EEC revegetation in the rehabilitation area completed to date against the detailed performance and completion criteria in both the Biodiversity Management Plan and Rehabilitation Management Plan; (c) identify any measures that should be implemented to improve the performance of the rehabilitation; and (d) if the completion criteria have not been met, or are not adequately trending towards being met, determine the likely ecological value of the rehabilitation once completed, and recommend additional measures to augment the offset strategy to ensure that it adequately offsets the project's impacts on these EECs. If the audit recommends the implementation of additional measures to augment the offset strategy in accordance with (d) above, then within 6 months of the completion of the audit the Proponent shall revise the biodiversity offset strategy, in consultation with the Department and OEH, to the satisfaction of the Director-General
PA 09_0202 Schedule 3 Condition 38	Rehabilitation Area	By the end of March 2033, unless the Director-General agrees otherwise, the Proponent shall enter into a conservation agreement pursuant to section 69B of the National Parks and Wildlife Act 1974 for the Rehabilitation Area in the Biodiversity Offset Strategy, recording the obligations assumed by the Proponent under the conditions of this approval in relation to this area, and register this agreement pursuant to section 69F of the National Parks and Wildlife Act 1974. The conservation agreement must remain in force in perpetuity
PA 09_0202 Schedule 3 Condition 51	Biodiversity Areas and Rehabilitation Area	The Proponent shall prepare and implement a Biodiversity Management Plan for the project to the satisfaction of the Director-General
PA 09_0202 Schedule 3 Condition 71	Biodiversity Areas and Rehabilitation Area	The Proponent shall prepare and implement a Visual Impact Management Plan for the project to the satisfaction of the Director-General.
PA 09_0202 Schedule 3 Condition 76	Rehabilitation Areas	The Proponent shall rehabilitate the site to the satisfaction of the Executive Director, Mineral Resources in DRE. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the EA (and depicted conceptually in the figures in Appendix 9), and comply with the objectives in Table 16.

PA 09_0202 Schedule 3 Condition 77	Rehabilitation Areas	The Proponent shall rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. Note: It is accepted that some parts of the site that are progressively rehabilitated maybe subject to further disturbance at some later stage of the project
PA 09_0202 Schedule 3 Condition 78	Rehabilitation Areas	The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Executive Director, Mineral Resources in DRE
Statement of Commitment	Rehabilitation Areas	WML commits to an offset strategy to compensate for the disturbance of EECs consisting of the following: Rehabilitation of mine lands – progressively establish some 2,116.6ha of Central Hunter Grey Box-Ironbark-Spotted Gum woodland communities, 305ha of trees on grassland and the residual being rehabilitated to grassland.
		Overburden will be rehabilitated with grasses and woodland. Woodland planting will be extended on the eastern face to achieve a similar mosaic to the existing rehabilitation on the landscape.
		The overburden heights will be maintained on average at current consent limits, which are RL 160m AHD for Warkworth Mine and RL 155m AHD for Mount Thorley Mine.
CL 219 & CCL 753 Condition 21	Coal Lease area	If so directed by the Minister the lease holder shall rehabilitate to the satisfaction of the Minister any lands within the subject area which may have been disturbed by the lease holder.
CL 219 & CCL 753 Condition 22	Coal Lease area	Upon completion of operations on the surface of the subject area or upon the expiry or sooner determination of this authority or any renewal thereof, the lease holder shall remove from such surface such buildings, machinery, plant, equipment, constructions and works as may be directed by the Minister and such surface shall be rehabilitated and left in a clean, tidy and safe condition to the satisfaction of the Minister.
CL 219 & CCL 753 Condition 23	Coal Lease area	If so directed by the Minister the lease holder shall rehabilitate to the satisfaction of the Minister and within such time as may be allowed by the Minister any lands within the subject area which may have been disturbed by mining or prospecting operations whether such operations were or were not carried out by the lease holder.
BSO		
DA 41-03-99 Clause 3.6 (b)	Rehabilitation and Offset Areas	The Rehabilitation and Offset Management Plan must include: i. The objectives for rehabilitation of the site and vegetation offsets ii. A description of the short, medium, and long term measures that would be implemented to rehabilitate the site, manage the remnant vegetation and habitat on site and implement vegetation offsets iii. Detailed performance and completion criteria for the rehabilitation of site and implementation of the vegetation offsets

		iv. A detailed description of how the performance of the rehabilitation of the mine would be monitored over time in order to demonstrate achievement of the stated objectives v. A detailed description of what measures would be implemented over the next 3 years, including for: • Minimising and rehabilitating disturbed areas • Implementing vegetation offsets\ • Protecting vegetation and soil outside disturbance areas • Undertaking pre-clearance surveys • Managing impacts of fauna • Landscaping the site to minimise visual impacts • Conserving and reusing topsoil • Collecting and propagating seed for rehabilitation works • Salvaging and reusing material from the site fir habitat enhancement • Controlling weeds and feral pests • Controlling access; and • Bushfire management vi. A program to monitor the effectiveness of the measures, and progress against the performance and completion criteria vii. A description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks viii. Details of who is responsible for monitoring, reviewing and implementing the plan.
ML1547 Condition 21	Rehabilitation Areas	If so directed by the Minister the leaseholder shall rehabilitate to the satisfaction of the Minister any lands within the subject area which may have been disturbed by the leaseholder
ML1547 Condition 22		Upon completion of operations on the surface of the subject areas or upon expiry or sooner determination of this authority or any renewal thereof, the leaseholder shall remove from such surface such buildings, machinery, plant, equipment, constructions and works as may be directed by the Minister and such surface shall be rehabilitated and left clean, tidy and safe condition to the satisfaction of the Minister
ML1547 Condition 23		If so directed by the Minister the lease holder shall rehabilitate to the satisfaction of the Minister and within such time as may be allowed by the Minister any lands within the subject area which may have been disturbed by mining or prospecting operations whether such operations were or were not carried out by the lease holder

4.2 Post-Mining Land Use Vision

4.2.1 Final Land Use

The final landuse objective for the Common Boundary is consistent with the final landuse objectives of both MTW and BCC, being to integrate post mining areas into the surrounding landscape. The pre-mining landscape at both MTW and BCC was predominantly low-intensity grazing, however the post-mining land capability is constrained by the dispersive properties of spoils and soils, and grazing pasture is not generally a sustainable land use for emplacement areas at BCC and MTW.

MTW and BCC Final Land Use Integration

The Common Boundary will have a primary land use of open woodland communities commensurate with adjacent undisturbed vegetation communities, and some pasture areas, vegetated with native and exotic pasture species where appropriate (**Figure 4**).

Figure 4 also shows the post mining final land use adjacent to the Common Boundary project area to provide context. This includes the north-south conservation corridor proposed to extend through MTA and BCC and ultimately link to undisturbed native vegetation at the SMTA.

A conveyance channel is proposed to be located along the shared mine lease boundary (see **Figure 4**), and will be vegetated with riparian species in accordance with the MTW MOP and BCC LMP. To enhance habitat connectivity across the Common Boundary, vegetation communities adjacent to the shared boundary will transition into the riparian zone.

4.3 Common Boundary Rehabilitation Objectives

The Common Boundary forms an integral link in the overarching project rehabilitation objectives for both MTW and BCC, being to increase regional native vegetation and native fauna habitat by establishing a north/south connecting corridor through the rehabilitation areas of the MTW and BCC mines, ultimately linking with undisturbed native vegetation at the SMTA.

Primary and Secondary Domain rehabilitation objectives are listed in **Table 5**. Rehabilitation objectives specific to the Landform Establishment and Growth Media Development phases of rehabilitation are listed in **Tables 6 and 7**.

5.0 REHABILITATION PLANNING

5.1 Domain Selection

Domains have been defined in accordance with the methodology prescribed in the *Working Draft MOP Guideline* (DTIRIS 2012). Primary Domains are defined as the set of discrete areas that have a particular operational or functional purpose. Land management units with similar operational function are likely to have similar geophysical features and constraints /opportunities for rehabilitation.

Secondary Domains are land management units with similar post-mining land use objectives, such as woodland communities and native grasslands. Primary and Secondary Domains associated with the Common Boundary are listed in **Table 5** and discussed in the following sections.

Table 5: Primary and Secondary Domains

Primary Domain	Code	Secondary Domain	Code
Water Management Area – Footprint for water management structures (e.g. drains,	3	Water Management Area – Footprint of water management structures retained in the final	A

channels, dams).		landform.	
		Rehabilitation Area: Derived Native Grassland – Grassland communities with a native component.	B
Overburden Emplacement. Disturbance footprint for active dumping.	4	Rehabilitation Area: Woodland – woodland association conforming to Central Hunter Grey Box – Ironbark woodland.	C
		Rehabilitation Area: Trees over grassland – woodland trees within pasture areas but not necessarily conforming to Central Hunter Grey Box – Ironbark woodlands	D

5.2 Domain Rehabilitation Objectives

The Domain rehabilitation objectives in this plan have been developed to be consistent with the existing MTW and BCC rehabilitation objectives associated with rehabilitation of overburden dumps to sustainable ecological communities. Domain rehabilitation objectives are described in **Table 6**.

Table 6: Domain Rehabilitation Objectives

Domain	Rehabilitation Objective
Primary Domains	
Water Management Area	The final landform drainage will be designed to integrate with the surrounding catchments and be revegetated to achieve long term stability and minimise erosion.
Overburden Emplacement Area	- The final landform will be developed with recognition of the pre-mining landform and landuse - The final landform will be an undulating, free draining landform, with features consistent with those of the surrounding landscapes.
Secondary Domains	
Water Management Areas	As per Primary Domain
Native Grassland	Recreating grassland communities with a native species component.
Trees over Grassland	Establishing trees over grassland areas, but not necessarily conforming to any particular vegetation community.
Woodland	- Establishing open woodland communities to a standard comparable to similar reference EEC communities (Central Hunter Grey Box–Ironbark Woodland). - Establishing a network of tree corridors to ensure connectivity of woodland community areas.

	• Provide additional habitat for threatened species. • Create an additional north/south wildlife corridor providing connectivity to other habitat.
--	--

5.3 Performance Criteria and Indicators

The performance criteria and indicators in this plan have been developed to be consistent with the performance criteria and indicators for comparable domains in the MTW and BSO current MOPs. The performance criteria and indicators in this plan reference industry standards, Xstrata and Rio Tinto corporate standards and scientific literature. The intent of this plan is to provide a rehabilitation framework for the Common Boundary that reflects industry best practice. Consequently, the indicators and performance criteria may be revised subject to future developments in the scientific literature or due to the outcomes of monitoring programs and research programs conducted by MTW and BCC.

5.4 Rehabilitation Phases

This CBRP includes encompasses the rehabilitation up to the growth medium development phase for the Common Boundary overburden emplacement area only; the Ecosystem Establishment and Ecosystem Development rehabilitation activities are not relevant to this plan.

Because rehabilitation works will be undertaken progressively in accordance with the site MOPs, there will however be areas within the Common Boundary that progress to Landform Establishment and Landform Development during the term of this plan. Accordingly, progression to these phases is reflected on **Figures 3a to 3i** and summarised in **Table 10**.

Since water management structures are to be retained in the final landform; the objectives, performance indicators and completion criteria described in the following sections apply to the Overburden Emplacement Area domain only.

5.4.1 Landform Establishment

Landform Establishment constitutes the activities required to produce landforms which are compatible with regulatory requirements and the post-mining landuse objectives. In the context of this plan, Landform Establishment involves the process required to achieve a final landform that:

- Is stable, with slopes and rates of erosion that are comparable to surrounding landforms;
- Incorporates effective surface water drainage that minimise potential water pollution; and
- Supports the desired native vegetation communities and optimises integration with adjacent undisturbed native vegetation.

Where either MTW or BCC are required to rehabilitate the other mine's land, the land owner will provide a Construction Method Statement (CMS) to detail the work specifications and an Inspection and Test Plan (ITP) to be implemented to verify works are constructed to the agreed specifications

Agreed specifications for Landform Establishment phase are included in the Final Landform Drainage Design (**Appendix 3**). Due to the variability in topsoil / spoil characteristics, specifications for Growth Media Development will be finalised and agreed prior to topsoil emplacement.

The objectives, indicators and completion criteria for the Landform Establishment phase for each rehabilitation Domain are provided in **Table 7**.

Table 7: Landform Establishment

Domain Objective	Performance Indicator	Completion Criteria	Source/ Justification
Final landform will be suitable for the intended final land use and match surrounding landforms as much as possible	Landforms are shaped to include undulating, informal profiles visually compatible with the surrounding environment.	Landform is generally compatible within the context of the local topography.	MTW MOP Table 23
Final landforms including slopes and drainage will be designed to be safe, stable and non-polluting	Landform is regraded to a stable grade.	Slopes less than 10 degrees unless otherwise agreed.	BCC LMP MTW MOP Table 23
	There is an absence of slumping or uncontrolled erosion.	Gullies and rills occurring in 50m transects are assessed to be limited and stabilising.	BCC LMP
		No rills > 200mm deep	BCC LMP
	Active erosion is minimal.	Soil loss due to gully and rilling is assessed and determined to be limited and stabilising.	MTW MOP Table 23
	Sediment control structures are in accordance with the relevant site management plans and standards.	Drainage structures are stable with no active gully heads, tunnel erosion or bank failure.	MTW MOP Table 23
		Drainage structures are designed in accordance with agreed design specifications: - Drop structures designed to convey 1:50ARI - Channel banks and drains designed to convey 1:20ARI with max slope 1% (unless lined)	BCC LMP Appendix 3

Domain Objective	Performance Indicator	Completion Criteria	Source/ Justification
	Surface water quality is non-polluting and suitable for conservation end land use	Discharge water quality is in compliance with EPL 563 and EPL 1976	EPL 563 and EPL 1976
		No carbonaceous material (coarse or fine rejects) are disposed in the Common Boundary unless agreed and in accordance with relevant EMS and/or site specific standard.	
		No net acid generating materials will be dumped in the Common Boundary unless agreed and in accordance with relevant EMS and/or site specific standard.	Rio Tinto Performance Standards E3 – Acid Rock Drainage Prediction and Control, E8 – Mineral Waste Management BCC LMP Appendix 3

5.4.2 Growth Media Development

For the purposes of this plan, Growth Media Development encompasses the activities associated with emplacing growth media (topsoils and topsoil substitutes) with the appropriate physical, chemical and biological properties to support the establishment of the desired vegetation communities.

As outlined in **Section 2.2.4**, the scope of this CBRP is to define the rehabilitation works to the agreed handover stage which is the emplacement and amelioration of growth media (and stabilisation with sterile cover crops where required). Ongoing management actions to develop self-sustaining soil profiles that trend toward the indicators for Growth Media Development described in the MTW and BCC MOPs are outside the scope of this plan and will be managed independently by MTW and BCC.

Topsoils at both MTW and BCC has been characterised as poor due to sodicity, dispersive behaviour, low organic content and presence of weeds. Where soil resources are anticipated to be insufficient for rehabilitation or unsuitable due to weed infestation, spoils will be characterised and selectively handled and ameliorated to provide suitable topsoil substitutes for the desired final landuse.

Prior to reuse, soils and spoils will be tested to determine the appropriate amelioration to achieve the desired growth media properties for the intended final landuse, as defined in the MTW and BSO MOPs. Where works are conducted by BCC or MTW on the other mine's land, specifications for soil/spoil emplacement and amelioration will be documented in a CMS, including an ITP to verify works have been undertaken in accordance with the agreed specifications.

Soils and spoils will typically require amelioration with:

- Gypsum to rectify calcium / magnesium to sodium ratios, improve structure and water holding capacity, and reduce dispersivity;
- Composts to increase organic content, biological health, nutrient retention and water holding capacity;
- Fertilisers to provide nutrients and wetting agents in hydrophobic soils/spoils.

Objectives, indicators and completion criteria for Growth Media Development phase for the Overburden Emplacement Area domain are provided in **Table 8**.

Table 8: Growth Media Development

Domain Objective	Preliminary Indicator	Completion Criteria	Source/ Justification
Growth media resources are retained and stockpiled to retain structure, chemical and biological properties.	Topsoil from rehabilitated areas in the Common Boundary is stripped and stockpiled by MTW and BCC for their own land within the Common Boundary (where applicable, for re-use within their own lands in the Common Boundary.		BCC LMP, MTW MOP
Suitability of soils characteristics for the establishment of the desired vegetation community is assessed prior to spreading.	Tests are undertaken to assess topsoil and/or spoil: - Physical properties (texture, structure and Emerson Aggregate assessment); - Chemical properties (pH, salinity, nitrogen, potassium and phosphorous.); and - Biological properties and organic content	Assessment results complete	MTW MOP Table 24
	Develop recommended amelioration (ameliorants and application rates) to provide soil characteristics suitable for the desired vegetation community. Note: for works to be undertaken by either MTW or BCC outside their own mine lease, the mine leaseholder will provide a Construction Method Statement with specifications, hold points and verification requirements to undertake the soil/spoil amelioration in accordance with the mine leaseholders MOP objectives and indicators.	Work Method Statement agreed and accepted by MTW and BCC	
Topsoil / topsoil substitutes are spread.	Topsoil is re-spread directly onto reshaped landforms where possible at an average depth of 10cm.		MTW MOP, BCC LMP
Topsoil / spoil is ameliorated.	Soil ameliorants such as gypsum, wood and straw mulch, biosolids, municipal waste composts and other organic wastes are utilised based on soil/spoil characterisation tests.	Independent verification that soil ameliorants are incorporated into the growth medium.	MTW MOP

6.0 REHABILITATION IMPLEMENTATION

6.1 Financial Resources and Timing for Rehabilitation

As outlined in **Section 2.2.4** each party will be responsible to undertake rehabilitation activities up to and including emplacement and amelioration of topsoil to agreed specifications that meet the relevant Growth Media Development criteria for the proposed final land use. Rehabilitation will be undertaken progressively, and commence as soon as practicable in areas where dumping is complete.

Additionally, MTW and BCC agree that:

- Significant surface drainage features in the final landform (**Figure 4**: conveyance channel and rock drop structure) will be constructed progressively at the completion of active dumping by the mine undertaking the final dumping stage; and
- Where mine planning results in dump areas remaining inactive for a period of 3 months or more temporary rehabilitation (for example aerial seeding with sterile cover crops) will be undertaken.

Xstrata Coal NSW HSEC standard *STD 5.12 Mine Closure Planning* and Rio Tinto Closure Standard describes the requirements for Xstrata Coal NSW and Rio Tinto mines to ensure sufficient financial resources are allocated to achieve mine closure obligations. Both MTW and BCC commit to funding and undertaking the rehabilitation activities described in this plan in general accordance with the timings proposed in **Tables 9 and 10** and displayed in **Figures 3a to 3i**. The cost estimates for rehabilitation activities described in this plan have been calculated using the DTIRIS's *ESB26 Rehabilitation Cost Estimate Tool*.

6.2 Rehabilitation Status at CBRP commencement

As outlined in **Section 2.1** at the commencement of the project the majority of land in the Common Boundary footprint has previously been used for overburden emplacement. The majority of land within the Common Boundary has previously been rehabilitated and is currently in Ecosystem Development phase (**Figure 2**).

6.3 Proposed Rehabilitation Activities during the term of this CBRP

Previously rehabilitated areas in the Common Boundary will be re-disturbed

The areas to be rehabilitated during the term of this plan are shown on **Figures 3a to 3i**, and summarised in **Table 9**.

Table 9: Common Boundary Rehabilitation and Disturbance 2013 – 2016

Year	Stage	Rehabilitation (ha)		Disturbance (ha)		Rehabilitation Disturbance (ha)	
		BCC	MTW	BCC	MTW	BCC	MTW
2013	Stage 1	0	0	0	0	5.57	58.07
2013	Stage 2	0	0	0	0	0	0
2013	Stage 3	0	0	0.81	4.76	43.34	0

Year	Stage	Rehabilitation (ha)		Disturbance (ha)		Rehabilitation Disturbance (ha)	
2014	Stage 4	23.27	9.93	0	0	0	37.28
2014	Stage 5	0	0	0	0	0	10.33
2014	Stage 6	0	0	0	0	0	0
2015	Stage 7	0	93.6	0	0	0	0
2016	Stage 8	65.66	0	0	0	0	0

6.4 Rehabilitation Summary Table

The change in areas disturbed (active) and progressing through rehabilitation areas for each domain is summarised in **Table 10**.

Table 10: Summary of Forecast Rehabilitation during the CBRP Term

Domain	Total Area CBRP Start		Total Area CBRP End	
	BCC	MTW	BCC	MTW
Overburden Emplacement				
Active (Disturbed)	39.9	12.4	0	0
Landform Establishment	0	0	65.7	0
Growth Media Development	0	0	0	0
Ecosystem Establishment	0	0	0	96.7
Ecosystem Development	48.9	94.1	23.3	9.7
Water Management Area				
Active (Disturbed)	0.3	1.0	0.8	4.8
Landform Establishment	0	0	0	0
Growth Media Development	0	0	0	0

Ecosystem Establishment	0	0	0	0
Ecosystem Development	0	0	0	0

7.0 REHABILITATION MONITORING, MAINTENANCE AND VERIFICATION

7.1 Monitoring

Rehabilitation monitoring will generally be undertaken in accordance the MTW and BCC MOPs. Additional monitoring requirements associated with managing surface water and erosion and sedimentation prior to the commissioning of the proposed Ramp 22 Dam are documented in the Interim ESCP (**Appendix 2**). Additional monitoring requirements for surface water management following the commissioning of the Ramp 22 Dam will be detailed in the Ramp 22 Dam Detailed Design.

7.2 Maintenance

As described in **Section 3.2**, environmental management, including maintenance work will be the responsibility of the mine operating in a given area within the Common Boundary. During active dumping and rehabilitation works described in this plan, the area will be incorporated into the Colliery Holding Boundary of the mine operating the area and maintenance will generally be constructed in accordance with the mine's MOP and maintenance plans.

Specific maintenance requirements associated with interim ESC structures is documented in the interim ESCP (**Appendix 2**). Maintenance requirements associated with permanent ESC conveyances and the Ramp 22 Dam will be detailed in the Ramp 22 Dam Detailed Design Report.

7.3 Verification

As described in **Section 5.5** works conducted by MTW or BCC on each other's land will require independent verification to confirm works have been completed in accordance with all completion criteria detailed in **Tables 7 and 8**, including additional specifications and QA requirements to be documented in agreed Work Method Statements. Upon satisfactory completion of the completion criteria documented in this plan, responsibility for a given area will be handed back to the mine leaseholder and the Colliery Holdings Boundary amended accordingly.

8.0 REVIEW AND IMPLEMENTATION

8.1 Review

Reviews will be conducted to assess the effectiveness of this plan. Generally this plan will be reviewed, and if necessary revised as mutually agreed, by both MTW and BCC each 12 months from the date of approval by the DTIRIS.

Additionally, this plan will be reviewed, and if necessary revised, within three months of the submission of an:

- Incident report related to activities associated with the Common Boundary;
- MTW or BCC Audit recommendations associated with activities at the Common Boundary; or

- Application to modify Approvals DA 41-03-99 or PA 09_0202.

This plan may also be revised due to:

- Deficiencies being identified;
- Recommendations resulting from MTW and BCC monitoring programs;
- Changes to environmental requirements due to (for example) changed legislation or regulatory requirements;
- Changes in the activities or operations associated with the Common Boundary; and
- Amendments to the MTW or BSO MOPs.

8.2 Implementation

MTW and BSO personnel responsible for the monitoring, review and implementation of this plan are defined in **Table 11**.

Table 11: Responsibilities for Implementation of the CBRP

Title (MTW and BSO for all roles)	Responsibility
Mine Manager	• Implement the procedures and plans referenced in this CBRP • Undertake training in the relevant management plans and procedures as required • Provide resources and support required to implement this plan • Construct the Common Boundary landform in accordance with this plan • Develop dumping strategies to allow for the surface water management and progressive rehabilitation on accordance with this plan
Technical Services Manager	• Implement the procedures and plans referenced in this CBRP • Undertake training in the relevant management plans and procedures as required • Allocate resources to implement this plan • Develop mine plans to manage surface water and allow for progressive rehabilitation in accordance with this plan • Prepare the required Work Method Statements required to implement this plan
Environmental Manager / Environmental Specialist	• Prepare the required Work Method Statements required to implement this plan

Title (MTW and BSO for all roles)	Responsibility
	• Implement, monitor and review the programs and procedures associated with this plan • Consult with regulatory authorities as required • Undertake maintenance as required • Provide environmental training and support to personnel undertaking works in association with the Common Boundary • Report the progress of rehabilitation in the MTW / BCC AEMR
Environmental Officer / Advisor	• Provide support for the implementation of the Environmental Manager / Environmental Specialist where required

9.0 REFERENCES

AECOM, 2012, *Mount Thorley Warkworth Mining Operations Plan*.

Coal & Allied, *Environmental Procedure 2.1 – Cultural Heritage Management*.

Coal & Allied, *Environmental Procedure 5.1 – Disturbance and Rehabilitation*.

Coal & Allied, *Environmental Procedure 7.1 – Water Management*.

Coal & Allied, *Environmental Procedure 8.2 – Dust Management – Mobile Equipment*.

Coal & Allied, *Environmental Procedure 9.1 – Noise*.

Coal & Allied, *Environmental Procedure 10.2 – Flora and Fauna*.

Department of Environment and Climate Change, 2008, *Volume 1 and Volume 2E – Mines and Quarries*.

Department of Trade and Investment, Regional Infrastructure and Services, 2012, *Working Draft Mining Operations Guideline*.

Department of Trade and Investment, Regional Infrastructure and Services, 2013, *ESB26 Rehabilitation Cost Estimate Tool*.

Landcom, 2004, *Managing Urban Stormwater: Soils and Construction (The Blue Book)*.

Mount Thorley Warkworth, *Aboriginal Cultural Heritage Management Plan*.

Mount Thorley Warkworth, *Erosion and Sediment Control Plan*.

Mount Thorley Warkworth, 2012, *Noise Management Plan*.

Rio Tinto, 2011, *Aboriginal Cultural Heritage Management Standard*.

Rio Tinto, 2008, *Performance Standards E3 – Acid Rock Drainage Prediction and Control*.

Rio Tinto, 2012, *Performance Standards E8 – Mineral Waste Management*.

Rio Tinto, 2008, *Environmental Standard E2 – Air Quality Control*.

Rio Tinto, 2008, *Environmental Standard E6 – Noise and Vibration Control*.

Rio Tinto, 2008, *Environmental Standard E9 – Land Use Stewardship*.

Rio Tinto, 2008, *Environmental Standard E10 – Water Use and Quality Control*.

Rio Tinto, 2010, Closure Standard Version 4

Umwelt (Australia Pty Ltd), 2012, *Bulga Open Cut Western Mining Limit Modification Environmental Assessment*.

Xstrata Coal, 2009, *Air Quality Monitoring Program (ENVSTD4.3.03.04.012)*.

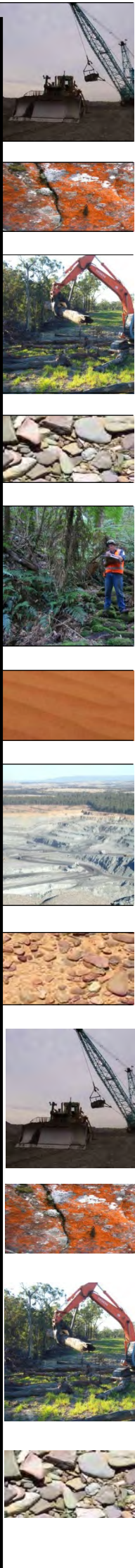
Xstrata Coal, 2011, *Bulga Coal Complex Landscape Management Plan*.

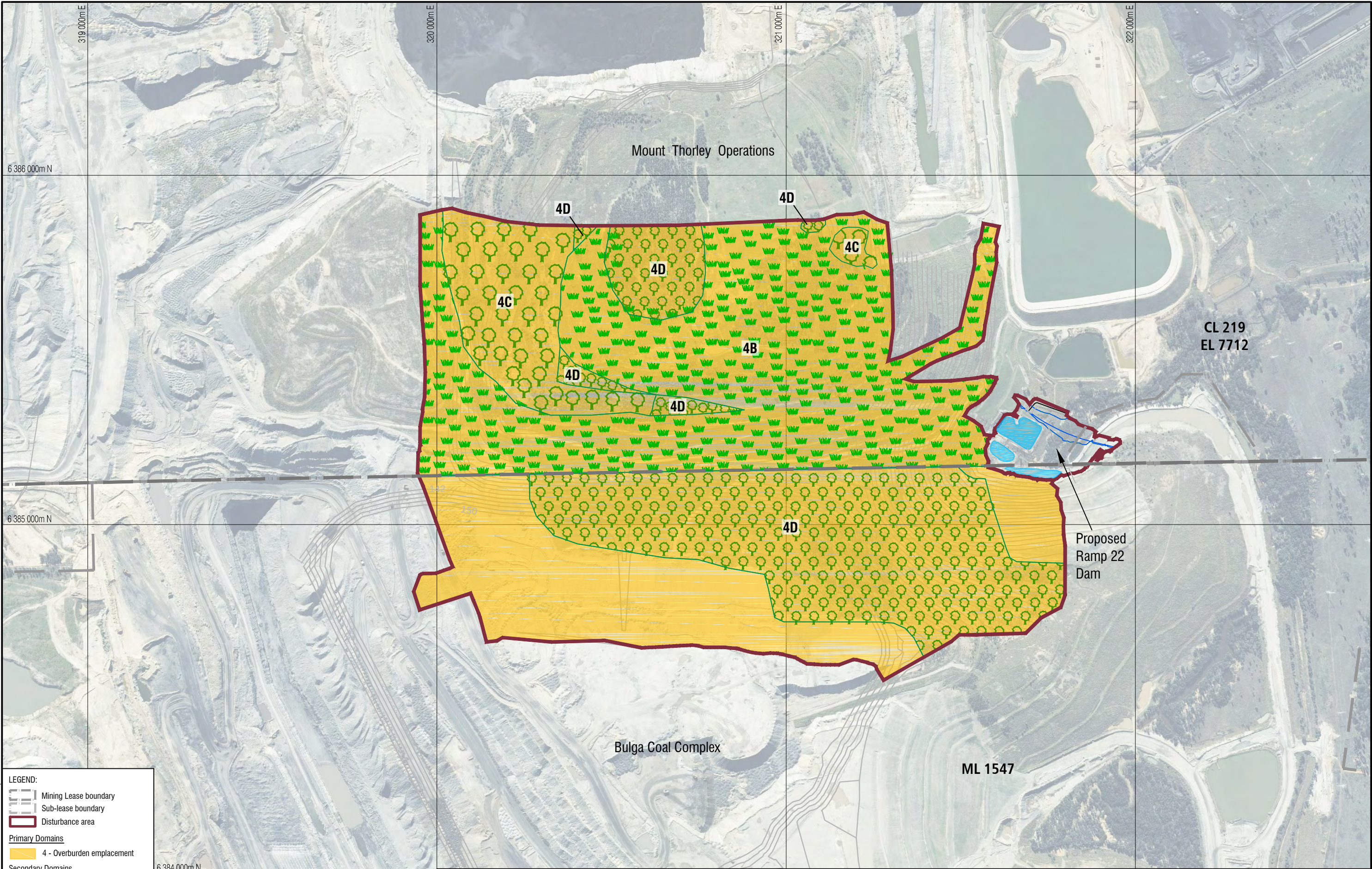
Xstrata Coal, 2012, *Noise Management Plan (BUL SD PLN 0032)*.

Xstrata Coal NSW, 2011, *Erosion and Sediment Control Plan (BUL SD PLN 0023)*.

Xstrata Coal NSW, 2010, *HSEC Standards STD 5.12 Mine Closure Planning*.

