SOUTH WALES

Newport
Cardiff
Barry
Swansea
Port Talbot
River Usk

Oil Spill Contingency Plan

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Preface

Document Administration

Title:	Oil Spill Contingency Plan
Owner and Responsibility for Plan::	Harbour Master - Rod Lewis
Company:	Associated British Ports
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Distribution & Document Control

The Oil Spill Contingency Plan is a controlled document and the latest version is downloadable at www.southwalesports.co.uk. Printed copies of the plan are held in the Harbour Masters Office, and Cardiff Local Port Services (Cardiff LPS). The plan, and future amendments of it, will be sent electronically to the below organisations. When printed the document will be uncontrolled.

- National Resources Wales
- Newport Council
- Cardiff Council
- Swansea Council
- Neath, Port Talbot Council
- Monmouth Council
- Bristol Channel Environment Group
- Valero
- Prax
- Inver
- Navigator
- Neath Harbour Commissioners
- Newport Harbour Commissioners
- HM Coastguard

Amendments

Amendment Number	Amended pages	Authorised By
0001	P177 - Identification of cleanup, waste, storage sites	ML
0002	Change of operator from vopak to navigator	ML
0003	Appendix 10 Inserted – Spillage on the port estate Procedure and associated MSDS sheets (Methanol, D4 and Linears)	ML
0004	P24 – Operational key Team Members	ML

Contents

Introduction

Under an agreement, first made in 2005 and renewed in September 2010, between Newport Harbour Commissioners and ABP South Wales, ABP South Wales are contracted by NHC to respond to and manage the responses for oil spill and other emergencies with in the NHC Statutory area of Jurisdiction. So as to aid that response and management, the NHC and ABP regional OSCP's have been harmonised into one document. This document describes ABP's responses to Oil spills in its own SHA area of jurisdiction and in the NHC SHA area of Jurisdiction where ABP are contracted to respond.

Strategy Plan

This describes the statutory requirements, as well as the purpose and scope of the plan, including the geographical coverage. It shows the relationship of the plan to the National Contingency Plan for Marine Pollution from Shipping (NCP) and plans of local organisations. Also included are perceived risks, and the Incident Response Organisation and responsibilities of individuals for defined categories of spill.

Action Plan

This sets out the emergency procedures, which will allow rapid mobilisation of resources and an early response to the situation.

Data Directory

This contains all supplementary information relevant to the performance of the plan such as; Contact Directory, Training and Exercise Policy, Risk Assessment, Sensitivity maps, Roles and Responsibilities of Government and Other Agencies, Resources Directory and Product Information Sheets.

Strategy Section

1.1 Statutory Requirement

This Oil Spill Contingency Plan has been developed to conform with the Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998, SI 1998 No. 1056, which entered into effect on 15 May 1998. The plan is designed to meet the statutory responsibilities placed on the Harbour Authority for responding to oil pollution within the harbour area.

1.2 Purpose of the Plan

The plan is provided to assist the Harbour Authority and other organisations in dealing with an accidental discharge of oil. Its primary purpose is to set in motion the necessary actions to stop or minimise the discharge and to mitigate its effects. Effective planning ensures that the necessary actions are taken in a structured, logical and timely manner.

This plan guides the Harbour Master and his Duty Officers through the decisions that will be required in an incident response. The tables, figures and checklists provide a visible form of information, thus reducing the chance of oversight or error during the early stages of dealing with an emergency situation.
For the plan to be effective, it must be:

- Familiar to those with key response functions in the Port
- Regularly exercised, reviewed and updated on a regular basis.

This plan uses a tiered response to oil pollution incidents. The plan is designed to deal with Tier One and Tier Two incidents, and to provide guidance for the initial response to a Tier Three incident. Where a spillage is associated with a wider emergency such as a shipboard fire, then additional factors involving the safety of personnel will take precedence over the pollution response. In this case, reference must be made to the Port Emergency / Business Continuity Plan. The salvage and casualty management of any vessel, which poses a threat of pollution, are priority considerations.

During oil spill response activities account must be taken of the following:

- Site hazard information
- Adherence to permit procedures
- Spill site pre-entry briefing
- Boat safety
- COSHH Regulations and material safety data sheets
- Personal protective equipment needs
- Heat stress, cold stress and hypothermia
- Decontamination
- Waste Management

1.3 Responsibility for the Plan

The Harbour Master is responsible for the maintenance and review of the OSCP, the HM discharges the statutory responsibility for the ports of Cardiff, Newport, Barry, Swansea and Port Talbot, and by contract for NHC; this plan therefore details the contingency arrangements for responding to actual or threatened oil pollution incidents in any of the South Wales ports and the River Usk. The response strategy has been developed taking into account the spill risks and possible sources of spillage associated with the port operations, including those at the oil tanker jetties and other facilities within the docks.

Environmental Statement

ABP's Environmental Statement can be found online at this address: http://environment.abports.co.uk/admin/content/files/ABP%20Environmental%20Policy%20Statement.pdf

1.4 Geographical Boundaries

The statutory harbour areas of jurisdiction are shown on the maps in section 12.3.

1.5 Consultation with Local Authorities

The following authorities and organisations have been consulted during the preparation of this plan:

- Natural Resources Wales (NRW)
- Cardiff Harbour Authority
- Newport Harbour Commissioners
- City and County of Swansea
- Neath Port Talbot County Borough Council
- Newport City Council

1.6 Interfacing Contingency Plans

Oil Company Plans (Cardiff)

Valero, Prax and Inver all operate from Cardiff Docks the import and storage of ground fuels, Jet Fuel, and Fuel Oils.

Oil Berth One in Queen Alexandra Dock is available for import of Fuel oils.

The oil spill response obligations of these companies are deemed to be covered within the scope of this plan and the Harbour Master, or his deputy, will direct any necessary spill response effort together with the assistance of terminal personnel.

Oil Company Plans (Barry)

Navigator operates a Petro-Chemical installation at the Navigator site with loading/discharge berths in Number Two Dock.

Safety Study undertaken identified the risk of methanol release from one of the Navigator pipelines above one of the roads on the dock, therefore common response procedure developed that captures LPS and Security Protocols – This information is detailed in Appendix 10.

The oil spill response obligations of this company have been jointly formulated with ABP and are deemed to be covered within the scope of this plan and the Harbour Master, or his deputy, will direct any necessary spill response effort together with the assistance of terminal personnel.

The subsidiary oil spill contingency plans are:

No.	Owner	Title
1	Valero at Roath Dock, Inver Energy and Prax at Queen Alexandra Dock Cardiff	Company Oil Spill Contingency Plan
2	Navigator terminal at No 2 Dock Barry	Joint ABP/Company Oil Spill Contingency Plan

Local Authority Plans

In the event of actual or threatened shoreline impact, the Oil Spill Contingency Plan administered by the relevant local authority will be implemented. The level of activation will be dictated by the incident classification (refer Section 1.7).

The interfacing plans are:

No.	Owner	Title
1	Cardiff Council	Cardiff Oil Spill Contingency Plan
2	Newport City Council	Local Coastal Pollution Tier 1 Incident Plan
3	City and County of Swansea Neath Port Talbot County Borough Council	Hazardous Materials and Chemicals Washed Ashore Plan
4	Cardiff Harbour Authority	Oil Spill Contingency Plan

1.7 Adjacent Harbour Authorities

Cardiff Harbour Authority

The entrance to Cardiff Bay is by locks leading off a supplementary channel of the Wrach channel into Cardiff Docks. The Wrach channel falls within the port limits and is the responsibility of ABP. The entrance to the outer harbour, locks, and waters within the enclosed bay, are all the responsibility of Cardiff Harbour Authority. Any spill in one area could quickly migrate into the adjoining waters and therefore both parties, whilst each having their own plans, would work closely together in the event of a spill.

Neath Harbour

The eastern port limit of Swansea and the western port limit of Port Talbot adjoin the limits of Neath Harbour. Where the possibility exists that spilled oil may migrate to, or from, the Neath harbour area, close liaison will be maintained with the Neath Harbourmaster.

1.8 National Contingency Plan

In the event of an oil spill incident, which calls for a Tier Three response, the Maritime and Coastguard Agency may decide to implement the National Contingency Plan (NCP). In this event, MCA will take control of at-sea counter pollution measures from either the Port Marine Response Centre (PMRC) or from their own Coastguard Operations Centre, (CGOC). Should there be a formal hand-over of responsibility to MCA for dealing with the incident, the Port's oil spill response resources and facilities will be made available to MCA.

In the event that the NCP is called into operation then the Secretary of State's representative, SOSREP, will assume full command of the operation. He/She has the decisive voice in the decision making process in a marine salvage operation that involves the threat of significant pollution. The Director / Deputy Director of Operations will act as a stand-in in the event of SOSREP being unavailable. The Director of Operations is responsible for search and rescue, counter pollution, survey and inspection, enforcement action, and clean up operations at sea. They are also responsible for maintaining the Government and MCA's stockpiles of equipment. All though the SOSREP would have overall control of the salvage elements in a large scale incident, if there was major oil pollution, this would potentially be taken up by the MCA Counter Pollution Branch.

1.9 Places of Refuge

Places of refuge are places of safety to which a ship in need of assistance can be brought to stabilise it's condition e.g. to effect repairs or to transfer cargo, so that further damage to the ship, and consequential pollution damage to the seas and coasts, can be averted. SOSREP will determine whether a vessel requiring such assistance should be directed to proceed to a safe haven and where that place might be. The SOSREP will take into account all the factors that relate to each specific incident such as the weather, the geographical location of the incident, and the type of threat posed by the vessel and it's cargo. The SOSREP will, at all times, seek to minimise the adverse consequences of the incident. There is no definitive list of places of refuge around the coast of the UK, any suitable location can be used, and the SOSREP, or the deputy, will decide at the time where the best location shall be.

1.10 Summary of Risk Assessment

(for full risk assessment details refer to section 11)

Cause	Likelyhood	Worst Case Spillage Quantity (Tonnes)

Grounding in channel	Low	<50 fuel
Striking floating object	Low	>250 cargo, <250 fuel
Locking / Berthing incident	Low	<500 cargo, >200 fuel
Tug Impact	Low	>250 cargo, <250 fuel
Oil Transfer Operations	Low/Moderate	<5 clean oil, <5 fuel oil
Bunkering Operations	Low/Moderate	<5 fuel / marine gas oil
Fire/Explosion	Low	<500 cargo, >200 fuel
Ranging	Low	<500 cargo, >200 fuel
Collision ship to ship	Low	<1000 cargo, >400 fuel
Sinking / Capsizing	Low	<500 cargo, >200 fuel
Impact with Structure	Low	<500 cargo, >200 fuel

Note: *the Worst Case Spillage quantities for tankers have been estimated for conventional, single hull vessels. The risk of spillage, and the quantities involved, as a result of grounding, collision, berthing incident or tug impact will diminish as more double hulled vessels and tankers with protectively located ballast tanks enter service.*

1.11 Categories of Incident

Oil spills will be categorised in accordance with the internationally recognised three-tier classification system.

It is not the intention of ABP to specify the amount of oil spilled which would automatically lead to the response being at the next higher tier. Rather each incident will be assessed at the time and the officer on scene will instigate appropriate action. If in any doubt he will always call for assistance. Continuous reassessment may mean that a further response at a higher level is subsequently deemed necessary.

Tier 1
Small operational spills. A spill that can be dealt with immediately utilising local resources without assistance from other areas.
Tier 2
Medium sized spills. A spill that requires regional assistance from other areas. May involve assistance by local government.
Tier 3
Large spills. Beyond the capability of local and regional resources. A spill that requires national assistance through the implementation of the National Contingency Plan (NCP).

Irrespective of the spill classification, Form **CG77 POLREP** will be completed and submitted to MCA-HM Coastguard by the Harbour Master for doubtful, probable, and confirmed oil spills

2.0 Incident Response Organisation

Harbour Master

The Harbour Master (or his nominated deputy) has overall responsibility for the conduct of spill response operations and for casualty / salvage management within the SHA areas of jurisdiction. He will be supported in his role by ABP harbour personnel and by the Oil Spill Management Team.

Oil Spill Management Team (OMT)

An Oil Spill Management Team (OMT) will be established, under the chairmanship of the Harbour Master, for Tier Two and Tier Three incidents. Depending on the circumstances of the incident, an OMT may be set up for a Tier One response. The OMT will convene at the designated building and will provide the command and control structure to co-ordinate and direct the incident response. The OMT may consist of representatives from the following organisations and authorities:

Oil Spill Management / Support Team	Tier 1	Tier 2	Tier 3
Harbour Authority	x	x	x
Relevant Local Authority / Emergency Teams	x	x	x
Oil Company (terminal Spill as required)	x	x	x
Natural Resources Wales	x	x	x
Tier 2 Contractor: Adler and Allan		x	x
Salvor (if appointed)		x	x
P&I Club / ITOPF		x	x
MCA		x	x
Vessels Owners / Agents		x	x
TATA (if appropriate)		x	x
Other Terminal Contractors		x	x
CPSO (Counter Pollution and Salvage Officer)		x	x
Police		x	x
Fire and Rescue Service		x	x

Contact details and notification matrix for the OMT and Support team can be found in Appendix 4 & 5. Local response personnel can be found in section 3.5.

2.1 Incident Response

Cardiff LPS will initiate the appropriate response actions and will immediately advise the Harbour Master. In the event that the spill involves oil terminal operations, the oil company concerned will initiate the first response actions. Once the Harbour Master

assumes control, management of the response will be in line with the established day-to-day management structure of the Harbour Master's Department. Section 4.1

Tier 1

The Harbour Master will decide whether or not to set up an Oil Spill Management Team and in the event of an oil company involvement, whether the OMT will operate from the Port Marine Response Centre or from the oil company's response centre.

Tier 2

An Oil Spill Management Team, under the chairmanship of the Harbour Master, will be established at the Port Marine Response Centre, then initiate and coordinate the appropriate response in line with the Oil Spill Contingency Plan. It is possible that an Environment group may be set up in a Tier 2 Incident, depending on the response required.

Tier 3

An Oil Spill Management Team, under the chairmanship of the Harbour Master, will be established at the Port Marine Response Centre and will assist the governments National Contingency Plan in the appropriate response.

In the event of a Tier Three incident and the implementation of the National Contingency Plan (NCP), overall control would pass to the Secretary of State's Representative, SOSREP, or his appointed deputy. The OMT will assist SOSREP and appropriate members of the OMT will re-deploy to the Tactical Co-ordinatiing Group or the Response Co-ordinating Group.

Activation of the NCP will result in the formation of an Environment Group (EG) to provide environmental advice to response units. Natural Resources Wales would be a core member of this group together with other environmental and public health agencies. Conventionally this would be located with the TCG/RCG but maybe located close to CGOC or Ports Marine Response Centre if that is more appropriate.

The Port Marine Response Centre will remain active unless superseded by the MCA CGOC. The Harbour Master will require the transfer of responsibility for managing the incident response to be formally documented prior to relinquishing overall control of at-sea counter pollution measures to MCA.

2.2 Incident Control Arrangements

In all cases involving a national response, whether from ship or offshore installation, there is a need to establish centres to deal with the incident. Whilst the oil remains at sea, these centres may include:

Coastguard Operations Centre

The CGOC considers and implements the most appropriate means to contain, disperse, and remove potential pollutants from the scene based on all the information available to them. In almost all cases involving a national response the MCA establishes a Marine Response Centre at the most appropriate location. For a shipping incident this location may be within the Marine Emergencies Information Room at the MCA's Southampton Headquarters, the nearest CGOC or suitably equipped port operations room. During a complex salvage operation, the Marine Response Centre may be co-located near the Salvage/Operations Control Unit.

Salvage Control Unit

During a shipping incident, the primary role of the Salvage Control Unit is to monitor salvage operations and actions that are being taken and/or proposed relating to salvage activity and to ensure that such actions do not have an adverse effect on safety and the environment. The SOSREP determines the requirement for a Salvage Control Unit taking into consideration the nature and scale of the incident. The Unit operates close to the incident site. For incidents at sea the most appropriate CGOC or other MCA facilities may be considered. For incidents within port or harbour jurisdictions it is likely that a suitable location for the cell may have already been determined in the local contingency plan. However for at sea or harbour responses commercial facilities may be more appropriate or conveniently situated.

Operations Control Unit

During an offshore related incident the primary role of the Operations Control Unit is to monitor the offshore operator's response actions taken and/or proposed relating to containment activity and to ensure that such actions do not have an adverse effect on safety and the environment. The SOSREP determines the requirement for an Operations Control Unit taking into consideration the nature and scale of the incident. The Operations Control Unit is established by the SOSREP and is located at the operator's premises or with their emergency response provider as detailed within the operator's relevant approved Oil Pollution Emergency Plan. In circumstances where an Operations Control Unit has not been established, the lead government Department dealing with the incident decides, through the course of normal operational delivery, whether there is a need for additional formal inter-government liaison.

Strategic Co-ordinating Group

Civil Contingency (Gold Level) – during the acute phase of an incident where there is likely to be significant on-shore consequential impacts on health, the economy or environment or where significant public and media interest has been generated, a Strategic Co-ordinating Group may be activated. It is normally be chaired by a senior police officer during the response phase, although on occasions, particularly where there is no immediate threat to life, a senior local authority official or other

appropriately trained and experienced individuals may assume the role. When established, it manages the overall on-shore response strategy, dovetailing when appropriate with the "at sea" response, develops the long term plan, and the policy and direction of operational response.

Tactical Co-ordinating Group

Civil Contingency (Silver Level) – when established develops and coordinates the on-shore operational response plan. The Tactical Coordinating Group usually comprise the most senior officers of each agency committed within the area of operations and assumes tactical command of the event or situation. In addition, for an offshore installation incident, other response teams may be established alongside the main centres to assist.

Operator's Emergency Response Team – incident response team established by the offshore operator and tasked with managing the operator's pollution response activity. Provides information to the SOSREP, Operations Control Unit and to other response organisations.

Operator's Crisis Management team - established by the offshore operator to manage the operator's stakeholders and to address the operator's long term strategic goals.

When the pollution threatens the shoreline, a number of additional groups may be established. These are:

Response Co-ordinating Group (ResCG)

Where an incident affects more than one Local Resilience Forum area a Response Co-ordinating Group (ResCG) may be established by the Department for Communities and Local Government to co-ordinate multi SCG interaction. The ResCG will normally be chaired by DCLG, with Lead Government Department input from DfT. ResCGs will observe the principle of subsidiarity – in which it is recognised that decisions should be taken at the lowest appropriate level. The ResCG will not interfere in local command and control arrangements but will provide a mechanism for ensuring that local responders can be as fully informed as possible in the decisions they have to take.

Recovery Co-ordinating Group

After the acute phase of an incident, recovery may be co-ordinated by a Recovery Co-ordinating Group.

Environment Group

Following the formation of an TCG/ResCG an Environment Group may be required to provide advice to any response unit set up to deal with the incident. The National

Contingency Plan for maritime incidents identifies that any unit set up to deal with a maritime incident must contain a representative of the Environment Group, referred to as the Environment Liaison Officer. Currently there are two active Environment Groups within the ABP – South Wales Area of operation;

(i) Bristol Channel Standing Environment Group – Cover the Barry, Cardiff, Newport and River Usk Operational port areas.
(ii) West Wales Environment Group – cover the Port Talbot and Swansea operational port areas.

Each Environment Group is primarily is made up of representatives from the following organisations, however members of other organisations may be involved depending on the nature of the incident;

- Natural Resources Wales
- Public Health Wales
- Public Health England
- Public Health England CRCE

To ensure continuity, an Environment Group will be set up in incidents declared Tier 2 or 3 where it is likely that support will be required. It is also likely that the West Wales and Bristol Channel Group will also want to be informed and involved in any Tier 1 Pollution that will impact on shoreline or an environmentally sensitive area. The Environment Group will be purely advisory but response units should take all reasonable steps to consult on any proposed action.

2.4 Strategic Action / Response

For more details on the 3 stages please see Response Section 5.3.

