
K. APPENDIX K – LEGISLATIVE REQUIREMENTS

This page has been left blank intentionally.

Table K.1 below contains a list of subsidence-related development consent conditions relevant to the preparation and implementation of this Extraction Plan. The table also includes a statement or report reference outlining how this commitment will be met.

Table K.1 Development Consent Conditions

Consent Ref	Condition		Compliance / document reference
1.18	The Applicant shall design underground workings to ensure that longwall voids do not result closer than 40 metres from any point vertically beneath the high bank of Bowmans Creek (except those sections of channel made redundant by the diversion).		The mine plan for ULD LW 1-8 maintains this requirement for all panels, assuming diversion of Bowmans Creek is completed.
3.9	The Applicant shall ensure that underground mining does not cause any exceedances of the performance measures in Table 1, to the satisfaction of the Director-General.		Each of the relevant performance measures in Table 1 of the consent are addressed in the Water Management Plan, Biodiversity Management Plan and Heritage Management Plan under this Extraction Plan, which also include more detailed performance indicators
	Table 1: Subsidence Impact Performance Measures		
	Bowmans Creek	No greater subsidence impact or environmental consequences than predicted in the documents referred to in condition 1.2	Revised predictions of impacts have been prepared and are contained within Volume 3 – Technical reports that address aspects of Bowmans Creek, including groundwater impacts (Report 3), geomorphology (Report 6) and aquatic and riparian ecology (Report 5). Subsidence impacts to Bowmans Creek and the diversion are no greater than that predicted in the BCD EA (refer Appendix A), and overall baseflow losses are expected to be less. Impacts and other environmental consequences are also consistent with those documents.
	Bowmans Creek – Eastern and Western Diversions	Hydraulically and geomorphologically stable	Refer to Fluvial Geomorphology Technical Report (Volume 2, Report 6) of which Section 7.0 notes that the revised mine plan and associated subsidence predictions have no implications for fluvial geomorphological processes in Bowmans Creek or the stability of the diversions.
	Bowmans Creek alluvium	No greater subsidence impact or environmental consequences than predicted in the documents referred to in condition 1.2	Refer to Groundwater Impact Assessment (Volume 2, Report 3). Section 5.44 notes that total predicted drawdown and baseflow impacts to the alluvium of Bowmans Creek is less than that predicted in the BCD EA.

Consent Ref	Condition		Compliance / document reference
	Threatened species, threatened populations, or endangered ecological communities	Negligible impact or environmental consequences.	Negligible impact to threatened species, populations and endangered ecological communities are anticipated (refer to Volume 2, Report 4).
	Waterhole Site	Negligible impact or environmental consequence.	No subsidence movements predicted at the waterhole site (refer Appendix A).
	Other Aboriginal heritage sites	No greater subsidence impact or environmental consequences than approved under a permit issued under section 90 of the <i>National Parks and Wildlife Act 1974</i> .	Refer to the Heritage Management Plan (Appendix J).
3.10	The Applicant shall ensure that underground mining does not cause any exceedances of the performance measures in Table 2, to the satisfaction of the Director-General of DII.		Each of the relevant performance measures in Table 1 of the consent are addressed in the Built Features Management Plan and Public Safety Management Plan under this Extraction Plan, which also include more detailed performance indicators.
	Table 2: Subsidence Impact Performance Measures		
	New England Highway, including bridge over Bowmans Creek	Always safe & serviceable. Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired.	Refer to Built Features Management Plan (Appendix D) and associated sub plan: Roads and Maritime Services Asset Management Plan.
	Brunkers Lane	In accordance with recommendations of the report prepared under condition 7.14.	Refer to Built Features Management Plan (Appendix D) and associated sub plans: Macquarie Generation Asset Management Plan and Xstrata – Ravensworth Operations Asset Management Plan.
	Other built features, including other public infrastructure	Always safe. Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repaired or replaced, or else fully compensated.	Refer to Built Features Management Plan (Appendix D) and all associated sub plans.

Consent Ref	Condition	Compliance / document reference
3.12 & 3.13	Preparation of Extraction Plan.	See Section 2.1
3.14	The Applicant may carry out first workings within the underground mining area, other than in accordance with an approved extraction plan, provided that DII is satisfied that the first workings are designed to remain long-term stable and non-subsiding.	First workings in the ULD are ongoing in accordance with approvals from Division of Resources and Energy.

Table K.2 below contains a list of commitments made by ACOL, as contained in Schedule C of the development consent, that are relevant to the preparation and implementation of this Extraction Plan. The table also includes a statement or report reference outlining how this commitment will be met.