Rehabilitation Maps





LEGEND:

Mining Lease boundary
 Sub-lease boundary
 Disturbance area

Primary Domains

4 - Overburden emplacement

Secondary Domains

A - Water management areas
 B - Rehabilitation area - Grassland
 C - Rehabilitation area - Trees over Grassland
 D - Rehabilitation area - Woodland

6 384 000m N

Source: Aerial photo supplied by Bulga - flown July 2011

I, _____, the Mine Manager,
certify that the information on this plan is a true indication of the
proposed development.

Mine Manager _____ Date _____

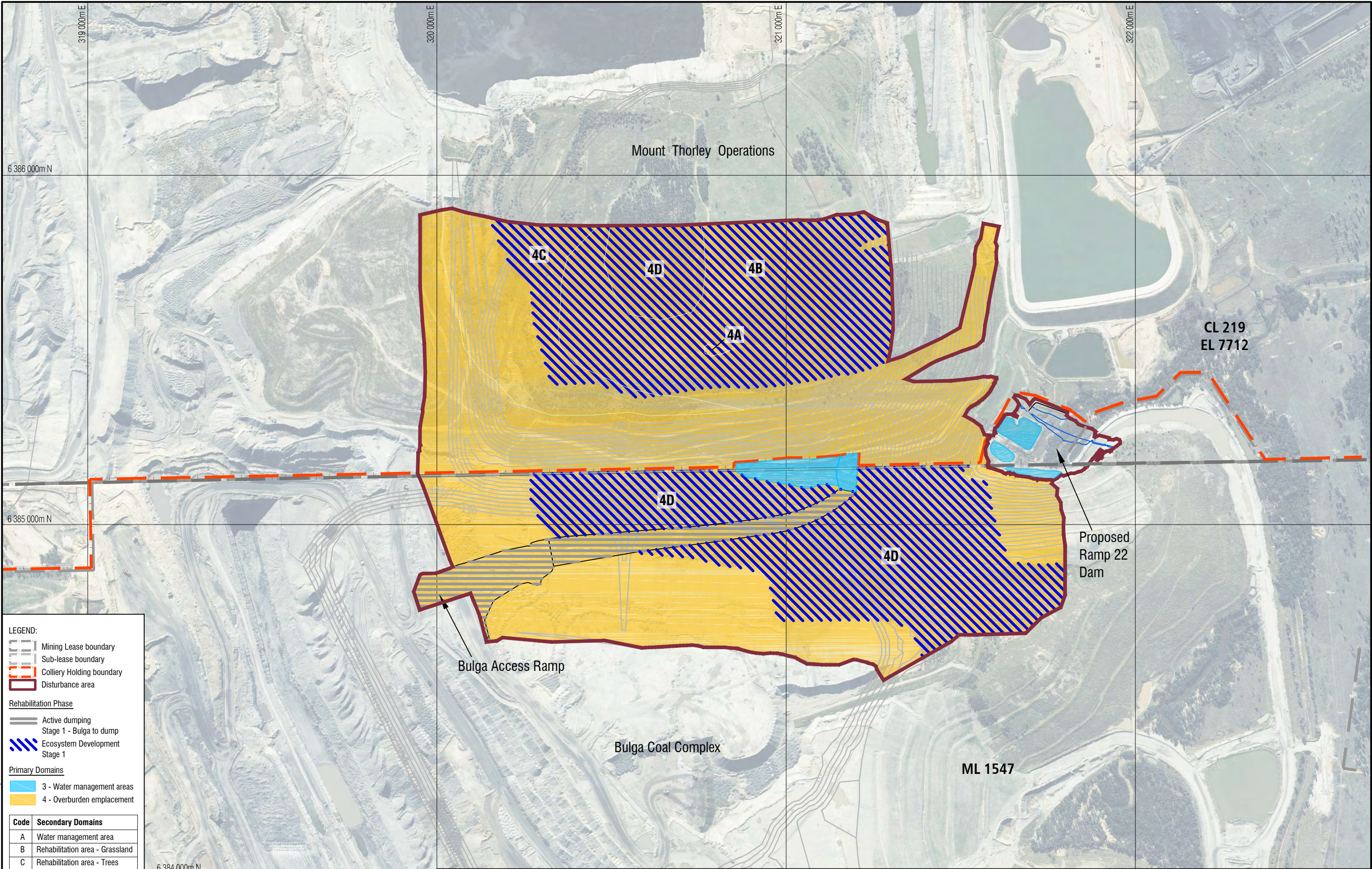
Date: 11/2/2013
Drawn: LJF
Scale: 1:10000
Coordinate System: MGA_ZONE56
Sheet Size: A3

0 200 400m

Prepared by: SLR Consulting Australia

Bulga Coal Complex and Mount Thorley Operations
BULGA - MTW COMMON BOUNDARY REHABILITATION PLAN
Mine Domains at Commencement of MOP
FIGURE 2

MAP2_63310001_BulgaMTW_CBRP_A3_130211.dwg



LEGEND:

Mining Lease boundary
Sub-lease boundary
Colliery Holding boundary
Disturbance area

Rehabilitation Phase

Active dumping
Stage 1 - Bulga to dump
Ecosystem Development Stage 1

Primary Domains

3 - Water management areas
4 - Overburden emplacement

Code	Secondary Domains
A	Water management area
B	Rehabilitation area - Grassland
C	Rehabilitation area - Trees over Grassland
D	Rehabilitation area - Woodland

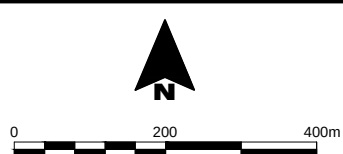
Note:
Stage 1: BCC RL125 Access Ramp
Stage Volume 651,000m³

Source: Aerial photo supplied by Bulga - flown July 2011

I, _____, the Mine Manager,
certify that the information on this plan is a true indication of the
proposed development.

Mine Manager _____ Date _____

Date: 5/2/2013
Drawn: LJF
Scale: 1:10000
Coordinate System: MGA_ZONE56
Sheet Size: A3



xstrata coal

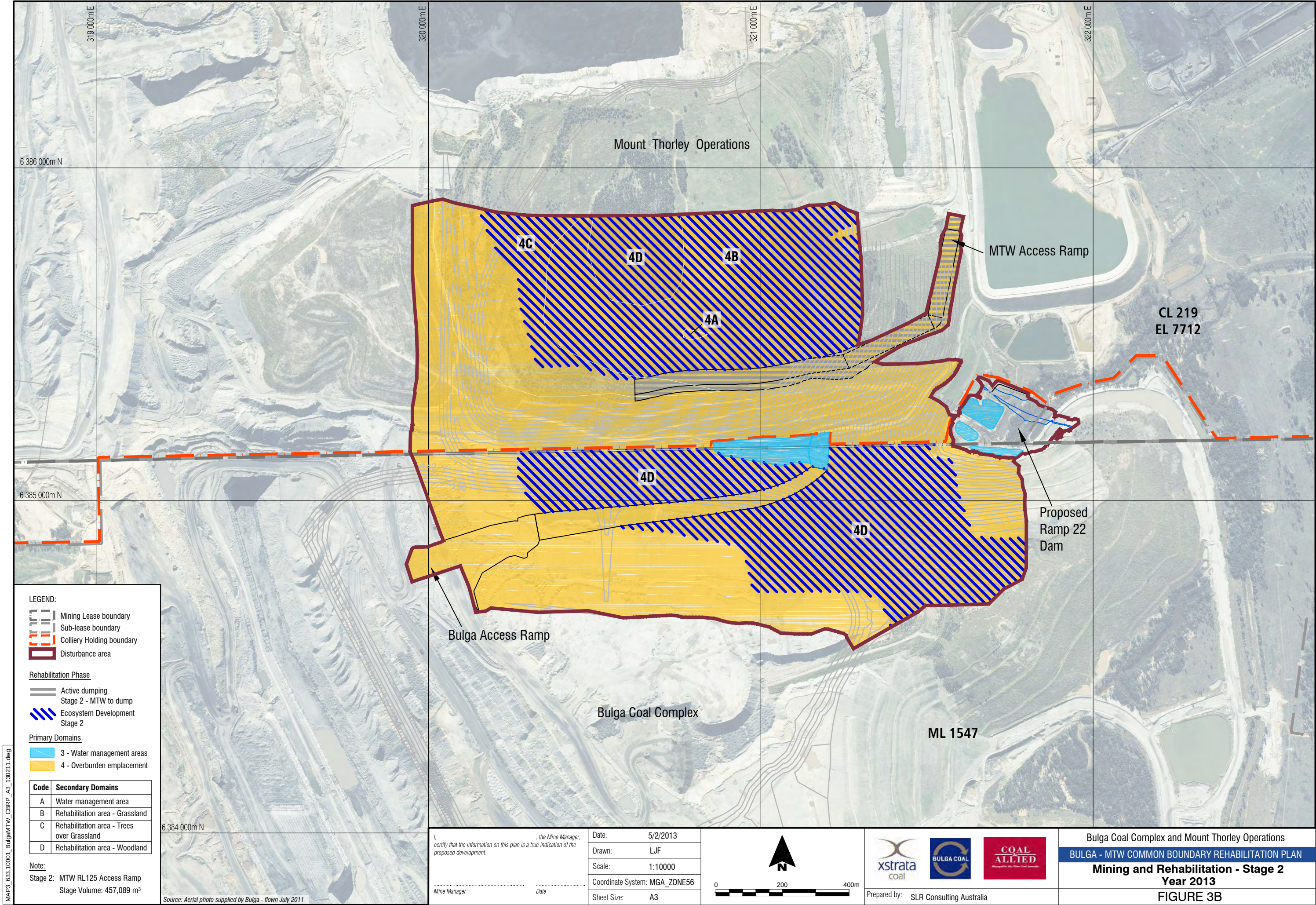
BULGA COAL

COAL ALLIED

Prepared by: SLR Consulting Australia

Bulga Coal Complex and Mount Thorley Operations
BULGA - MTW COMMON BOUNDARY REHABILITATION PLAN
Mining and Rehabilitation - Stage 1
Year 2013
FIGURE 3A

MAP3_633.10001_BulgaMTW_CBRP_A3_130211.dwg



MAP3_633.1001_BulgaMTW_CBRP_A3_130211.dwg

LEGEND:

- Mining Lease boundary
- Sub-lease boundary
- Colliery Holding boundary
- Disturbance area

Rehabilitation Phase

- Active dumping
- Stage 2 - MTW to dump
- Ecosystem Development
- Stage 2

Primary Domains

- 3 - Water management areas
- 4 - Overburden emplacement

Code	Secondary Domains
A	Water management area
B	Rehabilitation area - Grassland
C	Rehabilitation area - Trees over Grassland
D	Rehabilitation area - Woodland

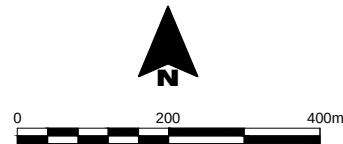
Note:

Stage 2: MTW RL125 Access Ramp
Stage Volume: 457,089 m³

I, _____, the Mine Manager,
certify that the information on this plan is a true indication of the
proposed development.

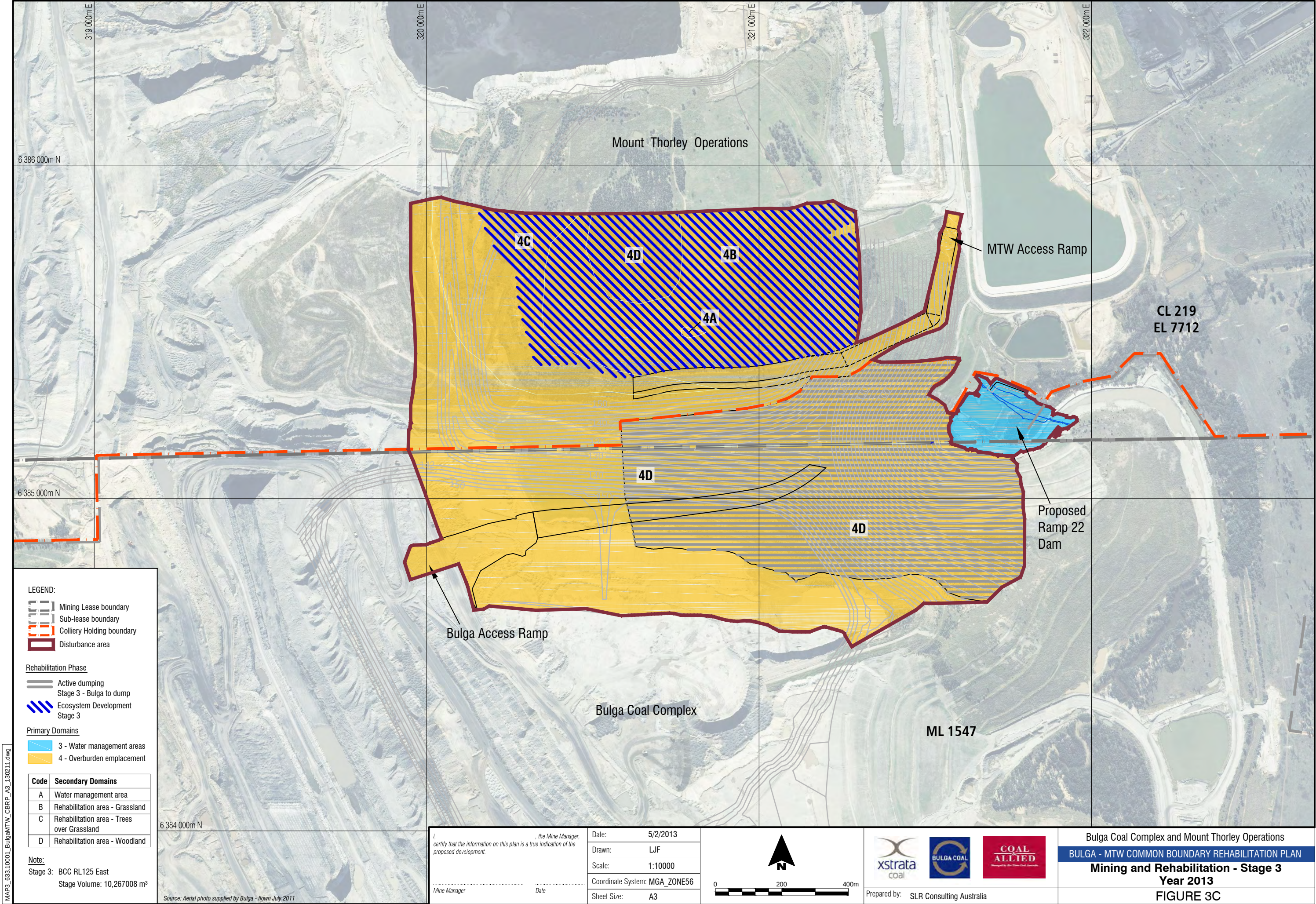
Mine Manager _____ Date _____

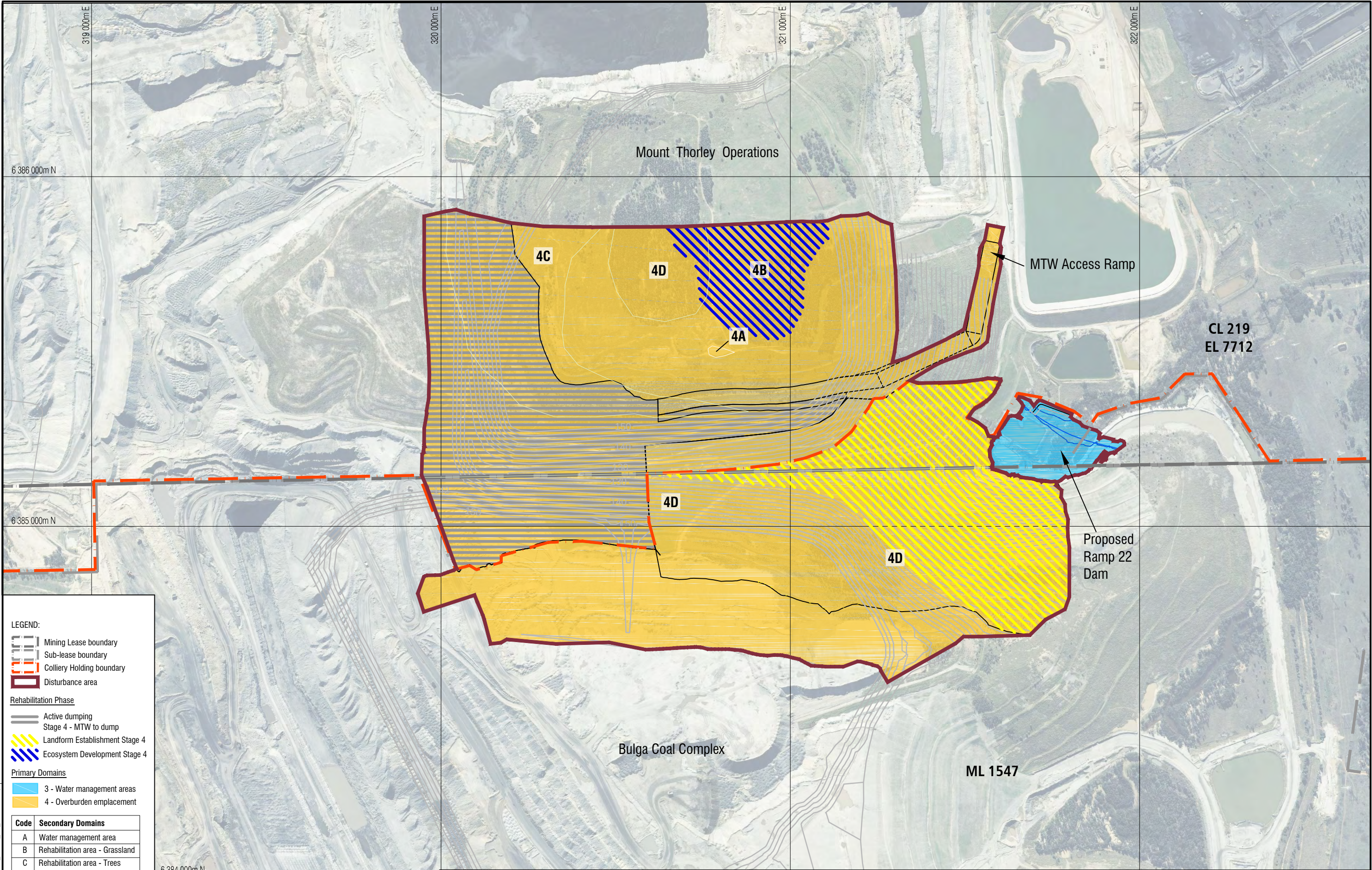
Date: 5/2/2013
Drawn: LJF
Scale: 1:10000
Coordinate System: MGA_ZONE56
Sheet Size: A3



Prepared by: SLR Consulting Australia

Bulga Coal Complex and Mount Thorley Operations
BULGA - MTW COMMON BOUNDARY REHABILITATION PLAN
Mining and Rehabilitation - Stage 2
Year 2013
FIGURE 3B





LEGEND:

Mining Lease boundary
Sub-lease boundary
Colliery Holding boundary
Disturbance area

Rehabilitation Phase

Active dumping
Stage 4 - MTW to dump
Landform Establishment Stage 4
Ecosystem Development Stage 4

Primary Domains

3 - Water management areas
4 - Overburden emplacement

Code	Secondary Domains
A	Water management area
B	Rehabilitation area - Grassland
C	Rehabilitation area - Trees over Grassland
D	Rehabilitation area - Woodland

Note:
Stage 4: MTW RL125 West
Stage Volume: 10,663,042 m³

6 384 000m N

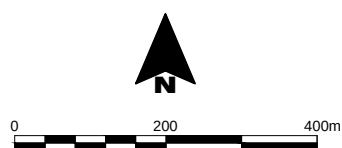
Source: Aerial photo supplied by Bulga - flown July 2011

I, _____, the Mine Manager,
certify that the information on this plan is a true indication of the
proposed development.

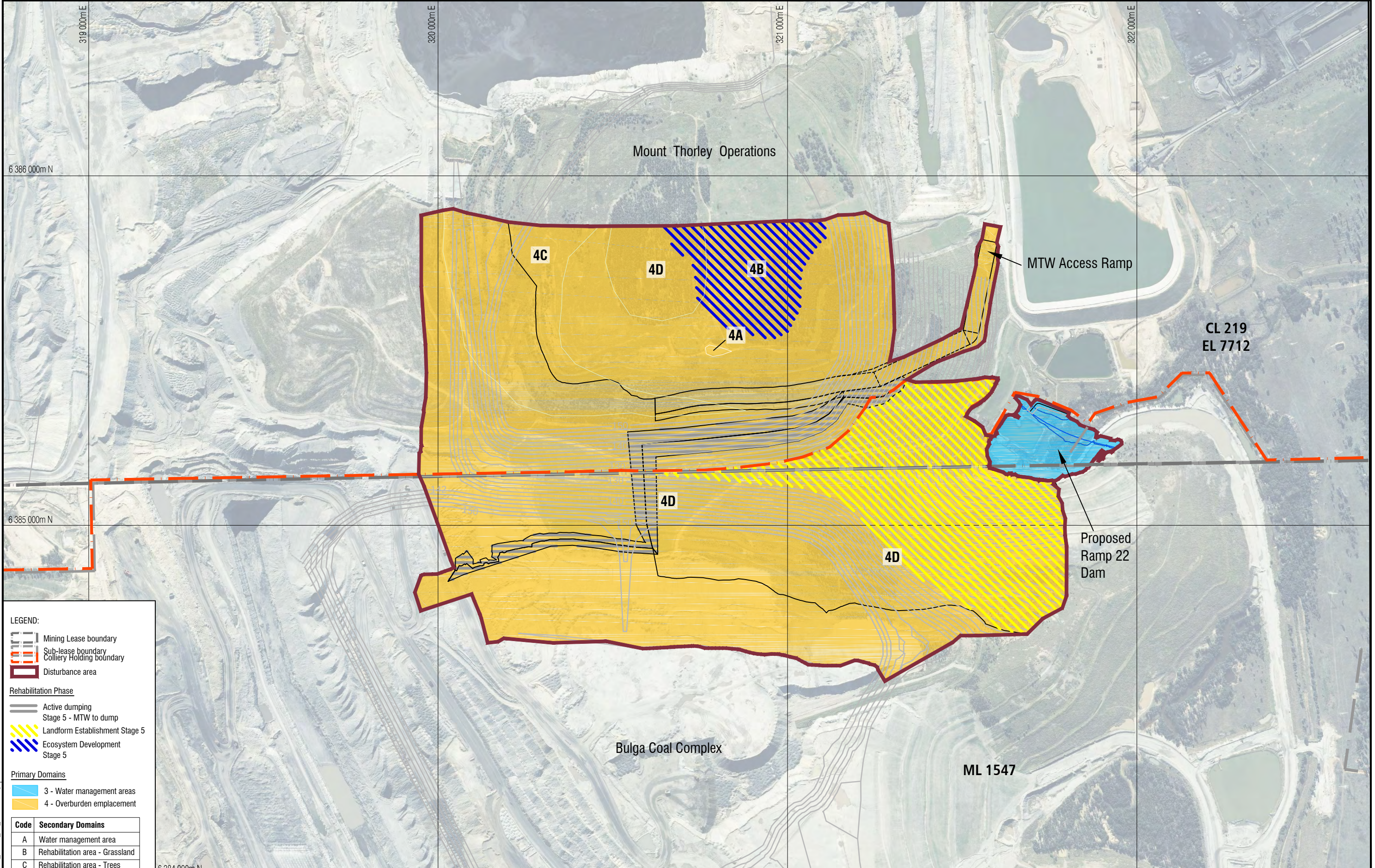
Mine Manager

Date

Date:	5/2/2013
Drawn:	LJF
Scale:	1:10000
Coordinate System:	MGA_ZONE56
Sheet Size:	A3



Prepared by: SLR Consulting Australia



LEGEND:

Mining Lease boundary
 Sub-lease boundary
 Colliery Holding boundary
 Disturbance area

Rehabilitation Phase

Active dumping
 Stage 5 - MTW to dump
 Landform Establishment Stage 5
 Ecosystem Development Stage 5

Primary Domains

3 - Water management areas
 4 - Overburden emplacement

Code	Secondary Domains
A	Water management area
B	Rehabilitation area - Grassland
C	Rehabilitation area - Trees over Grassland
D	Rehabilitation area - Woodland

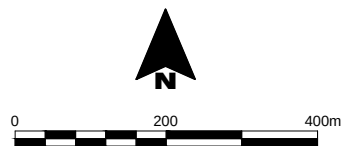
Note:
Stage 5: BCC and MTW Void infill to RL125
Stage volume: 1,065,409 m³

Source: Aerial photo supplied by Bulga - flown July 2011

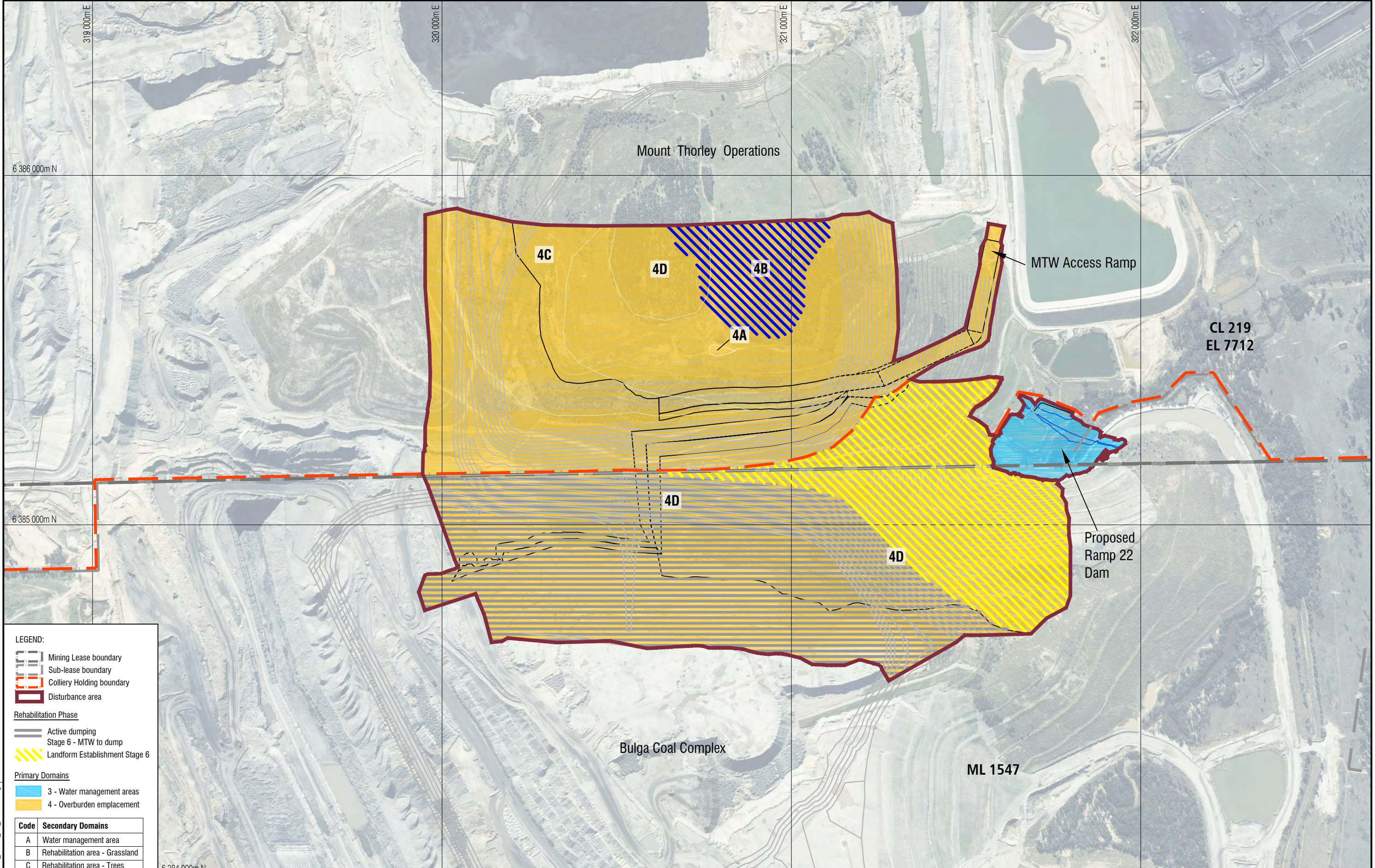
I, _____, the Mine Manager,
certify that the information on this plan is a true indication of the
proposed development.

Mine Manager _____ Date _____

Date: 5/2/2013
Drawn: LJF
Scale: 1:10000
Coordinate System: MGA_ZONE56
Sheet Size: A3



Prepared by: SLR Consulting Australia



LEGEND:

- Mining Lease boundary
- Sub-lease boundary
- Colliery Holding boundary
- Disturbance area

Rehabilitation Phase

- Active dumping
- Stage 6 - MTW to dump
- Landform Establishment Stage 6

Primary Domains

- 3 - Water management areas
- 4 - Overburden emplacement

Code	Secondary Domains
A	Water management area
B	Rehabilitation area - Grassland
C	Rehabilitation area - Trees over Grassland
D	Rehabilitation area - Woodland

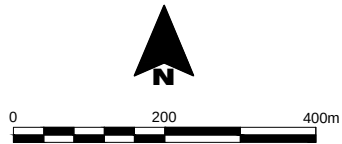
Note:
Stage 6: BCC RL150 South
Stage Volume: 9,306,000 m³

Source: Aerial photo supplied by Bulga - flown July 2011

I, _____, the Mine Manager,
certify that the information on this plan is a true indication of the
proposed development.

