

# Orchard Hills Waste and Resource Management Facility

## Response to Submissions

### Part C: Final Statement of Commitments



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## 5.1 INTRODUCTION

This part has been compiled to update all operational and environmental management commitments that the Proponent would adopt in the event project approval is granted for the proposed Project. These commitments have been updated in response to the submissions to the Proponent's Project described in the *Environmental Assessment* dated April 2010. All commitments are presented in terms of their desired outcome, action and timing.

### Final Statement of Commitments

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Desired Outcome	Action	Timing
<b>1. Area of Activities and Operational Levels</b>		
All approved activities are undertaken in the area(s) nominated on the approved figures.	1.1 Clearly mark the boundary of each area of activity.	Prior to the commencement of each activity in each area.
	1.2 Ensure all waste emplacement activities and clay/shale extraction occurs only within the cells nominated.	Ongoing.
All activities are undertaken in accordance with nominated maximum operational levels	1.3 Ensure annual waste receipts do not exceed 450 000tpa.	Ongoing.
	1.4 Ensure quantities of clay / shale transported off site do not exceed the 400 000tpa.	Ongoing.
	1.5 Ensure annual quantity of waste emplaced does not exceed the 350 000tpa.	Ongoing.
	1.6 Ensure the quantities of waste received, clay / shale despatched off site and recycled / re-processed materials despatched off site collectively do not cause the maximum number of heavy vehicle movements to exceed 280 in any one day.	Ongoing.
	1.7 Optimise the sale of clay/shale extraction for brick making purposes.	Ongoing.
<b>2. Operating Hours</b>		
Management of all activities only during the approved hours of operation.	2.1 Site establishment/construction: Monday to Friday 7:00am to 6:00pm Saturday 8:00am to 5:00pm	Construction period.
	2.2 Waste receipts and despatch of recycled/re-processed products: Monday to Friday 7:00am to 5:00pm Saturday 8:00am to 5:00pm	Ongoing.
	2.3 Waste re-processing, waste emplacement management: Monday to Friday 7:00am to 6:00pm Saturday 8:00am to 5:00pm	Ongoing.



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Desired Outcome	Action	Timing
<b>2. Operating Hours (Cont'd)</b>		
	2.4 Extraction activities and clay/shale despatch: Monday to Friday 7:00am to 6:00pm Saturday 8:00am to 5:00pm	Ongoing.
	2.5 Maintenance Activities.	Any time, 24 hours per day (provided all maintenance activities are inaudible).
<b>3. Workforce Competencies and Training</b>		
All employees and contractors are trained and assessed as competent to undertake those activities influencing the environment.	3.1 Require all employees and contractors to demonstrate competency for any activity undertaken on site with environment implications.	Prior to commencement of activity.
	3.2 Training would be provided or sought in the event that the required level of competency has not been achieved.	Following an assessment of competency.
<b>4. Groundwater</b>		
Protection of groundwater occurrences within the Bringelly Shale.	4.1 Maintain a barrier of at least 10m of clay/shale around the external boundary of each emplacement cell.	When extracting cells.
	4.2 Install an engineered liner around the external boundaries of each emplacement cell up to the elevation of the land's natural surface.	Prior to emplacement of wastes within the respective cell.
	4.3 Install an engineered cell liner on the floor of Cells 1, 2, 3 and the Final Cell which meets DECCW requirements.	Prior to emplacement of wastes within the respective cell.
	4.4 Ensure the Initial and Long-Term Leachate Evaporation Ponds and Initial and Final Stormwater Leachate Ponds are fully lined with 1.0mm HDPE.	Prior to receipt of leachate to the leachate ponds / dam.
Minimal impacts upon the productivity of registered groundwater bores intersecting the Hawkesbury Sandstone	4.5 Ensure the annual abstraction rate is less than the licence limit on 10BL161098.	Ongoing.
Demonstration of compliance with groundwater quality objectives.	4.6 Undertake groundwater monitoring program as nominated in <b>Table 4.3</b> .	Quarterly and annually.



