

<b>Procedure</b>		<b>Document No.</b>	155246
<b>Document Title</b>	<b>Environmental Management Program Targets, Actions and Major Changes 2018</b>		
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<b>Major Process</b>	Environment	<b>Sub Process</b>	Environment
<b>Authoriser</b>	Jacqui McGill – Asset President Olympic Dam	<b>Version Number</b>	4

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## **1 SCOPE**

This document outlines the Environmental Management (EM) Program targets, actions and continuous improvement opportunities which are updated annually (where required) as part of the Environmental Protection and Management Program (EPMP) review process and forms part of the EPMP. Progress in achieving these targets and actions is reported in the annual EPMP Report.

Targets, Actions and Continuous Improvement Opportunities as used in this EPMP are defined below.

Targets – are to reflect either a level of environmental impact that is as low as reasonably achievable (ALARA), or to indicate a long-term aspirational goal, or an interim target leading to a long-term goal. Failure to meet a target is not a breach of compliance.

Actions – are derived from the continuous improvement opportunities that have been identified for the relevant environmental aspect. Actions should be achievable within the EPMP review period (1-3 years) or may form part of addressing a more complex improvement opportunity. Where the environmental impact is ALARA, actions may not be applicable.

Continuous Improvement Opportunities – are activities that have been previously identified to either reduce operational impact on the environment or improve the way in which an environmental aspect is managed or monitored.

This document also provides a summary of any major changes to the Environmental Management Manual (EMM), EM Program and Monitoring Programs (MPs) that have resulted from the annual EPMP review process.

## **2 INTERPRETATION**

This document should be read in conjunction with the EMM (Olympic Dam Document Number 2617), EM Program (Olympic Dam Document Number 49329) and MPs (Olympic Dam Document Numbers 2663, 2664, 2788, 2789, 2790, 2791, 2792, 49329, 110687 that form the Olympic Dam EPMP.

**3 CONTINUOUS IMPROVEMENT OPPORTUNITIES, ACTIONS & TARGETS 2018**

EM Program ID	CONTINUOUS IMPROVEMENT OPPORTUNITIES	ACTIONS	TARGETS
<b>ID1 USE OF NATURAL RESOURCES</b>			
<b>ID 1.1 LAND DISTURBANCE AND REHABILITATION</b>	<p>Limited management of short-term surface rehabilitation has occurred on site due to the small areas involved, planned areas for expansion of the operations, and the low level of risk associated with these areas. Rehabilitation requirements of short-term surface disturbance, permitted under the Olympic Dam EDP System, including backfill areas, sand acquisition facilities, exploration areas, temporary storage facilities, temporary access routes and maintenance facilities. All other rehabilitation requirements are addressed through the Olympic Dam Rehabilitation Strategy.</p> <ul style="list-style-type: none"> <li>Opportunity: Implement actions as identified in the Olympic Dam Rehabilitation Strategy.</li> </ul> <p>The Olympic Dam Mine Closure and Rehabilitation Plan was reviewed and submitted to government in September 2013. Risk workshops have been conducted annually using BHP Billiton’s Risk Management methodology to evaluate the closure risks for all operational areas, and the accounting provision for closure is recalculated each year.</p> <ul style="list-style-type: none"> <li>Opportunity: Clarify closure risks and assumptions identified in the Olympic Dam Mine Closure and Rehabilitation Plan.</li> </ul> <p>Considerable work has been undertaken to formalise weed monitoring and management at Olympic Dam.</p> <ul style="list-style-type: none"> <li>Opportunity: Continue to undertake a regional approach to weed management through the coordination of annual workshops with Arid Recovery, Roxby Downs Council, Kingoonya NRM District Group and relevant pastoralists and contractors.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to implement actions and identify progressive rehabilitation opportunities in the site Rehabilitation Strategy.</li> <li>Review closure risks and assumptions through annual workshop.</li> <li>Align pest plant and animal control with SAALNRM objectives</li> <li>Continue to develop pest plant and animal management (monitoring and control) effort guidelines.</li> </ul>	<ul style="list-style-type: none"> <li>None Applicable</li> </ul>

