



## Design and Construction of Stage AB of the Googong Water Recycling Plant (WRP)

Contract Number WRP01

### Hazards, Risk and Safety Management Plan

Rev	Date	Prepared by	Reviewed by	Approved by	Remarks
1	6/09/13	RPS Manidis Roberts			Draft CEMP issued to agencies for review.
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**JOHN HOLLAND GROUP PTY LTD**

Level 3, 65 Pirrama Road  
Pyrmont NSW 2009

t (02) 9552 4288 f (02) 9660 0410

[info@jhg.com.au](mailto:info@jhg.com.au)

[www.johnholland.com.au](http://www.johnholland.com.au)



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# 1 Introduction

## 1.1 Context

This Hazards, Risk and Safety Management Plan (HRSMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for Stage AB - WRP.

Refer to Section 1 and Section 2 of the CEMP for additional detail on the scope of Stage AB WRP to which this HRSMP applies.

This HRSMP has been prepared to address the requirements of the Minister's Conditions of Approval (CoA), the Statement of Commitments (SoC), the safeguards listed in the Googong Township water cycle project Environmental Assessment (EA), submissions report, and all applicable legislation.

This HRSMP relates only to environment-related hazard and safety issues. The John Holland Proprietary Limited (JHPL) Safety Management Plan (SMP) that will meet all workplace health and safety requirements for the construction of Stage AB WRP. This HRSMP should be read in conjunction with the SMP, and it is not intended to replace or substitute the SMP.

## 1.2 Background

The Googong Township water cycle project EA assessed the impacts of construction and operation of the IWC Project with regard to hazards, risks and safety.

As part of EA development, a detailed assessment was prepared to address the Director General's Requirements issued by the Department of Planning and Infrastructure (DP&I). The hazards, risks and safety assessment was addressed in Section 13.5 of the EA.

The EA concluded that there were unlikely to be significant environment-related hazards, risks and safety issues associated with the construction of Stage AB WRP provided that the proposed mitigation measures identified in the EA are implemented.

## 1.3 Environmental Management System overview

The overall Environmental Management System for Stage AB WRP and approach to managing environmental impacts during construction is described throughout the CEMP.

This HRSMP forms part of the environmental management framework for Stage AB WRP, as described in Section 1.6 of the CEMP. This HRSMP also links to safety documentation (eg the Safety Management Plan (SMP) to be prepared by the contractors) that is part of the Safety Management System for the IWC Project.

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# 2 Purpose and objectives

## 2.1 Purpose

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The purpose of this HRSMP is to describe how Googong Township Proprietary Limited (GTPL) JHPL will manage environmental hazards, risks and safety during construction of Stage AB WRP. The contractors will also develop and implement a SMP that will discuss in detail the management of workplace health and safety requirements of which the hazards identified in this plan are a subset.

This Plan also assists in ensuring the construction of Stage AB WRP meets the environmental objectives and targets as defined in Section 3.5 of the CEMP.

## 2.2 Objectives

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The key objective of the HRSMP is to ensure that hazards and safety risks are minimised and managed. To realise this objective, the following will be undertaken:

- Ensure appropriate controls and procedures are implemented during construction activities to avoid or minimise potential environmental hazards and risks (refer Section 5.1).
- Ensure appropriate measures are implemented to address the relevant CoA and SoC (listed in Section 3.2 and Section 3.3).
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3.1 of this Plan.

# 3 Environmental requirements

## 3.1 Relevant legislation and guidelines

Section 3.1 of the CEMP identifies the legal and other requirements applicable to the IWC Project and the construction of Stage AB WRP. This section identifies the key legislation applicable to managing hazards and safety risks.

### 3.1.1 Legislative requirements

#### *Environmental Planning and Assessment Act 1979 (EP&A Act)*

As outlined in Section 3.1 of the CEMP, the IWC Project has been assessed and approved by the Planning Assessment Commission under delegation from the Minister for Planning and Infrastructure (DP&I) under Part 3A (now repealed) of the EP&A Act.

#### *Protection of the Environment Operations Act 1997 (POEO Act)*

The POEO Act provides for the control of polluting activities in NSW in order to prevent pollution of the environment. Offences exist in relation to activities that cause water, soil and air pollution.

Soil, water and air pollution associated with potential spills of fuel oil and other chemicals are controlled through the CEMP, this Plan, the Soil and Water Management Plan (CEMP Appendix A) and the Waste and Resource Management Plan (CEMP Appendix G).

The *Protection of the Environment Legislation Amendment Act 2011* (POELA Act) has introduced several changes to improve the way pollution incidents are reported, managed and communicated to the general community. This includes a new requirement (under Part 5.7A of POEO Act) for licence holders to prepare, keep, test and implement a pollution incident response management plan. A Pollution Incident Response Management Plan (PIRMP) has been prepared for the construction of Stage AB WRP and is included at Appendix O of the CEMP. It will be updated and implemented by JHPL as required.

#### *Protection of the Environment Operations (General) Regulation 2009*

The regulation provides detail on everyday implementation of the POEO Act to control pollution of the environment including the following areas:

- Identifies scheduled activities, premises and licence requirements and situations where remedial notices and orders can be issued.
- Creates a framework for managing licence requirements.
- Identifies appropriate regulatory authorities to administer licences and pollution control notices.

The regulation applies to the control of pollution for all project activities including hazard and risk events.

#### *Environmentally Hazardous Chemicals Act 1985 (EHC Act)*

The EHC Act sets up the Hazardous Chemicals Advisory Committee. The functions of the committee include advising the Office of Environment and Heritage (OEH) in relation to the assessment and control of chemicals that are environmentally hazardous such as asbestos. The Act may apply to chemicals used during construction.

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#### *Environmentally Hazardous Chemicals Regulation 2008*

This regulation sets fees and licences to carry out prescribed activities in relation to environmentally hazardous chemicals or declared chemical waste such as asbestos, and specifying the matters to be included in notices issued by OEHS about applications.

#### *Dangerous Goods (Road and Rail Transport) Act 2008 (DGRRT Act)*

The DGRRT Act regulates the transport of dangerous goods by road and rail in order to promote public safety and protect property and the environment.

All dangerous goods (eg fuel) used during the construction of Stage AB WRP should be transported in accordance with the DGRRT Act.