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Desired Outcome	Action	Timing
<b>4. Groundwater Cont'd</b>		
	4.7 Report the results of the Groundwater Monitoring Program to the Director-General and the NSW Office of Water on an annual basis.	Annually.
	4.8 Implement appropriate management measures in relation to groundwater as indicated by the Monitoring Program and agreed with the Director-General and the NSW Office of Water.	Ongoing.
	4.9 Commence the background Groundwater Monitoring Program,	Prior to receipt of wastes.
	4.10 A licence to authorise any groundwater monitoring installation, required as part of this project, shall be obtained from the NOW.	Prior to any drilling commencing.
	4.11 Prepare a Closure Plan to comply with Section 76 of the POEO Act.	At least 2 years prior to site closure.
<b>5. Leachate Management</b>		
An effective on site leachate management system.	5.1 Minimise generation of leachate through: a) isolation from run-on water; and b) minimise the area of uncovered waste exposed to rainfall.	Ongoing.
	5.2 Install a leachate collection system within the floor of each cell incorporating HDPE collection pipes (at 50m spacings) and a leachate drainage layer.	Prior to receipt of wastes in each sub-cell.
	5.3 Establish a leachate riser within each emplacement cell.	Prior to receipt of waste in cell.
	5.4 Install a mobile 25 000L tank to accept leachate until the Initial Leachate Evaporation Pond is constructed.	Prior to receipt of waste on site.
	5.5 Construct a HDPE-lined Leachate Evaporation Pond with a capacity of approximately 12ML.	Prior to accumulating >25 000L of leachate.
	5.6 Construct the HDPE-lined – Leachate Stormwater Pond to receive stormwater leachate from within the recycling and re-processing area.	During site establishment.
An effective on site leachate management system (Cont'd).	5.7 Establish a leachate pumping system between the leachate riser and the leachate evaporation pond.	Prior to receipt of waste in each cell.
	5.8 Undertake a program of leachate re-injection at a rate not exceeding 0.03m <sup>3</sup> per tonne of emplaced waste – to be undertaken in accordance with a specific procedure.	Ongoing.



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Desired Outcome	Action	Timing
<b>5. Leachate Management Cont'd</b>		
	5.9 Monitor the level of leachate in the riser in all cells.	Ongoing until post closure leachate management is no longer required by DECCW.
	5.10 Monitoring the volume of leachate generated (by each cell), storage and disposed of and compare to model prediction.	On-going until post closure leachate management is no longer required DECCW.
	5.11 Prepare a Construction Quality Control Assurance Plan for the selected barrier.	Provide with application for EPL..
<b>6. Surface Water</b>		
Containment of sediment-laden water within the Project Site.	6.1 Reconstruct Dam 1 to provide for the Long-Term Leachate Evaporation Pond (7 000m <sup>2</sup> ) and Final Stormwater Leachate Pond (2 000m <sup>2</sup> ).	Prior to decommissioning of the Initial Leachate Evaporation Pond and Initial Stormwater Leachate Pond.
	6.2 Maintain and expand Dam 5 as required to contain run-off from within the Recycling and Re-processing Area.	Prior to removal of Dam 4.
	6.3 Construct and maintain sumps in all active extraction areas.	Ongoing.
	6.4 Construct diversion embankments within each extraction cell to isolate sediment-laden water from active waste emplacement areas.	Ongoing.
External sediment dams capable of containing run-off from external faces of perimeter bund walls.	6.5 Increase the storage capacities of Dams 2 and 3 to provide a storage capacity of 2 600m <sup>3</sup> (Dam 2) and 3 100m <sup>3</sup> (Dam 3). (Note: The eastern third of Dam 2 is to be retained in its current form).	Prior to construction of the northern bund wall.
	6.6 Construct a new dam (Dam 6) in the southeastern corner of the Project Site to collect run-off from external and internal areas.	During initial site establishment.
Control of sediment at sources and minimisation of erosion.	6.7 Construct and maintain controls such as silt-stop fences, straw bale barriers, rock groynes, diversion banks/drains and level spreaders/sills.	Ongoing, as required. Inspected monthly or following 25mm of rainfall in 24 hours.
	6.8 Revegetate all exposed soil areas with a cover crop.	As soon as practicable.