EM Program ID	CONTINUOUS IMPROVEMENT OPPORTUNITIES	ACTIONS	TARGETS
	<ul style="list-style-type: none"> <li>Opportunity: Contribute to a regional database, in collaboration with the wider SAAL NRM, to record areas of known weed infestations and management actions.</li> </ul> <p>Declared plant species under the NRM Act are present on ODC owned land within the Roxby Downs township (e.g., Buffel Grass).</p> <ul style="list-style-type: none"> <li>Opportunity: Implement highest standard of vehicle hygiene in collaboration with the SAAL NRM Board where development is planned in known weed infestation locations.</li> <li>Opportunity: Continue to progress control of Buffel Grass within the SML and Roxby Downs Municipality through ongoing control in the weeks following rain.</li> <li>Opportunity: Actively engage with SAAL NRM and implement actions from the State Buffel Grass Strategic Plan: 2012 to 2017 where appropriate.</li> <li>Opportunity: Continue to improve community and BHP employee knowledge about the impacts of pest plants and animals in the Roxby Downs region.</li> </ul>		
<p><b>ID 1.2 AQUIFER LEVEL DRAWDOWN</b></p>	<p>Within the GAB, pastoral abstraction may influence the reported drawdown. The elimination of pastoral flow at Jackboot Bore has resulted in drastically reduced drawdown, previously incorrectly attributed to Wellfield B operations. Some of the declining trends observed in current reported drawdown at D2 and Tarkanina 2 may also be influenced by antecedent pastoral flow and temperature effects.</p> <ul style="list-style-type: none"> <li>Opportunity: Eliminate or minimise the influence of pastoral flow on reported drawdown.</li> </ul> <p>Within the deeper GAB the combination of high temperatures (&gt; 60°C) and the depth of the aquifer (north of Wellfield B &gt; 700 m) makes the monitoring of GAB groundwater heads challenging. Opportunities</p>	<ul style="list-style-type: none"> <li>Continue implementation of water use conservation and recycling initiatives.</li> <li>Continue substitution of saline water for high quality water where possible.</li> </ul>	<ul style="list-style-type: none"> <li>Maintain an industrial water efficiency of 1.16 kL/t at the budgeted production rate.</li> <li>Maintain a domestic water use target of 3.2 ML/day average.</li> </ul>

EM Program ID	CONTINUOUS IMPROVEMENT OPPORTUNITIES	ACTIONS	TARGETS
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exist for improving the quality of data collected and the accuracy of interpreted drawdown by reviewing the methods used for measurements and the way drawdown is calculated.

ID2 STORAGE, TRANSPORT AND HANDLING OF HAZARDOUS MATERIALS			
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<p><b>ID 2.1 CHEMICAL / HYDROCARBON SPILLS</b></p>	<p>An audit of all existing bunds was undertaken in FY13 to determine compliance against the EPA Guidelines. Based on the audit a risk based approach and review is being applied to bund management. Process controls are implemented when bund capacity is inadequate or there is a risk that bunds will be insufficient to contain a spill if it is found that a spill is likely to occur.</p> <ul style="list-style-type: none"> <li>Opportunity: Ensure bunds are continuously maintained and process controls are implemented such as safe fill levels and Citect alarms when a risk has been identified. The controls must be captured in the site aspect and impact register against the functional location of the bund.</li> </ul>	<ul style="list-style-type: none"> <li>Maintain a register of recordable chemical and hydrocarbon spills and corrective actions.</li> </ul> <p><i>Note: An internally recordable spill of chemicals and/or hydrocarbons is defined as a spill of 10 litres or greater, outside of a bund, in a single event.</i></p> <ul style="list-style-type: none"> <li>Continue to implement environment improvement plans for areas of concern, as identified through the annual Aspects and Impacts risk register review</li> </ul>	<p>Corrective actions for all reportable spills of chemicals and hydrocarbons are implemented in a timely manner and do not result in <b>material environmental harm</b> (as defined in the EMM).</p> <p><i>Note: Spills are reportable if they result in potential or actual material environmental harm in accordance with the EP Act 1993</i></p>
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- Opportunity: Ensure bunds are continuously maintained and process controls are implemented such as safe fill levels and Citect alarms when a risk has been identified. The controls must be captured in the site aspect and impact register against the functional location of the bund.