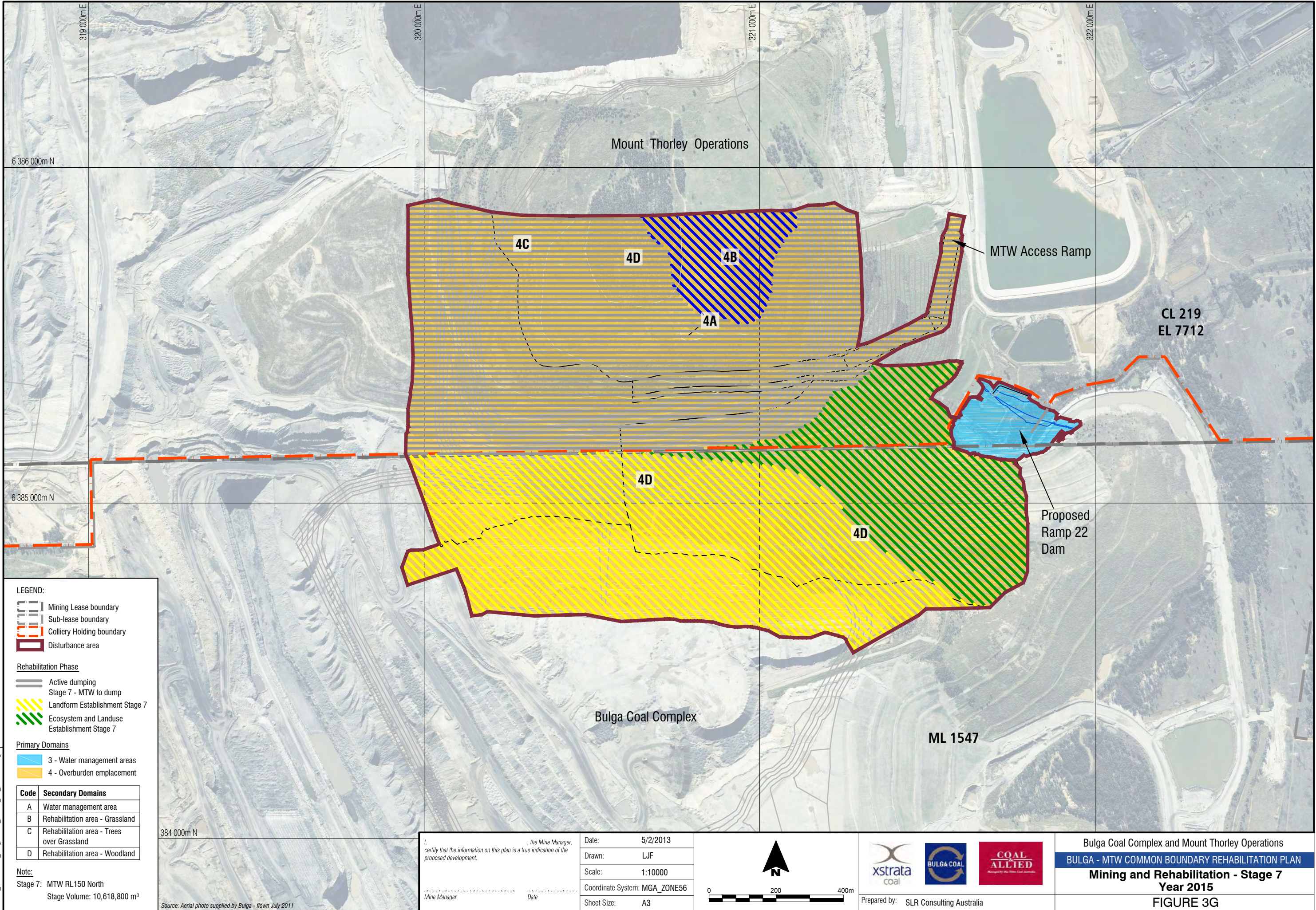
Mine Manager _____ Date _____

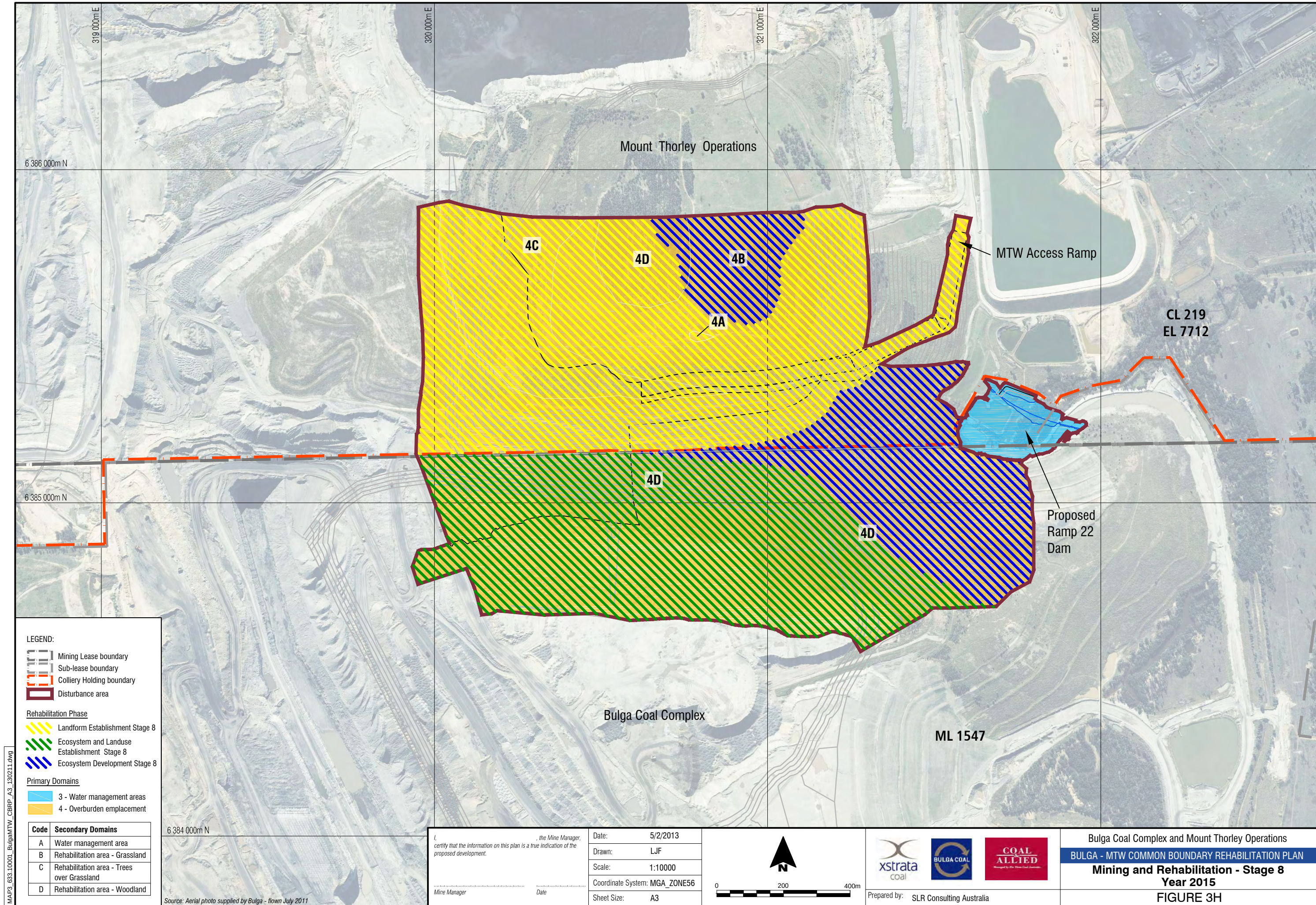
Date:	5/2/2013
Drawn:	LJF
Scale:	1:10000
Coordinate System:	MGA_ZONE56
Sheet Size:	A3



Prepared by: SLR Consulting Australia

Bulga Coal Complex and Mount Thorley Operations
BULGA - MTW COMMON BOUNDARY REHABILITATION PLAN
Mining and Rehabilitation - Stage 6
Year 2014
FIGURE 3F





LEGEND:

Mining Lease boundary
 Sub-lease boundary
 Colliery Holding boundary
 Disturbance area

Rehabilitation Phase

Landform Establishment Stage 8
 Ecosystem and Landuse Establishment Stage 8
 Ecosystem Development Stage 8

Primary Domains

3 - Water management areas
 4 - Overburden emplacement

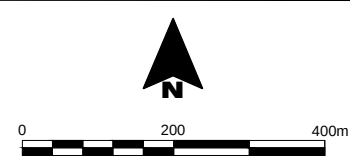
Code	Secondary Domains
A	Water management area
B	Rehabilitation area - Grassland
C	Rehabilitation area - Trees over Grassland
D	Rehabilitation area - Woodland

I, _____, the Mine Manager,
certify that the information on this plan is a true indication of the
proposed development.

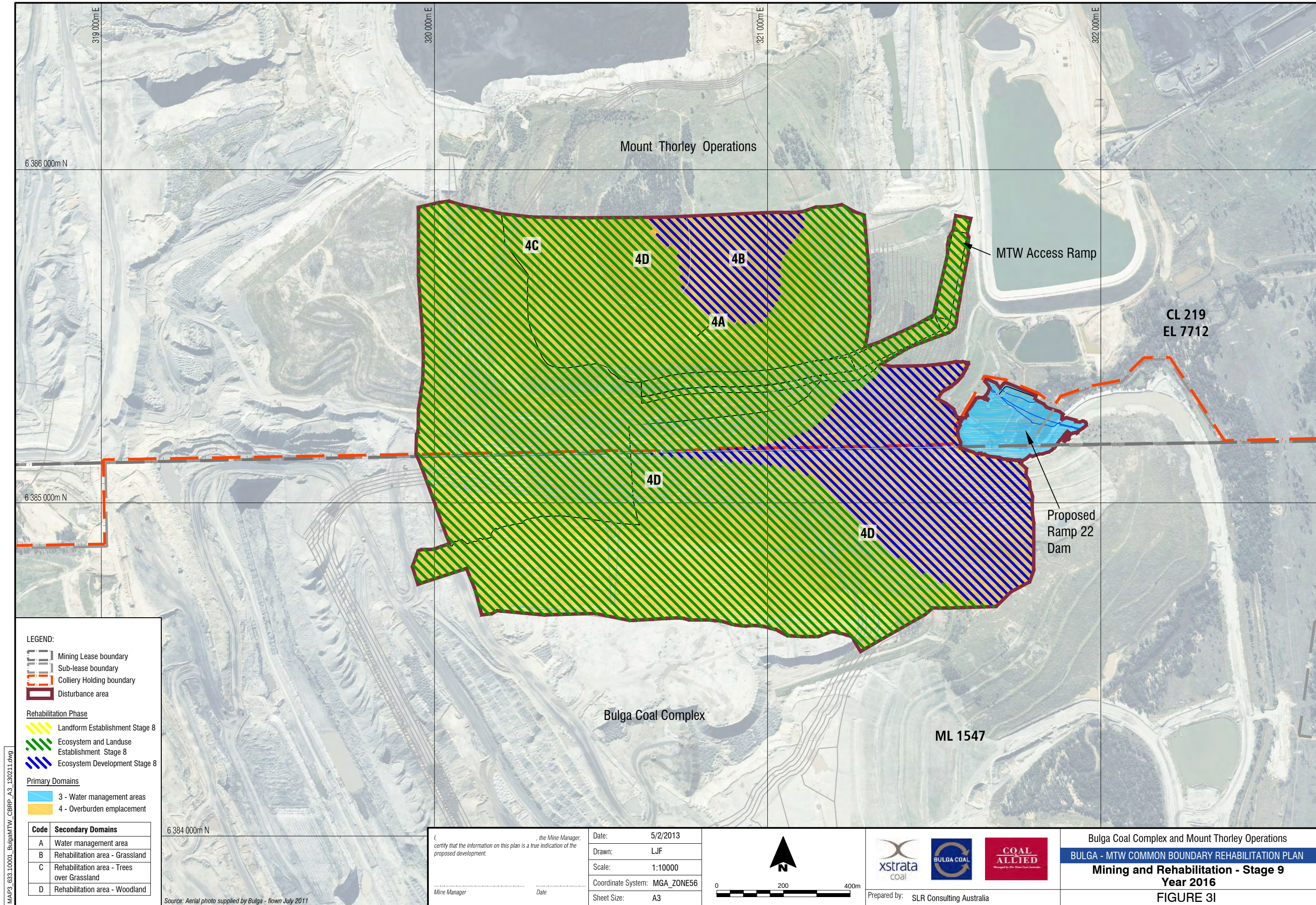
Mine Manager

Date

Date: 5/2/2013
Drawn: LJF
Scale: 1:10000
Coordinate System: MGA_ZONE56
Sheet Size: A3



Prepared by: SLR Consulting Australia



LEGEND:

- Mining Lease boundary
- Sub-lease boundary
- Colliery Holding boundary
- Disturbance area

Rehabilitation Phase

- Landform Establishment Stage 8
- Ecosystem and Landuse Establishment Stage 8
- Ecosystem Development Stage 8

Primary Domains

- 3 - Water management areas
- 4 - Overburden emplacement

Code	Secondary Domains
A	Water management area
B	Rehabilitation area - Grassland
C	Rehabilitation area - Trees over Grassland
D	Rehabilitation area - Woodland

6 384 000m N

Source: Aerial photo supplied by Bulga - flown July 2011

I, _____, the Mine Manager,
certify that the information on this plan is a true indication of the
proposed development.

Mine Manager

Date

Date: 5/2/2013

Drawn: LJF

Scale: 1:10000

Coordinate System: MGA_ZONE56

Sheet Size: A3



0 200 400m



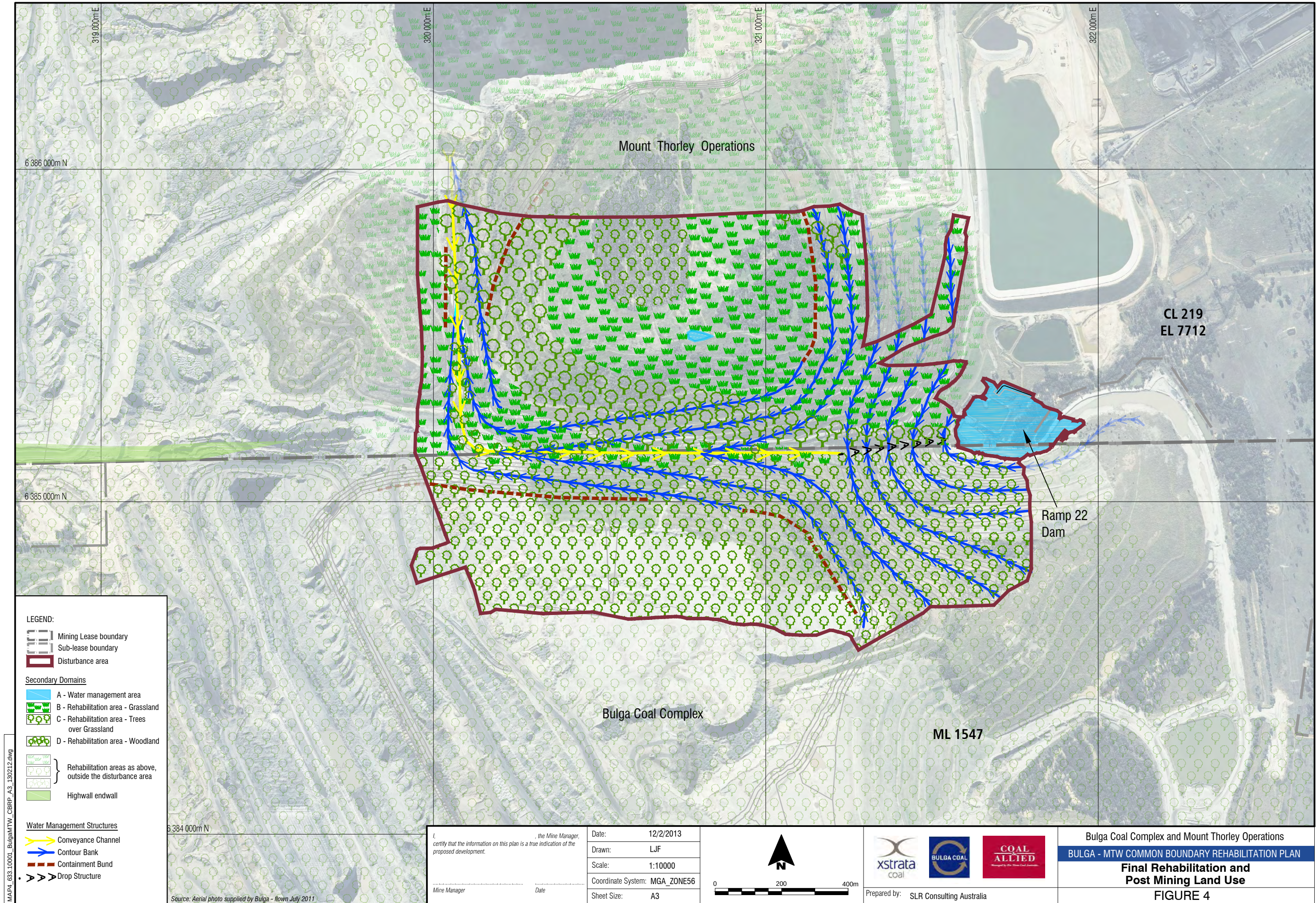
Prepared by: SLR Consulting Australia

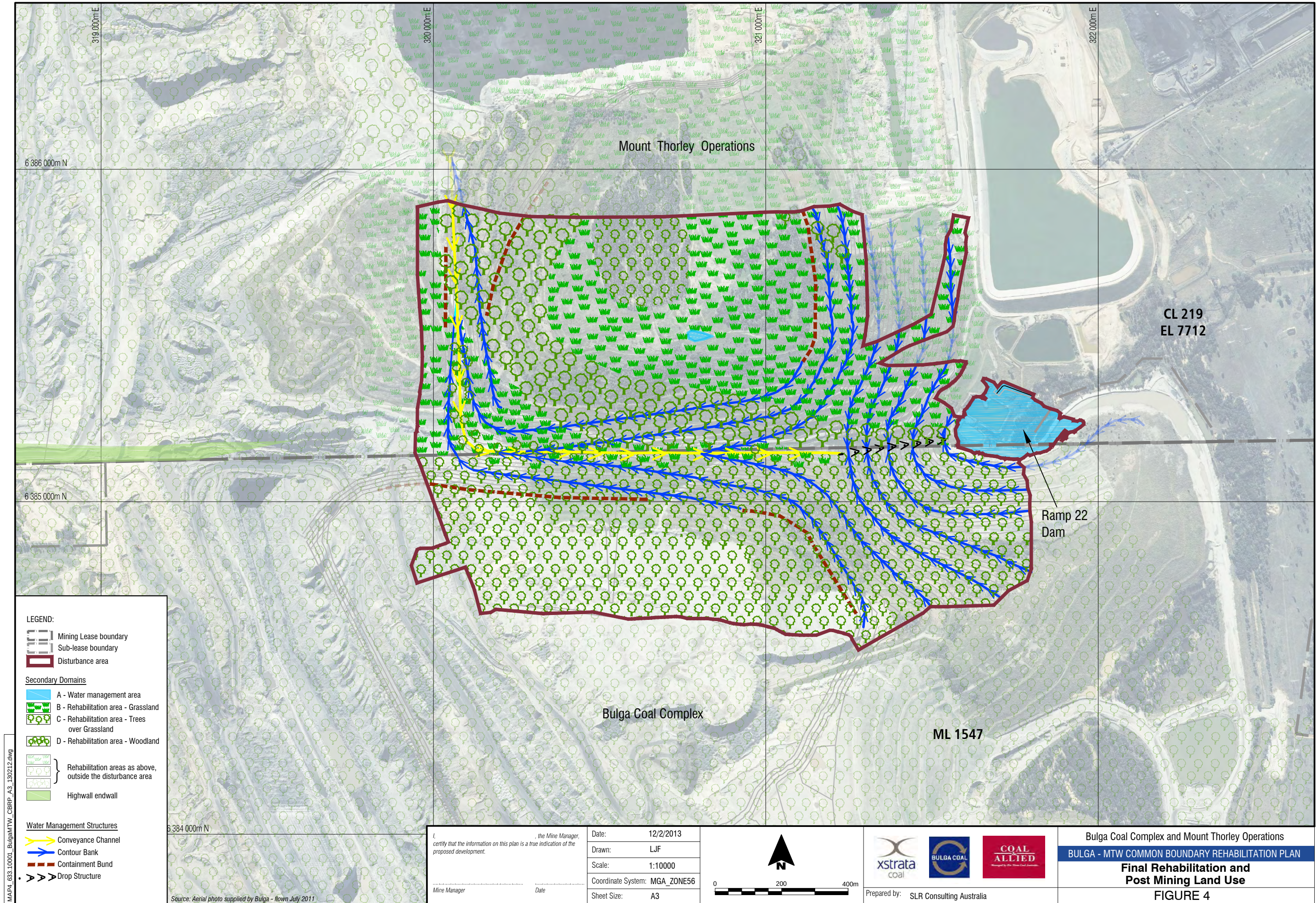
Bulga Coal Complex and Mount Thorley Operations

BULGA - MTW COMMON BOUNDARY REHABILITATION PLAN

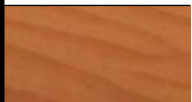
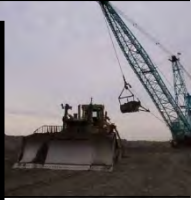
**Mining and Rehabilitation - Stage 9
Year 2016**

FIGURE 3I





Common Boundary Agreement



APPENDIX 1

8 July 2005 Boundary Agreement

Amendment Agreement

- Grant of Area B Sublease and boundary coal conditional commitments
- Confirmation of Western Area Sublease and Eastern Area Sublease
 - Confirmation of early termination of Mt Thorley Dump Sublease and Boundary Corridor Sublease

Mt Thorley Operations Pty Limited

Miller Pohang Coal Co Pty Limited

Posco Australia Pty Limited

Saxonvale Coal Pty Limited

Nippon Steel Australia Pty Limited

Bulga Coal Management Pty Limited

Boundary Agreement Amendment Agreement

Summary map

This summary map is indicative and an overview summary only of certain defined areas dealt with under this Agreement.

In the event of inconsistency between the following map and the detailed provisions of this Agreement, the detailed provisions of this Agreement prevail.

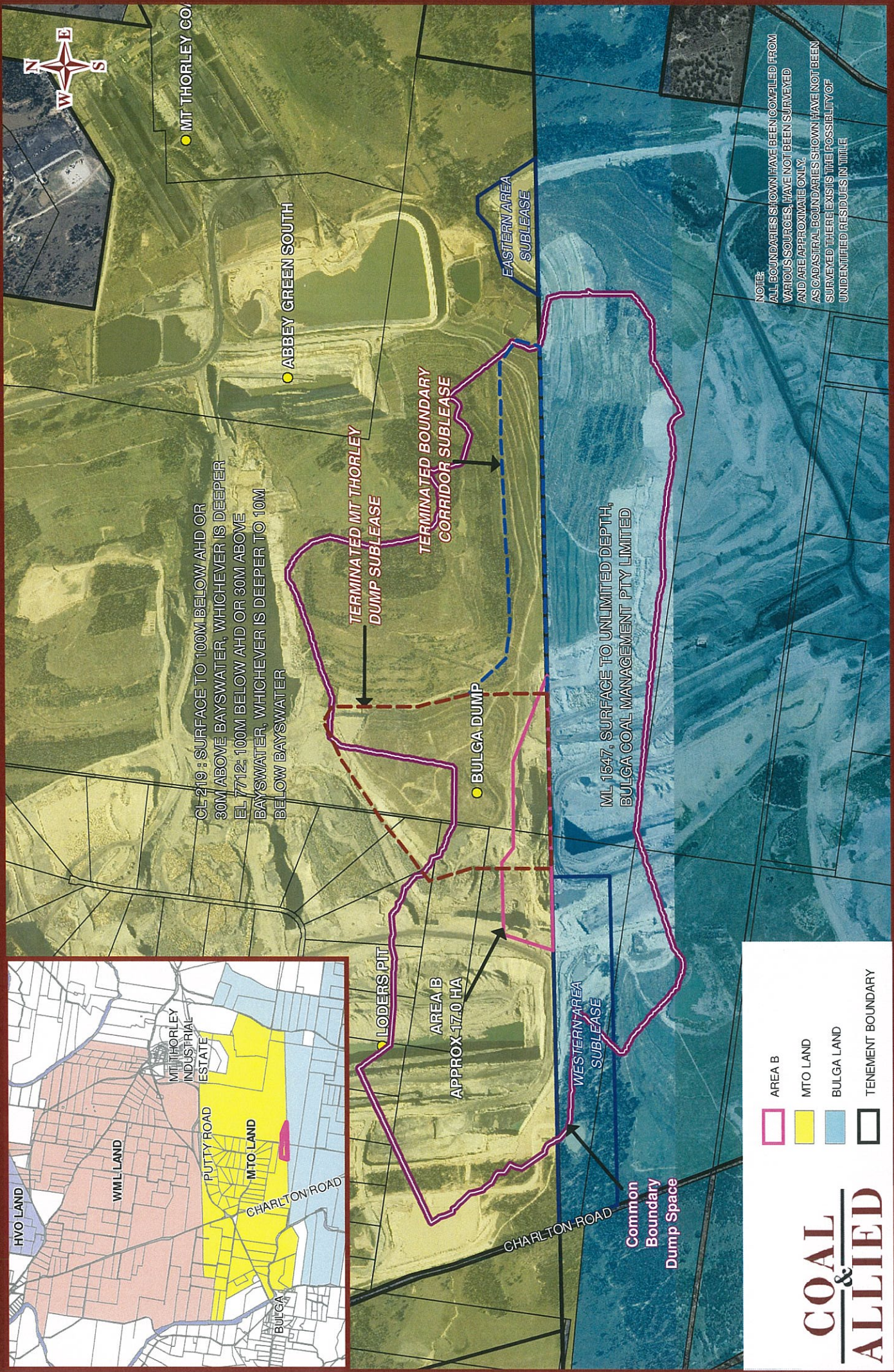
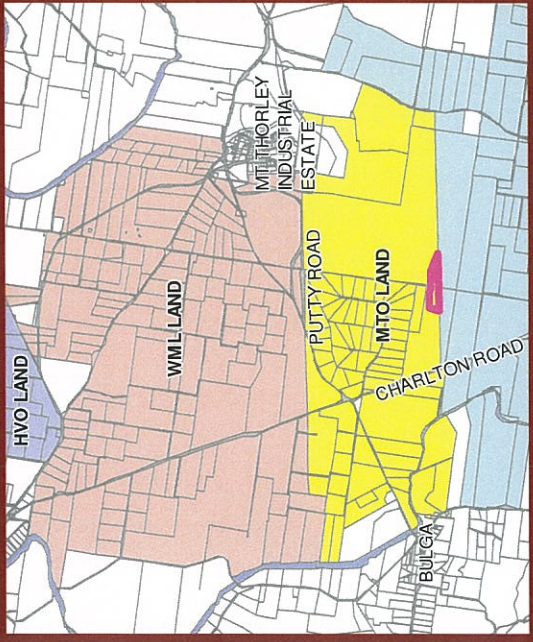
Summary Map

Location: Bulga
LGA: Singleton

Projection: MGA Zone 56
Contour: N/A
Source: N/A

Date: 11/10/11
Plan By: SC
Version: 04

Project: MTW
Layout: A4
Our Ref: P_MTW_Bulga Agreement 110705.WOR



NOTE:
ALL BOUNDARIES SHOWN HAVE BEEN COMPILED FROM
VARIOUS SOURCES, HAVE NOT BEEN SURVEYED
AND ARE APPROXIMATE ONLY.
AS CADASTRAL BOUNDARIES SHOWN HAVE NOT BEEN
SURVEYED THERE EXISTS THE POSSIBILITY OF
UNIDENTIFIED RESIDUES IN TITLE

- AREA B
- MTO LAND
- BULGA LAND
- TENEMENT BOUNDARY

**COAL
&
ALLIED**

Boundary Agreement Amendment Agreement

Table of Contents

Summary map

1	Definitions and interpretation	2
2	Commencement	5
3	Confirmations	6
4	Area B Sublease	9
5	Barrier coal	13
6	Management of potential mining impacts	14
7	Hedley West Property	15
8	Entire agreement	15
9	Governing law	15
10	Further Assurances and Acts	16
	Signing page	17

Attachments

1	Area B map	19
2	Area B design	20
3	Barrier coal map	21
4	Area B Sublease (agreed form to be executed as a separate document)	22
5	Hedley West Property Call Option Deed	31
6	Map of Common Boundary Dump Space	32

Exhibit – Boundary Agreement

Boundary Agreement Amendment Agreement

Date 2011

Parties

1. Mt Thorley Operations Pty Limited ACN 000 013 249 (**MTO**)
Mount Thorley Road
Mount Thorley via Singleton NSW 2330
Fax + 61 7 3361 4114
Attention Company Secretary
2. Miller Pohang Coal Co Pty Limited ACN 001 588 209 (**Miller Pohang**)
Level 3, West Tower
410 Ann Street
Brisbane QLD 4000
Fax + 61 7 3361 4114
Attention Company Secretary
3. Posco Australia Pty Limited ACN 002 062 160 (**Posco**)
Mount Thorley Road
Mount Thorley via Singleton NSW 2330
Fax
Attention Company Secretary
4. Saxonvale Coal Pty Limited ACN 003 526 467 (**Saxonvale**)
Level 38, Gateway, 1 Macquarie Place
Sydney NSW 2000
Fax + 61 2 9241 6898
Attention Company Secretary
5. Nippon Steel Australia Pty Limited ACN 001 445 049 (**NSA**)
Level 24, 1 York Street
Sydney NSW 2000

Boundary Agreement Amendment Agreement

- | | |
|----|--|
| 6. | Fax

Attention Company Secretary

Bulga Coal Management Pty Limited ACN 055 534 391 (Bulga)

Level 38, Gateway, 1 Macquarie Place

Sydney NSW 2000

Fax + 61 2 9241 6898

Attention Company Secretary |
|----|--|

Recitals

- | | |
|---|---|
| A | This Agreement amends the Boundary Agreement and documents the agreed arrangements for the grant by MTO to Bulga of the Area B Sublease. |
| B | This Agreement also documents the agreed framework between MTO and Bulga for managing each mine's potential impacts on the other's mine in respect of Area B. |
| C | This Agreement confirms the continuation of the Western Area Sublease and the Eastern Area Sublease. |
| D | This Agreement also confirms the retrospective termination by agreement of the Mt Thorley Dump Sublease and Boundary Corridor Sublease on 8 July 2010. |
-

It is agreed as follows.

1. Definitions and interpretation

1.1 Definitions

In this Agreement, defined terms will have the meaning ascribed to them in the Boundary Agreement and as set out in this clause 1.1, unless the context otherwise requires:

Agreement means this agreement for amending the Boundary Agreement.

Approvals to Mine means those approvals required under the Mining Act or otherwise for the extraction of coal.

Boundary Agreement Amendment Agreement

Area B means the area identified as such on Attachment 1, and as may be adjusted in accordance with the clause 4.8 of this Agreement.

Area B Activities means:

- (a) the operation of a land bridge, haul and access road, drainage and dumping infrastructure including an end wall haulage ramp system; and
- (b) the construction and use of ancillary infrastructure; and
- (c) only if the MTO Tenement Boundary Coal Conditions are met, the mining of the MTO Tenement Boundary Coal,

in accordance with the terms of this Agreement and as may be varied pursuant to clause 5.2.

Area B Activities Approvals has the meaning given in clause 4.1 (b) (i).

Area B Landform Condition has the meaning given in clause 4.12.

Area B Sublease means the sublease granted pursuant to this Agreement as provided for in Attachment 4.

Area B Sublease Term means 6 years from the Commencement Date or such other time as provided for in accordance with the terms of this Agreement.

Boundary Agreement means the Bulga Mt Thorley Boundary Agreement between Mt Thorley Operations Pty Limited, Posco Australia Pty Limited, Miller Pohang Coal Co Pty Limited, Bulga Coal Management Pty Limited, Saxonvale Coal Pty Limited and Nippon Steel Australia Pty Limited dated 8 July 2005, being an agreement registered as a dealing on parts of the Bulga Tenement and parts of the MTO Tenement, a copy of which comprises the Exhibit to this Agreement.

Boundary Corridor Sublease the sublease so titled and dated 8 July 2005.

Bulga Tenement means ML 1547 (1992).

Bulga Tenement Barrier Coal means the coal falling within the final 20 metres of the Bulga Tenement boundary for the length that that boundary abuts the Area B Sublease which coal Bulga may from time to time hold Approvals to Mine.

Commencement Date means the date on which MTO executes the Area B Sublease as provided for in clause 4.1(d).

Common Boundary has the meaning given to that term in the Boundary Agreement.

Common Boundary Dump Space means the area identified as such on Attachment 6.

Common Boundary Valley means the vacant area that, without the existence of this Agreement, would otherwise exist within the lines of repose of both mines' permissible final

Boundary Agreement Amendment Agreement

waste dumps along the Common Boundary within the Common Boundary Dump Space and which is identified as such in the Common Boundary Rehabilitation Plan.

Department means the government department responsible for administering the Mining Act, currently the Department of Trade and Investment, Regional Infrastructure and Services.

Eastern Area Sublease means the sublease so titled dated 8 July 2005 and registered on part of the MTO Tenement.

Hedley West Property means the land shown on Attachment 5.

Hedley West Property Call Option means the call option by which MTO can purchase the Hedley West Property from Bulga (largely in the form of the deed annexed to this Agreement as Attachment 5).

Mining Act means the *Mining Act* 1992 (NSW).

Mining Lease means a mining lease granted under the provisions of the Mining Act.

Mt Thorley Dump Sublease means the sublease so titled and dated 8 July 2005.

MTO Tenement means Coal Lease 219 (1973).

MTO Tenement Boundary Coal means:

- (a) that coal located within Area B along the southern boundary of the MTO Tenement for 20 metres (in a northerly direction) of the MTO Tenement where it abuts the Bulga Tenement; and
- (b) that coal from the 20 metre mark referred to in (a) of this definition and extending to the northern boundary of the Area B Sublease,

with these areas more particularly shown in Attachment 3.

MTO Tenement Boundary Coal Conditions means the conditions set out in clause 5.2(a).

