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ADELAIDE, MONDAY, 10 OCTOBER 2011

DEVELOPMENT ACT 1993: SECTION 48, AS MODIFIED BY THE ROXBY DOWNS
(INDENTURE RATIFICATION) ACT 1982

DECISION BY THE MINISTER FOR MINERAL RESOURCES DEVELOPMENT AS
THE MINISTER RESPONSIBLE FOR THE ROXBY DOWNS (INDENTURE RATIFICATION) ACT 1982

Preamble

1. On 15 September 2005, the South Australian Minister for Mineral Resources Development declared that certain key elements of the proposed Olympic Dam Expansion would be a 'Major Development' under the Development Act 1993 (first declaration). In accordance with the Indenture Schedule to the Roxby Downs (Indenture Ratification) Act 1982 (Indenture), Clause 28 (Zoning, Rentals and Fees), the first declaration was limited to development on the Special Mining Lease (SML), and land reasonably required for the provision of water, power and petroleum.
2. Following the making of the first declaration and subsequent lodgement of a Development Application by the proponent BHP Billiton Olympic Dam Corporation Pty Ltd (BHPB), the South Australian Minister for Mineral Resources Development, acting pursuant to the Indenture, assumed the role of the Development Assessment Commission (DAC) in setting an Environmental Impact Statement (EIS) level of assessment.
3. Subsequently on 14 December 2006 and 10 April 2008, two further (minor) declarations were made to allow works for the pilot desalination plant to occur and preliminary activities for the EIS (i.e. re-injection trials, collection of samples etc) to occur.
4. On 21 August 2008, a second 'Major Development' declaration (second declaration) under the Development Act 1993, was made by the South Australian Minister for Urban Development and Planning, to capture activities not covered by the first declaration, including development outside the SML and not for the provision of water, power and petroleum.
5. Following the making of the second declaration, BHPB lodged an updated Development Application for activities captured by both declarations. The DAC confirmed that an EIS would be required for the activities in the second declaration in addition to the activities in the first declaration. All development covered by the two major development declarations are components of a single project for the Olympic Dam Expansion.
6. The Major Development (in total) has been the subject of an EIS and has been assessed in accordance with Section 46 and Section 46 (B) of the Development Act 1993, as modified by the Roxby Downs (Indenture Ratification) Act 1982.

7. The Minister for Mineral Resources Development is solely responsible in law for issuing any approval under Section 48 of the Development Act 1993, in respect of the Major Development (in total). This authority arises as a result of BHPB's election under Clause 7 (Approvals) of the Indenture (appearing as a Schedule to the Roxby Downs (Indenture Ratification) Act 1982) that the Minister for Mineral Resources Development, who is the Minister to whom the said Act has been assigned, be responsible for deciding whether to issue an approval under s.48 of the Development Act 1993, which election is required to be effected by virtue of Sections 6 and 7 of the Roxby Downs (Indenture Ratification) Act, 1982.
8. The following decision notice has been set out to provide decisions on the separate components of the proposal covered by Clause 28 of the Indenture (first declaration) and outside (second declaration), with the exception of nineteen (19) whole of project conditions that address native vegetation clearance, impacts to fauna, soils, greenhouse gas emissions, social management and the environmental management program which are required for all project components. This allows progress on parts of the project to proceed (subject to conditions) independently of other parts.
9. The components of the project that are to be undertaken on land referred to in Clause 28 of the Indenture, which includes development within the Special Mining Lease (SML) and land reasonably required for the transport, supply or provision of petroleum (gas), electricity and water (covered by the first major development declaration on 15 September 2005) that are approved by this decision notice include:
 - (a) The mine expansion, including the open pit mine, the expanded tailings storage facility (TSF) and the new rock storage facility (RSF);
 - (b) a new 275kV electricity transmission line from Port Augusta to Olympic Dam;
 - (c) a new 132kV electricity transmission line from Cultana to Port Bonython;
 - (d) new water supply pipelines from the borefields and from the Port Bonython desalination plant to Olympic Dam, including any related bores or pumps;
 - (e) expansion of the minerals processing facility;
 - (f) an on-site power station; and
 - (g) three (3) alternate natural gas transmission pipeline routes from Moomba to Olympic Dam.
10. The components of the project, which are outside land referred to in Clause 28 of the Indenture (covered by the second major development declaration on 21 August 2008), that are approved by this decision notice include:
 - (a) a 280 megalitre per day coastal desalination plant at Port Bonython;
 - (b) a new rail line to connect Olympic Dam to the national rail network near Pimba;
 - (c) a rail/road intermodal facility at Pimba;
 - (d) a new airport and decommissioning the existing airport;
 - (e) a new landing facility near Port Augusta to unload equipment from barges;
 - (f) a pre-assembly yard on the outskirts of Port Augusta;
 - (g) new workers accommodation (Hiltaba Village); and
 - (h) establishing or upgrading an access road or other road, including:
 - i the new access corridor from the landing facility to the pre-assembly yard;
 - ii the new access corridor from Hiltaba Village to Olympic Dam;
 - iii relocation of Borefield Road; and
 - iv the new road overpass (associated with the new rail line)
11. The 'life' of this approval decision notice is for 40 years i.e. until 2051, with the exception of the development of the Landing Facility and associated access corridor near Port Augusta which must be decommissioned within 16 years of the landing facility becoming operational, unless the proponent can demonstrate that the impacts to the local area can be managed in the longer term.
12. I am satisfied that an appropriate Draft EIS, Supplementary EIS (response document) and Assessment Report have been prepared in relation to the Major Development, in accordance with Sections 46 and 46B, Division 2 of Part 4 of the Development Act 1993, and have had regard to it when considering the Major Development and in making a decision under Clause 7 of the Indenture.
13. In future, power to vary or revoke conditions or attach new conditions may be exercised under Clause 7 of the Indenture after consultation with the Minister responsible for the Development Act 1993.

Decision

1. Pursuant to Clause 7 of the Roxby Downs (Indenture Ratification) Act 1982 and having due regard to the matters set out in Section 48(5) of the Development Act 1993 and all other relevant matters, I:
 - (a) Grant development authorisation for the proposed Major Development (as described in Parts 9 and 10 of the Preamble) under Clause 7 of the Indenture subject to conditions set out in Part A below; and
 - (b) Specify all matters relating to this development authorisation as matters in respect of which conditions of this authorisation may be varied, revoked or new conditions attached.

PART A: CONDITIONS OF DEVELOPMENT AUTHORISATION**GENERAL CONDITIONS FOR WHOLE PROJECT****GENERAL**

Conditions 1–19 apply to all project components.

1. The proponent shall carry out the project generally in accordance with:
 - (a) Development applications dated 4 October 2005 and 19 September 2008;
 - (b) Olympic Dam Expansion Draft Environmental Impact Statement 2009 (Main Report Volumes 1 and 2 and Appendices) (DEIS);
 - (c) Olympic Dam Expansion Supplementary Environmental Impact Statement 2011 (Volumes 1 and 2 and Appendices) (SEIS);
 - (d) The Consolidated List of Commitments provided in Table 2.1 of the SEIS (dated 2011); and
 - (e) Correspondence from BHPB to the Olympic Dam Task Force dated 1 September 2011 containing a drawing entitled Port Augusta pre-assembly yard.
2. In the event of any inconsistency between:
 - (a) the conditions of this approval and any documents listed from condition 1 (a) to (e) inclusive, the conditions of this development authorisation shall prevail to the extent of the inconsistency; and
 - (b) any document listed from condition 1 (a) to (e) inclusive, the most recent document shall prevail to the extent of the inconsistency.
3. Before any building is undertaken on the site, the building work is to be certified by a private certifier, or by some person determined by the Minister for Urban Development and Planning and the City of Adelaide, as complying with the provisions of the Building Rules (or the Building Rules as modified according to criteria prescribed by the Regulation). For the purposes of this condition ‘building work’ does not include plant and equipment or temporary buildings that are not permanently attached to the land.

NATIVE VEGETATION CLEARANCE

4. Clearing of vegetation must not exceed the total area indicated in the Final EIS (DEIS and SEIS).
5. The proponent must prepare and implement Native Vegetation Management Plan(s), in consultation with DENR. The final plans must be approved by the Native Vegetation Council, prior to any clearance occurring. The Native Vegetation Management Plans must include (as a minimum):
 - (a) details regarding the proposed Significant Environmental Benefit (SEB) locations and information regarding the vegetation communities within the proposed areas;
 - (b) identification of any species or plant communities that are of conservation significance, including an outline of the overall biodiversity gain from the proposed SEB; and
 - (c) details regarding the proposed ongoing management of the SEB areas.
6. The activities associated with the major development approved herein must not worsen the conservation status of any flora species listed under the National Parks and Wildlife Act 1972.

IMPACTS TO FAUNA

7. The activities associated with the major development approved herein must not worsen the conservation status for any fauna species listed under the National Parks and Wildlife Act 1972.
8. The proponent must update the Fauna Management Plan for the Pernatty Knob-tailed Gecko, Plains Rat, Dusky Hopping Mouse, Thick-billed Grass-wren and Ampurta for approval by the Indenture Minister, within 12 months of this approval.
9. The proponent must update its Fauna Monitoring Program to monitor and manage feral and abundant species and their impacts as a result of the expanded operation, prior to construction commencing on the mine site.

SOILS

10. The proponent must prepare and implement an Acid Sulphate Soils (ASS) Management Plan, should additional investigations identify it as being necessary.

GREENHOUSE GAS EMISSIONS

11. The proponent must prepare and implement an initial Greenhouse Gas and Energy Management Plan (GG&EMP) that addresses all project components. The GG&EMP is to be available within 12 months of the date of this authorisation, for approval by the Indenture Minister, with the objective of achieving:
 - (a) A goal of reducing greenhouse gas emissions (reportable under the National Greenhouse and Energy Reporting (Measurement) Determination 2008) to an amount equivalent to at least a 60% reduction of 1990 emissions, by 2050; and
 - (b) Any interim goals, targets and timelines set throughout the project.
 - (c) The plan must include:

- i A comprehensive approach to energy efficiency, renewable energy and greenhouse gas abatement in the construction design and operation of the expanded mine site to ensure viable, cost-effective opportunities being maximised; and
 - ii Clear statements about the conditions under which opportunities will become viable and be implemented.
- 12. The proponent must implement the approved Greenhouse Gas and Energy Management Plan.
- 13. The proponent must produce and make available to the Indenture Minister, for public release, an 'annual road map' that:
 - (a) Reports on progress to meet targets determined in the approved GG&EM Plan; and
 - (b) Quantifies emission reduction opportunities and achievements.

SOCIAL MANAGEMENT

- 14. The proponent must collaboratively prepare a Social Management Plan (SMP) within 12 months from the date of the approval (in consultation with the State Government and key stakeholders) for approval by the Indenture Minister that includes measures to achieve the following:
 - (a) Maintain a minimum rental housing vacancy rate in Roxby Downs of 5%;
 - (b) Provide for a minimum of 7% affordable rental and home purchase opportunities within all new developments, adjusted in accordance with affordability thresholds provided in the SMP;
 - (c) Monitor rental rates, rental availability and housing stress in Whyalla, Port Augusta, Andamooka and Woomera;
 - (d) Inclusion of community health and social well-being indicators to manage social well being within Roxby Downs and other affected communities;
 - (e) Thresholds for the delivery and monitoring of social infrastructure provision;
 - (f) Set performance indicators/targets in relation to employment and training;
 - (g) Consultation procedures to facilitate cooperation and consultation with SAPOL in respect to:
 - i the percentage reduction in victim recorded crime; and
 - ii the questions to be asked in the 'perceptions of crime' survey of Roxby Downs and Andamooka;
 - (h) A dispute resolution mechanism that supports an active response to community and stakeholder concerns about social impact issues; and
 - (i) A Stakeholder Engagement Strategy which contains a list of key stakeholders and describes their interest in the project, actions and outcomes.

The proponent, in collaboration with the State Government and key stakeholders must implement the approved SMP.

- 15. The SMP must establish the roles and responsibilities of the proponent, government, stakeholders and communities throughout the life of the project.
- 16. A 'Social Management Partnership' must be established to provide a forum for key stakeholders to discuss and respond to the social effects of the Olympic Dam expansion. At a minimum the 'Social Management Partnership' must include representatives from BHPB, the SA Government, the Roxby Downs Community Board and Roxby Downs Council.

