



# **POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN**

## **SHELL COVE BOAT HARBOUR – CONSTRUCTION**

AUSTRALAND CORPORATION (NSW) PTY LTD

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## ACRONYMS

ASS	Acid Sulfate Soils
CEMP	Construction Environmental Management Plan
CLM Act	Contaminated Land Management Act 1997
EPA	Environment Protection Authority
EPL	Environmental Protection Licence
MSDS	Material Safety Data Sheet
OEH	NSW Office of Environment and Heritage
PIRMP	Pollution Incident Response Management Plan
POELA Act	Protection of the Environment Legislation Amendment Act 2011
POEO Act	Protection of the Environment Operations Act 1997
SEMP	Site Environmental Management Plan

## **1 PURPOSE AND SCOPE**

### **1.1 Purpose of this Plan**

This Pollution Incident Response Management Plan (PIRMP) has been prepared in response to amendments to the *Protection of the Environment Legislation Amendment Act 2011* (POELA Act) that requires licensees to prepare, implement and test pollution-incident management plans (including community notification and community protocols) for each licensed activity and specified non-licensed activities.

The objectives of this PIRMP, as per the *EPA's Environmental Guidelines for the preparation of pollution incident response management plans* are to:

- ensure that a pollution incident is communicated to the relevant authorities and to people outside the licensed area who may be affected;
- minimise and control the risk of a pollution incident; and
- ensure that plan is appropriately implemented and regularly tested.

This PIRMP relates to the Australand Corporation (NSW) Pty Ltd (Australand) Environment Protection Licence (EPL 12456) and has been prepared for the three construction phases of the Shell Cove Boat Harbour project. There may be a period of up to several years between the completion of each stage and the commencement of the subsequent stage and this PIRMP will be amended prior to each phase as necessary. A subsequent PIRMP will be prepared for the operational phase of the project.

### **1.2 Scope of Construction Works**

Australand and Shellharbour City Council propose to develop a boatharbour and marina at Shell Cove, south of Shellharbour on the New South Wales south coast.

The combined construction phases consist of the construction of inner and outer harbour basins located behind an existing beach dune system in what is currently a degraded swamp, and an access channel across the beach. Included in the boatharbour project are:

- inner and outer harbour basins;
- boardwalk/ promenade surrounding the inner and outer harbours;
- regional boat launching ramp located in the outer harbour;
- 470 m long rock breakwater on the northern side of the access channel;
- 282 m long rock groyne on the southern side of the access channel;
- dune construction and beach nourishment;
- land platform works for hotel, shopping centre, residential development, marine support facilities and dry boat storage surrounding the boatharbour;
- a staged 300 berth floating marina in the inner harbour;
- vessel fuelling facilities and sewage pumpout facilities in the outer harbour; and
- a boat lift and hardstand area for vessel maintenance.

The Shell Cove Boat Harbour project is a component of the overarching Shell Cove development comprising a community with 3,000 residential allotments, 300 berth boatharbour, 18 hole championship golf course, district retail centre, community facilities and open space networks.

## **2 PRE-EMPTIVE ACTIONS**

### **2.1 Inventory of Pollutants**

Pollutants that will be used or stored on site during the construction activities are expected to include those listed in **Appendix A** (Pollutant Inventory).

The proposed storage locations for pollutants are identified in **Appendix B** (Maps).

This PIRMP would be amended following preparation of the Contractor's methodology and the Contractor's detailed Site Environmental Management Plan (SEMP).

### **2.2 Description and Likelihood of Hazards**

The Contractor shall complete a risk assessment and identification of the potential environmental impacts associated with the works as part of the SEMF on the basis of the Contractor's construction methodology. As such, this PIRMP would be updated following preparation of the SEMF.

For the purpose of this PIRMP, environmental risks have been identified from Australand's Construction Environmental Management Plan (CEMP).

Pollution incidents which may potentially occur as a result of the construction activities and cause material harm to the environment are listed in the table below.

A summary of pre-emptive actions and controls associated with each of the hazards is provided in **Appendix C**. The table below details the risk associated with each hazard without controls and the residual risk following the implementation of management measures and controls. The residual risk associated with each hazard is low or very low.

<u>Hazard</u>	<u>Potential Consequences</u>	<u>Risk</u>	<u>Pre-emptive Actions</u>	<u>Residual Risk</u>
<b>Significant emission of:</b>				
<ul style="list-style-type: none"> <li>• smoke or fumes from plant and equipment</li> <li>• dust and windblown soil during clearing and construction</li> <li>• odour from acid sulfate soils</li> </ul>	<ul style="list-style-type: none"> <li>• Injury from inhalation</li> </ul>	Low	Refer to controls specified in <b>Appendix C</b>	Very low
	<ul style="list-style-type: none"> <li>• Complaint by community</li> </ul>	High		Low
<b>Significant release to stormwater systems, beach or ocean of:</b>				
<ul style="list-style-type: none"> <li>• turbid water from site runoff, construction of the breakwater or channel dredging</li> <li>• acidic groundwater</li> <li>• groundwater discoloured with iron</li> <li>• fresh or deoxygenated water</li> <li>• pollution from spills of ASS, sewage, solid waste, fuel, oil, chemicals or other construction materials</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental contamination to groundwaters and surface waters including adjacent coastal waters</li> </ul>	Medium	Refer to controls specified in <b>Appendix C</b>	Very low
	<ul style="list-style-type: none"> <li>• Fish kills</li> </ul>	Medium		Low
	<ul style="list-style-type: none"> <li>• Reduced light penetration to marine vegetation from turbid waters</li> </ul>	Medium		Low
	<ul style="list-style-type: none"> <li>• Exposure to hazardous substances/ injury</li> </ul>	Low		Very low
	<ul style="list-style-type: none"> <li>• Complaints</li> </ul>	High		Low