REMP means Rehabilitation and Environmental Management Plan and until its application means Mining Operations Plan.

Western Area Sublease means the sublease so titled dated 8 July 2005 and registered on part of the Bulga Tenement.

1.2 Interpretation

References to clauses refer to clauses of this Agreement unless the context indicates expressly that the clause references mean references to clauses in the Boundary Agreement (not affected by this amending Agreement).

Boundary Agreement Amendment Agreement

2. Commencement

- 2.1** Subject to the satisfaction of the condition in clause 7.1, the amendments contemplated in this Agreement will commence on the date of this Agreement.
- 2.2** Except to the extent amended by this Agreement, all provisions of the Boundary Agreement continue in full force and effect.
- 2.3** Subject to the terms of this Agreement, MTO agrees to sublease Area B to Bulga on the terms of the Area B Sublease, and Bulga agrees to accept the Area B Sublease.
- 2.4** (a) Application will be made by Bulga to have the Area B Sublease registered on the Register of Mining Subleases to satisfy the requirement for Ministerial approval under section 163A of the Mining Act (as the proposed Area B Sublease Term exceeds 5 years).
- (b) For the purposes of the application referred to in clause 2.4(a):
- (i) the rehabilitation cost estimate stated in the application will be an estimate of the likely cost of Bulga's obligation under clause 4.12; and
 - (ii) subject to Bulga being in compliance with this Agreement and the Area B Sublease at the time the application for registration is made, this Agreement constitutes the consent of a party to the application under clause 2.4(a) and a copy of this Agreement may be provided to the Department as evidence of that consent.
- (c) MTO and Bulga will do everything reasonably available to them to obtain the Ministerial approval applied for under clause 2.4(a) and to the extent not already done, will upon entering this Agreement, engage with the Department jointly to obtain the Department's in principle support for the registration of the Area B Sublease subject to Ministerial approval.
- (d) If the Department informs MTO and Bulga that Ministerial approval of the Area B Sublease is likely, but may not be given within a reasonable time, then MTO and Bulga will reduce the Area B Sublease Term to 4 years and 364 days provided that both MTO and Bulga must continue to do all things reasonably available to them to secure Ministerial approval for a sublease on the same terms as the Area B Sublease for a term of 6 years after the Commencement Date of the Area B Sublease and if Ministerial approval is granted, Bulga and MTO must enter into the new sublease and terminate the Area B Sublease.

Boundary Agreement Amendment Agreement

- (e) If the Department informs MTO and Bulga that Ministerial approval of the Area B Sublease should be expected promptly, then MTO and Bulga will proceed with the Area B Sublease on the basis that its term will be 6 years from the Commencement Date of the Area B Sublease.
- (f) If the Department advises that Ministerial approval of the Area B Sublease is unlikely to be obtained, then MTO and Bulga will promptly consider other tenement structures so as to achieve the same intent as the Area B Sublease and engage with the Department on these as is appropriate. Each of MTO and Bulga will use reasonable endeavours to enter into arrangements with respect to authorities under the Mining Act which as nearly as practically possible achieve the outcomes of the Area B Sublease.

2.5 Each of MTO and Bulga must keep the other informed of all communications in relation to the Ministerial approval process for the Area B Sublease.

3. Confirmations

3.1 Confirmation of Western Area Sublease and Eastern Area Sublease

- (a) The Western Area Sublease is confirmed to be in effect in accordance with its terms.
- (b) The Eastern Area Sublease is confirmed to be in effect in accordance with its terms.

3.2 Confirmation of early termination of Mt Thorley Dump Sublease and Boundary Corridor Sublease

- (a) The parties agree that the Mt Thorley Dump Sublease and Boundary Corridor Sublease are retrospectively terminated, with such termination taking effect, as of 8 July 2010.
- (b) The termination of the Mt Thorley Dump Sublease and the Boundary Corridor Sublease referred to in clause 3.2(a) is confirmed to be on the following conditions and the parties agree that:
 - (i) the Common Boundary Rehabilitation Plan referable to the areas of the Mt Thorley Dump Sublease and the Boundary Corridor Sublease will be prepared in accordance with clause 3.3(b), (c), (d), (e) and (f);
 - (ii) clause 2.7 of the Boundary Agreement will cease to have any force or effect;
 - (iii) the requirements of clauses 1.2(b) and 6 of the Boundary Agreement have been satisfied and cease or are otherwise waived;
 - (iv) MTO, Posco and Miller Pohang release Bulga from any further obligation to comply with the requirements of clauses 1.2(b) and 6 of the Boundary Agreement;

Boundary Agreement Amendment Agreement

- (v) the rights and obligations of the parties under clauses 2.2(b), 7.1, 7.2 and 7.3 of the Boundary Agreement cease or are otherwise waived;
 - (vi) MTO, Posco and Miller Pohang release Bulga from any further obligation to comply with the requirements of clauses 2.2(b), 7.1, 7.2 and 7.3 of the Boundary Agreement;
 - (vii) MTO, Posco and Miller Pohang waive the requirements set out in the Mt Thorley Dump Sublease and the Boundary Corridor Sublease with respect to rehabilitation and MTO, Posco and Miller Pohang release Bulga from any claim, whether existing or future, regarding such rehabilitation requirements within the area of these subleases;
 - (viii) MTO, Posco and Miller Pohang release Bulga from any claim, whether existing or future, regarding the quality of rehabilitation carried out by Bulga in the Mt Thorley Dump and the Boundary Corridor;
 - (ix) Bulga warrants that it maintained and complied with all Approvals and legislation required for, or relevant to, the Mt Thorley Dump Activities and the Boundary Corridor Activities prior to 8 July 2010;
 - (x) without limiting clause 5 of the Boundary Agreement, signage and fencing relating to the Mt Thorley Dump and the Boundary Corridor at the boundary of the two mines will be as agreed between Bulga and MTO, both acting reasonably, as to design, cost sharing (if any), and implementation timing; and
 - (xi) clauses 1.1, 1.3-1.7 (inclusive), 2.1 and 2.3-2.7 (inclusive) of the Boundary Agreement are terminated.
- 3.3**
- (a) This Agreement does not include any specific commitments by the parties to the use of the area of Miller Pohang's land between the eastern boundary of Area B and the western boundary of the Eastern Area Sublease, other than the obligation to prepare the Common Boundary Rehabilitation Plan in accordance with clause 3.3(b).
 - (b) Within 9 months of the date of this Agreement, Bulga and MTO will jointly prepare the Common Boundary Rehabilitation Plan contemplated by clause 5.2 of the Boundary Agreement to accommodate the circumstance of all parties including the circumstance of Bulga proposing to make reference to that Common Boundary Rehabilitation Plan as part of its planning approval process for its expansion project known at the date of this agreement as the Bulga Optimisation Project.
 - (c)
 - (i) Unless otherwise agreed, Bulga will pay all costs of preparing the Common Boundary Rehabilitation Plan referred to in clause 3.3(b).
 - (ii) Neither Bulga nor MTO will represent to any Government Agency or the community as part of that planning approval process that a proposed common boundary rehabilitation plan is agreed between MTO and Bulga until such time

Boundary Agreement Amendment Agreement

as the Common Boundary Rehabilitation Plan has been approved by both MTO and Bulga.

- (iii) Despite clause 3.3(c)(ii), Bulga and MTO may, with the prior written consent of the other party, inform the community or any Government Agency that a conceptual common boundary rehabilitation plan is being considered.
- (d) The Common Boundary Rehabilitation Plan must satisfy the rehabilitation requirements of the MTO Tenement, Bulga Tenement, other Approvals and requirements of all relevant Government Agencies.
- (e) Subject to this clause 3.3, the provisions of clause 5.2 of the Boundary Agreement will continue to apply without amendment including, without limitation, the periodic review of the Common Boundary Rehabilitation Plan.
- (f) Without limiting the generality of the obligations created elsewhere in this Agreement or the Boundary Agreement in relation to creating and agreeing the Common Boundary Rehabilitation Plan, MTO and Bulga acknowledge and agree that the Common Boundary Rehabilitation Plan will address and incorporate, amongst other matters, the following matters and principles:
 - (i) the Common Boundary Rehabilitation Plan will identify the proposed final landform of the Common Boundary Dump Space and will acknowledge that the creation of that final landform will involve the future filling of that area by MTO and Bulga with overburden material from the mining operations of each of MTO and Bulga (**Future Fill**); and
 - (ii) the Common Boundary Rehabilitation Plan and its implementation and all emplacement of Future Fill by each of MTO and Bulga into the part of the Common Boundary Dump Space forming the Common Boundary Valley and access to the lands of the respective landholders must be consistent with the following principles:
 - (A) equal (50/50) sharing of the capacity available for emplacement of Future Fill into the Common Boundary Valley;
 - (B) to ensure the allocation of the 50/50 sharing of capacity referred to above, the Common Boundary Rehabilitation Plan will:
 - (i) specify zones of cubic space within the Common Boundary Valley, including waste height and level, and estimate the volumetric capacity of those zones;
 - (ii) specify horizons of time for the filling of those zones;
 - (iii) give specific consideration to noise and dust limits, where relevant, when sequencing waste dumping within the Common Boundary Valley;

Boundary Agreement Amendment Agreement

- (iv) specify required changes, if any, to drainage lines and dams;
 - (v) identify the requirement, if any, for access to the other party's land or tenement necessary for Common Boundary Valley filling; and
 - (vi) specify the timing for periodic review of the Common Boundary Rehabilitation Plan;
- (C) each party bearing its own costs of haulage of Future Fill to, and emplacement of Future Fill into, the Common Boundary Valley ;
 - (D) equal (50/50) sharing of the rehabilitation liability once the Future Fill in the relevant area of the Common Boundary Valley is completed (for this clause the term "rehabilitation liability" includes all costs incurred by either party in completing all rehabilitation required of the Common Boundary Valley);
 - (E) access to the relevant area of Common Boundary Valley over the other party's respective landholders' land will not attract any access or dump charge for emplacement of Future Fill;
 - (F) the parties will use their reasonable endeavours to create a Common Boundary Rehabilitation Plan which gives consideration to an equitable distribution of operational and cost efficiencies for both MTO and Bulga, taking into account the various characteristics of their respective operations and the distribution of Common Boundary Valley capacity;
 - (G) Bulga and MTO will not unreasonably withhold their consent, or the procurement of consent, where access to the lands of the respective landholders is required to enable the other party to fill its relevant entitlement of the Common Boundary Valley; and
 - (H) no party will permit Future Fill into the Common Boundary Dump Space until the Common Boundary Rehabilitation Plan is agreed.
- (g) Subject to part (f) of this clause, the Common Boundary Rehabilitation Plan is not to be construed to impose on Bulga any higher standard regarding land condition at the end of the relevant sublease as is provided for under clause 3.2(b) (for concluded Mt Thorley Dump Sublease or Boundary Corridor Sublease) or under clause 4.12 (for Area B Sublease).

4. Area B Sublease

4.1 Sublease

- (a) Subject to consideration of \$10, receipt of which is hereby acknowledged, MTO will sublease to Bulga in accordance with the Area B Sublease:
 - (i) the surface of Area B for the Area B Activities; and

Boundary Agreement Amendment Agreement

- (ii) subject to satisfaction of the MTO Tenement Boundary Coal Conditions, from the surface to any (if any) depth restriction of the MTO Tenement within Area B.
- (b) Bulga will, at its cost, as soon as practicable after the date of this Agreement:
 - (i) to the extent not yet obtained, do all things available to it to obtain all Approvals required from time to time for the Area B Activities (in addition to the requirement for Ministerial approval referred to in clause 2.4) (**Area B Activities Approvals**). The parties agree that, as at the date of this Agreement, there are no Area B Activities Approvals that are required for the Area B Activities other than the requirement for Ministerial approval referred to in clause 2.4; and
 - (ii) deliver to MTO a copy of all application documents relating to the Area B Activities Approvals; and
 - (iii) comply with the Area B Activities Approvals.
- (c) Within seven days after Bulga delivers all of the documents in clause 4.1(b)(ii) to MTO, MTO will deliver the Area B Sublease to Bulga for execution.
- (d) Bulga will execute the Area B Sublease and return it to MTO within 14 days of receipt from MTO. MTO will then execute the Area B Sublease and provide a copy of the fully executed Area B Sublease to Bulga.
- (e) Bulga will pay any stamp duty payable on the Area B Sublease and will attend to any stamping of the Area B Sublease.

4.2 Care and ongoing responsibility for Area B

Bulga and MTO agree that:

- (a) subject to clauses 2.4, 4.8 and the conditions of the Area B Sublease, the Area B Sublease Term will be 6 years from the Commencement Date, and the Area B Sublease Term cannot be extended unless agreed by all parties (acting in their absolute discretion);
- (b) immediately prior to the termination of the Area B Sublease or where an area of Area B is no longer subject to the terms of the Area B Sublease, whether by variation to the relevant area of Area B and/or change to the extent of the colliery holding of Area B, Bulga must at its cost procure that Area B or the relevant part is left in the Area B Landform Condition;
- (c) from the termination of the Area B Sublease in whole or as to part, subject to:
 - (i) Bulga's obligation under clause 4.12 in relation to the Area B Landform Condition; and
 - (ii) Bulga's indemnity in clause 4.2(d),

Boundary Agreement Amendment Agreement

MTO will be responsible for the future management and maintenance of Area B; and

- (d) Bulga indemnifies MTO for any liability arising out of any act on Area B which constitutes a breach of any Approval or any legislation which has occurred during the Area B Sublease Term prior to the termination of the Area B Sublease.

4.3 Registration – Form 19, REMP and Agreement

- (a) MTO must withdraw Area B from the Mt Thorley Colliery Holding by completing and lodging a Form 19 (Application for Additions to or Cancellations from Colliery Holdings) within 7 days of the date the Area B Sublease is executed by Bulga. Within those 7 days, Bulga will apply to the Department to have Area B included in the Saxonvale Colliery Holding.
- (b) Bulga must incorporate Area B into its REMP (or equivalent from time to time) (as approved from time to time by the Department) whilst the Area B Sublease is in force.
- (c) MTO and Bulga will cooperate to effect the registration of this Agreement as a dealing on the relevant part of Bulga Tenement and relevant part of MTO Tenement. Subject to Bulga being in compliance with this Agreement and the Area B Sublease at the time the application for registration is made, this Agreement constitutes the consent of a party to the applications for registration and a copy of this Agreement may be provided to the Department as evidence of that consent.

4.4 Performance

MTO will, in its capacity as holder of the relevant mining lease, give all consents as are reasonably necessary to enable Bulga to perform its obligations under clause 4.1(b).

4.5 Land owner acknowledgement

Miller Pohang, as the owner of the Mt Thorley Land:

- (a) acknowledges the grant of the Area B Sublease;
- (b) agrees that no compensation is payable to it in respect of the grant of the Area B Sublease or the carrying out of the Area B Activities;
- (c) consents to the carrying out of the Area B Activities; and
- (d) acknowledges that this Agreement constitutes a land compensation agreement for the purposes of the Mining Act.

4.7 Area B design

- (a) Bulga's design of the Area B Activities is to be reasonably acceptable to MTO. MTO acknowledges that the design forming Attachment 2 is reasonably acceptable to it.
- (b) Should Bulga propose a material change to the design of the Area B Activities, such change must be approved by MTO, acting reasonably, before Bulga can proceed with implementing such a change.

Boundary Agreement Amendment Agreement

4.8 Area B boundary adjustment

MTO and Bulga will do all things and sign all documents (including surrenders of relevant areas of the Area B Sublease and grants of new areas to be included in the Area B Sublease) to achieve the following:

- (a) The Area B Sublease western boundary will move to the west to extents and at times which accord with the progression of the MTO and Bulga pits. The first westward movement is set out on Attachment 2;
- (b) Further adjustment of the Area B Sublease western boundary to extents and at times which accord with high wall and dump progressions may be requested by either MTO or Bulga provided that any further westward movement of the Area B Sublease western boundary, beyond that provided for in clause 4.8(a), is subject to the prior agreement of MTO and Bulga, both acting reasonably;
- (c) Bulga acknowledges and agrees that MTO may request a westward relocation of the Area B Sublease eastern boundary to facilitate MTO dumping into that area. Bulga will not unreasonably withhold its agreement to a boundary adjustment requested by MTO under this clause 4.8(c) if Bulga's operations have, at the time of the request, ceased for a material period of time, in respect of that area; and
- (d) As the Area B Sublease boundary may be realigned in accordance with clauses 4.8(a), (b) or (c), MTO and Bulga will cooperate to promptly effect any colliery holding change and/or Area B Sublease boundary variations as may be required to ensure that colliery holding boundaries align with the party using the relevant area.

4.9 Barrier Coal

Bulga's rights under the Area B Sublease and this clause 4 do not extend to the mining or other extraction of coal within Area B, except as may be agreed under clause 5.2.

4.10 Compliance with Approvals

- (a) Bulga will for the duration of the Area B Sublease maintain the Area B Activities Approval.
- (b) Bulga will, in carrying out the Area B Activities, ensure that there is compliance with the Area B Activities Approval and any other legislation relevant to the Area B Activities.
- (c) Bulga indemnifies MTO against any liability incurred as a result of any breach by Bulga of this clause 4.10.

4.11 Water drainage

- (a) In Area B, Bulga will at its cost install an end wall haulage system that is designed to preclude Bulga dumping to a level above the boundary drain final surface design.
- (b) Bulga will, in consultation with MTO, establish a sedimentation management plan to effectively manage the sediment runoff from Area B during the term of the Area B

Boundary Agreement Amendment Agreement

Sublease. That sedimentation management plan is to be acceptable to MTO, acting reasonably.

4.12 Area B Landform Condition

Bulga must, prior to termination of the Area B Sublease (including any parts incorporated into Area B as a result of a realignment under clause 4.8 (Extra Land)) or upon cessation of use of Area B and/or any Extra Land, do all things necessary to cause the relevant area of Area B to be in a condition which is:

- (a) in accordance with all relevant Approvals and relevant mining authorities and applicable laws including the Mining Act; and
- (b) otherwise in a condition acceptable to MTO, acting reasonably, which condition will:
 - (i) be in accordance with MTO's reasonable requirements such as levelling the surface or shaping the ground in a manner reasonably required by MTO;
 - (ii) (subject to clause 4.12(a)) be less than full rehabilitation to the standard normally accepted for closure of a Mine (as the term 'rehabilitation' is used by the Department),

with (a) and (b) comprising the Area B Landform Condition.

5. Barrier coal

5.1 Bulga Tenement Barrier Coal

Whilst the Area B Sublease is current, MTO agrees:

- (a) not to undertake any mining or other activities on the MTO Tenement adjoining Area B which may prevent Bulga mining the Bulga Tenement Barrier Coal; and
- (b) to provide all reasonably required assistance and support to Bulga, at Bulga's cost, in obtaining any required Approval for mining the Bulga Tenement Barrier Coal.

5.2 MTO Tenement Boundary Coal

- (a) Subject to clauses, 5.2(b) and (c), the entitlement of Bulga to mine the MTO Tenement Boundary Coal is conditional upon the satisfaction of the conditions set out in this clause 5.2(a):
 - (i) in addition to Bulga having complied with clause 4.10, Bulga having obtained all Approvals to mine the MTO Tenement Boundary Coal;
 - (ii) MTO and Bulga, both acting in their absolute discretion, having agreed:
 - (A) the terms of a private royalty payable by Bulga to MTO with respect to the mining of MTO Tenement Boundary Coal including specifics of its quantification, payment and the agreed process of measuring and validating the amount of MTO Tenement Boundary Coal mined. From

Boundary Agreement Amendment Agreement

the date of this Agreement, Bulga and MTO agree to negotiate the terms of the private royalty as expeditiously as is possible; and

- (B) the particulars of an obligation to be imposed on Bulga to extract all of the MTO Tenement Boundary Coal that is economic for Bulga to mine (with the objective of minimising coal left behind and which may be uneconomic for MTO to mine); and
- (C) any other terms regarding that mining by Bulga including on landform and rehabilitation, water management, management of dust and noise impacts and any (if any) depth restriction on mining and liabilities and any other matters relevant to the proposed mining,

with any agreed terms under (A), (B) and (C) to be formally documented and executed by the parties to this Agreement (as applicable) before the MTO Tenement Boundary Coal Conditions will be taken to have been satisfied.

- (b) If MTO determines for any reason in its absolute discretion that it does not agree to Bulga undertaking mining of the MTO Tenement Boundary Coal, or the MTO Boundary Coal Conditions are not satisfied, then:
 - (ii) Bulga will not mine MTO Tenement Boundary Coal; and
 - (iii) MTO will not be obligated to compensate Bulga for that potential mining not proceeding.
- (c) For the avoidance of doubt, Bulga acknowledges that despite any provision of this Agreement or the Area B Sublease to the contrary, MTO is under no obligation to allow Bulga to mine the MTO Tenement Boundary Coal.

6. Management of potential mining impacts

6.1 Blasting

Without limiting clause 5 of the Boundary Agreement (by way of additional specific commitments in carrying out their respective operations as those operations adjoin at or about the Area B Sublease) each of MTO and Bulga will:

- (a) use its reasonable endeavours to time and design its blasting activities to minimise any interference with or impact on the operations, assets or activities of the other of them;
- (b) without limiting clause 6.1(a), through modification of design of trim shot and buffer shot, both MTO and Bulga will use their reasonable endeavours to minimise blasting impacts between the two mines. In the event that notwithstanding their reasonable endeavours, either MTO or Bulga overblasts so as to impact the other's mine, the overblasting mine will be required, at its cost to clean up the overblast, with such clean up to be completed promptly and in accordance with the reasonable instructions and requirements of the operations manager of the impacted mine;

Boundary Agreement Amendment Agreement

- (c) in accordance with best practice mining procedures, undertake all usual safety precautions and procedures to ensure there is no risk or danger of injury to the officers, employees, agents, or damage to the property, of the other;
- (d) prior to commencement of construction of any land bridge or haul road on Area B, put in place a blasting protocol between them which will cover – period of time of prior notice of blasting, format of written blasting notice, process to be followed in the event that either mine reasonably regards the other mine to be in breach of its blasting commitments under this Agreement, and the process to be followed in the event of any blasting damage incident where a miner reasonably believes that it was caused by the other miner being in breach of its blasting commitments under this Agreement. The blasting protocol will be otherwise consistent with this Agreement.

6.2 Water

Without limiting clause 5 of the Boundary Agreement MTO will at its cost relocate the pipeline and pumps currently on Area B, off Area B.

7. Hedley West Property

- 7.1 The obligations of the parties under this Agreement (other than under clauses 1, 8, 9 and 10) are conditional upon the execution by the relevant parties of the Hedley West Property Call Option Deed.
- 7.2 Except for under clauses 1, 8, 9 and 10 this Agreement will be null and void and of no further effect if the condition referred to in clause 7.1 is not satisfied or, mutually agreed by the relevant parties to the Hedley West Property Call Option Deed, to be waived by the date which is 14 days after the date of this Agreement.

8. Entire agreement

This Agreement contains the entire agreement of the parties with respect to its subject matter. It constitutes the only conduct relied on by the parties (and supersedes all earlier conduct by the parties) with respect to its subject matter.

9. Governing law

This Agreement is governed by the laws of New South Wales. Each party submits to the non-exclusive jurisdiction of courts exercising jurisdiction there in connection with matters governing this Agreement.

Boundary Agreement Amendment Agreement

10 Further Assurances and Acts

This Agreement will be registered with the Department as a dealing on the Bulga Tenement and the MTO Tenement.

Boundary Agreement Amendment Agreement

Signing page

Date

Executed by Mt Thorley Operations Pty
Limited in accordance with section 127 of
the *Corporations Act 2001* (Cth):

Director Signature

Director/Secretary Signature

Print Name

Print Name

Executed by Miller Pohang Coal Co Pty
Limited in accordance with section 127 of
the *Corporations Act 2001* (Cth):

Director Signature

Director/Secretary Signature

Print Name

Print Name

Executed by Posco Australia Pty Limited in
accordance with section 127 of the
Corporations Act 2001 (Cth):

Director Signature

Director/Secretary Signature

Boundary Agreement Amendment Agreement

Print Name

Print Name

Executed by Saxonvale Coal Pty Limited in
accordance with section 127 of the
Corporations Act 2001 (Cth):

Director Signature

Director/Secretary Signature

Print Name

Print Name

Executed by Nippon Steel Australia Pty
Limited in accordance with section 127 of
the *Corporations Act 2001* (Cth):

Director Signature

Director/Secretary Signature

Print Name

Print Name

Executed by Bulga Coal Management Pty
Limited in accordance with section 127 of
the *Corporations Act 2001* (Cth):

Director Signature

Director/Secretary Signature

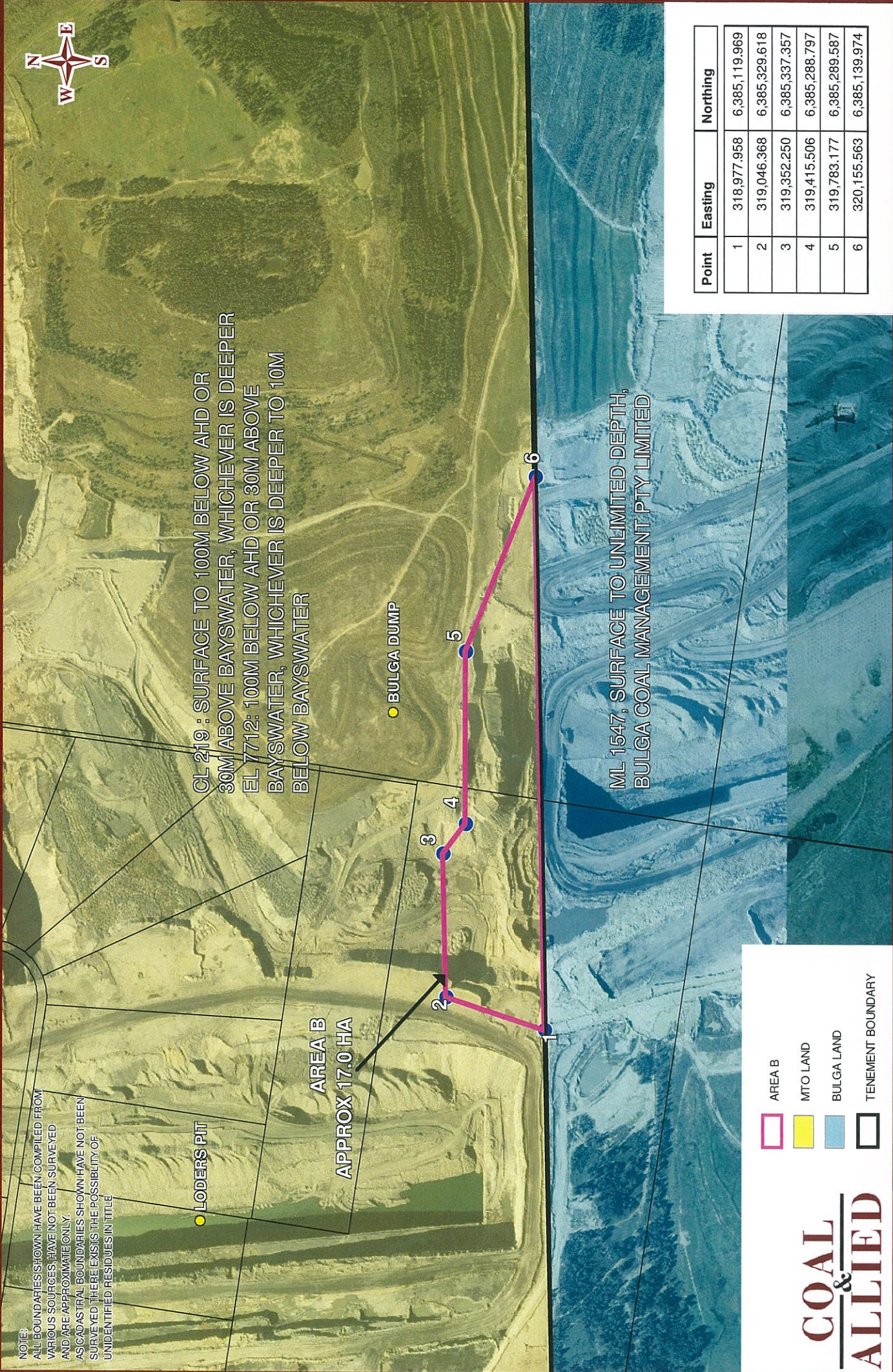
Print Name

Print Name

Boundary Agreement Amendment Agreement

Attachment 1

Area B map



NOTES:
ALL BOUNDARIES SHOWN HAVE BEEN COMPILED FROM
VARIOUS SOURCES, HAVE NOT BEEN SURVEYED
AND ARE APPROXIMATE ONLY.
AS CADASTRAL BOUNDARIES SHOWN HAVE NOT BEEN
SURVEYED THERE EXISTS THE POSSIBILITY OF
UNIDENTIFIED RESIDUES IN TITLE

CL 219 : SURFACE TO 100M BELOW AHD OR
30M ABOVE BAYSWATER, WHICHEVER IS DEEPER
EL 7712: 100M BELOW AHD OR 30M ABOVE
BAYSWATER, WHICHEVER IS DEEPER TO 10M
BELOW BAYSWATER

● BULGA DUMP

ML 1547, SURFACE TO UNLIMITED DEPTH,
BULGA COAL MANAGEMENT PTY LIMITED

- AREA B
- MTD LAND
- BULGA LAND
- TENEMENT BOUNDARY

Point	Easting	Northing
1	318,977.958	6,385,119.969
2	319,046.368	6,385,329.618
3	319,352.250	6,385,337.357
4	319,415.506	6,385,288.797
5	319,783.177	6,385,289.587
6	320,155.563	6,385,139.974

Boundary Agreement Amendment Agreement

Attachment 2

Area B design

NOTE:

ALL BOUNDARIES SHOWN HAVE BEEN COMPILED FROM VARIOUS SOURCES, HAVE NOT BEEN SURVEYED AND ARE APPROXIMATE ONLY.
AS CADASTRAL BOUNDARIES SHOWN HAVE NOT BEEN SURVEYED, THERE EXISTS THE POSSIBILITY OF UNIDENTIFIED RESIDUES IN TITLE.
AREA B SHOWN APPROXIMATE AND SUBJECT TO SURVEY
BULGA HAUL ROAD DESIGN PROVIDED BY XSTRATA

CL 219: SURFACE TO 100M BELOW AHD OR 30M ABOVE BAYSWATER, WHICHEVER IS DEEPER
EL 7712: 100M BELOW AHD OR 30M ABOVE BAYSWATER, WHICHEVER IS DEEPER TO 10M BELOW BAYSWATER

LODERS PIT

AREA B

BULGA DUMP

ABBEE GREEN SOUTH

MT THORSEY COA

CHARLTON ROAD

ML 1547, SURFACE TO UNLIMITED DEPTH,
BULGA COAL MANAGEMENT PTY LIMITED

AREA B

BULGA DUMP

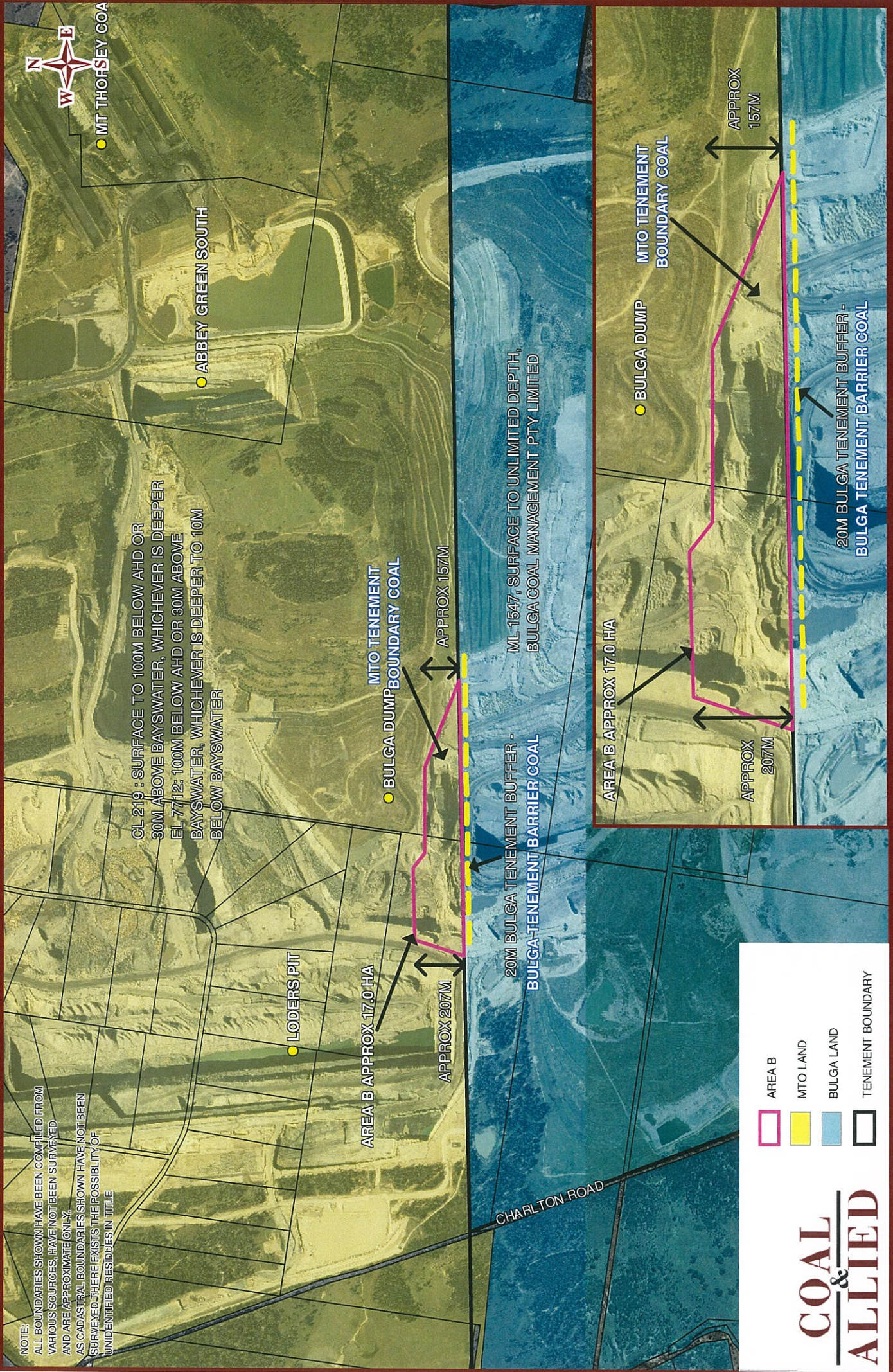
- AREA B
- MTO LAND
- BULGA LAND
- HAUL ROAD DESIGN BY BULGA
- TENEMENT BOUNDARY

COAL
&
ALLIED

Boundary Agreement Amendment Agreement

Attachment 3

Barrier coal map



Boundary Agreement Amendment Agreement

Attachment 4

Area B Sublease (agreed form to be executed as a separate document)

Area B Sublease

Details

Interpretation Definitions are at the end of the General terms

Parties **Lessor and Lessee**

Lessor **Mt Thorley Operations Pty Limited** ACN 000 013 249

Address Mount Thorley Road, Mount Thorley via Singleton
NSW 2330

Fax + 61 7 3361 4114

Attention Company Secretary

Lessee **Bulga Coal Management Pty Limited** ACN 055 534 391

Address Level 38, 1 Macquarie Place, Sydney NSW 2000

Fax + 61 2 9241 6898

Attention Company Secretary

Recitals A The Lessor is the holder of the Tenement.