#### *Contaminated Land Management Act 2008 (CLM Act)*

Depending on the category of remediation required if contamination is found to be present, the Proponent may be required to provide Council with specific information. Development consent may be required for contaminated land remediation work carried out and duty to report contamination may be triggered.

Relevant sections include:

- Section 60 – duty to report to OEHS if:
  - Contamination exceeds guideline level on land.
  - Contamination enters or may enter neighbouring land and exceeds guideline level; and
  - Contamination otherwise meets criteria in regulations.

Where known contamination is managed the CLM Act applies. If a spill of chemical or fuel causes contamination of land the provisions of the CLM Act may apply. No known contamination is known to be present at the Stage AB WRP site.

#### *Pesticides Act 1999*

The *Pesticides Act 1999* governs the use of pesticides to ensure they are used in an environmentally satisfactory manner.

The *Pesticides Act 1999* applies to storage, use and handling of pesticides and herbicides on the Project.

#### *Rural Fires Act 1997 (RF Act) and the Rural Fires Regulation 2002*

The objectives of the RF Act are to provide for:

- The prevention, mitigation and suppression of bush and other fires in local government areas (or parts of areas) and other parts of the State constituted as rural fire districts.
- The coordination of bush fire prevention throughout the State.
- The protection of persons from injury or death and property from damage, arising from fires.
- The protection of the environment by requiring certain activities to be carried out having regard to the principles of ecologically sustainable development.

The Regulation provides details on the everyday implementation of the RF Act. The Act and the Regulation will be taken into account by the contractors when preparing evacuation and emergency response protocols.

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### *State Emergency and Rescue Management Act 1989*

This Act relates to the preparation for an emergency, response to emergency and recovery of affected community and will be taken into account by the contractors when preparing evacuation and emergency protocols.

#### **3.1.2 Relevant guidelines**

- *Waste Classification Guidelines* (DECCW, 2009). These guidelines are required by the POEO Act to be implemented and define types of wastes, procedures for assessing waste. Any chemical wastes (eg containers or used spill response materials) generated by construction works will be assessed and classified in accordance with the guidelines and the Waste and Resource Management Plan (refer Appendix G of the CEMP).
- *Australian Standard 1940 – 2004 the Storage and Handling of Flammable and Combustible Liquids*. Storage of fuel and other flammable chemicals during construction must be undertaken in accordance with the Australian Standard.
- *Storing and Handling Liquids – Environmental Protection – Participants Manual* (DECC, 2007). Provides detail on the correct storage and handling of liquids (Note. The DECC Environment Protection Manual Technical Bulletin and Spill Management referred to in CoA B15 is now superseded).
- *Environmental Compliance Report: Liquid Chemical Storage, Handling and Spill Management – Part B Review of Best Practice and Regulation*. Provides best practice details on liquid chemical storage, handling and spill management.
- *Australian Standard 3780 – The Storage and Handling of Corrosive Substances*. Corrosive substances used during construction must be stored and handled in accordance with this standard.
- *Australian Dangerous Goods Code (ADG7)*. The code provides details regarding the transport and storage requirements of dangerous goods.
- *Code of Practice for the Safe Use of Pesticides Including Herbicides in Non-Agricultural Workplaces* (WorkCover, 2006). The industry code of practice provides guidance on how to comply with relevant legislation relating to the use and storage of pesticides and herbicides. It promotes safe and healthy practices in the use, storage and transport of pesticides by end users and it assists users to minimise detrimental effects to human health and the environment by suggesting ways to control the risks of exposure to these hazardous substances.
- OEH Protocol for industry notification of pollution incidents. The protocol describes the notification actions that must be undertaken in the event of a pollution incident. This protocol should be taken into consideration in conjunction with Section 7 of the CEMP.
- *Code of Practice for the Safe Removal of Asbestos* [NOHSC: 2002 (2005)]. The code of practice provides guidance on how to comply with the relevant legislation relating to safe removal of asbestos.
- *Development Construction Specification, C101, General* (QCC, 2011).

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### 3.2 Minister's Conditions of Approval

The CoA relevant to this Plan are listed in Table 1. A cross reference is also included to indicate where the condition is addressed in this Plan or other management documents.

**Table 1** Conditions of Approval relevant to environmental hazards, risks and safety

CoA No.	Condition requirements	Document reference
B9	The Proponent shall ensure that all liquid/and non-liquid waste generated by the Project is assessed and classified in accordance with <i>Waste Classification Guidelines</i> (DECCW 2008 or any future guideline that may supersede that document) and where removed from the site is only directed to a waste management facility lawfully permitted to accept those materials.	<a href="#">Table 3</a> (HRS7) Waste and Resource Management Plan (Appendix G CEMP)
B15	The Proponent shall store and handle all dangerous goods, as defined by the Australian Dangerous Goods Code, strictly in accordance with a) all relevant Australian Standards; b) for liquids, a minimum bund volume requirement of 110% of the largest single stored volume within the bund; and c) DECC's <i>Environment Protection Manual Technical Bulletin – Bunding and Spill Management</i> (now superseded by <i>Storing and Handling Liquids Environmental Protection – Participants Manual</i> )  In the event of an inconsistency between the requirements listed from a) to c) above, the most stringent requirement shall prevail to the extent of the inconsistency.	<a href="#">Table 3</a> (HRS7, HRS8)
B17	The Proponent shall: (a) take all practicable measures to mitigate off site lighting impacts from the construction and operation of the project; and (b) ensure that all external lighting associated with the project complies with <i>Australian Standard AS4282 – 1997 – Control of the Obtrusive Effects of Outdoor Lighting</i>	<a href="#">Table 3</a> (HRS14)
C20 (b)	A Hazards, Risk and Safety Management Plan to address: (i) the safety of construction workers in the event of a flood, bushfire and any other likely hazard or risk;	This Plan <a href="#">Table 3</a> (HRS1, HRS2, HRS5, HRS6, HRS9, HRS10)
	(ii) the management of risk fuel spillages and associated activities with respect to potential groundwater contamination, including an [sic] description of designated fuel distribution points; and	<a href="#">Table 3</a> (HRS1, HRS2, HRS4, HRS5, HSR11, HRS12) Spill Response Procedure (Appendix B) PIRMP (Appendix O CEMP)
	(iii) the safety of the public (such as bushwalkers) near the site during construction, such as installation of signage and fencing as necessary	<a href="#">Table 3</a> (HRS5, HRS6)

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### 3.3 Statement of Commitments

The SoC relevant to this Plan are listed in Table 2. A cross reference is also included to indicate where the commitment is addressed in this Plan or other management documents.