Table K.2 Statements of Commitments

Item	Description	Comment / Reference
1.	Mining	
1.1	All mining will be undertaken within the approved mining lease.	The mine plan is wholly contained within the limits of the ML 1529 and 1533
1.2	The final extraction design of each subsequent seam below the Pikes Gully Seam, including whether longwall panels are stacked or offset, will be subject to the results of impact monitoring and subsidence from the preceding seam and would be detailed in an Extraction Plan.	Consideration of the final extraction design has been undertaken in detail based on monitoring.
2.	General	
2.1	Subsidence troughs will be reshaped and fill will be used where practicable to create a free-draining landform. This approach is expected to reduce the potential for surface pooling and inflow into the mine.	Provisions to assess and undertake works to maintain a free draining landform and included in the Land Management Plan (Appendix I).
3.	Subsidence Monitoring and Mitigation	
3.1	Mine plans will be reviewed in response to actual subsidence and geotechnical behaviour associated with mining in the deeper seams based on monitoring experience, expert interpretation, and other advice.	Peer-reviewed predictions of subsidence based on the best-available information at the ACP and elsewhere (Appendix A). Ongoing assessment of the ULD Seam and deeper seams is being undertaken e.g. using numerical caving models (Technical Report No. 1) and other methods and provisions to collect data to validate and calibrate these models is included in the Subsidence Monitoring Program (Appendix C).
3.2	The Southern limits of LW 5, LW 6 and LW 7 will be offset at least 200m from the Hunter River alluvium.	Mine plan maintains this offset.
3.3	Subsidence will be monitored and managed in accordance with approved Extraction Plans (or equivalent), the development of which will be informed by: <ul style="list-style-type: none"> • Subsidence monitoring over LW 1-4 in the lower seams, as each seam is 	This Extraction Plan. Approvals under this Extraction Plan are being staged (i.e. LW 1-4 and 5-8)

Item	Description	Comment / Reference
	<p>mined, to allow more accurate predictions of subsidence parameters above LW5-8.</p> <ul style="list-style-type: none"> An End of Panel Report for each longwall panel with a focus on subsidence. Consultation with the owner(s)/operator(s) of the Ravensworth Underground Mine on a seam by seam basis. 	<p>as described in Section 1. Refer to Section 7.5 Refer to Built Features Management Plan – RUM Asset Management Plan.</p>
3.4	<p>Subsidence and groundwater experts will be used to assess the western longwall (LW8) to ensure concurrent operation of the RUM and ACOL underground mines can be undertaken safely.</p>	<p>SCT and Aquaterra have considered this in their assessment and will continue to include this as part of their scope of work. (Appendix A, Technical Report No. 3)</p>
3.5	<p>With the exception of Brunkers Lane as a public road:</p> <ul style="list-style-type: none"> Existing surface infrastructure will be maintained to be safe, serviceable and repairable manner unless the owner agrees otherwise in writing. Damage to existing third party-owned infrastructure due to the ACOL induced subsidence will be mitigated or remediated. 	<p>Refer to Built Features Management Plan.</p>
4.	<p>Groundwater</p>	
4.1	<p>The current ACP groundwater monitoring network will be maintained and expanded to enable monitoring of water extracted from the mine workings as the lower seams are developed and mined.</p>	<p>Groundwater monitoring network has been maintained and expanded since prior to the commencement of mining. Additional recommendations by Aquaterra have been incorporated into the Water Management Plan (Appendix G).</p>
4.2	<p>Additional (nested) groundwater monitoring bores will be installed in the alluvium and Pikes Gully overburden at the following locations:</p> <ul style="list-style-type: none"> Southwest of LW6A. On the eastern side of LW6B near the downstream end of the Eastern Diversion. On the eastern side of LW6B near the upstream end of the Eastern Diversion. <p>These monitoring points will be monitored monthly as part of the routine monitoring and weekly at the time that mining occurs in the Pikes Gully Seam immediately below in order to monitor groundwater drainage from the alluvium.</p>	<p>Refer to Water Management Plan (Appendix G).</p>

Item	Description	Comment / Reference
4.3	The volume of water extracted from the mine workings will be monitored for the life of mine.	Refer to Water Management Plan (Appendix G).
4.4	The volume and quality of individual sources of groundwater inflows will be monitored where separation of sources is possible.	Refer to Water Management Plan (Appendix G).
4.5	The existing ACP Groundwater Trigger Action Response Plan (TARP) will be reviewed and extended to include monitoring of the lower seam inflows as they are mined.	A TARP is included in the Water Management Plan, and a site-wide TARP is also being reviewed as part of a revised site-wide Surface and Groundwater Response Plan.
5.	Surface Water	
5.1	Water level monitoring will be undertaken in two pools immediately above LW 6B as part of the routine monthly monitoring program and used to guide construction of block banks to their final level. While mining is occurring in LW 6B, water levels will be monitored weekly.	Refer to Water Management Plan (Appendix G).
5.2	The existing ACP surface water quality monitoring program will be reviewed and updated where required.	Program has been reviewed and updated – refer to Water Management Plan (Appendix G).
5.3	Setting back all secondary workings by at least 40m (in a horizontal direction) to the high bank of Bowmans Creek in its diverted function form.	Mine plan maintains this distance from Bowmans Creek in its diverted form (once constructed).
6.	Water Licensing	
6.1	Hold appropriate and adequate water entitlements to account for water from all sources impacted by underground operations on an annual basis.	Refer to Water Management Plan (Appendix G)
6.2	Returning flows to Bowmans Creek whenever the rules of the Water Sharing Plan for Jerrys Management Zone prohibit the taking of water, including provisions for returning flows post-mine closure. Returned flows will be of an equal or better quality than the receiving waters.	Refer to Water Management Plan (Appendix G)
6.3	Retaining or retiring an equivalent licensed entitlement to account for the long-term annual water based impacts, post-mine closure.	Refer to Water Management Plan (Appendix G)