Stage 1 - Assessment / Preparation / Activation

1A – Assess Situation – GPMO/LC/LPS
1B – Activate Contingency Plan - LPS
1C – Activate Organisational Response – HM / 4P

Stage 2 - Response / Action / Management

2A - Activate Operational Response – IC
2B – Prepare Ongoing Incident Action Plan – OMT
2C – Manage Ongoing Response - OMT

Stage 3 – Deactivate / Consolidate / Report

3A – Deactivate Response - OMT
3B – Consolidate Costs - OMT
3C – Debrief and Report - OMT

Action Section

3.1 Introduction

This section sets out the reporting procedures that should be followed in the event that an oil spill occurs within the area controlled by the Statutory harbour Authority.

3.2 Reporting

The extent of the notification of external organisations and authorities will be determined by the initial classification of the incident. Responsibility for external notification and the completion of POLREP CG77 rests with the Harbour Master.

Notification / Contact Sheet

Contact sheet can be found in appendix 4 & 5

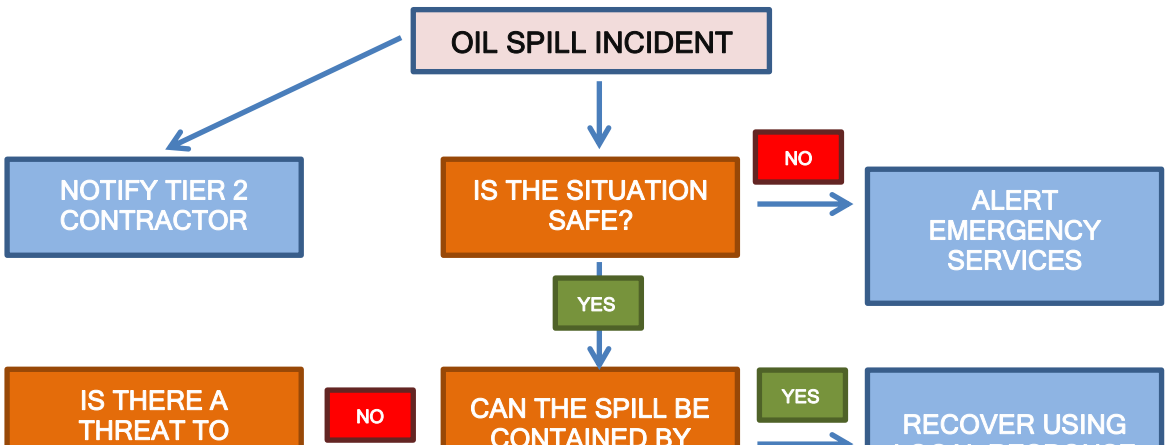
3.3 Call out Procedure

The first response to a report of an oil spill will be to notify LPS. Local Port Services (LPS) based in Cardiff are the 24 hour emergency response centre. The LPS officer will follow response procedure relevant to the nature of the spill. Depending on the nature of the spill the Emergency/ Business Continuity Plan may be activated. The LPS officer will assume control of the incident until an MCA 4/5p accredited OMT member is on scene. An example of the escalation of an Oil Spill Incident can be seen in Section 3.5.

3.4 Mobilisation Procedure

In the event of an oil spill, Operational Key Team Members from the corresponding ports and regional resources shall be mobilised to report in more detail, the location, type and extent of the spill. This should be an MCA accredited 2P (or higher) oil spill trained responder. (See section 3.6)

3.5 Escalation of Oil Spill Incident



3.6 Operational Key Team Members Call Out List (Local Response Team)

Name	Role	Newport	Cardiff	Barry	Port Talbot	Swansea	Training	Tier 1	Tier 2	Tier 3	Contact No
Cardiff LPS	Local Port Services	✓	✓	✓	✓	✓	2P	x	x	x	

Rod Lewis	Harbour Master	✓	✓	✓	✓	✓	4P	x	x	x	
		✓	✓	✓	✓	✓		x	x	x	
Elton Prance	Marine Ops Supervisor	✓	✓	✓	✓	x	4P	x	x	x	
Martin Lightwood	Marine Ops Supervisor	✓	✓	✓	✓	✓	4P	x	x	x	
Dan Brown	Eng and Ops Supervisor	✓	✓	✓	✓	✓	2P	x	x	x	
Rhodri Evans	LPS Supervisor	✓	✓	✓	✓	✓	4P	x	x	x	
Newport Pierhead	Lock Controller	✓					2P	x	x	x	
Barry Pierhead	Lock Controller			✓			2P	x	x	x	
Port Talbot Marine Control	Lock Controller				✓		2P	x	x	x	
Swansea Marine Control	Lock Controller					✓	2P	x	x	x	
Chris Simmons	GPMO	✓	✓	✓			2P	x	x	x	
Gary Tattersall	GPMO	✓	✓	✓			2P	x	x	x	
								x	x	x	
Luke Legge	GPMO				✓	✓	2P	x	x	x	
								x	x	x	
Joe Missen	GPMO	✓	✓	✓	✓	✓	2P	x	x	x	
									x	x	
									x	x	
									x	x	
Newport Boatmen	Boatmen	✓					2P		x	x	
Cardiff Boatmen	Boatmen		✓				2P		x	x	
Barry Boatmen	Boatmen			✓			2P		x	x	
Port Talbot Boatmen	Boatmen				✓		2P		x	x	
Swansea Boatmen	Boatmen					✓	2P		x	x	

3.7 Incident / Personal Logs

It is the responsibility of Incident Commander to ensure an accurate Incident Log is completed. This may be delegated to another member of the Oil Spill management Team as appropriate. Every person responding to the incident is expected to maintain a Personal Log

Personal Log guidance
This guidance is designed to facilitate and provide consistency in the response teams log keeping, thereby providing accurate information in the final incident report.

Safety Hazards	Record all accidents / near miss incidents regardless of how / potentially how serious result.
Initial Notification	Record time of notification of oil spill incident and the name of the person informing you.
Daily Activities	Keep a daily record of all response activities undertaken, including time and location. Also include: • Meetings attended • Instructions received / given • Site visits and movements • Contacts with outside agencies
Personal Contacts	Generate a list of relevant contacts made, including contact details.
Photographic/Video records	Note time and location of any photographs / video taken.
Oil Distribution	Make sketches of oiled areas with notes.
Site Supervision	Keep a record of all staff under supervision, including hours of work etc. List all equipment utilised.
Expenditure Incurred	Record all expenditure and keep receipts.

3.8 Personal Log

Personal Log			
Incident Name			
Date		**Page**	
Time	Comment / Action / Detail		

3.9 Oil Spill Progress Report

Oil Spill Progress Report		
Incident Name:		
Updated By:		
Date:	Time:	
Summary of Incident Response Operations:		

Summary of Incident Resource Utilisation: Equipment / Vessels / Personnel
Extra Resource Required if any:
Identify any new Hazards or Threats:

Oil Spill Balance Sheet:	
Total Amount of Oil Spilled:	Litres/Tonnes
Total Amount of Oil Recovered:	Litres/Tonnes
Outstanding Amount of Spilled Oil:	Litres/Tonnes
Mass Balance:	
Estimated Natural Weathering:	Litres/Tonnes
Chemically Dispersed:	Litres/Tonnes
Skimmer Recovered:	Litres/Tonnes
Mechanically Agitated:	Litres/Tonnes
Sorbent Recovered:	Litres/Tonnes
Manually Recovered:	Litres/Tonnes
Other….	Litres/Tonnes

3.10 POLREP – Marine Pollution Report

Incident Details				
Date			**Time**	
Name & Organisation				
Tel			**Email**	
A	**Pollution Confirmed?**			
B	**Reported By** Date Time			
C	**Positon and Extent**			

	Volume Volume Remaining Location Distance from coast	
D	**Conditions** Ebb/Flood HW Time Speed of Tide Direction of Tide Wind Speed Wind Direction	
E	**Weather Conditions** Wave Height Sea State Swell	
F	**Appearance** Type of Spill	
G	**Source** Vessel / Structure name Type and Size of Vessel Cargo and Contents	
H	**Vessels in Area**	
J	**Photos and Samples?**	
K	**Remedial Action** Dispersants? Booming etc	
L	**Forecast of Likely Effect**	
M	**Persons Informed** SOSREP MCA - zone27@hmcg.gov.uk NRW Other..	
N	**Other Information**	

3.11 Post Exercise / Incident Report

Post Exercise / Incident Report	
Scenario	

Location		Date	
Organisations or Authorities			
Equipment Deployed			
Tactical Response Actioned			
Boom Deployment Actioned			
Observations / Outcomes			
Details of Amendments to be made to Contingency Plan			
I can confirm that the details on this form provide a realistic summary of the exercise. Any action points resulting from this exercise have been completed accordingly.			
On Scene Commander		Position	
Signature		Date	

Amendments to the plan should be revised post incident by the Harbour Master, retained and either sent to the MCA as soon as possible, or at the time of the annual OSCP review.

4.0 Action Sheets

The following section contains action sheets and checklists for various members of the Oil Spill Response and Management Teams.

The action sheets follow a methodical checklist style, in order to effectively guide the post holders through the actions that they will be expected to take, and the sheets also list the post holders' responsibilities.

Action sheets are included for the following positions:

- GPMO / Gatemen
- Lock Controllers
- Harbour Master / Deputy Harbour Master / Other 4P Responder

- Port Director / Marine Manager

On Scene Commander The OSC should use the Strategic Action Response referenced in section 2.4 as a guide to the appropriate response to an incident.

GPMO / Gatemen		
Responsibilities	• Assisting Harbour Master / Incident Commander • Provide situation reports to On Scene Commander • Ensure safe working practice is carried out • Follow instructions of OSC	
Step	**Actions**	**Additional Information**
Alert	• LPS Cardiff	
Initial Actions	• Proceed to Incident Location • Assume role of On Scene Co-ordinator • Communicate relevant information to HM / Incident Commander • Initiate Personal Log	
Further Actions	• Assist HM in conducting response • Liaise with response craft / response team as directed • Monitor Safety	
Final Actions	• Submit personal log to the HM • Attend debrief	

Lock Controller		
Responsibilities	• Initially assess situation • Assign incident classification • Collect evidence and / or statements • Liaise with incident vessel / oil company regarding status of oil spill • Assist HM / IC	
Step	**Actions**	**Additional Information**
Alert	• LPS Cardiff	
Initial Actions	• Proceed to incident location • Assume role of On Scene Co-	

	ordinator • Investigate cause / source of spill • Communicate all information to the Harbour Master • Ensure samples of spilled oil are taken • Initiate personal log	
Further Actions	• Ensure resources being deployed as required • Take photographic evidence as appropriate • Collect evidence and take statements • Liaise with oil company representative (if applicable) • Liaise with emergency services, environmental and other organisations at the spill site	
Final Actions	• Submit personal log to the Harbour Master • Attend debrief	

Harbour Master / 4P Trained Equivalent		
Responsibilities	• Confirm / amend initial classification of incident • Manage the Port response to the incident • Authorise expenditure • Mobilise Tier Two Contractor • Review Press Statements prior to release • Liaise with external authorities and organisations • Deputise for Port Director as required	
Step	**Actions**	**Additional Information**
Alert	• MCA-HM Coastguard • Port Director / Port Manager (PM)	*POLREP*

	• Port Facilities & Security Manager • External Organisations	
Initial Actions	• Verify / amend spill classification • Convene Oil Spill Management Team • Liaise with vessel agents / owners as appropriate • Initiate personal log	
Further Actions	• Authorise mobilisation of Tier 2 contractor • Authorise contract labour for shoreline clean up if appropriate • Chair the Oil Spill Management Team meetings • Constantly review the strategy and advise of changes where necessary • Agree all expenditure commitments • Brief Port Director / Port Manager • Review Press Statements with PD / PM • Attend Press Conferences as required • Confirm formal samples have been taken • Decide if Master or Polluter should be formally charged	
Final Actions	• Terminate the clean-up • Collate personal logs. • Prepare the incident report. • Hold full debrief involving all members. • Amend contingency plan as required.	

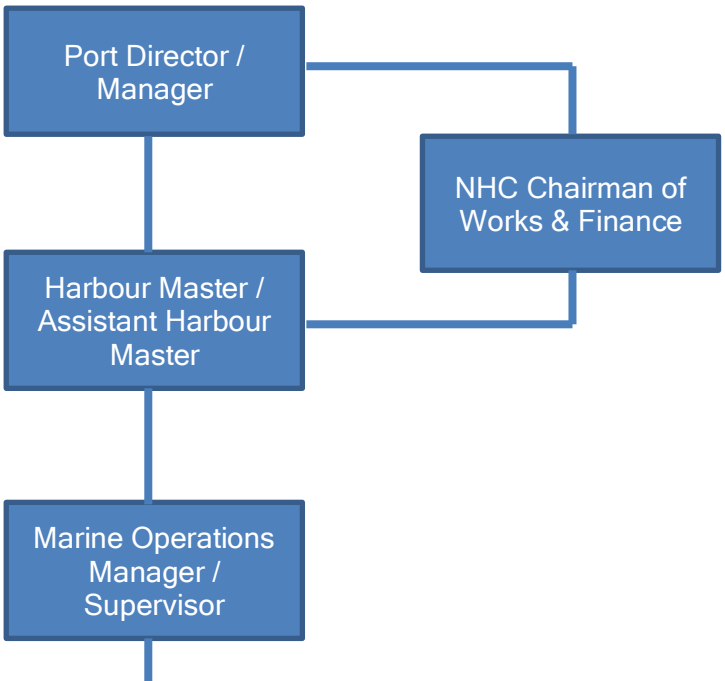
Port Director or Port Manager or deputy		
Responsibilities	• Overall responsibility for incident response • Approval and release of press statements • Brief ABP Management Board • Overall responsibility for expenditure and record keeping • Liaison with government / local government representatives as appropriate	
Step	**Actions**	**Additional Information**
Alert	• ABP Chief Executive (Tier 2/3 incidents only)	
Initial Actions	• Confirm spill classification with Harbour Master • Confirm all appropriate external organisations have been alerted	

	• Review with Harbour Master initial response strategy being employed • Liaise with vessel Agents / Owners as appropriate	
Further Actions	• Release press statements after discussion with Harbour Master • Attend Oil Spill Management Team meetings • Attend press conferences • Brief ABP Management Board	*Maintain liaison with Corporate Public Relations Advisor*
Final Actions	• Submit personal log to the Harbour Master for inclusion in his report • Attend debrief • Review / implement recommendations from the Harbour Master's incident report	

Chairman, Works & Finance Committee (For NHC Responses)		
Responsibilities	• Overall responsibility for incident response • Approval and release of press statements • Brief Commissioners • Overall responsibility for expenditure and record keeping • Liaison with government / local government representatives as appropriate	
Step	**Actions**	**Additional Information**
Alert		
Initial Actions	• Confirm spill classification with Harbour Master • Confirm all appropriate external organisations have	

	been alerted • Review with Harbour Master initial response strategy being employed • Liaise with vessel Agents / Owners as appropriate	
Further Actions	• Release press statements after agreement with Harbour Master • Attend Oil Spill Management Team meetings • Attend press conferences • Brief Commissioners	*Maintain liaison with Public Relations Advisor*
Final Actions	• Submit personal log to the Harbour Master for inclusion in his report • Attend debrief • Review / implement recommendations from the Harbour Master's incident report	

4.1 Hierarchy of Responsibility



4.2 Oil Spill Incident Checklists.

The following checklists are intended to promote consistency of approach by all personnel involved in the incident response.

4.21 Oil Spill Assessment Checklist

This checklist ensures that the initial assessment of the oil spill is accurate and all aspects likely to affect the classification such as quantity, oil type and likely fate of the spilled oil, are investigated thoroughly.

4.22 Oil Spill Sampling Checklist

This checklist summarises the guidance given in MCA STOp Notice 4/2001, “Collection and Handling of Oil Samples”. Following the guidance ensures that samples of sufficient quantity will be taken, sealed, labelled and handled correctly. Some STOp notices are under review, these can be found here;

https://www.gov.uk/government/publications/scientific-technical-and-operational-advice-notes-stop-notes

4.23 Incident Briefing Checklist

This checklist ensures that all personnel involved in the management of the incident are given a thorough briefing, and are then able to give a consistent and effective briefing to personnel under their control during the incident.

4.24 Adler and Allan Briefing Checklist

This checklist ensures key information is exchanged between ABP and Adler and Allan when initiating an emergency response.

4.21 Oil Spill Assessment Checklist	
This checklist is designed to assist those personnel who are responsible for the initial and subsequent assessments of the oil spill incident. These personnel are likely to be: • Lock controllers / GPMO's / Gatemen • Harbour Master / Deputy	
STEP	**GUIDANCE**
Assess safety hazards	Until otherwise established, assume oil spill is giving off potentially dangerous hydrocarbon vapours. ELIMINATE IGNITION SOURCES Approach Oil Spill from upwind to reduce effects of vapours. APPROACH ONLY IF CONSIDERED SAFE TO DO SO
Determine oil spill source	If source unknown, investigate with care. Instigate actions to stop spillage at source IF SAFE TO DO SO

Estimate quantity of oil released if exact amount unknown	
Assess prevailing weather conditions.	Determine: Wind speed and direction State of tide and current speed Sea state
Can spill be contained	
Predict oil fate; determine direction and speed of oil movement in addition to weathering characteristics	Take forecast weather into account

4.22 Oil Spill Sampling Checklist	
This checklist gives guidance on taking samples of spilled oil. Following the guidance will ensure that sufficient oil has been collected, packaged and labelled correctly and has been handled in such a way that the samples may be used to support claims or prosecution proceedings.	
ITEM	GUIDANCE
Number of samples required	By law, a single sample must be collected. However, it would be normal practice to take at least three samples at each sampling point.
Sampling Frequency	Where an incident is ongoing, at least one sample of oil pollution on water should be taken per day. Where shoreline impact has occurred, one sample per every 1km of polluted shoreline should be taken per day.
Sample Size	A minimum of 500ml of liquid is required or, in the case of polluted shorelines, at least 50 grammes of pollutant.

Method of Sampling	Where the oil is free floating, it is essential that the oil is skimmed from the water surface and that any free water drawn with the sample is minimised. Where the oil has impacted the shoreline, oil should be scraped from rocks, boulders etc and placed in the sample container.
Sealing of Sample Containers	Samples should be placed in screw top bottles with the bottle top being sealed to ensure that the sample cannot be tampered with. Lead or wire seals or adhesive labels can be used.
Labelling of Samples	Sample bottles should be labelled in accordance with the MCA STOp Notice instructions.
Information	Samples should be forwarded, as appropriate, to the address given in the STOp Notice and, additionally, MCA should be informed of the fact.