ENVIRONMENTAL MANAGEMENT

- 17. The proponent must prepare an Environmental Protection Management Program (EPMP) (in accordance with Clause 11 of the Indenture) for approval by the Indenture Minister and must include the following:
 - (a) the scope of the area and proposed operations covered by the EPMP;
 - (b) environmental outcomes relating to potential environmental impacts;
 - (c) compliance criteria, to demonstrate the clear and unambiguous achievement of the environmental outcomes;
 - (d) leading indicator criteria to provide an early warning that compliance criteria may not be met;
 - (e) target criteria to reflect a level of impact that is as low as reasonably achievable;
 - (f) the specific parameters to be measured and monitored;
 - (g) information about the strategies and other measures the proponent intends to implement to achieve the outcomes or to investigate and respond to any non-compliance with the compliance, leading indicator, or target criteria without limiting the measures that may be implemented to those specified in the plan;
 - (h) information on the proponent's management systems that will be relied upon to ensure compliance with the compliance criteria, leading indicator criteria, and target criteria;
 - (i) protocols for reporting to the Indenture Minister any non-compliance with the compliance criteria as soon the approval holder becomes aware of the non-compliance; and
 - (j) any other specific obligations and management or monitoring plans specified by these conditions or required by other State legislation.
 - (k) All criteria in the EPMP must specify the:
 - i specific parameters to be measured and monitored;

- ii locations at which monitoring will take place, or how these locations will be determined;
 - iii acceptable values for demonstrating achievement of the outcome, with consideration of any inherent errors of measurement;
 - iv frequency of monitoring or how it will be determined; and
 - v baseline or control data to be used or how it will be acquired (if necessary).
18. The proponent must prepare an annual environmental management and monitoring report (in accordance with Clause 11 of the Indenture) to report on compliance with the EPMP.
19. The proponent must implement the approved EPMP.

MINING AND PROCESSING

Conditions 20—58 apply to development within the Special Mining Lease.

GENERAL CONDITIONS

20. For the purposes of Section 48 (11) (b) of the Development Act 1993, the proponent must commence the development by substantial work on the site of the development within five years of the date of this authorisation, failing which the authorisation may be cancelled.
21. The proponent must have substantially commenced construction of the open pit within five years of the date of this authorisation.
22. The proponent must not produce more than 750 000 tonnes per annum of refined copper (either as refined copper or as equivalent copper rich concentrates).

VIBRATION

23. The proponent must achieve the human comfort criteria defined in the Australian Standard AS2187.2 (2006) (or as amended) and monitor and report air blast overpressure and vibration levels in Roxby Downs and Hiltaba Village to demonstrate ongoing compliance with that standard.

SITE CONTAMINATION

24. The hazardous and dangerous substances storage areas and/or activities within the SML must be designed to ensure that substances are stored in banded and sealed compounds/areas capable of preventing the escape of material into the soil, surface waters or underground water resources.
25. All stormwater retention ponds which are designed to constitute a component of a tertiary containment system for chemical spills must be designed and constructed to prevent the escape of material into the soil, surface waters or underground water resources.

GROUNDWATER

26. The proponent must review and update on a three yearly basis the regional groundwater model presented in the EIS used to predict regional groundwater drawdowns. Review of the groundwater model is to be undertaken by an independent expert in accordance with the Murray-Darling Basin Commission Modelling Guidelines (as the nationally recognised groundwater modelling guidelines), as amended from time to time. In reviewing and updating the regional groundwater model a report must be prepared that includes at least the following specific items:
- (a) Updated understanding of the hydrogeology of the Torrens Hinge Zone;
 - (b) Updated aquifer parameters for the Torrens Hinge Zone to be used in modelling upgrades;
 - (c) Updated understanding of the recharge mechanisms to the Stuart Shelf, including recharge from rainfall and inflow from the Arkaringa Basin; and
 - (d) Updated understanding of impacts to the regional groundwater system resulting from the open pit void.
27. Outside of the Designated Area prescribed pursuant to the Indenture, the proponent must offset drawdown impacts to existing third party users identified in the EIS resulting from the proposed expansion during the operational phase of the mine.
28. The proponent must prepare a Regional Groundwater Management and Monitoring Program for the GAB and Yarra Wurta Springs to manage potential impacts from the Olympic Dam Expansion, for approval by the Indenture Minister, within 12 months of the date of this authorisation. The Regional Groundwater Management and Monitoring Program must include the following:
- (a) Ecological monitoring, measured spring flow rates (taking into account local variations in barometric pressure, tidal influences and evaporation rates), open pit dewatering volumes resulting from both the dewatering activities and pit inflows, groundwater levels, salinities and water chemistry; and comparison between baseline measurements and ongoing monitoring.
29. The proponent must implement the approved Regional Groundwater Management and Monitoring Program.
30. Monitoring data must be used to update the Regional Groundwater Management and Monitoring Program, the regional model (as required above) and to develop trigger points for action.
31. If an update of the regional groundwater model and/or monitoring indicates that a trigger point is reached, the proponent must develop mitigation strategies and, if necessary, contingency options (for example relocation of Lake Eyre Hardyheads to alternate habitat).

SURFACE WATER AND DRAINAGE

32. The proponent must prepare and implement a Site Groundwater and Surface Water Monitoring Program designed to achieve the following outcomes as measured against the respective approved criteria, for approval by the Indenture Minister, before commencing construction of the RSF or TSF:

OUTCOME	CRITERIA
No adverse impact on vegetation as a result of seepage from the tailings storage facility and rock storage facility.	Compliance criteria: Groundwater level outside the perimeter of the tailings storage facility must not be higher than 80 m AHD or as otherwise agreed by the Indenture Minister.
No compromise of current and future land uses on the Special Mining Lease or adjoining areas as a result of seepage from the tailings storage facility and rock storage facility.	Compliance criteria: A numerical groundwater simulation model confirmed by Monitoring that continues to demonstrate that all movement of TSF and RSF seepage is captured by the final open pit. A numerical geochemical model confirmed by monitoring that continues to demonstrate that all TSF and RSF seepage is attenuated within the Special Mining Lease.
No adverse impact on local drainage patterns and water quality that would compromise existing use and water dependent ecosystems.	Compliance criteria: Any surface water outside of containment structures designed to manage runoff must comply with the Environment Protection (Water Quality) Policy 2003 or as amended.

33. A report by a suitably qualified independent consultant which certifies that the final designs for the TSF and RSF are likely to achieve each outcome prescribed in Condition 32 (contained within a Site Groundwater and Surface Water Monitoring Program), when measured against the respective approved criteria must be provided to the Indenture Minister, prior to commencement of construction of the TSF and prior to the placement of rock within the RSF.

RADIATION

34. The proponent must achieve the following outcomes as measured against the respective approved criteria:

OUTCOME	CRITERIA
Radiation doses to the public arising from the expanded Olympic Dam operations and radioactive waste management are below internationally agreed levels and are as low as reasonably achievable.	Compliance criteria: Radiation doses to the public must be within the dose limits recommended in the Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing (ARPANSA 2005 or, as amended). Leading Indicator: A reference level must be set for public doses at Roxby Downs and Hiltaba Village. The reference level must be 0.3mSv/yr unless otherwise agreed by the relevant Minister.
Radiation doses to non-human biota arising from the expanded Olympic Dam operations and radioactive waste management area are as low as reasonably achievable.	Leading Indicator: The proponent must set a reference level for impacts on non-human biota (interim criteria for non-human biota may be set until such time as an agreed national approach is determined).
Radiation doses to the public and non-human biota arising from the transport of radioactive material are below internationally agreed levels and are as low as reasonably achievable.	Compliance criteria: Transport of radioactive material complies with the Code of Practice for the Safe Transport of Radioactive Material (ARPANSA 2008 or, as amended).

IMPACTS OF THE TSF ON FAUNA AND MIGRATORY SPECIES

35. The proponent must prepare and implement a Bird Impact Management and Monitoring Plan (BIMMP) relating to listed migratory species and Banded Stilts, for approval by the Indenture Minister, prior to the commissioning and operation of the new tailings storage facility (TSF), that is designed to minimise, record and report actual and extrapolated/modelled bird mortalities as a result of exposure to the TSF. The BIMMP must:
- outline a process to identify, monitor and respond to potential impacts on birds. To this end the plan should include indicators and/or criteria that will be applied to measure success in achieving environmental protection objectives, and as far as possible mitigating any adverse impacts;
 - consider knowledge gaps in scientific understanding, and associated key uncertainties;
 - include a process for interim treatment, measures or controls to manage uncertainty and risk; and
 - include processes and accountabilities for monitoring, analysing and contributing to adaptive management and continuous improvement processes.
36. The proponent must annually prepare and submit a monitoring report to report against the actions and criteria contained in the BIMMP.

37. The proponent must review the BIMMP in accordance with the EPMP required under Clause 11 of the Olympic Dam Indenture, or as required by the Indenture Minister.
38. Prior to finalising the location of the parking bays on the Stuart Highway between Port Augusta and Pimba, and the Olympic Dam to Pimba Road, the proponent must conduct floristic surveys, following adequate rainfall if possible, to confirm the presence/absence of listed threatened species. In determining the final location of the parking bays, the proponent must avoid listed species, however if clearance is unavoidable, revegetation of these species must be reinstated or relocated to adjacent work areas, or as otherwise agreed by DENR.

TRAFFIC IMPACTS

39. The road shoulders over the entire length of the Stuart Highway between Port Augusta and Pimba, and the Olympic Dam to Pimba Road must be sealed, at the proponent's cost, within twelve months of this development authorisation.
40. Where Over-Dimensional (OD) and Over Mass (OM) loads enter or exit BHPB facilities onto the sealed arterial road network, the proponent must design, construct and maintain sealed junctions in accordance with DTEI standards to minimise deterioration to the edge of the sealed carriageway and prevent debris being carried onto it, including (but not limited to):
 - (a) to/from the Pimba Intermodal;
 - (b) all entry/exit points to rest areas (parking bays) for use by existing road users; and
 - (c) all access points used by OD/OM vehicles associated with the major development approved herein.
41. The proponent must construct sufficient parking bays on the Stuart Highway between Port Augusta and Pimba, and the Olympic Dam to Pimba Road, to ensure a maximum delay of 30 minutes for the travelling public, to the satisfaction of DTEI.
42. The proponent must prepare and implement a Traffic Management Plan for approval of the Indenture Minister, with the concurrence of DTEI, prior to the movement of escorted OD/OM loads associated with the major development approved herein. The Traffic Management Plan must include the following:
 - (a) Details about traffic volumes, proposed transport routes, required road infrastructure maintenance and/or upgrades, transport scheduling and road safety;
 - (b) Measures to restrict OD/OM movements in extreme hot weather, with a temperature limit being identified to avoid road closures during these events;
 - (c) Measures to restrict OD movements during peak times (as informed by Culway data¹);
 - (d) An education and media information strategy regarding road closures be implemented in the lead up to and during the expansion project;
 - (e) The plan must incorporate a provision that, 12 months prior to commencing any program to move escorted OD loads associated with the project, the proponent will advise and consult with DTEI and SAPOL;
 - (f) Road Safety Management Plans to be prepared in consultation with SAPOL and DTEI; and
 - (g) Consideration of vehicle mix in the parking bays (i.e. vehicles carrying dangerous goods should be corralled separately from general vehicles due to increased risks and compliance with the Dangerous Goods Code).
43. The re-alignment of the Borefield Road must be established in accordance with DEIS Figure 5.5.
44. Construction of the re-aligned Borefield Road must be complete before the existing Borefield Road is closed due to 'pre-strip' construction activities.
45. The proponent must comply with the relevant DTEI standards for the realignment of Borefield Road, with all costs being the responsibility of the proponent.

RAIL SPUR

46. The rail spur from Pimba to Olympic Dam must be operational prior to the first movement of copper concentrate, derived from the open pit.
47. Rail wagons used for transporting sulphur and copper concentrate to and from Olympic Dam must achieve no release containment.

AIR QUALITY

48. The proponent must prepare and implement an Air Quality Management and Monitoring Program (AQMMP), for approval by the Indenture Minister, with the concurrence of the EPA that incorporates the following:
 - (a) A Dust Management Plan prior to the commencement of open pit mining;
 - (b) A Process Emissions Management Plan (including point and diffuse source emissions) prior to the commencement of processing; and
 - (c) An Air Quality Monitoring Program linked to the above management plans.
49. The proponent must ensure the following criteria are contained in its AQMMP:
 - (a) Ground level PM₁₀ and PM_{2.5} dust concentrations at Roxby Downs and Hiltaba Village derived from construction and operational sources at Olympic Dam must not exceed the following criteria:

¹ Culway Data is used to optimise traffic movement information gathered by other systems such as Counters and Classifiers.