Item	Description	Comment / Reference
6.4	The provision of an ongoing financial contribution to cover the cost associated with returning flows to Bowmans Creek, post-mine closure, when baseflow impacts to Bowmans Creek are not permitted under the rules of the relevant water sharing plan (from 2015 onwards).	Refer to Water Management Plan (Appendix G)

Table K.3 below contains a list of requirements under the SMP Guidelines (Department of Mineral Resources, 2003), that are relevant to the preparation and implementation of this Extraction Plan. The table also includes a statement or report reference outlining how this commitment will be met.

Table K.3 SMP Requirements Checklist

	SMP Guideline Requirement	Document & Section Reference / Comment
6.0	Written Report	
6.1	Introduction	
	The main areas to be addressed in the written report include: The proposed mining system(s) and resource recovery;	Appendix B - Coal Resource Recovery Plan (CRRP), Section 3
	Community consultation;	Public exhibition of the EA for development consent modification (MOD6) was undertaken in accordance with the statutory requirements. The CCC were consulted on Tuesday 6/12/2011 (per minutes) The EP was advertised in the Singleton Argus and the Sydney Morning Herald on Friday 22/6/12. Affected stakeholders have been provided with draft plans for comments, and details can be provided upon request.
	Statutory requirements that apply to the Application Area; and	Extraction Plan, Section 2 and Appendix K
	Expected subsidence and its potential impacts on public safety, the environment, community, land use, surface improvements and infrastructure.	Revised predictions of impacts by SCT (Appendix A), also see Volume 2 - Technical Reports (all)
6.2	Application Area	
	(definition)	Volume 3 – SMP Plans The ‘Extraction Plan area’ is described in Section 1.2 as the footprint of secondary extraction in LW1-8 in the ULD Seam. However, current approval for second workings is only being sought for LW1-4.
6.3	Mining System and Resource Recovery	
	The following information should be included in this section: (1) Proposed mining method(s) and mine layout(s) and the main reasons for selecting the particular method(s) and layout(s);	Volume 3 – SMP Plans and Section 3.3 and 3.6 of Appendix B - CRRP

SMP Guideline Requirement	Document & Section Reference / Comment
(2) Name of the seam to be mined, seam thickness and proposed extraction thickness;	Seams are presented in Appendix B - CRRP (Section 1.1) and this Extraction Plan (Section 1.2). Seam thickness and extraction thicknesses are presented in Section 3.3 of Appendix B
(3) A schedule of proposed mining within the Application Area for the period to be covered by the SMP;	Extraction Plan, Section 3.2 and Appendix B – CRRP, Section 3.4
(4) The impact on resource recovery of the remainder of the mining lease(s) and colliery holding area;	Appendix B – CRRP, Section 3.5
(5) Justification if proposing to mine only a selected part of a thick seam;	Appendix B – CRRP, Section 3.3
(6) Estimated recovery of the total resource contained within the proposed layout, as a percentage and in tonnes;	Appendix B – CRRP, Section 3.6
(7) The possible effects of the mining proposal on seams above and/or below the seam to be mined;	Appendix B – CRRP, Section 3.6
(8) Any further plans for mining other seams within the Application Area, and	Appendix B – CRRP, Section 3.5
(9) Any other information which the applicant considers to be relevant.	N/A
6.4	Site Conditions of the Application Area
The following information about the Application Area and its immediate surrounds should be provided:	Appendix B – CRRP Volume 3 - Plan 1 and 2
(1) Surface topography	Appendix B – CRRP Section 3.2
(2) Cover depths	Appendix B – CRRP Section 3.2
(3) Overburden stratigraphy;	Appendix B – CRRP Section 2.2, 2.3 and Plan 6
(4) Location of the proposed mine workings in relation to any existing and/or planned future mine workings that may interact with the proposed workings;	Appendix B – CRRP Section 3.5, Volume 3 - Plan 1 and 2, Approved Plan.
(5) The lithological and geotechnical characteristics of the overburden;	Appendix B – CRRP Section 2.3
(6) The lithological and geotechnical characteristics of the roof and floor strata;	Appendix B – CRRP Section 2.4