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Desired Outcome	Action	Timing
<b>6. Surface Water Cont'd</b>		
Discharge of surplus water from site satisfying EPL requirements	6.9 Retain area of aquatic vegetation in eastern third of Dam 2.	During site establishment.
	6.10 Construct and line with turf all discharge locations.	During site establishment.
	6.11 Use a flocculent to reduce turbidity levels to meet accepted criteria in surplus water to be discharged.	As required.
Compliance with surface water quality objectives.	6.12 Undertake surface water monitoring program as nominated in <b>Table 4.8</b> .	Daily/weekly, (for discharges) Quarterly (for Dams/Blaxland Creek).
	6.13 Rehabilitate the stream bank erosion on Blaxland Creek using soft engineering where practical.	During Site Establishment.
<b>7. Noise</b>		
Project is designed to minimise noise impact on all adjoining land owners.	7.1 Sequence earthmoving operations to avoid excessive noise levels exceeding limits specified in the Environment Protection Licence.	During construction of the northern bund wall.
	7.2 Construct the northern bund wall to an elevation of 55m AHD.	As early as possible during the site establishment period.
	7.3 Erect a 2m high wooden fence on the top of the northern bund wall.	Following completion of northern bund wall.
	7.4 Increase the elevation of the eastern bund wall to an elevation of 58m AHD.	Prior to commencement of recycling/re-processing.
	7.5 Construct the eastern and northern earth mounds around the Recycling and Re-processing Area to an elevation of 62m AHD.	Prior to commencement of recycling/re-processing.
	7.6 Place and maintain a 4m high mobile acoustic barrier (100m to 150m long) on the outer side of the bund walls and final landform.	When earthmoving equipment is operating on external elevated areas of the site.
	7.7 Program works so that the external northern edge of the final landform is developed first so that subsequent waste placement will occur in areas partially shielded from residences.	Ongoing.
	7.8 Ensure noise from all activities undertaken in topographically shielded areas are no greater than 2dB than the relevant criteria for those activities.	Continuous.



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Desired Outcome	Action	Timing
<b>7. Noise (Cont'd)</b>		
	7.9 Monitor noise levels to demonstrate compliance with criteria.	Monthly (during site establishment) Continual Real time monitoring (during operations).
Employees and contractors will be sensitive to the noise impacts on neighbours.	7.10 Maintain a dialogue (phone number / contact email) between the Proponent and surrounding neighbours to ensure any noise-related concerns are received and appropriately addressed.	As required.
	7.11 Undertake all approved activities within approved hours of operation.	Ongoing.
	7.12 Fit only broadband reversing alarms to earthmoving equipment used on site.	Ongoing.
	7.13 Highlight noise management responsibilities of every employee / contractor.	During site inductions.
<b>8. Gas and Odour Management</b>		
Prevention of odour above 2 odour units at surrounding residences.	8.1 Adopt procedures to cover all odourous wastes upon arrival.	Ongoing.
	8.2 Operate and maintain aerator for the evaporation pond.	Ongoing.
Avoidance of build up of methane within the emplacement cells.	8.3 Install gas collection system and gas drainage layers (or alternate system) within the emplacement cells to allow the escape and oxidation of methane (in the event that the wastes accepted generate sufficient quantities of gas to permit effective collection).	During Rehabilitation Stages.
	8.4 Undertake odour monitoring in accordance with the approved Air Quality Monitoring Plan.	As nominated in the Plan.
<b>9. Air Quality</b>		
Site activities are undertaken without exceeding DECCW air quality criteria or goals.	9.1 Use a water truck to minimise dust generation on active unsealed roads applying water at 2L/m <sup>2</sup> /application.	As required (avoid visible dust where possible).
	9.2 Revegetate completed areas as soon as practical.	Ongoing and as soon as available.
	9.3 Disturb the minimum area necessary for operations to take place at any one time.	Ongoing.
	9.4 Monitor deposited dust levels to demonstrate compliance with the DECCW goals.	Continuous (monthly changeover). Monitor PM <sub>10</sub> dust levels with real time equipment. Continuous during site establishment or operations.