## 2.3 Safety Equipment

Safety equipment kept on-site is expected to comprise:

- All personnel wearing personal protective equipment (PPE) relevant to the scope of works being undertaken. Additional PPE for visitor's or in the case of emergency will be kept in the main site office.
- Relevant Material Safety Data Sheets (MSDS) will be kept with all fuel, chemicals and hazardous substances. The register of MSDS' provided in **Appendix A** and a copy of each MSDS shall be kept in the main site and the satellite offices and updated as required.
- Water sprays/ water carts for dust control.
- Fire extinguishers will be located on each plant item, in the main site and satellite offices.
- Spills kits located in the Mobile Fuel Bowser (which will come to site each day), at the main site and satellite offices.
- Standard portable first aid kits in each supervisor's vehicle. In addition, a first aid kit (code of practice 2012 low risk) shall be provided in the main site and satellite offices.

In addition, onsite construction equipment such as dozers could be used to create additional bunding to contain any spills.

## 2.4 Maps

The map provided in **Appendix B** identifies the likely location of pollutants that will be kept on the premises, i.e. at the main site and satellite offices. Note that some pollutant storage locations will be mobile, e.g. fuel trucks and welders truck.

Any air pollution incident (e.g. release of smoke) has the potential to impact the surrounding properties to the north and west of the site as shown on the maps. Any spills or leaks have the potential to impact surface water drainage lines, storage ponds or groundwaters within the site. The site is situated within a valley which drains to the ocean and prevents runoff of pollutants to surrounding urban areas. The discharge points for runoff from the site to the ocean are at the existing watercourse outlet beneath the bridge on Boollwarroo Parade which is on the northern side of the northern breakwater (refer **Appendix B**).



### **3 NOTIFICATION**

#### **3.1 Distribution of this Plan**

A controlled hardcopy of this PIRMP must be kept onsite at all times.

A copy of the relevant sections of the plan to be made publicly available will be provided on the Shell Cove Boat Harbour development website within 14 days of preparation of this PIRMP. Those sections, exclusive of any personal information, include:

- Procedures for contacting relevant authorities as detailed in **Section 3.4**; and
- Procedures for communicating with the community as detailed in **Section 3.5**.

#### **3.2 Duty to Notify**

In accordance with the *EPA's Environmental Guidelines for the preparation of pollution incident response management plans*, "a pollution incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise."

Under the *Protection of Environment Operations Act, 1997* (POEO Act), notification of a pollution incident is required if there is a risk of material harm to the environment, defined as follows.

- a) harm to the environment is material if:
  - i) Involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial; or
  - ii) Results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations); and
- b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

In the event of a pollution incident, notification of the relevant regulatory authorities listed in **Section 3.4** is required immediately (i.e. promptly and without delay).

#### **3.3 Contact Details for Key Personnel**

**In the event of a pollution incident, the Actions Flow Chart provided in Section 4.1 shall be implemented.**

The Contractor shall be primarily responsible for the management of any pollution incidents onsite. As an incident may require the ceasing of all works, an evacuation, or the emergency use of plant and equipment being utilised for construction works, the Contractor's Works Superintendent shall be the first point of contact.

The Contractors Works Superintendent shall be shall immediately notify Australand's Site Superintendent who in turn will be responsible for notifying external parties (refer **Section 3.4**), All other notification and action shall be initiated by the Contractors Works Superintendent.

In summary, the Contractor's Works Superintendent must:

- notify Australand's Site Superintendent immediately after becoming aware of the incident;
- notify the Contractor's Safety Manager;
- notify the Contractor's Environmental Manager (responsible for the environmental management of the works including preparation and implementation of the SEMP and this PIRMP) and activate the environmental management team;
- initiate notification of the community via the Shell Cove Community Liaison Officer (refer **Section 3.5**);
- initiate corrective and preventative actions in conjunction with the environment team;
- investigate incidents; and
- issue non-conformance reports and corrective action reports.

Australand's Site Superintendent shall be responsible for:

- immediately notifying the relevant authorities (refer **Section 3.4**);
- acting on any incidents and emergencies in addition to the corrective and preventative actions implemented by the Contractor; and
- reviewing corrective action reports.

Contact details for the relevant onsite personal are as follows.

Contact	Representative of:	Phone Number
Site Superintendent	Australand	Pieter Goldie 0408 950 476
Works Superintendent	Contractor	Craig Rogers 0418 421 549
Environment Manager	Contractor	Nick Chalk 0408 211 064
Safety Manager	Contractor	Tim Rogers 0417 290 498
Community Liaison Officer	Shellharbour City Council	Kevin James (02) 4221 6111
Project Manager	Contractor	Oliver Waters 0421 755 344
Head Surveyor	Contractor	Scott Rogers 0418 921 890

### 3.4 Notification of External Parties

In the event of a pollution incident when material harm to the environment is caused or threatened, Australand's Site Superintendent shall immediately notify (or delegate notification to the Contractor's Environment Manager) the relevant authorities, in the following listed order.