	SMP Guideline Requirement	Document & Section Reference / Comment
	(7) Existence and characteristics of geological structures, and	Appendix B – CRRP Section 2.3
	(8) Any other relevant information for the site.	N/A
6.5	Stability of Underground Workings	
	Where the proposed mine workings are designed to provide support to the surface the application should contain the following information:	
	(1) The required level(s) of surface protection and/or the maximum allowable subsidence parameters for the site where applicable;	Appendix B – CRRP
	(2) The proposed mine workings including all dimensions;	Appendix B – CRRP Section 3.1, Volume 3 - Plan 1 and 2, Approved Plan.
	(3) Any existing and/or planned future mine workings, which may interact with the proposed mine workings, including all known dimensions;	Appendix B – CRRP Section 3.5
	(4) Location of the proposed mine workings in relation to any existing and/or planned future mine workings that may interact with the proposed mine workings;	Appendix B – CRRP Section 3.5
	(5) The thickness of seam to be mined and proposed pillar heights;	Appendix B – CRRP Section 3.3
	(6) The cover depths;	Appendix B – CRRP Section 3.2
	(7) Detailed lithological and geotechnical conditions of the strata within a distance, as noted below, of the seam to be mined and the existing and/or planned workings which may interact with the proposed mine workings. This distance should generally be the average width of pillars in a particular area of concern or subject to appraisal by geotechnical specialists in exceptional circumstances. Specific attention should be paid to the existence and characteristics of claystone units or other mechanically weak layers or strata within the above-specified distance.	Appendix B – CRRP Section 2.3
	(8) Detailed descriptions of geological structures at the level of the seam to be mined and the seams associated with the existing and/or planned future mine workings;	Appendix B – CRRP Section 2.5

	SMP Guideline Requirement	Document & Section Reference / Comment
	(9) Lithological and geotechnical conditions of the overburden, in particular, the locations and thickness of massive strata units, and	Appendix B – CRRP Section 2.2, 2.3, and 2.4, Volume 3 - Plan 6
	(10) Any other relevant site information.	N/A
6.6	Stability of Underground Workings	
6.6.1	Identification of Surface and Sub-Surface Features	
	In addition, this section should include:	
	(1) A statement as to whether the area is partly or wholly within a declared Mine Subsidence District;	Patrick Plains Mine Subsidence District (also refer to Appendix B – CRRP)
	(2) Identification, so far as is practicable, of all man-made structures which were built before the declaration of the Mine Subsidence District, and	Appendix D – Built Features Management Plan (BFMP) Section 3.4 identifies all built features within the extraction area.
	(3) Identification of any known, relevant proposed developments (e.g. sub-divisions or improvements), which are proposed for development within the next 7 years or during the time when the Application Area is to be affected by the proposed mining. The Mine Subsidence Board, relevant local or state government agencies and public utility authorities are possible sources for this information.	Appendix D –BFMP Section 3.4 features all built features within the extraction area. Figure 4 indicates proposed assets within the extraction area.
6.6.2	Characterisation of Surface and Sub-Surface Features	
	The following information should be provided in the written report:	
	(1) A general description of the surface environment of the Application Area, for example, residential, agricultural, industrial, commercial and natural environments or their combinations as well as any identified areas of potential conservation, heritage, archaeological or environmental significance;	Various Sections, refer to Appendix C – Subsidence Monitoring Program for full summary list and each individual management plan for further detail.
	(2) Maximum plan dimension, type of construction, height and/or number of stories, estimated ages, pre-mining conditions and any other relevant structural information for each of the surface improvements or man-made structures in the Application Area;	Appendix D –BFMP individual Asset Management Plans contained in BFMP Appendices.

	SMP Guideline Requirement	Document & Section Reference / Comment
	(3) Results of a minimum of one-year pre-mining base-line monitoring of relevant environmental values in areas of environmental sensitivity that may be affected by the proposed mining. Base-line data may include water quality, groundwater levels, surface water flows or quantity, water dependent ecosystems or any other relevant site-specific information that may vary with time, climate conditions or any other factors. Summary analysis of the base line data should also be presented;	Volume 2: Report 3 - Groundwater, Appendices B & F Report 4 - Terrestrial ecology, Section 5 ; and Report 5 - Aquatic ecology, Section 2
	(4) The location, distribution/density, dimension/geometry in plan-view and other relevant information where appropriate of each of the identified surface features should be marked on Plan 2 (Section 9.2); and	Volume 3 Plan 2
	(5) Characterisation of each of the identified surface and sub-surface features that may be affected by the proposed mining.	Various sections, refer to Appendix C – Subsidence Monitoring Program for full summary list and each individual management plan for further detail.
6.6.3	Areas of Environmental Sensitivity	Areas within the Extraction Plan area defined as ‘areas of environmental sensitivity’ (as per the SMP Guideline) include: - Voluntary Conservation Area – refer to the Biodiversity Management Plan (Appendix H) - Major surface infrastructure - refer to the Built Features Management Plan (Appendix D)