PARTICULATE SIZE FRACTION	AVERAGING PERIOD	GROUND LEVEL AMBIENT AIR QUALITY CRITERIA
PM ₁₀	24 hour	50 µg/m ³
PM _{2.5}	24 hour	25 µg/m ³
	Annual	8 µg/m ³

- (b) Ground-level SO₂ concentrations at Roxby Downs and Hiltaba Village derived from operational sources at Olympic Dam must not exceed the following criteria:

POLLUTANT	AVERAGING PERIOD	GROUND LEVEL AIR QUALITY CRITERIA
Sulphur dioxide (SO ₂)	1 hour	450 µg/m ³
Sulphur dioxide (SO ₂)	24 hour	228 µg/m ³
Sulphur dioxide (SO ₂)	Annual	57 µg/m ³

- (c) Ground-level air pollutant concentrations at Roxby Downs and Hiltaba Village derived from operational sources at Olympic Dam must not exceed the following criteria for design of the expansion:

POLLUTANT	AVERAGING PERIOD	GROUND-LEVEL AIR QUALITY CRITERIA
Nitrogen dioxide (NO ₂)	1 hour	158 µg/m ³
carbon monoxide (CO)	1 hour	29 mg/m ³
Lead (Pb)	Annual	0.5 µg/m ³
Fluoride (as HF)	24 hour	2.9 µg/m ³

50. The proponent must ensure the following requirements are addressed in its AQMMP:

- The installation of four meteorological and air quality monitoring stations to be located in Roxby Downs, Hiltaba Village, and north and west of the Olympic Dam mine site and processing operations;
- Each meteorological station to be sited and designed in accordance with relevant Australian standards and be capable of continuously monitoring wind speed and direction, temperature, and humidity, and at least one station to also monitor solar radiation, atmospheric pressure, rainfall and evaporation;
- Each air quality monitoring station to be sited and designed in accordance with relevant Australian standards for the continuous measurement of PM₁₀ and PM_{2.5};
- The meteorological and air quality monitoring stations to have real-time data download to a central location (preferably at Olympic Dam) so that necessary pre-emptive or responsive action can be taken to deal with likely or actual exceedences of ground-level air quality criteria arising from operational sources;
- The meteorological and air quality monitoring system to be capable of differentiating the contribution that background TSP, PM₁₀ and PM_{2.5}, and operationally generated TSP, PM₁₀ and PM_{2.5} make to total TSP, PM₁₀ and PM_{2.5} concentrations over short periods (daily and hourly);
- Real-time radon (or radon decay product) monitors to be located at each meteorological and air quality monitoring stations to better model radon transport from the mine and mineral processing areas to Roxby Downs and Hiltaba Village;
- Continuous monitoring of SO₂ concentrations must be provided for the main smelter stacks and the tail gas stack exit of each individual acid plant;
- Continuous monitoring of SO₂ concentrations at the air quality monitoring stations in Roxby Downs and Hiltaba Village prior to the operation of the expanded metallurgical plant; and
- Detailed information on the proposed pollution management measures to reduce SO₂ emissions during acid plant start-up, shutdown and abnormal conditions, and abnormal smelter conditions.

51. The proponent must undertake a research study to determine the threshold levels for effects of SO₂ on flora of the region. The scope of the research study must be agreed with the Indenture Minister within twelve months of the date of this authorisation.

52. The Indenture Minister may require the findings of the research study required by condition 51 to be reflected in the updated AQMMP.

SOLID WASTE

53. Detailed designs, drawings and specifications for the proposed onsite solid waste landfill facility at Olympic Dam must be provided to the EPA prior to such a facility being constructed.

WASTEWATER FROM STAFF FACILITIES

54. Detailed designs, drawings and specifications for the on-site sewage treatment system at Olympic Dam must be provided to the EPA prior to the on-site sewage treatment plant being constructed. The following details must be provided:
- (a) type of wastewater inflows (including an outline of on-site sources) to be accepted into the treatment plant;
 - (b) maximum design capacity of the treatment plant in ML/day and population equivalents;
 - (c) type of wastewater treatment plant to be used;
 - (d) standard of treatment to be achieved;
 - (e) where and how treated wastewater reuse will occur; and
 - (f) schematic plans showing location and design of the proposed treatment plant and reuse areas including pipework layout.

REHABILITATION AND CLOSURE

55. The proponent must develop and submit to the Indenture Minister for approval a Mine Closure and Rehabilitation Plan within two years from the date of this authorisation, or prior to construction of the TSF, whichever date is the earliest. The plan must:
- (a) Include a set of environmental outcomes that are anticipated to be able to be achieved indefinitely post mine closure. An outcome is a statement of the acceptable impact on the environment caused by the proposed mining activity; and
 - (b) Include assessment criteria that are clear and unambiguous and are specific to the achievement of the agreed environmental outcomes and should include:
 - i specific parameters to be measured and monitored;
 - ii specification of the locations where the parameters will be measured, or how these locations will be determined;
 - iii clear statement of the acceptable values for demonstrating achievement of the outcome, with consideration of any inherent errors of measurement;
 - iv the frequency of monitoring; and
 - v identification of what background or control data is to be used or specifying how these will be acquired if necessary.
 - (c) Include an updated risk assessment of the project developed in consultation with relevant stakeholders, to determine the long-term risk to the public and the environment from the mining and processing operations, tailings storage facility and rock storage facility, including radioactive emissions. The updated risk assessment must inform the potential environmental outcomes that can be achieved indefinitely post mine closure, must consider the potential for and impacts resulting from early, unplanned closure or suspension of operations and demonstrate that all practical options for progressive rehabilitation have been addressed.

56. The proponent must implement the approved Mine Closure and Rehabilitation Plan.

57. The proponent must review the Mine Closure and Rehabilitation Plan as required by the Indenture Minister.

SUSTAINABILITY

58. The proponent must construct an on-site cogeneration power station (250MW capacity) for recovering waste heat.

DESALINATION PLANT

Conditions 59-88 apply to the desalination plant only.

TIMING

59. Construction of the desalination plant must be substantially commenced within 12 years from the date of this authorisation.
60. If the construction of the desalination plant is not substantially commenced within 12 years from the date of this authorisation, the Governor or the Indenture Minister may advise the proponent that construction of the desalination plant shall permanently halt or not commence, as the case may be, and in that case the proponent shall not continue or commence, as the case may be, construction of the plant.

ADDITIONAL ECOTOXICITY TESTING

61. To demonstrate that the final design of the return water diffuser and alignment are optimised at the time of construction, the proponent must undertake further ecotoxicity testing on at least five species from at least four taxonomic groups (one of which must be the Australian Giant Cuttlefish *Sepia apama*) using simulated effluent representative of the effluent that will be discharged from the operational desalination plant (i.e. including all water treatment chemicals and anti-scalants that will be discharged from the final plant). As part of the work to be undertaken, the proponent must undertake the following:
- (a) Prior to commencing further ecotoxicity testing, a panel of ecotoxicity experts (approved by the SA EPA, but at the cost of the proponent) must provide recommendations on the appropriateness of the species selected, the necessary experimental design to be used, and acceptable criteria for quality assurance/control for those species tests that do not have existing standards or, where an existing standard test is being used, they must confirm that the accompanying quality assurance/control criteria are adequate;

- (b) A copy of the expert panel recommendations must be provided to the SA EPA and the laboratory or laboratories that will conduct the ecotoxicity testing prior to testing commencing;
- (c) The required ecotoxicity tests must be conducted by a commercial or research laboratory that has experience in conducting ecotoxicity tests on, or laboratory-based experiments with, Giant Cuttlefish or similar species;
- (d) Immediately on completion of the additional ecotoxicity test, the panel must review the data and the quality of procedures adopted to ensure the experimental design and data acceptability criteria have been met. The ecotoxicity data must be analysed, a dilution factor calculated to theoretically protect 99% of all species and a report written by a scientist employed (or contracted) by the proponent; and
- (e) The scientific report and the raw data generated by the ecotoxicity testing must be provided to the SA EPA for independent review.

DESIGN AND OPERATION OF THE OUTFALL INFRASTRUCTURE

- 62. The proponent must design and construct the outfall infrastructure in general accordance with SEIS Figure 17.13 within the zone shown on SEIS Figure 1.7.
- 63. The proponent must design and/or operate the outfall infrastructure to achieve the following criteria:
 - (a) A design dilution factor of 1:70 must be achieved beyond 100 m from the diffuser as demonstrated by near-field modelling;
 - (b) An operational dilution factor of 1:85 must be achieved at all cuttlefish breeding areas during all tidal conditions (including dodge tides) and all operating conditions, including under low discharge flow rates;
 - (c) The discharge plume must not interact with the water surface at any time and dilution of the plume must be maximised when it reaches the seabed;
 - (d) The use of bypass flows or other measures to ensure the achievement of the approved dilution factors, particularly under low discharge flow rates; and
 - (e) Shall be capable of being extended and modified to achieve the approved dilution factors.
- 64. To demonstrate that the final design of the return water diffuser is optimised the proponent must undertake further near-field and mid-field modelling to describe dispersion and mixing of return water under a range of flow scenarios with each of the proposed production stages (e.g. 70ML/d, 135ML/d, 200ML/d and 280ML/d). If the 1st percentile exceeds the dilution factors described in condition 63 (a) and (b), mitigation measures must be included in the final design that improve dilution to meet the approved dilution factors. The outputs from this work and associated mitigation measures must be approved by the Indenture Minister with the concurrence of the EPA prior to the outfall infrastructure being constructed.
- 65. The proponent must design and/or operate the desalination plant to achieve the following outcomes:
 - (a) No change to the long term salinity in the Upper Spencer Gulf (USG) attributable to the desalination plant beyond that predicted in the Final EIS (DEIS and SEIS).
 - (b) No significant decline in the condition and extent of known native species or their associated ecological communities attributable to the desalination plant beyond 100 m of the diffuser;
 - (c) No measurable adverse impacts on the abundance and distribution of the Australian Giant Cuttlefish as a result of construction and operation of the desalination plant; and
 - (e) No introduction of marine invasive organisms attributable to the construction, operation or maintenance of the desalination plant.
- 66. The proponent must install a live telemetry observing system, or equivalent, to allow appropriate management responses to any unexpected salinity events.

DESIGN OF THE INTAKE INFRASTRUCTURE

- 67. The proponent must design and construct the intake structure in general accordance with DEIS Appendix F2 Drawing Nos ODP3672-D0-0022 and ODP3672-D4-0004 within the location shown in DEIS Figure 5.30. To demonstrate that the final design and alignment are optimised at the time of construction, the proponent must undertake:
 - (a) Further site-specific quantitative monitoring of marine organisms (particularly planktonic larvae) and habitats in the proposed water intake area with the aim of optimising the intake location to minimise impingement and entrainment of marine organisms; and
 - (b) An updated analysis of best available technology to achieve the lowest practically possible flow rates between the bars and into the intake pipeline to minimise entrainment and entrapment.

The outputs from this work must be approved by the Indenture Minister with the concurrence of the EPA prior to the intake structure being constructed.

FURTHER TESTING AND MODELLING PRIOR TO OPERATION

- 68. The proponent must monitor dissolved oxygen at the seabed in natural bathymetric depressions close to the proposed return water discharge diffuser to adequately establish a minimum 12 month baseline condition for dissolved oxygen in these locations prior to any construction work commencing on the desalination plant.
- 69. The proponent must monitor light levels, turbidity, and suspended solids concentrations in waters near the proposed intake pipeline at the nearest down current shallow subtidal reef habitat for a minimum three (3) month period (outside of the Giant Cuttlefish breeding season), prior to construction commencing on the desalination plant.

70. The proponent must annually survey the intertidal and subtidal reef condition in the area of the proposed intake pipeline for at least three years prior to construction.
71. The proponent must continue to undertake an annual survey of the Giant Cuttlefish during the breeding season to record numbers and distribution between Black Point and Backy Point.
72. For at least three years prior to operation of the desalination plant commencing, the proponent must undertake an annual quantitative and qualitative survey of marine ecology within the sponge garden community near the proposed return water outfall.
73. The proponent must establish a salinity and current monitoring system at Point Lowly and in the Upper Spencer Gulf to collect a minimum of 12 months continuous data in order to further refine the near-field and mid-field hydrodynamic models.
74. All ecological monitoring must be designed in accordance with the principles of a Beyond BACI sampling methodology.
75. The results of all water quality and ecological monitoring programs must be reported to the EPA prior to any construction work commencing.