4.23 Incident Briefing Checklist	
This checklist is designed to facilitate an effective response team briefing and should be used by supervisory personnel and, if appropriate, the Oil Spill Management Team	
STEP	**NOTES**
Specify Safety Hazards	
Extent of Problem *Size of spillage, type of oil, source*	
Slick trajectory *Tide and Wind conditions*	
Response actions *Strategies to utilise*	

Resource mobilisation *Equipment and personnel*	
Planning Cycle *Meetings schedule*	
Additional Information *Communications, Waste Disposal, Weather Forecast*	
Shipping List	
Oil Spill Trailer Equipment List	

4.24 Adler and Allan Briefing Report	
From (Sender's name):	
Position:	
Company:	
Contact Details:	
Designated callout authority	
Location of spill	
Time of spill (GMT and local time)	
Source of spillage	
Quantity (if known)	
Oil type and characteristics	

Weather conditions and forecast	
Resources at risk	
Clean up resources available on site or others ordered with estimated time of arrival	
Port of embarkation for equipment; location of secure storage for equipment	
Vessel availability for equipment deployment, storage of recovered oil	
Location of Command Centre	
Name of On Scene Commander and designated contact(s) and/or deputies	

5.0 Response Guidelines

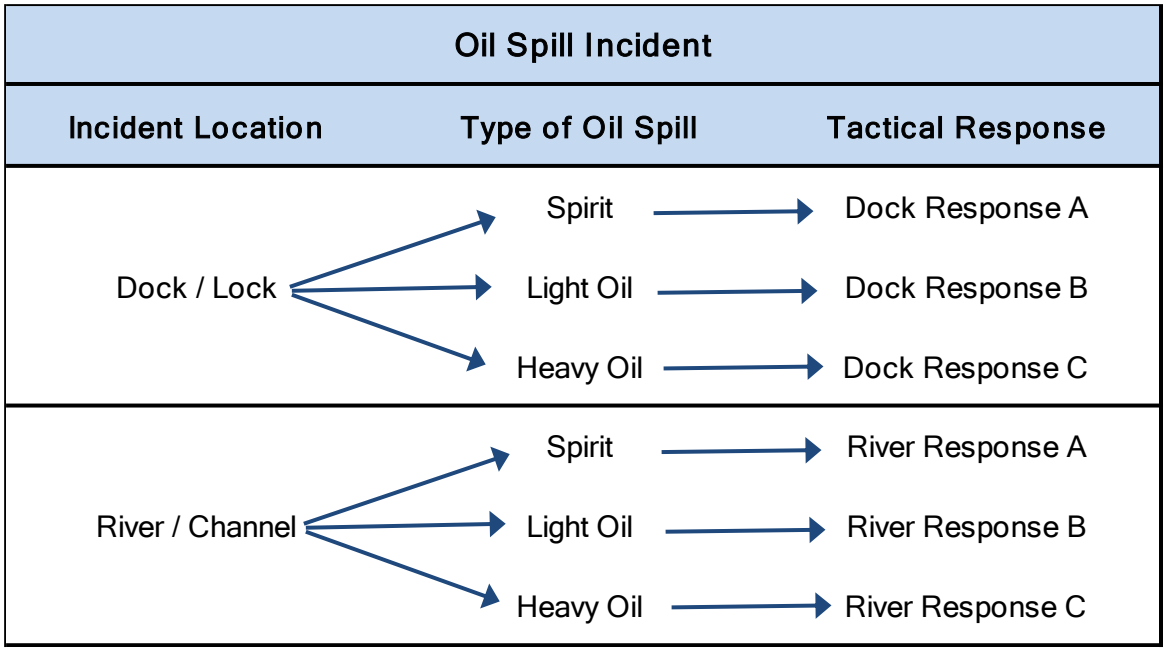
The following section gives details of the strategies to employ for the various type of oil spill incident that could occur within Port or Harbours limits. The section contains a flow chart that is designed to enable a swift decision to be made as to what strategy/tactics to employ in response to an incident dependent upon oil type and the location of the spillage.

All discharges, or potential discharges, of polluting material onto land, into rivers, estuaries or the sea where the pollution is likely to affect water within three miles of the territorial baseline, should be reported to the Natural Resources Wales using the National Contact Number 03000 653000.

5.1 Flowchart & Tactical Response Plans

By using the flow chart, it will be possible to determine which of the nine tactical response plans to employ. These tactical response plans give details of what tactics should be employed and considerations/requirements that should be complied with or made before implementing the plan.

Incident Flowchart



5.2 Tactical Responses

Dock Response A	
Incident Location	Dock
Type of Oil Spill	Spirit
Primary Strategy	Monitor
Secondary Strategy	Agitation / Absorbents

Introduction

Spirit will spread rapidly over the water's surface. It is likely to evaporate rapidly in the first few hours after a spillage, due to the many light ends. Spirit spills in an enclosed environment pose an explosive hazard. There is little that can be done actively to recover spirit from the waters surface. The most acceptable strategy is usually to encourage the products to evaporate and disperse naturally.

Safety

- Stop all operations in the area
- Ensure all personnel wear full PPE
- Prohibit smoking and naked flames
- Evacuate the area
- DO NOT attempt to contain the spillage - allow it to spread
- Call the Emergency Services
- Ban use of non-intrinsically safe equipment

Tactical Response

STOP ALLPORT OPERATIONS IN THE AFFECTED DOCK!
• INFORM relevant parties using Dock Response Notification Sheet Appendix 4
• The initial tactical response to this incident is to do nothing for the first few fours apart from considering the safety of life.
• The Emergency Services should take charge of the initial response effort.
• When considered to be safe, assist the dispersion of the product by agitating the spillage using water jets / fire hoses and possibly the propeller wash / bow waves of vessels.
• For large concentrations of spilled product, use absorbent pads to soak up the product.

Considerations / Requirements

Upon arrival at the scene, the Emergency Services Primary Response is likely to be to smother the spillage with Foam to inhibit Fire and Explosion. If it is considered to be safe not to smother the spillage, this should be encouraged. The reasoning behind this is that up to 80% of a spirit spillage on water may evaporate rapidly. If the spillage is smothered, evaporation will not take place, and there will become a need for a major manual clean-up operation to be undertaken

Dock Response B	
Incident Location	Dock
Type of Oil Spill	Light oil
Primary Strategy	Containment
Secondary Strategy	Recovery / Absorbents

Introduction

Light oils (such as diesel) are not as volatile as spirit, but still evaporate and disperse quite rapidly in the correct environment. As these types of oil are not as volatile, it is possible to contain the spillage close to its source, thereby reducing the overall area where an active clean up is required. Recovery of the Gross oil may be undertaken by vacuum systems / trucks and ‘final polishing’ by using absorbent pads. Absorbent booms may be used to sweep the spillage using small vessels.

Safety

• Stop all operations in the area
• Prohibit smoking and naked flames
• Ensure all personnel wear full PPE
• Persons using vessels / working on the waters edge should use lifejackets

Tactical Response

• INFORM relevant parties using Dock Response Notification Sheet Appendix 4
• Boom across the entrance to the relevant dock
• Once oil spill contained, commence recovery using vacuum system / truck
• Use small boats and an absorbent boom sweep system to corral oil and move to the vacuum system / truck.
• For small patches of spilled oil, use absorbent pads to remove from the waters surface

Considerations / Requirements

Given the fact that the impounded dock remains at approximately a constant level, there is no need to use 'running moorings' for the booms, merely ensure that there is an effective seal with the dock wall. Given the fact that the dock is relatively 'still' water, there is no need to angle the boom to the current to make it effective. It is essential that all recovered oil and absorbents be disposed of in the correct manner. If it is necessary to use temporary storage devices the NRW should be consulted

Dock Response C	
Incident Location	Dock
Type of Oil Spill	Heavy Oil
Primary Strategy	Containment
Secondary Strategy	Recovery / Absorbents

Introduction

Heavy oils do not evaporate and disperse as readily as light oils and spirits. It is for this reason that they are referred to as 'Persistent Oils'. For oil spills like this, it is necessary to contain the oil near its source of spillage and then to actively recover the oil from the waters surface. For large amounts of oil spilled of this type, booming and mechanical recovery will take place. Chemical dispersants may then be used to disperse any residual amounts into the water column. However it is extremely unlikely this method would be used in a dock.

Safety

• Stop all operations in the area
• Prohibit smoking and naked flames
• Ensure all personnel wear full PPE
• Persons using vessels / working on the waters edge should use lifejackets

Tactical Response

• INFORM relevant parties using Dock Response Notification Sheet Appendix 4
• Boom across the entrance to the relevant dock – See Figure 5or Figure 6 Booming Sites
• Once oil spill contained, commence recovery using disc or weir skimmers, pumped to temporary storage tanks that should be located on the quayside.
• Use small boats and an absorbent boom sweep system to corral oil and move to the recovery device.
• For small patches of spilled oil, use absorbent pads to remove from the waters surface.

Considerations / Requirements

Given the fact that the impounded dock remains at a relatively constant level, there is no need to use 'running moorings' for the booms, merely ensure there is an effective seal with the dock wall. Given the fact that the dock is relatively 'still' water, there is no need to angle the boom to the current to make it effective. It is essential that all recovered oil and absorbents are disposed of in the correct manner. If it is necessary to use temporary storage devices, then the NRW should be consulted. The use of dispersants is strictly controlled by NRW. They should be consulted before its use

River/Channel Response A	
Incident Location	River
Type of Oil Spill	Spirit
Primary Strategy	Monitor
Secondary Strategy	Agitation / Absorbents

Introduction

Spirit will spread rapidly over the water's surface. It is likely to evaporate rapidly in the first few hours after a spillage, due to the many light ends. There is little that can be done actively to recover spirit from the waters surface. The most acceptable strategy is usually to encourage the products to evaporate and disperse naturally, and where possible assist this.

Safety

• Stop all operations in the area
• Ensure all personnel wear full PPE
• Prohibit smoking and naked flames
• DO NOT attempt to contain the spillage – allow it to spread
• DO NOT allow vessels to close to within 800 metres of the spillage
• Where possible, remain upwind of the spill

Tactical Response

• INFORM relevant parties using River Response Notification Sheet Appendix 5
• Establish a vessel exclusion zone around the spillage – be prepared to change the position of this exclusion zone as the spillage moves.
• If possible, arrange aerial surveillance to monitor the size and movement of the spillage.
• If this is not possible, monitor the spillage from a vessel
• When considered safe, approach the spillage by vessel from upwind and agitate the spillage by fire hose from vessels. It is also possible to use the vessels propeller wash and bow wave to assist dispersion.

Considerations / Requirements

Specialist organisations are able to provide computer modelling of spillages to give indications of the likely time scale for the spillage to evaporate/disperse naturally. Information that will be required to do this is: water temperature, air temperature, wind speed, oil type, approximate size of spillage.

River/Channel Response B	
Incident Location	River
Type of Oil Spill	Light oil
Primary Strategy	Monitor
Secondary Strategy	Agitation / Absorbents

Introduction

Light oils (such as diesel) are not as volatile as spirit, but still evaporate and disperse quite rapidly in the correct environment. Due to the strong currents in the Severn Estuary/River Usk, there is little that can be done to actively recover the spilled oil. It is more acceptable to monitor the spillage and allow it to disperse / evaporate naturally. Shoreline protection will prove difficult due to the strong currents / tidal regime. It is also possible to assist the natural dispersion / evaporation by agitating the oil spill manually.

Safety

• Stop all operations in the area
• Prohibit smoking and naked flames
• Ensure all personnel wear full PPE
• Persons using vessels should use lifejackets

Tactical Response

• INFORM relevant parties using River Response Notification Sheet Appendix 5
• Establish a vessel exclusion zone around the spillage – be prepared to change the position of this exclusion zone as the spillage moves.
• If possible, arrange aerial surveillance to monitor the size and movement of the spillage.
• If this is not possible, monitor the spillage from a vessel
• If the oil spill does not appear to be approaching the shoreline, do not undertake an active response, merely monitor the situation on a regular basis.
• If the spillage appears to be approaching the shoreline, approach the spillage by vessel from upwind and agitate the spillage by fire hose from vessels. It is also possible to use the vessels propeller wash and bow wave to assist dispersion.
• For large concentrations that are not evaporating / dispersing, use either absorbent booms or pads to remove these concentrations from the waters surface.

Considerations / Requirements

Specialist are able to provide computer modelling of spillages to give indications of the likely timescale for the spillage to evaporate / disperse naturally. Information that will be required to do this is: water temperature, air temperature, wind speed, oil type, approximate size of spillage. It is essential that all used absorbents are disposed of in the correct manner. The NRW should be consulted with regard to this matter.

River/Channel Response C

Incident Location	River
Type of Oil Spill	Heavy Oil
Primary Strategy	Containment
Secondary Strategy	Recovery / Absorbents

Introduction

Heavy oils do not evaporate and disperse as readily as light oils and spirits. It is for this reason that they are referred to as 'Persistent Oils'. For oil spills like this in open water areas, the most appropriate strategy to employ is the use of chemical dispersant, to disperse the oil into the water column. However it is highly unlikey that this method would be used in shallow waters in such close proximity to the shore. The other strategy is to utilise specialist equipment to contain and recover the spilled oil. It should be noted that this strategy is unlikely to have a high success rate.

Safety

• Stop all operations in the area
• Prohibit smoking and naked flames
• Ensure all personnel wear full PPE
• Persons using vessels / working on the waters edge should use

Tactical Response

• INFORM relevant parties using River Response Notification Sheet Appendix 5
• The Tier Two contractor will be able to mobilise specialist containment, recovery and storage equipment.
• Establish a vessel exclusion zone around the spillage – be prepared to change the position of this exclusion zone as the spillage moves.
• If possible, arrange aerial surveillance to monitor the size and movement of the spillage.
• If this is not possible, monitor the spillage from a vessel

Considerations / Requirements
It is essential that all recovered oil is disposed of in the correct manner. If it is necessary to use temporary storage devices, then the NRW should be consulted. The use of dispersants is strictly controlled by NRW. They should be consulted before its use.

5.3 Dispersants

Under the Marine and Coastal Access Act 2009 the Marine Management Organisation (MMO) acts as the regulatory authority for the use of oil spill dispersant products in waters off England. In welsh waters Natural Resources Wales are the Approval Authority.

Natural Resources Wales acts on behalf of Welsh Government to approve the use of oil spill treatment products in welsh waters.

You need approval from the Marine Management Organisation (MMO) before you use a product to treat oil.

MMO will respond within 1 hour approving or rejecting your request to use an approved product in Welsh waters.

The product must be approved by MMO and be used in line with the conditions of its approval.

This section provides strategy guidelines for two oil types:

Oil Type	Strategy Figure	Specific Gravity	Genre	Characteristics	Examples

Light oils	5.1	< 0.8	White oils	Non-persistent, Volatile	Aviation fuel, Kerosene, Diesel, Motor Spirit
Heavy oil	5.2	> 0.95	Black oils	Persistent, Viscous, Emulsion	Fuel oils

By selecting the appropriate strategy figure, the user can derive an indicative strategy path to mitigate the effects of an oil spill, consistent with safe practice and net environmental benefit. The movement of any oil spilled within the docks complex will be dictated by the wind speed and direction at the time of the incident; the predominant factor influencing the movement of spilled oil within the Port Limits and at Port Talbot Harbour is the tidal regime.

The primary response to Tier One incidents in either port will be the use of absorbent booms and materials. There are no pre-identified protective booming sites within the port limits.

In the event of any oil spill within the docks complex, the option of suspending shipping movements and of keeping the lock gates closed must be given serious consideration when the circumstances so warrant.

Natural Resources Wales should be alerted to any oil spill threat to controlled waters, shoreline impacts or any threat to protected sites and species including those that are offshore such as SACs.

The guidelines refer to the Environmental Sensitivity Maps, Priority Protection Areas including Fisheries and the environmental information given in Section 12.

Mussel beds are operated under a “Several Order” in the vicinity of Mumbles, and crustacean shellfish store pots are also stored in the same area. Any threatened impact to fisheries interests must be advised to the South Wales Sea Fisheries Committee.

Although the guidelines offer the option of a dispersant response, the application of any chemical dispersant to an oil spill within the dock complexes / harbour areas would be under exceptional circumstances only and subject to full regulatory approval of NRW.

5.4 Strategic Action / Response

Stage 1 - Assessment / Preparation / Activation

1A – Assess Situation – GPMO/LC/LPS	Section	✓
Member of staff to spill site to identify oil if possible	4.2	
Identify spill size using Bonn agreement table	6.2	
Check weather forecast for projected spill movement		
Identify any threats – Dock Plans & Sensitivity Mapping	6.1 & 12.3	

1B – Activate Contingency Plan - LPS	Section	✓
Inform HM or relevant 4P Responder - call out table	3.6	
Mobilise local response team using call out table	3.6	
Use notification matrix to inform relevant authorities notifications	App 4/5	
Put A&A on standby number of A&A	App4/5	

1C – Activate Organisational Response – HM / 4P	Section	✓
Implement Organisational Structure – Establish IC, Loggist, Comms, OSC	3.7, 3.8	
Setup Command centre – Local Emergency Room (ER)		
Establish internal / external comms procedure – ER Number, VHF Channel		
Implement Safety and Security procedure – Inform Security + IM/SS		
Establish potential cleanup, waste, storage sites	6.2	

Stage 2 - Response / Action / Management

2A - Activate Operational Response – IC	Section	✓
Prepare Site Safety Plans – Initial Incident Checklist, H&S Assessment Form	7.01, 7.1	
Briefings – POLREP, Incident Briefing Checklist, A&A Briefing Report	3.10, 4.23/4	
Coordinate Waste Disposal – Local Spill Equipment, A&A & Biffa Waste	13.8	
Monitor Results and Review Response Actions		
Inform Corporate Communications	6.5	

2B – Prepare Ongoing Incident Action Plan – OMT	Section	✓
Oil Spill Progress Report	3.9	
Consult Technical Experts A&A		
Identify Ongoing Response Strategy		
Maintain Records – Costs, Log etc		

Develop Response Action		

2C – Manage Ongoing Response - OMT	Section	✓
Evaluate Response Reports		
Update Incident Plans		
Brief Response Team		
Manage Site Safety and Occupational Hygiene		
Manage Incident Control Response Activities		
Contact P&I Club, IOPC	App 4	

Stage 3 – Deactivate / Consolidate / Report

3A – Deactivate Response - OMT	Section	✓
Determine Deactivating response with appropriate agencies		
Assess Potential for Recontamination		
Shutdown Field Operations		
Clean and Reinstate equipment		
Post Incident Report	3.11	

3B – Consolidate Costs - OMT	Section	✓
Verify Costs		
Consolidate and Produce Expenditure Records		
Verify Reasons for Costs – Log entries		
Produce Final Cost Report		

Submit Claims		

3C – Debrief and Report – OMT	Section	✓
Conduct Review		
Analyse Strengths and Weaknesses		
Commission Independent Report for Major Spills		
Make Recommendations for Future Responses		
Submit Report		

6.0 Booming

The Port of Cardiff

Cardiff has 2 dedicated bulk liquid hydrocarbon reception facilities

- Roath Dock Oil terminal
- Queen Alexander dock No1 oil terminal.

A permanently fixed bubble barrier, is in place to contain any small spill from the Roath Dock oil terminal. For a larger ship to shore spill from either of the 2 oil terminals in Cardiff, an oil boom is stored close to the Roath Dock Communication passage and can be used to contain a spill at either terminal.

The Cardiff Dock Plan shows the following:

- Position of Bubble barrier
- Boom position to isolate QA dock from Roath Dock
- Boom Position to isolate a spill at No 1 oil berth

The Port of Newport

Newport has 2 main docks, North and South with a junction cut separating the two. In the event of a spill a boom can be placed across the junction cut to prevent the movement of oil between North and South Dock.

The Port of Port Talbot

Port Talbot Docks consists of 4 main sections, should there be a spill in dock there is a possibility one of these sections could be contained using boom showed on the map. Currently only the main part of the dock is used for shipping so it is at low risk from a spill.

Port Talbot Tidal harbour

The Tidal Harbour at Port Talbot was purpose built to service Cape size vessels carrying iron ore and coal to the steel works at Port Talbot.

- The area has a high tidal rise and fall:
- 8.5m spring
- 5m neap

Has tidal streams across the entrance of up to 3 knots during spring tides.
The entrance to the harbour has a westerly aspect and is exposed to the prevailing Atlantic swells and winds. The entrance itself is over 600 m wide. The harbour is man made, the breakwaters constructed from irregular shaped stone blocks. (high Energy)

Due to the exclusive dry bulk cargo trade in the port and the natural and physical obstacles, it is not considered practical to plan to boom off the harbour in the case of the type of spill that could be expected (small bunkering spill)

Swansea Dock

There is currently no commercial activity taking place in the Queens dock at Swansea, however, there is a mussel farm situated close to the old BP facility (marked on the attached dock Plan. In the eventuality of a spill in the Kings dock (commercial activity other than bulk oil) it may be necessary to boom across the communication passage (as marked on the dock Plan). Similarly there is no commercial shipping in the POW Dock, however Swansea Watersports are licensed to operate in the POW Docks, so it may be necessary to boom across the Junction cut in the event of a spill in the Kings Dock.