	SMP Guideline Requirement	Document & Section Reference / Comment
6.7	Subsidence Prediction	
6.7.1	Prediction Method and Reliability	
	<p>The following information should be provided in the written report:</p> <ol style="list-style-type: none"> (1) Method(s) employed to estimate subsidence resulting from the proposed underground coal mining; (2) A discussion of all factors that may affect the development of subsidence over the Application Area; (3) Relevance of all input data, including results of previous relevant subsidence monitoring, which has been utilised or considered to develop the predictions; (4) Identification of all assumptions used, especially those which may significantly affect the outcome of the subsidence predictions, and discussion of their relevance, and (5) Reliability of the subsidence predictions and the level of uncertainties involved, in particular, any potential deviations from the predictions due to factors such as topographic, geological or geotechnical conditions or variations 	<p>Refer to revised prediction of subsidence impacts by SCT (Appendix A). Additional information is also contained in the Volume 2, Reports 1 and 2: 3D extrapolation of multi-seam subsidence based on numerical caving model independent peer review by MSEC respectively.</p>
6.7.2	Results of Subsidence Predictions	
	<p>The applicant should clearly demonstrate that:</p> <ol style="list-style-type: none"> (1) The subsidence parameters included in the subsidence predictions are relevant. In most cases, vertical subsidence, strains, tilts and curvatures should be included. However, depending on the nature of the identified surface/sub-surface features in the Application Area, other subsidence parameters such as horizontal movements, valley closure, upsidence or far field subsidence, etc, may also need to be included, and (2) The results of the predictions, irrespective of any differences in presentation formats, will lead to the identification and adequate assessment of maximum subsidence impacts to be experienced by each of the surface and sub-surface features, or different sections or domains of such features in the Application Area. 	<p>Refer to Appendix A: SCT analysis are based on conservative empirical estimates due to the current uncertainty in the estimation of subsidence from multi-seam extraction at ACP</p>

	SMP Guideline Requirement	Document & Section Reference / Comment
6.8	Community Consultation	
6.8.1	Community Consultation Undertaken during Preparation of SMP Application	
	The applicant should identify stakeholders who have an interest in or concern about subsidence issues related to the proposed mining project,	
	The proponent should provide in the written report: (1) A summary of consultation processes undertaken;	Extensive consultation recently conducted as part of the planning approval process for the BCD EA. This information is public information available on the DP&I major projects website. Identification of stakeholders provided in each management plan. Consultation undertaken as part of the preparation of this Extraction Plan includes: <ul style="list-style-type: none"> • Provision of draft management plans to relevant government agencies, affected landowners and stakeholders for discussion and comment, including ongoing meetings and negotiation of access/compensation agreements. • Presentation to the Community Consultative Committee regarding the management of subsidence and preparation of this document on 6 December 2011. • Information on the Extraction Plan presented in the December issue of the Ashton Coal community newsletter. • Copies of all consultation correspondence and presentations can be provided upon request.
	(2) Copies of advertisements that have appeared in a local and a state newspaper of the proponent's intention to submit an application for approval to extract coal under the Application Area. Copies of written notice sent by the proponent to any of the parties	The EP was advertised in the Singleton Argus and the Sydney Morning Herald on Friday 22/6/12. Advertising for the BCD EA planning approval process was conducted in accordance with statutory requirements.
6.8.2	Results of Community Consultation Undertaken during Preparation of SMP Application	
	The results should include, but not be limited to: (1) A summary of the views, perceptions, expectations, needs and concerns expressed by the community as relevant to the application;	Refer to Submissions Report prepared as part of the BCD EA planning approval process - available on the DP&I major projects website.
	(2) Any identified subsidence issues causing significant community concerns;	Details of stakeholder feedback will be forwarded to DRE and DP&I when received.

	SMP Guideline Requirement	Document & Section Reference / Comment
	(3) Recommendations or suggestions made by the community with regard to subsidence management;	
	(4) Management tasks or priorities identified through the consultation processes;	
	(5) Areas or issues where subsidence management is to be undertaken jointly with relevant stakeholders (e.g. in the case of roads, rail and utilities).	
	(6) Any other conclusions relevant to the expected subsidence impacts and the proposed management programs for such impacts, derived through the consultation process.	
6.9	Statutory Requirements	
	<p>The following information should be provided in the written report of the SMP application:</p> <p>1) A reference list quoting relevant sections/parts/clauses of all existing approvals, consents, licences, permits and policies that apply to the Application Area, in relation to any potential subsidence impacts likely to arise from the proposed mining operation;</p>	Each management plan contains a summary of applicable statutory requirements and approvals relevant to the scope of that plan; and Appendix K.
	2) Identification of any additional approvals, consents, licenses or permits regarding the expected subsidence impacts due to the proposed mining, which will be required conjointly with the SMP approval;	Approval as an Extraction Plan under the development consent. Refer to Appendix G Water Management Plan.
	3) A statement as to whether the proposed mining is under lake foreshores or land prone to flooding or inundation and if so whether the predicted subsidence effects are in conformity with any current guidelines and reasons for any variations from the guidelines;	Appendix C Subsidence Monitoring Program, Section 2.2.
	4) A statement as to whether the proposed mining is under any dams (including stored waters and reservoirs) and/or structures referred to by the <i>Dams Safety Act 1978</i> and if so whether the approval of the Dams Safety Committee has been sought;	Proposed mining is within the Notification Area of two Prescribed Dams: Ravensworth Inpit Storage and Void 5 Ash Dam. Refer to Appendix D – BFMP and sub plans: Xstrata – Ravensworth Operations Asset Management Plan and Macquarie Generation Asset Management Plan.