- Maintain a register of recordable chemical and hydrocarbon spills and corrective actions.
- Note: An internally recordable spill of chemicals and/or hydrocarbons is defined as a spill of 10 litres or greater, outside of a bund, in a single event.*
- Continue to implement environment improvement plans for areas of concern, as identified through the annual Aspects and Impacts risk register review

Corrective actions for all reportable spills of chemicals and hydrocarbons are implemented in a timely manner and do not result in **material environmental harm** (as defined in the EMM).

*Note: Spills are reportable if they result in potential or actual material environmental harm in accordance with the EP Act 1993*

<p><b>ID 2.2 RADIOACTIVE PROCESS MATERIAL SPILLS</b></p>	<p>The majority of spill events occur in areas within secondary and tertiary containment systems and have minimal potential to cause significant <b>environmental impact</b>. The data from these incidents are reviewed to identify root causes and reduce the potential for further spill events.</p> <ul style="list-style-type: none"> <li>Opportunity: Review data to identify actions to be included in the area Environmental Improvement Plans.</li> </ul> <p>An audit of all existing bunds has been undertaken to determine compliance against EPA Guideline –Bunding and Spill Management (2007).Based on the audit a risk based approach and review is being applied to bund management. Process controls are implemented when</p>	<ul style="list-style-type: none"> <li>Maintain a register of recordable spills of radioactive process material resulting from operations at Olympic Dam.</li> </ul> <p><i>Note: Reportable and recordable spills of radioactive process material as defined by the Criteria and Procedures for Recording and Reporting Incidents at SA Uranium Mines (DEM), known as 'Bachmann Criteria'</i></p> <ul style="list-style-type: none"> <li>Continue to implement environment improvement plans for areas of concern as identified in the annual Aspects and Impacts risk register review</li> </ul>	<ul style="list-style-type: none"> <li>No spill of Radioactive Process Material into an undisturbed environment</li> <li>Corrective actions resulting from a reportable spill of radioactive process material are executed in a timely manner to ensure no adverse impacts to human health</li> </ul>
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The majority of spill events occur in areas within secondary and tertiary containment systems and have minimal potential to cause significant **environmental impact**. The data from these incidents are reviewed to identify root causes and reduce the potential for further spill events.

- Opportunity: Review data to identify actions to be included in the area Environmental Improvement Plans.

An audit of all existing bunds has been undertaken to determine compliance against EPA Guideline –Bunding and Spill Management (2007).Based on the audit a risk based approach and review is being applied to bund management. Process controls are implemented when

- Maintain a register of recordable spills of radioactive process material resulting from operations at Olympic Dam.
- Note: Reportable and recordable spills of radioactive process material as defined by the Criteria and Procedures for Recording and Reporting Incidents at SA Uranium Mines (DEM), known as 'Bachmann Criteria'*
- Continue to implement environment improvement plans for areas of concern as identified in the annual Aspects and Impacts risk register review

- No spill of Radioactive Process Material into an undisturbed environment
- Corrective actions resulting from a reportable spill of radioactive process material are executed in a timely manner to ensure no adverse impacts to human health

