

Air Quality Management

Particulates

Target	Action	Progress
<ul style="list-style-type: none"> - Reduce the particulate emissions from calcination and shipping areas 	<ul style="list-style-type: none"> - Investigate fugitive emission sources from calcination and shipping areas - Implement specific projects to reduce fugitive emissions from calcination building and shipping areas 	<p>Consultant engaged to further detail dust sources and potential improvements.</p> <p>To follow from above action.</p>
<ul style="list-style-type: none"> - Identify the ambient levels of fine particulates adjacent to the refinery and residue areas 	<ul style="list-style-type: none"> - Install a PM10 monitor at the Refinery boundary - Work via KIC to support a PM2.5 monitoring program at appropriate locations in the region as part of the Perth background air quality study being conducted by the Department of Environment 	<p>Site selected and monitor is leased. Prepared for installation is underway.</p> <p>No action to date.</p>
<ul style="list-style-type: none"> - Continue to improve dust control methods and applications at the residue area 	<ul style="list-style-type: none"> - Complete the ROWS pond project to provide a clean source of sprinkler water in 2006 - Upgrade the sprinkler system in Area F to reduce the distance between sprinklers to the current Alcoa standard in 2006 	<p>ROWS pond construction completed.</p> <p>Replacements of laterals have been completed in F1 and F4, and nearing completion in F2 and F3. Larger capital project funding approval being progressed.</p>
<ul style="list-style-type: none"> - Provide the community with an understanding of the dust related health risks associated with the residue area 	<ul style="list-style-type: none"> - Commence the use of carbonated mud onto all drying areas (including Area F) as soon as practical (expected July 2006) - Involve community representatives in inspection and reporting of progress on implementing dust control - Develop an easy to use feedback mechanism to encourage community to report dust issues - Complete an Alcoa residue dust-related health risk assessment by 2007 	<p>Final agreements and approvals for pipeline construction being obtained, with pipeline due to be completed November. Construction of carbonation facility at the residue area is complete.</p> <p>Community representatives have toured residue area to observe dust control measures in 2005 and 2006.</p> <p>Dust reporting logs have been distributed to near neighbours and feedback collected each month.</p> <p>No action to date.</p>

Air Quality Management

Gaseous Emissions, Greenhouse gases, Gases and Odour

– Target	– Action	– Progress
<ul style="list-style-type: none"> Options for the reduction in greenhouse gas emissions are identified Reduce VOC emissions from liquor burner by 98 per cent and odour by 95 per cent Minimise the use of diesel, and use only ultra low sulphur diesel 	<ul style="list-style-type: none"> Complete a feasibility study on replacement of existing less-efficient boilers with a gas turbine and waste heat boiler. Commission the emissions reduction equipment on the liquor burner Use LNG gas as the primary fuel source for power and steam generation, with backup only from ultra-low sulphur diesel to minimise SO_x 	<ul style="list-style-type: none"> Feasibility study in progress – report due along with other related reports in Q3 2006. Liquor Burner is being wet commissioned in June 2006. SRG visited site for inspection in March 2006. LNG is the primary fuel source. Ultra low sulphur diesel used on several occasions in 2006, primarily due to gas curtailments.

Noise

Target	Action	Progress
<ul style="list-style-type: none"> Communicate and respond to community concerns about noise following mutually agreed processes Ensure new equipment is installed with consideration to reduce noise emissions 	<ul style="list-style-type: none"> Maintain links with the Kwinana noise reference group through KIC membership to ensure noise emissions from Alcoa are managed appropriately Continue to proactively consider environmental noise emissions and cumulative noise in design for significant capital projects to maintain compliance 	<ul style="list-style-type: none"> Noise reference group still reporting back to KIC and visa versa regularly. Fan for Liquor Burner is scheduled for noise assessment when running in full operation. No other major installations.

Water Management and Conservation

Groundwater

Target	Action	Progress
<ul style="list-style-type: none"> - Reduce the potential for impacts from refinery groundwater outside Alcoa property 	<ul style="list-style-type: none"> - Complete a review of groundwater monitoring program including monitoring for trace elements 	<p>Review complete and report provided to DoE for their advice. Some trace elements have been added to the monitoring program on advice from DoE.</p>
<ul style="list-style-type: none"> - Reduce the existing contamination under the refinery and adjacent property 	<ul style="list-style-type: none"> - Review options to install a refinery perimeter underground barrier to effectively contain groundwater to Alcoa property - Increase groundwater recovery capacity at the refinery. - Monitor quality of existing sealed areas within the refinery to maintain integrity 	<p>Review completed – feasibility study provided to DoE on 1st April 2006. Community consultation over proposed options has commenced.</p> <p>Additional 2 bores are being installed (nearing completion) at the refinery in 2006. Feasibility study has related recommendations.</p> <p>2006 annual monitoring and repair program has commenced.</p>
<ul style="list-style-type: none"> - Reduce the plumes in the area around Area F to minimise impact on groundwater 	<ul style="list-style-type: none"> - Develop and progress research plans for the early closure of Area F in 2010 and rehabilitation over the following years - Install additional recovery capacity at Area F 	<p>Development of plans for closure of Area F has commenced</p> <p>4 additional bores have been installed in 2006.</p>
<ul style="list-style-type: none"> - Increase contaminated groundwater recovery capacity at residue areas A B C 	<ul style="list-style-type: none"> - Examine feasibility for further de-liquoring of Area A B C - Install additional recovery capacity at Areas A B and C 	<p>A feasibility study has commenced for options to further de-liquor Area ABC. Expected completion is June 2006</p> <p>No action – expect 2007 installation.</p>

