



ThaQuarry Pty Ltd &

ACN 114 843 453 Pty Ltd

Light Horse Business Centre



Stage 1:

Site Preparation & Bulk Earthworks

SITE ENVIRONMENTAL MANAGEMENT STRATEGY

March 2010

Reference: EMS 240210

TABLE OF CONTENTS

1.	OVERVIEW - ENVIRONMENTAL MANAGEMENT STRATEGY	4
1.1.	OVERVIEW and Purpose of EMS	4
1.2.	DETAILS OF STAGE 1	4
1.3.	SUPPORTING MATERIAL AND DOCUMENTS RELIED UPON	6
2.	PLANNING APPROVALS	7
3.	SITE MANAGEMENT & RESPONSIBILITY	8
3.1.	ROLES AND RESPONSIBILITIES	8
4.	COMMUNITY CONSULTATION MEASURES	10
4.1.	MINCHINBURY RESIDENT'S COMMITTEE	10
4.2.	ACCESS TO WEB-SITE INFORMATION	10
4.3.	COMPLAINTS HOTLINE	11
4.4.	MONITORING & COMPLIANCE REPORTING	11
4.5.	RESPONSE/ DISPUTES AND MEDIATION	11
4.6.	EMERGENCY MANAGEMENT PROCEDURE	11
5.	SOIL, WATER AND LEACHATE MANAGEMENT	13
5.1.	CRITERIA	13
5.2.	MANAGEMENT AND MITIGATION MEASURES	13
5.3.	MONITORING AND COMPLIANCE REPORTING	14
5.4.	CONTINGENCY MEASURES	15
6.	NOISE MANAGEMENT	17
6.1.	CRITERIA	17
6.2.	MANAGEMENT AND MITIGATION MEASURES	17
6.3.	MONITORING AND COMPLIANCE REPORTING	17
6.4.	CONTINGENCY MEASURES	18
7.	DUST MANAGEMENT	19
7.1.	CRITERIA	19
7.2.	MANAGEMENT AND MITIGATION MEASURES	19
7.3.	MONITORING AND COMPLIANCE REPORTING	20

7.4.	CONTINGENCY MEASURES.....	20
8.	VEGETATION MANAGEMENT	22
8.1.	CRITERIA.....	22
8.2.	MANAGEMENT AND MITIGATION MEASURES	22
8.3.	MONITORING AND COMPLIANCE REPORTING.....	24
8.4.	CONTINGENCY MEASURES.....	24
9.	FAUNA PROTECTION	25
9.1.	CRITERIA.....	25
9.2.	MANAGEMENT AND MITIGATION MEASURES	25
9.3.	MONITORING AND COMPLIANCE REPORTING.....	25
9.4.	CONTINGENCY MEASURES.....	25
10.	ABORIGINAL HERITAGE.....	26
10.1.	CRITERIA.....	26
10.2.	MANAGEMENT AND MITIGATION MEASURES	26
10.3.	MONITORING AND COMPLIANCE REPORTING.....	27
10.4.	CONTINGENCY MEASURES.....	27
11.	BUSHFIRE HAZARD ASSESSMENT	28
11.1.	CRITERIA.....	28
11.2.	MANAGEMENT AND MITIGATION MEASURES	28
11.3.	MONITORING AND COMPLIANCE REPORTING.....	28
11.4.	CONTINGENCY MEASURES.....	28

1. OVERVIEW - ENVIRONMENTAL MANAGEMENT STRATEGY

1.1. OVERVIEW AND PURPOSE OF EMS

This Environmental Management Strategy (EMS) has been prepared in response to Schedule 5 within Development Consent MP 06_0239 dated 22 November 2009.

The key purpose of this EMS is to provide the overall strategic framework for the environmental management for **Stage 1** of the approved project (being site preparation and bulk earthworks). Further details will be provided to the Department of Planning addressing ongoing stages of the project at the appropriate time.

This Stage 1 EMS:

- Identifies the relevant statutory approvals that apply to the project
- Describes the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project
- Describes how:
 - Environmental performance is monitored and managed
 - The local community and relevant agencies will be kept informed of relevant works and the environmental performance of the project
 - Complaints will be received, handled, responded to and recorded
 - Disputes will be resolved
 - Non-compliance issues will be responded to
 - Emergencies will be responded to
- Is supported by various strategies, plans and programs required by Development Consent MP 06_0239.

1.2. DETAILS OF STAGE 1

The specific details of what has been approved as part of Stage 1 are included in the development consent, however for the purposes of establishing the context and detail contained within this EMS (and the various strategies and plans that support it), the key details of Stage 1 are summarised below:

LOCATION

Lot 10 DP 241859, Lot W 419612, Lot 1 DP 400697 and Lot 2 DP262213 and as specifically shown architectural drawings A101/E and A103/A by Axis Architectural.

PROPOSED WORKS

The pre-construction bulk earthworks involve the following:

- Pumping water out of the base of the pit (this will be used where required in dust control during works)
- Erosion and sediment control works including construction and establishment of Onsite Detention Basins (OSDs).
- Bulk earthworks to establish appropriate levels for construction and 'cut and fill' works.
- Quarry pit maintenance works and wall stabilisation for safety.
- Establishment of stockpiles of purpose specific materials on site for use during Stage 1 and Stage 2 works.
- Remove and strip top soil/vegetation for later re-use in area to be filled.
- Excavate material from project areas and internal sides of berms to be cut and shaped.
- Remove and stockpile rocks for later re-use.
- Transport and position excavated material in area to be filled.
- Bulldoze earth and distribute.
- Compact and grade to levels required.