Barry Dock

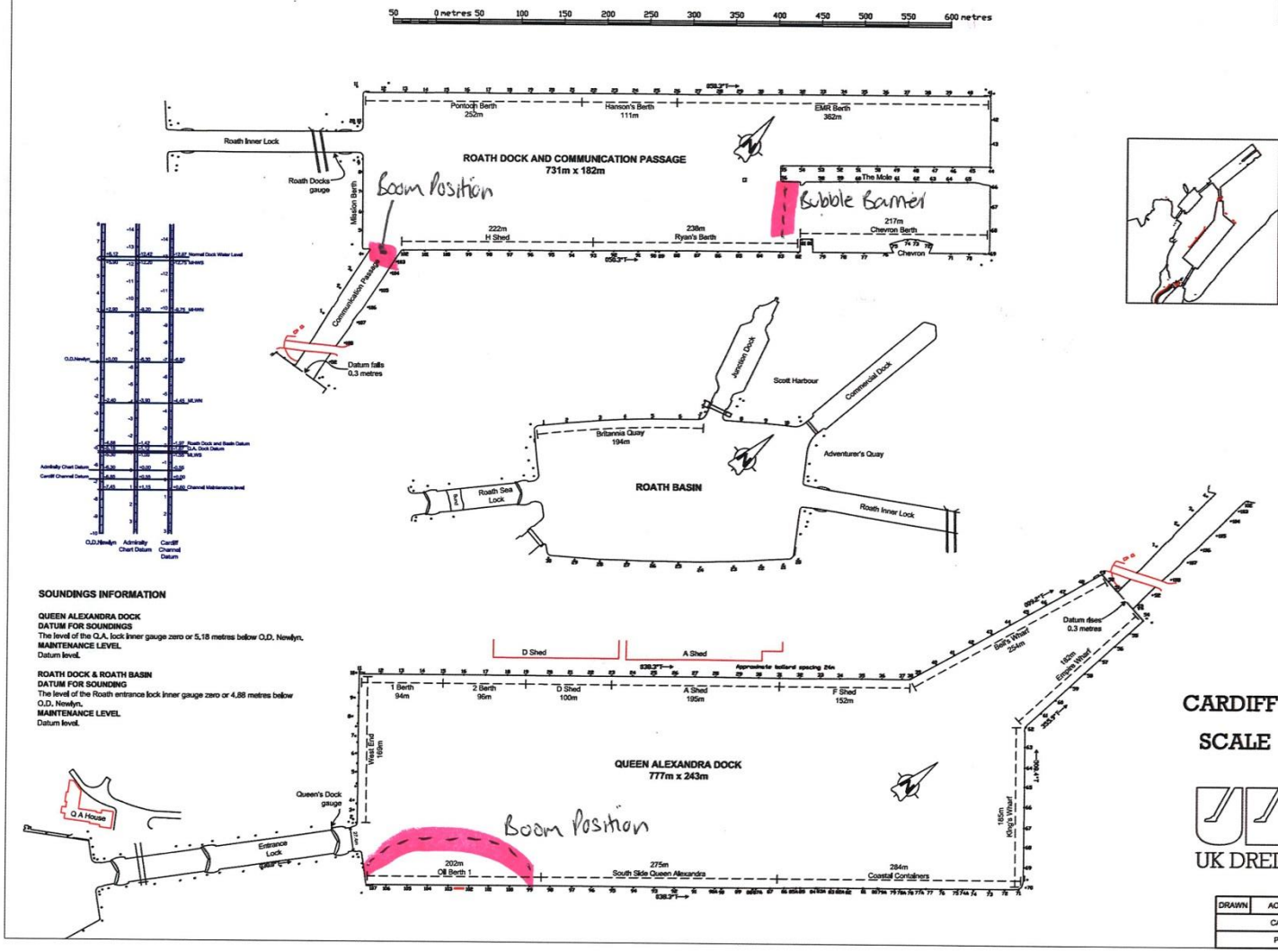
Ocean Watersports Trust are licensed to operate in Barry dock, in the event of a spill it would be important to notify the trust, the only area that could be boomed off is the junction between 1 and 2 dock.

6.1 Booming Plans

Due to the nature of the ports of Swansea, Port Talbot dock, Barry Dock and Newport dock, having at least 2 sets of lock gates to confine any spill from contaminating the wider environment and due to the fact that no oil products are handled at these ports it has risk assessed that any likely pollution incident will be a small bunkering operation type spill. Because of the above, no booming plans have been prepared for incidents inside these enclosed docks. However Plans have been provided to show positions to deploy booms if the need to isolate areas of the dock should arise.

ABP personnel would keep the lock gates closed while any small spill was cleared up using local personnel and absorbents held in stock. For any larger spill, the services of Adler & Allan are on retention to respond within the required 4 hrs with a defined inventory of equipment and personnel.