**Table 2** Statement of Commitments relevant to environmental hazards, risks and safety

Objective	Ref. No.	Commitment	Timing	Document cross reference
Minimise the risk of surface water contamination	WQ2	<p>A spill management and response procedure will be developed in the CEMP for the construction phase of the Project. These will specify that:</p> <ul style="list-style-type: none"> <li>Any fuels and chemicals will be stored in bunded or contained areas and a spill kit will be provided at all locations where fuels and/or chemicals are used.</li> <li>Fuel and chemical storage sites will not be located in the vicinity of any permanent and/or flowing waterway.</li> <li>The maintenance or refuelling of equipment will not be undertaken within the vicinity (within 150m) of any waterway.</li> </ul>	Construction	<p><del>Table 3</del> (HRS7, HRS8, HRS11, HRS12)</p> <p>Dangerous Goods and Hazardous Substances Management Procedure (Appendix A)</p> <p>Spill Response Procedure (Appendix B)</p> <p>PIRMP (Appendix O CEMP)</p>
Prevent and Manage Spills	S3	<p>To prevent and manage spills, the proponent will:</p> <ul style="list-style-type: none"> <li>Implement chemical transport, storage, handling and disposal procedures, in accordance with requirements for dangerous goods, of environmental legislation and industry standards.</li> <li>Ensure spill response procedures and equipment for containment and recovery are available on site.</li> <li>Conduct workforce training on the transport, storage, handling and disposal procedures relating to chemicals.</li> </ul>	Construction	<p><del>Table 3</del> (HRS2, HRS4, HRS7, HRS8, HRS12)</p> <p>PIRMP (Appendix O CEMP)</p>

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Objective	Ref. No.	Commitment	Timing	Document cross reference
Minimise groundwater contamination	G2	<p>Site environmental management measures will be developed and outlined in the CEMP with the purpose of minimising the potential for spills to occur and implementing remedial actions. These will include:</p> <ul style="list-style-type: none"> <li>Ensuring that all refuelling, where possible, occurs at designated fuel distribution points. These points will be underlain by compacted earth to prevent the significant loss of fuel to the ground during a spill and will be bunded to contain large spills.</li> </ul>	Construction	<a href="#">QTable-3</a> (HRS11)
Manage operational risks associated with storage and delivery of chemicals	R1	<p>Measures typical of facilities of the nature and the size of the Project will include</p> <ul style="list-style-type: none"> <li>Storing relevant chemicals below threshold quantity levels.</li> <li>Undertaking activities in accordance with relevant SDS's</li> <li>Installing bunded areas for the storage and delivery of chemicals in accordance with AS 3780:2008 <i>The storage and handling of corrosive substance and the relevant SDS's</i></li> <li>Developing and implementing appropriate procedures for delivery and handling and accidental spills of chemicals</li> </ul>	Operation	<a href="#">QTable-3</a> (HRS2, HRS4, HRS7, HRS8, HRS12) Dangerous Goods and Hazardous Substances Management Procedure (Appendix A) Spill Response Procedure (Appendix B) PIRMP (Appendix O) CEMP)

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# 4 Environmental aspects and impacts

The following sections summarise identified existing environmental hazards, risks and safety issues. Identified impacts are then reviewed. The key reference documents are section 13.5 of the EA and Appendix K of the EA.

## 4.1 Environmental aspects/hazards

### 4.1.1 Environmental aspects

Key aspects of the of the construction of Stage AB WRP that could be hazardous or be subject to risks and safety issues include:

#### *Construction activities in the vicinity of public roads*

Construction will be undertaken in the vicinity of roads where traffic movements present a hazard to construction personnel.

#### *Construction and public interface areas*

Construction will be undertaken adjacent to areas where members of the public (eg bushwalkers) may inadvertently interact with construction activities.

#### *Chemical and fuel storage, transport and use*

Chemicals and fuels will be used during construction and commissioning activities eg fuel and herbicide.

#### *Plant and equipment maintenance or emergency*

Plant and equipment used during construction activities could breakdown or require maintenance on site. Fuels and chemicals associated with the plant or equipment could escape from the equipment.

#### *Bushfire, flood, earthquake or other natural disaster*

Natural disasters could occur during the construction period. Fires, floods and earthquakes would present hazards to personnel causing entrapment and/or injury. Natural disasters could also cause chemical storages to be breached or damaged.

#### *Potential disturbance of asbestos*

Asbestos pipe has been identified buried in the vicinity of IWC Project activities but it is not anticipated that asbestos will be disturbed by the construction of Stage AB WRP.

### 4.1.2 Hazard, risk and safety impacts

The potential impacts associated with the above aspects include:

#### *Impacts relating to working in the vicinity of public roads*

Impacts could include:

- Personnel being struck by vehicles.
- Unplanned road closure(s) due to an incident.

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This construction hazard would primarily be managed via implementation of the SMP and the Traffic Management Protocol as per HRS5 in [QTable 3](#).

#### *Construction and public interface impacts*

Impacts could include:

- Injury to a member of the public due to inadvertent contact with construction activities.

The risk of members of the public coming into contact with construction activities is low to moderate as there will be new residents present at Neighbourhood 1A (NH1A). However NH1A is located about 400 metres west of the construction site and pedestrian activity around the construction site would be minimal. This hazard is also relevant to the Googong Foreshore recreational area that is accessed via Googong Dam Road. This hazard will be managed via the use of exclusion fencing and signage as per mitigation measure HRS6 in [QTable 3](#).

#### *Chemical and fuel storage, transport and use impacts (including plant or equipment emergency or maintenance impacts)*

Impacts could include:

- Spills from refuelling, accidents and plant breakdown or emergencies.
- Leaks from plant and equipment.
- Reactions due to chemical incompatibilities.
- Reaction to storage conditions such as high temperature and pressure.

The quantities of chemicals that will be stored on site during construction and were determined to be below the relevant SEPP 33 thresholds. Safety Data Sheets (SDS) for each chemical will be kept in a register on site and directions on storage and handling will be implemented.

Only chemicals identified for use during operation and commissioning activities (Sodium hypochlorite and Acetic acid) were assessed in terms of the number of transport and storage (EA Appendix K) and operational activities and risks are not included in this plan.