B Under the Boundary Agreement, the Lessor agreed to grant the Lessee a sublease of Area B in accordance with the terms of this Sublease.

Activities Area B Activities (as defined in the Boundary Agreement).

Boundary Agreement Bulga – Mt Thorley Boundary Agreement between Mt Thorley Operations Pty Limited, Posco Australia Pty Limited, Miller Pohang Coal Co Pty Limited, Bulga Coal Management Pty Limited, Saxonvale Coal Pty Limited and Nippon Steel Australia Pty Limited dated 8 July 2005 as amended by agreement dated [*Note – this will be the date of the amending Agreement.*]

Sublease Means this document.

Sublease Area Area B (as defined in the Boundary Agreement) as shown in Attachment 1.

Tenement Coal Lease No 219 (1973).

Governing law New South Wales.

Date of agreement See Signing page.

Boundary Agreement Amendment Agreement

Area B Sublease

General terms

1. Sublease

- (a) The Lessor subleases the Sublease Area to the Lessee on the terms and conditions contained in this Sublease and the Lessee accepts the Sublease.
- (b) The Sublease confers upon the Lessee all of the rights, interests and obligations of the Lessor as holder of the Tenement in respect of the Sublease Area to the extent necessary to carry out the Activities.

2. Term

2.1 Term of Sublease

- (a) The Sublease commences on the Commencement Date and continues until the date [*Note – to be completed following upon engagement with the Department as contemplated by clause 2.4 of the Agreement*] years after the Commencement Date (**Term**), unless terminated earlier in accordance with clause 2.2 or the Sublease Area and/or the colliery holding relating to it being varied in accordance with clause 2.1(b).
- (b) The Lessor and Lessee acknowledge that the boundary of the Sublease Area may be adjusted during the Term in accordance with the Boundary Agreement and on that adjustment the Lessor and Lessee will:
 - (i) adjust the colliery holding boundary between the two mines which may not involve any change to the Sublease Area; or
 - (ii) adjust both the colliery holding boundary and the Sublease Area.

2.2 Right to terminate

Each party has the right to terminate this Sublease by notice in writing to the other party if:

- (a) a party suffers an Insolvency Event; or
- (b) a party commits any breach of this Sublease, and
 - (i) the breach is material and not capable of being cured; or
 - (ii) the breach is capable of being cured and the party fails to cure the breach within 20 Business Days of being notified in writing of the breach by the party.

A notice given under clause 2.2(b)(ii) must specify the event in relation to which the notice is given.

2.3 Damages

Boundary Agreement Amendment Agreement

In addition to the right of termination under clause 2.2, where there is no appropriate remedy for the breach in this Sublease (other than termination), the non-defaulting party is entitled to damages for losses suffered by it and expenses incurred by it as a result of the breach of the terms of this Sublease including, without limitation, for any loss to MTO security that may have been lodged by MTO with the Department in respect of the MTO Tenement.

3. Rent

- (a) In consideration of the grant of the Sublease, the Lessee will pay the Lessor a single payment of \$10.00, already received.
- (b) No further moneys will be payable by the Lessee to the Lessor by way of rental.

4. Obligations of Lessee

- (a) In conduct of all activities within the Sublease Area, the Lessee will:
 - (i) exercise reasonable care and ensure that its invitees, licensees, servants and agents exercise reasonable care;
 - (ii) comply with the provisions of the Mining Act and all other relevant legislation;
 - (iii) comply with the requirements of the Department and all other relevant authorities;
 - (iv) not do any act or thing that may lead to forfeiture of the Tenement;
 - (v) comply with all the terms and conditions of the Tenement to the extent that they apply to the Sublease Area, including without limitation, the payment of all rents and royalties or other fees that may become payable during the Term, in so far as they relate to the Sublease Area or the Lessee's activities; and
 - (vi) comply with any development consent issued under the *Environmental Planning and Assessment Act 1979* (NSW) in so far as it relates to the Sublease Area or the Lessee's activities.
- (b) For the term of the Sublease, the Lessee will:
 - (i) only use the Sublease Area for the Activities and as these may be varied as contemplated by clause 6; and
 - (ii) not use the Sublease Area for any purpose which is not authorised under the Mining Act.
- (c) Immediately prior to a variation of the Sublease Area as provided for under clause 2.1(b) or otherwise the termination of the Sublease under clause 2.2, the Lessee will procure that the Sublease Area has been left in the Area B Landform Condition.

5. Obligations of Lessor

- (a) For the term of the Sublease, the Lessor will:
 - (i) maintain the Tenement in good standing and in full force and effect;

Boundary Agreement Amendment Agreement

- (ii) not intentionally do or omit to do any act or thing that may lead to cancellation or forfeiture of the Tenement;
 - (iii) pay all rates, taxes and other outgoings levied or assessed against or in respect of the Tenement, other than those applicable to the Sublease Area;
 - (iv) promptly pass to the Lessee copies of all notices received by the Lessor from the Department or any other relevant authority relating to the Tenement; and
 - (v) permit the Lessee full and free access to the Sublease Area but this will not extend to access by way of any other land owned or leased by the Lessor without the prior written consent of the Lessor.
- (b) The Lessor, in exercising its rights under the Tenement, must comply with the requirements the Mining Act and the conditions of the Tenement.

6. Barrier Coal

The Lessor and Lessee acknowledge that the terms of this Sublease are capable of variation if the MTO Tenement Boundary Coal Conditions of the Boundary Agreement are satisfied.

7. Default

7.1 Default by the Lessee

- (a) If the Lessee commits a Default and fails to remedy the Default within 21 days after service of a notice from the Lessor requiring the Default to be remedied, the Lessor may do all such acts, matters and things as may be necessary or expedient to remedy the Default for an on behalf of the Lessee. All costs and expenses incurred by the Lessor will be payable by the Lessee on demand to the Lessor.
- (b) For the purpose of fully exercising its rights under paragraph (a) above, the Lessor may:
 - (i) enter the Sublease Area with all necessary labour, equipment and materials;
 - (ii) expend moneys for and on behalf of the Lessee; and
 - (iii) execute agreements and documents for, on behalf of, in the name of and as the lawful attorney of the Lessee and that Lessee constitutes the Lessor its lawful attorney for that purpose.

7.2 Default by the Lessor

If the Lessor commits a Default and fails to remedy the Default within 21 days after service of a notice from the Lessee requiring the Default to be remedied, the Lessee may do all such acts, matters and things as may be necessary or expedient to remedy the Default for an on behalf of the Lessor. All costs and expenses incurred by the Lessee will be payable by the Lessor on demand to the Lessee.

Boundary Agreement Amendment Agreement

8. Indemnity

8.1 Indemnity

Subject to clause 8.2, each of the parties to this Sublease (the **Defaulting Party**) agrees to indemnify each other party (the **Innocent Parties**) against all liability, loss, costs, charges and expenses incurred by each of the Innocent Parties as a result of a breach of this agreement by the Defaulting Party or which is otherwise caused by the Defaulting Party's negligent, wilful or reckless act or omission including, without limitation, for any loss to MTO security that may have been lodged by MTO with the Department in respect to the MTO Tenement.

8.2 No consequential loss

Each of the parties to this Sublease acknowledges and agrees that, notwithstanding clause 8.1, no party will be liable for any consequential or indirect loss (including loss of profits, loss of business or loss of bargain) or any special or exemplary damages incurred by a party to this Sublease (or any other person) under or in connection with a breach of this Sublease by any party or in respect of any negligent or wilful act or omission of any party in connection with this Sublease or as otherwise arising under law, equity, statute or otherwise.

9. Termination

Upon termination of the Sublease:

- (a) the Lessee will give vacant possession of the Sublease Area to the Lessor;
- (b) the Lessee will remove all of the Lessee's movable plant, equipment and materials; and
- (c) subject to the Boundary Agreement, the Lessee will as soon as practicable carry out such works as may be necessary to ensure the Sublease Area is satisfactorily rehabilitated and complies with the provisions of the Mining Act and all other relevant legislation and the requirements of the Department and all other relevant authorities including the terms of any development consent issued under the *Environmental Planning and Assessment Act 1979* (NSW).

10. Assignment

- (a) The rights and obligations of the Lessee under this Sublease are personal. The Lessee cannot transfer, assign, sub-let, part with possession of, charge or otherwise encumber the Sublease, or any of its rights and obligations under this Sublease, to any third party, without the prior written consent of the Lessor (which must not be unreasonably withheld).
- (b) The rights and obligations of the Lessor under this Sublease are personal. The Lessor cannot transfer, assign, sub-let, part with possession of, charge or otherwise encumber the Tenement, or any of its rights and obligations under this Sublease, without the prior written consent of the Lessee (which must not be unreasonably withheld).

Boundary Agreement Amendment Agreement

- (c) Any transfer, assignment, subletting or encumbrance by a party of its rights and interests under this Sublease, in favour of any person is conditional upon that person first entering into an agreement in a form reasonably acceptable to the other party, agreeing to comply with the provisions of this Sublease.

11. Notices

Any notice given under this Sublease:

- (a) must be in writing addressed to the intended recipient at the address specified in the Details or the address last notified by the intended recipient to the sender;
- (b) must be signed by an Authorised Officer of the sender;
- (c) will be taken to have been given when delivered, received or left at the above address. If delivery or receipt occurs on a day when business is not generally carried on in the place to which the notice is sent, or is later than 4pm (local time), it will be taken to have been duly given at the commencement of business on the next day when business is generally carried on in that place.

12. Stamp duty

The Lessee shall bear any stamp duty (including fines and penalties) chargeable on this Sublease, on any instruments entered into under this Sublease, and in respect of a transaction evidenced by this Sublease. The Lessee shall indemnify the Lessor on demand against any liability for that stamp duty (including fines and penalties).

13. GST

If GST is payable on a Taxable Supply made under, by reference to or in connection with this Sublease, the Lessor and Lessee must also pay the GST Amount equally.

14. Miscellaneous

14.1 Governing law

This Sublease is governed by the laws of the place specified in the Details. The parties submit to the non-exclusive jurisdiction of courts exercising jurisdiction there.

14.2 No waiver

No failure to exercise and no delay in exercising any right, power or remedy under this Sublease will operate as a waiver. Nor will any single or partial exercise of any right, power or remedy preclude any other or further exercise of that or any other right, power or remedy.

14.3 Amendment

This Sublease may be amended only by another agreement executed by all parties.

14.5 Further assurances

Each party shall take all steps, execute all documents and do everything reasonably required by any other party to give effect to any of the transactions contemplated by this Sublease.

15. Interpretation and definitions

Boundary Agreement Amendment Agreement

15.1 Definitions

Terms used in this Sublease have the same meaning as in the Boundary Agreement unless the context requires otherwise.

Activities has the meaning specified in Details.

Approvals has the meaning given to it in the Boundary Agreement.

Area B Landform Condition has the meaning specified in the Boundary Agreement.

Authorised Officer means, in relation to a party, any secretary, director or general manager of the party and any person acting in those offices.

Boundary Agreement has the meaning specified in Details.

Business Day means a day other than a Saturday, Sunday or public holiday in Sydney.

Commencement Date is the date of this Sublease.

Default in relation to a party, means any breach of or non-compliance with any of the provisions of this Sublease by that party.

Defaulting Party has the meaning given in clause 7.1.

Department means the government department responsible for administering the Mining Act and currently Department of Trade and Investment, Regional Infrastructure and Services.

Details is the section of this Sublease headed "Details".

GST Amount means in relation to a Taxable Supply the amount of GST payable in respect of that Taxable Supply.

Innocent Parties has the meaning given in clause 7.1.

Insolvency Event means:

- (a) the passage of a resolution by a party that it be wound up or liquidated, other than for the purposes of reconstruction or amalgamation;
- (b) the appointment of a provisional liquidator or an official manager of the party;
- (c) the entry by a party into a scheme of arrangement with its creditors;
- (d) the appointment of a receiver, administrator or manager of any of the party's material assets; or

anything substantially similar or having the same effect as the matters set out in paragraphs (a) to (d) above.

Plan is Attachment 1.

Sublease Area has the meaning specified in the Details.

Taxable Supply has the meaning given by the GST Law excluding the reference to section 84-5 of the A New Tax System (Goods and Services Tax) Act 1999 (Cth).

Tenement has the meaning specified in the Details.

Boundary Agreement Amendment Agreement

15.2 Interpretation

Headings are for convenience only and do not affect interpretation. The following rules apply unless the context requires otherwise.

- (a) The singular includes the plural, and the converse also applies.
- (b) If a word or phrase is defined, its other grammatical forms have a corresponding meaning.
- (c) A reference to a clause, or schedule is a reference to a clause of, or schedule to, this Sublease.
- (d) A reference to an agreement or document (including a reference to this Sublease) is to the agreement or document as amended, supplemented, novated or replaced, except to the extent prohibited by this Sublease or that other agreement or document, and includes the recitals and schedules to that agreement or document.
- (e) A reference to writing includes any method or representing or reproducing words, figures, drawings or symbols in a visible and tangible form.
- (f) A reference to a party to this Sublease or another agreement or document includes the party's successors, permitted substitutes and permitted assigns (and, where applicable, the party's legal personal representatives).
- (g) A reference to legislation or to a provision of legislation includes a modification or re-enactment of it, a legislative provision substituted for it and a regulation or statutory instrument issued under it.
- (h) A reference to an *agreement* includes any undertaking, agreement, agreement and legally enforceable arrangement, whether or not in writing, and a reference to a *document* includes an agreement (as so defined) in writing and any certificate, notice, instrument and document of any kind.
- (i) A reference to *dollars* and \$ is to Australian currency.
- (j) A reference to a *right* or *obligation* of any two or more people comprising a single party confers that right, or imposes that obligation, as the case may be, on each of them severally and each two or more of them jointly. A reference to that party is a reference to each of those people separately (so that, for example, a representation or warranty by that party is given by each of them separately).
- (k) Nothing in this Sublease is to be interpreted against a party solely on the ground that the party put forward this Sublease or a relevant part of it.

EXECUTED as an agreement

Signing page

Boundary Agreement Amendment Agreement

Date

Executed by Mt Thorley Operations Pty
Limited in accordance with section 127 of
the *Corporations Act 2001* (Cth):

Director Signature

Director/Secretary Signature

Print Name

Print Name

Executed by Bulga Coal Management Pty
Limited in accordance with section 127 of
the *Corporations Act 2001* (Cth):

Director Signature

Director/Secretary Signature

Print Name

Print Name

Attachment – Plan

Boundary Agreement Amendment Agreement

Attachment 5

Hedley West Property Call Option Deed

Bulga Coal Management Pty Limited
ACN 055 534 391

and

Mt Thorley Operations Pty Limited
ACN 000 013 249

Hedley West Property Call Option Deed
(Acquisition or alternative structure)



Table of contents

1. Definitions and interpretation	2
2. Division of title.....	5
3. Grantor commitments.....	7
4. Exercise of Option	9
5. Option	10
6. Annexed Contract	10
7. Caveat	11
8. Option Fee	11
9. GST.....	11
10. General	12
11. Signing page.....	14
12. Annexure A - Annexed Contract	15
13. Annexure B - Notice of Exercise of Option.....	17
14. Annexure C - Map of Hedley West Property	18

Deed**Date****Parties**

Name	Bulga Coal Management Pty Limited
ACN	055 534 391
Address	Level 38 Gateway, 1 Macquarie Place, Sydney NSW 2000
Telephone	02 9253 6700
Fax	02 9241 6898
Attention	The Company Secretary

(the **Grantor**)

And

Name	Mt Thorley Operations Pty Limited
ACN	ACN 000 013 249
Address	Level 3, West Tower, 410 Ann Street, Brisbane, QLD 4000
Telephone:	07 3361 4163
Fax	07 3361 4114
Attention	The Company Secretary

(the **Grantee**)

Background

- A. The Grantor plans to acquire the Whole Property for its mining purposes and the Grantee has potential future plans for the western area of the Whole Property for its mining purposes, with that western area referred to in this deed as the Property.
- B. The parties have agreed to enter into the Boundary Agreement Amendment with respect to the interactions between their respective adjoining mines.
- C. If the Grantor acquires the Whole Property it has agreed to grant to the Grantee, the Option to purchase the Property or if the Option cannot be exercised (for reasons set out in this deed), then to lease or licence the Property to the Grantee for the purposes of the Grantee's mine.
- D. The terms and conditions on which the Option is granted, or a licence may be granted, are set out in this deed.

Operative part**1 Definitions and interpretation****1.1 Definitions**

In this deed:

Address means a party's address set out in the Parties section of this deed.

Alternate Structure means a lease, licence or other equivalent tenure whereunder the Grantee has exclusive possession of the Property for the duration of its requirements for the mining purpose uses proposed and consented to in clause 2 for a fee

determined by an independent valuer acceptable to and appointed by both the Grantor and the Grantee.

Annexed Contract means the agreement for sale of land in the form required under clause 6.1 and Annexure A.

Authority has the same meaning as in the Mining Act.

Boundary Agreement Amendment means the proposed agreement titled 8 July 2005 Boundary Agreement Amendment Agreement amongst the Grantor, the Grantee, Miller Pohang Coal Co Pty Limited, Posco Australia Pty Limited, Saxonvale Coal Pty Limited and Nippon Steel Australia Pty Limited.

Bulga Optimisation Project means the proposed expansion of the Grantor Mine operated by the Grantor or Grantor Group entities near Bulga in the Hunter Valley known at the date of this deed as Bulga Optimisation Project.

Business Day means a day on which banks are open for general banking business in Sydney, excluding Saturdays and Sundays.

Division Application means the application or applications for necessary approvals for the subdivision of the Whole Property to create a title which will enable the Property to be transferred to the Grantee (under the Annexed Contract) if the Option is exercised (which may include consolidation of the Property with other property owned by the Grantee and may include consolidation of the remainder of the Whole Property with other property owned by the Grantor).

Fax Number means a party's facsimile number set out in the Parties section of this deed.

Governmental Authority includes any government or semi-governmental or local governmental authority, administrative or judicial body or tribunal, department, commission, public authority, agency, minister, officer, statutory corporation or instrumentality or any officer or official thereof acting in an official capacity.

Grantee Consent means 09_0202 and DA 34/95 as modified or replaced by new planning approvals in respect of the Grantee Mine from time to time.

Grantee Group means the Grantee, Miller Pohang Coal Co Pty Limited, Warkworth Mining Limited ACN 001 385 842, Rio Tinto plc, incorporated in England and Wales, Rio Tinto Limited (ACN 004 458 404), incorporated in Victoria, Australia, and any other company or other corporate entity or enterprise which directly or indirectly controls, is controlled by or is under common control, with Rio Tinto plc or Rio Tinto. For this purpose, **control** means the possession, directly or indirectly, of the power to direct or cause the direction of management and policies through ownership of voting securities, contract, voting trust or otherwise.

Grantee Mine means the Mount Thorley Warkworth Mine, comprising the Mount Thorley mine and the Warkworth mine, as this mine may be renamed.

Grantor Consent means Bulga's development consent (DA 41-03-99) as modified or replaced by new planning approvals in respect of the Grantor Mine from time to time.

Grantor Group means Xstrata Plc, incorporated in England and Wales and AZSA Holdings Pty Limited (ACN 082 714 770) and any other company or other corporate entity or enterprise which directly or indirectly controls, is controlled by or is under common control with Xstrata Plc and AZSA Holdings Pty Limited. For this purpose, **control** means the possession, directly or indirectly, of the power to direct or cause the direction of management and policies through ownership of voting securities, contract, voting trust or otherwise.

Grantor Mine means Bulga Mine as this mine may be renamed.

GST means the tax that is payable under the *GST Act* and the related imposition Acts of the Commonwealth.

GST Act means the *A New Tax System (Goods and Services Tax) Act 1999*, as amended from time to time.

Mining Act means the *Mining Act 1992* NSW.

Mining Impacts means an impact or effect, including a health, noise, dust or air quality, odour, blasting or visual impact arising from Mining or Mining purposes of the Grantor Mine for the purposes of clause 3(a) and the Grantee Mine for the purposes of Annexure A, and including, without limitation, those impacts which may be an exceedence by that mine of environmental impact assessment criteria set out in a Grantor Consent for the purposes of clause 3(a) and the Grantee Consent for the purposes of Annexure A.

Mining has the meaning given to it in the Mining Act.

Mining purposes has the meaning given to it in the Mining Act.

Option means the option to purchase the Property granted by the Grantor to the Grantee under clause 5.

Option Commencement Date means the date, if and when it may occur, that the last of the conditions precedent in clause 4.1 is satisfied.

Option Expiry Date means the date which is 5 years after the Option Commencement Date.

Option Fee means \$10.00 (excluding GST).

Option Period means the period commencing at 9.00 am on the Option Commencement Date and ending at 5.00 pm on the Option Expiry Date.

Property means that part of Lot 15 DP 1141621 identified as Hedley West Property on Annexure C and as that part is further defined under clause 2(b), and all improvements and rights attaching to this land.

Purchase Price means an amount determined as follows:

$$\left(\frac{TPP}{TA} \times PA \right) \times CPI \text{ Adjustment}$$

WHERE

TPP means the total purchase price paid by the Grantor for the Whole Property (including all compensation and any other amounts paid by the Grantor to Hedley in connection with the purchase of the Whole Property)

TA means the total area of the Whole Property in hectares

PA means the total area of the Property in hectares

CPI Adjustment means the CPI (All Groups) Sydney most recently released as at the date of exercise of the Option divided by the CPI (All Groups) Sydney most recently released as at the date of completion of the purchase by the Grantor of the Whole Property.

Whole Property means the whole of Lot 15 DP 1141621.

1.2 Interpretation

In this deed, unless the context indicates a contrary intention:

(documents) a reference to this deed or another document includes any document which varies, supplements, replaces, assigns or novates this deed or that other document.

(references) a reference to the background, a party, clause, paragraph, schedule or annexure is a reference to the background, a party, clause, paragraph, schedule or annexure to or of this deed.

(headings) clause headings and the table of contents are inserted for convenience only and must not be used when interpreting this deed.

(person) a reference to a person includes a natural person, corporation, statutory corporation, partnership, the Crown and any other organisation or legal entity.

(natural person) a reference to a person includes a natural person, corporation, statutory corporation, partnership, the Crown and any other organisation or legal entity.

(corporation) a reference to a corporation includes its successors and permitted assigns.

(rights and obligations) a reference to a right or obligation of a party is a reference to a right or obligation of that party under this deed.

(requirements) a requirement to do any thing includes a requirement to cause that thing to be done, and a requirement not to do any thing includes a requirement to prevent that thing being done.

(including) **including** and **includes** are not words of limitation.

(corresponding meanings) a word that is derived from a defined word has a corresponding meaning.

(singular) the singular includes the plural and vice-versa.

(gender) words importing one gender include all other genders.

(parts) a reference to one or more things includes each part and all parts of that thing or group of things.

(rules of construction) neither this deed nor any part of it is to be construed against a party on the basis that the party or its lawyers were responsible for its drafting.

(time and date) a reference to a time or date in connection with the performance of an obligation by a party is a reference to the time and date in, Australia even if the obligation is to be performed elsewhere.

(joint and several) a reference to a right or obligation of any two or more persons confers that right, or imposes that obligation, as the case may be, jointly and severally.

(writing) a reference to a notice, consent, request, approval or other communication under this deed or an agreement between the parties means a written notice, request, consent, approval or agreement.

(Australian currency) a reference to **dollars** or **\$** is to Australian currency.

1.3 Payments

Unless the context otherwise requires, where an amount is required to be paid to a party (**Receiving Party**) by another party (**Paying Party**) under this deed, that amount must be paid to the Receiving Party by unendorsed bank cheque or otherwise in accordance with the written direction of the Receiving Party if that written direction is received by the Paying Party not less than 4 Business Days before the date upon which payment of the amount is due.

2. Division of title

- (a) Subject to clause 4, the Grantee may make the Division Application at any time during the first 2 years after the Option Commencement Date.

- (b) Prior to making the Division Application as contemplated in clause 2(a), the Grantee will:
- (1) provide to the Grantor the detail of the specific area of and coordinates for the Property;
 - (2) inform the Grantor of the proposed use of the Property as proposed for transfer; and
 - (3) seek the consent of the Grantor for the Division Application.
- The Grantor may not unreasonably withhold consent to the Division Application.
- (c) The Grantor acknowledges that at the date of this deed the Grantee's proposed use of the Property is for extended development of rail loading capacity, as well as associated coal preparation plant development and water management works, devices or areas.
- (d) The Grantor is only entitled to withhold its consent under clause 2(b) if:
- (1) the proposed area of the Property in the Division Application is materially different from that represented in Annexure C; or
 - (2) the proposed use of the Property as advised by the Grantee under clause 2(b)(2) will be other than that set out in clause 2(c) and will be materially and adversely incompatible with the Grantor's then current use of the balance of the Whole Property; or
 - (3) the Division Application proceeding will materially and adversely prejudice the likelihood of the Grantor receiving planning approval for its proposed expansion known at the date of this deed as Bulga Optimisation Project.
- (e) Either party may reject an approval of the Division Application (or any of them if more than one) if any of the conditions of an approval are not acceptable to that party provided that neither party may reject any approval under this clause unless:
- (1) the conditions of approval cause that party genuine unavoidable commercial or operational disadvantage; and
 - (2) that party is acting reasonably in its rejection.
- (f) The Grantee will pay all costs associated with the Division Application, and the Grantor will provide reasonable assistance for that application including promptly signing any landowner consent requirements and facilitating surveyor and consultant access to the Property.
- (g) In the event that the Division Application is:
- (1) not approved within a period of 18 months from the date of the application; or
 - (2) approved but rejected by either party under clause 2(e),
- then the Grantor will offer an Alternate Structure to the Grantee in respect of the Property. This offer must remain open for acceptance by the Grantee for a minimum period of 45 Business Days from the date the document or documents evidencing the Alternate Structure are provided by the Grantor to the Grantee.
- (h) Where an authority is required under the Mining Act for the Grantee's use of the Property, then, provided that the Grantee has first exercised the Option, the

Grantor and the Grantee will, both acting reasonably, do all things reasonably available to them to ensure that the Grantee secures the necessary authority under the Mining Act.

- (i) Any costs associated with the physical separation of infrastructure which passes through the Property from the remainder of the Whole Property as a result of the sale of the Property or Alternate Structure (including without limitation pipeline, powerline or other infrastructure relocation, and establishment and ongoing maintenance of initial boundary fence), will be borne by the Grantee and the Grantor will have no liability for such costs.
- (j) Despite any other requirement of this deed, the Grantee:
 - (1) acknowledges the existence of the lease originally between John Duncan Hedley (as lessor) and Telstra Corporation Limited (as lessee) in respect of part of the Property; and
 - (2) releases the Grantor from any liability or obligation whatsoever to the Grantee in respect of such lease.