DESIGN OF SITE INFRASTRUCTURE

76. The desalination plant site infrastructure must be designed to provide:
 - (a) Enclosure of the following plant/equipment to comply with the Environment (Noise) Protection Policy 1997:
 - i The seawater pumps associated with the intake pipeline; and
 - ii The reverse osmosis component of the desalination plant and associated station;
 - (b) Maintenance of pre-development stormwater flows around the desalination plant site;
 - (c) Any off-site stormwater discharges to comply with the Environment Protection (Water Quality) Policy 2003 or as amended;
 - (d) All loading/unloading of bulk chemicals to be carried out within an impervious bunded area designed to contain any spills;
 - (e) Sludge and evaporative lagoons must be designed and constructed to prevent the escape of material into the soil, surface waters or underground water resources; and
 - (f) Any chemicals used at the desalination plant must be stored within a bunded area which has a capacity of at least 120% of the volume of the greatest container to be stored within the bund and which is designed and constructed to prevent the escape of material into surface or underground water resources.

CONSTRUCTION IMPACTS

77. The proponent must prepare a Construction Environmental Management and Monitoring Plan (CEMMP) which must be developed in consultation with the EPA and approved by the Indenture Minister with the concurrence of the EPA before the commencement of construction activities. The CEMMP must be implemented by the proponent and include measures that at a minimum address the following:
 - (a) Groundwater management and monitoring, including storage, treatment and disposal of groundwater if dewatering is required during construction.
 - (b) An update on intake pipeline construction methods, including an analysis of construction techniques using best available technology and management methods to avoid adverse ecological impacts, including potential impacts on nearby aquaculture operations and Giant Cuttlefish breeding grounds.
 - (d) Management of noise and vibration, including:
 - i Identification of all construction activities with the potential to have an adverse noise or vibration impact on nearby sensitive receivers;
 - ii Identification and details of noise mitigation measures, preventative maintenance programs and operational protocols proposed to secure compliance with the requirements for construction noise as outlined in Part 6 of the Environment Protection (Noise) Policy 2007 (Noise EPP);
 - iii Identification and details of how vibration impacts arising from construction of the proposed facility and associated pipeline infrastructure will be managed to meet the requirements of the following standards:
 - Integrity of buildings: DIN 4150
 - Human Exposure: AS 2670.2-1990;
 - iv Management of underwater noise to ensure that there are no adverse impacts on cetaceans and other marine fauna. Management must use the best available information and include a marine mammal exclusion zone of no less than 600 m from significant underwater noise sources; and
 - v A communication plan identifying how all nearby sea cage aquaculture operators, local dive shops and affected residents will be notified prior to and during construction and how concerns raised will be addressed and managed.

- (d) Management of soil erosion and drainage, including:
- i Minimising areas disturbed;
 - ii Rainfall landing upstream of disturbed areas to be diverted around the site;
 - iii Installation and maintenance of erosion control measures; and
 - iv Progressive rehabilitation and stabilisation of disturbed areas.
- (e) Dust and odour management, including:
- i Minimising the area and extent of earthworks required and ensuring disturbed areas are protected and revegetated in a timely manner;
 - ii Specific measures to manage dust and limit emissions, including covered construction vehicles to prevent any loss of load; and
 - iii Management of any odours from any organic and other sources.
- (f) Minimisation and management of wastes, including management of spoil generated from the outfall shaft/tunnel and intake pipeline trench construction, including:
- i Suitable location and design of spoil stockpiling areas to avoid pollution of surface water and/or groundwater;
 - ii Use of a suitably qualified and experienced environmental consultant to sample and classify spoil as it is generated to enable appropriate stockpiling, reuse and/or disposal;
 - iii Suitable sampling and analysis program (including laboratory analysis) to assess the extent and nature of any contaminants within the stockpiled spoil;
 - iv Details of stockpile management and characterisation of spoil should be specified in accordance with the SA EPA Standard for the production of Waste Derived Fill and the EPA Guideline for Stockpile Management: Waste and Waste Derived Products for Recycling;
 - v Descriptions of on-site waste storage facilities;
 - vi Waste loading and off-loading areas;
 - vii Routes taken by waste disposal vehicles;
 - viii Locations for off-site waste disposal; and
 - ix Steps taken to minimise waste generation and maximise reuse and recycling.
- (g) Identification of exclusion zones for construction in order to protect areas of high conservation value and/or high erosion potential.
- (h) Trenching or blasting in the marine environment must not occur during the 1 May to 31 October period as this is the Giant Cuttlefish breeding period. Should any areas of Australian Giant Cuttlefish breeding habitat be disturbed during construction activities, they must be reinstated within 6 months following construction activities, environmental conditions permitting.

SHIPWRECKS

78. The proponent must conduct a pre-disturbance survey of the seabed for the presence of historic shipwreck remains in the area of the desalination plant to be impacted by construction activities. Results of the survey must be provided to DENR.
79. If shipwreck remains are located by the survey or from monitoring of the construction activities, DENR must be contacted to ascertain if the in situ remains are historic and for directions on how to prevent impacts on the remains.
80. Should historic shipwreck remains be located as a result of a pre-disturbance survey or monitoring of the construction works, monitoring for accelerated in situ deterioration of the remains due to changes in the marine environment will be required. Any accelerated deterioration is to be reported to DENR.

RENEWABLE ENERGY

81. Electricity requirements to power operation of the desalination plant and all four associated pumping stations must be drawn from renewable energy sources via the national electricity market.

TRAFFIC AND ACCESS

82. Access and egress to the site (including internal movements within the site) during construction must be undertaken in accordance with a Traffic Management Plan (as part of the CEMMP) approved by the Indenture Minister, with the concurrence of DTEI, prior to the commencement of construction works. The Traffic Management Plan must identify:
- (a) The preferred access route to and from the site for vehicle movements associated with the project;
 - (b) Outline measures to manage and mitigate traffic impacts to the local community and industry during construction; and
 - (c) The internal access route and on-site parking arrangements for bus parking and vehicles sufficient to service the workforce.
83. The proponent must comply with the relevant DTEI and Whyalla City Council standards (as appropriate) for the access arrangements to and from the desalination plant, and any upgrades required on the Port Bonython Road as a result of additional traffic associated with desalination plant, with all costs being the responsibility of the proponent.
84. Signage must be installed at the Point Lowly Boat Ramp showing the exclusion zone for the desalination plant operations.

VISUAL AMENITY

85. The Desalination Plant must be established in general accordance with DEIS Figure 5.27 and DEIS Appendix F2 Drawing ODP3672-DO-0002 (Desalination Plant—Site Infrastructure).
86. The proponent must prepare and implement a detailed Landscaping Plan that includes a 3 m vegetated buffer along the front of the development (along the boundary facing the Port Bonython Road), using locally indigenous species. The plan must indicate the mature height and density of species used to screen the desalination plant along the perimeter. The Landscaping Plan must be lodged with Indenture Minister for approval prior to the operation of the plant.
87. All lighting required for the desalination plant site must only illuminate the minimum areas required, through the use of low profile, directional lighting.

OTHER

88. The Whyalla City Council must be given 1 months notice, before the commencement of works, and shall be provided with the name and contact details of a person who shall be responsible for co-ordinating site works.

LANDING FACILITY

Conditions 89-107 apply to the landing facility only.

HAZARDS AND CONTAMINANTS

89. The landing facility must be designed to ensure that hazardous and dangerous substances are stored in banded and sealed compounds/areas capable of preventing the escape of material into the soil, surface waters or underground water resources.

SAFETY (INCLUDING NAVIGATION)

90. Movement of the proponent's marine traffic must be undertaken in accordance with a Maritime Safety Plan prepared in consultation with DTEI. The Maritime Safety Plan at a minimum must include a traffic management system covering the movement of the proponent's marine traffic.
91. The proponent must review and upgrade the deep water markers from the deep water mooring site to the landing facility to comply with OHS&W standards.

AIR QUALITY/ SOIL EROSION/MARINE ECOLOGY/SURFACE WATER

92. All works and site activities must be undertaken in accordance with a Construction Environmental Management and Monitoring Plan (CEMMP) to be approved by the Indenture Minister, with the concurrence of the EPA prior to the commencement of construction activities for the landing facility. The CEMMP must, as a minimum, address the following:
- (a) Measures to address air quality, including management of dust issues at the quarantine lay down and hard stand areas, and access corridor;
 - (b) Management of soil erosion and drainage, including:
 - i Minimising areas disturbed;
 - ii Rainfall landing upstream of the disturbed areas to be diverted around the site;
 - iii Installation and maintenance of erosion control measures; and
 - iv Progressive rehabilitation and stabilisation of disturbed areas.
 - (c) Preparation and implementation of an Acid Sulphate Soils (ASS) Management Plan, should additional investigations identify it as being necessary.
 - (d) Preparation and implementation of an Underwater Noise Management Plan to minimise adverse impacts on marine fauna, that as a minimum identifies and addresses:
 - i Known and potential noise and vibration impacts; and
 - ii Known and potential marine impact issues including:
 - turbidity management; and
 - underwater noise.
 - (e) Measures to manage the impact of marine pests.
 - (f) Preparation and implementation of a Traffic Management Plan.
93. The landing facility must include stormwater management measures that will ensure:
- (a) The quality of surface water drainage complies with the general obligations and associated water quality criteria contained in the SA Environment Protection (Water Quality) Policy 2003 or as amended;
 - (b) Surface water drainage off the site does not exceed pre development flow rates; and
 - (c) Rain falling upstream of the landing facility is diverted around the site.
94. Operations at and in the vicinity of the landing facility must be undertaken in accordance with an Operational Environmental Management and Monitoring Plan (OEMMP) to be approved by the Indenture Minister, with the concurrence of the EPA prior to commencing operation of the landing facility and lay-down yard. The OEMMP must, as a minimum, address the following:
- (a) Measures to address air quality, including management of dust issues at the quarantine lay down and hard stand areas, and access corridor;

- (b) Measures to address known and potential noise and vibration impacts, particularly under worst case operating and meteorological conditions;
- (c) Preparation and implementation of a Marine Pest Management Plan to address the management of introduced marine pests at the landing facility (and in neighbouring marine waters); and
- (d) Preparation and implementation of a Ballast Water Management Plan.

NOISE AND VIBRATION

95. Operations at the landing facility must not exceed the following noise criteria at any noise sensitive receivers:

- $L_{Aeq, 15 \text{ minutes}} = 47 \text{ dB(A)}$ (day, 7 a.m. to 10 p.m.)#
- $L_{Aeq, 15 \text{ minutes}} = 40 \text{ dB(A)}$ (night, 10 p.m. to 7 a.m.)#
- $L_{Amax, 15 \text{ minutes}} = 60 \text{ dB(a)}$ (night, 10 p.m.-7 a.m.)

(b) # When measured and adjusted in accordance with the Environment Protection (Noise) Policy 2007.

96. All noise-generating operations at the landing facility must not be undertaken between the hours of 7pm to 7am.

VISUAL AMENITY

97. Final designs for the Landing Facility must be constructed in accordance with DEIS Figures 5.52 and 5.53.

98. The proponent must prepare and implement a detailed Landscaping Plan that includes a 3 m vegetated buffer along the southern and northern boundaries, using locally indigenous species. The plan must indicate the mature height and density of species used to screen the facility along the perimeter. The Landscaping Plan must be lodged with Indenture Minister for approval prior to the operation of the landing facility.

99. All lighting required for the landing facility site must only illuminate the minimum areas required, through the use of low profile, directional lighting.

SOCIAL IMPACTS

100. The proponent must cease operation of the landing facility at the end of the expansion construction period, or within 16 years of opening the landing facility, whichever occurs first. This condition is subject to variation on the proponent demonstrating to the government's satisfaction that the impacts to the local area can be managed in the longer term. Should this not be demonstrated, the infrastructure on land and the pier infrastructure located above low water mark must be removed and the site rehabilitated to the satisfaction of the Indenture Minister within one year of closure.

101. The Landing Facility must be operated as an import only facility for the sole importation of materials and products associated with the Olympic Dam project.

TRAFFIC AND ACCESS

102. Construction of the landing facility must be:

- (a) Substantially commenced within ten years of the grant of this approval, otherwise the approval given in this notice for the landing facility component of the Olympic Dam Expansion will lapse; or
- (b) In time for the movement of large pre-assembled modules required for the metallurgical plant required for the major development approval herein; whichever occurs first.