EM Program ID	CONTINUOUS IMPROVEMENT OPPORTUNITIES	ACTIONS	TARGETS
	<p>bund capacity is inadequate or there is a risk that bunds will be insufficient to contain a spill if it is found that a spill is likely to occur.</p> <ul style="list-style-type: none"> <li>Opportunity: Ensure bunds are continuously maintained and process controls are implemented such as safe fill levels and Citect alarms when a risk has been identified.</li> </ul>		
<b>ID 3 OPERATION OF INDUSTRIAL SYSTEMS</b>			
<b>ID 3.1 PARTICULATE EMISSIONS</b>	None Applicable	<ul style="list-style-type: none"> <li>Implement an Environmental Improvement Plan should any significant increase of operationally contributed PM<sub>10</sub> 24-hour average of 50 µg/m<sup>3</sup> occur over the year.</li> </ul>	<ul style="list-style-type: none"> <li>None applicable</li> </ul>
<b>ID 3.2 SULPHUR DIOXIDE EMISSIONS</b>	<p>Sampling has identified Acid Plant bypasses as being the emission most likely to result in <b>environmental impact</b>.</p> <ul style="list-style-type: none"> <li>Opportunity: Investigate threshold levels for effects of sulphur dioxide (SO<sub>2</sub>) on flora in the region of Olympic Dam.</li> </ul>	<ul style="list-style-type: none"> <li>None Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Capture approximately 99 per cent of all SO<sub>2</sub> generated during the smelting process.</li> </ul>
<b>ID 3.3 SALINE AEROSOL EMISSIONS</b>	Continue a watching brief on saline emission reduction technology.	<ul style="list-style-type: none"> <li>Install and maintain controls as per the design standard around raise bores.</li> </ul>	<ul style="list-style-type: none"> <li>Monitor the deposition of salt from saline aerosol emissions at the edge of the SML against background levels of 20 mg/m<sup>2</sup>/day.</li> </ul>
<b>ID 3.4 RADIOACTIVE EMISSIONS</b>	<p>International and national standards, guidance and codes are subject to change from time to time, to ensure effective protection of humans and the environment from the harmful effects of radiation. Any new recommendations or revisions should be reviewed and implemented as necessary.</p> <ul style="list-style-type: none"> <li>Opportunity: Maintain a watching brief on ICRP and IAEA recommendations and any new or</li> </ul>	<ul style="list-style-type: none"> <li>None applicable</li> </ul>	<ul style="list-style-type: none"> <li>Maintain radiation doses as low as reasonably achievable, as assessed through the annual Radiation Management Plan Review</li> </ul>

EM Program ID	CONTINUOUS IMPROVEMENT OPPORTUNITIES	ACTIONS	TARGETS
	<p>revised national Codes and implement as necessary.</p> <ul style="list-style-type: none"> <li>Opportunity: Consider impacts of potential changes to ICRP recommended dose conversion factors for radon decay products and implement as required.</li> </ul>		
<b>ID 3.5 GREENHOUSE GAS EMISSIONS</b>	<ul style="list-style-type: none"> <li>Continue to identify and implement energy efficiency projects for the existing operation, particularly those identified opportunities that do not require capital expenditure.</li> </ul>	<ul style="list-style-type: none"> <li>None applicable</li> </ul>	<ul style="list-style-type: none"> <li>None applicable</li> </ul>
<b>ID 4 GENERATION OF INDUSTRIAL WASTES</b>			
<b>ID 4.1 EMBANKMENT STABILITY OF TSF</b>	<p>Several contingency options exist to maintain slope stability and reduce the risk of potential piping failures.</p> <ul style="list-style-type: none"> <li>Opportunity: Identify, design and install contingency options as required.</li> </ul> <p>Regular audits of the TRS operation are undertaken as described in the Waste MP.</p> <ul style="list-style-type: none"> <li>Opportunity: Ensure improvement actions and recommendations from audits are documented and where appropriate implemented in a timely manner.</li> </ul>	<ul style="list-style-type: none"> <li>Undertake periodic (2-3 year) CPTu testing of tailings to confirm strength parameters used in stability analysis.</li> </ul>	<ul style="list-style-type: none"> <li>None applicable</li> </ul>
<b>ID 4.2 TAILINGS SEEPAGE</b>	<p>Regular inspections around the perimeter of the TSF identify any new areas of lateral seepage. Existing perimeter features are also monitored to determine if there is any change in size, location and appearance.</p> <ul style="list-style-type: none"> <li>Opportunity: Install a liquor interception system where seepage of liquor has potential to impact native vegetation.</li> </ul>	<ul style="list-style-type: none"> <li>Identify and install additional liquor interception systems as required.</li> </ul>	<ul style="list-style-type: none"> <li>None applicable</li> </ul>