EQUIPMENT

Equipment used during earthworks and construction is expected to include:

- 50 tonne truck mounted cranes
- Mobile cranes, light vehicles
- Delivery trucks (semis and rigid),
- Concrete agitators (as required)
- Elevating work platforms
- Loaders
- Bulldozers
- Scrapers
- Earth moving equipment
- And a variety of smaller hand held tooling (e.g. welders, grinders, saws etc).

WORKS PERIOD

Bulk earth works for the project are expected to last for approximately 6-8 weeks with subsequent construction expected to last up to 9 months.

1.3. SUPPORTING MATERIAL AND DOCUMENTS RELIED UPON

This EMS encompasses relevant strategies and plans addressing particular issues relevant to Stage 1 (refer Sections 5-11). These sections are supported by the additional material contained within the following documents, or as otherwise stated in this EMS.

- Project Environmental Assessment Volumes 1 & 2
- Hyder Consulting Bulk Earthworks Design
- Douglas Partners Preliminary Contamination Report
- Douglas Partners Landfill Environment Management Plan
- Douglas Partners Soil Water and Leachate Management Plan
- Storm Consulting Pavement Setout and Drainage Plans
- Global Consulting -Dilapidation Report
- Aboriginal Heritage Management Plan (Jo McDonald Cultural Heritage Study)
- Vegetation Management Plan (Abel Ecology)
- Dial A Dump Industries Environmental Health Management Plan and Work Directions
- Haines Bros. Site Environmental Management Plan
- Proposed Noise Management Plan prepared by Environmental Management Group Australia
- PAE Holmes – Air Quality and Landfill Gas Management Plan

These documents will be made available for viewing at www.dadi.com.au/landfills.

2. PLANNING APPROVALS

The relevant planning approval in this matter is Development Consent MP 06_0239 dated 22 November 2009.

This approval, inclusive of the condition in which this EMS seeks to satisfy, is available to be viewed at <http://www.dialadump.com.au/land/main/lhbc.shtml>

3. SITE MANAGEMENT & RESPONSIBILITY

The following summarizes the various key personnel involved in the environmental management of Stage 1 together with their roles, responsibilities and authority.

Position	Name	Phone	Email
Site Project Manager	Steven Baxter B.Eng (Civil)	0429 293 909	stevebaxter@dadi.com.au
Bulk Earthmoving Contractor	Mark Haines	0419 687 880	mark@hainesbros.com.au
Building Project Manager	Martin Carey	9714 5992	mcarey@globalprojects.nsw.com.au
Managing Director	Ian Malouf	9519 9999	ianmalouf@dadi.com.au
General Counsel	Christopher Biggs	9519 9999	chrisbiggs@dadi.com.au
Accredited Certifier	Vic Lilli	9715 2555	vlilli@vicilli.com.au

3.1. ROLES AND RESPONSIBILITIES

DIRECTORS AND EXECUTIVE MANAGEMENT

The Directors and executive management of Light Horse Business Centre and ThaQuarry Pty Ltd (being 'the Landowner') shall:

- Comply with the requirements of all applicable environmental laws, regulations, legislations, licences, development consents and adopt practices that reflect commitment to the protection of environment.
- Adhere to the principles of sustainable development and life cycle management.
- Avoid areas of environmental significance where possible and practical rehabilitate those areas disturbed by the company's activities on an on going basis.
- Implement measurable objectives and targets that will trigger the impact on environment from conduct of company's operations.
- Conduct regular audits of the operations and apply results of audits and reviews to continually improve processes and implement control and measures that will mitigate environmental threats.
- Achieve savings on usage of resources energy, fuel and minimise waste generation by utilising the principles of reduce, recover, recycle and reuse in all aspects of the business operations.
- Provide employees with training, induction, information, resources and responsibilities necessary to achieve environmental objectives and targets.

- Evaluate environmental technology and processes for best practices and continually improve on the Landowner's commitment to environmental management through a process of innovation, review and revision.

SITE PROJECT MANAGER

The Site Project Manager (SPM) or equivalent will be appointed to perform the role of the Environmental Representative for the site. The SPM will be responsible:

- To ensure projects are delivered in compliance with the supplier performance monitoring.
- To ensure that the required records/documents are signed off.
- To ensure that the works are carried out in accordance with the Environmental Management Strategy and Safe Work Plan.
- To ensure appropriate corrective action is taken when required.
- Where multiple Contractors are involved, to ensure the interface issues are identified and any necessary changes are made to the Safe Work Plans for the affected Sub-Contractors.
- To (along with the Landowners) be directly involved with staff and contractor induction.

SUB-CONTRACTOR'S RESPONSIBLE MANAGER (FOREMAN)

This person is responsible for the preparation of the Sub-Contractor's work that is executed in accordance with this EMS.