103. The proponent must comply with the relevant DTEI and Port Augusta City Council standards (as appropriate) for the access arrangements to and from the landing facility, with all costs being the responsibility of the proponent.

104. Material imported on vessels/barges must not be transported from the landing facility to the pre-assembly yard until the dedicated access road is operational.

INTRODUCTION AND/OR SPREAD OF WEEDS FROM EXPANSION ACTIVITIES

105. A vehicle and plant wash down/inspection facility must be installed within three months of the site becoming operational to manage the introduction and spread of weeds at the landing facility. The location and type of wash down/inspection facility must be approved by Department of Environment and Natural Resources (DENR) before any construction.

OTHER

106. The Indenture Minister must be given 6 months notice before construction work commences at the landing facility.

107. The Port Augusta City Council must be given 1 months notice, before the commencement of works, and shall be provided with the name and contact details of a person who shall be responsible for co-ordinating site works.

PRE-ASSEMBLY YARD

Conditions 108-115 apply to the pre-assembly yard only.

HAZARDS AND CONTAMINANTS

108. The pre-assembly yard must be designed to ensure that hazardous and dangerous substances are stored in bunded and sealed compounds/areas capable of preventing the escape of material into the soil, surface waters or underground water resources.

NOISE AND VIBRATION

109. The pre-assembly yard in Port Augusta must be designed to ensure that noise generated from ongoing operations at the facility does not exceed 51 dB(A)Leq between 7 a.m. to 10 p.m. (day) and 43 dB(A)Leq during 10 p.m.-7 a.m. (night) at the nearest noise sensitive receiver when measured and adjusted in accordance with the Environment Protection (Noise) Policy 2007.

VISUAL AMENITY

110. Final designs for the Pre-Assembly Yard must be constructed in accordance with DEIS Figure 5.48 and the plan subsequently lodged by the proponent on 1 September 2011, entitled Port Augusta Pre-Assembly Yard.

111. The proponent must prepare and implement a detailed Landscaping Plan that includes a 3 m vegetated buffer along the eastern boundary, using locally indigenous species. The plan must indicate the mature height and density of species used to screen the facility along the perimeter. The Landscaping Plan must be lodged with Indenture Minister for approval prior to the operation of the pre-assembly yard.

INTRODUCTION AND/OR SPREAD OF WEEDS FROM EXPANSION ACTIVITIES

112. A vehicle and plant wash down/inspection facility must be installed within three months of the site becoming operational to manage the introduction and spread of weeds at the pre-assembly yard. The location and type of wash down/inspection facility must be approved by Department of Environment and Natural Resources (DENR) before any construction.

SURFACE WATER

113. The pre-assembly yard must include stormwater management measures that will ensure:

- (a) The quality of surface water drainage complies with the general obligations and associated water quality criteria contained in the SA Environment Protection (Water Quality) Policy 2003 or as amended;
- (b) Surface water drainage off the site does not exceed pre development flow rates; and
- (c) Rain falling upstream of the landing facility is diverted around the site.

TRAFFIC

114. The proponent must comply with the relevant DTEI and Port Augusta City Council standards (as appropriate) for the access arrangements to and from the pre-assembly yard, with all costs being the responsibility of the proponent.

OTHER

115. The Port Augusta City Council must be given one months notice, before the commencement of works, and shall be provided with the name and contact details of a person who shall be responsible for co-ordinating the site works.

AIRPORT

Conditions 116-120 apply to the airport only.

GREENHOUSE GASES AND SUSTAINABILITY

116. The proponent must install photo voltaic panels or an equivalent renewable technology, and associated power systems during construction of the airport.

117. The proponent must install a solar hot water system/s or an equivalent renewable technology at the airport.

VISUAL AMENITY

118. Final design of the Airport must be constructed in accordance with DEIS Appendix F2 Drawings ODP 3152-D0-0001 (Andamooka Road Airport Site Layout) and ODP 3152-D5-0001 (Andamooka Road Airport Terminal Building).

ACCESS AND TRAFFIC

119. The proponent must comply with the relevant DTEI standards for the access arrangements to and from the airport, and any upgrades required on the Andamooka Rd as a result of additional traffic associated with the expansion project, with all costs being the responsibility of the proponent.

NATURAL HAZARD MANAGEMENT

120. The proponent must prepare and implement a Fire Study for the airport (and Hiltaba Village) that at a minimum addresses the following matters:

- (a) The ability of Hiltaba Village management to provide adequate first response to emergency incidents (Fire, Rescue, Hazmat);
- (b) The structure and resources that the proponent (or its contractors) will have (i.e. suitable appliances to deal with the size of the aircraft, as well as details of staff training and numbers);
- (c) The appropriate rescue capacity in case of an aircraft crash;
- (d) Supply of fire fighting foam, foam delivery systems and appliances;
- (e) Adequate water supplies; and
- (f) Details of compliance with the Building Code of Australia (i.e. installation of fire alarm systems and residential sprinklers throughout Hiltaba Village etc).

The Fire Study must be lodged with Indenture Minister for approval prior to the operation of the airport.

HILTABA VILLAGE

Conditions 121-125 apply to Hiltaba Village only.

NOISE

121. Accommodation units at Hiltaba Village must be designed and constructed so that external noise sources do not exceed 30dB(A) when measured within sleeping areas at all times of the day when windows are closed.

SURFACE WATER

122. Apart from storm events that cause local flooding, runoff into the proposed northern and southern stormwater storage basins at Hiltaba Village (as shown on DEIS Figure 11.6) must be reused, and in particular must be reused to reduce dust levels and to irrigate landscaped areas around the village.

ACCESS AND TRAFFIC

123. The proponent must comply with the relevant DTEI standards for the access arrangements to and from Hiltaba Village, and any upgrades required on the Andamooka Rd as a result of additional traffic associated with the expansion project, with all costs being the responsibility of the proponent.

SUSTAINABILITY

124. The proponent must install solar hot water systems or an equivalent renewable technology, for the permanent accommodation units at Hiltaba Village.

NATURAL HAZARD MANAGEMENT

125. The proponent must prepare and implement a Fire Study for Hiltaba Village (and the airport) that at a minimum addresses the following matters:

- (a) The ability of Hiltaba Village management to provide adequate first response to emergency incidents (Fire, Rescue, Hazmat);
- (b) The structure and resources that the proponent (or its contractors) will have (i.e. suitable appliances to deal with the size of the aircraft, as well as details of staff training and numbers);
- (c) The appropriate rescue capacity in case of an aircraft crash;
- (d) Supply of fire fighting foam, foam delivery systems and appliances;
- (e) Adequate water supplies; and
- (f) Details of compliance with the Building Code of Australia (i.e. installation of fire alarm systems and residential sprinklers throughout Hiltaba Village etc.).

The Fire Study must be lodged with Indenture Minister for approval prior to the operation of Hiltaba Village.

PIMBA INTERMODAL FACILITY

Conditions 126-134 apply to the Pimba Intermodal facility only.

HAZARD AND RISK

126. The Pimba Intermodal facility must be designed to ensure that hazardous and dangerous substances are stored in bunded and sealed compound/areas designed to prevent the escape of material into the soil, surface water or underground water resources.

NOISE, VIBRATION AND DUST

127. The Pimba Intermodal facility must be designed to ensure that it does not generate noise levels at the façades of noise sensitive receivers in Pimba that exceed 51 dB(A)_{Leq} between 7 a.m. to 10 p.m. (day) and 43 dB(A)_{Leq} between 10 p.m. to 7 a.m. (night) when measured and adjusted in accordance with the Environment Protection (Noise) Policy 2007.

128. A report, prepared by an acoustic engineer, detailing the methods and results of noise monitoring undertaken post construction, as well as any recommended noise mitigation measures to ensure compliance with the noise criteria contained in condition 127 must be submitted to the SA EPA within three months, or within such a time as otherwise approved by the Indenture Minister, of the commencement of operations at the Pimba intermodal facility. The noise monitoring must be of sufficient duration to encompass all operational situations, including night time operations, the full range of operational equipment noise sources and adverse weather conditions.

SURFACE WATER

129. The Pimba Intermodal facility must be designed to ensure that erosion-control devices are constructed on drainage outlets from the site to ensure that concentrated stormwater runoff does not cause scouring and erosion of downstream drainage lines and watercourses.

130. The Pimba Intermodal facility must be designed to ensure the quality of surface water draining from the Pimba intermodal facility complies with the general obligations and associated water quality criteria contained in the SA Environment Protection (Water Quality) Policy 2003 (Water EPP) or as amended.

TRAFFIC AND ACCESS

131. The proponent must comply with the relevant DTEI standards for the access arrangements to and from the Pimba Intermodal facility, with all costs being the responsibility of the proponent.

132. The proponent must complete construction, and commence operation of the Pimba Intermodal facility within two years from the date of this authorisation.

VISUAL AMENITY

133. Final designs for the Pimba Intermodal facility must be constructed in accordance with DEIS Appendix F2 Drawing G1500 (Pimba Transit Terminal—Conceptual General Arrangement).
134. All lighting required on site must be low-profile, directional lighting that illuminates only those areas required to be illuminated.

INFRASTRUCTURE CORRIDORS

Conditions 135-151 apply to the linear infrastructure for water, electricity, gas, the rail spur and new and upgraded roads.

CORRIDOR ALIGNMENTS FOR WATER, ELECTRICITY AND RAIL SPUR

135. The final alignment of the water supply pipeline from the Port Bonython desalination plant to Olympic Dam must be constructed in accordance with DEIS Appendix N Figures N1.4 (a)-(f).
136. The final alignment of the 275kV electricity line from Port Augusta to Olympic Dam must be constructed in accordance with DEIS Appendix N Figures N1.4 (a)-(f).
137. The final alignment of the 132kV electricity transmission line from Cultana to Port Bonython must be constructed in accordance with DEIS Appendix F Figure N1.4 (f).
138. The final alignment of the rail line from Pimba to Olympic Dam must be constructed in accordance with DEIS Appendix N Figures N1.4 (a)-(b).

TERRESTRIAL IMPACTS

139. The proponent must prepare and implement a Trench Management Plan for the gas pipeline and water supply pipeline that includes measures to respond to a significant increase in fauna mortalities. A 'significant increase' must be defined in the Trench Management Plan, and submitted to the Indenture Minister for approval, prior to construction commencing on the water supply and gas pipeline corridors.
140. Within 6 months of completing the water and gas pipeline construction activities, or within such time as otherwise approved by the Indenture Minister, the proponent must provide records of species recovered and removed from the easements, including their GPS location in a form suitable to the Department of Environment Natural Resources (DENR) for inclusion in the Biological Databases of South Australia (BDBSA).
141. Except in areas of permanent clearance, revegetation of impacted areas for the construction of the linear infrastructure components must commence within 6 months of construction activities concluding, or within such time as otherwise approved by the Indenture Minister, environmental conditions permitting.
142. Within six months of completing the construction activities for the linear infrastructure components, or within such time as otherwise approved by the Indenture Minister, the proponent must commence rehabilitation of the cleared areas of Mulga Acacia aneura low woodlands on the sand plain, except in areas of permanent clearance, environmental conditions permitting.
143. No new groundwater wells are to be located within 20 km of GAB springs for water extraction during gas pipeline construction.
144. Prior to finalising the detailed route alignment for the linear infrastructure components the proponent must conduct floristic surveys, ideally following adequate rainfall, to confirm the presence/absence of listed threatened species. The surveys must target vegetation types that are likely to support threatened species, in particular:
- (a) *Atriplex kochiana* (Koch's Saltbush);
 - (b) *Ophioglossum polyphyllum* (Large Adder's Tongue);
 - (c) *Atriplex eichleri*;
 - (d) *Gratwickia monochaeta*;
 - (e) *Bulbostylis turbinata*;
 - (f) *Calandrinia sphaerophylla* (Bead Purslane);
 - (g) *Eleocharis plana* (Flat Spike-rush); and
 - (h) *Frankenia cupularis*.
145. If clearance of listed species is unavoidable, the proponent must reinstate or relocate these species to adjacent work areas; or as otherwise agreed by DENR.
146. All identified listed plants will require a buffer zone of at least 50 m from construction and operational activities for the linear infrastructure components. If it is impractical to provide a 50 m buffer zone for the listed species and it will be impacted directly, the species must be reinstated or relocated to adjacent work areas; or as otherwise agreed by DENR.
147. Prior to finalising the detailed route alignment for the linear infrastructure components (including the parking bays on the Stuart Highway) the proponent must undertake surveys of listed fauna populations, including targeted surveys for the Pernatty Knob-tailed Gecko and Plains Rat. The final alignment must avoid populations of listed fauna, where practicable.
148. The proponent must prepare guidelines, in consultation with DENR, to determine the methodology of final corridor realignment to avoid listed species, including definition of practical construction limitations, prior to construction of the water and gas supply pipelines, rail spur and electricity transmission lines.
149. The proponent must attach highly visible reflective markers to conductors at 30 m intervals on Sections of the transmission line within 2 km of ephemeral lakes and coastal areas, in a manner suitable to ElectraNet.