EM Program ID	CONTINUOUS IMPROVEMENT OPPORTUNITIES	ACTIONS	TARGETS
<p><b>ID 4.3 FAUNA INTERACTION WITH TAILINGS RETENTION SYSTEM</b></p>	<p>The TRS fauna project was instigated after an increase in numbers of birds interacting with the TRS became apparent in 2004. This project manages research, on-ground work and monitoring relating to the interaction of fauna with the TRS.</p> <ul style="list-style-type: none"> <li>Opportunity: Identify new opportunities to reduce fauna mortalities through ongoing research into management practices relating to fauna interaction with tailings storage systems.</li> </ul> <p>Opportunistic and standardised monitoring of fauna interactions at the TRS has occurred since the implementation of the TRS fauna project.</p> <ul style="list-style-type: none"> <li>Opportunity: Continue to assess the impact to fauna and the efficacy of various management tools through monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>Continue investigating and trial alternative deterrent technologies when they become available.</li> </ul>	<ul style="list-style-type: none"> <li>None applicable</li> </ul>
<p><b>ID 4.4 SOLID WASTE DISPOSAL</b></p>	<p>The opportunity to reuse and recycle materials would be greater if more waste materials were segregated at their source. Segregation reduces contamination and double handling and enable more accurate tracking of waste streams. Waste segregation has been rolled out across site however still needs improvement and extension to the mine and underground mine.</p> <ul style="list-style-type: none"> <li>Opportunity: Improve at source segregation and improve mine end waste segregation system.</li> </ul> <p>No site-standard recycling program exists for office-based waste.</p> <ul style="list-style-type: none"> <li>Opportunity: Develop an office-based recycling program to enhance recycling of paper/cardboard and refundable drink containers.</li> </ul> <p>One of the largest volumes of waste generated on site is rubber tyres. Used tyres are already reused on site where possible, as road berms and for area demarcating. Reducing the quantity of waste tyres is key to reducing the volume of landfill. Investigations regarding initiatives to increase tyre life will be progressed during detailed design of the project (DEIS</p>	<ul style="list-style-type: none"> <li>Implement a site wide paper/cardboard recycling programme with bailing and off site removal/recycling.</li> </ul>	<ul style="list-style-type: none"> <li>Increase at source waste segregation to reduce waste to landfill.</li> </ul>

EM Program ID	CONTINUOUS IMPROVEMENT OPPORTUNITIES	ACTIONS	TARGETS
	<p>5.6.3; SEIS 5.4.3).</p> <ul style="list-style-type: none"> <li>Opportunity: Investigate ways to increase tyre life for haul trucks.</li> </ul>		
<p><b>ID 4.5 RADIOACTIVE WASTE</b></p>	<p>International and national standards, guidelines and codes are subject to change from time to time, to ensure effective protection of humans and the environment from the harmful effects of radiation. Any new recommendations or revisions should be reviewed and implemented as necessary.</p> <ul style="list-style-type: none"> <li>Opportunity: Maintain a watching brief on ICRP and IAEA recommendations and any new national Codes of Practice and implement as necessary.</li> </ul> <p><b>ALARA</b> is built into the design of the operation. This means that all reasonable efforts are made to ensure that radiation and radioactive emissions are controlled and managed in the design of new plant. Radiation protection design criteria have been established and are mandatory for all facilities. An optimisation (<b>ALARA</b>) study will be conducted for all phases of any future expansion with findings incorporated into designs.</p> <ul style="list-style-type: none"> <li>Opportunity: Develop and implement optimisation in design process.</li> </ul> <p>Olympic Dam produces waste of various streams as a result of normal operations. A permanent facility specifically designed for disposing contaminated waste has been established. Maximising the capacity whilst minimising the volume of waste deposited at the facility, is a key factor in reducing the environmental impact through land disturbance and improved resource recovery.</p> <ul style="list-style-type: none"> <li>Opportunity: Continue to develop, update and implement a strategy towards managing radioactive waste produced at the site (including waste minimisation strategy).</li> </ul>	<ul style="list-style-type: none"> <li>None applicable</li> </ul>	<ul style="list-style-type: none"> <li>Maintain radiation doses as low as reasonably achievable, as assessed through the annual Radiation Management Plan Review.</li> </ul>