SUB-CONTRACTOR

The Sub-Contractor is the person/company engaged by the Landowner and managed by the Foreman to undertake the project works . The Sub-contractor will be responsible for carrying out their brief as established by the Landowner in order to meet the responsibilities of the Landowner and obligations pursuant to this EMS.

STAGE 1 PRINCIPAL SUB-CONTRACTOR

Haines Bros Earthmoving & Drainage shall be responsible for the management and execution of all Site Preparatory works as per the scope of works contained in the contract documents.

Haines Bros Earthmoving & Drainage will be required before commencing work to sign acknowledging receipt and understanding of their obligations pursuant to this EMS.

Daily visual checks will be made by the Site Manager or by on-site personnel delegated by him. Any non-conformances would be reported immediately to Senior Management.

PUBLIC / VISITORS

The public/visitors do not strictly have a role and responsibility however, due to site proximity or public actions and activities, may potentially be impacted by site works. For this reason, various community consultation measures are included within this EMS allowing for public involvement.

4. COMMUNITY CONSULTATION MEASURES

In order to provide clear and transparent opportunities for consultation with the Community and other stakeholders, to provide the opportunity to receive feedback; and to refine or improve relevant environmental practices, various Community Consultation measures associated with this EMS have been developed. These include:

- The establishment of the Minchinbury Resident's Committee (comprising of not less than 3 local residents) and the ongoing liaison with Committee (refer further details below)
- The establishment of a website with relevant information (refer further details below).
- The establishment of a complaints hotline (refer further details below).
- The establishment of other measures generally as outlined in the Landfill Environmental Management Plan (LEMP) and Environmental Waste Management Plan (EWMP).

4.1. MINCHINBURY RESIDENT'S COMMITTEE

One or more of the Resident's Committee will be invited to consult in relation to each complaint received and in relation to the relevant investigation and attenuation measures which are implemented as a result of that complaint. The purpose of this is to ensure the presence of and involvement by one or more impartial persons in the process so that verification is available, if required.

A six monthly review of work procedures and/or noise control procedures shall be undertaken in response to complaints or to issues raised by the Residents Committee.

4.2. ACCESS TO WEB-SITE INFORMATION

Information that will be publically available on the Landowner's website (www.dadi.com.au/landfills) includes:

- The complaints hotline number (**9832 3333**).
- A copy of all current statutory approvals.
- A copy of the current environmental management strategy and associated plans and programs.
- A summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval.
- A complaints register, which is to be updated on a monthly basis.
- A copy of any Annual Reviews (over the last 5 years).
- A copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit.
- Any other matter required by the Director-General.

New developments, new (or refined) work practices, complaints or other issues raised by the Residents Committee will be notified to the broader Community by display on the Company website.

4.3. COMPLAINTS HOTLINE

The Complaints Hotline Number is 9832 3333

The Number is accessible 24 Hours per day.

4.4. MONITORING & COMPLIANCE REPORTING

The various Community consultation measures identified above will ensure that:

- Any complaints are logged and appropriately recorded.
- All relevant initial data is obtained in order to determine whether a prima facie case exists to support the view that the complaint relates to the site and that an exceedance has or may have occurred.
- The Site Project Manager will ensure that an effective complaint investigation is immediately carried out in order to determine the likely cause of the exceedance.
- If as a result of investigation an exceedance of site environmental parameters is found to exist then appropriate measures will be immediately implemented (if required) by the issue of Work Directions or changes to operational procedures depending upon the nature or extent of the measures taken.

4.5. RESPONSE/ DISPUTES AND MEDIATION

The Site Project Manager (SPM) (or his delegate) will respond to the complainant in each case outlining the measures taken (if any). The Complaints Register will contain all written records of the complaints logs together with all relevant work directions and correspondence and file notes.

In the event that the Complainant is dissatisfied with the actions taken by Site Management the SPM will convene a mediation meeting to which the Complainant, a Community Representative and an External Consultant with expertise in the area of the complaint will be invited for the purposes of exploring the issues and of mediation and reaching resolution with the Complainant.

The Complaint Records Form (and related correspondence) must be maintained for a minimum of 3 years after receipt.

Unresolved complaints may be referred to the NSW Department of Planning.

4.6. EMERGENCY MANAGEMENT PROCEDURE

Emergency Management Procedures are to be conducted as per instructions from the Site Project Manager or relevant authority, as appropriate. Any incidents are to be recorded on the Incident Management Register and forwarded to any relevant Contractor for inclusion in the OH&S Management Programme.

This document is to be progressed to the SPM for record and appropriate action and reporting. The responsible Manager is to isolate problem, contact emergency services (if required) and notify Work Safety Committee (WSC)/SPM.

Sydney Water	132 090	Integral Energy	131 008	Poison Information Centre	131 126
Ambulance	000	Telstra Cable Damage	132 203	Public Health Emergencies	9391 9000
Energy Australia	131 388	Gas	131 606	DECCW	131 555

5. SOIL, WATER AND LEACHATE MANAGEMENT

5.1. CRITERIA

The relevant criteria are set out in conditions 21-25 and 27-28 of Development Consent MP 06_0239 dated 22 November 2009 and the relevant provisions of the Protection of the Environment and Operations Act.