However the potential impacts from the transport, handling and storage of chemicals used for chlorination and de-chlorination of water (Sodium hypochlorite and Sodium bisulphite) during commissioning activities, along with fuel and oils used during construction will be managed via the mitigation measures in [QTable 3](#).

#### *Bushfire, flood, earthquake or other natural disaster*

Impacts could include:

- Personnel being trapped and injured or killed.
- Spills/leaks or explosion of stored fuels and/or chemicals.

Emergency situations as a result of natural disasters are unlikely but their impact could be significant. Emergency evacuation protocols and routes will be outlined in the SMP. This impact would be managed via implementation of HRS5, HR6, HRS9 and HRS10. Table 7.1 of the CEMP lists emergency contacts for the construction of Stage AB WRP.

#### *Asbestos discovery*

In the event that asbestos is disturbed it will be managed via implementation of the mitigation measures identified in [QTable 3](#) (HRS13).

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# 5 Environmental hazard and risk mitigation measures

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## 5.1 Hazard, risk and safety issue mitigation and management measures

A range of requirements and control measures are identified in the various environmental documents, including the CoA, SoC and the EA. Specific measures and requirements to address hazard, risk and safety issues are outlined in [Table-3](#). Some measures also help to satisfy other CoA or SoC not directly related to hazards and risk but which are also referenced in this table. ~~Responsibilities for implementing measures have been assigned to roles that GIPL considers will be required by the contractors. However the contractors will be responsible for confirming roles prior to the commencement of construction.~~

**Table-3** Hazard, risk and safety mitigation measures

ID	Measure	When to implement	Reference	Responsibility
HRS1	All personnel will receive the appropriate safety training and are aware of plans and procedures that address environmental hazards and risk. Training and hazard management activities will include but is not limited to general project and site specific inductions, safe work method statement toolboxes, management plan(s) revision, auditing and inspection of contractors' safety management and inspection and checking of construction plant and equipment.	Prior to and during construction	CoA C20 (b)(i) CoA C20 (b)(ii)	Project Manager Environment Manager

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ID	Measure	When to implement	Reference	Responsibility
HRS2	Specific training on the prevention and management of spills will be provided. The training will include but not be limited to familiarisation with the Pollution Incident Response Management Plan, standards, codes of practice and procedures for chemical storage, transport and handling and incident (spill) notification and use of appropriate spill kits.	Prior to and during construction	CoA C20 (b)(ii) SoC S3 SoC R1 Dangerous Goods and Hazardous Substances Management Procedure (Appendix A) Spill Response Procedure (Appendix B) PIRMP (Appendix O CEMP)	Project Manager Environment Manager
HRS3	The contractors will adhere to and implement the conditions of any Environment Protection Licences (EPLs) held for the IWC Project. The EPL will be available for inspection by all personnel and will be kept on site at all times. The EPL will be produced to any authorised officer of the EPA who asks to see it.	Prior to and during construction	CoA A7 CoA C20(b)(ii)	Project Manager Environment Manager
HRS4	The contractors will update and implement the Pollution Incident Response Management Plan to minimise the risk of harm to the environment.	Prior to and during construction	CoA C20(b)(ii) SoC WQ2 SoC S3 SoC R1 PIRMP (Appendix O CEMP)	Environment Manager
HRS5	The contractors will prepare and implement a Safety Management Plan (SMP), which will reference this Plan and the Traffic Management Protocol. The Traffic Management Protocol will be implemented to reduce risks associated with construction activities in close proximity to lanes of traffic	During construction	CoA C20 (b)(i) CoA C20 (b)(iii) CoA C20 (c) Traffic Management Protocol (Appendix C CEMP)	Project Manager



ID	Measure	When to implement	Reference	Responsibility
HRS6	Exclusion fencing and signage will be installed prior to construction in appropriate construction locations where an interface with the public may exist to prevent members of the public inadvertently entering the construction site.	Prior to and during construction	CoA C1 CoA C20 (b)(iii)	Project Manager
HRS7	Activities involving chemicals and fuels including but not limited to transport, storage, use and disposal will be carried out in accordance with the Dangerous Goods and Hazardous Substances Management Procedure and all relevant Australian Standards such as (but not limited to) AS 3780:2008 <i>Storage and Handling of Corrosive Substances, Safe Use of Pesticides including Herbicides in Non-Agricultural Workplaces- Code of Practice, Storing and Handling Liquids Environmental Protection Participants Manual.</i> <i>Note: if quantities are increased to above threshold limits the further assessments will be required.</i> In the event of an inconsistency between the procedures and any relevant standard, code of practice or supplier SDS the more stringent requirement will prevail.	Construction	CoA B9 CoA B15 SoC WQ2 SoC S3 SoC R1 Dangerous Goods and Hazardous Substances Management Procedure (Appendix A)	All personnel (including the wider project team)
HRS8	Chemicals will be stored in banded or contained areas in quantities below the relevant SEPP 33 thresholds and in accordance with the relevant Australian Standards and the SDS for the chemical. For liquids a minimum bund volume will be 110% of the largest single stored volume in the bund	Construction	CoA B15 SoC WQ2 SoC S3 SoC R1 Spill Response Procedure (Appendix B)	Project Manager Environment Manager
HRS9	Emergency management procedures and protocols will be developed and implemented by the contractors in accordance with the relevant legislation (refer Section 3.1 of this Plan) and included as an appendix to this plan. Ongoing liaison with the local emergency services will detail evacuation procedures in the event of a bushfire, flood or other natural disaster.	Construction	CoA C20 (b)(i) Safety Management Plan (to be prepared)	Project Manager
HRS10	No hot works will be carried out during total fire bans without the appropriate Hot Work Permit and safe work methods in place to reduce the possibility of bushfire.	Construction	CoA C20 (b)(i)	Project Manager