These contacts have been identified in accordance with the EPA's *Protocol for industry notification of pollution incidents*.

Contact	Phone Number
OEH Pollution Hotline	131 555
NSW Ministry of Health Wollongong Office	Normal Hours: (02) 4221 6700 After Hours: (02) 4222 5000 (Wollongong Hospital – ask for Public Health Officer on call)
WorkCover Authority	13 10 50
Shellharbour City Council	Main Switchboard Telephone: (02) 4221 6111 Kevin James After Hours Emergency: (02) 4221 6171
Fire and Rescue NSW	000 (if there is an immediate threat to human health or property and inadequate resources to contain the release)
Department of Primary Industry (Fisheries NSW)	Alan Lugg (DPI Huskisson) (02) 4428 3401

Relevant information to be given consists of the following information, as known at the time of the incident:

- a) the time, date, nature, duration and location of the incident,
- b) the location of the place where pollution is occurring or is likely to occur,
- c) the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known,
- d) the circumstances in which the incident occurred (including the cause of the incident, if known),
- e) the action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known,
- f) other information prescribed by the regulations.

Where information for items c) to f) are not known at the time of the initial notification, that information must be notified immediately after it becomes known.

### 3.5 Communications with Neighbours and the Community

Australand has appointed a qualified Community Liaison Officer to function as the primary contact point for public enquiries and concerns and to be responsible for advising the public of progress and particular events during the construction period. This officer is a representative on the Shell Cove Compliance Committee. A 24 hour telephone service has been established to enable this function when the officer is unavailable.

Signage has been erected at the entrance to the site showing contact details for any enquiries.

In the event of a pollution incident with the potential to cause material harm, the Community Liaison Officer shall notify the community with potential to be at risk as a result of the incident. Should the pollution incident be a major event, notification of the community may be undertaken by emergency services personnel as directed by the relevant authority (refer **Section 3.4**).

The notification shall include specific information to minimise the risk of harm to the community.

As the primary risk of harm involves release of turbid water, leachate, fuels/ lubricants or water of poor quality (low pH, deoxygenated or with elevated concentrations of heavy metal concentrations), the notification would contain recommendations with regards to avoiding swimming, surfing and/or fishing at the beach and adjacent foreshore areas for a specified time period. Such incidents would also involve placing signage along Shellharbour South Beach at beach access points.

Should the incident involve emissions of significant dust or smoke to air, residents downwind (given consideration of the prevailing wind) and any nearby sensitive receptors such as schools, hospitals and nursing homes shall be notified with a recommendation to keep doors and windows closed until the incident has been controlled.

Should earthworks uncover any asbestos or other hazardous substance during the construction works, advice shall be sort from the Safety Manager (refer **Sections 3.3**) regarding the most appropriate method of advising the community and the relevant actions to be taken to minimise harm.