5.2. MANGAEMENT AND MITIGATION MEASURES

- Bulk Earthworks are only to be commenced upon the successful establishment of erosion and sediment controls and On-site Detention Basins (OSDs) as set out and described in the Storm Pavement Design and Set Out Report.
- Surface Water drainage Flow Paths are shown on the Blacktown Council diagram indicating pre-development flows. Surface Water drainage paths, OSDs are to be constructed as outlined in this EMS consistent with the diagram.
- The ground levels to be achieved by cut and fill operations within Precincts A, B, C, D, E, F, G, H and I are shown in detail in the Light Horse Business Centre Pavement Set out and Drainage plans (available to be viewed at www.dadi.com.au/landfills).
- Cut and fill operations are also required outside of the Project area to redistribute the filling material excavated from other parts of the site in order to achieve overland water flows consistent with pre-development flows and OSDs. The Report entitled Eastern Creek Business Park Bulk Earthworks Drawings DA001-DA002-DAO03-DA004-DA005-DA006 -DA016- DAAO17 DA021 - Hyder Consulting Pty Ltd identifies the location and quantity of fill materials on site. Volumes of cut and fill by precinct are shown in this Report (available to be viewed at www.dadi.com.au/landfills).

The Contractors shall:

- Undertake regular waste clearing and wetting down of exposed construction areas to limit sediment erosion and waste contamination of construction areas. Construction areas include but are not limited to embankment and excavation areas, stockpile areas, site facility and storage areas and temporary work areas.
- Rehabilitate or revegetate construction areas on completion or where prompt revegetation cannot be completed, implement erosion control measures including siltation fencing until revegetation is completed.
- Install silt fences and hay bales where required downstream of disturbed areas, base of embankments, existing drainage lines, earthworks stockpiles otherwise implement measures in accordance with best practice generally as described in the Light Horse Business Centre Pavement Set out and Drainage Plans and the Eastern Creek Business Park Bulk Earthworks Report.
- Limit flow velocities in drainage systems by implementing sediment and waste collection barriers in order to minimise possible scouring and to encourage precipitation of particulates in run off.
- Maintain vegetation in and adjacent to drainage lines.

- Remove silt build-up following large storm events.
- Provide an access track where practicable, along the toe of embankments to allow access for maintenance.
- Protect ongoing earthworks by temporary berms and drains to prevent the scouring of unconsolidated earthworks. Typically, diversion drains are constructed at the end of each day.
- Prior to major surface disturbance install drainage structures for waterways, catch drains which intercept flow, and sediment traps and basins to allow existing water flows to pass through the disturbed areas without mixing with unfiltered run-off from the disturbed areas.
- Construct graded contour drains or diversion channels around disturbed areas to ensure that all stormwater is directed away from disturbed areas.
- Keep sedimentation basin in a drawn-down state by preferential use of the water by tankers for dust suppression.
- Collect water generated from concrete batching plants in sedimentation basins and recycle for dust suppression.
- Wash out concrete delivery vehicles and wash down plant items a minimum of 20m from stormwater drainage systems and natural water courses.
- Fuel and service all plant / equipment on a safe area away from any water course.

The small amount of 'inert' and general waste generated at the facility by employees, agents, invitees or contractors (not as part of the waste receipt for the site) will be stored temporarily and later separated and either directed for recycling or disposed of off-site as necessary.

5.3. MONITORING AND COMPLIANCE REPORTING

- The surface water monitoring program must be able to demonstrate that surface water is not polluted by the Site.
- Surface Water Monitoring points will be established at each of the OSD discharge points.
- Water at these locations will be monitored quarterly by an Independent appropriately qualified expert to test compliance with Blacktown City Council's Stormwater Quality Control Policy (2005) and the Pollutant Retention Criteria.
- Riparian vegetation and aquatic habitat will be monitored weekly to Protect and maintain these areas (i.e. no demonstrated adverse impact on) natural drainage features.
- The Site Project Manager will be responsible for the following:
 - The maintenance of the proposed stormwater controls including regular visual inspection of the stormwater treatment measures on a monthly basis and after major rain events.
 - Will ensure an OSD Basin cleaning program – more frequently during earthworks and until revegetation takes place, and then based on results of regular visual inspections. Cleaning generally to consist of sediment and weed removal from the OSD basin and its associated sediment control/stilling basins.

- Conduct regular inspections of all water management safeguards and complete checklist.
- Monitor and test water quality, as required.
- The quality of any water released (if any) should be in accordance with any site Environment Protection Licence.
- Otherwise, the water quality criteria in the following Table are based on ANZECC (2000) criteria.

Stormwater Quality Criteria for Discharge

Analyte	Unit	Proposed Criterion
pH	pH Units	6.5 to 8.52
Dissolved Oxygen	% Saturation	80-110%2
Ammonia	mg/L	0.91
Oil & Grease	mg/L	103
Suspended Solids	mg/L	503
Total Organic Carbon	mg/L	103
Lead	mg/L	0.00341
Phenol	mg/L	0.321

Notes: 1: ANZECC (2000) Default Trigger Values, Toxicants;

2: ANZECC (2000) Criteria for Environmental Stressors;

3: Typical DEC discharge water quality criteria applied for industrial and/or landfill sites in Sydney.