3. Grantor commitments

- (a) If the Grantor acquires the Whole Property, then from the date of its acquisition of the Whole Property and subject to the Grantee having complied with clause 4.1(a)(2) and the terms of the Boundary Agreement Amendment, the Grantor, as owner or occupier of the Whole Property, acknowledges and agrees:
 - (i) from the date of this deed and during the Option Period, to not use any part of the Property for a purpose which would be likely to preclude the Grantee's proposed use of the Property as set out in clause 2(c) including without limitation the Grantor will not enter into any arrangement which would restrict the use of the Property in any way including an arrangement or dedication for the purposes of placing the Property into an offsets area for or connected with any mine;
 - (ii) to not object to any Mining Impacts to the Whole Property caused by Mining or Mining purposes from the Grantee Mine, as further detailed in clause 3(a)(iv);
 - (iii) to procure that any lessee, licensee or occupier of the Whole Property that becomes a lessee, licensee or occupier of the Whole Property after the date of this deed does not object to any Mining Impacts to the Whole Property caused by Mining or Mining purposes from the Grantee Mine including causing any licensee or lessee to enter into a formal agreement in a form and on conditions reasonably acceptable to both the Grantor and the Grantee including, as a minimum, the provisions of clause 3(a)(iv), and to be executed by both the Grantor and the Grantee;
 - (iv) for the purposes of this deed, to "not object" includes that the Grantor and any lessee, licensee or occupier of any part of the Whole Property (as the following are related only to ownership or occupancy of the Whole Property):
 - (A) accepts the Mining Impacts and releases the Grantee or Grantee Group entity as owner of the Grantee Mine from any rights or obligations with respect to any compensation of any type under any legislation or otherwise in relation to any Mining Impacts;

- (B) does not make any objection, complaint or statement in relation to any Mining Impacts;
 - (C) releases the Grantee or any Grantee Group entity as owner of the Grantee Mine from all claims in respect of any Mining Impacts from that mine;
 - (D) indemnifies the Grantee or any Grantee Group entity as the owner of the Grantee Mine from all claims in connection with any Mining Impact from that mine;
 - (E) is not entitled to any separate compensation from the Grantee or any Grantee Group entity as the owner of the Grantee Mine connected with that mine's Mining or Mining purposes;
 - (F) immediately gives any consent, authority or approval required by the Grantee or any Grantee Group entity connected with the Grantee Mine;
 - (G) does not lodge any objection, submission, complaint or request for any inquiry, or commence any dispute resolution procedure in respect of any Mining Impact with the Grantee or any Grantee Group entity as owner of the Grantee Mine or any Governmental Authority, and immediately withdraw any such objection; and
 - (H) does not make any complaint or raise any issue in connection with Mining Impacts from any mine on the Whole Property with the environment or complaint hotline, website, email address or other public complaint mechanism operated by the Grantee or any Grantee Group entity as owner of the Grantee Mine or any other mining company.
- (b) Where the Whole Property as owned by the Grantor:
- (1) is not "privately owned land" under a the Grantee Consent, then the commitment by the Grantor to not object continues to apply to Mining Impacts on the Whole Property or any part of the Whole Property which is outside of the Grantee Mine Consent environmental impact assessment criteria;
 - (2) is "privately held land" under a Grantee Consent, then, without payment of further consideration, the commitments in clause 3(a)(iv) constitute a 'negotiated agreement' or a 'private agreement' (or equivalent) for the purposes of any Grantee Consent.
- (c) Where a payment of money is required to be given to any lessee, licensee or occupier of the Whole Property (or any part of the Whole Property) who is not a Grantor Group entity to facilitate agreement under clause 3(a)(iii) for the purposes of a Grantee Consent then:
- (1) the Grantor will not be liable to make the payment; and
 - (2) the Grantee is liable to make the payment.

4. Exercise of Option

4.1 Conditions precedent to and exercise of the Option

- (a) The Grantee may not exercise the Option under this deed or progress any Division Application unless and until:
 - (1) the Grantor has become the registered proprietor of the Whole Property;
 - (2) the Boundary Agreement Amendment has been executed by all parties to it; and
 - (3) except to the extent that the Common Boundary Rehabilitation Plan is not prepared due to non performance by the Grantor of its obligations under clause 3.3(b) of the Boundary Agreement Amendment, the Common Boundary Rehabilitation Plan contemplated by clause 3.3(b) of the Boundary Agreement Amendment has been prepared and the Grantor and the Grantee have approved such Common Boundary Rehabilitation Plan in writing.
- (b) The Grantor has no obligation to acquire the Whole Property and the Grantor is not obligated to compensate the Grantee if the Grantor does not acquire the Whole Property.
- (c) The Option may be exercised, and the Alternate Structure offer may be accepted, by a member of the Grantee Group (a **Nominee**) subject to the Nominee contracting on the same terms of this deed.

4.2 Notice of ownership of Whole Property

Within 30 Business Days of becoming the registered proprietor of the Whole Property the Grantor must serve a notice to the Grantee that it is the registered proprietor of the Whole Property.

4.3 Other than Grantor acquires

In the event that a member of the Grantor Group (other than the Grantor) acquires the Whole Property, then the Grantor will promptly procure that purchasing entity to enter a deed with the Grantee on the same terms as this deed.

4.4 Notice of proposed sale of Property to (non Grantee) 3rd party

- (a) The Grantor must not transfer, sell, mortgage or otherwise grant any interest in the Property during the Option Period unless the Grantee releases the Grantor from the Option or provides its prior written consent to such a course of action.
- (b) At any time after the Division Application has been approved and either:
 - (1) not rejected by either party under clause 2(e); or
 - (2) rejected under clause 2(e) and the Grantor has performed its obligations under clauses 2(g) and 2(h),

the Grantor may give to the Grantee notice of its intent to sell, transfer, mortgage or otherwise grant an interest in the Property to a 3rd party other than to the Grantee (a **Notice of Intent to Dispose**). If the Grantee does not, within 30 Business Days from that Grantor's notice exercise the Option in accordance with clause 5.2, then the Grantee must release the Option. For the avoidance of doubt, the Grantor will not be constrained in any way from

disposing of, or granting an interest in, the Property after the Option Expiry Date.

5 Option

5.1 Grant of Option

Subject to clause 4, in consideration of payment of the Option Fee (the receipt of which the Grantor acknowledges on the date of this deed) and in consideration of the execution by all parties of the Boundary Amendment Agreement, the Grantor grants to the Grantee during the Option Period an option to purchase the Property for the Purchase Price subject to the terms and conditions of this deed.

5.2 Exercise of Option

The Grantee must exercise the Option by delivering to the Grantor on any Business Day during the Option Period at the Address of the Grantor a Notice of Exercise of Option duly executed by the Grantee.

5.3 Consequence of exercise of Option

On the exercise of the Option, an agreement for the sale and purchase of the Property will arise between the Grantor and the Grantee on the terms and conditions set out in the Annexed Contract.

6 Annexed Contract

6.1 Update by the Grantor

When providing notice pursuant to clause 4.2 the Grantor will, at the Grantee's cost, provide an Annexed Contract as prepared in accordance with Annexure A.

6.2 Update by the Grantee

At any time after it receives the Annexed Contract pursuant to clause 6.1 and before exercise of the Option, the Grantee may update any disclosure information required by law to be inserted in the Annexed Contract. In this event, the Grantee may deliver to the Grantor an Annexed Contract which replaces the Annexed Contract provided by the Grantor under clause 6.1.

6.3 Grantor and Grantee to execute Annexed Contract

- (a) On receipt of the Notice of Exercise of Option referred to in clause 5.2, the Grantor must execute and cause to be delivered to the Grantee within 15 Business Days of the exercise of the Option a duly executed counterpart of the Annexed Contract issued under clause 6.1.
- (b) On receipt of the counterpart in clause 6.3(a), the Grantee must execute and cause to be delivered to the Grantor within 30 Business Days, a duly executed counterpart of the Annexed Contract. That counterpart will bear the same date as the Annexed Contract delivered under clause 6.3(a).
- (c) If the Grantor fails to submit any Annexed Contract in accordance with clause 6.1, then the Annexed Contract for the purposes of this deed will be deemed to be an agreement for sale of land prepared in accordance with Annexure A clause 1 contract option (1), and which Annexed Contract may be prepared by the Grantee. In this case, all references under this deed to an Annexed Contract prepared, submitted and delivered under clause 6.1 will be deemed to be interpreted to mean references to the Annexed Contract prepared pursuant to this clause 6.3(c).

- (d) The parties acknowledge and agree:
- (1) that the exchange of Annexed Contract counterparts is intended only to permanently record the detailed terms of the Annexed Contract; and
 - (2) they intend to be, and will be, bound by the Annexed Contract on the date it is executed by the last party.

7 Caveat

7.1 Grantee may register a caveat

The Grantor agrees that after the Grantor has become the registered proprietor of the Property the Grantee may register a caveat on the title to the Whole Property to give notice of its rights pursuant to the Option. The Grantee agrees that in so doing it will:

- (a) not prevent or delay registration of any dealing affecting the Whole Property not inconsistent with the rights of Grantee under this deed; and
- (b) withdraw such caveat upon the Option coming to an end.

8 Option Fee

8.1 Non exercise of Option

If the Grantee does not exercise the Option then the Option Fee will be forfeited to the Grantor.

8.2 Option Fee on exercise of either option

If the Grantee exercises the Option, the Option Fee will be retained by the Grantor and will comprise part of the deposit payable under the Annexed Contract.

9 GST

9.1 Interpretation

- (a) Words defined in the *GST Act* have the same meaning in this clause, unless it is clear that a different meaning is intended.
- (b) Unless otherwise specifically stated, sums payable or consideration provided or in connection with this deed will be expressed as exclusive of any applicable amount of GST.

9.2 Taxable Supply

Where a party to this deed (**Supplier**) makes a Taxable Supply under or in connection with this deed or in connection with any other matter or thing occurring under this deed to another party to this deed (**Recipient**) the Supplier will be entitled, in addition to any other consideration recoverable in respect of the Taxable Supply, to recover from the Recipient the amount of any GST on the Taxable Supply.

9.3 Timing

Where the Recipient must pay an amount of any GST to the Supplier under this deed, that amount must be paid or provided by the Recipient to the Supplier at the time when the consideration to which the amount of GST relates must be paid or provided by the Recipient to the Supplier under this deed, but no earlier than the Supplier has issued a tax invoice to the Recipient which relates to that Taxable Supply.

9.4 Adjustments

If the amount paid by the Recipient to the Supplier in respect of GST differs from the GST on the Taxable Supply (taking into account any Adjustment Events that occur in

relation to the Taxable Supply), an adjustment will be made. If the amount paid by the Recipient exceeds the GST on the Taxable Supply, the Supplier will refund the excess to the Recipient. If the amount paid by the Recipient is less than GST on the Taxable Supply, the Recipient will pay the deficiency to the Supplier.

9.5 Tax Credits

Where a party to this deed is entitled, under or in connection with this deed or in connection with any matter or thing occurring under this deed, to recover all or a proportion of its costs or is entitled to be compensated for all or a proportion of its costs, the amount of the recovery or compensation will be reduced by the amount of (or the same proportion of the amount of) any Input Credits available in respect of those costs.

9.6 Registration

Each party represents and warrants to the other that it is registered for GST, or required to be registered for GST.

10 General

10.1 Notices

- (a) Any notice, demand, consent or other communication given or made under this deed must be:
 - (1) clearly readable;
 - (2) signed by the party giving or making it (or signed on behalf of that party by its authorised representative); and
 - (3) left at the Address or sent by pre-paid security post (air mail if outside Australia) to the Address or to the Fax Number of the recipient.
- (b) A party may change its Address or Fax Number for the purpose of service by giving notice of that change to the other party in accordance with clause 10.1.
- (c) Any communication will be taken to be received by the recipient:
 - (1) in the case of a letter, on the third (seventh, if sent outside the country in which the letter is posted) Business Day after the date of posting;
 - (2) in the case of a facsimile, on production of a transmission report by the machine from which the facsimile was sent which indicates that the facsimile communication was sent in its entirety to the Fax Number of the recipient; and
 - (3) if the time of dispatch of a facsimile is not on a day, or is after 5.00 pm (local time) on a day, in which business generally is carried on in the place to which the facsimile communication is sent it will be taken to have been received at the commencement of business on the next day in which business is generally carried on in that place.

10.2 No assignment

- (a) The rights and obligations of the parties under this deed are personal. The parties cannot transfer, assign, charge or otherwise encumber any of their rights and obligations under this deed, without the prior written consent of the other parties (which must not be unreasonably withheld).
- (b) Any transfer, assignment, subletting or encumbrance by a party of its rights and interests under this deed, in favour of any person is conditional upon that

person first entering into an agreement in a form reasonably acceptable to all parties, agreeing to comply with the provisions of this deed.

10.3 Time for doing acts

- (a) If the time for doing any act or thing required to be done or a notice period specified in this deed expires on a day other than a Business Day, the time for doing that act or thing or the expiration of that notice period is extended until the following Business Day.
- (b) If any act or thing required to be done is done after 5.00 pm on the specified day, it is taken to have been done on the following Business Day.

10.4 Further assurances

Each party must promptly execute all documents and do all other things reasonably necessary to give effect to the arrangements recorded in this deed.

10.5 Variation

A provision of this deed can only be varied by a later written document executed by all parties.

10.6 Counterparts

This deed may be executed in any number of counterparts. All counterparts taken together constitute one instrument.

10.7 Legal expenses and duty

- (a) Each party must pay its own legal costs and disbursements in connection with the negotiation, preparation, execution and carrying into effect of this deed.
- (b) The Grantee must pay all duty (including fines and penalties, if any) assessed on or in relation to this deed or any nomination created in connection with it and any instrument or transaction required by or necessary to give effect to this deed. The Grantee undertakes to keep the Grantor indemnified against all liability relating to the duty, fines and penalties.

10.8 Entire agreement

The contents of this deed constitute the entire agreement between the parties and supersede any prior negotiations, representations, understandings or arrangements made between the parties regarding the subject matter of this deed, whether orally or in writing.

10.9 Invalidity

- (a) A word or provision must be read down if:
 - (1) this deed is void, voidable or unenforceable if it is not read down;
 - (2) this deed will not be void, voidable or unenforceable if it is read down; and
 - (3) the provision is capable of being read down.
- (b) A word or provision must be severed if:
 - (1) despite the operation of clause 10.9(a), the provision is void, voidable or unenforceable if it is not severed; and
 - (2) this deed will be void, voidable or unenforceable if it is not severed.
- (c) The remainder of this deed has full effect even if clause 10.9(b)(1) or (2) applies.

10.10 Waiver

A right or remedy created by this deed cannot be waived except in writing signed by the party entitled to that right. Delay by a party in exercising a right or remedy does not constitute a waiver of that right or remedy, nor does a waiver (either wholly or in part) by a party of a right operate as a subsequent waiver of the same right or of any other right of that party.

10.11 Governing law and jurisdiction

- (a) The laws applicable in New South Wales govern this deed.
- (b) The parties submit to the non-exclusive jurisdiction of the courts of New South Wales and any courts competent to hear appeals from those courts.

Signing page**Executed as a deed**

Executed by Bulga Coal Management Pty Limited in accordance with section 127 of the *Corporations Act 2001* (Cth):

 Director Signature

 Print Name

 Director/Secretary Signature

 Print Name

Executed by Mount Thorley Operations Pty Limited in accordance with section 127 of the *Corporations Act 2001* (Cth):

 Director Signature

 Print Name

 Director/Secretary Signature

 Print Name

Annexure A Annexed Contract

1. Subject to clause 6.2 and clause 6.3 of this deed, the Annexed Contract will comprise the document prepared by the Grantor and provided to the Grantee under clause 6.1, reflecting the form of contract selected by the Grantor in its absolute discretion from the list in (1) and (2) in this clause 1, but at a minimum must include the following information:
 - (a) the physical description of the Property;
 - (b) the Purchase Price,
 - (c) that settlement will be with vacant possession;
 - (d) that the Property is acquired on an 'as is' basis;
 - (e) the disclosure information required by law; and
 - (f) the conditions set out in 2 below:
 - (1) Contract for Sale of Land comprising Law Society printed forms with necessary changes made to reflect this deed, or
 - (2) Contract for Sale of Land in the form the Grantor acquired the Property with necessary changes made to reflect this deed.

At the election of the Grantee, the Annexed Contract may be entered conditional upon the title subdivision in accordance with clause 2 of this deed or entered following completion of the title subdivision process.

2. From the date of exercise of the Option, the Grantee, as owner or occupier of the Property, acknowledges and agrees:
 - (a) to not object to any Mining Impacts to the Property caused by Mining or Mining purposes from the Grantor Mine, as further detailed in clause 2(c) below,
 - (b) to procure any lessee, licensee or occupier of the Property does not object to any Mining Impacts to the Property caused by Mining or Mining purposes from the Grantor Mine under a formal agreement, with such agreement to be in a form and on conditions reasonably acceptable to both the Grantor and the Grantee, with clause 2(c) below indicating variables that the Grantor would request the Grantee to include in that agreement, and to be executed by both the Grantor and the Grantee;
 - (c) to "not object" includes that the Grantee under clause 2(a) above, and (as procured by the Grantee under and to the extent of clause 2(b) above) any lessee, licensee or occupier of Property, as the following are related only to ownership or occupancy of the Property:
 - (1) accepts the Mining Impacts and is not entitled to any compensation in relation to any Mining Impacts,
 - (2) not makes any objection, complaint or statement in relation to any Mining Impacts,
 - (3) releases the Grantor or Grantor Group entity as owner of Grantor Mine from all claims in respect of any Mining Impacts from that mine,

- (4) indemnifies the Grantor or Grantor Group entity as the owner of Grantor Mine from all claims in connection with any Mining Impact from that mine,
 - (5) is not entitled to any separate compensation from the Grantor or Grantor Group entity as the owner of Grantor Mine connected with that mine's Mining or Mining purposes,
 - (6) immediately gives any consent, authority or approval required by the Grantor or Grantor Group entity connected with the Grantor Mine,
 - (7) not lodge any objection, submission, complaint or request for any inquiry, or commence any dispute resolution procedure in respect of any Mining Impact with Grantor or Grantor Group entity as owner of Grantor Mine or any Governmental Authority, and immediately withdraw any such objection,
 - (8) not make any complaint or raise any issue in connection with Mining Impacts from any mine on the Property with the environment or complaint hotline, website, email address or other public complaint mechanism operated by Grantor or Grantor Group entity as owner of Grantor Mine or any other mining company.
- (d) Where the Property as owned by the Grantee is not "privately owned land" under a Grantor Consent, then the commitment by the Grantee to not object continues to apply to Mining Impacts outside of the Grantor Consent environmental impact assessment criteria. Where the Property as owned by the Grantee is "privately held land" under a Grantor Consent, then, without payment of further consideration by the Grantor or Grantor Group entity, the commitments in clause 2(a) above constitute a 'negotiated agreement' or a 'private agreement' for the purposes of a Grantor Consent.
- (e) Where consideration, if any, is required and agreed to be given to lessee, licensee or occupier of the Property to facilitate agreement under clause 2(c) above for the purposes of a Grantor Consent, and where any such agreement if entered into does not operate to relieve the Grantor or Grantor Group entity as owner of Grantor Mine of responsibility or liability to any lessee, licensee or occupier of the Property under a Grantor Consent, then the Grantor or Grantor Group entity as owner of Grantor Mine is liable to pay the contribution without cost contribution by the Grantee.
- (f) Where another member of the Grantee Group acquires the Property from the Grantee, then the Grantee will promptly procure that purchasing entity to enter a deed with the Grantor under which that purchasing entity will agree to comply with and be subject to the conditions of this clause 2.

Annexure B **Notice of Exercise of Option**

To: **(Grantor)**

Notice of Exercise of Option

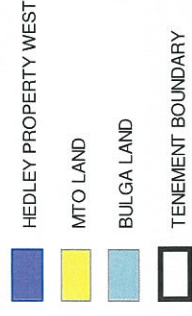
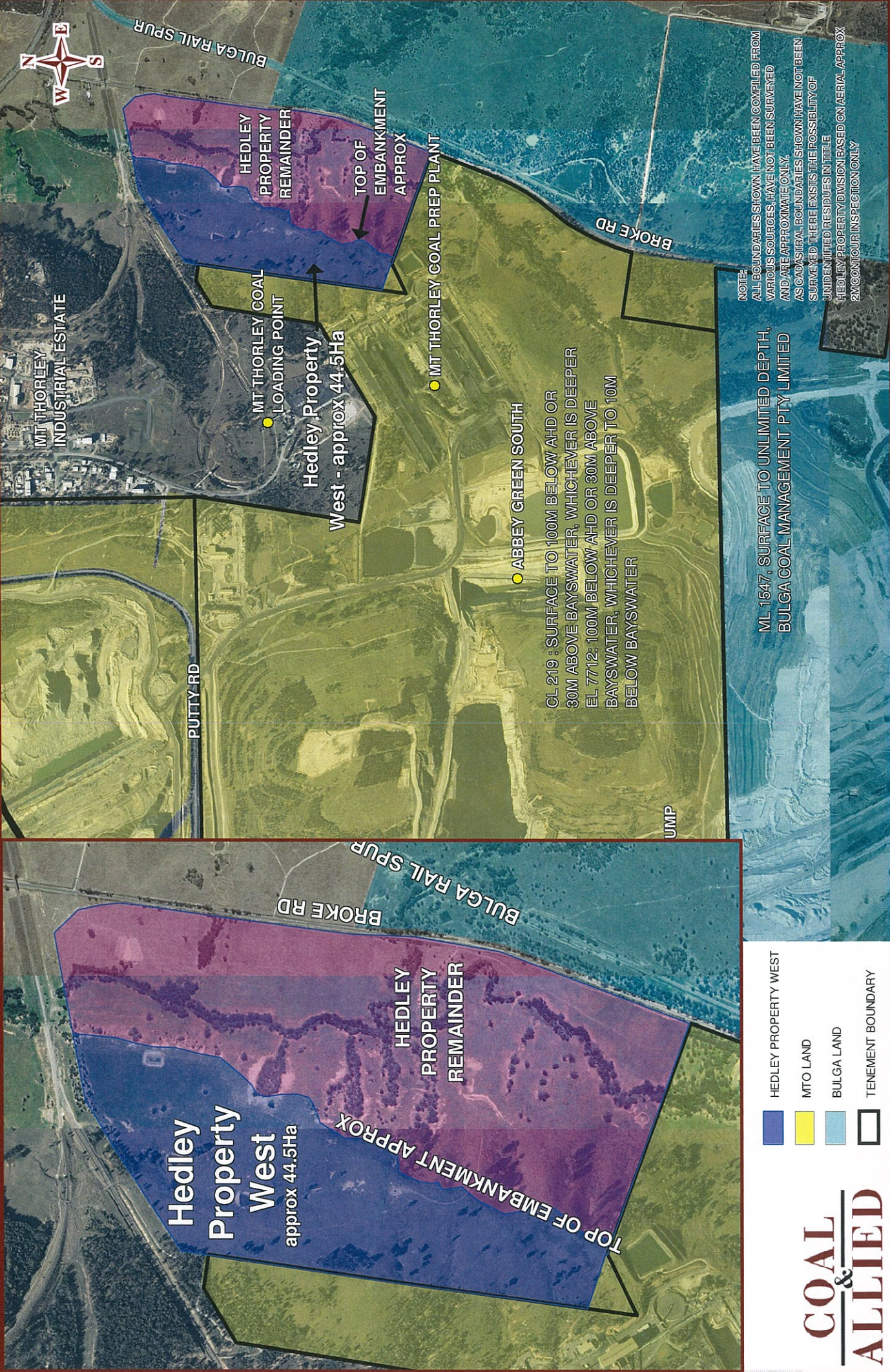
Notice is given by **(Grantee)** to the Grantor that the Grantee irrevocably exercises the Option over the Property granted to the Grantee by the Grantor by the Deed of Call Option dated [date of call option deed] **(Option Deed)**.

Capitalised words used in this notice have the meanings given to them in the Option Deed.

Dated:

[Insert execution clause for Grantor and Grantee]

Annexure C **Map of Hedley West Property**



Boundary Agreement Amendment Agreement

Attachment 6

Map of Common Boundary Dump Space

Common Boundary Dump Space

Location: Bulga
LGA: Singleton

Projection: MGA Zone 56
Contour: N/A
Source: N/A

Date: 27/10/11
Plan By: SC
Version: 01

Project: MTW
Layout: A4
Our Ref: P_MTW_Bulga Agreement 110705.WOR



- MTW LAND
- BULGA LAND
- TENEMENT BOUNDARY

**COAL
&
ALLIED**

Boundary Agreement Amendment Agreement

Exhibit – Boundary Agreement

Common Boundary Interim Erosion and Sediment Control Plan



APPENDIX 2



Interim Erosion and Sediment Control Plan
Common Boundary Project
Bulga Coal Complex and Mount Thorley
Warkworth

February 2013

633.10024

GSS Environmental a Division of SLR Consulting Australia Pty Ltd
(ABN 29 001 584 612) Effective 3 November 2012

TABLE OF CONTENTS

1.0	INTRODUCTION	2
1.1	PURPOSE	2
1.2	OBJECTIVES	3
1.3	THE MINING OPERATIONS	3
2	REGULATORY REQUIREMENTS	4
2.1	PROJECT APPROVAL CONDITIONS	4
2.2	RELEVANT LEGISLATION	4
2.3	ENVIRONMENT PROTECTION LICENCE	4
3	EROSION AND SEDIMENT CONTROL MANAGEMENT	5
3.1	OVERVIEW	5
3.2	DESIGN AND SIZING CRITERIA	5
3.3	STAGE 1 AND 2	5
3.3.1	<i>Proposed Mining Activities</i>	5
3.3.2	<i>ESC Measures</i>	6
3.4	STAGE 3	6
3.4.1	<i>Proposed Mining Activities</i>	6
3.4.2	<i>ESC Measures</i>	6
3.5	SEDIMENT DAM CAPACITY REQUIREMENTS	7
3.6	19ML TEMPORARY SEDIMENT DAM	8
4	MONITORING AND MAINTENANCE	9
4.1	INSPECTIONS	9
4.2	VERIFICATION OF PLAN IMPLEMENTATION	9
4.3	SEDIMENT DAM MANAGEMENT	9
5	REVIEW AND REPORTING	11
6	ACCOUNTABILITIES	12
7	REFERENCES	1

APPENDICES

APPENDIX 1 –INTERIM ESCP DRAWINGS

APPENDIX 2 –ESC STANDARD DRAWINGS

APPENDIX 3 –SEDIMENT DAM CAPACITY CALCULATION SHEETS

ABBREVIATIONS

ARI	Annual Recurrence Interval
BCC	Bulga Coal Complex
BSO	Bulga Surface Operations
C&A	Coal and Allied
CBRP	Common Boundary Rehabilitation Plan
DA	Development Application
DECC	Department of Environment and Climate Change
EPA	Environmental Protection Authority
EPL	Environment Protection Licence
ESC	Erosion and Sediment Control
ESCP	Erosion and Sediment Control Plan
GSSE	GSS Environmental
MOP	Mining Operations Plan
MTO	Mount Thorley Operations
MTW	Mount Thorley Warkworth
NIA	Noise Impact Assessment
NSW	New South Wales
OEH	Office of Environment and Heritage
RTCA	Rio Tinto Coal Australia
XCN	Xstrata Coal NSW

1.0 INTRODUCTION

Mount Thorley Warkworth (MTW) and Bulga Surface Operations (BSO) share a common boundary between Coal Lease (CL) 219 (MTW) and Mine Lease (ML) 1547 (BSO). MTW and BSO propose to develop a shared overburden emplacement area located across the eastern section of the common boundary (hereafter referred to as the 'Common Boundary'). The overburden emplacement area and associated infrastructure (including access ramps and surface water conveyances) will be developed on rehabilitated land disturbed for previous mining activities. The Common Boundary project will provide both MTW and BSO sufficient capacity for out of pit overburden emplacement for continuation of mining activities as currently approved.

The Common Boundary project, including construction, operations and rehabilitation works is anticipated to be undertaken over 3 years, and be completed by 2016. Both BSO and MTW propose to alternately dump overburden in a staged dumping sequence to construct an integrated final landform for the Common Boundary, consistent with the regulatory requirements and statutory approvals for both MTW and BSO. The Common Boundary project will conclude at the successful completion of growth media development rehabilitation phase for all areas within the Common Boundary sub-lease boundary. Rehabilitation works for ecosystem establishment and development will be undertaken by MTW and BSO independently in accordance with each site's approved MOP. Further details are contained within the body of the *Common Boundary Rehabilitation Plan* (CBRP) (GSSE, 2013).

The total disturbance area for the Common Boundary is estimated to be 225ha. Measures will need to be implemented to minimise the risk of sediment-laden runoff entering downstream waterways. The receiving waters for the Common Boundary is Loders Creek, a tributary of the Hunter River. In order to comply with Erosion and Sediment Control (ESC) guidelines (both internal and regulatory), it is proposed that a sediment dam with a capacity in the order of 130ML is constructed for the catchment. This sediment dam is proposed to be located at the eastern end of the Common Boundary area and is referred to as the Ramp 22 Sediment Dam. Given it is a significant structure, the dam is not predicted to be constructed and in operation until the early part of 2014. With dumping proposed to start in this area in March 2013, interim ESC measures will be required. This report details the proposed interim ESC measures.

This interim Erosion and Sediment Control Plan (ESCP) has been prepared to provide details of the measures that will be implemented to minimise potential effects of erosion and sediment created from dumping activities in the Common Boundary area. This ESCP has been developed for the interim period between when overburden dumping is scheduled to commence and the permanent construction of the ESCs, suitable for the life of the project, (i.e. Ramp 22 Sediment Dam). This period is estimated to be 12 months from the commencement of dumping.

1.1 Purpose

This interim Erosion and Sediment Control Plan (ESCP) has been prepared to provide details of the measures that will be implemented to minimise potential effects of erosion and sediment created from dumping activities in the Common Boundary area. This ESCP has been developed for the interim period between when overburden dumping is scheduled to commence and the permanent construction of the ESCs, suitable for the life of the project, (i.e. Ramp 22 Sediment Dam). This period is estimated to be 12 months from the commencement of dumping.

1.2 Objectives

The primary objective of the interim ESCP is to implement a system to safeguard against soil loss and in turn, minimise the risk of adverse water quality impacts downstream as a result of increased turbidity and sedimentation.

The objectives of the interim ESCP are the following:

- Meet the requirements of the development consents relevant to the operation for both the BSO and MTW;
- Meet the requirements of *Managing Urban Stormwater: Soils and Construction (the Blue Book)*, Volume 1 and Volume 2E – *Mines and Quarries* (Landcom, 2004 and Department of Environment and Climate Change (DECC), 2008);
- Meet the requirements of the EPL No. 568 and EPL No. 1976, with regard to total suspended solids;
- Describe the generic soil stripping and stockpiling procedures in order to recover topsoil for use in rehabilitation;
- Minimise soil erosion and the potential release of sediment laden runoff to downstream waters during mining and recommend erosion and sediment controls in accordance with best management practice;
- Undertake overburden dumping in a manner to minimise the disturbance area;
- Coordinate progressive shaping and rehabilitation to minimise exposure of bare spoil and soil to the elements;
- Describe the location, function and capacity of erosion and sediment control structures; and
- Implement an effective maintenance program for the site. This will include ensuring that water management structures are operated to ensure that the required designed capacities are retained for runoff containment and optimum setting of sediments.

1.3 The Mining Operations

MTW is an amalgamation of two separate joint venture coal mining operations, majority owned and managed by Coal & Allied Operations Pty Limited (C&A), which in turn is managed by Rio Tinto Coal Australia (RTCA).

These two mines, Mt Thorley Operations (MTO) and Warkworth Mining Limited (WML), were integrated into one operation in February 2004 to form MTW, and operate under Development Approval (DA) 09_0202. MTW is located approximately 14 kilometres (km) southwest of Singleton, in the upper Hunter Valley of New South Wales (NSW).

BSO is the surface operation of the Bulga Coal Complex (BCC). Bulga is located immediately south of MTW, approximately 12 km southwest of Singleton, and is majority owned by Xstrata Coal Australia and managed by Bulga Coal Management Pty Ltd. Bulga operates under DA 41-03-99.

2.0 REGULATORY REQUIREMENTS

2.1 Project Approval Conditions

This interim ESCP has been prepared in accordance with the requirements documented in:

- Draft MTW Water Management Plan (includes a section on Erosion and Sediment Control) which is currently under review by the Department of Planning and Infrastructure (DP & I);
- XCN STD ANN077 – 10.11 Erosion and Sediment Control Management; and
- BCC Erosion and Sediment Control Plan *BUL SD PLN 0023*.

These documents have been prepared in accordance with the relevant project approval conditions that relate to the common boundary area (i.e. BSO's DA No. 41-03-99 and MTW DA 09_0202 (as modified)).

2.2 Relevant Legislation

A number of legislative requirements, government policies and guidelines relating to erosion and sediment control and soil management have been considered in the preparation of this ESCP. The key pieces of legislation are as follows:

- *Protection of the Environment Operations Act 1997* ;
- *Water Act 1912*; and
- *Water Management Act 2000*.