SURFACE WATER

150. Final route alignment for the gas pipeline must identify St Mary's Pool and Reedy Springs as 'no go' zones to be avoided by construction activities.

HAZARD AND RISK

151. To ensure electricity stability and network security, the proponent must comply with the technical standards in the National Electricity Rules (NER) to the satisfaction of the Technical Regulator (as the Jurisdictional System Security Coordinator).

NEW ROADS

Conditions 152-157 apply to new roads only.

PORT AUGUSTA ACCESS CORRIDOR (FROM THE LANDING FACILITY TO THE PRE-ASSEMBLY YARD)

152. The access road from the landing facility to the pre-assembly yard in Port Augusta must be constructed in accordance with the alignment shown on SEIS Figure 22.3.

153. The proponent must cease operation of the Port Augusta access road at the end of the expansion construction period, or within 16 years of opening the access road, whichever occurs first. This condition is subject to variation on the proponent demonstrating to the government's satisfaction that the impacts to the local community can be managed in the longer term. Should this not be demonstrated, the site must be rehabilitated to the satisfaction of the Indenture Minister within one year of closure.

154. The proponent must comply with the relevant DTEI and Port Augusta Council standards (where applicable) for the access road from the landing facility to the pre-assembly yard, with all costs being the responsibility of the proponent.

ACCESS ROAD FROM HILTABA TO OLYMPIC DAM

155. The eastern access road from Hiltaba Village to the mine site must be established in accordance with the alignment shown on SEIS Figure A6.2 (refer SEIS Appendix A5).

156. The proponent must comply with the relevant DTEI standards for the eastern access road from Hiltaba Village to the mine site, with all costs being the responsibility of the proponent.

ROAD OVERPASS (ASSOCIATED WITH THE RAIL SPUR)

157. The proponent must comply with the relevant DTEI standards for the road overpass (associated with rail spur operation), with all costs being the responsibility of the proponent.

PART B: NOTES TO PROPONENT**WHOLE OF PROJECT NOTES****NATIVE VEGETATION CLEARANCE**

Note to support condition 5:

Before approving the native vegetation management plan(s), the Native Vegetation Council (NVC) will be required to take account of the nature and extent of the proposed clearing and any commitments for restoration and maintenance, sufficient to satisfy themselves that there will be a significant environmental benefit (SEB).

IMPACTS TO FAUNA

Notes to support condition 9:

In updating the Fauna Monitoring Program, the proponent should have regard to *The Kangaroo Conservation and Management Plan for South Australia 2008-2010* (DEH 2007).

SEB offsets for fauna species management would need to be approved by the Native Vegetation Council (NVC).

The proponent will be required to comply with Section 185 of the NRM Act that requires weed outbreaks to be reported to the relevant NRM Board.

The proponent should work with NRM boards and Roxby Downs Council to address vertebrate pest issues.

GREENHOUSE GAS EMISSIONS

Notes to support condition 11:

The Greenhouse Gas & Energy Management Plan (GG&EMP) should incorporate:

- (a) Interim goals, targets and timelines for emissions reduction based projects, including interim emission objectives for 2020, 2030 and 2040;
- (b) Consideration of further renewable energy and greenhouse gas abatement opportunities, identified in the Final EIS (DEIS and SEIS);
- (c) Identification and consideration of further greenhouse gas abatement opportunities;
- (d) Identification and consideration of further opportunities to increase the proportion of renewable energy used and to further reduce electricity demand;
- (e) A comprehensive approach to energy efficiency in the construction design and operation of the expanded mine site to ensure viable, cost-effective opportunities are maximised;
- (f) Further work to identify and publicly report relevant Scope 3 emissions that can be reasonably included for management under the Plan in line with best practice for greenhouse management and reporting;
- (g) Modelling to forecast, via an emissions trajectory, the likely emissions reduction pathway from commencement of operations to 2050, including information regarding accuracy and key variables;
- (h) The relevant requirements of an emissions trading scheme, if and when it is implemented and the effect of such a scheme on abatement opportunities and the emissions trajectory;
- (i) Further commitments to be developed in the following areas:
 - i Details of the scale of solar hot water and solar PV to be installed, particularly in residential developments;
 - ii Optimising the performance of the housing stock;
 - iii Involvement in the early development of renewable technologies;
 - iv Minimising greenhouse emissions through design of desalination plant, pumping and pipeline to best practice standards;
 - v Best practice approaches to design and ongoing management for reducing greenhouse emissions across all elements of the expansion; and
 - vi Future proofing of key investments such as the use of smart grid technologies.

Greenhouse and Energy Management should also be the subject of a sector agreement, to be entered into with the Minister for Sustainability and Climate Change under Section 16 of the Climate Change and Emissions Reduction Act 2007.

MINING AND PROCESSING NOTES**NOISE**

In order to achieve relevant criteria prescribed in the Environment Protection (Noise) Policy 2007 truck horn testing within the mine maintenance and industrial areas at Olympic Dam may require a warehouse-type building with suitable acoustic insulation to reduce noise emissions.

SITE CONTAMINATION

Note to support conditions 24 and 25:

The EPA Guidelines '*Bunding and Spill Management (2007)*' and '*Wastewater Lagoons (Draft 2010)*' contains information that can assist the proponent to comply with the chemical storage and containment requirements above.

GROUNDWATER

Note to support conditions 27:

Clause 13 of the Olympic Dam Indenture makes special provision for the company to maintain water supply to existing 3rd party users within the Designated Area around the water supply wellfields.

Notes to support conditions 26-31:

If the action triggers are exceeded during extraction from the Motherwell Saline Wellfield, and, in the opinion of the Indenture Minister the exceedence constitutes a significant risk to the environmental values of the Yarra Wurta Spring complex, the Minister may direct the proponent to cease extraction from the Motherwell saline wellfield, or to take action to maintain pressure levels.

The results of monitoring within the Yarra Wurta Springs and GAB Springs, should be reported in the annual Environmental Management and Monitoring Report (EMMP), including updated research as follows:

- (a) the significance that declines in groundwater levels in the Andamooka Limestone may have on the Springs;
- (b) the groundwater processes supporting the Yarra Wurta Springs;
- (c) the structural controls that exist between Yarra Wurta Springs and the open pit; and
- (d) the storage buffering of Lake Torrens to the drawdown of groundwater levels within the Andamooka Limestone.
- (e) The proponent will be required to establish a monitoring program required for the Motherwell Wellfield and other water supply wellfields in accordance with requirements under the Olympic Dam Indenture (Special Water Licence), and that monitoring data would include as a minimum:
- (f) total abstraction and individual well abstraction on a monthly basis;
- (g) water pressure and levels in monitoring and production wells; and
- (h) water quality at monitoring and production wells on an annual basis.

GROUNDWATER DEPENDENT ECOSYSTEMS—IMPACTS ON THE YARRA WURTA SPRINGS AND RESIDENT POPULATION OF LAKE EYRE HARDYHEAD

Detailed baseline information for the Yarra Wurta Springs should be developed with enough statistical power to account for natural variation and 'noise' including:

- (a) spring flow rate, wetland area, pH and salinity;
- (b) an assessment of the flow would need to be carried out that accounted for local variations in barometric pressure, tidal influences and evaporation rates; and
- (c) baseline data on the relative abundance/health of the Hardyheads and microbial mats.

The monitoring program will have to adequately account for the likely impact timeframe i.e. from the Motherwell Saline Wellfield and the mine pit drawdown, respectively.

To enable the development of mitigation strategies in the event that potential impacts emerge at the Yarra Wurta Springs that are attributable to the operation of the Motherwell wellfield, the proponent should develop trigger points, based on the groundwater model and monitoring at key locations.

SOLID WASTE

Note to support condition 53:

The EPA will require details of design and proposed construction of new landfill cells in accordance with the SA EPA Guidelines: Environmental Management of Landfill Facilities (municipal solid waste and commercial and industrial general waste) including:

- (a) detailed design drawings;
- (b) a Landfill Construction Quality Assurance Plan;
- (c) a Landfill Construction Management Plan; and
- (d) a Landfill Environmental Management Plan incorporating details of the closure and post closure management.

The suitability of the new onsite waste landfill should include a risk assessment that considers the location and management requirements of the adjoining Tailings Storage Facility (i.e. take account of potential overflow and/or leakage of liquor from the Tailings Storage Facility).

It is likely that a requirement to prepare a General Waste and Used Tyre Management Plan which incorporates all waste streams for the waste management facility prior to receipt of waste at the waste management facility would become a condition of license under the Environment Protection Act 1993.

'As Construct' Reports of the onsite landfill cells will need to be provided to the EPA for approval prior to waste being deposited within any landfill cell. Refer to the draft SA EPA Guideline: Guideline for construction specifications and reports—For landfills, leachate ponds, composting facilities and wastewater lagoons (2009).

SURFACE WATER AND DRAINAGE

Notes to support condition 32:

Each portion of the Rock Storage Facility (RSF), including the proposed low grade ore stock pile, should incorporate an engineered structure designed to capture all the run-off from the RSF during a 1-in-100 year rainfall event and avoid contaminated runoff leaving the area of the Special Mining Lease.

Each Tailings Storage Facility (TSF) cell should include upstream and downstream toe drains to manage near surface lateral seepage (i.e. capture the seepage). Measures should be put in place to manage any observed seepage from the toe drains for the TSF cells, to reduce the potential for surface water impacts. These measures should include the transfer of captured seepage in interception systems to be returned to the TSF or evaporation ponds.

Licence conditions that relate to monitoring and management of such surface water containment facilities may be imposed under the Environment Protection Act 1993.

The proponent will need to apply to the EPA for an exemption to the Environment Protection (Water Quality) Policy 2003 or seek to have the current environmental values applying to groundwater at Olympic Dam modified in the Environment Protection (Water Quality) Policy 2003.

RADIATION

Notes to support condition 34:

When seeking authorisation from the SA EPA to undertake construction (as required under the conditions of the Radiation Protection and Control Act 1982 licence), the proponent must submit a summary report on the results of the radiation protection optimisation program. This report will be in addition to the Radiation Management Plan and Radioactive Waste Management Plan that need to be submitted though it is expected that the findings of the radiation protection optimisation program will be incorporated into those plans. The radiation protection optimisation program should include consideration of the current design of the smelter and other relevant plant infrastructure to determine engineering controls to support the increase in production rate.

When undertaking the radiation protection optimisation study during the design phase of the new plant and open pit mine, the proponent must also consider the design of the existing smelter and other relevant existing plant infrastructure to determine engineering controls to support the increase in production rate.

In keeping with the EPA's regulatory practice to enact national codes of radiation protection, the proponent will be required to seek authorisation to commence each stage of the project; that being construction, operation and decommissioning and rehabilitation of the site. Each authorisation will require a Radiation Management Plan and Radioactive Waste Management Plan applicable to the project stage and approved by the EPA. These plans must address all risks of radiation exposure to workers, the environment and the public and the control methods and monitoring that will be employed to ensure that doses will be as low as reasonably achievable.

The proponent is reminded of its routine reporting requirements under licence conditions and radiation accident or emergency reporting pursuant to regulations 31 and 32 of the Radiation Protection and Control (Ionising Radiation) Regulations 2000.

It is expected that the proponent will incorporate the following requirements within the Radiation Management Plan (RMP) that must be approved by the EPA as conditions of the licence under the Radiation Protection and Control Act 1982 to conduct expanded mining or milling of radioactive ore at Olympic Dam:

- (a) the proponent will conduct radon emanation measurements on the overburden, waste rock and exposed ore as the pit develops. This data should be used to model Radon Decay Product exposures within the pit;
- (b) the proponent will undertake real-time gamma, radon, dust and pit atmospheric monitoring during the development of the pit and Rock Storage Facility to assist the development of control strategies associated with different sources of dust and radon;
- (c) the Radon Decay Product dose assessments must be re-modelled for the pit and underground mine, should the International Commission on Radiological Protection introduce a change to the recommended RDP dose conversion factor; and
- (d) the proponent must develop a program to derive realistic respiratory protection factors for use in the smelter and elsewhere in the Plant to provide an accurate estimation of dose.