- In respect to Sediment and Soil Erosion, the Site Project Manager will be responsible for the following:
 - Inspection of silt fences regularly to confirm that they are not partially buried and still in good condition.
 - Conduct a detailed inspection after any significant rain event to check status of safeguards and confirm that siltation barriers are functional and that the sedimentation basins are working effectively and are not compromised.

5.4. CONTINGENCY MEASURES

- If the surface water monitoring program detects water pollution, the Site Project Manager will investigate surface water pollution and institute additional sediment control measures as outlined in the management and mitigation measures above.
- As a result of regular inspections of the site by the Site Project Manager, and immediately following major rain events, a 'site knowledge' will be established in respect to the potential for particular water quality impacts, including the likely location of control measures failing, This

knowledge will allow a proactive approach to maintenance and implementation of additional measures before impacts are likely to occur- hence reducing impacts on water quality.

- Spare Hay bales will be kept on site for immediate use.
- In the event of unexpectedly large overland water flows the Site Project Manager shall take steps to implement additional sediment protection barriers and ensure water flows so far as practicable are diverted to grassed overland areas where siltation cannot enter into streams or watercourses.
- The SPM shall monitor the site daily and report weekly to the Landowner on the following:
 - The impacts and environmental performance of the Cut and Fill Bulk Earthworks.
 - Effectiveness of the management measures in relation to Soil erosion and sediment Control.
 - Any recommendations of ways to improve the environmental performance of the works over time.

6. NOISE MANAGEMENT

6.1. CRITERIA

The relevant criteria is set out in condition 38 of Development Consent MP 06_0239 dated 22 November 2009.

6.2. MANAGEMENT AND MITIGATION MEASURES

Until the results of the monitoring have been compiled and assessed, the Landowner will initially rely upon feedback through the Community Consultation measures established in Section 4 of this EMS. This includes establishing and maintaining contact and liaison with a Resident Committee comprising a minimum of 3 householders in sensitive receiver areas and acting upon reports provided to the Site Project Manager.

Compliance with the hours of operation identified within Condition 39 of the consent (refer below) and conducting site preparation works in the manner set out in accordance with the approved documentation provides the ability to meet the required noise criteria and reduce the scope for Community complaints.

HOURS OF OPERATION

- Monday – Friday 7.00am to 6.00pm
- Saturday - 8.00am to 4.00pm
- No construction on Sundays or public holidays.

6.3. MONITORING AND COMPLIANCE REPORTING

- The Landowner will commence a Noise monitoring program to commence not later than 15th April 2010 in line with DECCW procedures.
- This will be carried out by an appropriately qualified Environmental Consultant, PAE Holmes.
- Unattended Loggers will be established at residential locations to the west and north of the site , being:
 - North – In the area of McFarlane Drive, Tod Place and Cobbler Crescent.
 - West – Area of Swamphen Street, Warbler Road.
- Results from the logging will be collated and supplied to the Director General of the Department of Planning and the DECCW within 3 months of the completion of monitoring.
- A complaints handing procedure will ensure that any complaints regarding noise are logged and appropriately recorded and all relevant initial data is obtained in order to determine whether prima facie case exists to support the view that the complaint relates to the site and that an exceedance has or may have occurred.
- Complaints will be handled in the manner set out in Section 4 of this EMS.

6.4. CONTINGENCY MEASURES

- Noise Management measures will be implemented immediately (if required) by the issue of work directions or changes to operational procedures depending upon the nature or extent of the measures taken.
- Non-compliance with the noise goals set out in Table 4 of Condition 38 will be reported promptly and corrective action taken to mitigate any impacts.
- All on-site, fixed and mobile diesel powered plant equipment, excluding road vehicles, are to be correctly fitted and maintained in accordance with the manufacturer's specifications. Particular attention is to be given to engine exhaust systems and the care and maintenance of mufflers.
- If fixed machinery is identified as being a source that exceeds noise trigger values the use of the machinery will cease until noise attenuation measures are implemented.
- If the noise source is a point source such as an engine or motor then the engine or motor will be housed in a suitably noise insulated cowling hood or structure.
- If the noise source is reversing beepers or alarms on moveable plant or trucks then for those vehicles and plant on site then measures will be taken to adjust the tone and where appropriate reduce the volume of those appropriately so as to remove the potential for noise disturbance.
- Temporary cessation of work until wind conditions are favourable.
- A six monthly review of work procedures and/or noise control procedures shall be undertaken in response to complaints or to issues raised by the Residents Committee.
- In the event of complaints of noise impacts, the Site Project Manager shall implement the measures above and institute the complaints and mediation process outlined in Section 4.
- The SPM shall monitor the site daily and report weekly to the Landowner on the following:
 - The impacts and environmental performance of the Cut and Fill Bulk Earthworks.
 - Effectiveness of the management measures in relation to Noise Management.
 - Any recommendations of ways to improve the environmental performance of the works over time.

7. DUST MANAGEMENT

7.1. CRITERIA

The relevant criteria is set out in condition 37 of Development Consent MP 06_0239 dated 22 November 2009.

Trigger Levels for Activity Control

There are two PM10 concentration trigger levels required for the site, as follows:

- Trigger Level 1 – elevated 1-hour average PM10 concentrations indicate that additional dust control measures are required; and
- Trigger Level 2 – sustained elevated 1-hour and 24-hour average PM10 concentrations indicate that site activities should cease.