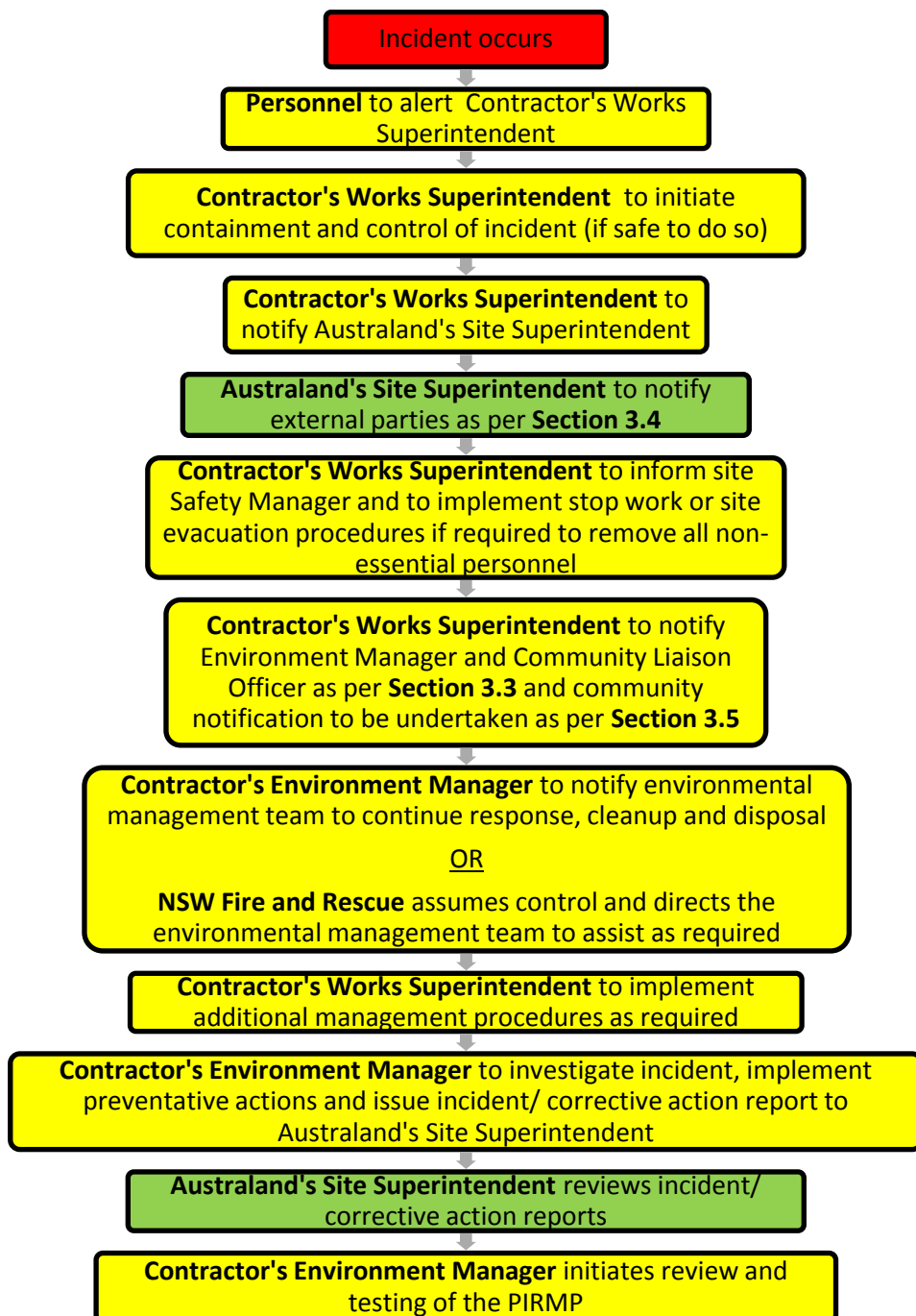
### **3.6 Contaminated Land**

Should any land contamination be identified during, or as a result of construction, or should Australand be reasonably aware of any such contamination, the EPA must be notified as soon as practicable, if the contamination meets certain criteria. The notification is a requirement under Section 60 of the *Contaminated Land Management Act 1997* (CLM Act)

## 4 INCIDENT MANAGEMENT/ RESPONSE

### 4.1 Actions

In the event of a pollution incident with the potential to cause material harm, the emergency response plan prepared as part of the Contractor's SEMP shall apply. The emergency response plan, yet to be developed, is expected to be similar to the following procedure. The response plan will include clear procedures to be followed to minimise harm to people on-site such as the evacuation procedures.



## **4.2 Clean-Up and Disposal**

Following containment and control of the pollution incident, clean-up shall be undertaken followed by disposal of materials in an appropriate manner. This may involve use of spill kits and disposal of contaminated booms and absorbent material in bins provided, or the excavation of sediment or dredging of sediment laden waters and placement in sediment basins for treatment.

Where required, appropriately qualified and licensed contractors shall be employed to carry out the clean-up and disposal activities as necessary.

## 5 TRAINING

A staff training program including a site induction is required as part of the Contractor's SEMP. The training shall ensure that:

- all staff onsite including employees and subcontractors are aware of their responsibilities in the event of an emergency situation; and
- those personnel required to implement environmental management procedures (such as storage, clean-up, installation of preventative controls and media are properly trained.

The training program shall include the following key elements:

- Site inductions including an environmental component covering all aspects of site environmental management such as monitoring (eg dust, water quality) and education (eg acid sulfate soils, their identification and treatment)
- Specific environmental controls training for relevant staff (eg training in spill kit use and installation of sediment controls)
- Monitoring of staff performance including the identification of the need for refresher training
- Daily site inspections including inspection of environmental controls which also provides an additional opportunity to identify staff training needs
- Weekly Toolbox Talks at which environmental issues are discussed
- Prestart Meetings held prior to the commencement of new job activities including discussion of environmental considerations related to the task and training of workers in new environmental procedures if required
- Preparation, review and sign off of Safe Work Method Statements (SWMS) by workers prior to the commencement of new job activities. The SWMS include environmental procedures as relevant

Records of environmental training shall be kept onsite in the custody of the Environmental Manager for auditing purposes.

## 6 TESTING AND REVIEW

This PIRMP is to be reviewed, amended and tested:

- following preparation of the PIRMP and the Contractor's SEMP;
- routinely at least once every 12 months;
- within one month of the occurrence of any pollution incident.

Review shall include a site walk over to confirm the main pollutants listed in the pollutant inventory and the hazards associated with any potential pollution incident.

Testing shall comprise a mock pollution incident relevant to the site and construction activities (such as a mock release of turbid water) to ensure that the information contained within this PIRMP is accurate and that the incident response mechanisms are workable.

Tracking of PIRMP testing and review is to be kept in accordance with the form provided in **Appendix D**.



## **Appendix A – Pollutant Inventory**

A Material Safety Datasheet register for all hazardous substances proposed to be used or stored onsite is provided in this Appendix.

In addition, storage ponds located onsite will store sediment laden water. The locations of these ponds are shown on the maps in **Appendix B** and comprise the following approximate capacities:

- Main sediment pond (i.e. the Landfill Cell Pond) = 16,500 cum;
- Sediment pond south west of P3 = 586 cum.