ID	Measure	When to implement	Reference	Responsibility
HRS11	No maintenance or refuelling be will carried out within 150 metres of a waterway and, where possible, refuelling will occur at designated fuel distribution points nominated. The designated fuel distribution point will be located at the northern. Area of the construction footprint. Fuel distribution points will be underlain by compacted earth to prevent significant loss of fuel to the ground and will be banded to contain large spills.	Construction	CoA C20 (b)(ii) SoC WQ2 SoC G2 PIRMP (Appendix O CEMP)	Project Manager All personnel (including the wider project team)
HRS12	Appropriate spill kits will be available for fuel and chemical spill containment and clean up (for land and water based spills) at each location where chemical or fuel is stored or in use. Sufficient spill kits for the work being undertaken will be provided (vehicles, plant etc).	Construction	CoA C20 (b)(ii) SoC WQ2 SoC S3 SoC R1 Spill Response Procedure (Appendix B)	Environment Manager All personnel (including the wider project team)
HRS13	In the event of disturbance of buried asbestos a specialist asbestos removalist contractor will be engaged to remove and dispose of the asbestos in accordance with relevant waste classification and disposal legislation, guidelines and relevant codes of practice.	Construction	SoC S4 SoC W1	Environment Manager All personnel (including the wider project team)
HRS14	In the event that night works are required, all practicable measures will be applied to mitigate off-site lighting.	Construction	CoA B17	Project Manager Environment Manager

# 6 Compliance management

## 6.1 Roles and responsibilities

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The project team's roles and responsibilities are outlined in Section 4.1 of the CEMP. Specific responsibilities for the implementation of controls outlined in this Plan are detailed in Section 5 of this Plan.

## 6.2 Training

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All employees, contractors and sub-contractors working on site will attend site induction training relating to requirements of this Plan, as part of the CEMP, and how it addresses environmental issues, hazards, risk and safety issues and its relationship to the SMP and any associated safety procedures and protocols. The induction training will address but not be limited to:

- Mitigation measures for the minimisation of identified hazards.
- Incident/ Emergency management, response and reporting requirements eg. spills and emergency evacuation due to natural disaster.
- Refuelling locations (to be nominated by the contractors in taking into account waterway and drainage line constraints).

Further details regarding personnel induction and training are outlined in Section 5 of the CEMP.

## 6.3 Inspections

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Inspections across the Stage AB WRP site with respect to hazard, risk and safety issue identification and management will occur for the duration of construction. Construction personnel will be required to identify and report any hazards and risks they observe during construction activities.

The Environment Manager will undertake weekly environmental inspections including an inspection of hazard and risk management and mitigation measures. This will include auditing of construction activities to ensure environmental hazard and risk mitigation measures are in place and are adequate. These inspections will be documented on the weekly checklist.

The Environmental Representative will inspect the site regularly to inspect hazard and risk controls.

Requirements and responsibilities in relation to inspections are documented in Section 8.1 of the CEMP.

Field Code Changed

## 6.4 Auditing

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Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this Plan, CoA and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 8.4 of the CEMP.

## 6.5 Reporting

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Results and outcomes of inspections, monitoring and auditing will be reported internally on a monthly basis. Six-monthly construction compliance reports will be prepared to report on compliance with the IWC Project Approval. Reporting requirements and responsibilities are documented in Section 8.5 of the CEMP.

Field Code Changed

# 7 Review and improvement

## 7.1 Non-conformity, corrective and preventative actions

A non-conformance is an action or omission that does not conform with the requirements of this Plan or any legal and other requirements. Any member of the project team or the Environmental Representative can identify a non-conformance or opportunity for improvement. Section 8.3 of the CEMP identifies the process for identifying, reporting, recoding and reviewing non-conformances. This will ensure continual improvement.

## 7.2 Management plan update and amendment

The processes described in Section 7 and Section 8 of the CEMP (relating to incidents, inspections, monitoring and auditing) may result in the need to update this Plan. This will occur as needed.

In particular, this Plan will require update and review if additional chemicals are identified and/or if chemical or fuel quantities stored on site increase significantly from the volumes predicted in the EA Appendix K.

Field Code Changed

# Appendix A Dangerous Goods and Hazardous Substances Management Procedure

## A.1 Distribution

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The purpose of this document is to provide a readily understood and consistent approach for the transport, storage, handling and use of dangerous goods and hazardous substances for the Googong Township IWC Project Stage AB - WRP construction activities.

This procedure will assist Googong Township Pty Ltd (GTPL) personnel, JHPL and associated sub-contractors employ best practice measures to so that they meet all notification obligations under the relevant legislation and guidelines outlined in Section 3.1 of the Hazards, Risk and Safety Management Plan.

## A.2 Purpose

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This procedure applies to all construction activities undertaken for the construction of Stage AB WRP.

All personnel including sub-contractors involved in the storage, handling, use and transport of dangerous goods and hazardous substances are to be familiar with this procedure so that they are able to manage dangerous goods and hazardous substances in accordance with legislation and be aware of the relevant codes of practice.

Although this procedure has not specifically identified hazardous substances or dangerous goods other than fuel that may be used during construction activities, if JHPL become aware of any additional hazardous substances or dangerous goods that will be stored or used during Stage AB WRP construction activities, this procedure must be reviewed and updated. For example – if herbicides and/or pesticides are used during construction activities, prior to use, JHPL will undertake a risk assessment and if they are determined to be hazardous substances or dangerous goods or both then the substance would need to be stored and used in accordance with the relevant code of practice and the relevant safety data sheet (SDS).

Field Code Changed

## Definitions

*GENERAL NOTE: dangerous goods and hazardous substances can be easily confused. It is important to note that there are differences in the way that dangerous goods and hazardous substances are classified and managed.*

*Dangerous goods classification identifies substances that have a short-term effect on human health (long term effects are not considered). However, a dangerous good can also be classified as a hazardous substance.*

### Dangerous goods

Means any substance or article prescribed as 'Dangerous Goods' for the purposes of the *Dangerous Goods Act (Road and Rail Transport) 2008* – being:

A substance or article prescribed by the regulations as dangerous goods, or

A substance or article determined by a Competent Authority in accordance with the regulations to be dangerous goods.

*NOTE: Dangerous goods are substances or articles that are potentially hazardous to people property and the environment. They may be corrosive, flammable, explosive, spontaneously combustible, poisonous, oxidising or water reactive. Whatever their properties or their potential to cause harm, extreme care is needed in their handling storage and transport.*

### Hazardous substance

Means a substance that: is listed on the Hazardous Substances Information System.

<http://hsis.safeworkaustralia.gov.au/Default.aspx>

*NOTE: Hazardous substances are substances that have the potential to harm human health. They can be solids, liquids or gases and they can be pure elements or compounds or mixtures. A wide range of industrial, laboratory and agricultural chemicals are classified as hazardous substances.*

### SDS

Is an acronym for a document titled Safety Data Sheet as defined by the *Workplace Health and Safety Regulation 2011* clauses 330 and 331. The SDS provides information regarding hazardous substances including but not limited to storage requirements, first aid information and requirements for disposal.