Water Management and Conservation

Containment

<ul style="list-style-type: none"> - Reduce the risk of groundwater contamination from existing containment facilities including existing refinery to residue area pipeline containment facilities 	<ul style="list-style-type: none"> - Develop a 5 year containment strategy. - Implement a risk reduction program for high risk areas over the first 2 years. - Upgrade the secondary containment facilities at the refinery to residue area pipeline pumping stations by end 2006 	<p>A risk reduction strategy has been developed and reported to the DoE.</p> <p>As above.</p> <p>Three of the four secondary containment facilities outside of the refinery and residue areas have been upgraded.</p>
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Water Use

<ul style="list-style-type: none"> - Identify alternative industrial water uses and supplies to minimise high quality (potable and ground water) water use by Alcoa 	<ul style="list-style-type: none"> - Review the options for the use of secondary or tertiary treated water for use in the refinery process - Develop a water use strategy focusing on water source alternatives and water reuse and efficiency - Support and assist the KIC and appropriate Government Departments in a review of the movement of the salt water wedge in the region 	<p>Kwinana refinery has developed a water use model and identified areas where alternative water supplies could be used.</p> <p>From the work identified above, a new strategy is being developed and preliminary discussions have been held with potential suppliers.</p> <p>No action to date.</p>
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Visual Amenity and Land Management Residue Rehabilitation

Target	Action	
<ul style="list-style-type: none"> - Residue rehabilitation to focus on visual amenity and dust control as a priority, and be self sustaining in the long term 	<ul style="list-style-type: none"> - Review existing rehabilitation and develop and implement an annual rehabilitation rework plan to upgrade areas of the existing rehabilitation that do not meet current standards 	<p>Existing residue rehabilitation on the outer batters of Area F will have infill planting in 2006. Annual rework plans will be developed for each year.</p>
<ul style="list-style-type: none"> - Use native vegetation complexes including conifers as part of the residue rehabilitation program to ensure self-sustaining ecosystems are developed 	<ul style="list-style-type: none"> - Develop the residue rehabilitation research plan to focus on identifying mixes of self sustaining native species 	<p>Current focus of residue rehabilitation is on these types of plant communities, and comparison to reference vegetation community types</p>

Wetlands

<ul style="list-style-type: none"> - Continue to support wetland research and local community use 	<ul style="list-style-type: none"> - Include wetland research in the strategic land management program - Work with local government and community interest groups to promote appropriate uses of the wetlands 	<p>Research into success of nutrient stripping pond at Wellard planned.</p> <p>No action to date</p>
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Waste Management

Waste Reduction

Target	Action	Progress
<ul style="list-style-type: none"> – Continue with waste minimisation activities to identify waste to landfill reduction opportunities 	<ul style="list-style-type: none"> – Complete assessment of recyclable canteen food waste packaging for implementation – Continue to work with suppliers to further identify packaging waste reduction and recyclable supplies initiatives. – Undertake an assessment of the effectiveness of the glove recycling program and implement identified improvements. 	<p>Initial assessment did not identify suitable recyclable packaging for canteen food. Further investigation planned.</p> <p>Preliminary discussions held with Alcoa supply personnel.</p> <p>No action to date.</p>

Oxalate Management

<ul style="list-style-type: none"> – Implement a strategy for long-term oxalate management 	<ul style="list-style-type: none"> – Implement the natural bio-removal process for oxalate destruction subject to environmental approvals 	<p>Technical design of bio-removal process is complete. Funding and environmental approval is being sought.</p>
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Residue Reuse

<ul style="list-style-type: none"> – Support projects to identify and research residue reuse opportunities with involvement with external bodies 	<ul style="list-style-type: none"> – Work with research groups to develop markets for alternative uses for red sand – Work with research groups to develop a project for separation and alternative use of recovered lime 	<p>Work within Alcoa's Technology Delivery Group is continuing, with support from Kwinana.</p> <p>As above.</p>
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