Not to be used for navigation

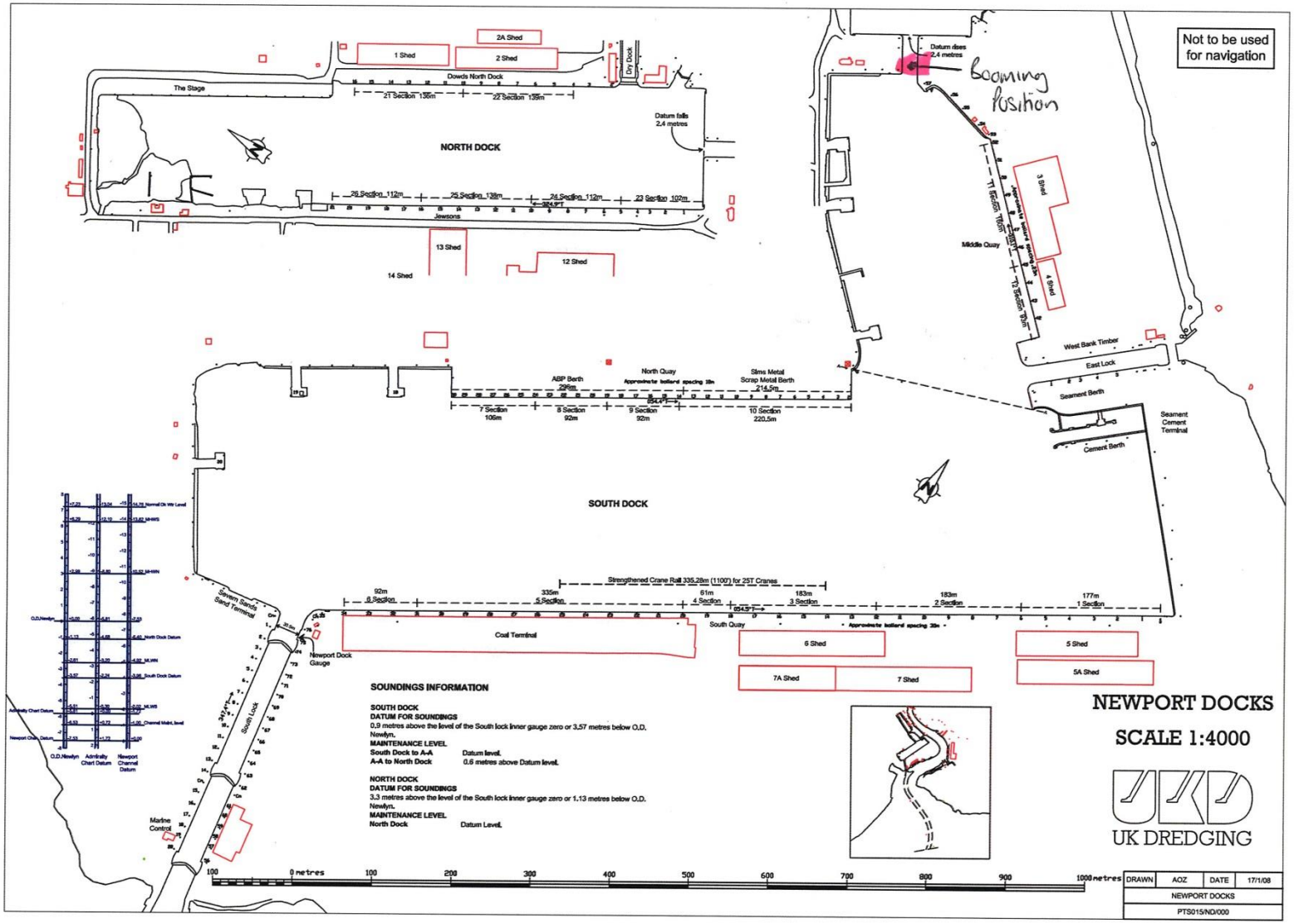


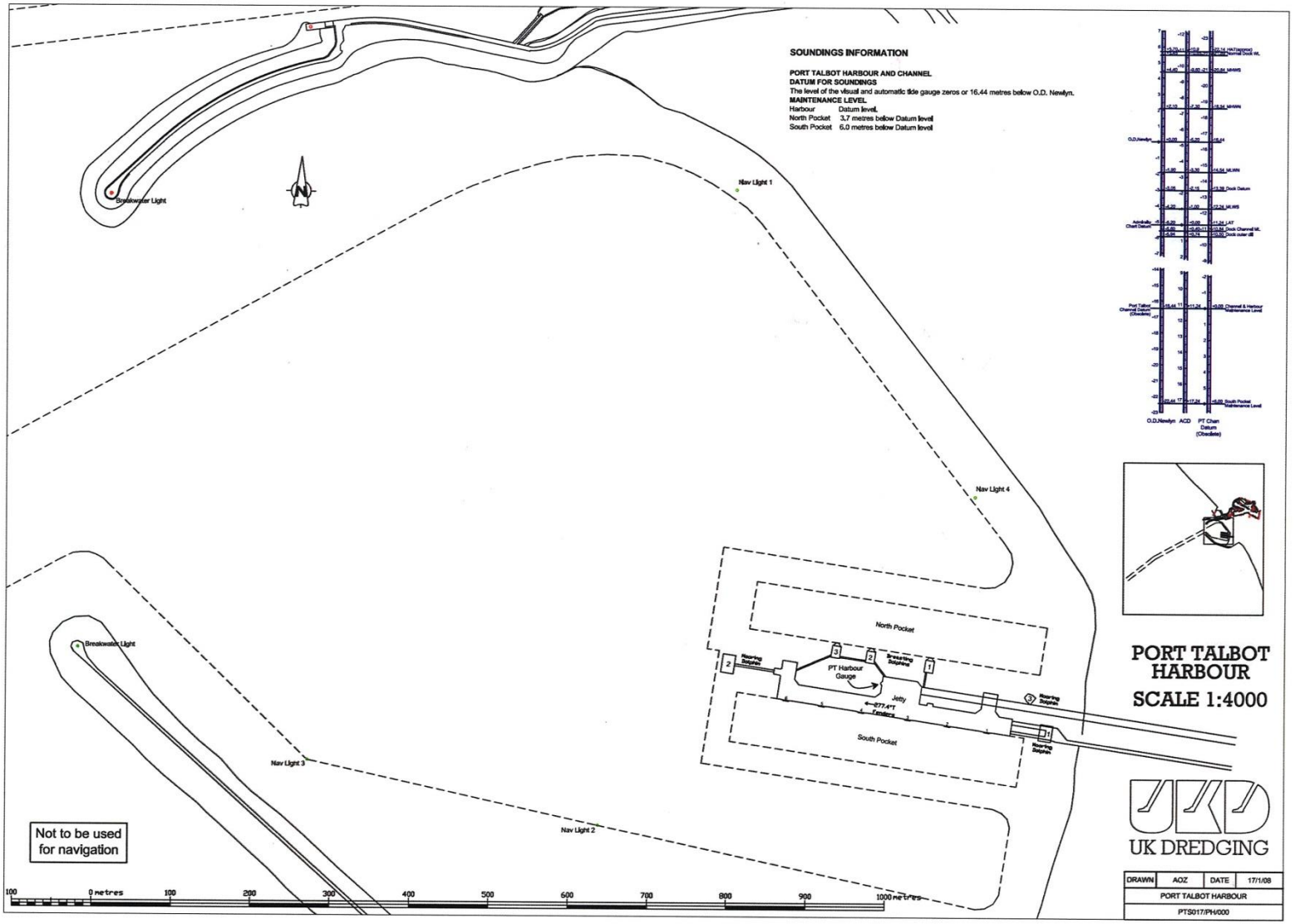
CARDIFF DOCKS

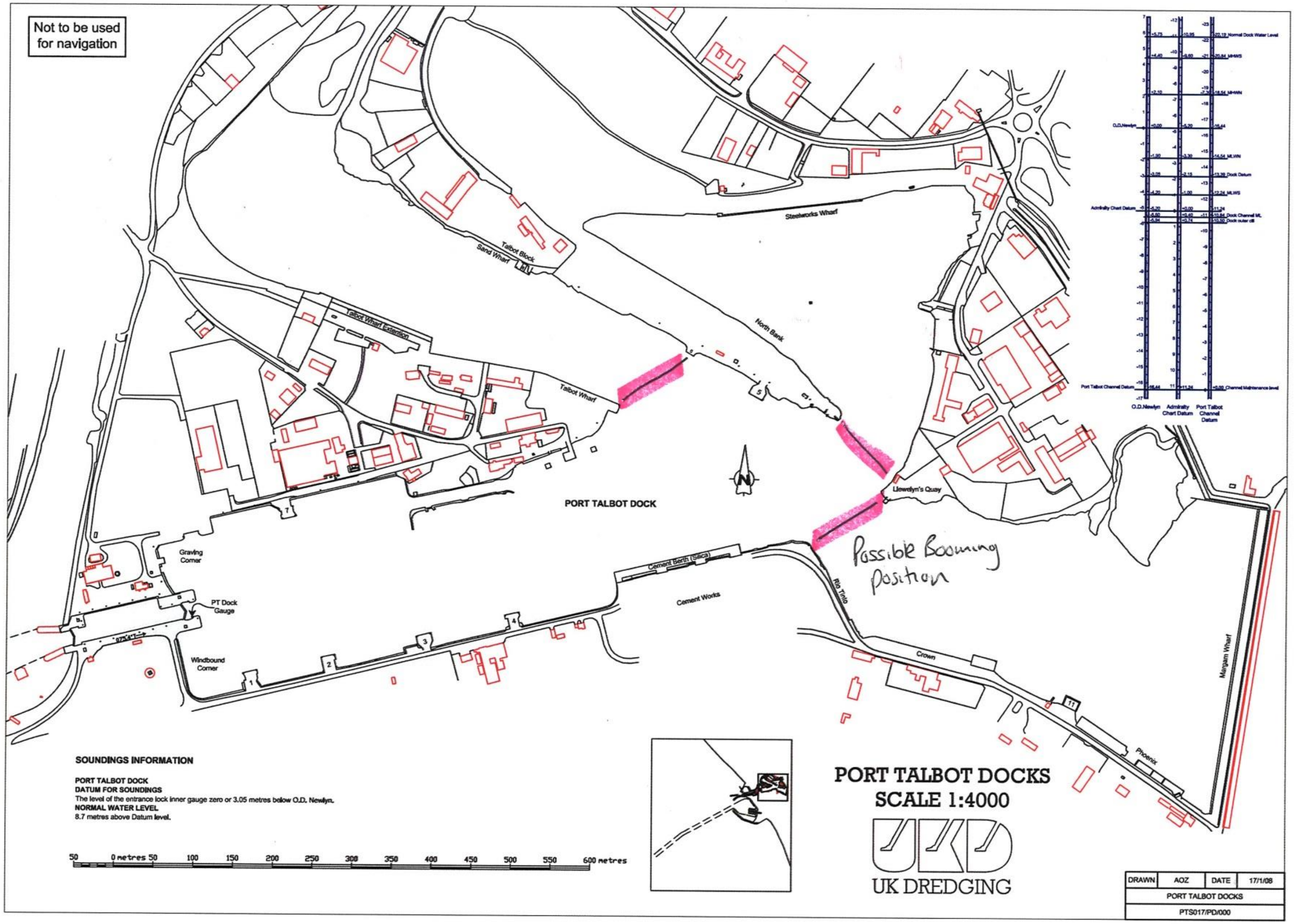
SCALE 1:4000

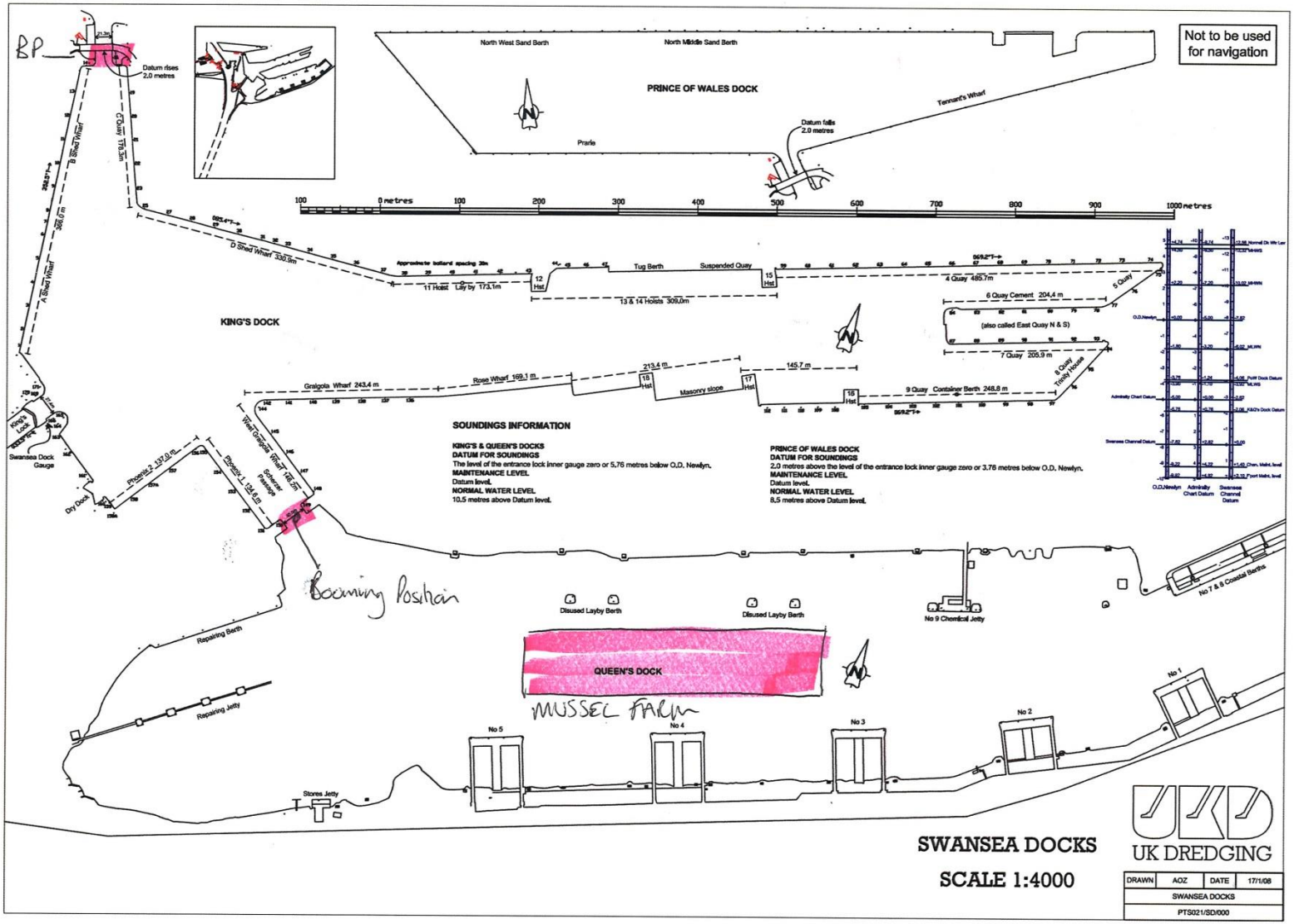
UK DREDGING

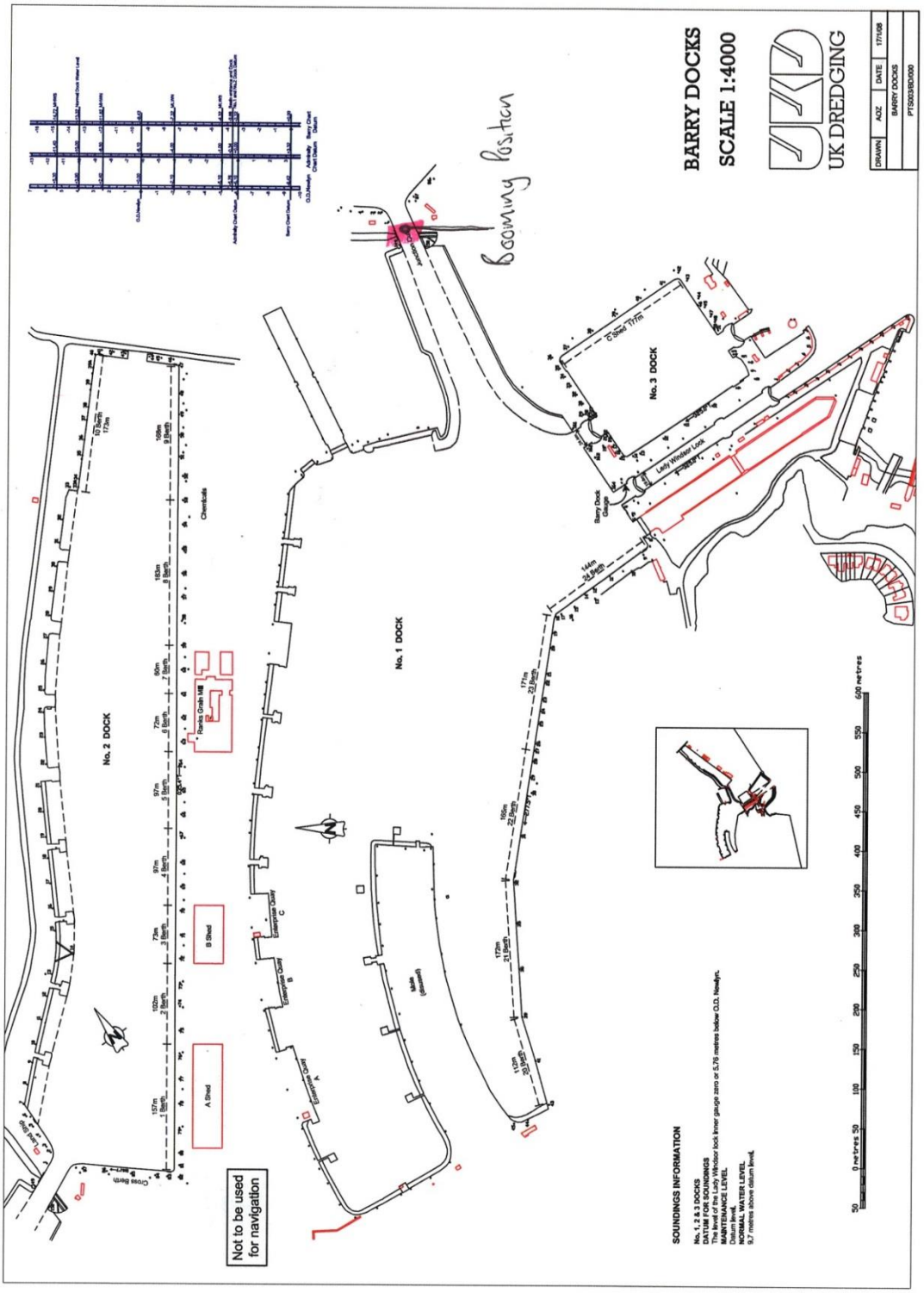
DRAWN	AOZ	DATE	17/1/08
CARDIFF DOCKS			
PTS004/CD/000			


Not to be used for navigation
2A Shed
1 Shed
2 Shed
Dry Dock
Dowds North Dock
The Stage
21 Section 135m
22 Section 135m
Datum falls 2.4 metres
NORTH DOCK
26 Section 112m
25 Section 138m
24 Section 112m
23 Section 102m
Jewsons
13 Shed
12 Shed
14 Shed
Datum rises 2.4 metres
Booming Position
3 Shed
4 Shed
Middle Quay
West Bank Timber
East Lock
Seament Berth
Seament Cement Terminal
Cement Berth
ABP Berth 296m
North Quay
Approximate bollard spacing 30m
Sims Metal Scrap Metal Berth 214.5m
854.5
7 Section 106m
8 Section 92m
9 Section 92m
10 Section 220.5m
SOUTH DOCK
Strengthened Crane Rail 335.28m (1100') for 25T Cranes
92m 6 Section
335m 5 Section
61m 4 Section
183m 3 Section
183m 2 Section
177m 1 Section
854.5
South Quay
Approximate bollard spacing 30m
Coal Terminal
6 Shed
5 Shed
7A Shed
7 Shed
5A Shed
Severn Sands Sand Terminal
Newport Dock Gauge
South Lock
Marine Control
O.D.Newlyn
Admiralty Chart Datum
Newport Channel Datum
SOUNDINGS INFORMATION
SOUTH DOCK
DATUM FOR SOUNDINGS
0,9 metres above the level of the South lock inner gauge zero or 3,57 metres below O.D. Newlyn.
MAINTENANCE LEVEL
South Dock to A-A Datum level.
A-A to North Dock 0.6 metres above Datum level.
NORTH DOCK
DATUM FOR SOUNDINGS
3.3 metres above the level of the South lock inner gauge zero or 1.13 metres below O.D. Newlyn.
MAINTENANCE LEVEL
North Dock Datum Level.
NEWPORT DOCKS
SCALE 1:4000
UK DREDGING
0 metres 100 200 300 400 500 600 700 800 900 1000 metres
DRAWN AOZ DATE 17/1/08
NEWPORT DOCKS
PTS015/ND/000


SOUNDINGS INFORMATION
PORT TALBOT HARBOUR AND CHANNEL
DATUM FOR SOUNDINGS
The level of the visual and automatic tide gauge zeros or 16.44 metres below O.D. Newlyn.
MAINTENANCE LEVEL
Harbour Datum level.
North Pocket 3.7 metres below Datum level
South Pocket 6.0 metres below Datum level
Breakwater Light
Nav Light 1
Nav Light 4
Nav Light 3
Nav Light 2
North Pocket
South Pocket
PT Harbour Gauge
Jetty
277.4FT Fenders
Mooring Dolphin
O.D.Newlyn
ACD
PT Chart Datum (Chartlets)
PORT TALBOT HARBOUR
SCALE 1:4000
Not to be used for navigation
100 0 metres 100 200 300 400 500 600 700 800 900 1000 metres
UK DREDGING
DRAWN AOZ DATE 17/1/08
PORT TALBOT HARBOUR
PTS017/PH/000


Not to be used
for navigation
Steelworks Wharf
Talbot Block
Sand Wharf
Talbot Wharf Extension
Talbot Wharf
North Bank
Llewelyn's Quay
PORT TALBOT DOCK
Possible Booming
position
Graving
Corner
PT Dock
Gauge
Windbound
Corner
Cement Berth (Silica)
Cement Works
Rio Tinto
Crown
Phoenix
Margam Wharf
O.D.Newlyn
Admiralty
Chart Datum
Port Talbot
Channel
Datum
Normal Dock Water Level
MHWS
MHWN
MLWN
Dock Datum
MLWS
Dock Channel ML
Dock outer sill
Channel Maintenance level
SOUNDINGS INFORMATION
PORT TALBOT DOCK
DATUM FOR SOUNDINGS
The level of the entrance lock inner gauge zero or 3.05 metres below O.D. Newlyn.
NORMAL WATER LEVEL
8.7 metres above Datum level.
50 0 metres 50 100 150 200 250 300 350 400 450 500 550 600 metres
PORT TALBOT DOCKS
SCALE 1:4000
UK DREDGING
DRAWN AOZ DATE 17/1/08
PORT TALBOT DOCKS
PTS017/PD/000

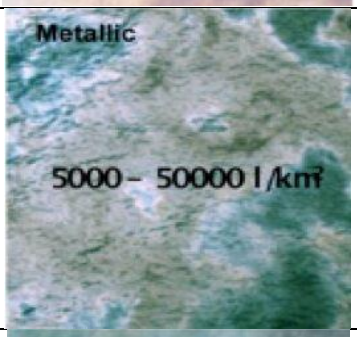

Not to be used for navigation
RP
Datum rises 2.0 metres
C Quay 176.3m
B Shed Wharf
A Shed Wharf
D Shed Wharf 330.9m
KING'S DOCK
Approximate bollard spacing 30m
11 Hoist Lay by 173.1m
12 Hst
Tug Berth
Suspended Quay
15 Hst
13 & 14 Hoists 309.0m
4 Quay 485.7m
5 Quay
6 Quay Cement 204.4 m
(also called East Quay N & S)
7 Quay 205.9 m
8 Quay Trinity House
9 Quay Container Berth 248.8 m
Graigola Wharf 243.4 m
Rose Wharf 169.1 m
213.4 m
145.7 m
16 Hst
17 Hst
18 Hst
Masonry slope
Swansea Dock Gauge
King's Lock
Phoenix 2 137.0 m
Phoenix 1 134.6 m
Dry Dock
West Glamorgan Wharf 166.4m
Schooner Passage
SOUNDINGS INFORMATION
KING'S & QUEEN'S DOCKS
DATUM FOR SOUNDINGS
The level of the entrance lock inner gauge zero or 5.76 metres below O.D. Newlyn.
MAINTENANCE LEVEL
Datum level.
NORMAL WATER LEVEL
10.5 metres above Datum level.
PRINCE OF WALES DOCK
DATUM FOR SOUNDINGS
2.0 metres above the level of the entrance lock inner gauge zero or 3.76 metres below O.D. Newlyn.
MAINTENANCE LEVEL
Datum level.
NORMAL WATER LEVEL
8.5 metres above Datum level.
North West Sand Berth
North Middle Sand Berth
PRINCE OF WALES DOCK
Tennant's Wharf
Datum falls 2.0 metres
Prarie
0 metres
100
200
300
400
500
600
700
800
900
1000 metres
O.D.Newlyn
Admiralty Chart Datum
Swansea Channel Datum
Booming Position
Diseased Layby Berth
Diseased Layby Berth
No 9 Chemical Jetty
No 7 & 8 Coastal Berths
QUEEN'S DOCK
MUSSEL FARM
Repairing Berth
Repairing Jetty
Stores Jetty
No 5
No 4
No 3
No 2
No 1
SWANSEA DOCKS
SCALE 1:4000
UK DREDGING
DRAWN AOZ DATE 17/1/08
SWANSEA DOCKS
PTS021/SD/000



6.2 Clean up, Waste and Storage – Potential sites

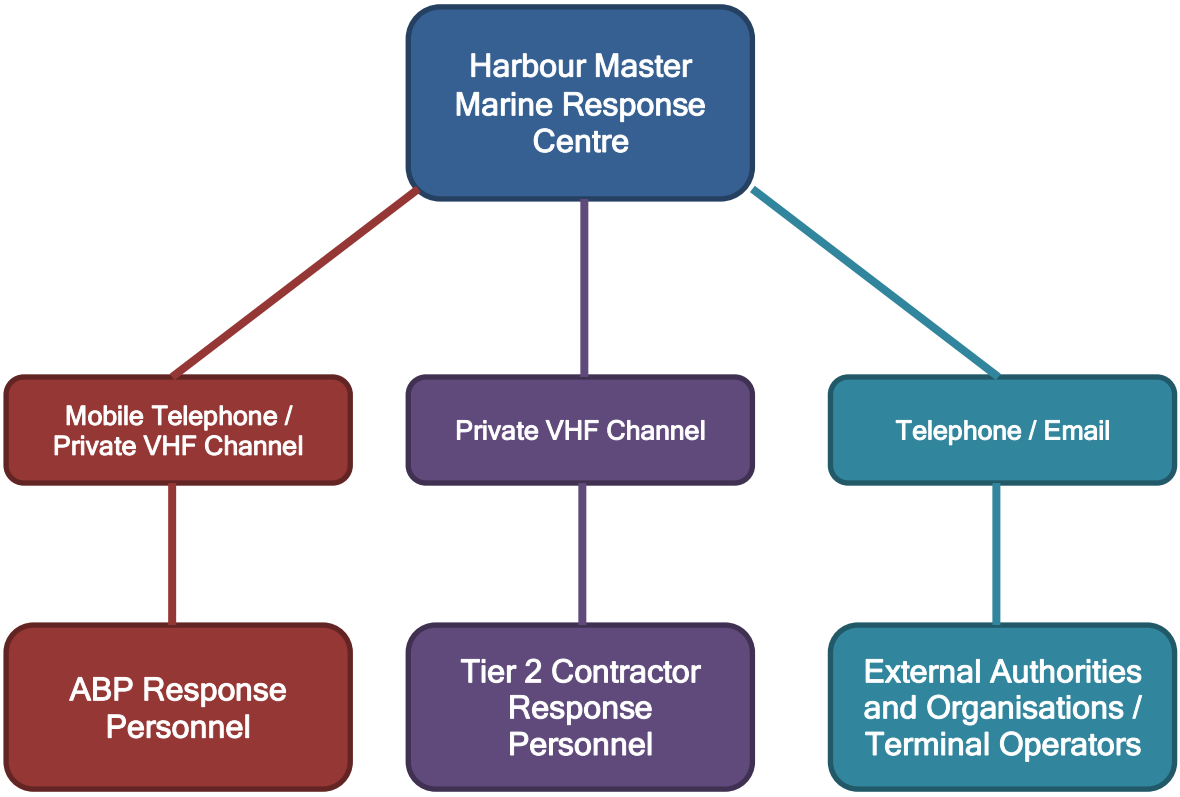
Sites have been identified in the SW Ports that could be used for these purposes. Please refer to Appendix 9.

6.3 Bonn Agreement Oil Appearance Chart

Code	Description - Appearance	Layer Thickness Interval (µm)	Litres per km^2	Appearance
1	Sheen (silvery/grey)	0.04 to 0.30	40 - 300	
2	Rainbow	0.30 to 5.0	300 - 5000	
3	Metallic	5.0 to 50	5000 - 50,000	
4	Discontinuous True Oil Colour	50 to 200	50,000 - 200,000	
5	Continuous True Oil Colour	More than 200	More than 200,000	No Image

6.4 Communications / Public Affairs Plan

Details of the communication between internal personnel and external bodies, during an incident are shown below:



6.5 Media enquiries

If you receive an enquiry from the media (other than if you work in a designated communications role), you should take down details of the enquiry without offering any information or opinion. Details of the enquiry should be immediately emailed to the relevant port manager / Regional Director and the Public Affairs and Corporate Communications (PACC) team at communications@abports.co.uk or passed on by telephone call to any of the following people:

David Leighton	Head of Public Affairs and Corporate Communications	dleighton@abports.co.uk P: 020 7406 7861 / M: 07711 480586
Gareth Lewis	Corporate Communications Manager	gdlewis@abports.co.uk P: 020 7406 7814 / M: 07739 104945
Ann-Maree Andritsakis	Communications Advisor	amandritsakis@abports.co.uk P: 020 7406 7825 / M: 07796 154501

In the specific case of a response in the NHC area of Jurisdiction, the Chairman of NHC should also be advised. Further handling of any media enquiry should only be undertaken if you have approval from:

- The Head of Public Affairs and Corporate Communications or the Corporate Communications Manager **and**
- The appropriate director, regional or business function head or manager or other nominated employee.

You should not handle a media enquiry unless you have received appropriate media training. For a list of employees who have received media handling training, please see the document 'Employees who are trained for media enquiries' here; https://abbritishports.sharepoint.com/teams/communications/General%20Documents/Employees%20trained%20for%20media%20enquiries.pdf#search=media%20enquiries

Media Enquiry Form

Please pass the following details to the Communications Team:

Name:	
Telephone:	
Email:	
Organisation:	
Request Details:	

7.0 Introduction

Full account must be taken of the health and safety requirements for all personnel involved in oil spill response activities. Initially basic health and safety checks should be completed by the IC to take control of the incident. The Initial Incident Checklist can be used as a guide (see below Section 7.01).The Site Specific Health and Safety Plan Assessment Form (Section 7.1) lists site characteristics, site hazards and personal protective equipment and site facility needs. This plan is intended to act as an aide-mémoire to ensure that all applicable health and safety requirements are considered and appropriate actions are taken.

Sections 8.2 and 8.3 summarise legislative requirements and give guidance on specific oil spill clean-up tasks and hazards. In Tier 2 and Tier 3 incidents, an ABP Safety Officer will support the Harbour Master in the control and management of the health and safety function.

7.01 Initial Incident Checklist

Initial Incident Checklist			
Confirm Spill Incident		Are all personnel safe / any injuries or casualties	
Confirm Tier		Does the area need evacuating	
Confirm Location		Does the area need cordoning off	
Confirm On Scene Commander		Is there need for mechanical/electrical isolations	
Initiate Site H&S Assessment 7.1		Review actions	

7.1 Health and Safety Assessment Form

Site Specific Health and Safety Plan Assessment Form										
1. APPLIES TO SITE:										
2. DATE:			3. TIME:			4. INCIDENT:				
5. PRODUCT (S):								(Attach MSDS)		
6. Site Characterisation										
6a. Area	☐ Open water		☐ Inshore water		☐ River		☐ Salt marsh		☐ Mudflats	
	☐ Shoreline		☐ Sand		☐ Shingle		☐ Docks			
6b. Use	☐ Commercial		☐ Industrial		☐ Recreational		☐ Government		☐ Public	
	☐ Residential		☐ Other							
7. Site Hazards										
	☐ Boat safety			☐ Fire, explosion			☐ Slips, trips and falls			
	☐ Chemical hazards			☐ Heat stress			☐ Steam and hot water			
	☐ Cold stress			☐ Helicopter operations			☐ Tides			
	☐ Manual handling			☐ Lifting			☐ Trenches, excavations			
	☐ Equipment operations			☐ Motor vehicles			☐ Visibility			
	☐ Electrical hazards			☐ Noise			☐ Weather			
	☐ Fatigue			☐ Overhead/buried utilities			☐ Work near water			
	☐ Others			☐ Pumps and hoses						
8. Personal Protective Equipment										
☐ Foot Protection				☐ Coveralls						
☐ Head Protection				☐ Impervious suits						
☐ Eye Protection				☐ Personal Floatation						
☐ Ear Protection				☐ Respirators						
☐ Hand Protection				☐ Other						
9. Site Facilities										
☐ Sanitation			☐ First Aid				☐ Decontamination			
10. Contact details:										
☐ Doctor						Phone				
☐ Hospital						Phone				
☐ Fire						Phone				
☐ Police						Phone				
☐ Other						Phone				
11. Date Plan Completed										
12. Plan Completed by										

Legislative Requirements

8.1 Employers' Duties

The principal duty of an employer is that imposed by The Health and Safety at Work Act etc. 1974 & The Management of Health and Safety at Work Regulations 1999 (as amended). The Act states the employer is to ensure, as far as is reasonably practicable, the health, safety and welfare of their employees and anyone else who may be affected by their business activities whilst at work.

- The Management of Health and Safety at Work Regulations 1992 impose specific duties on employers to:
- Carry out risk assessments of their work activities in order to identify protective and preventative measures - significant findings must be recorded if there are five or more employees;
- Make arrangements for the planning, organisation, control, monitoring and review of the preventive and protective measures. When there are five or more employees these arrangements must be recorded;
- Provide employees with appropriate health surveillance, where this is shown to be necessary by risk assessment;
- Appoint a competent person(s) to help ensure compliance with health and safety law;
- Set up emergency procedures;
- Only allow persons with sufficient health and safety instructions to have access to restricted areas;
- Provide employees with comprehensive health and safety information relating to the details above;
- Full co-operation with other employers sharing the workplace;
- Provide the relevant health and safety information to any outside employer working within their premises, including relevant instruction and information;
- Provide the relevant health and safety training to employees; and
- Provide all temporary workers with relevant information on health and safety requirements appropriate to their position within the company.

8.2 Employees' Duties

All employees have a duty under The Health and Safety at Work Act etc. 1974 & The Management of Health and Safety at Work Regulations 1999 (as amended) to take reasonable care for the health and safety of themselves and their colleagues at work who may be affected by their acts or omissions.