It is expected that the proponent will incorporate the following requirements within the Radiation Waste Management Plan that must be approved by the EPA as conditions of the licence under the Radiation Protection and Control Act 1982 to conduct expanded mining or milling of radioactive ore at Olympic Dam:

- (a) A comprehensive rehabilitation and closure plan for the landfill containing low-level radioactive contaminated material, to ensure it meets international best practice for disposal (either in situ, or moved to a more appropriate location);
- (b) A plan to address the recycling where appropriate, of large lightly contaminated equipment items in accordance with international best practice;
- (c) The conduct of regular (e.g. 5-10 years) soil surveys within and outside of the Special Mining Lease as part of the RWMP, to assess the radiological impacts of dust deposition for the expanded operations using appropriate models (e.g. ERICA).

It should be noted that any Radiation Management Plan and Radioactive Waste Management Plan that is approved by the EPA under the Radiation Protection and Control Act 1982 for the expanded Olympic Dam operation will be subject to regular review to ensure monitoring and control methods demonstrate best practice and exposures are as low as reasonably achievable (ALARA).

HAZARDS

Detailed planning for the storage and transport of bulk ammonium nitrate will be required to be undertaken prior to construction occurring at the mine site, and in consultation with the South Australian explosives regulatory authority, SafeWork SA to satisfy licensing requirements under the South Australian Explosives Act 1936. There may be a requirement for Major Hazard Facility licensing under SA Work Health and Safety (WHS) Regulations (to be effective as from 1 January 2012) when Schedule 15 chemicals threshold quantity level is triggered.

In order to achieve compliance with clause 24 of the State Emergency Management Plan, pursuant to Section 9 (e) of the South Australian Emergency Management Act 2004, the proponent would be required to update the Emergency Response Plan in consultation with SafeWork SA. The MHF-related operational hazards and risks should be reviewed during the pre-commissioning, commissioning and operational phases, in consultation with SafeWork SA.

IMPACTS OF THE TSF ON FAUNA AND MIGRATORY SPECIES

Notes to support condition 35:

In preparing the Bird Impact Management and Monitoring Plan the proponent should consider the following principles and actions:

- (a) uses best practice technology to decrease attractiveness of tailings to avifauna, and to deter and disperse avifauna;
- (b) a set of environmental protection objectives aimed at mitigating any adverse impacts to birds from the TSF;
- (c) the development and implementation of a rigorous TSF monitoring program with the aim of reducing the degree of uncertainty around actual mortality numbers; and
- (d) the investigation, development and implementation, if practicable, of an ongoing real-time surveillance system, and automated detection/hazing systems, to detect the approach and arrival of flocking bird species and deter them from entering the TSF.

TRAFFIC IMPACTS

Notes to support condition 39-45:

The proponent is advised that permits issued for the movement of OD and OM vehicles will include the standard condition that applies to all permits issued for the movement of OD and OM loads with respect to the obligation to pay the road authority (council and/or DTEI) for the reasonable costs of making good damage caused as a result of the passage of a vehicle or combination travelling under a permit.

The proponent will be required to obtain relevant approvals/permits from DTEI for the movement of OD/OM loads under the Road Traffic Act 1961.

The proponent has not provided sufficient evidence of any of the requested four matters to allow any change in the standard conditions as set out in the DTEI policy document, 'Transport of Oversize and Indivisible Loads and Vehicles'. Further consultation on this matter between the proponent, DTEI and SAPOL is required to discuss contingencies for breakdowns and moving traffic past the loads, including the following four matters:

- (a) Risk mitigation regarding vehicle breakdowns;
- (b) Scheduling of operations;
- (c) Proposed convoy configurations; and
- (d) Evidence that the proposal would be strongly supported from a road user perspective.

The Traffic Management Plan should include details for Restricted Access Vehicle (RAV) routes. As RAV's (i.e. B-doubles, over-dimensional vehicles) will be using the state road network to access the Olympic Dam site it will be necessary for the routes to be assessed and appropriate upgrades made prior to DTEI issuing approval for these vehicles to utilise the surrounding road network.

The proponent will be required to comply with all relevant DTEI standards for the upgrading of road infrastructure.

The South Australian Police (SAPOL) will require at least six months notice of OD scheduling from the proponent to manage its Police Escort Group capacity.

RAIL SPUR FROM PIMBA TO OLYMPIC DAM

Notes to support condition 47:

As a condition of licence under the Radiation Protection and Control Act (1982) to conduct expanded mining or milling of radioactive ore at Olympic Dam, the following requirements should be included in the Radiation Waste Management Plan for approval by the SA EPA:

- (a) Conduct background gamma dose rate measurements and soil sampling at representative locations along the rail corridors prior to the commencement of operations, to clearly establish background radionuclide concentrations; and
- (a) Include routine monitoring of the transport corridors as part of the Radioactive Waste Management Plan.

AIR QUALITY

Notes to support condition 48-52:

The proponent in preparing the Air Quality Management and Monitoring Plan (AQMMP) should consider the following:

- (a) Providing relevant detail on:
 - i The detailed siting and design of meteorological and air quality monitoring stations;

- ii Process management appropriate to air quality emissions;
 - iii Updated air emissions inventory for point, diffuse and fugitive dust emissions;
 - iv Air pollution control equipment and stack and vent configuration;
 - v point source air emissions test facilities and stack testing program to demonstrate compliance with the AQMMP;
 - vi Control of fugitive dust emissions;
 - vii Incident responses to exceedences or particular climatic conditions;
 - viii Community consultation and engagement;
 - ix Engagement with local health services for identifying and responding to any relevant health impacts (e.g. asthma management protocols); and
 - x The continuing review of the literature on the impact of emissions to inform both monitoring and response.
- (b) In relation to preparing the Dust Management Plan (as part of the AQMMP) providing specific detail on:
- i Pre-emptive particulate controls such as dust suppression on haul roads and conveyors, and best practice measures for minimising dust generation from unloading points, material stockpiles, crushers, rock storage facilities, and other potential fugitive dust emission sources; and
 - ii Identification of remedial action at specific operational dust sources in response to actual or impending exceedences of the 24 hour average ground-level PM10 and PM2.5 air quality criteria referenced above, as determined from an air quality monitoring program established in accordance with an approved AQMP.

The proponent's licence under the Environment Protection Act 1993 and the Radiation Protection and Control Act 1982 would likely be amended to encompass changes that would be necessary to accommodate the expansion project.

A requirement to implement, report on and update an approved AQMMP would likely be incorporated into the proponent's licence under the Environment Protection Act 1993 to conduct activities of environmental significance at Olympic Dam.

A requirement to ensure compliance with the ground-level air quality criteria listed in condition 49 would likely be incorporated into the proponent's licence under the Environment Protection Act 1993 to conduct activities of environmental significance at Olympic Dam.

It may become a requirement of the licence issued under the Environment Protection Act 1993 for periodic independent auditing of the AQMMP.

A requirement to report on radon (or radon decay product) monitoring results for each of the meteorological and air quality monitoring stations would likely be a condition of the licence approval under the Radiation Protection and Control Act 1982 for expanded mining and milling of radioactive ore at Olympic Dam.

All particulate data to be reported with attribution of results, where clear evidence is available, to broad-scale natural events such as dust storms that might cause exceedences of the above standards. For other events, contributions from the mine/processing site would also need to be reported. The mechanism of apportioning particulates to mine/processing site will need to be resolved by the proponent in consultation with the EPA prior to any major earthworks associated with the expansion project commencing at Olympic Dam.

REHABILITATION AND CLOSURE

Notes to support condition 55:

The existing TSF Cells 1, 2 and 3 closures should be used to conduct long -term (decades) testing of seepage rate decline, modelled rehabilitation structures, and processes.

The existing TSF Cells 1, 2 and 3 should be used as a test bed for closure assessment to evaluate identified risks including, water infiltration, slope erosion and wind scour processes.

During operation the proponent should undertake site trials of the preferred covers that have been determined from the modelling on the completed Tailings storage facility Cell 1-3 of the existing operations in accordance with a program detailed in the approved Closure and Rehabilitation Plan.

GENERAL MINING AND PROCESSING NOTES

The proponent is reminded of its general environmental duty, as required by Section 25 of the Environment Protection Act 1993, to take all reasonable and practical measures to ensure that the activities associated with the construction and operation of the mine and mineral processing facilities do not pollute the environment in a way that causes or may cause environmental harm.

An environmental authorisation in the form of a licence issued under the Environment Protection Act 1993 is required for the operation of the open cut mine, rock storage facility, metallurgical plant and tailings storage facility components of the project approved via this notice. The proponent is advised to contact the EPA before acting on this approval to ascertain licensing requirements.

The following activities are likely to require a licence under the Environment Protection Act 1993 in relation to the components of the development application hereby approved and/or requiring future approval:

- (a) Chemical storage and warehousing facilities;
- (b) Chemical works: inorganic;
- (c) Petroleum production, storage or processing works of facilities;
- (d) Abrasive blasting;

- (e) Concrete batching works;
- (f) Ferrous and non-ferrous metal melting;
- (g) Metallurgical works;
- (h) Mineral works;
- (i) Waste or recycling depot;
- (j) Activities producing listed wastes;
- (k) Crushing, grinding or milling: rock, ores or minerals;
- (l) Fuel burning: rate of heat release exceeding 5 megawatts;
- (m) Extractive industry;
- (n) Sewage treatment works; and
- (o) Fuel burning.

As many of the above activities are listed on the current licence under the Environment Protection Act 1993 for BHP Billiton's operations at Olympic Dam, the proponent should contact the EPA to ensure that the current licence is appropriately amended to reflect any additional activities and/or expansion of existing activities prior to such activities commencing operation.

The proponent is reminded of its notification requirements pursuant to Section 83 of the Environment Protection Act 1993 if serious or material environmental harm from pollution is caused or threatened in the course of an activity.

The proponent is also reminded of its notification requirements pursuant to Section 83A of the Environment Protection Act 1993, if the proponent becomes aware of the existence of site contamination at the site or in the vicinity of the site (whether arising before or after the commencement of this Section) that affects or threatens water occurring naturally under the ground or introduced to an aquifer or other area under the ground.

If polluted soils and/or groundwater are identified at the site during the detailed design or construction stage, then an assessment must be carried out by a suitably qualified and experienced environmental consultant to ensure that the site is suitable for the proposed use. Any such assessment must be undertaken in accordance with Schedules A and B of the National Environment Protection (Assessment of Site Contamination) Measure, 1999. The assessment must be in a form of an environmental assessment report and include a definitive statement that the site is suitable for the proposed use.

There may be a requirement for Major Hazard Facility licensing under SA Work Health and Safety (WHS) Regulations (to be effective as from 1 January 2012) when the Schedule 15 chemicals threshold quantity level is triggered.

DESALINATION PLANT NOTES

Further testing and modelling prior to operation

Note to support conditions 68-75:

Following the commissioning and operation of the desalination plant, monitoring and reporting is likely to be required in accordance with license conditions issued under the Environment Protection Act 1993.

CONSTRUCTION IMPACTS

Notes to support condition 77:

Spoil from construction of the outfall and intake pipelines has the potential to be contaminated or to contain acid sulphate material. Such materials will need to be contained, classified, treated and/or disposed of in accordance with relevant SA EPA standards and guidelines.

Waste oil to be stored and any other substance that may have the potential to pollute surface or groundwater must be stored in accordance with the SA EPA Guidelines for Bunding and Spill Management.

The discharge of any excess water associated with construction of the outfall pipeline tunnel must comply with the Environment Protection (Water Quality) Policy 2003.

GENERAL NOTES

The proponent is reminded of their general environmental duty, as required by Section 25 of the Environment Protection Act 1993, to take all reasonable and practical measures to ensure that the activities associated with the construction and operation of the desalination plant do not pollute the environment in a way that causes or may cause environmental harm.

An environmental authorisation in the form of a licence issued under the Environment Protection Act 1993 is required for the construction and operation of the desalination plant and some associated construction activities. The proponent is advised to contact the EPA before acting on this approval to ascertain licensing requirements.

The following activities in relation to the components of the development hereby approved and/or requiring future approval will require licences under the Environment Protection Act 1993:

- (a) Earthworks Drainage: the conduct of earthworks operations in the course of which more than 100 kilolitres of waste water containing suspended solids in a concentration exceeding 25 milligrams per litre is discharged directly or indirectly to marine waters or inland waters;
- (b) Dredging: removing solid matter from the bed or any marine waters by any digging or suction apparatus, but excluding works carried out for the establishment of a visual aid to navigation and any lawful fishing or recreational activity; and
- (c) Discharge to Marine or Inland Waters: the conduct of operations involving discharges into marine water when the total volume of discharge exceeds 50 kilolitres per day and contains chemical water treatment.