	SMP Guideline Requirement	Document & Section Reference / Comment
	5) A statement as to whether the proposed mining is under any heritage items and if so whether an approval by the Heritage Office and/or other relevant authorities is required by the authorities;	The proposed mining is not under any heritage items.
	6) A statement as to whether the proposed mining is under an area of potential archaeological significance and if so whether an archaeological survey of that area has been undertaken. In addition, the applicant should make a statement as to whether an approval under Section 90 of the <i>National Parks and Wildlife Act 1974</i> is required by or has been obtained from NPWS for identified archaeological sites that may be affected by subsidence arising from the proposed mining, and	The proposed workings lies beneath a number of sites of potential archaeological significance. Refer to Appendix J – Heritage Management Plan, Section 4
	7) Any other relevant information.	N/A
6.10	Subsidence Impacts	
	In this section, the applicant should provide information that: 1) Characterises the nature, extent and magnitude of the expected subsidence impacts due to the proposed mining, and 2) Identifies priority risks, highlighting the expected subsidence impacts with high risk levels and /or potentially severe consequences.	Refer to report by SCT - Appendix A, Section 4
6.10.1	Assessment of Subsidence Impacts	
	The assessment of impacts of the proposed mining upon the Application Area as a whole and on each of the identified surface or sub-surface features should be made based on: 1) Site information provided in Sections 6.3, 6.4 and 6.5; 2) Characterisation of surface and sub-surface features provided in Section 6.6; 3) Subsidence predictions provided in Section 6.7, and 4) Results of community consultation provided in Section 6.8.	Appendix A Section 4 – subsidence predictions Appendix D Section 3 – built features Appendix G – water Appendix H - biodiversity Appendix I Section 4 – land Appendix J Section 4 – heritage Volume 2 – Technical Reports
6.10.2	Risk Assessment	Volume 2 Report 8

	SMP Guideline Requirement	Document & Section Reference / Comment
6.10.3	Impact Assessment based on Increased Subsidence Predictions	All predictions of environmental consequences has been based on the maximum likely potential subsidence for multi-seam mining – namely 85% of combined seam thickness. Adoption of this empirical basis is considered a conservative approach for the ACP. Refer to: Appendix A Section 4 – subsidence predictions; Appendix D Section 3 – built features; Appendix I Section 4 - land; Appendix J Section 4 – heritage; Volume 2 Report 3 Section 5 - groundwater; Volume 2 Report 4 Section 4 – terrestrial ecology; Volume 2 Report 5 Section 4 – aquatic ecology; Volume 2 Report 6 Section 4 – geomorphology; Volume 2 Report 7 – steep slopes.
6.10.4	Summary	Section 5.2
7	PROPOSED SUBSIDENCE MANAGEMENT PLAN	
7.2	Preparation of Subsidence Management Plan	
	<p>The applicant should provide in this section sufficient details to demonstrate that the proposed SMP will be capable of managing potential subsidence impacts to produce outcomes that are consistent with government policies, taking into account community expectations.</p> <p>The details to be provided should include, but not be limited to:</p> <p>1) The objectives of the SMP as defined by the applicant;</p>	<p>General objectives provided in Section 1.3 with more detailed objectives, and performance measures provided in each individual management plan, specifically: built features – Appendix D, public safety, Appendix E, water – Appendix G, biodiversity – Appendix H, land Appendix I, Heritage – Appendix J</p>
	<p>2) A summary of the leaseholder's subsidence management process, structure and organisation, with clearly defined responsibilities including, where appropriate, those of infrastructure owners, participating stakeholders and other third parties, and adequate training programs, resources and communication systems, etc;</p>	Section 6, Section 7
	<p>3) The relevance and adequacy of the proposed mine layout, mining methods and sequences demonstrating that the identified management priorities (Section 6.10) have been adequately considered at the mine planning / design stage;</p>	Appendix B – Coal Resource Recovery Plan