2.3 Environment Protection Licence

The *Protection of the Environment Operations Act 1997* (POEO Act) requires all extractive industries, including coal mines, to hold an Environment Protection Licence (EPL). Licences are issued by the Office of Environment and Heritage (OEH). BSO operates under the EPL No. 563 and the MTW operates under the EPL No. 1976. Under these licences the sites are allowed to discharge water via a Licensed Discharge Point (LDP) subject to numerous conditions as part of the Hunter River Salinity Trading Scheme (HRSTS). The current LDP used for BSO is located on the outlet of Swan Lake into Loders Creek. Truck Fill Point 2 (Dam 9) and Truck Fill Point 1 (Dam 13) are also LDPs but are not currently used for discharge by BSO. The current LDP used for the MTW is LDP 4 and is located at the end of the discharge pipe from Dam 9 into Loders Creek.

In relation to erosion and sediment control, the concentration limit for the discharge of water to the environment placed on Total Suspended Solids (TSS) is 120mg/L. The ultimate goal of this interim ESCP is to ensure that through adopting the principles, controls and management procedures contained within, that any potential water discharge from site would be within this concentration limit and/or comply with Section 120 of the *Protection of the Environment Operations Act 1997*.

3.0 EROSION AND SEDIMENT CONTROL MANAGEMENT

Implementation of ESCs presented in this section is proposed for the initial dumping phases of the Common Boundary project until such time that the Ramp 22 Sediment Dam is constructed. Standard ESC techniques and management principles will be used in accordance with the requirements of the “Blue Book”, internal standards and the associated site ESCPs.

3.1 Overview

It is proposed that the Common Boundary catchment is broken up into three main catchment areas which each have a sediment dam located at the catchment outlet to collect any potential runoff. Collecting runoff in the sediment dams will allow suspended solids to settle prior to releasing accumulated runoff from site, or more commonly, if the water quality is not suitable for release, pumped back into the mine water system. Some of the existing dams located at the eastern end of the Common Boundary area will be used to collect runoff from the eastern end of the proposed dumping area. A larger 19ML temporary sediment dam will be constructed via dumping out of the existing valley with mine spoil to contain runoff from the larger, western catchment area until the Ramp 22 Sediment Dam is in operation.

3.2 Design and Sizing Criteria

The design criteria for the erosion and sediment controls have been determined using the guidelines and recommended design criteria detailed in Xstrata Coal NSWs (XCN) Internal Standard for ESC. This document is titled ‘XCN SD ANN 0077 10.11 Erosion and Sediment Control Management’ (XCN, 2011). The internal standard has been developed in accordance with the guidelines and design criteria presented in the publication titled *Managing Urban Stormwater: Soils and Construction Vol.1 4th edition (Landcom, 2004) and Vol.2E - Mines and Quarries* (DECC, 2008) (referred to hereafter as the ‘Blue Book’). These guidelines are the industry standard for erosion and sediment control and are commonly referred to in mine operations consent conditions. The XCN internal standard presents more stringent design criteria than the minimum criteria presented in the Blue Book. Hence the designs of the ESC measures proposed in this interim ESCP either meet or exceed the minimum requirements of the Blue Book.

Given that the ESCs presented in this interim ESCP are only required for approximately 12 months until the more permanent controls are installed (i.e. Ramp 22 Sediment Dam), the design criteria adopted have been based on a duration of disturbance of less than 12 months.

3.3 Stage 1 and 2

3.3.1 Proposed Mining Activities

During Stage 1 and 2, the following disturbance activities are scheduled to occur:

- BSO to dump the RL 125 Access Ramp (referred to as Stage 1). The ramp will extend into the current valley to dump out material for the construction of the 19ML temporary sediment dam. The ramp will also allow access for the dumping of overburden material in Stage 3;
- MTW to dump the RL125 Access Ramp (referred to as Stage 2). This access ramp will be used for dumping of overburden material in the Common Boundary Area by MTW in future stages not covered by this interim ESCP;
- BSO to construct the embankment of the 19ML temporary sediment dam;
- Topsoil stripping prior to dumping which only applies to the MTW mining lease area. There is no topsoil present on the BSO Mining Lease covered by the Common Boundary area that will be disturbed.

3.3.2 ESC Measures

Runoff from all disturbance areas will be directed into sediment dams. **Drawing No. 633.10024-SK01** (contained in **Appendix 1**) details the proposed disturbance area. ESCs that will be implemented during Stage 1 and 2 activities. The proposed measures include:

- Utilising four existing sediment dams (Existing Dams 1, 2, 3 and 4) located at the eastern toe of the existing overburden emplacement. Three of these dams (Existing Dams 2, 3 and 4) will be hydraulically linked to form one single dam capacity. Some minor earthworks will be required to allow this to take place. Temporary controls for these minor earthworks will be installed as required (i.e. sediment fence downslope). Refer to **Appendix 2** for standard drawing of a sediment fence installation;
- A temporary dam embankment will be constructed within the current valley floor to create a temporary storage area of approximately 19ML. The purpose of this dam is to break up the overall catchment into an upper and lower area so that the catchment area reporting to the Existing Dams is manageable with respect to meeting the requirements for sediment control;
- Install temporary pumps and pipelines to dewater the 19ML Temporary Sediment Dam, Existing Dam 1 and Existing Dam 2 following rainfall events. Each pump/pipeline is proposed to transfer water to MTW's neighbouring 2GL mine water (Dam 6S); and
- Soil management techniques outlined in the MTW Mining Operations Plan (MOP) will be implemented for stripping and stockpiling of topsoil located on the MTW mining lease area.

The ESC measures will be implemented prior to dumping. The exception to this will be the construction of the 19ML temporary sediment dam embankment which can only be constructed once material is delivered to this area via the Stage 1 dumping.

3.4 Stage 3

3.4.1 Proposed Mining Activities

During Stage 3, BSO are to dump out the eastern end of the Common Boundary area. The proposed dumping around the 19ML temporary sediment dam will need to occur in such a way that the available capacity within the dam is not reduced significantly. This will result in a void remaining within this area until such time that the dam is no longer required (i.e. once the Ramp 22 Dam is in operation). The 19ML temporary sediment dam can then be de-watered and the void filled with overburden to RL 125.

If the capacity of the 19ML temporary sediment dam is reduced, then construction of a temporary sediment dam located further upslope immediately to the west of the Stage 3 dumping footprint will be constructed to offset this storage reduction. At no stage will the catchment area reporting to Existing Dam 2, 3 and 4 be increased to more than 50ha. This will ensure that the required capacity to meet the XCN requirements (and therefore Blue Book) for sediment storage is less than the capacity within Existing Dam 2, 3 and 4 (15.1ML).

3.4.2 ESC Measures

The ESC measures implemented for Stage 1 and 2 activities have been designed to also account for disturbance activities for Stage 3. As a result the ESCs essentially remain the same. Runoff from all disturbance areas will continue to be directed into sediment dams. **Drawing No. 633.10024-SK02** (contained in **Appendix 1**) details the proposed disturbance area and ESCs that will be implemented for Stage 3 activities.

It is proposed that shaping of the eastern end of the dump may occur so that disturbed land is progressively rehabilitated. This will increase ground cover which in turn will increase infiltration and reduce erosion potential. Contour banks will be installed as part of the shaping activities to reduce flow path lengths and erosion potential. Figure 4 of the CBRP contains the layout of the proposed final landform drainage (GSSE, 2013).

3.5 Sediment Dam Capacity Requirements

The required capacity of the sediment dams was determined using the guidelines and recommended design criteria provided in the XCN internal Standard for ESC (XCN, 2011). Based on past soil characterisation undertaken at the site, Type D/F sediment dams will be required given the predominately fine particle size of the soil classifying the soil as either Type F or Type D.

The required storage capacity of each dam is made up of the 'settling zone' and the 'sediment storage zone'. The following criteria have been adopted for each zone as recommended in the XCN internal Standard for disturbance duration of less than 12 months:

- Settling Zone designed to 85th percentile, 5 day duration storm event (31.7 mm based on Ravensworth/Bulga area); and
- Sediment Storage Zone designed to estimate the 6 month soil loss based on the Revised Universal Soil Loss Equation (RUSLE).

Table 1 presents the required Blue Book capacities of both dams. Both the settling zone and sediment storage zone are presented for management purposes.

Table 1 – Required Sediment Dam Capacities for the Interim Common Boundary ESCP

Sediment Dam ID	Estimated Disturbed Catchment Area (ha)*	Required Settling Zone Volume (ML)	Required Sediment Storage Zone Volume (ML)	Total Required Capacity (ML)
Existing Dam 1	8.5	1.7	0.3	2.0
Existing Dam 2,3,4 combined (capacity)	46	9.4	4.7	14.1
19ML Temporary Sediment Dam	33 96 (clean water)	12.8	3.4	16.2

* - Based on the most critical stage (requires the largest storage capacity)

The key assumptions and design criteria used to calculate the sediment dam capacities are as follows:

- A volumetric runoff coefficient of 0.64 for highly disturbed areas – based on the default soil hydrologic group D as per Volume 2E (Mines and Quarries) of the Blue Book; and
- A ground cover and management factor (C-factor) of 0.25 – this assumes that the soil is recently disturbed and there is no grass cover on half the catchment and 70% grass cover on the remaining half. This is a best estimation of how progressive rehabilitation of the catchment will reduce erosion. Should progressive rehabilitation not be undertaken, the required sediment dam capacities will need to be increased.

The full sediment dam capacity calculations are contained in **Appendix 3**.

Important Note – As a 5 day rainfall period has been selected, the 'settling zone volume' must be made available within 5 days of the rainfall event occurring. As a 6 month soil loss has been calculated, the dams need to be de-silted within their operational life should the 'sediment zone' be filled with sediment. Refer to Section 4.2 for further details.

3.6 19ML Temporary Sediment Dam

Given the limited capacity of Existing Dams 2, 3 and 4, the construction of the 19ML temporary sediment dam will enable the required sediment dam volumes to be achieved so as to comply with the XCN and Blue Book guidelines. As Stage 2 is the first dumping to occur in the area, the dam embankment will be in place for the Stage 1 and Stage 3 dumping areas.

The upstream section of the dam embankment is proposed to be constructed using selected overburden which is dumped in the valley as part of Stage 1. The required compaction of this section of the embankment will need to be greater than the typical compaction achieved during truck dump and dozer push operations. To achieve the required compaction, it is recommended that the upstream section is progressively emplaced and compacted in 300mm layers using the select overburden with a particle size of no greater than 50mm. A clay liner will then be placed over the upslope batter of the embankment to assist with water retention. For further construction requirements refer to **Drawing No. 633.10024-SK03** (contained in **Appendix 1**).

4.0 MONITORING AND MAINTENANCE

4.1 Inspections

To ensure that the ESCs are functioning effectively throughout the interim phase of the common boundary project, it is recommended that they are inspected quarterly or following a notable rainfall event (greater than 10mm in a 24hr period). The purposes of the inspections are to:

- Ensure that all runoff from disturbance areas is being directed into sediment dams for containment and treatment;
- Identify any areas of disturbance that are occurring outside that proposed and covered by this Interim ESCP;
- Identify any areas of erosion (including drainage channels) that require stabilisation due to excessive flow velocities;
- Ensure that if the sediment dams are being managed as required with regard to dewatering following rainfall events and de-silting as required;
- Identify any areas that require additional controls to be installed; and
- Determine if there is a requirement to update the interim ESCP.

4.2 Verification of Plan Implementation

Prior to any significant dumping occurs in the area, a design verification of the required ESCs will be undertaken to ensure they have been installed in accordance with the approved designs. Included in this design verification will be the need to undertake an 'as built survey' of the sediment dams to ensure they have sufficient capacities in accordance with this Interim ESCP. It is proposed that the design verification is undertaken by a third party surveyor.

4.3 Sediment Dam Management

The design capacities of the sediment dams presented in Section 3.5 are based on the need for following management requirements to be implemented for each sediment dam:

- The available capacity within the dam must be at least equal to the Settling Zone volume within 5-days of a rainfall event occurring. Hence the dams must be regularly drawn down following rainfall.
- The dams must be de-silted when their storage capacity is reduced by the Sediment Storage Zone volume. De-silting frequency is subject to the amount of sediment being delivered into the dam. Based on the calculations (which assume a 6 month soil loss volume), de-silting will likely be required every 6 months.

Once the dams are ready for operation, it is recommended that depth markers (volume-stage) be installed in the dams to reflect the sediment storage zone status and when de-silting is required. It is recommended that all dams are fully de-watered following rainfall events to ensure the available capacity to contain runoff from the subsequent rainfall event is maximised.

The required de-watering rates to achieve the minimum requirement (settlement zone capacity) have been calculated based on pumping 24hrs per day over 4 days. The period has been reduce to 4 days to take into consideration possible pump breakdowns and delayed responses. The de-watering rates for each dam are:

- Existing Dam 1 – 5L/s
- Existing Dam 2,3,4 – 27L/s
- 19ML Sediment Dam – 37L/s

It is proposed that the accumulated runoff will be primarily transferred to the 2GL Mine Water Dam (Dam 6S) located at MTW. The water could also be used for dust suppression if required.

5.0 REVIEW AND REPORTING

Regular review of this Interim ESCP may be required to ensure that the document remains relevant to the dumping operations taking place in the Common Boundary Area until the it becomes redundant (the Ramp 22 Sediment Dam is operational). If a review or update of the ESCP is required, this will be identified during the routine inspections of the area.

The purpose of any potential review or update to the interim ESCP will be to:

- Document additional controls required as a result of alteration to the proposed disturbance areas covered by this ESCP;
- Alter legislative requirements; and
- Changes to significant environmental or business aspects.

The effectiveness of ESC measures adopted on the site will be assessed and reported to site management as part of the environmental officers' routine inspection of both sites. Requirements for corrective actions identified during routine inspections are to be reported and corrective actions should be implemented in a timely manner which may include updating the document in consultation with relevant Government regulators.

A summary of any ESC management issues and actions arising throughout the year will generally be presented in each site's Annual Environmental Management Report (AEMR). Environmental incidents will be reported in accordance with each site's Pollution Incidence Response Management Plan (PIRMP).

6.0 ACCOUNTABILITIES

Table 2 outlines relevant accountabilities of site personnel.

Table 2 – Accountabilities

Role	Accountabilities for this document
Operations Manager	Approve the interim ESCP for the Common Boundary Area Review and take action where necessary on reported incidents affecting erosion and sediment control and management within the site.
Environment & Community Manager	Implement the ESCP for the Common Boundary Area Oversee the planning, construction, inspection and maintenance and repair of the ESC system in the Common Boundary Area Control activities that might lead to unnecessary disturbance of BSO or MTW lands and the contamination of runoff with sediment
Environment & Community Officer	Investigate and report all incidents involving the failure of or damage to the ESC system Periodically inspect all ESCs in the Common Boundary Area for evidence of erosion that might lead to a failure to maintain water quality standards on or downstream of the site Manage water quality monitoring systems throughout the site and control contracts for water quality testing. Convey results to Managers and follow up on failures to maintain standards Participate in the design of, budgeting for and construction of ESC infrastructure.
All personnel	Report incidents affecting water quality or ESC systems to a supervisor Prevent and report potential erosion
All Contractors	Report incidents affecting water quality or ESC systems to a supervisor Prevent and report potential erosion

7.0 REFERENCES

Department of Environment and Climate Change (2008), *Managing Urban Stormwater: Soils and Construction – Volume 2E Mines and Quarries*.

Landcom (2004), *Managing Urban Stormwater: Soils and Construction – Volume 1, 4th Edition*

Mount Thorley Warkworth Operations Pty Ltd (2013), 'Draft' *Water Management Plan*. Currently under review by the Department of Planning and Infrastructure.

Xstrata Coal, Bulga Coal (2011), *Erosion and Sediment Control Plan BUL SD PLN 0023*

Xstrata Coal NSW (2011), *XCN SD ANN0077 10.11 Erosion and Sediment Control Management*

Interim ESCP Drawings



APPENDIX 1

A B C D E F G H I J K L M N O P

CONSTRUCTION SPECIFICATION NOTES

GENERAL

G1. THE EROSION AND SEDIMENTATION CONTROL PLAN HAS BEEN PREPARED IN ACCORDANCE WITH 'MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION' (LANDCOM, 2004) PLUS XSTRATA STANDARD ANNEXURE C077 10.11 EROSION AND SEDIMENT CONTROL MANAGEMENT PLAN (XCN,2011).

G2. REFER TO DOCUMENT TITLED " INTERIM EROSION AND SEDIMENT CONTROL PLAN"(GSSE, 2013) FOR FURTHER DETAIL.

ENVIRONMENTAL

EN1. ALL EROSION AND SEDIMENT CONTROLS ARE TO BE INSTALLED PRIOR TO SITE DISTURBANCE (WITH THE EXCEPTION OF THE 19ML DAM WHICH IS TO BE INSTALLED FOLLOWING STAGE 1 DUMPING)

EN2. DISTURBANCE BOUNDARIES WILL BE CLEARLY DEFINED. ANY DISTURBANCE OUTSIDE THESE DISTURBANCE LIMITS IS STRICTLY PROHIBITED.

EN3. STAGE OVERBURDEN EMPLACEMENT WHEREVER POSSIBLE SO THAT ONLY AREAS WHICH ARE ACTIVELY UNDER DUMPING ARE CLEARED,THUS, LIMITING THE TIME THE AREAS ARE EXPOSED.

EN4. ALL RUNOFF FROM DISTURBANCE AREAS MUST BE DIRECTED TO SEDIMENTATION DAMS.

EN5. TEMPORARY EROSION AND SEDIMENT CONTROL (ESC) MEASURES SHALL BE MAINTAINED IN OPERATIVE CONDITION AT ALL TIMES AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE WORK AND UNTIL THE RAMP 22 SEDIMENT DAM IS CONSTRUCTED.

DRAINAGE AND DEWATERING

D1. PROVIDE ADEQUATE STANDBY DEWATERING EQUIPMENT CAPABLE OF PUMPING AT THE RATES SHOWN.

D2. ALL DIRTY WATER COLLECTED WITHIN THE SEDIMENT DAMS AND DOWNSTREAM BUND WILL BE REGULARLY DRAWN DOWN AS SOON AS PRACTICALLY POSSIBLE FOLLOWING A RAINFALL EVENT. THE WATER WILL BE TRANSFERRED BACK TO THE MT THORLEY MINE WATER MANAGEMENT SYSTEM OR USED ON SITE FOR DUST SUPPRESSION.

LEGEND

- EXISTING CONTOURS
- PROPOSED DISTURBANCE AREA - STAGE 1 (FINISHED R.L. VARIES)
- PROPOSED DISTURBANCE AREA - STAGE 2 (FINISHED R.L. 125.0)
- EXISTING SEDIMENTATION DAMS
- POTENTIAL DAM PONDING AREA
- EXISTING SURFACE FLOW PATH
- TEMPORARY SURFACE DRAINAGE PATH
- PIPELINES (INDICATIVE PATH ONLY)
- DEWATERING PUMP
- SEDIMENT FENCE

STAGE 1

STAGE 2

CATCHMENT AREA TO EXISTING DAM 1 (APPROX. 8.6 ha)

CATCHMENT AREA TO 19ML TEMPORARY SEDIMENT DAM (APPROX. 130 ha)

CAPACITY REQUIRED = 2.0 ML (ESTIMATED CAPACITY = 4.4 ML)

MIN. 5 L/s

MIN. 27 L/s

MIN. 37 L/s

ENGINEERED DAM WALL REFER TO DRG.-SK03

OVERBURDEN MATERIAL WIDTH REQUIRED FOR TRUCK SAFETY AND OPERATION

HYDRAULICALLY LINKED SEDIMENT DAMS (EXISTING) REQUIRED CAPACITY = 14.1 ML (EXISTING AVAILABLE CAPACITY = 15.1 ML)

EARTHWORKS REQUIRED TO HYDRAULICALLY LINK SEDIMENT DAMS SEDIMENT FENCE TO BE INSTALLED DOWNSLOPE

EXISTING DAM 1

EXISTING DAM 2

EXISTING DAM 3

EXISTING DAM 4

PROPOSED RAMP 22 DAM EMBANKMENT (CONCEPT ONLY)

DAM 6S (2 GL)

POTENTIAL PONDING R.L. 77.6

19 ML TEMPORARY SEDIMENT DAM

TEMPORARY CULVERT

REPORTS BACK TO MINE PIT

PRELIMINARY ISSUE

REVISIONS

B	DATE	DESCRIPTION	DRAWN
B	14.02.2013	INFORMATION ONLY	MS
A	30.01.2013	INFORMATION ONLY	MS

THIS DRAWING IS THE PROPERTY OF SLR CONSULTING AUSTRALIA AND MUST NOT BE RETAINED, COPIED OR USED WITHOUT THE CONSENT OF THE COMPANY.

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ENDORSED BELOW

Responsible Principal Signature _____ Date _____

DRAWN: MS
DESIGN: DJ
DRG. CHECK: DATE:
DES. CHECK: DATE:

DATE: 30.01.2013
DATE: 30.01.2013
DATE:
DATE:

SLR

LEVEL 1, 14 WATT ST
NEWCASTLE
NEW SOUTH WALES 2300
AUSTRALIA
T: 61 2 4908 4500
F: 61 2 4908 4501
www.slrconsulting.com

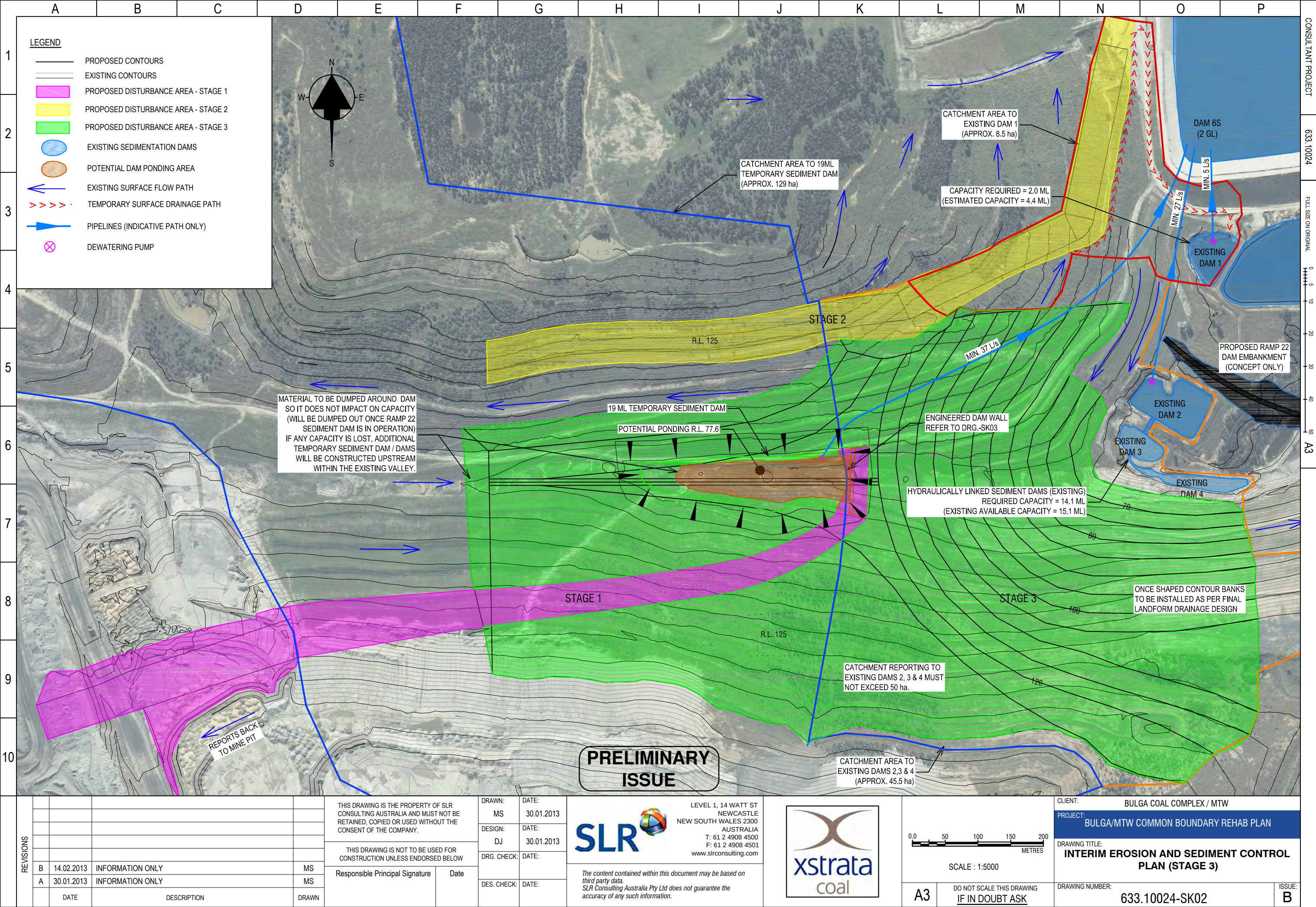
The content contained within this document may be based on third party data.
SLR Consulting Australia Pty Ltd does not guarantee the accuracy of any such information.

xstrata coal

0.0 50 100 150 200 METRES

SCALE : 1:5000

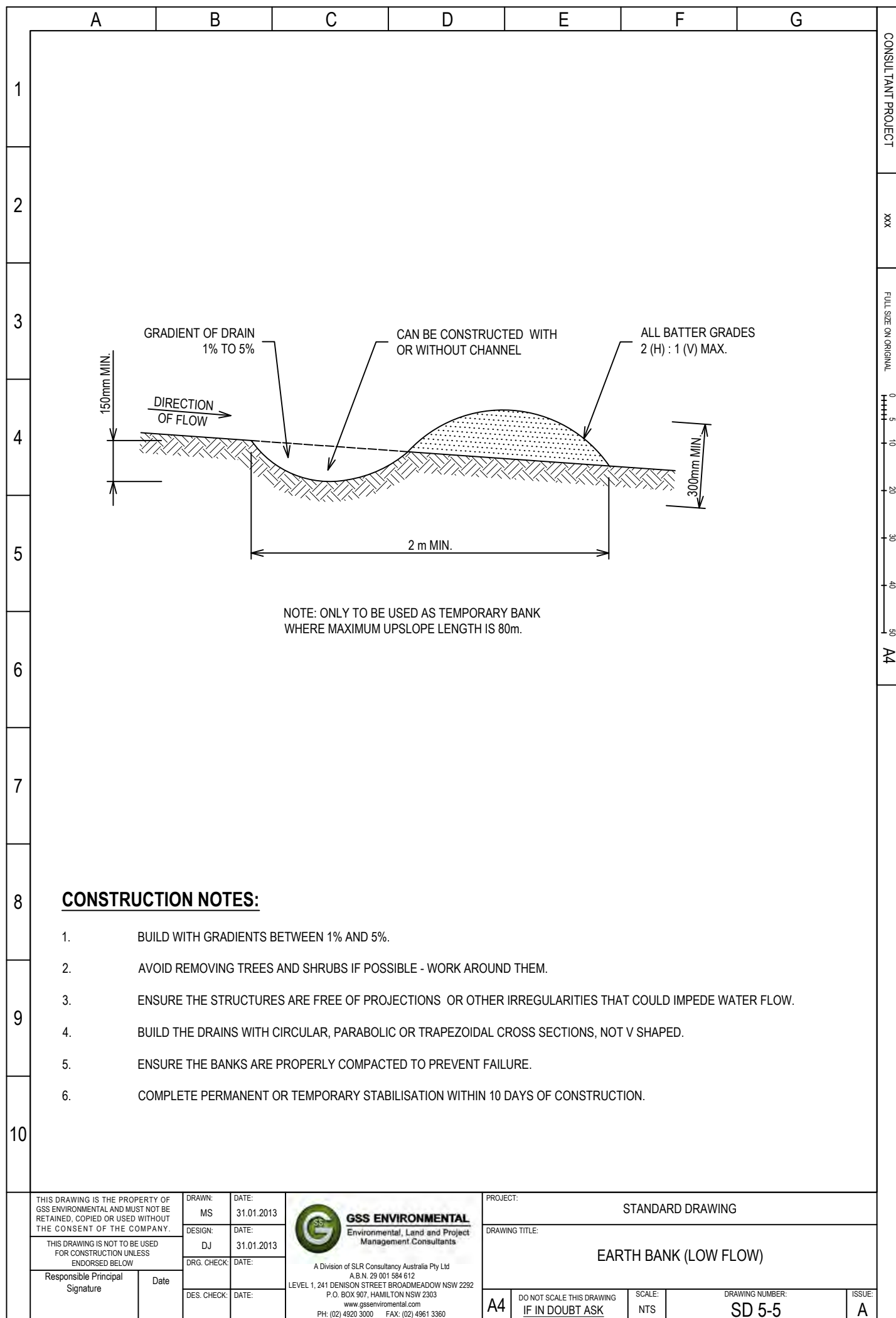
CLIENT: BULGA COAL COMPLEX / MTW
PROJECT: BULGA/MTW COMMON BOUNDARY REHAB PLAN
DRAWING TITLE: INTERIM EROSION AND SEDIMENT CONTROL PLAN (STAGE 1 AND 2)
DRAWING NUMBER: 633.10024-SK01
ISSUE: B