EM Program ID	CONTINUOUS IMPROVEMENT OPPORTUNITIES	ACTIONS	TARGETS
<b>ID 5 EMPLOYMENT AND ACCOMMODATION OF PEOPLE</b>			
<b>ID 5.1 COMMUNITY INTERACTION</b>	<ul style="list-style-type: none"> <li>• Olympic Dam provides opportunities for employment and businesses locally, regionally and state-wide and for specific target groups such as Aboriginal people. These opportunities would increase with any future expansion at Olympic Dam. ODC is also committed to increasing Aboriginal employment in the Olympic Dam workforce and to enabling Aboriginal enterprises from the Northern Region of South Australia to secure contracts at site.</li> <li>• Opportunity: Maximise opportunities for South Australian and Aboriginal employment and business participation at Olympic Dam: <ul style="list-style-type: none"> <li>○ Develop and implement a local procurement plan with targets to maximise the participation of local, regional and State businesses and employment in supplying goods and services to Olympic Dam; and</li> <li>○ Continue to explore opportunities to build the capacity of Aboriginal people and businesses to participate in Olympic Dam.</li> </ul> </li> <li>• ODC is committed to maintaining and enhancing the amenity and lifestyle of Roxby Downs. This requires a good understanding of the social and economic environment and the factors that influence amenity, such as the social cohesion, living costs, housing and social services. It is also recognised that responsibility for some social matters lies outside of the authority of ODC, and as such, will need to be managed collaboratively with the State Government and other key stakeholders.</li> <li>• Opportunity: Maintain and enhance the amenity and lifestyle of Roxby Downs as a desirable place to live and work.</li> </ul>	<ul style="list-style-type: none"> <li>• Undertake the triennial Community Perception Survey to monitor local community perceptions of ODC, and of local services and facilities.</li> <li>• Undertake the five-yearly Social Baseline Study to monitor key data relating to health, education, employment, safety, commercial activity and environment.</li> </ul>	<ul style="list-style-type: none"> <li>• None applicable.</li> </ul>

EM Program ID	CONTINUOUS IMPROVEMENT OPPORTUNITIES	ACTIONS	TARGETS
	<ul style="list-style-type: none"> <li>○ undertake a regular (five-yearly) assessment (social baseline study) of Roxby Downs, Andamooka and Woomera;</li> <li>○ continue to build on best practice and learnings from other remote Australian mine sites to enhance liveability and build sustainable relationships between the residential community and non-resident workforce;</li> <li>○ in collaboration with the South Australian Government and key stakeholders, identify indicators to assist in planning, delivering and monitoring social infrastructure provision; and</li> <li>○ work collaboratively with the South Australian Government and key stakeholders to investigate and deliver appropriate social services and infrastructure.</li> </ul>		

**4 SUMMARY OF AMENDMENTS TO THE EPMP 2017**

Document	Section	Description of Change	Change Explanation
All		The 'at-risk' species terminology has been changed to 'Important Biodiversity and Ecosystems'.	The change has been made to align with BHP global standards.
All	All	Updated numbering references to EPA Licence 1301 and EPA Exemption licence 31543. Removed references to Licence 3014.	Licence 1301 and Exemption licence 31543 were updated and have new numbering of conditions. EPA Exemption licence 3014 has been revoked.
All	All	'BHP Billiton' changed to BHP	Company name change
EM Manual	All	Removed reference to Exemption licence 3014	Exemption Licence 3014 was revoked due to the updating of the Environmental Protection (Air Quality) Policy 2016.
EM Manual	2.3, 5.1	'Department of State Development' changed to 'Department of Energy and Mining'	Department change
EM Manual	3.4.1	Reference to and detail of rock storage facility (RSF) removed.	No longer relevant to current operations
EM Manual	3.4.2	Deleted entire section (describing open pit expansion)	No longer relevant to current operations
EM Manual	Figure 3.3	Deleted	Not required and not referred to in text
EM Manual	Table 8.1	Updated table 8.1 EPA Licence 1301.	The EPA Licence 1301 has been updated which has resulted in new conditions and numbering.
EM Manual	Appendix C	Various updates	Reflect changes to compliance criteria etc.
EM Program	All	Updated all references to Licence 1301 numbering to reflect the updated Licence 1301 issued 1 May 2017. Removed reference to exemption Licence 3014.	Exemption Licence 3014 not applicable due to updated Air Quality Policy 2016. Licence 1301 updated with new numbering in May 2017.
EM Program	3.1.12	Included 'Appropriate filters are connected to each silo to minimise dust emissions, Process controls exist to prevent overfilling of silos (EPA 1301 (S-89; S - 90)).'	Licence 1301 updated.