Field Code Changed

### A.3 Roles and responsibilities

Role	Responsibility
Wider project team (All personnel including sub-contractors)	<ul style="list-style-type: none"> <li>To attend project and site inductions and where appropriate chemical management/handling training.</li> <li>To implement this procedure when transporting, storing and using dangerous goods and hazardous substances.</li> <li>To know what to do if an incident occurs involving dangerous goods or hazardous substances.</li> <li>To contact 000 if it is identified that there is a threat to human health or property.</li> <li>To cooperate with and assist emergency agencies and other authorities with respect to incident control and management.</li> </ul>
Environment Manager	<ul style="list-style-type: none"> <li>To prepare, deliver, and keep records of, environmental inductions and any specific dangerous goods and hazardous substances management training.</li> <li>To ensure that appropriate spill kits are provided at all refuelling points, chemical storage areas and where appropriate with plant, equipment and vehicles.</li> <li>To inspect all project sites regularly to ensure that all dangerous goods and hazardous substances are transported, stored, used and labelled appropriately.</li> <li>To work with site personnel to rectify any non-conforming practices.</li> <li>To work with site personnel to complete incident report forms.</li> </ul>
Project Manager Environment Manager	<ul style="list-style-type: none"> <li>To inspect all project sites regularly to ensure that all dangerous goods hazardous substances are identified, labelled, stored, handled and transported in accordance with the relevant legislation, standards, codes of practice, project plans and this procedure.</li> <li>To monitor and restock spill kits.</li> </ul>
Project Manager	<ul style="list-style-type: none"> <li>To ensure that transport (delivery) and handling and storage of dangerous goods and hazardous substances is undertaken in a safe manner in accordance with this procedure.</li> <li>To ensure that the SDS and Hazardous substances registers are kept at all chemical storage and handling locations. That the registers are up to date and available to all personnel at all times.</li> <li>To report to the Environment Manager regarding the current stock of spill kits to ensure they are appropriately stocked at all times.</li> <li>To ensure that staff are advised of their responsibilities with respect to this procedure and all other environmental procedures.</li> <li>To ensure that this procedure is fully implemented.</li> </ul>

### A.4 Consultation/notification requirements

#### *Personnel consultation*

Consultation with project personnel is required whenever a new dangerous good or hazardous substance is brought to a work site. Personnel will be advised of any new transport and storage requirements and any personal protective equipment that may be required during the use and management of the new dangerous good or hazardous substance.

Field Code Changed



#### *Emergency agency consultation*

Measures to notify the relevant emergency agencies of hazardous substances and dangerous goods that are stored on site both temporarily and permanently, will be included in the emergency response plans and incident response plans, to be developed by the contractors.

### **A.5 Procurement of materials**

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Wherever possible a non-hazardous alternative to a hazardous substance will be selected and used, where no such alternative is available the most suitable but least harmful or dangerous shall be considered.

The procurement of hazardous substances is conditional upon the supplier providing sufficient information to ensure that the substance can be handled, transported, stored, used and disposed of safely.

The supplier must provide full safety data in the form of a current and approved SDS on the first occasion that a hazardous substance is supplied. SDSs should also be supplied on request.

The manufacturer shall review and revise the SDS every five years as a minimum. The user of the hazardous substance should ensure that the SDS is current and that it is representative of the properties of the substance in use.

### **A.6 Labelling of hazardous substances**

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Suppliers shall ensure that all containers of hazardous substances are appropriately labelled. Where a hazardous substance is decanted and not used immediately, the container into which the substance is decanted must be labelled with the product name and risk and safety information. Note this does not apply to substances that are decanted and completely used immediately.

Hazardous substance containers must remain appropriately labelled until they are cleaned and no longer contain any hazardous substances. All containers shall be in suitable condition ie not damaged or corroded and in accordance with the SDS.

### **A.7 SDS register and hazardous substances register**

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#### *SDS register*

JHPL will maintain a register of Safety Data Sheets (SDSs). A register should be made available to all personnel at each work place, refuelling point and chemical storage area.

#### *Hazardous Chemicals Register*

JHPL will be responsible for maintaining a Hazardous Chemicals Register for the construction of Stage AB WRP in accordance with the Work Health and Safety Regulation 2011. JHPL must ensure that:

- (a) A register of hazardous chemicals used, handled or stored at the workplace is prepared and kept at the workplace, and
- (b) The register is maintained to ensure the information in the register is up to date. Note that penalties apply if a register is not kept.

Field Code Changed

The register must include:

- (a) A list of hazardous chemicals used, handled or stored, and
- (b) The current SDS for each hazardous chemical listed.

The person must ensure that the register is readily accessible to:

- (a) A worker involved in using, handling or storing a hazardous chemical, and
- (b) Anyone else who is likely to be affected by a hazardous chemical at the workplace.

The regulation clause does not apply to a hazardous chemical if:

- (a) The hazardous chemical is in transit, unless there is a significant or frequent presence of the hazardous chemical in transit at the workplace, or
- (b) The hazardous chemical is a consumer product and the person is not required to obtain a safety data sheet for the hazardous chemical.

## A.8 Risk assessment

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JHPL will perform a risk assessment for each hazardous substance in accordance with applicable legislation. Results of the risk assessment relating to each substance will be shown by:

- Making a notation in the register of hazardous substances if no specific measures are required to control the risks associated with exposure to the hazardous substance; or
- Preparing a report on the risk assessment describing the specific measures that are required to control the risks associated with exposure to the hazardous substance.

## A.9 Storage and transport

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Dangerous goods and hazardous substances will be stored and transported in accordance with the *Dangerous Goods (Road and Rail Transport) Act 2008*, *Dangerous Goods (Road and Rail Transport) Regulation 2009*, relevant Australian Standards and codes of practice

The quantity of stored chemicals should be minimised, where possible, to prevent creation of a hazardous situation.

In addition to relatively low storage volumes to avoid the hazards of reactions or incompatibilities between materials and hazardous processing or storage conditions (eg high temperatures and pressures) the following measures should be employed:

- Storage in separate bunded areas as per AS 3780:2008 for incompatible products.
- Operating procedures and engineered safeguards (eg incompatible hose couplings) for delivery and unloading of chemicals to prevent unloading into the incorrect tank.