Trigger values are presented for two averaging periods and explained as follows.

- **Trigger Level 1:** Remedial action is required under Trigger Level 1 when peak 1-hour concentrations are above 100 µg/m³ for three (3) consecutive hours and the wind is blowing from the site to the monitoring location.
- **Trigger Level 2:** Under extreme cases, open air crushing or screening site operations would be required to cease under Trigger Level 2. This applies when the rolling 24-hour concentration is above 50 µg/m³ for 24 consecutive hours and the peak 1-hour concentrations above 100 µg/m³ are also sustained. The additional conditions for when this applies that the wind is blowing from the site to the monitoring location and that the elevated PM10 concentrations are not caused by an external regional pollution event such as a bushfire or dust storm. This is tested by examining the 24-hour PM10 concentrations at the DECCW's monitoring sites at Prospect and St Marys.

7.2. MANAGEMENT AND MITIGATION MEASURES

The additional dust control measures to be implemented under Trigger 1 will depend on the activities occurring on-site at the time but may involve:

- Increasing the frequency of watering for exposed areas and stockpiles.
- Increasing the frequency of watering on paved and unpaved roads.
- Modifying site activities such as ceasing all open air processing (i.e. crushing).

Specific and regular tasks undertaken by the Site Project Manager will also seek to address the relevant criteria relating to dust and air quality. These are outlined in the 'Contingency Measures' outlined below.

7.3. MONITORING AND COMPLIANCE REPORTING

- A meteorological monitoring station will be established with sensors to measure wind speed and wind direction.
- The real-time dust monitoring will be conducted in accordance with the NSW DECCW “Approved methods for the sampling and analysis of air pollutants in NSW” (DECC 2005a).
- Real time PM10 monitoring will be to assess the potential for off-site air quality impacts and will commence by 15th April and for a representative period during Bulk earthworks.
- Dust deposition monitoring at four locations around the site as shown on the plan below, or as specified by DECCW.



7.4. CONTINGENCY MEASURES

Specific responsibilities of the Site Project Manager that seek to address any unpredicted impacts and to improve the environmental performance in terms of dust/air quality issues include:

- Logging of weather conditions on a daily basis, including wind speed and direction and also by reference to the nearest BOM monitoring site.

- Direct the use of a water tanker to suppress dust on site during bulk earthworks and construction periods, and at other times (as necessary) on public roads where these have been disturbed during construction works.
- Implementation of the following measures:
 - Restrict concrete dust generation by the use of water sprays.
 - Remove mud from wheels and bodies of haulage equipment before they enter public roads and ensure loads are fully covered.
 - Remove mud spilt on public roads by construction equipment.
 - Service and maintain all plant and equipment powered by internal combustion engines to ensure exhaust emissions comply with regulations.
 - Visually monitor and record dust emissions to ensure emission comply with regulatory requirements.
 - Define of trafficked areas.
 - Impose of site vehicle speed limits.
 - Stabilise exposed areas as quickly as possible.
 - Install perimeter dust fences around the main area of operations to provide a barrier for dust emissions.
 - Immediately clean spills of potentially dusty materials.
- In the event there is an exceedance of the trigger values at sensitive receivers then the control measures outlined in this section must be enhanced with greater use of water on site for dust suppression. If enhanced measures are unsuccessful, then all on site earthmoving and dust generating works outside of the perimeter berms works must cease until there is a variation in climatic conditions.
- The Site Project Manager shall monitor the site daily and report weekly to the Landowner on the following:
 - The impacts and environmental performance of the Cut and Fill Bulk Earthworks.
 - Effectiveness of the management measures in relation to cut and fill works and compaction.
 - Any recommendations of ways to improve the environmental performance of the works over time.

8. VEGETATION MANAGEMENT

8.1. CRITERIA

Condition 14 of Development Consent MP 06_0239 dated 22 November 2009 provides relevant criteria in respect to Pest, Vermin, Feral Animals and Noxious Weed Management.

Condition 58 of Development Consent MP 06_0239 dated 22 November 2009 provides relevant criteria in respect to the protection of the various Conservation Areas in the Precinct Plan identified and mapped in the EA.

Condition 59 of Development Consent MP 06_0239 dated 22 November 2009 provides relevant criteria in respect to creek rehabilitation and reinstatement work within Lot 2 DP 262213.

Condition 60 of Development Consent MP 06_0239 dated 22 November 2009 provides relevant criteria in respect to Landscape and Vegetation Management.

A Vegetation Management Plan (VMP) has been prepared by Abel Ecology and can be viewed at www.dialadump.com.au/landfill This VMP sets out aims and objectives as well as specific targets that are sought to be achieved.