Document	Section	Description of Change	Change Explanation
EM Program	3.5.2, 3.5.3	Substantial changes and updates	Reflect BHP-wide strategy and response to climate change and new corporate 5 year greenhouse gas reduction targets.
EM Program	3.5.4	Include 'National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Cth)'.	Include new/updated legislation.
EM Program	3.5.8	New compliance criteria	Reflect BHP-wide strategy and response to climate change and new corporate 5 year greenhouse gas reduction targets.
EM Program	3.5.10	Remove reference to Energy and Greenhouse Gas Management Plan, Document No. 61598	Document no longer valid. This document primarily addressed energy and greenhouse gas impacts resulting from the planned Olympic Dam open pit expansion, the subject of the Draft Environmental Impact Statement 2009 (EIS). That project was suspended in August 2012.
EM Program	4.1.3	Included 'A barrier wall is being constructed between the TSF and mining and surface operations, to minimise consequences in the unlikely event of a total TSF wall failure.'	Reflect updates to management strategy.
EM Program	4.1.9	Leading indicators modified to be expressed in the negative.	For consistency with other leading indicators in the EM program and the intent of the leading indicators.
EM Program	4.4.12	Included 'the integrity of the lagoon structure and liner is maintained to minimise seepage to land and groundwater and lagoon walls and capacity are maintained to prevent uncontrolled overflow (EPA 1301. 3.6 (S-122))'	Licence 1301 update.
EM Program	4.4.12	Included 'Ensure all wastewater lagoons constructed with a leak detection system undergo quarterly inspections (EPA 1301. 3.7 (S – 163))'.	Licence 1301 update.
EM Program	4.4.12	Included 'The Licensee must implement and comply with the approved Landfill Environmental Management Plan QD 83202 (EPA 1301. 3.3 (T-1036))'.	Licence 1301 update.
EM Program	4.4.12	Included 'The Licensee must implement and comply with the approved Landfill Environmental Management Plan QD 83202 (EPA 1301. 3.3 (T-1036)).'	New condition in Licence 1301.

Document	Section	Description of Change	Change Explanation
EM Program	4.5.12	Changed CWDF activity concentration limit from 1 Bq/g to reference schedule 4 of the National Directory for Radiation Protection.	Different radionuclide mixtures have different exemption levels as defined by the National Directory for Radiation Protection. 1 Bq/g is only applicable to natural uranium.
Annual Actions and Targets	Table 3 ID 1.2	Remove Opportunity "Continue to develop Practical Reference Heads (PRH)"	The 2017 Annual Wellfield Report presented temperature inclusive heads (PRH) as corrected baseline values. Wells will reported against these PRH's in the future and no further work is required.
Annual Actions and Targets	Table 3 ID 5.1	Remove Tagret 'A long-term desirable trend towards a minimum housing rental vacancy rate in Roxby Downs of 5%'.	This target has been removed as it was associated with the open pit expansion.
Annual Actions and Targets	Table 3 ID 4.4	Remove 'Implement plan for reducing stockpiles of recyclable material and Reduce recycling stockpiles by 20%'	Recycling initiatives have been implemented resulting in majority of stockpiles to be reduced on site with ongoing removal from site.
Annual Actions and Targets	Table 3 ID 4.5	Remove 'Spent catalyst (acid plant catalyst containing vanadium pentoxide) is a hazardous waste produced on site and is currently disposed of into the TSF. Investigations into the radiological components of the waste product have been undertaken in the past to aid in determining if alternative disposal or treatment methods are available. Historically, recycling has not proved to be viable in Australia.  Opportunity: Investigate alternative treatment methods for spent catalyst (DEIS 5.6.6).	Spent catalyst is no longer disposed to the TSF. This waste has successfully been removed from site for disposal by a specialist waste contractor.
Airborne Emissions MP	All	Remove reference to EPA exemption 3014	EPA exemption 3014 revoked in light of new Environmental Protection (Air Quality) Policy 2016.
Airborne Emissions MP	2.1 & Table 2.1	Updated to reflect schedule 4 Environmental Protection (Air Quality) Policy 2016 and Licence 1301 stack limits.	Environmental Protection (Air Quality) Policy 2016 stack limits differ for SO <sub>2</sub> to our EPA 1301 licenced limits. The previous EP Air Quality Policy 1994 set limits for particulates for general processes, excluding the heating of metal ores, at 250mg/m <sup>3</sup> . It has been updated to 100mg/m <sup>3</sup> in the EP Air Quality Policy 2016. The Calciner and Feed Prep fall within this category and are operated to achieve <250mg/m <sup>3</sup> however due to the design and age of the plant they will not achieve 100mg/m <sup>3</sup> . Until they are upgraded they will be operated to <250mg/m <sup>3</sup> and ground level concentrations at sensitive receivers will be used as an indication of compliance.