For transport and storage requirements of dangerous goods refer to the Australian Dangerous Goods Code (ADG7).

Field Code Changed

## A.10 Handling and use

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To ensure the health and safety of personnel, the JHPL will develop and implement Task Risk Assessments (TRA) for hazardous substances and dangerous goods in consultation with the personnel who will be using the TRA. Each TRA should include the tasks that use the hazardous substance or dangerous good and a risk assessment of the task. The TRA should reference the SDS for the substance.

## A.11 Storage, spills and disposal

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Hazardous substance storage will be undertaken in accordance with the SDS for the substance or the Australian Dangerous Goods Code (whichever is more stringent).

Spills will be cleaned up in accordance with the Spill Response Procedure (Appendix B) and the SDS. Disposal of spilled and clean up materials shall be in accordance with the Waste and Resource Management Plan (Appendix G of the CEMP), associated procedures and the relevant SDS. Similarly, hazardous substances and their containers shall be disposed of in accordance with the Waste and Resource Management Plan, associated procedures and the relevant SDS.

## A.12 Special requirements

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### *Health surveillance*

Health surveillance of personnel has not been identified as being required for the substances that will be used during the construction of Stage AB WRP. (Refer to Work Health and Safety Regulation 2011 Schedule 14, Table 14.1). JHPL will review all new/additional identified substances to be used in construction activities and if any are listed in the table note above then health surveillance of personnel using the substance may be required.

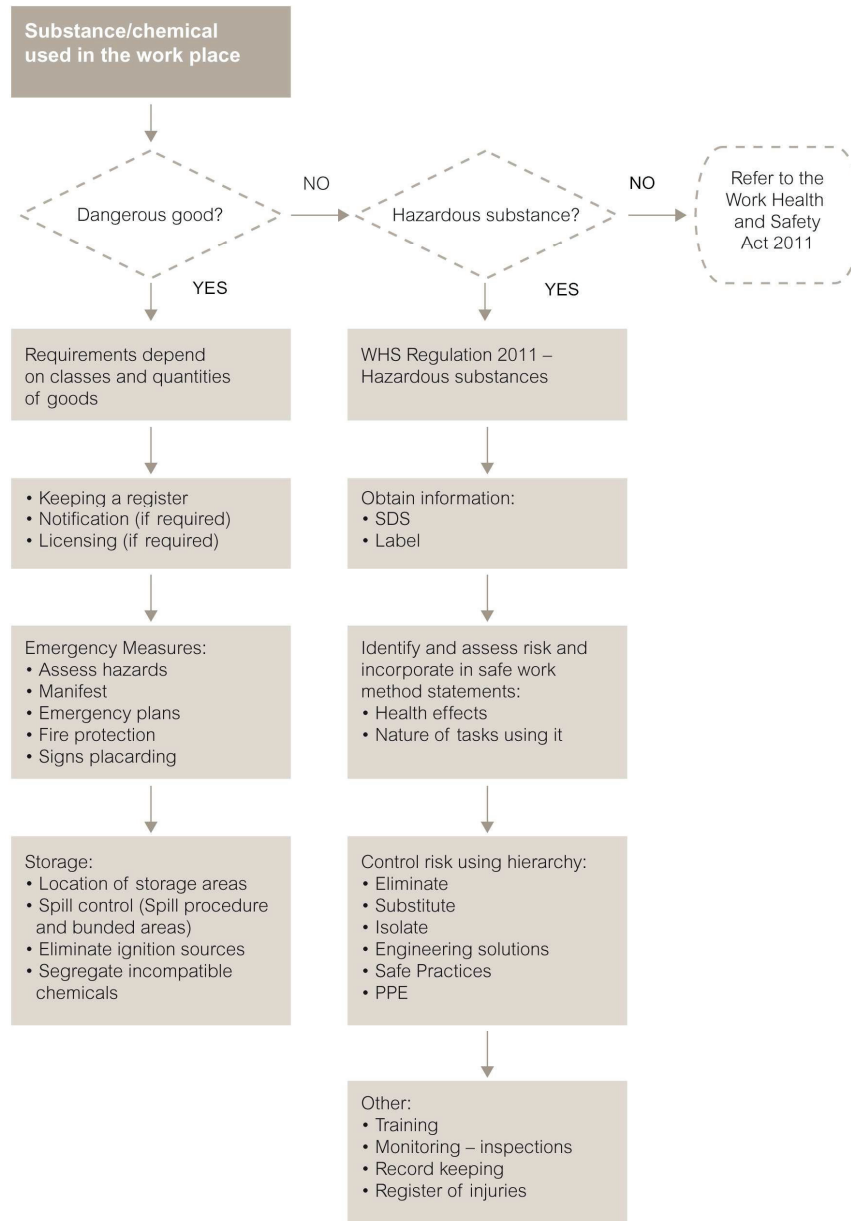
### *First Aid*

Work-place first-aiders must have access to all SDSs, within the SDS register, to enable the appropriate first aid to be applied in case of an emergency.

Field Code Changed

## A.13 Flow chart

Management of hazardous substances and dangerous goods



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Field Code Changed

# Appendix B Spill Response Procedure

## B.1 Distribution

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There are no restrictions on the distribution or circulation of this procedure within the Googong IWC Project Stage AB – WRP.

## B.2 Purpose

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This procedure details the requirements for managing and clearing up spills ie chemical, fuel or oil spills/leaks that occur on site. The procedure when followed will ensure that Googong Township Pty Ltd (GTPL) personnel, JHPL and associated sub-contractors meet all notification obligations under the *Protection of the Environment Operations Act 1997* (POEO Act).

Spills should be classified, managed and reported as environmental incidents (Category one or Category two) in accordance with Section 7 of the CEMP.

## B.3 Induction/training

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All personnel including sub-contractors involved in use of fuels, oils and chemicals are to be familiar with this procedure so that in the event of a spill they are able to respond appropriately and in a timely fashion.

Where required, personnel will be made aware of this procedure as required through toolbox talks.

Training will include employee responsibilities and legal obligations in relation to spills, stormwater management and water pollution, and the systems in place at the Stage AB WRP site to address spills.

## B.4 Scope

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This procedure is applicable to all activities conducted by JHPL or subcontractors that have the potential to spill or leak fuels, oils or other chemicals.

This procedure details the process involved in the following elements of spill management.