Under The Health and Safety at Work Act etc. 1974 & The Management of Health and Safety at Work Regulations 1999 (as amended) employees have a duty to co-operate with their employer and colleagues enabling them to comply with statutory duties and requirements.

Additionally, The Health and Safety at Work Act etc. 1974 & The Management of Health and Safety at Work Regulations 1999 (as amended) states that employees must not intentionally or recklessly misuse any equipment and the like provided for them in the interests of health, safety or welfare.

The Management of Health and Safety at Work Regulations 1992, further oblige employees to:

- Use any of the equipment etc, provided in the interests of safety;
- Follow health and safety instructions;
- Report any problem they consider to be a danger; and
- Report any shortcomings in the protection arrangements for health and safety.

8.3 Site Hazards

Bird Handling

Handling of birds must be undertaken by properly trained personnel to ensure the protection of both bird and handler. The Health and Safety of persons involved in the handling of birds will fall under the responsibility of the competent organisation. Eg. RSPCA, RSPB.

Boat Safety

- Boat operators must familiarise themselves and passengers with safety features and equipment on their boats.
- Boats must be operated by qualified individuals.
- Lifejackets must be worn by personnel on boats.
- Use of cold-water immersion suits is particularly critical under conditions of cold stress.
- Boats should generally not be used after sunset for oil recovery. If this is required or poses minimal risk, areas of operation should be carefully prescribed, and individual boat operators should maintain a communication schedule with a shore base. Each boat should be fully equipped with appropriate navigation lights.
- Distress signals should be carried on all craft.
- Boat operators must keep their supervisors informed of their area of operation, especially when they change their work area (if plans call for a boat to move to another location during a shift, the operator should advise the supervisor of his actual time of departure).
- Portable fuel tanks should be filled outside of the boat. All sources of ignition in the area of refuelling should be isolated.
- Personnel working in or operating boats should wear appropriate non-slip footwear.
- Fixed ladders or other substantial access/egress should be provided at boat transfer locations from low water line to platform.
- Workers should be cautioned about using their arms or legs to fend off during berthing, or getting their hands, arms, or legs between vessels and docks or fixed structures.

8.4 Chemical Hazards

Attach appropriate Material Safety Data Sheets for all hazardous substances likely to be used at a spill site.

8.5 Cold Stress

Cold stress can occur among responders as a result of prolonged exposure to low environmental air temperatures or from immersion in low temperature water. It can lead to a number of adverse effects including frostbite, chilblain and hypothermia. The single most important aspect of life-threatening hypothermia is the fall in the deep core temperature of the body. Workers shall be provided with warm clothing, rest opportunities, exposure protection, and warm and / or sweet fluids. Boat crew personnel will wear immersion suits the water temperature is below 15°, or the combined water and air temperature is less than 48° Celsius.

8.6 Wind Chill Chart

Wind Chill Chart								
Wind Speed Mph	Temperature 'C							
	15	10	5	0	-5	-10	-15	-20
5	10	4	-1	-7	-12	-18	-21	-23
10	9	3	-3	-9	-14	-21	-23	-26
15	4	-2	-9	-16	-23	-29	-33	-36
20	2	-6	-13	-21	-28	-38	-40	-43
25	0	-8	-16	-23	-32	-39	-43	-47
30	-1	-9	-18	-26	-34	-42	-46	-51
35	-2	-11	-19	-28	-36	-44	-49	-53
40	-3	-12	-20	-29	-37	-45	-50	-55
	Little Danger for Properly Dressed Person			Increased Danger for Properly Dressed Person				
	Exposed Flesh in Danger of Freezing							

8.7 Manual Handling

Please refer to ABP's Manual Handling Procedure for guidance, this can be found here;
https://abbritishports.sharepoint.com/sites/MarineandCompliance/Compliance%20Published%20Documents/Manual%20Handling%20Operations.pdf#search=manual%20handling

8.8 Equipment Operations

Heavy Equipment and Fork lifts

Operators of heavy equipment and forklifts, must be trained in accordance with ABP's Policy and follow the relevant operating procedures.

8.9 Electrical Hazards

Electrical hazards shall be identified and marked with suitable placards, barricades, or warning tape as necessary.

8.10 Fatigue

Working long hours without rest may be required, especially during the early phase of response. This, coupled with the stress of the situation and wearing required PPE, can contribute to fatigue. Symptoms include loss of concentration, errors in judgement, irritability, sleepiness, soreness and stiffness in joints and muscles. Rest and sleep are the primary treatments for fatigue. Stress can be addressed by relaxation techniques, such as deep breathing, stretching and taking breaks.

8.11 Fire / Explosion

Flammable and combustible materials may be encountered at the spill site. These may be fuels for vehicles and equipment or the spilled material itself. However other chemicals may be used during the response. Precautions should be taken when working with either flammables or combustibles:

- No smoking or naked flames
- Provide fire extinguishers in areas where these materials are used.

8.12 Heat Stress

Heat stress can result as responders perform heavy labour work in protective and/or impermeable clothing that does not breathe or allow for the normal dissipation of body heat. Heat build up can lead to a number of adverse health effects including heat rash, heat cramps, dehydration, heat exhaustion or heat stroke.

The incidence of heat stress is dependent on a number of factors such as temperature, humidity, a person's fitness, age, weight and clothing worn. Therefore supervisors should continually monitor their employees when workloads are heavy and temperatures and/or humidity are high (see figure below for guidance).

Fluids shall be available at all times and personnel will be encouraged to drink these during rest periods. Shaded rest areas will be made available where feasible.

8.12 Heat Index Chart

Heat Index Chart

Degrees 'C	Humidity %															
	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	#
42	48	50	52	55	57	59	62	64	66	68	71	73	75	77	80	82
41	46	48	51	53	55	57	59	61	64	66	68	70	71	74	76	79
40	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75
39	43	45	47	49	51	53	55	57	59	61	63	65	66	68	70	72
38	42	44	45	47	49	51	53	55	56	58	60	652	64	66	67	69
37	40	42	44	45	47	49	51	52	54	56	58	59	61	63	65	66
36	39	40	42	44	45	47	49	50	52	54	55	57	59	60	62	63
35	37	39	40	42	44	45	47	48	50	51	53	54	58	58	59	61
34	36	37	39	40	42	43	45	46	48	49	51	52	54	55	57	58
33	34	36	37	39	40	41	43	44	46	47	48	50	51	53	54	55
32	33	34	36	37	38	40	41	42	44	45	46	48	49	50	52	53
31	32	33	34	35	37	38	39	40	42	43	44	45	47	48	49	50
30	30	32	33	34	35	36	37	39	40	41	42	43	45	46	47	48
29	29	30	31	32	32	35	36	37	38	39	40	41	42	43	45	46
28	28	29	30	31	32	33	31	35	36	37	38	39	40	41	42	43
27	27	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
26	26	26	27	28	29	30	31	32	33	34	34	35	36	37	38	39
25	25	25	26	27	27	28	29	30	31	32	33	34	34	35	36	37
24	24	24	24	25	26	27	28	28	29	30	31	32	33	33	34	35
23	23	23	23	24	25	25	26	27	28	28	29	30	31	32	32	33
22	22	22	22	22	23	24	25	25	26	27	27	28	29	30	30	31

Up to 29 'C	No Discomfort
30 - 34 'C	Slight Discomfort Sensation
35 - 39 'C	Strong Discomfort, Caution, Limit Heaviet Physical Activities
40 - 45 'C	Strong Disposition Sensation, Danger, Avoid Efforts
46 - 53 'C	Serios Danger, Stop All Physical Activities
Over 54 'C	Death Danger, Imminent Heatstroke

8.13 Helicopter Operations

Helicopters may be used at the spill site for over flight surveillance, site characterisation, personnel/equipment transport, and rescue/medical transport. The Health and Safety of persons involved in Helicopter operations will be the responsibility of the competent organisation/contractor.

8.14 Lifting

Cranes must be operated in accordance with the manufacturers' instructions and established construction practices. Only trained and authorised operators shall be allowed to operate cranes.

8.15 Motor Vehicles

Drivers shall maintain a safe speed at all times, and shall not be allowed to operate vehicles in a reckless manner. Only diesel powered motor vehicles to be used in areas with an explosive atmosphere.

8.16 Noise

Appropriate hearing protection shall be used in designated high noise areas – first action level of 80 dBA where hearing protection is recommended (85 dBA being the second action level where it becomes mandatory) with a time weighted average over an 8 hour work shift/period. Additionally, no person shall be exposed to greater than 115 dBA at any time without the use of appropriate hearing protection.

8.17 Overhead and Buried Utilities

If work has to be carried out near overhead lines, consultation with the organisation that operates the supply system should be undertaken. A safe working distance from these overhead lines should be determined and the area cordoned off.
The estimated location of buried utilities such as sewer, telephone, fuel, electric or water should be predetermined before work begins. Utility companies or owners must be contacted, advised of the proposed work and informed of the urgency of the situation.

8.18 Pumps and Hoses

Pumps and hoses may be used at the spill site to apply water, steam or chemical for clean up and/or decontamination. They may also be used for transfer of liquid waste. Caution should be used when working in these areas where hoses are being used as they represent a tripping hazard.

8.19 Slips, Trips and Falls

Slips, trips and falls on oily surfaces are the major cause of injuries at an oil spill site. Many of these injuries occur in the first few minutes of work before workers realise the conditions and begin to take precautionary measures. When entering a spill site, walk slowly and carefully in oil coated areas. Be especially careful when walking on oil-covered rocks. Oil resistant safety footwear with non-slip soles should be worn.It is better to clear an access/egress route than to walk through oiled areas.

9.0 Waste Management Plan

Note: oiled waste is classed as Hazardous Waste and the transfer and disposal of such material is governed by the Hazardous Waste (England & Wales) Regulations 2005.

9.1 General

Wherever possible, spilled oil should be recovered for recycling and re-use. However any shoreline clean-up operation is likely to result in amounts of oily waste far in excess of the original oil on the shoreline.

Responsibility for the arrangement to dispose of shoreline pollution wastes rests with the local County Council. Associated British Ports, in conjunction with the Local County Council, will arrange for the disposal of all oiled waste materials arising from spillages within the dock complexes or port areas and from the clean-up of land / foreshore owned by ABP. In the event of an incident Natural Resources Wales would be able to provide advice and guidance on waste minimisation and waste disposal matters.

The following types of waste can arise:

- Recovered oil (not heavily contaminated)
- Water in oil emulsion - untreated
- Water in oil emulsion - treated with dispersant
- Thick weathered oil - lumps
- Semi-solid bunker oil
- Oil and sand mixtures
- Dry waste
- Oiled shingle
- Heavily oiled seaweed and other debris

In Tier One and Tier Two incidents which do not involve an oil company, any oil recovered from the dock or harbour waters will be transferred to one of the waste oil disposal / recycling contractors listed in section 9.5.

9.2 Waste Disposal Operations

NB: Within this Plan waste oil refers to the disposal of oil which has been contained and recovered as the result of a spill or a pollution incident. The safe handling and disposal of recovered oil is governed by relevant sections in the following legislation:

1. Control of Pollution (Amendment) Act 1989
2. The Environmental Protection Act 1990
3. The Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations 1991
4. Environmental Permitting Regulations 2016
5. Landfill (England and Wales) Regulations 2005
6. Hazardous Waste (England and Wales) Regulations 2005
7. List of Wastes (England) Regulations 2005

If oily waste material is produced as a result of a pollution incident then the polluting party (operator) has a duty of care to ensure that the waste is contained, handled, transported and ultimately disposed of in an appropriate manner. If the material is to be handled by contractors then the operator (to reduce liabilities to a minimum) has to ensure that each contractor has the relevant transportation registration and waste management licences, where applicable. In addition HM Customs and Excise must be notified if recovered oil is brought ashore by dedicated oil recovery vessels. Landing should not be hindered by the absence of an official from HM Customs and Excise; however, the Operator should maintain a careful log on quantity and nature of the recovered oil.

The options for waste disposal or treatment of material, be it oily liquids or oil solids are:

- Take to appropriate disposal sites;
- Temporary store, clean, stabilise and then recover or re-use;
- Temporary store and then take to appropriate disposal site for burial;
- Take to a refinery/incinerator (mainly for oily liquids)

9.3 Disposal Plan

All waste arising from an oil spillage will be handled systematically and strictly in line with the current Regulations. Within the resources of the Plan, initial holding and storage will be possible through use of portable storage tanks as listed in section 9.4 and thereafter the oil will be disposed of using a local licensed contractor (9.5). Because of the length of shoreline, and tidal flows involved, it has been difficult to nominate a specific temporary waste holding area.

In the event of a Tier 2 or 3 spill response, the legal disposal of recovered oil will be undertaken, through a disposal route agreed with the NRW, on behalf of Port Penrhyn. This will be managed by the Port's nominated oil spill contractor duly accredited to Level 3 under the NRW / UK Spill Association.

9.4 Temporary Storage

This Plan being regional and covering a very large area does not designate temporary storage sites. Dependent on the nature and location of any pollution incident, temporary storage will be designated as an appropriate place by the on scene commander at the specific incident. However, it is worth noting that fastanks could be erected and used on most quaysides within the docks, providing there accessible by road. Unless the incident is declared an emergency any temp Storage will need be carried out in accordance with the Environmental Permitting (England & Wales) Regulations 2016 or the non Waste Framework Directive. Please see link for further info http://www.environment-agency.gov.uk/static/documents/Business/NWFD_2.pdf
Note: there are no exemptions under the EPR suitable for the type of waste storage to cover these type of incidents. However, there is a non waste framework directive exemption for temporary storage of waste to a secure place, that could be used to regularise the storage of theses wastes in these situations.

The following table summarises the temporary storage methods that can be used:

Type of Oil/Waste	Storage Facility	Comments
Liquid	Barges	Suitable for initial storage
	Road Tankers	Ideal for routing to final disposal site
	Pits	Must be lined with sand to protect essential heavy duty plastic liner
	Bunds	Cheaper than pits. Liners required
Liquid/solid mixture	Pits	As above
	Bunds	As above
	Skips	Versatile, robust and cheap
	Oil Drums	Difficult to handle when full
	Plastic Containers	Quick deployment. Useful for inaccessible areas
	Heavy Duty Plastic Bags	Ideal for manual clean up. Cheap, easy to deploy. Can create disposal problems
Solids	Hard standing	Preferably level site, bunded, with contained drainage
	Lorries	Restricted to solid debris. Access problems

Reprocessing is the preferred option. In general only pure oil and possibly oil/water mixtures will be acceptable. The contractors able to accept recovered oil for recycling or reprocessing are listed in section 9.6.

9.5 Waste Disposal Contractors

The following contractors are registered carriers and are capable of handling recovered oil and oiled waste materials.

Contractor	Contact Details
Adler & Allan (Tier 2 response contractor)	0800 592 827
Veolia Total Waste Management Limited	Tel: 02920 885897
Biffa Waste Services Limited	Tel: 01495 751213
Environmental Practical Solutions (EPS Ltd)	Tel: 01792 791426
Amber Waste Management	Tel: 01443 865965

Note: apart from small amounts of oily waste, contact with the above Contractors for the disposal of recovered oil and oiled waste materials should be made through, or with the knowledge of, the appropriate County Waste Disposal Manager.

Guidance for Contingency Planning and Operation of the Technical Team Waste Management Sub Group within a National Contingency Plan can be found on the following site: -

http://www.dft.gov.uk/mca/stop_1_09_waste_july_2009.pdf

Data Section

10.0 South Wales Regional Training and Exercise Policy

10.1 Training

The importance of training for harbour personnel who may become involved in the response to oil spill incidents is recognised and acknowledged. All members of the Management Team, Supervisors and Operators will undergo periodic training in line with the following matrix. Personnel will be trained for response across the South Wales Region. (Newport, Cardiff, Barry, Port Talbot and Swansea)

The Nautical Institute accredits the training courses for the Maritime and Coastguard Agency; the syllabus of the courses matches the requirements of UK oil spill training standards. Harbour Masters and Deputies are trained to MCA Level 4/5p.

10.2 Exercises

A regional annual exercise already takes place and this practice will continue. Harbour personnel also participate in oil company exercises and an oil pollution element is regularly included in major exercises of the Regional Port Emergency Plan. When practicable to so do, joint exercises will also be held with Natural Resources Wales and the Bristol Channel and West Wales Standing Environment Groups.

In-house exercises will be conducted at the approximate frequency noted in the exercise matrix.

Exercise Type	Frequency (Regionally in South Wales)
Notification exercise	Twice per year
Mobilisation exercise	Twice per year
Table-top exercise	Once per year
Incident Management Exercise	Once per year

10.3 Training and Exercise Policy

Course	Duration	NHC Chairman of Works & Finance Committee	Harbour Master / Deputy HM	Contract Operators	Frequency
Oil Spill Response (Ports) Induction 1P	1-2 days			x	Initial Induction Once every 3 years
Oil Spill Operator 2P	2-3 days			x	Initial Induction Once every 3 years
Oil Spill Operations Supervisor (Ports) 4P	4-5 days		x		Initial Induction Once every 3 years
Oil Spill Response Executive Commander 5	2 days	x			Initial Induction Once every 3 years
Oil Spill Operations Commander (Ports) 5P	4-5 days		x		Once

11.0 Risk Assessment

11.1 Introduction

Swansea

Swansea is a tidal, locked port that handles a range of dry, bulk, and containerised cargoes. A ferry terminal is located on the River Tawe, adjacent to the entrance lock. Annual traffic volume averages some 1,500 ships ranging from coastal vessels up to a maximum vessel size of 30,000dwt. The mean tidal range is 8.4 metres and there can be occasions when the actual height of tide may level with or overtop the lock gates. The maximum acceptable vessel size is based on length overall, breadth and draft. Acceptance criteria are 190 metres LOA, 26.2 metres beam and 9.9 metres draft. Port plans and access can be found in Appendix 6.

Swansea has a dry dock facility which is owned and operated separately by Swansea Dry Docks. There are usually 3 tugs stationed in Swansea permanently, these are owned by Svitzer.

Port Talbot

Port Talbot handles *ca* 150 bulk carriers per annum for the import of iron ore and coal; these ships range in size from 40,000 to 220,000 dwt. There are also occasional exports of granulated slag on coastal carriers of some 4,000dwt.The swinging area within the harbour is maintained to a dredged depth of 11.2 metres and the maintained depths at the two berths are 17.2 and 15 metres. The mean spring tidal range is 8.6 metres. Port plans and access can be found in Appendix 6.

Barry

Barry is a tidal, locked, port which handles Timber, Chemicals, Scrap, Cement, Grain, and other general cargo. Annual traffic volume amounts to approximately 250 ships. The mean tidal range is 11.0 metres and there are some 20 days each year when the actual height of the tide requires the gates to be left open. The maximum size of vessel acceptable for the Lady Windsor lock is LOA 200 metres, Beam 19.2 metres, and Draft 9.0 metres. The Basin entrance can accommodate vessels up to LOA 200 metres, Beam 24 metres, and Draft 9.0 metres. Port plans and access can be found in Appendix 6.

Cardiff

Cardiff is a tidal, locked, port which handles Timber, Petroleum, Chemicals, Containers, Scrap, Steel, and other general and dry bulk cargo. It also handles visits from Cruise Ships. Annual traffic volume amounts to approximately 2500 ships. The mean tidal range is 10.4 metres and the QA lock can handle vessels up to LOA 259 metres, Beam 27 metres, and Draft 10.3 metres. Port plans and access can be found in Appendix 6. Cardiff has tugs stationed in dock on an infrequent basis usually shared with Newport Dock depending on operational requirements; These are owned and operated by SMS Towing.

Newport

Alexandra Dock Newport is a tidal, locked, port which handles a range of Dry Bulk, Steel, Timber, Scrap, Coal, and other general cargo. Annual traffic volumes are in

excess of 1000 ships. The mean tidal range is 11.8 metres and there are some 20 days each year when the actual height of the tide requires the gates to be left open. The maximum size of vessel acceptable for the lock is LOA 244 metres, Beam 30.1 metres, and Draft 10.4 metres. Port plans and access can be found in Appendix 6. Newport has tugs stationed in dock on an infrequent basis usually shared with Cardiff Dock depending on operational requirements; These are owned and operated by SMS Towing.