## MATERIAL SAFETY DATA SHEET REGISTER

LOCATION:- Shell Cove Boat Harbour (Stage 2)

Substance Chemical/Common Name	Manufacturer	Purpose/Use	Storage Location	Approximate Volume	Hazardous Yes/No	Pollutant	Year MSDS
Soybiodiesel	The National Biofuels Group Pty Ltd	Fuel	Fuel Truck	7000 litres	Yes	Yes	2012
Rando HD	Caltex	Hydraulic System	Fuel Truck	1000 litres	No	Yes	2010
Thuban GL 5 EP 85W-140	Caltex	Engine Oil	Fuel Truck	200 litres	No	Yes	2011
Ultra - Duty Grease	Caltex	Plant Lubricant	Fuel Truck	200 litres	No	Yes	2011
Torque Fluid 434	Caltex	Transmission Fluid	Fuel Truck	200 litres	No	Yes	2010
Delo Gold Multigrade	Caltex	Diesel Engine Oil	Fuel Truck	200 litres	No	Yes	2010
Gear Oil LSD SAE 90	Caltex	Steering/Transmission	Fuel Truck	200 litres	No	Yes	2011
Anti - Freeze Anti - Boil Coolant	Caltex	Engine Coolant	Fuel Truck	100 litres	Yes	Yes	2011
Hydrated Lime	CHEM-SUPPLY	Acid Sulphate Neutralisation	Stored in a Temporary Covered Storage Area on ASS Treatment Pad	10 - 20 Tonnes (Pending volume of ASS found on site)	No	Yes	2010
Liquid Lime	Ultimate Agri-Products	Acid Sulphate Neutralisation	Plastic Storage Tank (Bunded)	10000 litres	No	Yes	2012
Sodium Hydroxide	Merck	Neutralisation of Acid Water	Fridge	10 litres	Yes	Yes	2013
Hydrogen Peroxide	Merck	Catalyst for ASS reaction	Fridge	10 litres	Yes	Yes	2013
Buffer Solution pH 7	Merck	pH Meter Calibration	Fridge	500ml	Yes	No	2013
Buffer Solution pH 4	Merck	pH Meter Calibration	Fridge	500ml	Yes	No	2013
Buffer Solution pH 10	Merck	pH Meter Calibration	Fridge	500ml	Yes	No	2013
Acetylene	Coregas	Burning/Cutting	Welders Truck	9.3 cu.m	Yes	Yes	2013
Unleaded Petrol	United	Fuel	Storage Shed	60 litres	Yes	Yes	2012
Dy-Mark Spray and Mark Aerosol Paint	Dy Mark	Marking out site works	Storage Shed	10 kg	Yes	Yes	2011
Rapid Weld PVC Cement P Green	Bostik	Solvent welding cement for uPVC plastic	Storage Shed	4 Litres	Yes	Yes	2008
Plumbers Mate Priming Fluid Red	Bostik	Primer for use with uPVC solvent welding cements	Storage Shed	4 Litres	Yes	Yes	2009