Field Code Changed

## B.5 Roles and responsibilities

Role	Responsibility
All personnel	<ul style="list-style-type: none"> <li>To attend project and site inductions and where appropriate spill management training in order to become familiar with incident response procedures</li> <li>To implement this procedure if a spill occurs.</li> <li>To stop work associated with a spill of fuel or chemicals if a spill occurs.</li> <li>To contact 000 if it is identified that there is a threat to human health or property.</li> <li>To cooperate with and assist emergency agencies and other authorities with respect to spill control and management.</li> <li>To notify the Project Manager and/or Environment Manager of any spills.</li> </ul>
Environment Manager	<ul style="list-style-type: none"> <li>To prepare, deliver, and keep records of, environmental inductions and any spill management training</li> <li>To ensure that appropriate spill kits are provided at all refuelling points, chemical storage areas and where appropriate with plant and equipment</li> <li>To inspect all project sites regularly to ensure that all hazards and spills are identified</li> <li>To assess the extent and nature of spills to determine if the EPA should be notified and provide advice to GTPL.</li> <li>To work with site personnel to complete spill/incident report forms.</li> <li>To notify the GTPL Assistant Project Director immediately as they become aware for a spill.</li> </ul>
Project Manager	<ul style="list-style-type: none"> <li>To ensure that staff are advised of their responsibilities with respect to this procedure and all other environmental procedures.</li> <li>To ensure that this procedure is fully implemented in the event of a spill</li> <li>To cooperate with the relevant authorities should further investigation regarding a spill is required.</li> <li>To assess the extent and nature of spills to determine if the EPA should be notified and provide advice to GTPL.</li> <li>To notify the GTPL Assistant Project Director immediately as they become aware for a spill.</li> </ul>

Field Code Changed

## B.6 Notification requirements

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Recent changes to the POEO Act require occupiers of premises, the employer or any person undertaking an activity which causes a pollution event such as a spill to immediately notify each relevant authority (the appropriate regulatory authority (ARA) is usually the EPA and the local authority is usually a local council). If the event is threatening human health or property an emergency should be raised by immediate notification of the NSW Fire Brigade or the NSW Rural Fire Service and NSW Ambulance by calling 000. There may also be a requirement to notify WorkCover Authority if personnel are injured.

Incident reporting and emergency contact details are provided in Section 7.3 of the CEMP respectively.

## B.7 Spill containment kit

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At any site where there is a significant risk/consequence of a spill, an appropriate spill kit(s) is to be available (different kinds are available for different pollutants). The environment manager can provide advice on purchasing the correct spill kit.

Field Code Changed

## B.8 Procedure

### *Spill procedure steps*

#### **Step 1 – Assessment of the spill**

- Stop all work in the affected area.
- Ensure the safety of all workers, visitors and the public in the vicinity of the spill/leak.
- Immediately notify the Environment Manager and/or Project Manager.
- Cordon off the area around the spill/leak to stop foot/vehicle passage through the affected area.
- Conduct a short assessment of the affected area and notify the Environment Manager of the results of this assessment. The assessment should include consideration of the:
  - Quantity of the substance spilt.
  - Type of substance (ie corrosive, poisonous, flammable etc).
  - Location, and potential impact on the environment, and the health and safety of personnel.
  - Whether the spill is manageable and the best method of clean up (only after referring to the relevant safety data sheet (SDS)).
  - Photographs of the location and extent of the spill.
- Refer to the container label or SDS for detailed information on the substance spilled and to determine the appropriate personnel protective equipment (PPE) and clean up/storage and disposal requirements.
- Where the spill is not manageable and presents an immediate danger to people, property or the environment, the following needs to be determined:
  - Whether sufficient spill control equipment and materials, and personal protective equipment exist on site to deal with the spillage.
  - Whether attempts to deal with the spill on site would pose any risk to employee safety.
  - Whether the site's waste management contractor should be contacted for clean up, removal and safe disposal of the spilled substance.

#### **Step 2 – Notification of Emergency Services**

Where it is determined that the spill cannot be managed by the resources on site, efforts shall be made (only where safe to do so) to protect stormwater drains and sensitive areas. Notify the NSW Fire Brigade or NSW Rural Fire Service (phone 000 or 112 from mobiles).

#### **Step 3 – Spill management**

- Personal protective equipment (PPE):
  - Prior to any clean-up, appropriate personal protective PPE is to be worn as per the SDS. No clean up should occur without the correct PPE.
  - Control the source.
  - Stop the source of the spill/leak if it is safe to do so.
- Protect drains, channels or other pathways for environmental reasons:

Field Code Changed



- If there is a possibility that the spill/leak will contaminate a greater area or move off site, protect drains, channels or other pathways for environmental release.
- If required, geo-fabric, absorbent materials, booms and sandbags should be placed around drains and grates.
- Contain the spread of the spill:
  - Stop the spill/leak from spreading by using absorbent materials from spill kit (ie booms, pads, pillows, granules etc) sand bagging, spoil or impermeable silt sausages, any handy physical barrier.
  - Place booms around outside edges of spilled/leaked substance. Ensure booms are overlapped to prevent leakage.
  - Ensure there are no gaps between the boom and the affected surface.

#### **Step 4 – Spill clean up**

- Deploy booms first to contain spill. Deploy booms first to contain or divert spill from waterway.
- If the booms alone cannot absorb the spill/leak, then use absorbent granules to soak up spilled liquid. Granules are quick and absorbent, good for small spills.
- Lay down pads or pillows. Pillows are best for thickly spread liquids. Pads are best for thinly spread liquids.
- Reduce the size of the spill/leak by gently pushing the booms towards the centre of the spill.

#### **Step 5 – Disposal of material used in clean up**

- Booms, pads, pillows, gloves and absorbent granules to be placed in yellow waste bag found within spill kit. These are then to be disposed of to the contaminated waste bin.
- Spilled liquid waste to be placed into a labelled sealed container
- Consult with the Environment Manager to determine the appropriate testing and classification of the waste material – implement the Waste Classification procedure where appropriate.

#### **Step 6 – Notification and review**

- After cleaning up the spill/leak, notify the Project Manager and/or Environment Manager as soon as possible to:
  - Record the incident and the mitigation measures employed on the incident register.
  - Ensure that any clean up materials are replaced.
  - Implement non-conformance and corrective action and record on the non-conformance register.

Field Code Changed