11.2 Port Operations

Pilotage

All ports lie within a compulsory pilotage area, pilotage is compulsory for all vessels over 85 metres LOA or carrying more than 12 passengers or hazardous substances in bulk and it is strongly recommended for other vessels especially in the eastern ports. Masters of coastal vessels that trade regularly to the ports may be issued with pilotage exemption certificates. Tug assistance is strongly recommended for larger vessels.

Local Port Service

Vessel arrivals are coordinated by Cardiff LPS. On entering the port limits communications are handed over to the Lock Controllers at each port who remain in VHF contact during the approach to the entrance locks or harbour entrances.

Main Approach Channel (Swansea)

The main approach channel is buoyed and has a maintenance level 1 metre below chart datum. The bottom is predominantly mud or sand. The minimum under keel clearance is 10% draft. While the risk of grounding in the channel is considered to be low, it cannot be wholly eliminated. The most probable cause of such an incident would be steering or propulsion system failure but it is unlikely that there would be significant resultant damage.

Main Approach Channel (Port Talbot)

The main approach channel is marked by buoys and leading lights and is maintained to a dredged depth of 11.2 metres below chart datum. The bottom is predominantly coarse sand or mud. The minimum under keel clearance is 10% draft. Again, while the risk of grounding in the channel is considered to be low, it cannot be wholly eliminated. Any grounding incident could result in large bulk carriers sustaining damage to bunker tanks in the fore part of the vessel leading to small releases of fuel oil.

Main Approach Channel (Cardiff)

The main approach channel is marked by buoys and leading lights and is maintained to a dredged depth of 1.2 metres. The bottom is predominantly sand, mud, or gravel but there are some rock outcrops to the west of the channel in the vicinity of Penarth Head. The minimum under keel clearance is 10% of draft metre. Again, while the risk of grounding in the channel is considered to be low, it cannot be wholly eliminated. Any grounding incident would be unlikely to result in significant damage to the mid-body plating of tankers but could result in large bulk/oil carriers sustaining

damage to bunker tanks in the fore part of the vessel leading to small releases of fuel oil.

Main Approach Channel (Newport)

The main approach channel is marked by buoys and leading lights and is maintained to a dredged depth of 0.7 metres. The bottom is predominantly soft mud. The minimum under keel clearance is 10% of draft . While the risk of grounding in the channel is considered to be low, it cannot be wholly eliminated. The most probable cause of such an incident would be steering or propulsion system failure but it is unlikely that there would be significant resultant damage to hull plating given the soft nature of the bottom.

Main Approach Channel (Barry)

The main approach channel is marked with buoys and leading lights, the sea bed is predominantly pebbles, sand and gravel and the minimum underkeel clearance is 10% draft. While the risk of grounding in the channel is considered to be low, it cannot be wholly eliminated. The most probable cause of such an incident would be steering or propulsion system failure but it is unlikely that there would be significant resultant damage.

Locking or Berthing Incident

Oil spills can occur as a result of hull contact with the knuckle end of lock entrances, breakwaters, quay walls or breasting dolphins during port entry and berthing or un-berthing manoeuvres. Such incidents are generally attributable to failure of a vessel's main propulsion or steering systems, loss of control onboard an attendant tug or pilot / master error or misjudgement. The potential spill quantities involved depend on the vessel type and the location and extent of the impact damage.

There is a remote risk that failure of the outer entrance lock gates to close properly due to debris obstruction could result in the grounding of a large vessel on the cill for the intermediate lock gates. Bottom damage from this cause has never been recorded but, in the case of larger tankers, could result in a cargo spillage of more than 100 tonnes.

No oil pollution incidents have been recorded at Port Talbot as a direct result of berthing damage although it is recognised that failure of a vessel's main engines in the final approach to the berth could result in damage to the fore part of the vessel and a consequent loss of fuel oil.

Lying Aground

Although all NAABSA berths are regularly inspected by the berth operators for debris, there remains a small risk that hull plating damage could occur when vessels take the bottom. Should bottom plating damage be sustained in way of double bottom or forward fuel oil tanks, a small amount of fuel oil could be released. Given the soft nature of the river bed, it is not anticipated that such spillages could exceed 50 tonnes.

Tug Impact

There are well documented national incidents where cargo or bunker oil has been released as a result of hull impact damage by tugs. This can occur when tugs are approaching a vessel underway prior to berthing, or when coming alongside a moored vessel prior to un-berthing. The potential spill quantities again depend on the location and extent of the impact damage but can be over 100 tonnes for bunker oil and 250 tonnes for cargo oil.

11.3 Bunkering (Refuelling) Operations

Ex-Barge

Bulk carriers are refuelled by bunkering barge at Port Talbot at rates of up to 250 t/ph and some larger vessels are occasionally bunkered ex- barge within any of the enclosed docks.. Although flexible hoses are tested at six monthly intervals and all bunkering craft are equipped with ESD (emergency shut down) facilities, the possibility of hose failure or a bunker tank overflow on board the receiving vessel must be recognised. In estimating the potential spill quantities, the facts that Check Lists are completed prior to each operation and that a continuous deck watch is maintained on board bunkering craft have been taken into account.

Cause	Assessed Risk	Estimated Maximum Spill Quantity (Tonnes)
Hose failure	Low	5
Tank overflow	Low / moderate	2

Ex-Road Tanker

There can be refuelling of vessels berthed within the enclosed docks by road tankers operated by various suppliers and distributors. ABP regulations insist on the completion of a pre-delivery checklist by both the vehicle driver and the receiver as a pollution prevention initiative, lubricating oils are also supplied in bulk ex road tanker at all ports.

Cause	Assessed Risk	Estimated Maximum Spill Quantity (Tonnes)
Hose failure	Low	0.5
Tank overflow	Moderate	0.5
Loading Arms	Low / moderate	5
Slop tank overflow	Low	3

Sea / overboard discharge valves	Low	1
Cargo tank overflow during ballasting	Low	1

ABP Bunkering Procedure for Vessels in South Wales

An example of this can be found in Appendix 7

Environmental Sensitivity Information

12.1 Summary

There are large areas in the vicinity of several of the ports that are highly sensitive for nature conservation; these are listed below. The implications for managing any oil spill vary considerably from site to site and treatment options will be agreed by NRW at the time of any oil spill incident.

12.2 Special Protection Areas / Special Areas of Conservation

ABP acknowledges that the Severn Estuary, areas around Swansea / Port Talbot and many parts of the south Wales coast are of national and international importance for nature conservation. This importance is reflected in the various site designations aimed at protecting coastal and marine species and habitats. Nationally important sites are designated as Sites of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act (1981 as amended by CROW 2000). Sites of international importance are designated as Special Protection Areas (SPA) under the EC Wild Birds Directive for the protection of birds and/or as Special Areas of Conservation (SAC) under the Habitats Directive for the protection of other marine species and habitats. Many coastal wetlands of international importance may also be designated as Ramsar Sites under the Ramsar convention.

The Severn Estuary is designated as an SPA and as a Special Area of Conservation (SAC) under the Habitats Directive.

The Maps shown below, show the location of designated sites and the features for which site has been designated and that may be sensitive to oil pollution or the effects of clean-up. Inclusion of the maps is intended as a guide to those seeking to rapidly identify wildlife and habitat resources sensitive to oil pollution but should not replace early consultation of the Natural Resources Wales in the event of an incident.

It is recognised that ports operating in or near sites designated as SPAs, SAC and SSSI, should give the highest degree of protection to these areas of European nature-conservation importance, and operations that have adverse effects on their nature-conservation status should be avoided, or minimised as far as practicable.

12.3 Sensitivity Mapping

Port of Barry

Maps provided as follows: -

1st Port Boundary and Statutory Harbour Authority

2nd Port Boundary, SHA, ABP Dredge areas and disposal sites, Designates shellfish waters, Local Nature Reserves, RSPB Reserves, Sites of Special Scientific Interest, Special Areas of Conservation and Special Protection Areas, RAMSAR.

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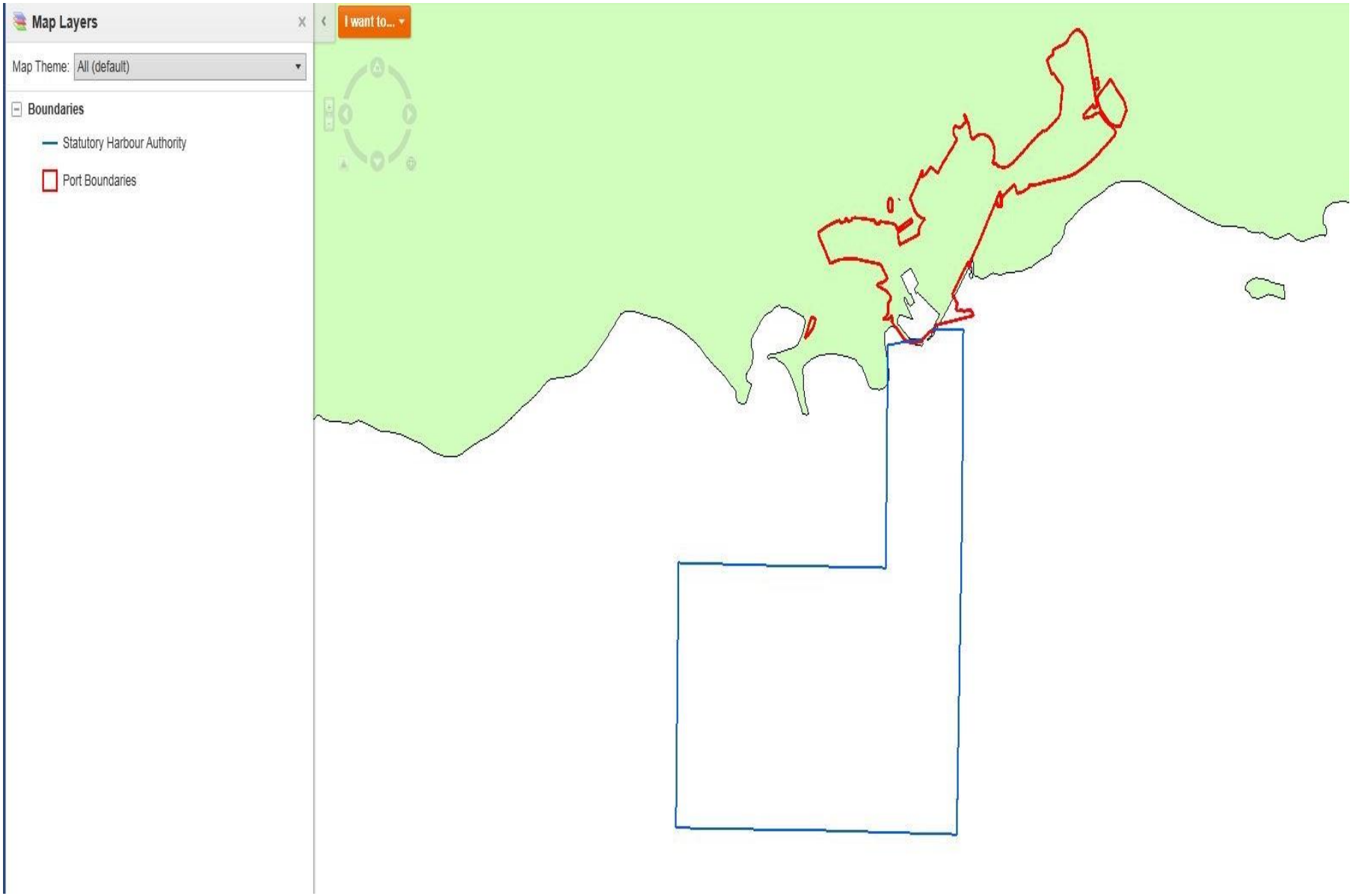
3rd Close up of Area of Jurisdiction (Port Boundary)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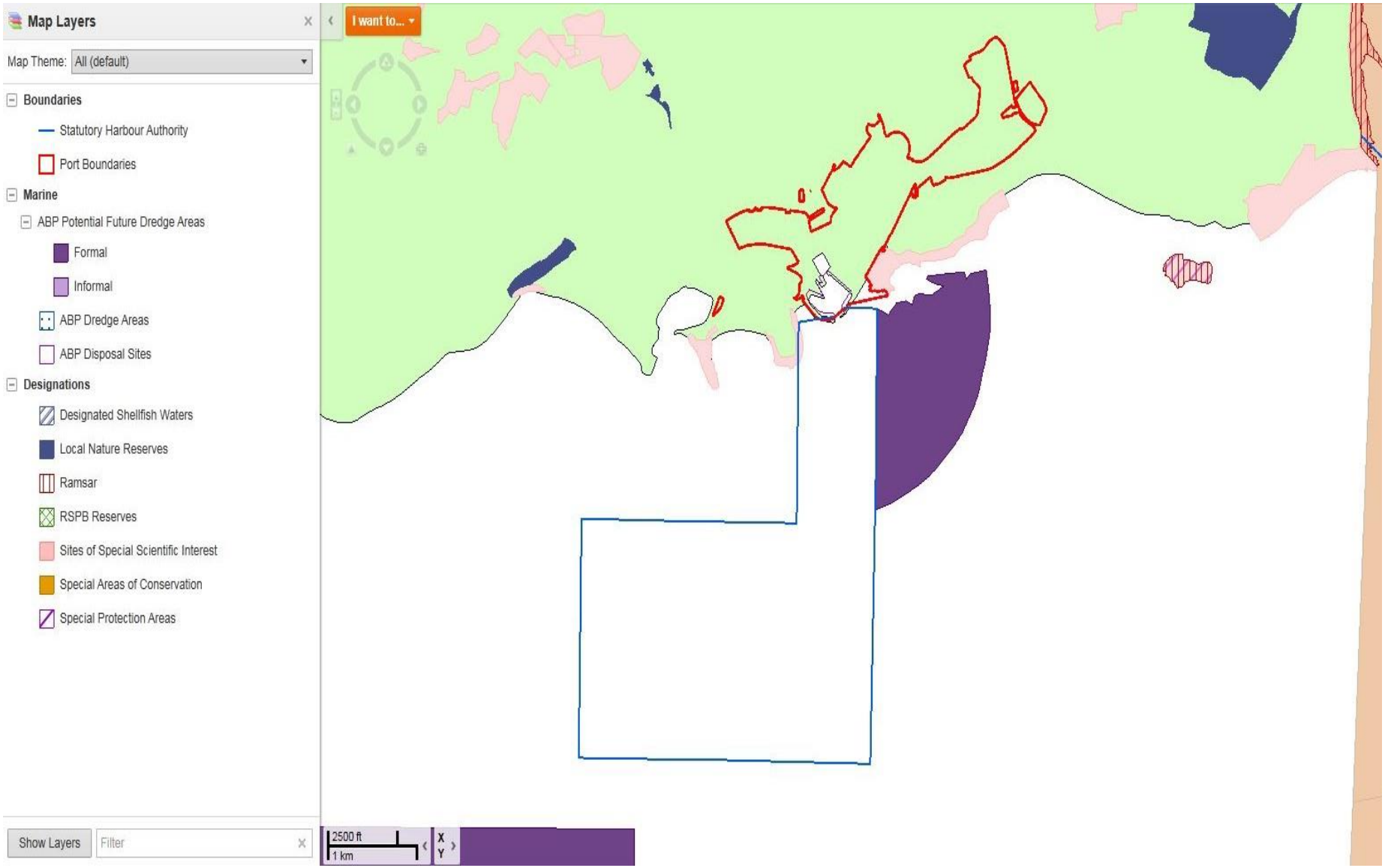
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Designations
Designated Shellfish Waters
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Ramsar
RSPB Reserves
Sites of Special Scientific Interest
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B4294
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Jenner Road
Pontypridd Road
Broad Street
Harbour Road
Holton Road
Gladstone Road
Court Road
Cardiff Road
Cadoxton
Cwm Talwg
Barry Dock
Y BARRI/ BARRY
Barry
Barry Docks
Barry Island
Vale of Glamorgan Steam Railway
Dock Number 1
Dock Number 2
Barry Harbour
Barry Island
Whitmore Bay
Jackson's Bay
The Knap
Black Rocks
Bendrick Rock
Coed-yr-Hayes
Sully Bay
2000 ft
500 m
X
Y

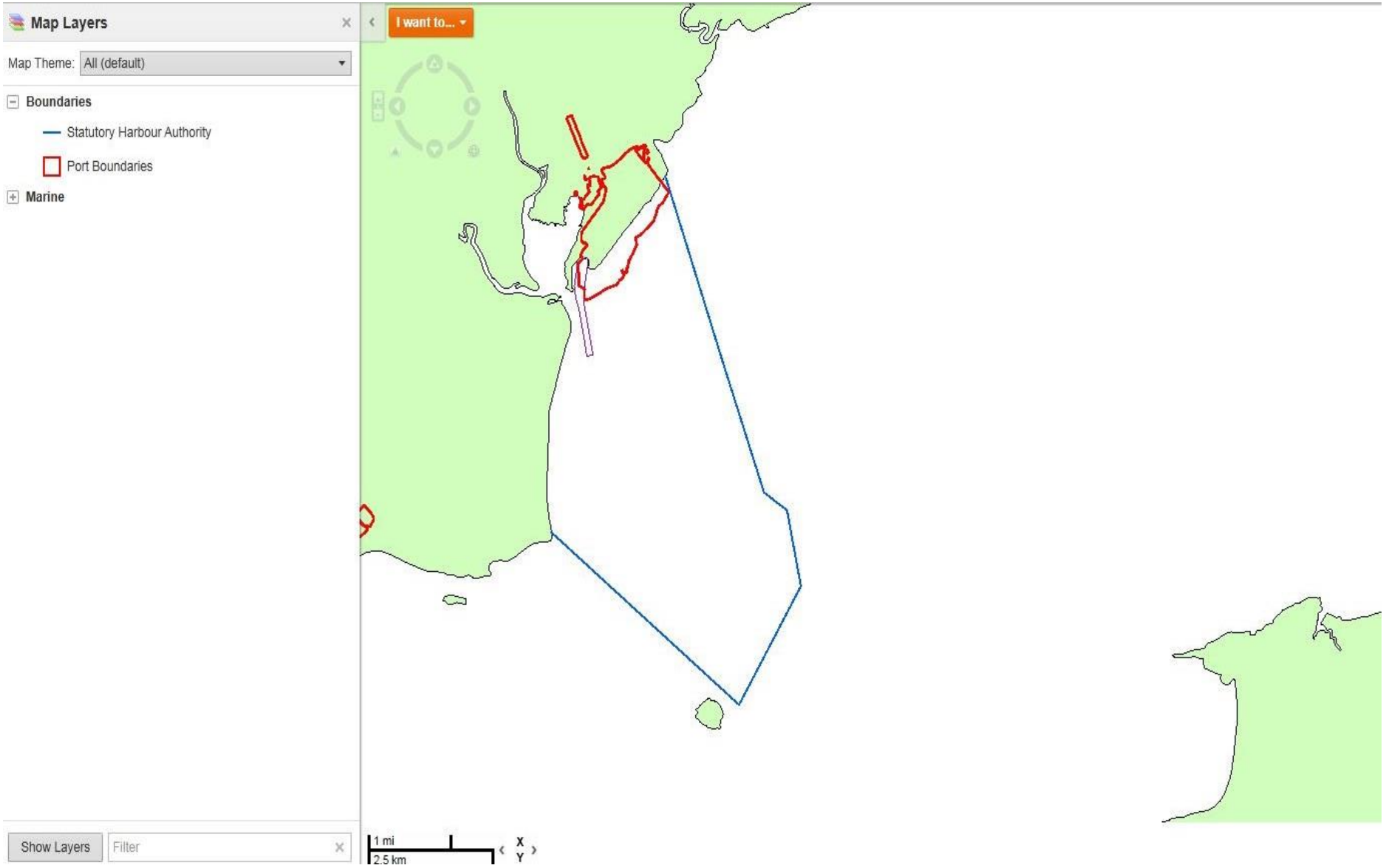
Port of Cardiff

Maps provided as follows: -

1st Port Boundary and Statutory Harbour Authority

2nd Port Boundary, SHA, ABP Dredge areas and disposal sites, Designates shellfish waters, Local Nature Reserves, RSPB Reserves, Sites of Special Scientific Interest, Special Areas of Conservation and Special Protection Areas, RAMSAR.