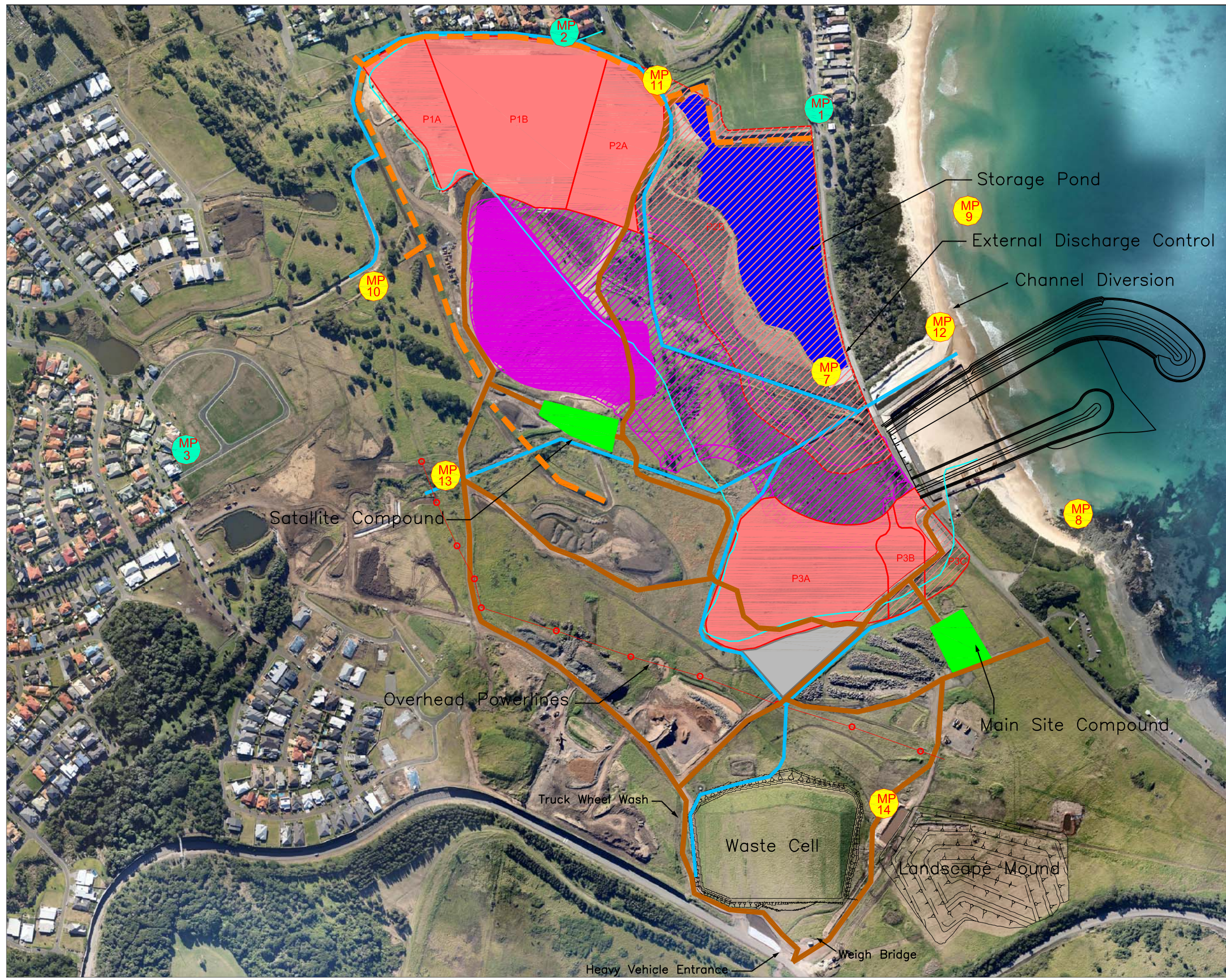
## MATERIAL SAFETY DATA SHEET REGISTER

LOCATION:- Shell Cove Boat Harbour (Stage 2)

Substance Chemical/Common Name	Manufacturer	Purpose/Use	Storage Location	Approximate Volume	Hazardous Yes/No	Pollutant	Year MSDS
Vinyl Restor	Hounds	Cleaning	Storage Shed	5 litres	No	No	2012
Glass Cleaner	Hounds	Cleaning	Storage Shed	5 litres	Yes	Yes	2009
Liquid Bleach	Supreme	Cleaning	Storage Shed	5 litres	Yes	Yes	2012
Delo Extended life coolant premixed	Caltex	Engine Coolant	Storage Shed	20 litres	Yes	Yes	2012
Texamatic 1888	Caltex	Transmission Fluid	Storage Shed	40 litres	Yes	Yes	2009
VPS Super Degreaser	Valvoline	Degreaser	Storage Shed	40 litres	Yes	Yes	2013
Mechanix Degreaser	Pascoe's	Degreaser	Storage Shed	5 litres	Yes	Yes	2011
Fire Blanket	Flame Stop	Fire Fighting	compound 1	x 2	No	No	2010
Carbon Dioxide Fire Extinguisher	Flame Stop	Fire Fighting	Plant/vehicles	x1	No	No	2011
Foam Agent Fire Extinguisher	Flame Stop	Fire Fighting	Plant/vehicles	x3	No	No	2011
Powder Fire Extinguisher	Flame Stop	Fire Fighting	Plant/vehicles	x23	No	No	2010

MSDS File Register 12/05/2014

## Appendix B - Map



Legend

- Site Haul Roads
- Existing Clean Water Diversion System
- Noise Bund
- Overhead Power Line
- ASS Risk Map Area
- Environmental Monitoring Point Location
- Completed Stage 1 Surchage Mounds
- Stage 2 Surchage Mounds
- Completed Stage 1 Harbour Excavation
- Stage 2 Harbour Excavation
- Site Compound Areas
- Stage 2 Trommel Area

1	31/03/14	N Chalk
0	24/03/14	N Chalk
Rev.	Date	Author

Firm Name and Address

**COASTWIDE CIVIL**

Project Name and Address

Shell Cove Boatharbour (Stage 1)  
Boollwarroo Pde, Shellharbour, NSW

Title

Stage 2 Construction Plan

## **Appendix C – Summary of Pre-Emptive Actions**

## **Air Quality Controls**

### General Controls

- All equipment used and all facilities erected are designed and operated to control the emissions of smoke, dust, fumes and other air pollutants into the atmosphere.
- Works shall be confined to working hours of 7:00 to 18:00 Monday to Friday and 7:00 to 17:00 Saturdays, and shall only be undertaken outside of these hours if it is of an emergency nature or other exemptions are approved by the EPA.
- The Contractor shall seek to minimise the potential for the generation of dust, odours and noxious vapours through minimisation of machinery movements and restriction of traffic movements and speeds.
- The Contractor shall consider the prevailing weather conditions in which all work is undertaken and modify/or cease site operations where necessary in the case of adverse weather conditions such as high wind.
- Implementation and recording of an air quality monitoring program involving dust and odour monitoring at the nearest residences and regular inspection of the site and construction activities to visually monitor dust and odour emissions.

### Smoke and Fume Emissions

- There shall be no burning of any material at the site.
- All plant and equipment must not emit unacceptable levels of smoke/ fumes and ensure that they comply with OEH licence conditions for air quality standards;
- The operation of any plant and equipment found emitting visible smoke/ fumes for periods longer than a designated time period (refer Contractor's SEMP) shall be suspended until acceptable levels can be achieved.