It is likely that as a condition of such licences the Environment Protection Authority will require the licensee to carry out specified environmental monitoring of water quality and to make reports of the results of such monitoring to it. For the purposes of the Discharge to Marine Waters licence the SA EPA will require, as a minimum, for the operator to monitor and report on:

- (a) Discharge water quality, including whole effluent ecotoxicity testing;
- (b) Diffuser performance validation;
- (c) Process monitoring to confirm that performance is within the acceptable range as originally designed;
- (d) Water quality and ecological impacts on the marine environment (including the use of multiple reference sites based on previous Beyond BACI monitoring described above); and
- (e) Identify management responses to exceedances of the trigger values/criteria used in association with monitoring programs.

Following the commissioning and operation of the desalination plant, the proponent may be required to cease discharging return water from the desalination plant into the Upper Spencer Gulf if the return water discharge does not meet agreed regulatory thresholds for return water dispersion, or monitoring identifies unacceptable impacts, in accordance with the proponent's commitments.

As the proposed desalination plant is located next to the Santos Port Bonython oil and gas facility which is a Major Hazard Facilities (MHF) site, the proponent needs to review the storage quantity of hazardous chemicals with regard to the threshold quantity of current MHF National Standard Schedule 1 Chemicals. In addition, the strategic location of the hazardous chemical storage facility on desalination plant site needs to be reviewed with respect to the consequential risk assessment of the location factor either affecting or being affected by the neighbouring Santos facility. As a consequence, the proponent should conduct an internal and external consequential risk analysis of the desalination plant in consultation with Santos and SafeWork SA.

The shotfirer who conducts and blasting associated with construction of the desalination plant and associated intake pipeline is legally required to hold a Blaster's Licence under the SA Occupational Health, Safety and Welfare Act 1986. They must carry out an assessment of all risks (including fly rock, vibration and noise) and implement measures to prevent or minimise the risk of injury to persons and damage to plant.

Before tunnel construction commences, an appropriate geotechnical evaluation and assessment of risks associated with tunnelling should be undertaken by the proponent. Such a risk assessment should address the risks of mud and water inrush into the tunnel.

The operational hazards and risks associated with the construction and operational management of the desalination plant should be assessed and a safety review conducted during the construction, commissioning and operational phases in consultation with SafeWork SA.

LANDING FACILITY NOTES

HAZARDS AND CONTAMINANTS

Notes to support condition 89:

The South Australian Environment Protection Authority (EPA) Guideline - Bunding and Spill Management contains information that could help the proponent comply with condition 89.

In order to comply with clause 24 of the State Emergency Management Plan, in relation to Section 9(e) of the South Australian Emergency Management Act 2004, an Emergency Response Plan for the landing facility should be prepared prior to construction, in consultation with the appropriate state authority that provides for the proponent's response arrangements for product recovery and site normalisation.

SAFETY (INCLUDING NAVIGATION)

Notes to support condition 90:

The following notes are recommended in relation to the proponent's obligations under the Harbors and Navigation Act 1993:

- (a) Additional surveys, including hydrographic surveys required to demonstrate safe navigation and transit of material from 'bank to ship' prior to the operation of the landing facility (survey methods to be developed in consultation with DTEI).
- (b) Should the proponent plan to moor heavy lift vessels at the holding site in deep water, a safe independent mooring location will need to be identified with an exclusion zone of 0.5 nautical miles radius around the mooring location to enable ships to off-load equipment on to the barges.
- (c) Should 'tugs' be used by the proponent to tow barges from the mooring site to the Landing Facility then the adequacy of the tugs will need to be addressed by the proponent (to comply with relevant DTEI standards), and will have to be manned by qualified crew with pilotage exemption certificates.

NOISE AND VIBRATION

Note to support conditions 95 and 96:

The proponent is reminded of its obligation to comply with the construction noise provisions contained in Part 6 Division 1 of the Environment Protection (Noise) Policy 2007. These requirements include restrictions on the noise levels that can be generated at certain times of the day and certain days of the week.

INTRODUCTION AND/OR SPREAD OF WEEDS FROM EXPANSION ACTIVITIES

Note to support condition 105:

The proponent needs to consult with the NRM Board over arrangements to minimise the risk of spreading weeds during works.

WASTE MANAGEMENT

Any on-site wastewater management system at the landing facility must be approved by the relevant authority in accordance with the requirements of the SA Public and Environmental Health (Waste Control) Regulations 2010 (or current equivalent regulatory requirements at the time of application).

PRE-ASSEMBLY YARD NOTES

HAZARDS AND CONTAMINANTS

Note to support condition 108:

The EPA Guideline—Bunding and Spill Management contains information that can assist the proponent to comply with condition 108.

NOISE AND VIBRATION

Note to support condition 109:

The proponent is reminded of its obligation to comply with the construction noise provisions contained in Part 6 Division 1 of the Environment Protection (Noise) Policy 2007. These requirements include restrictions on the noise levels that can be generated at certain times of the day and certain days of the week.

HILTABA VILLAGE NOTES

GENERAL NOTES ABOUT HILTABA VILLAGE

WASTE MANAGEMENT

If treatment and disposal of wastewater is proposed to take place at Hiltaba Village, approval would need to be given by the SA Department of Health and the SA EPA and the following details would need to be contained in any application:

- (a) maximum design capacity of the treatment plant;
- (b) type of wastewater treatment plant to be used;
- (c) standard of treatment to be achieved;
- (d) where and how treated wastewater would occur; and
- (e) schematic plans showing location and design of the proposed treatment plant and reuse areas including pipe work layout.

The proponent should engage early with the Municipal Council of Roxby Downs about the disposal of solid waste to the council's waste management facility to ensure the availability of landfill space and the suitability of cell design and construction.

In order to achieve the waste management objective contained in the SA Environment Protection (Waste to Resources) Policy 2010 solid wastes generated at the Hiltaba Village and the airport should be managed according to the waste management hierarchy by promoting waste avoidance, reduction, recycling, recovery ahead of waste treatment and/or disposal to the Roxby Downs landfill facility.

PIMBA INTERMODAL FACILITY NOTES

HAZARD AND RISK

Note to support condition 126:

The SA Environment Protection Authority (EPA) Guideline—Bunding and Spill Management contains information that could help the proponent comply with condition 126.

NOISE, VIBRATION AND DUST

Notes to support conditions 127 and 128:

The proponent is reminded of its obligation to comply with the construction noise provisions contained in Part 6 Division 1 of the Environment Protection (Noise) Policy 2007. These requirements include restrictions on the noise levels that can be generated at certain times of the day and certain days of the week.

The proponent is reminded of its general environmental duty, as required by Section 25 of the Environment Protection Act 1993, to take all reasonable and practical measures to ensure that the activities associated with the construction and operation of the Pimba Intermodal facility do not pollute the environment in a way that causes or may cause environmental harm.

GENERAL NOTES ABOUT THE PIMBA INTERMODAL

WASTE MANAGEMENT

The proposed on-site wastewater management system at the Pimba intermodal facility must be approved by the relevant authority in accordance with the requirements of the SA Public and Environmental Health (Waste Control) Regulations 2010 (or current equivalent regulatory requirements at the time of application).

RADIATION

It is expected that the proponent will incorporate the following requirements within the Radiation Waste Management Plan that must be approved by the SA Environment Protection Authority (EPA) as conditions of the licence under the Radiation Protection and Control Act (1982) to conduct expanded mining or milling of radioactive ore at Olympic Dam:

- (a) conduct background gamma dose rate measurements and soil sampling at representative locations along the rail corridor before operations commence to clearly establish background radionuclide concentrations; and
- (b) include routine monitoring of the transport corridors as part of the Radioactive Waste Management Plan.

INFRASTRUCTURE CORRIDORS NOTES

GENERAL NOTES

AIR QUALITY AND SURFACE WATER

The proponent is reminded of its general environmental duty, as required by Section 25 of the Environment Protection Act 1993, to take all reasonable and practical measures to ensure that the activities associated with the construction and operation of the service corridors do not pollute the environment in a way that causes or may cause environmental harm. In order to comply with this requirement, particular care should be given to dust management and soil erosion controls, including rehabilitation of disturbed areas, during the construction process.

TERRESTRIAL IMPACTS

Where possible threatened flora should be used in revegetation programs, ensuring that species are only planted in suitable habitat.

A pipeline licence will need to be applied for under the Petroleum and Geothermal Energy Act 2000. With the Pipeline Licence and approved SEO in force, an activity notification must be submitted to PIRSA in accordance with regulations 18 and 20 of the Petroleum and Geothermal Energy Regulations 2000. This notification must be accompanied by detailed information relating to the design, construction, operation and maintenance of the gas pipeline. The Minister's written approval would be required before pipeline construction can commence. A further approval is then required following completion of the hydrotest and prior to the introduction of gas into the pipeline. Further, a pipeline licence cannot be issued over a regional reserve without the approval of the minister administering the National Parks and Wildlife Act 1972. Accordingly, should the proponent seek to pursue option 1 or 3, approval would be required from the Minister administering the National Parks and Wildlife Act 1972.

NOISE AND VIBRATION

The proponent is reminded of their obligation to ensure that construction noise complies with the requirements of Division 1 of Part 6 of the Environment Protection (Noise) Policy 2007 at all times. Supplementary information on construction noise management can be found in the Guidelines for the Use of the Environment Protection (Noise) Policy 2007 and Construction Noise Information Sheets (available at: www.epa.sa.gov.au).

WASTE MANAGEMENT

On-site wastewater management systems associated with proposed service corridor construction camps must be approved by the relevant authority in accordance with the requirements of the SA Public and Environmental Health (Waste Control) Regulations 2010 (or current equivalent regulatory requirements at the time of application).

In order to achieve the waste management objective contained in the SA Environment Protection (Waste to Resources) Policy 2010 domestic and building wastes generated at temporary construction camps and/or from service corridor construction activities should be managed according to the waste management hierarchy by promoting waste avoidance, reduction, recycling, recovery ahead of waste treatment and/or disposal to licensed landfill facilities.

TRANSPORT OF RADIOACTIVE PRODUCT

As a condition of licence under the Radiation Protection and Control Act 1982 to conduct expanded mining or milling of radioactive ore at Olympic Dam, the following requirements should be included in the Radiation Waste Management Plan for approval by the SA EPA:

- (a) Conduct background gamma dose rate measurements and soil sampling at representative locations along the rail corridors prior to the commencement of operations, to clearly establish background radionuclide concentrations; and
- (b) Include routine monitoring of the transport corridors as part of the Radioactive Waste Management Plan.

NEW ROADS AND THE UPGRADING OF ROADS

GENERAL NOTES

TRANSPORT SAFETY AND EMERGENCY RESPONSE

Detailed planning for the storage of bulk ammonium nitrate will be required to be undertaken prior to construction occurring at the mine site, and in consultation with the South Australian explosives regulatory authority, SafeWork SA to satisfy licensing requirements under the South Australian Explosives Act 1936.

In order to comply with the South Australian Dangerous Substances (Dangerous Goods Transport) Regulations 2008, a Transport Emergency Response Plan (TERP) should be prepared, in consultation with SafeWork SA and other relevant authorities. The TERP should include the proponent's response arrangements for product recovery and site normalisation for Concentrate and Uranium Oxide that would include requirements for safely storing and transporting uranium oxide, including, amongst other matters, the emergency response to potential incidents along routes.

NOISE, VIBRATION AND DUST

The proponent is reminded of their obligation to ensure that construction noise complies with the requirements of Division 1 of Part 6 of the Environment Protection (Noise) Policy 2007 at all times. Supplementary information on construction noise management can be found in the Guidelines for the Use of the Environment Protection (Noise) Policy 2007 and Construction Noise Information Sheets (available at: www.epa.sa.gov.au).

The proponent is reminded of its general environmental duty, as required by Section 25 of the Environment Protection Act 1993, to take all reasonable and practical measures to ensure that the activities associated with the construction and operation of new private roads (including the haul road from the barge landing facility to pre-assembly area in Port Augusta) do not pollute the environment in a way that causes or may cause environmental harm. It should be noted that dust suppression by watering or chemical methods are possible methods of achieving this requirement.

TOM KOUTSANTONIS,
Minister for Mineral Resources Development