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Desired Outcome	Action	Timing
<b>9. Air Quality Cont'd</b>		
	9.5 Monitor wind speed and direction at the Project Site weather station.	Continuous.
	9.6 Seal internal roads to the entry of Cell 1 to minimise dust generation.	Prior to waste receipts.
	9.7 Cease earthmoving operations generating dust caused during adverse meteorological conditions.	During adverse meteorological conditions
<b>10. Traffic</b>		
Trucks enter and depart from Patons Lane without incident and have a minimal effect on traffic flow.	10.1 Widen the Project Site entrance to 12.5m.	From the start of construction.
	10.2 Ensure all drivers are aware fully of requirements specified in the Driver's Code of Conduct.	On engagement of each driver.
	10.3 Provide a telephone number/ email address for complaints and establish a register to record complaints and note action taken.	Ongoing.
	10.4 Ensure wheel wash is always clean, effective and used by all trucks.	Ongoing.
	10.5 Install safety and speed signs on Patons Lane and throughout the Project Site.	Prior to receipt of wastes.
Equitable funds available for maintenance of Luddenham Road.	10.6 Establish a trust fund to accept 3.3 cents (+CPI) per tonne of waste imported or products exported – for payment to Council for road maintenance when required on Luddenham Road.	Prior to receipt of wastes.
	10.7 Undertake all necessary maintenance works for Patons Lane at the Proponent's expense.	Ongoing.
<b>11. Visibility</b>		
Protect and enhance the scenic quality and rural character of the locality.	11.1 Revegetate the outer slope of the completed northern bund wall (to 55m AHD) with tree and shrub species to enhance views from "The Vines".	Commencing during Site Establishment.
	11.2 Ensure a high standard of housekeeping is maintained, particularly with respect to litter control.	Ongoing.
	11.3 Ensure that the form and colours of buildings/ structures, building materials and landscaping complement the natural scenic quality of these localities.	Ongoing.
	11.4 Ensure that the views of the final landform blend into the rural landscape character of the land when viewed from "The Vines" and Luddenham Road.	Post Rehabilitation.
	11.5 Minimise the visual impact of the mobile acoustic noise barriers.	Ongoing.