### Dust and Wind Blown Sand

- Appropriate dust and windblown sand suppression measures will be implemented to ensure that unacceptable levels of dust are not generated by construction activities;
- Minimise areas disturbed by works at any given time, including the progressive rehabilitation of disturbed areas following earthworks;
- Use water carts to keep haulage roads moist during operational hours;
- Spray disturbed areas with a fine spray of water during earthworks activities; and
- Ensure all watering equipment, including sprays, sprinklers and water carts are adequately maintained and readily available during the works.

### Potential Odour From Acid Sulfate Soils

- Apply odour suppressants to any odorous sediment to minimise the amount of odour emission when levels of odour exceed trigger values;
- Minimise the size of the exposed odorous sediment area;
- Add lime to odorous sediment in order to reduce odour emissions.

### Corrective Actions

- Immediately suspend any activity that generates unacceptable dust, odour or gases and implement further mitigation measure prior to resumption of activities.
- Monitor the activity during recommencement to ensure that unacceptable air quality levels are not exceeded.



## **Controls for Release of Pollutants to Stormwater Systems, the Beach and Ocean**

### General

- Bunding of the boatharbour construction site to control runoff. Bunding shall be planted, must not contain any ASS, and shall be controlled for dust.

### Erosion Control

- Installation of erosion control measures prior to any site disturbance or earthworks including:
  - Upslope diversion drains
  - Locating stockpiles away from watercourses
  - Installation of combination sediment filters, barriers and/or basins downslope of disturbed areas
- Stabilisation of all drainage diversions immediately and of all disturbed areas as soon as practical.
- Maintenance of all sediment and erosion controls throughout the site works.

### Clean Stormwater Management

- Diversion of clean stormwater (i.e. non-turbid water from undisturbed areas) from upstream areas around the construction site where possible.
- An area of the existing swamp shall be maintained for the majority of the construction period to receive clean (non-turbid) stormwater and periodically breakout across the beach in a similar manner to the current hydraulic regime.
- Clean stormwater shall be conveyed through the site in a manner isolated from construction activities.
- Following filling in of the remnant swamp, the clean stormwater shall be generally diverted to the boatharbour.

### Dirty Stormwater Management

- Dirty stormwater (i.e. from disturbed areas) shall be collected in sediment basins, which may include the Landfill Cell Pond and boat harbour excavation.
- Dirty water from sediment basins shall be disposed of via:
  - evaporation.
  - use for dust suppression and irrigation of revegetated areas.
  - treatment to remove sediment, gross pollutants and excess acidity prior to compliance testing and discharge to clean stormwater systems.
- Sedimentation basins shall be cleaned out when capacity is reduced by 30%.
- Records shall be kept of the date, location and quantity of:
  - flocculants and neutralizing agents applied to sediment basins.
  - any water discharged from sediment basin to clean surface water systems including results of compliance testing prior to release.
  - sediment removed from sediment basins.

#### Groundwater Management

- Groundwater from any dewatering activities shall be discharged to the northern-most point of the Landfill Cell Pond, remote from the position of the overflow from the Landfill Cell Pond into the swamp. The Landfill Cell Pond has approximately 13ML of storage available above the typical standing water level in the swamp.

#### Construction Traffic

- Construction traffic movements shall be restricted to defined roads where possible and will be minimised during and after wet weather.
- Measures shall be installed to prevent the carrying of mud or dirt onto public roads.
- Watercourse crossings shall be constructed in a manner which prevents sediment from washing into the watercourse.

#### Marine water quality

- Materials used in marine construction shall be as free as practical from fine material to minimise turbidity.
- Dredged material shall be disposed of onshore to limit turbidity.

#### Acid Runoff/ Discharge from ASS

- Excavation of ASS shall be conducted in wet or moist conditions to prevent oxidation.
- ASS remaining outside the boatharbour footprint is to be “chased out” in areas of low finished surface level. In other areas the ASS outside the boatharbour footprint is to be consolidated and capped in situ to minimise the risk of oxidation.
- Areas of exposed ASS shall be isolated from the clean stormwater system by bunds. Runoff from such areas shall be collected, tested and, if necessary, treated to ensure compliance with EPL criteria.

#### Spills

- All fuels, oils, paints and other chemicals stored onsite shall be contained in a bunded area constructed to comply with the requirements of Australian Standards and the *Dangerous Goods Act 1975*.
- The bunded area must be constructed with an impervious floor and must not be fitted with a drain valve.
- The bunded area shall be inspected weekly and immediately after wet weather.
- The Contractor shall immediately clean up any spills detected.
- Sewage effluent must not be disposed of onsite. A licensed waste pump-out contractor must remove all sewage waste from the site.

#### Beach Cleaning and Safety

- The beach shall be kept free of gross pollutants or other foreign matter that, in the opinion of the Australand’s Site Superintendent, are the result of activities of the Contractor.
- All such gross pollutants or other foreign matter shall be collected regularly as they occur, including retrieval from adjacent waters if necessary, and disposed of appropriately. Removal may be by manual means or by machine, such as an excavator with screening bucket.