SMP Guideline Requirement	Document & Section Reference / Comment
4) The relevance and adequacy of any proposed mitigation and remediation measures and/or any other management measures or procedures consistent with the identified management priorities as per Section 6.10 ;	Each technical report in Volume 2 includes consideration of subsidence monitoring / management to date and recommendations for future subsidence management based on the revised predictions.
5) The proposed program for the implementation of the above mitigation and remediation measures and/or any other management measures or procedures;	Each management plan (see item (1) above) includes timeframe/frequency of monitoring and mitigation measures.
6) Estimated likelihood of success of the proposed mitigation and remediation measures and/or any other management measures or procedures;	All proposed measures are considered likely to succeed in mitigating subsidence impacts, however contingency procedures are also incorporated into the Extraction Plan (Section 6.3) as well as a protocol for adaptive management (Section 7.1).
7) The relevance and adequacy of the proposed community consultation programs, including the Subsidence Community Consultation Process (SCCP) (Section 7.4) where required;	A detailed SCCP has not been required to date at the ACP and is not proposed for the next phase of mining.
8) The relevance and adequacy of the proposed monitoring, reporting and reviewing programs consistent with the identified management priorities as per Section 6.10. Where relevant, the principal elements of a monitoring program may include: <ul style="list-style-type: none"> a. Monitoring of subsidence impacts on surface and sub-surface features; b. Monitoring of the effectiveness of any mitigation and/or remedial measures, and c. Monitoring of subsidence development; 	All proposed measures are considered likely to succeed in mitigating subsidence impacts, however contingency procedures are also incorporated into the Extraction Plan (Section 6.3) as well as a protocol for adaptive management (Section 7.1). Also, refer to the Subsidence Monitoring Program (Appendix C).
9) Capacity of the proposed management system to detect early warning of any deviations from any defined outcomes on an on-going basis and to correct any such deviations in a timely fashion;	Trigger-Action-Response Plans have been developed for relevant built and environmental features (for example, refer to Appendix G – Water Management Plan). Each management plan also sets measurable performance measures and indicators, which, matched with the proposed monitoring programs enables identification of deviations and the initiation of contingency plans (Section 6.3) and adaptive management (Section 7.1).

	SMP Guideline Requirement	Document & Section Reference / Comment
	10) The relevance and adequacy of any proposed contingency plans / emergency procedures in the event that any proposed management strategies / programs fail to control the subsidence impacts;	See above.
	11) Any proposed options, such as compensation, land acquisition, temporary relocation and other forms of agreement with the landowners in regard to likely compensable loss, if subsidence impacts cannot be reduced satisfactorily;	Refer to Appendix D – BFMP and sub plans regarding compensation agreements, provision of alternative services etc.
	12) Any proposed measures for quality assurance of the management system;	Section 7.6
	13) A calculation of any additional security deposit required to reflect potential subsidence-related impacts, and	N/A
	14) Any other relevant information.	N/A
7.3	Preparation of Public Safety Management Plan	
	A Public Safety Management Plan is required as part of the proposed SMP if the predicted subsidence has a potential to cause safety hazards to the public. This Plan should address management measures such as monitoring of areas posing safety risks, erection of warning signs, entry restrictions, backfilling of surface cracks and securing of potentially unstable structures/buildings or rock masses, where required, and the provision of timely notification of mining progress to the community where management of public safety is required.	Provided as Appendix E
7.4	Preparation of Subsidence Community Consultation Process	
	An SCCP will usually be required by the Director-General in environmentally sensitive areas or in areas where impacts of subsidence are of significant concern to the community. The proposed SCCP should be developed by the proponent to be relevant to the Application Area, timing and the community. The proponent may utilise the existing consultation mechanisms where these exist and should refer to these processes.	No SCCP proposed. Consultation provisions provided in EP and sub-plans as appropriate and will continue to be implemented through the site EMS.

	SMP Guideline Requirement	Document & Section Reference / Comment
7.5	Preparation of Specific Management Plans	
	Specifically developed management plans are required as part of the proposed SMP for certain potential subsidence impacts with high risk levels and /or potentially severe consequences. This is to ensure that such impacts will be systematically and effectively managed to achieve the SMP objectives as defined in the Subsidence Management Plan.	See Appendices C to J
9.0 & 10.0	Plans and SMP Approved Plan	
	Plans 1 to 6	A3 reduced copies also included in Appendix B - CRRP and full sized copies with submission to DRE as Volume 3 .
	SMP Approved Plan	A3 reduced copies also included in Appendix B - CRRP and full sized copies with submission to DRE as Volume 3 .

Table K.4 below contains a list of conditions under the Mining Lease that are relevant to the preparation and implementation of this Extraction Plan and management of subsidence impacts. The table also includes a statement or report reference outlining how this commitment will be met.