8.2. MANAGEMENT AND MITIGATION MEASURES

- Weed Control and Vegetation Management will be carried out in accordance with the Schedule of works in the Vegetation Management Plan (VMP) with immediate commencement.
- Controlled access to be provided to the Conservation Area. The Conservation Area is shown in blue on Figures 13 and 14 below.
- That existing fencing is to be maintained on the western and northern boundaries and dry stone walls (with Security gates at intervals to be constructed along the southern and eastern boundaries to prevent vehicular access while allowing native animal access).
- Existing unmade roads in the Conservation Area are to be left untouched as fire and access trails.
- Locked gates are to be installed at the perimeter of the Conservation Area to prevent public access.
- Trail bike tracks are to be closed, covered with loose earth and leaf litter.
- Riparian habitat at the south of the site is to be maintained in accordance with the Riparian Management Plan prepared by Site Image and previously lodged with an approved by DECCW.
- A specific work direction be issued by the Site Project Manager to all relevant Sub-Contractors (including relevant plans) prescribing that NO ACCESS be permitted at any time to the Conservation Area, except for those activities specifically permitted and supervised by the SPM.
- Work practices implemented in respect to the Conservation Area include:

- Vegetation outside of the designated Conservation Area may be removed for the purposes of cut and fill bulk earthworks and compaction thereof and the establishment of OSDs as permitted in the EMS.
- No Vegetation or Trees are to be damaged or removed from the Conservation Area except for the removal of African Boxthorn and other Noxious weeds identified in the VMP or the Noxious weeds Act NSW as specifically permitted and supervised by the Site Project Manager.
- Rocks may be recovered during the carrying out of earthworks on land adjacent to the Conservation Zone and these are to be stockpiled in the areas shown.
- Stockpiled rocks will later be placed as a perimeter bund or berm surrounding the Conservation Zone to inhibit access by non approved persons.

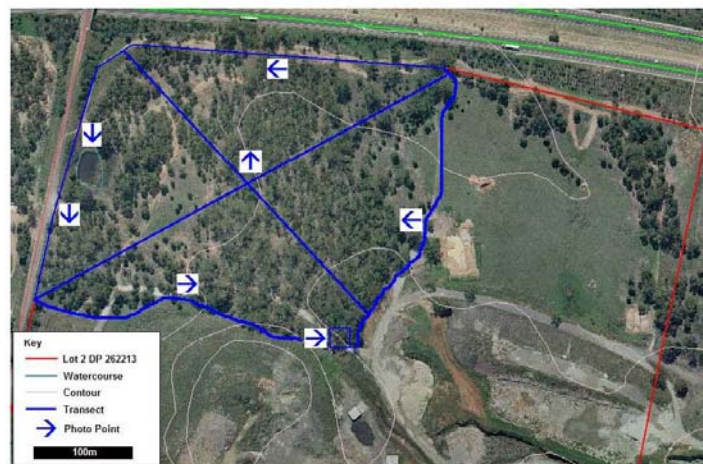


Figure 13. Conservation Area - Monitoring Points

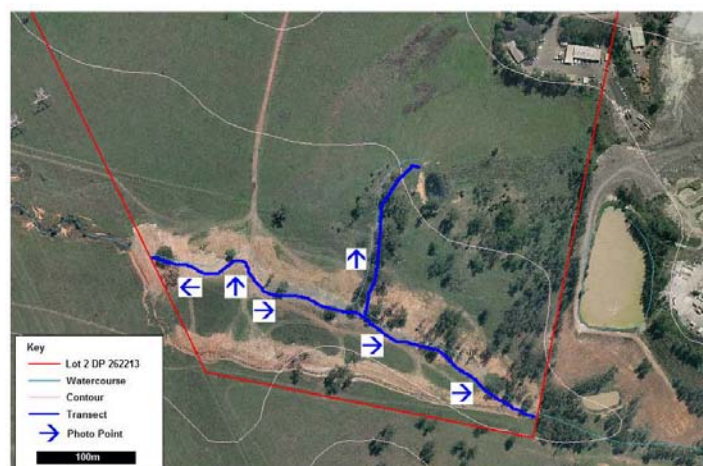


Figure 14. Riparian Habitat - Monitoring Points

Weed control techniques - weed control is to be carried out in a manner that minimises negative environmental impacts. Different techniques are required in varying situations, especially along watercourses, which are very sensitive to pollution impacts. See *Appendix 4 General Guidelines for Weed Control*.

8.3. MONITORING AND COMPLIANCE REPORTING

- The Site Project Manager shall monitor the site daily and ensuring all Conservation Areas are secured provide a weekly report to the Landowner.
- Weed Monitoring and reporting is to be carried out in accordance with the VMP in the areas and at the points specified using the forms and checklists in “Guidelines for Monitoring a Bushcare Project”
- Monitoring shall take place at the places shown by the arrow markings on the Figures 13 and 14 below and within the VMP.

8.4. CONTINGENCY MEASURES

- In the event that the perimeter of the Conservation Area is breached then the Site Project Manager will take immediate steps to reprimand the contractor and to require the contractor to make good so far as may be feasible any damage caused.
- The Site Project Manager shall monitor the site daily and provide a weekly report to the Landowner on the following:
 - The impacts and environmental performance of the Cut and Fill Bulk Earthworks.
 - Effectiveness of the management measures in relation to cut and fill works and compaction.
 - Any breaches in work directions or relevant activities (and performance) conducted within the Conservation Area.
 - Any recommendations of ways to improve the environmental performance of the works over time.
- The VMP prepared by Abel Ecology is to be reviewed within 5 years from November 2009.

9. FAUNA PROTECTION

9.1. CRITERIA

The relevant criteria is set out in condition 59 of Development Consent MP 06_0239 dated 22 November 2009.