Document	Section	Description of Change	Change Explanation
Airborne Emissions MP	2.2.4	U-238 Analysis for Calciner stack sampling changed from annually to quarterly	More frequent analysis required for faster detection of calciner baghouse failure.
Waste MP	Table 1.1	Remove temporary contaminated waste storage area.	All temporary contaminated waste storage areas have been decommissioned with all waste being either cleaned for offsite recycling or onsite disposal at the new contaminated waste storage facility.
Waste MP	2.2.1	Reworded "Precipitation of solids can be reduced by circulation of liquor through the pond and this is currently being implemented on a number of the EPs. EP1, EP2 and EP3A were taken out of service due to a high level of precipitated solids resulting in inadequate freeboard for their continued operation. The walls of EP1 and EP2 have been raised by two metres and the EPs have been returned to service." To "EP1, EP2 and EP3A were taken out of service due to a high level of precipitated solids resulting in inadequate freeboard for their continued operation. The walls of EP1 and EP2 were raised by two metres returned to service. EP3A and EP3B are currently having a refurbishment and wall raise to increase the wall height by 5 meters from RL 102.5m to RL 107.5m. Upon completion EP3A and EP3B will be returned to service."	The change is required to reflect the approval for the refurbishment and increase in height of EP3.
Environmental Radiation MP	1	Removed 'The Olympic Dam expansion project has been placed on hold and there are not expected to be any radioactive emissions associated with expansion activities during the period of this EPMP. Expansion activities are therefore not covered in this Monitoring Program. The main sources of radioactive emissions are from the existing operations and are expected to remain at current levels'.	No longer required as expansion is not currently progressing.
Energy Use and Greenhouse Gas Emissions MP	2.2	Substantial changes and updates	Reflect BHP-wide strategy and response to climate change and new corporate 5 year greenhouse gas reduction targets.
Energy Use and Greenhouse Gas Emissions MP	3.2	Table modified	Modified in accordance with changes to MP section 2.2.

Document	Section	Description of Change	Change Explanation
Groundwater MP	2.5	Addition of TSF5 dewatering monitoring requirements	TFS5 dewatering project will become operational in 2018 and agreed new monitoring requirements have been added to the Groundwater MP
Groundwater MP	Table 5.1	Removal of 5 groundwater quality sample sites	3 sites in the southern mine area and 2 sites new Roxby Downs have been removed from the quality sampling schedule Table 5-1. The off lease sites (LR6 and QR3) are no longer required as historical sampling and modelling demonstrated no contamination leaving the SML. The 3 on site bores (RD2875, RD3514P1, RD4462) are in the Southern Mining area and were retained after the Open Pit project ceased. The pumps at these wells are no longer operational and the data is not required.
Groundwater MP	Table 5.2	Table 5-2 Addition of TSF5 dewatering monitoring requirements	TFS5 dewatering project will become operational in 2018 and agreed new monitoring requirements have been added to the Groundwater MP
Contaminated Waste Management Plan	All	Included disposal of waste that is below exemption levels as defined in schedule 4 of the National Directory for Radiation Protection, June 2017	Previously only reflected 1 Bq/g to be disposed to the CWDF. 1Bq/g or below exemption levels as defined in schedule 4 of the National Directory for Radiation Protection, June 2017
Contaminated Waste Management Plan	All	Removed reference to past temporary facilities.	The temporary stockpiles of CW have been removed and decommissioned.
Contaminated Waste Management Plan	All	Updated operational requirements for ongoing management of the facility. This includes appropriately trained personnel; waste preparation to reduce voids; progressive filling/stockpiling.	The project learnings have required an update to the operational requirements of the facility however no environmental or legal implications will be expected from the changes. Changes are to set clear operating and management responsibilities.
Contaminated Waste Management Plan	Appendix B	Site layout and Engineering designs have been updated to include a new design for cell 2 and 3.	New cells will be required for the future expansion of the facility.