Table K.4 Mining Lease Requirements

Cdn	Mining Lease Requirement	Comment / Reference
Mining Lease 1529		
18	The lease holder shall not interfere in any way with fences on or adjacent to the subject area unless the prior written approval of the owner thereof or the Minister and subject to such conditions as the Minister may stipulate.	Provisions for the management of fences are included in Appendix D (Built Features Management Plan) Section 3.4 and Sub Plans E, F, K and L or that Appendix.
19	The lease holder shall observe any instruction given or which may be given by the Minister with a view to minimising or preventing public inconvenience or damage to public or private property.	A survey program is documented in the Subsidence Monitoring Program (Appendix C).
20	Where required to do so by the Minister and within such time as may be stipulated by the Minister the lease holder shall carry out to the satisfaction of the Minister surveys of structures, buildings and pipelines on adjacent landholdings to determine the effect of operations on any such structures, buildings and pipelines.	A survey program is documented in the Subsidence Monitoring Program (Appendix C).
21	If so directed by the Minister the lease holder shall rehabilitate to the satisfaction of the of the Minister any ands within the subject area which may have been disturbed by the lease holder	A strategy for rehabilitation is presented in the Rehabilitation Management Plan (Appendix F).
30	The lease holder shall conduct operations in such a manner as not to cause or aggravate soil erosion and the lease holder shall observe and perform any instructions given or which may be given by the Minister with a view to minimising or preventing soil erosion.	Management of impacts to land surface including repairing erosion are documented in the Land Management Plan (Appendix I).
31	The lease holder shall pay to Singleton Council, Department of Land and Water Conservation or the Chief Executive, Roads and Traffic Authority the cost incurred by such Council or Department or Chief Executive of making good any damage caused by operations carried on by or under the authority of the lease holder to any road adjoining or traversing the surface or the excepted surface, as the case may be of the subject area. PROVIDED HOWEVER that the amount to be paid by the lease holder as aforesaid shall be reduced by such sum of money if any as may be paid to the said Council, the Department of Land and Water Conservation of the Chief Executive, Roads and Traffic Authority as the case may be from the Mine subsidence Compensation Fund constituted under the <i>Mine Subsidence Compensation Act 1961</i> , in settlement of a claim for compensation for the same damage.	Proposed management and monitoring of roads and accessways in the vicinity of extraction is addressed in Appendix D , Built Features Management Plan.

Cdn	Mining Lease Requirement	Comment / Reference
32	In the event of operations being conducted on the surface of any road, track or firetrail traversing the subject area or in the event of the operations causing damage to or interference with any such road, track or firetrail the lease holder, at his own expense, shall if directed to do so by the Minister provide to the satisfaction of the Minister an alternate road , track or firetrail in a position as required by the Minister and shall allow free and uninterrupted access along such alternate road, track or firetrail and, where required to do so by the Minister, the lease holder shall upon completion of operations rehabilitate the surface of the original road, track or firetrail to a condition satisfactory to the Minister.	Proposed management and monitoring of roads and accessways in the vicinity of extraction is addressed in Appendix D , Built Features Management Plan.
Mining Lease 1529		
18	The lease holder shall not interfere in any way with fences on or adjacent to the subject area unless the prior written approval of the owner thereof or the Minister and subject to such conditions as the Minister may stipulate.	Provisions for the management of fences are included in Appendix D (Built Features Management Plan) Section 3.4 and Sub Plans E, F, K and L or that Appendix.
19	The lease holder shall observe any instruction given or which may be given by the Minister with a view to minimising or preventing public inconvenience or damage to public or private property.	A survey program is documented in the Subsidence Monitoring Program (Appendix C).
20	When required to do so by the Minister and within such time as may be stipulated by the Minister the lease holder shall carry out to the satisfaction of the Minister surveys of structures, buildings and pipelines on adjacent landholdings to determine the effect of operations on any such structures, buildings and pipelines.	A survey program is documented in the Subsidence Monitoring Program (Appendix C).
21	If so directed by the Minister the lease holder shall rehabilitate to the satisfaction of the of the Minister any ands within the subject area which may have been disturbed by the lease holder.	A strategy for rehabilitation is presented in the Rehabilitation Management Plan (Appendix F).
30	The lease holder shall conduct operations in such a manner as not to cause or aggravate soil erosion and the lease holder shall observe and perform any instructions given or which may be given by the Minister with a view to minimising or preventing soil erosion.	Management of impacts to land surface including repairing erosion are documented in the Land Management Plan (Appendix I).

Cdn	Mining Lease Requirement	Comment / Reference
31	<p>The lease holder shall pay to Singleton Council, Department of Land and Water Conservation or the Chief Executive, Roads and Traffic Authority the cost incurred by such Council or Department or Chief Executive of making good any damage caused by operations carried on by or under the authority of the lease holder to any road adjoining or traversing the surface or the excepted surface, as the case may be of the subject area.</p> <p>PROVIDED HOWEVER that the amount to be paid by the lease holder as aforesaid shall be reduced by such sum of money if any as may be paid to the said Council, the Department of Land and Water Conservation of the Chief Executive, Roads and Traffic Authority as the case may be from the Mine subsidence Compensation Fund constituted under the <i>Mine Subsidence Compensation Act 1961</i>, in settlement of a claim for compensation for the same damage.</p>	<p>Proposed management and monitoring of roads and accessways in the vicinity of extraction is addressed in Appendix D, Built Features Management Plan.</p>
32	<p>In the event of operations being conducted on the surface of any road, track or firetrail traversing the subject area or in the event of the operations causing damage to or interference with any such road, track or firetrail the lease holder, at his own expense, shall if directed to do so by the Minister provide to the satisfaction of the Minister an alternate road, track or firetrail in a position as required by the Minister and shall allow free and uninterrupted access along such alternate road, track or firetrail and, when required to do so by the Minister, the lease holder shall upon completion of operations rehabilitate the surface of the original road, track or firetrail to a condition satisfactory to the Minister.</p>	<p>Proposed management and monitoring of roads and accessways in the vicinity of extraction is addressed in Appendix D, Built Features Management Plan.</p>

This page has been left blank intentionally.