- Reasonable access on an as required basis shall be provided for a purpose built beach cleaning machine operated by Shellharbour City Council for removal of gross litter and seaweed deposited on the beaches after major storms.
- The Contractor shall cooperate with Council appointed lifeguards and develop procedures, approved by Australand's Site Superintendent, to ensure beach safety is not adversely impacted due to the works.

#### Monitoring and Compliance

- Surface water monitoring shall involve monitoring of waters upstream and downstream of construction works for turbidity acidity (pH) and the presence of oils and grease in surface waters. The downstream monitoring location shall be in the remaining portion of the swamp at the Boollwarroo Parade bridge. In addition, the apparent colour of the surface water shall be monitored at the downstream monitoring location.
- Surface water monitoring shall be conducted weekly in dry weather and daily in wet weather and/ or during a swamp breakout.
- All dirty water in stormwater sediment basins shall be monitored for suspended sediment concentrations prior to discharge to the clean stormwater system.
- All potentially acidic water from the boatharbour construction shall be monitored for acidity (pH) and corrected if necessary before discharge into the clean surface water system. Results shall be compared to specific trigger values.
- Water discharged from the Landfill Cell Pond to the swamp shall be monitored for pH and turbidity and the other pollutants listed in the EPL. Monitoring shall be conducted daily during any discharge from the Landfill Cell Pond.
- Stormwater, erosion and sediment control measures shall be inspected weekly during dry weather; daily within periods of extended rainfall; or within two days of the cessation of heavy rainfall.
- The marine water quality programs shall be carried out by Australand and comprise on-going, long term programs covering the pre, during and post-construction phases of the project. The program involves monitoring of a range of physico-chemical parameters at a variety of spatial and depth profiles. A biological monitoring program shall also be undertaken monitoring the benthic community structure on shallow sub-tidal rocky reefs. The intervals of monitoring are once every two months during marine construction works and once every three months during land-based works.
- Water quality monitoring of marine waters by the Contractor includes monitoring of water clarity measurements in the surf zone 100m north of the breakwater and 100 m south of the groyne at the following frequencies:
  - during marine constructions: daily; and
  - during land-only construction: once per week during dry weather and daily during wet weather and/ or a breakout of the swamp.
- Regular inspections of the condition of all turbidity containment structures or control devices to ensure their integrity as well as the beach on either side of the entrance and the intertidal rocky reef habitat to the south of the entrance to detect any spills or gross pollution. Inspections shall be carried out:
  - during marine construction activities: daily;
  - during land-based construction: weekly during dry weather periods and daily during periods of extended rainfall; and

- within two days of the cessation of any rainfall event that results in 20 mm or more rain falling at the site in any 24 hour period.
- Recording of inspections including:
  - The date and time of the inspection;
  - details of the use of any flocculants;
  - dates and times when sediment was cleaned out;
  - whether any water pollution control structures had their design exceeded; and
  - any maintenance requirements.

#### Corrective Actions

- Immediately conduct an investigation to determine the source of the pollution.
- Unless the source of the pollution is upstream of the site, the Contractor shall instigate works to rectify the water quality in the shortest practical time.
- Take steps to prevent the discharge of polluted water to the marine environment by diverting such water into the boatharbour excavation or other effective measures.
- Water in sediment basins or the boatharbour excavation which exceeds trigger values shall receive further treatment and testing before discharge to the 'clean' surface water system.
- If marine turbidity results exceed trigger values, the Contractor shall immediately investigate and implement corrective measures to minimise the impact on bathing water quality at the designated swimming area at the north end of Shellharbour South Beach and modify activity until effective controls are implemented.
- If Australand's marine water quality or biological monitoring program detects significant impacts as a result of construction activities, Australand's Site Superintendent may direct the Contractor to modify certain activities until effective measures are put in place.
- Should Shellharbour South Beach and Harbour Entrance Beach not be free of gross pollutants or other foreign material that, in the opinion of Australand's Site Superintendent, are the result of activities by the Contractor, all such pollutants and materials shall be immediately removed including any in the adjacent waters.
- At any time should monitoring data from the discharge point from the Landfill Cell Pond to the swamp not meet the compliance standards, the dewatering activity would cease or be temporarily directed to a standby pond/ tank or to the boat harbour until the water at the discharge point meets compliance standards.
- If a visual plume is observed in the nearshore zone as a result of heavy rainfall leading to a breakout and the monitoring data from the discharge point from the Landfill Cell Pond to the swamp:
  - is compliant, no further action (related to dewatering) is required.
  - is not compliant, dewatering is either to cease or to be temporarily directed to a standby pond/ tank or to the boatharbour excavation. Use of the Landfill Cell Pond may resume when water at the discharge point from the Landfill Cell Pond to the swamp meets the compliance standard.
- Should any incidents arise, due to the works, that lead to an actual or potential adverse impact on beach safety these shall be immediately investigated and reported to Australand's Site Superintendent and existing procedures revised where required to ensure no reoccurrence.

## Appendix D - Record of PIRMP Testing and Review

<b>PIRMP Testing and Review Tracking Record</b>				
<b>Version</b>	<b>Date Tested</b>	<b>Date Amended</b>	<b>Modified By</b>	<b>Details of Amendments Required/ Made</b>
1		16/04/13		Version 1 of plan
2		20/05/14		Update to reflect Stage 2