9.2. MANAGEMENT AND MITIGATION MEASURES

- Controlled access to be provided to the Conservation Area.
- A specific work direction be issued by the Site Project Manager to all relevant Sub-Contractors (including relevant plans) prescribing that NO ACCESS be permitted at any time to the Conservation Area, except for those activities specifically permitted and supervised by the SPM.
- The Site Project Manager will be responsible for the vacation of the site of the few goats and domestic sheep currently located on the site. It is expected the few eastern grey kangaroos observed on the site will vacate the construction area upon commencement of works.

9.3. MONITORING AND COMPLIANCE REPORTING

- The Conservation Area will be inspected on a daily basis during bulk earthwork and construction works to ensure that security of each area is maintained and that habitats are left undisturbed and provide a weekly report to the Landowner.

9.4. CONTINGENCY MEASURES

- The likelihood of encountering endangered species on the works site is LOW as this is disturbed quarry land.
- Movement of personnel, plant and machinery will be sufficient to cause animals to move on. Nevertheless, caution should always be exercised and will be encouraged by the Site Project Manager with all relevant site contractors.

10. ABORIGINAL HERITAGE

10.1. CRITERIA

The relevant criteria is set out in conditions 61 and 62 of Development Consent MP 06_0239 dated 22 November 2009.

10.2. MANAGEMENT AND MITIGATION MEASURES

Jo McDonald Cultural Heritage Management Pty Ltd has prepared an Aboriginal Heritage Management Plan in consultation with DECCW.

In the event that previously unrecorded relics (non-Indigenous heritage items) are encountered during bulk earthworks or construction, works will cease immediately at that location and the NSW Heritage Office will be notified and advice sought as to the appropriate course of action.

The relevant areas of sensitivity are as follows (refer Figure 5 below):

- Zone 3 is the Pit and the MPC Development area- highly disturbed with no aboriginal heritage concerns.
- Zone 2 is the area where Cut and fill operations are to take place – where no further archaeological investigation are warranted (McDonald AHMP Nov 2009).
- Zone 1 represents the Conservation Areas shown on the Plan are of 'high sensitivity'. They must not be entered.

In respect to Zone 1, the following measures are proposed:

- The area is to be clearly identified on maps and plans and also on site by boundary flags, tapes or other markers.
- Induction of all contractors, workers and employees on site as to their legal responsibilities as to site damage and or destruction.
- Arrange a briefing by a qualified archaeologist or suitably experienced aboriginal person regarding the nature of aboriginal heritage material which may be uncovered.
- Briefing all contractors on legal requirements regarding uncovered skeletal material.

Any management decisions in relation to the areas of high sensitivity are carried out in consultation with the Local Aboriginal Community.

As part of the project induction process a specific work direction be issued by the Site Project Manager to all relevant Sub-Contractors (including relevant plans) prescribing that NO ACCESS be permitted at any time to the areas of high sensitivity, except for those activities specifically permitted and supervised by the SPM.

Figure 5: Assessed archaeological sensitivity zoning within the DAD Industries land (from JMcD CHM 2002, 2005). The non-hatched areas are Zone 3.



10.3. MONITORING AND COMPLIANCE REPORTING

- The Site Project Manager shall monitor the site daily ensuring all areas of high sensitivity are secured and provide a weekly report to the Landowner.

10.4. CONTINGENCY MEASURES

- In the event that the perimeter of the High Sensitivity Area is breached then the Site Project Manager will take immediate steps to reprimand the contractor.
- The SPM shall monitor the site daily and provide a weekly report to the Landowner on the following,
 - any breaches in work directions or relevant activities (and performance) conducted within the areas of high sensitivity
 - any recommendations of ways to improve the environmental performance of the works over time.

Any contingency measures developed by the landowner would be done in consultation with the Local Aboriginal Community.

11. BUSHFIRE HAZARD ASSESSMENT

11.1. CRITERIA

The relevant criteria is set out in condition 16 of Development Consent MP 06_0239 dated 22 November 2009.

11.2. MANAGEMENT AND MITIGATION MEASURES

The risk of bushfire occurring on premises during the Site Preparation works is considered to be LOW due to the absence of combustible materials.

There is a small risk of bushfire occurring in the Conservation Area located at the North-western Corner of the site.

There is a small risk of fire in or around earthmoving plant and machines or other vehicles especially when they are being refuelled.

Considering these issues, the following is proposed:

- Except as detailed in this EMS, access to or works within the Conservation Area are PROHIBITED.
- All plant must be refuelled in an open area away from drainage lines sediment controls or OSDs and not within 100 metres of any trees or grassed areas. Appropriate re-fuelling points will be established by the Site Project Manger.
- During refuelling care must be taken to avoid spills. The Site Project Manager will advise all contractors to take the necessary precautions when refuelling plant or machinery.

11.3. MONITORING AND COMPLIANCE REPORTING

- The Site Project Manager shall monitor the site daily ensuring all refuelling activities are undertaken in accordance with the above management and mitigation measures. Any breach will be included in a weekly report to the Landowner.

11.4. CONTINGENCY MEASURES

- In the event that refuelling is not conducted in accordance with the management and mitigation measures identified above, or another potential fire source issue is identified in the daily inspections conducted by the Site Project Manager, the SPM will take immediate steps to reprimand the relevant contractor and/or appropriately reduce any bushfire risk.