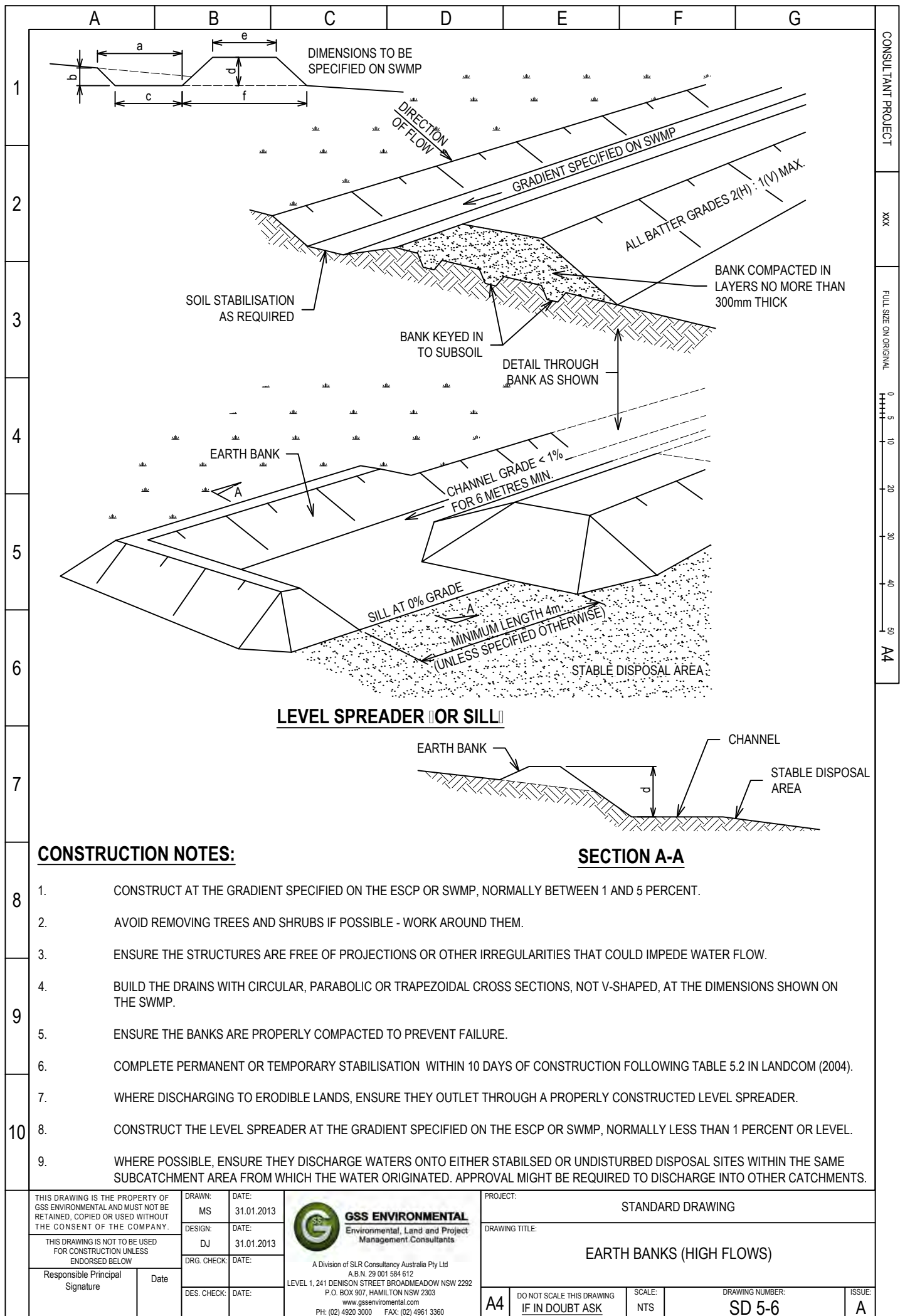


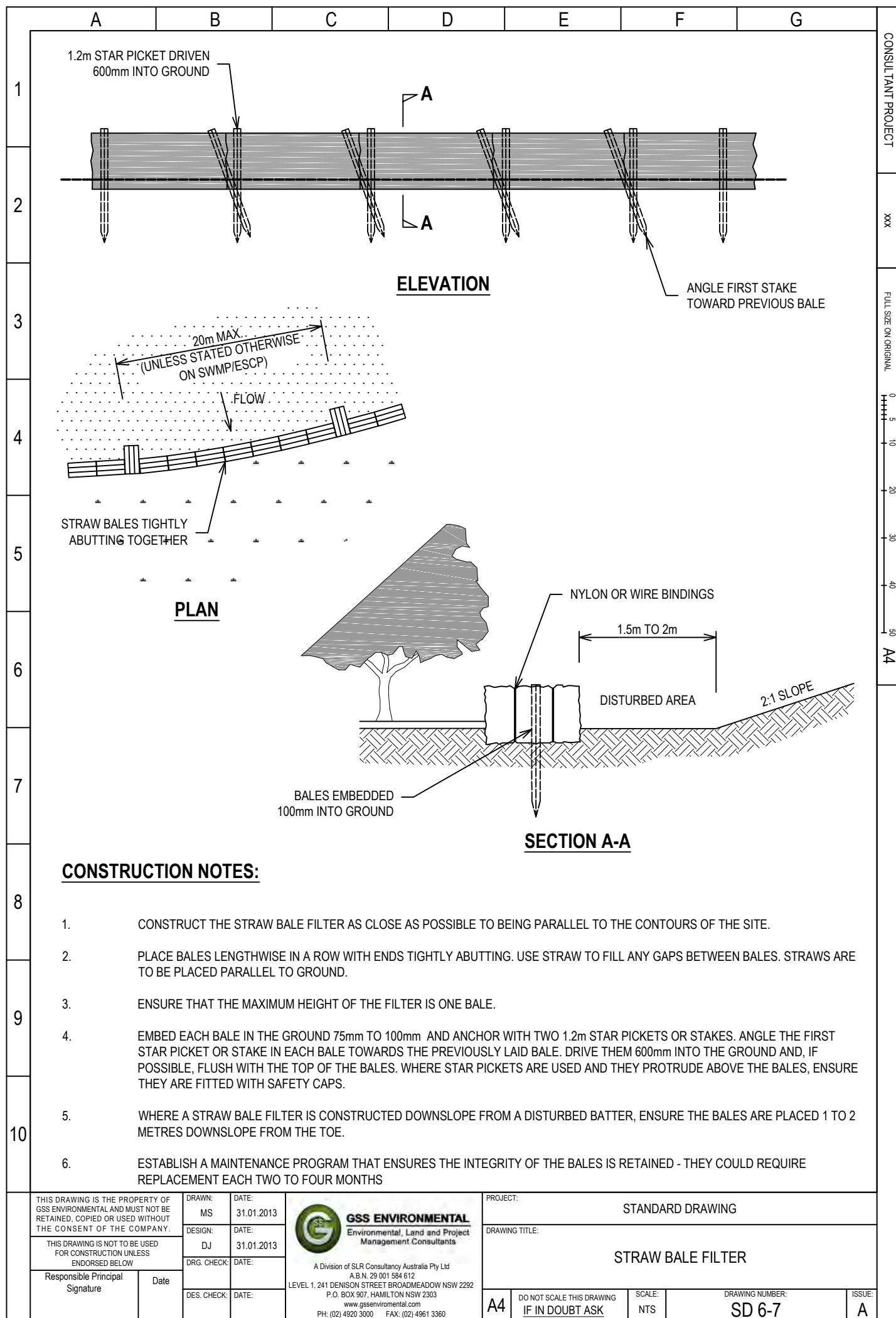
ESC Standard Drawings

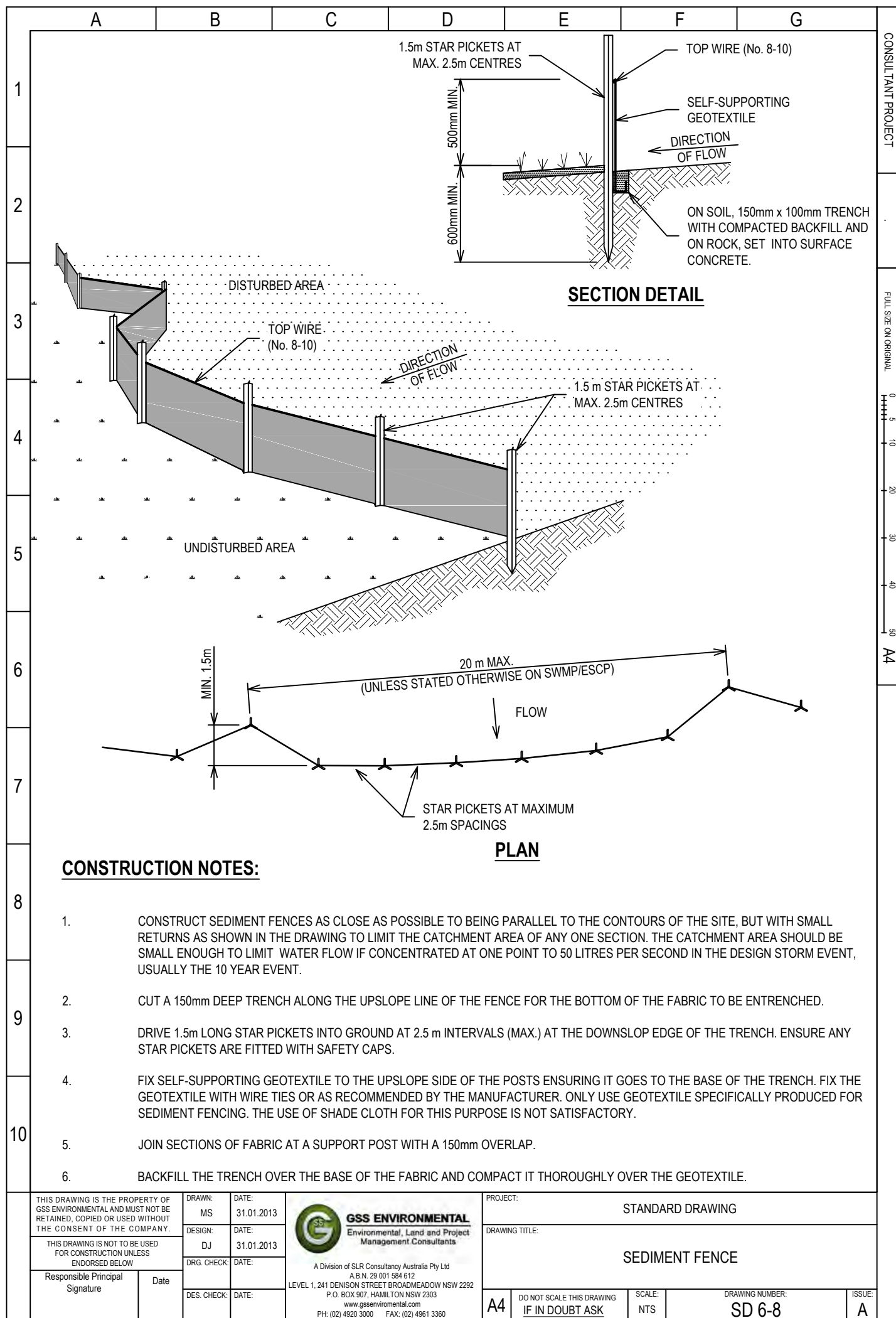


APPENDIX 2









Sediment Dam Capacity Calculation Sheets



APPENDIX 3



Existing Dam 1

Project Name: Common Boundary Interim ESCP

Project Number: 633.10024.00000

Customer: Bulga Coal / Mt Thorley

Date: 31/01/2013

File Location: H:\Projects-SLR\633-WNL\633-WNL\633.10024 Common Boundary Interim ESCP (XCN05)\SLR
Data\Calculations\[Type F and D Sediment Dam Design_Lower Dump_MTW Ramp.xlsm]4 Print

Sheet: 1 of 1

Designed in accordance with: Xstrata design criteria

SETTLING ZONE VOLUME

NOTES & ASSUMPTIONS

Duration of Disturbance = < 12
months

It is assumed that the Ramp 22 sed dam will
be constructed within 12 months of dumping

Five Day Duration = 85th %ile

Location = Ravensworth Area/Bulga

Rainfall (y%ile,Xday) (R) (mm) = 31.7

Disturbed Area (A) (ha) = 8.5

During Stage 2, 3

Runoff Potential = Very high

Soil Hydrologic Group = D

Disturbed Runoff Coefficient (Cv) = 0.64

Conservative value used as recommended in XCN Standard

Clean Water Area (CA) (ha) = 0

Assumed entire catchment disturbed (conservative)

Clean Water Catch Runoff Coefficient (CCv) = 0.2

Settling Zone Volume (m3) = 1,724

SEDIMENT ZONE VOLUME calculated by RUSLE

Surface condition = Loose to 0.3 metres depth

Erosion control practice factor (P) = 0.8

Assumes loose soil to 0.3m depth (unshaped or deep ripped)

Rainfall erosivity factor (R) = 1500

Soil erodibility factor (K) = 0.05

Used Default value as no soil information

Slope length/gradient factor (LS) = 4.46

Based on current landform

Ground cover and management factor (C) = 0.3

Assumed 30% grass cover

Sediment Zone Volume (m3) = 262

6 Month Soil Loss

BASIN VOLUME (Total Required Capacity) - Based on RUSLE

Total Required Capacity (m3) = Settling Zone Volume + Sediment Zone Volume

Total Required Capacity (m3) = 1987



Existing Dam 2, 3 and 4

Project Name: Common Boundary Interim ESCP

Project Number: 633.10024.00000

Customer: Bulga Coal / Mt Thorley Warworth

Date: 31/01/2013

File Location: H:\Projects-SLR\633-WNL\633-WNL\633.10024 Common Boundary Interim ESCP (XCN05)\SLR
Data\Calculations\[Type F and D Sediment Dam Design_Lower Dump.xlsm]4 Print

Sheet: 1 of 1

Designed in accordance with: Xstrata design criteria

SETTLING ZONE VOLUME

NOTES & ASSUMPTIONS

Duration of Disturbance = < 12
months

It is assumed that the Ramp 22 sed dam will
be constructed within 12 months of dumping

Five Day Duration = 85th %ile

Location = Ravensworth Area/Bulga

Rainfall (y%ile,Xday) (R) (mm) = 31.7

Disturbed Area (A) (ha) = 46

During Stage 3

Runoff Potential = Very high

Soil Hydrologic Group = D

Disturbed Runoff Coefficient (Cv) = 0.64

Conservative value used as recommended in XCN Standard

Clean Water Area (CA) (ha) = 0

Assumed all catchment areas disturbed (conservative)

Clean Water Catch Runoff Coefficient (CCv) = 0.2

Settling Zone Volume (m3) = 9,332

SEDIMENT ZONE VOLUME calculated by RUSLE

Surface condition = Loose to 0.3 metres depth

Erosion control practice factor (P) = 0.8

Assumes loose soil to 0.3m depth (unshaped or deep ripped)

Rainfall erosivity factor (R) = 1500

Soil erodibility factor (K) = 0.05

Used Default value as no soil information

Slope length/gradient factor (LS) = 4.46

Best estimate as amount of shaping/unshaped material is unknown.

Ground cover and management factor (C) = 1

Assumed worst case scenario with no grass cover

Sediment Zone Volume (m3) = 4734

6 Month Soil Loss

BASIN VOLUME (Total Required Capacity) - Based on RUSLE

Total Required Capacity (m3) = Settling Zone Volume + Sediment Zone Volume

Total Required Capacity (m3) = 14067



Project Name: Common Boundary Interim ESCP

Project Number: 633.10024.00000

Customer: Bulga Coal / Mt Thorley Warkworth

Date: 14/02/2013

File Location: H:\Projects-SLR\633-WNL\633-WNL\633.10024 Common Boundary Interim ESCP (XCN05)\SLR
Data\Calculations\[Type F and D Sediment Dam Design_Upper Dump.xlsm]4 Print

Sheet: 1 of 1

Designed in accordance with: Xstrata design criteria

SETTLING ZONE VOLUME

NOTES & ASSUMPTIONS

Duration of Disturbance = < 12
months

It is assumed that the Ramp 22 sed dam will
be constructed within 12 months of dumping

Five Day Duration = 85th %ile

Location = Ravensworth Area/Bulga

Rainfall (y%ile,Xday) (R) (mm) = 31.7

Disturbed Area (A) (ha) = 33

During Stage 3 (most critical)

Runoff Potential = Very high

Soil Hydrologic Group = D

Disturbed Runoff Coefficient (Cv) = 0.64

Conservative value used as recommended in XCN Standard

Clean Water Area (CA) (ha) = 96

Clean Water Catch Runoff Coefficient (CCv) = 0.2

Area in the upper catchment that is rehabilitated
that is not dumped out in interim phase (Stage 3)

Settling Zone Volume (m3) = 12,781

SEDIMENT ZONE VOLUME calculated by RUSLE

Surface condition = Loose to 0.3 metres depth

Erosion control practice factor (P) = 0.8

Assumes loose soil to 0.3m depth (unshaped or deep ripped)

Rainfall erosivity factor (R) = 1500

Soil erodibility factor (K) = 0.05

Used Default value as no soil information

Slope length/gradient factor (LS) = 4.46

Best estimate as amount of shaped/unshaped material is unknown
Also based on current landform in the area

Ground cover and management factor (C) = 1

Assumed worst case scenario with no grass cover in the disturbed areas

Sediment Zone Volume (m3) = 3396

6 Month Soil Loss (Disturbed Area Only)

BASIN VOLUME (Total Required Capacity) - Based on RUSLE

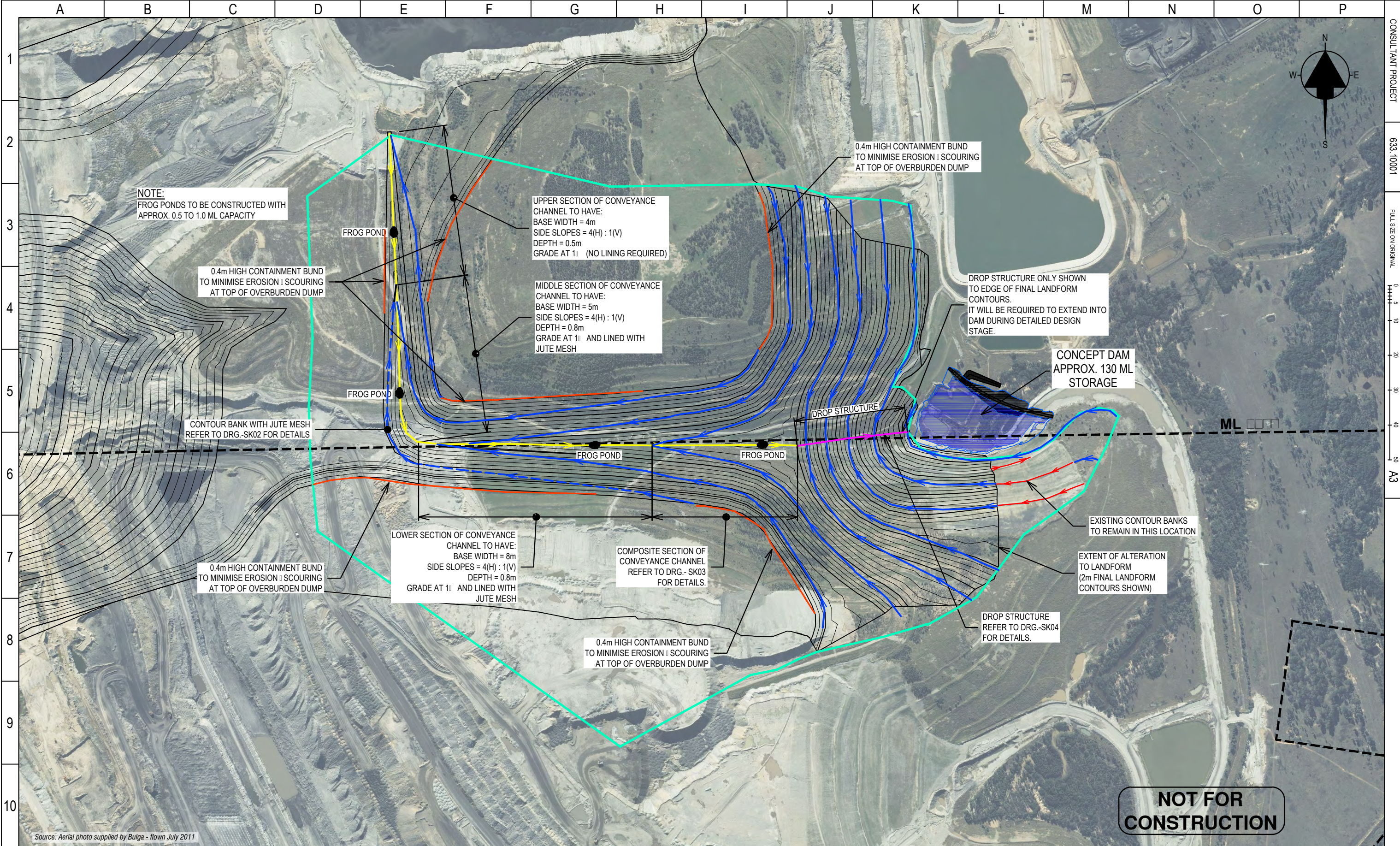
Total Required Capacity (m3) = Settling Zone Volume + Sediment Zone Volume

Total Required Capacity (m3) = 16178

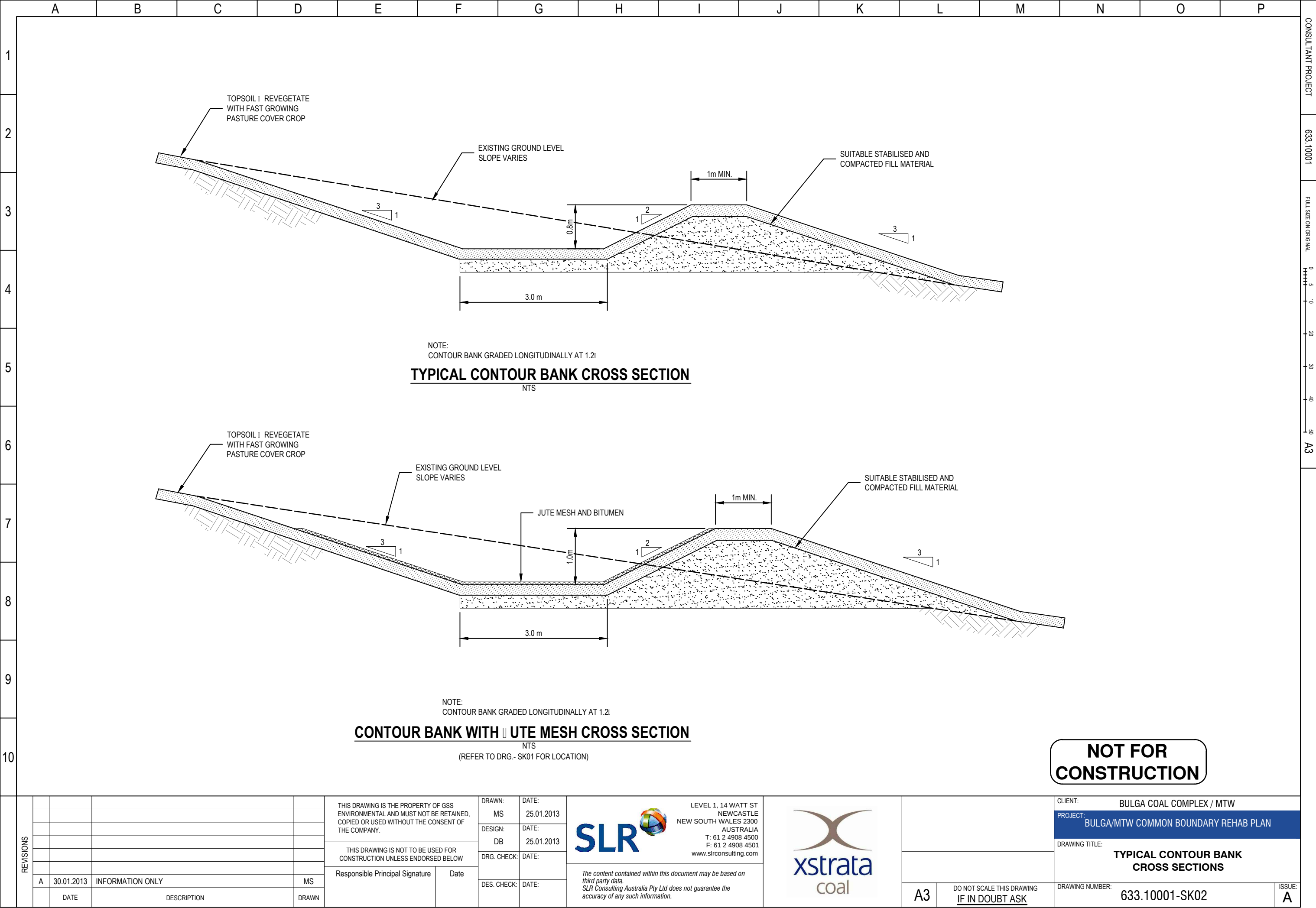
Common Boundary Final Landform Drainage Design

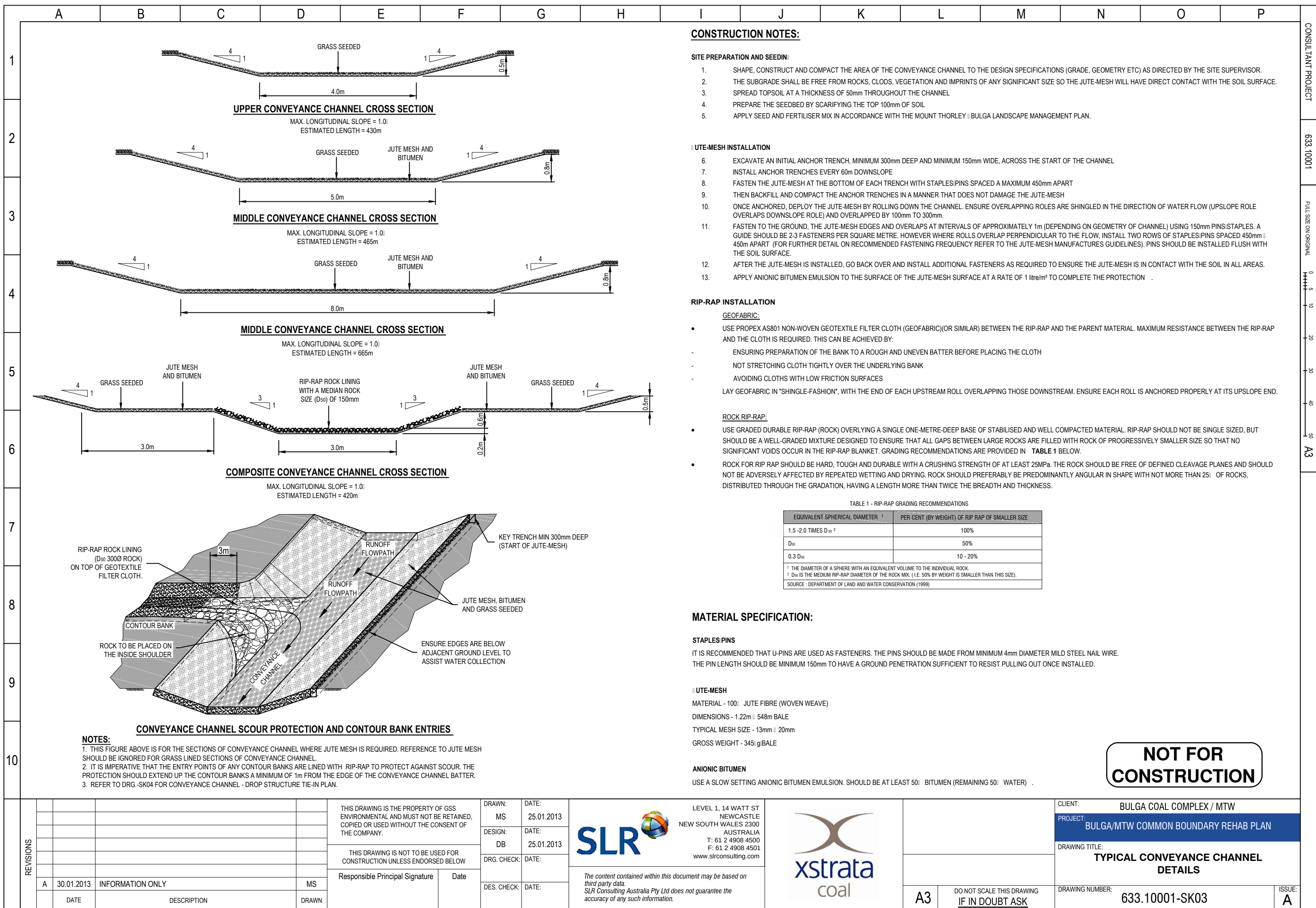


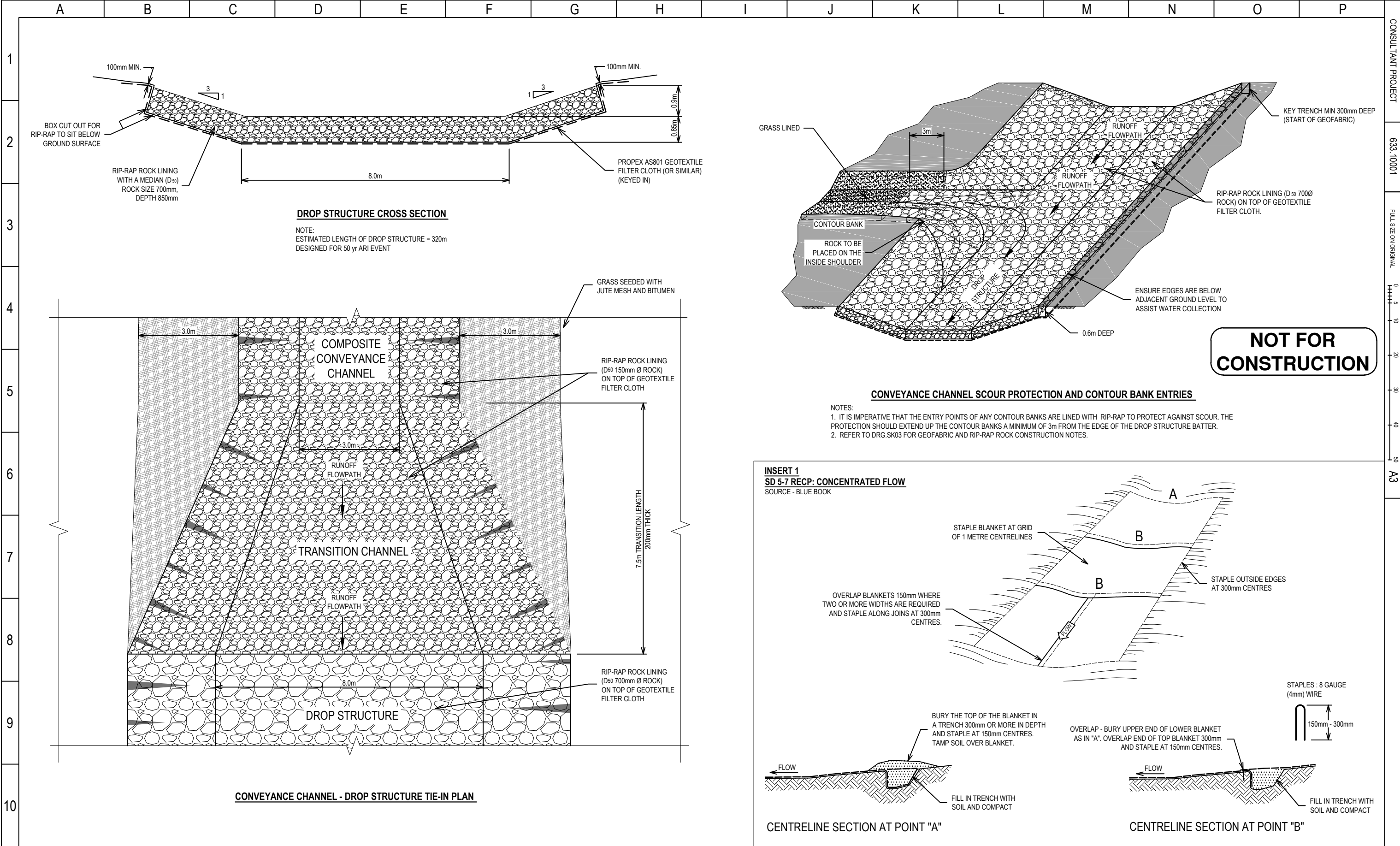
APPENDIX 3



REVISIONS					THIS DRAWING IS THE PROPERTY OF GSS ENVIRONMENTAL AND MUST NOT BE RETAINED, COPIED OR USED WITHOUT THE CONSENT OF THE COMPANY.		DRAWN: MS	DATE: 18.01.2013	 LEVEL 1, 14 WATT ST NEWCASTLE NEW SOUTH WALES 2300 AUSTRALIA T: 61 2 4908 4500 F: 61 2 4908 4501 www.slrconsulting.com			CLIENT: BULGA COAL COMPLEX / MTW					
												PROJECT: BULGA/MTW COMMON BOUNDARY REHAB PLAN					
												DRAWING TITLE: CONCEPT FINAL DRAINAGE LANDFORM PLAN					
	B	30.01.3013	INFORMATION ONLY	MS	THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ENDORSED BELOW		Responsible Principal Signature	Date						A3	DO NOT SCALE THIS DRAWING IF IN DOUBT ASK	DRAWING NUMBER: 633.10001-SK01	ISSUE: B
	A	18.01.2013	INFORMATION ONLY	MS													
		DATE	DESCRIPTION	DRAWN													







REVISIONS				THIS DRAWING IS THE PROPERTY OF GSS ENVIRONMENTAL AND MUST NOT BE RETAINED, COPIED OR USED WITHOUT THE CONSENT OF THE COMPANY.	DRAWN: MS DESIGN: DB DRG. CHECK: DATE: DES. CHECK: DATE:	DATE: 25.01.2013 DATE: 25.01.2013 DATE: DATE:	LEVEL 1, 14 WATT ST NEWCASTLE NEW SOUTH WALES 2300 AUSTRALIA T: 61 2 4908 4500 F: 61 2 4908 4501 www.slrconsulting.com			CLIENT: BULGA COAL COMPLEX / MTW PROJECT: BULGA/MTW COMMON BOUNDARY REHAB PLAN DRAWING TITLE: DROP STRUCTURE DETAILS DRAWING NUMBER: 633.10001-SK04 ISSUE: A
	A	30.01.2013	INFORMATION ONLY							
		DATE	DESCRIPTION	Responsible Principal Signature	Date					
			DRAWN							

Ramp 22 Dam Concept Design



APPENDIX 4