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Desired Outcome	Action	Timing
<b>12. Flora</b>		
Achieve long-term beneficial impacts on the flora on and around the Project Site.	12.1 Revegetate the northern bund wall with native trees and shrubs after stabilisation of the northern face of the northern bund wall is complete.	Commencing during Site Establishment.
	12.2 Enhance the 40m riparian vegetation adjacent to Blaxland Creek.	Commencing following receipt of wastes on site.
	12.3 Cultivate and sow a suitable perennial grass pasture mix on completed areas, regularly fertilise this and spray out the broadleaf weed species on a regular basis.	Continuous.
	12.4 Control African Boxthorn (Noxious Weed) and Castor Oil Plant (Poisonous) continually from the present.	Ongoing.
	12.5 Conduct regular weed control campaigns.	Ongoing.
	12.6 Prepare a Vegetation Management Plan to provide detail on the rehabilitation of riparian land.	Prior to receipt of waste.
	12.7 Revegetate the southern side of Patons Lane with appropriate species.	During the first 12 months.
<b>13. Fauna</b>		
Revegetate with species that are native and locally occurring.	13.1 Revegetate the 40m wide riparian zone of Blaxland Creek to complement the existing riparian ecosystem.	Ongoing.
<b>14. Aboriginal Heritage</b>		
Effective protection provided for identified Aboriginal artefacts	14.1 Invite Aboriginal stakeholders to salvage the identified artefacts on the Project Site.	Prior to site establishment activities.
Effective protection of any future findings of heritage significance.	14.2 Follow protocols developed by the DECCW and Aboriginal Stakeholders in the event that any additional artefacts are unearthed.	During earthmoving operations on undisturbed natural ground.
<b>15. Soil Management</b>		
Accumulation of sufficient topsoil for rehabilitation purposes.	15.1 Store suitable topsoil that is brought to the Project Site (as waste) or produced on site (following reprocessing) for use in rehabilitation works or for sale.	Ongoing / as off-site topsoil is delivered and suitable materials produced on site.
	15.2 Handle disturbed all natural soil as little as possible to minimise mechanical damage to soil structure.	During soil stripping programs.
	15.3 Ensure topsoil stockpiles average 1m high, and no higher than approximately 2m.	As required.
	15.4 Stabilise any topsoil stockpiles quickly using a suitable pasture cover.	As required.
	15.5 Incorporate a minimum of 750mm of subsoil/clay and 250mm of topsoil on the final capping layer.	As required.



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Desired Outcome	Action	Timing
<b>16. Community Involvement</b>		
A positive pro-active relationship with the local community.	16.1 Support the formation of a Community Consultative Committee for the Project.	Within three months of the receipt of waste.
	16.2 Support local events and interest groups.	As required.
<b>17. Environmental Monitoring</b>		
A dataset to confirm the Project's acceptable impact on the environment.	17.1 Undertake a groundwater monitoring program involving groundwater level and quality measurements from on-site, piezometers, abstraction bore and any other bores on adjoining properties.	Quarterly or Six Monthly.
	17.2 Undertake a program of surface water monitoring both on site and in Blaxland and South Creek (See <b>Figure 5.2</b> ).	Daily/weekly, (for discharges) Quarterly Dams/Blaxland Creek).
	17.3 Undertake an air quality monitoring program involving a network of deposited dust gauges positioned near residences surrounding the Project Site.	Monthly (ongoing).
	17.4 Undertake a series of noise monitoring programs to establish compliance and opportunities to optimise site activities (Note: The frequency of monitoring should be reviewed).	Monthly during site establishment continual Real Time Monitoring (during operations).
	17.5 Establish a meteorological station on site.	Prior to site establishment (continuous operation).
<b>18. Documentation</b>		
Completion of a systematic set of documents to guide the planning and implementation of site activities.	18.1 Prepare a Landfill Environmental Management Plan incorporating the following management plans and monitoring programs. <ul style="list-style-type: none"> <li>• Water Management and Monitoring Program.</li> <li>• Gas Monitoring Program.</li> <li>• Landscape and Rehabilitation Management Plan.</li> <li>• Noise Monitoring Program.</li> <li>• Fire Management Plan.</li> <li>• Safety Management Plan.</li> <li>• Hydrocarbon Management Plan.</li> <li>• Air Quality Management and Monitoring Program.</li> <li>• Vermin Management Plan.</li> </ul>	As nominated by project approval.
	18.2 Prepare environmental management procedures for relevant tasks and activities and incorporate into an environmental management system.	Prior to relevant activity.



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Desired Outcome	Action	Timing
<b>18. Documentation</b>		
	18.3 Prepare Annual Environmental Management Reports incorporating a summary of activities undertaken and monitoring results during the reporting period.	Annually.
	18.4 Maintain relevant documentation confirming rigorous procedures are being implemented to ensure compliance with waste levy obligations.	Ongoing.
	18.5 Establish and maintain documentation relating to the financial requirements to satisfy DECCW requirements.	Prior to receipt of wastes on site – ongoing.