3rd Close up of Area of Jurisdiction (Port Boundary)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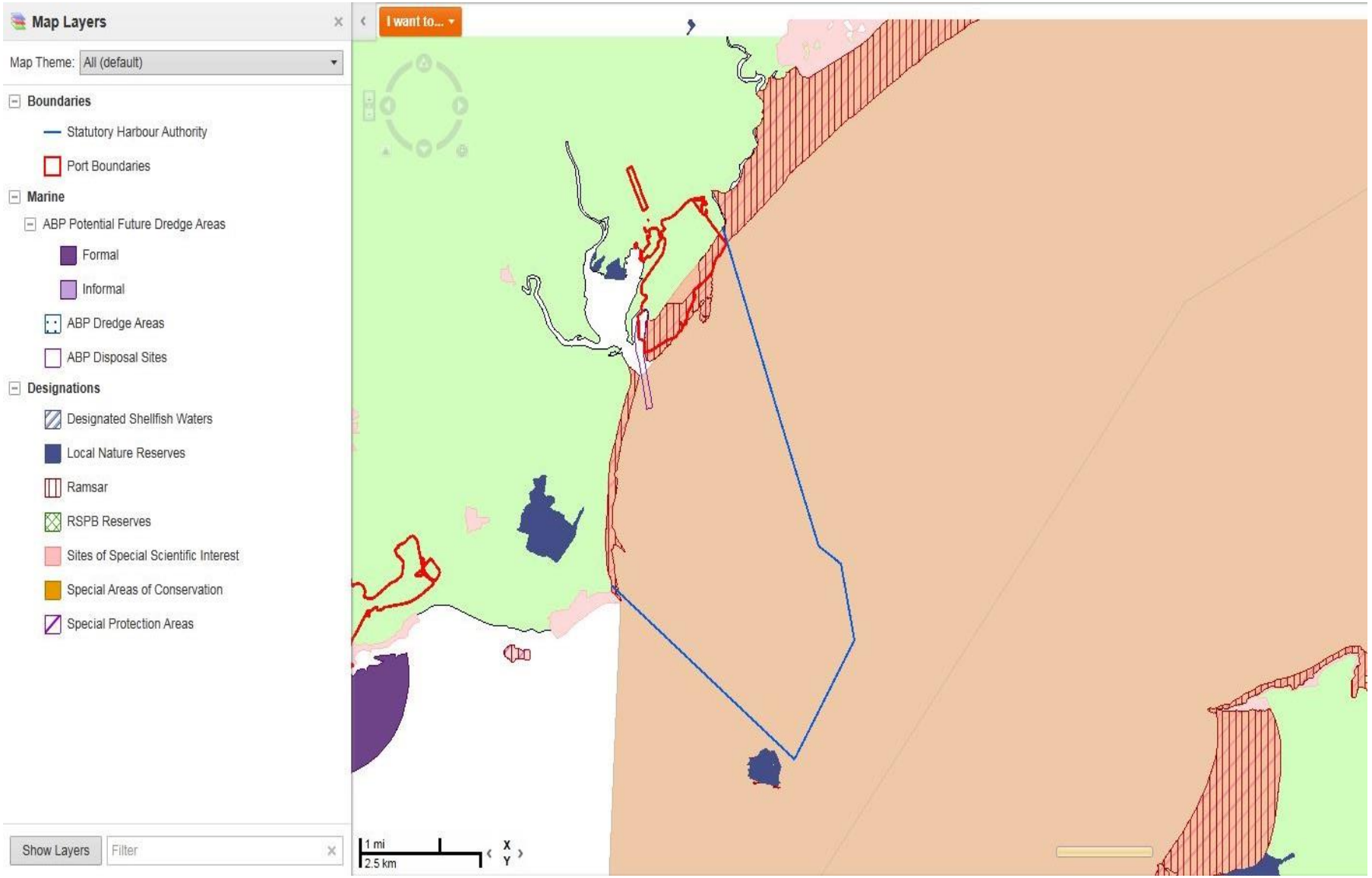
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Designations
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Local Nature Reserves
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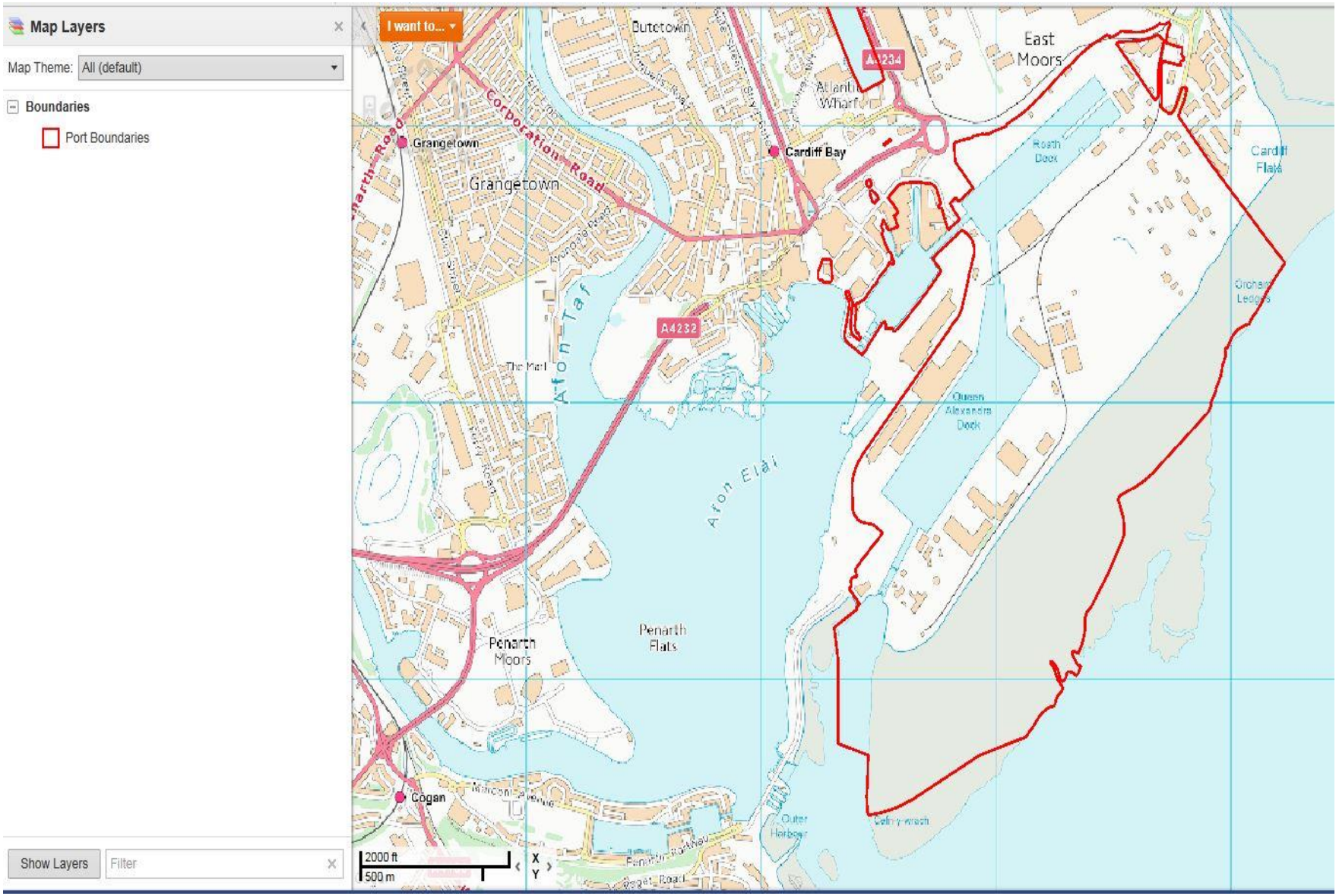
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Atlantic Wharf
Grangetown
Cardiff Bay
Roath Dock
Cardiff Flats
Corporation Road
Penarth Road
A4232
A4234
Afon Taf
Afon Elai
The Marl
Queen Alexandra Dock
Penarth Moors
Penarth Flats
Cogan
Outer Harbour
Cefn-y-wrach
2000 ft
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Y

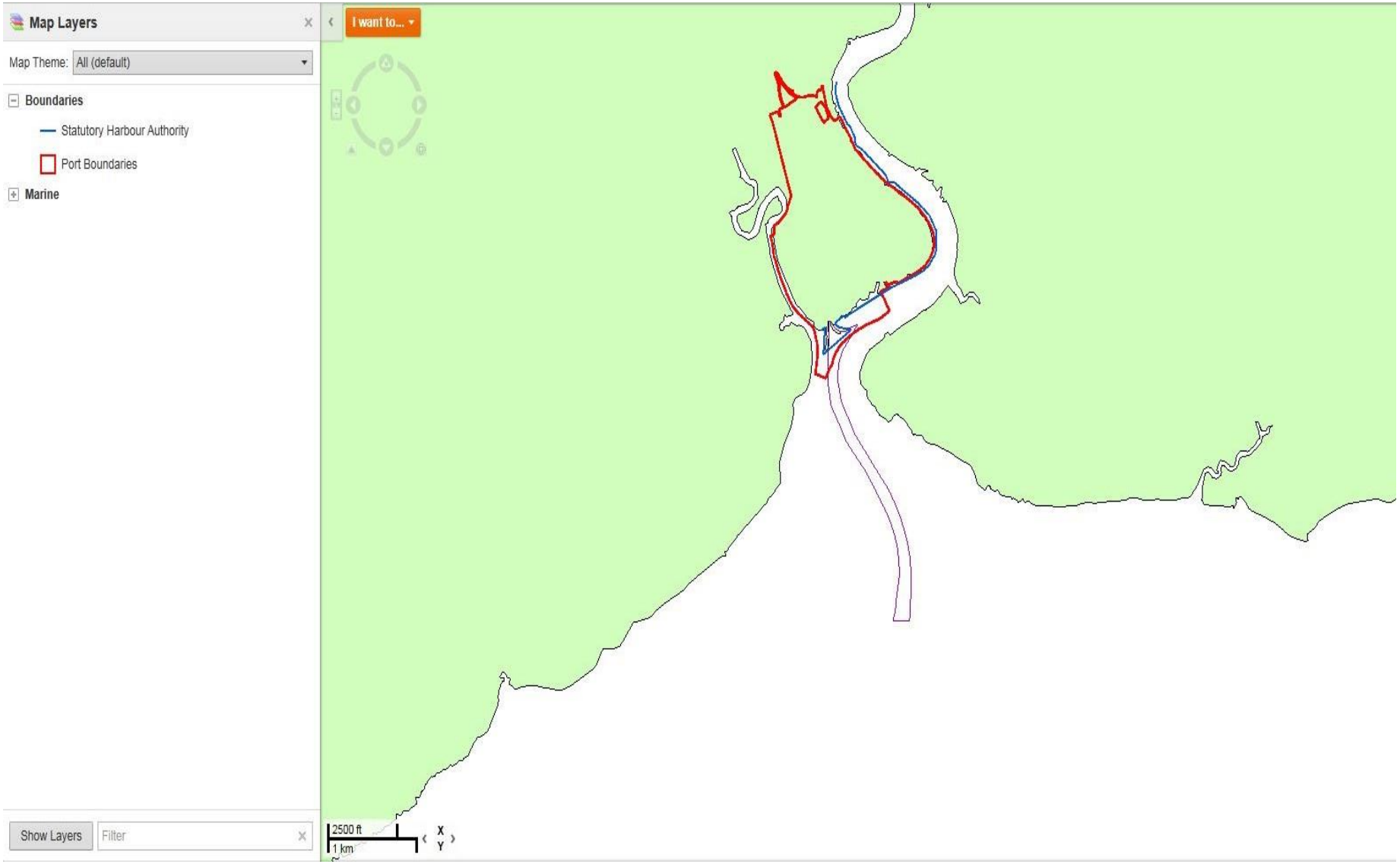
Port of Newport

Maps provided as follows: -

1st Port Boundary and Statutory Harbour Authority

2nd Port Boundary, SHA, ABP Dredge areas and disposal sites, Designates shellfish waters, Local Nature Reserves, RSPB Reserves, Sites of Special Scientific Interest, Special Areas of Conservation and Special Protection Areas, RAMSAR.

3rd Close up of Area of Jurisdiction (Port Boundary)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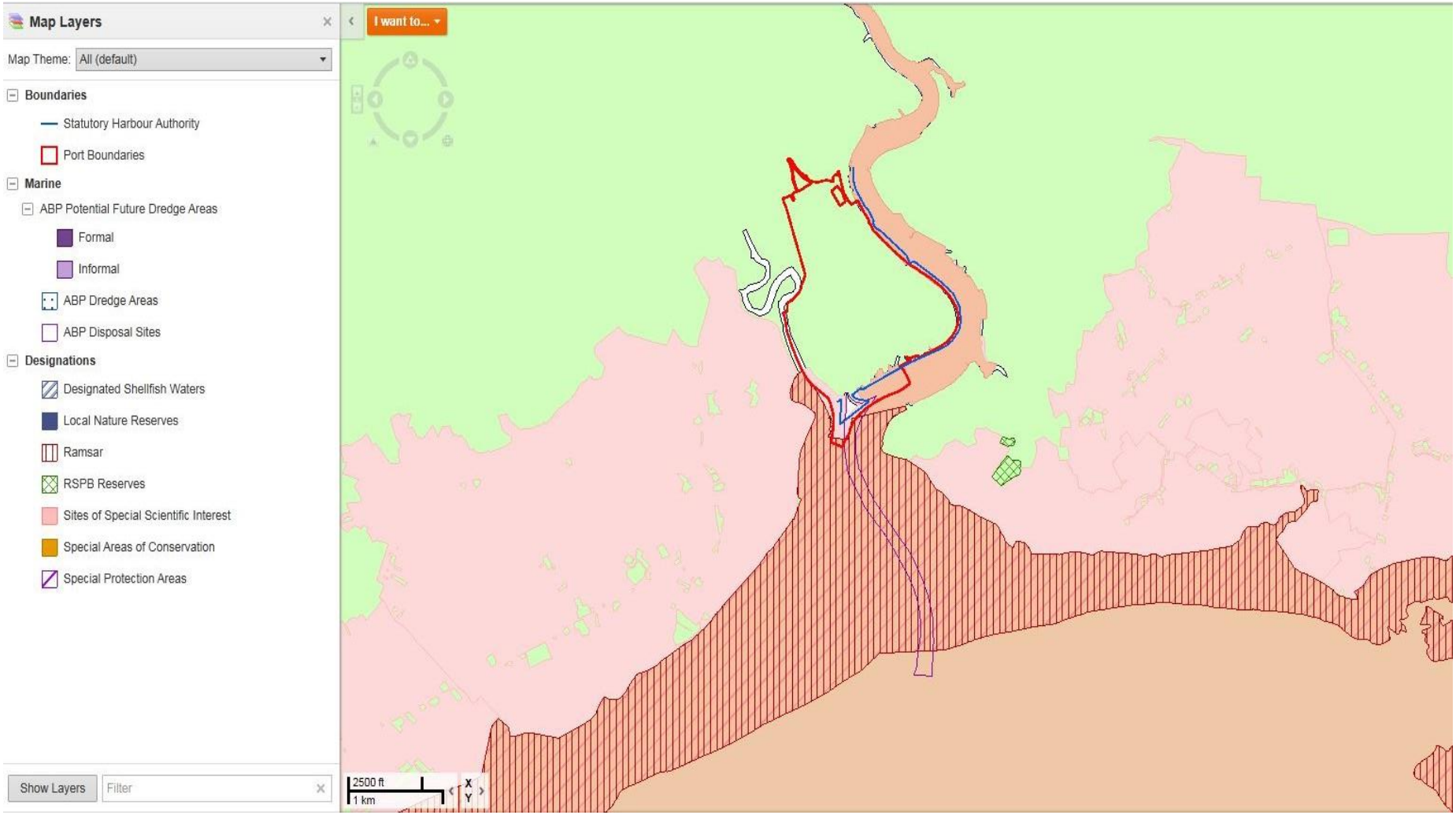
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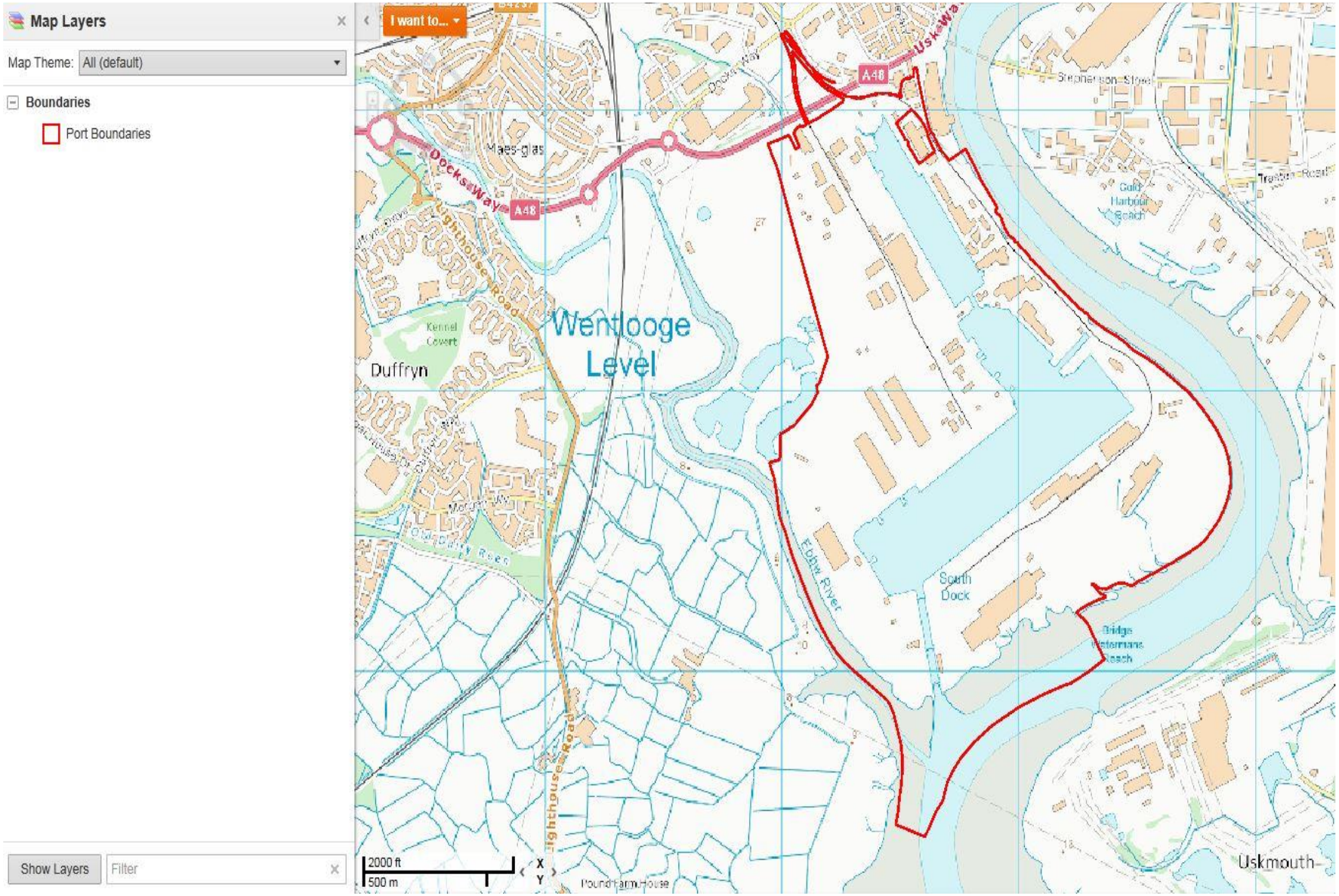
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Docksway
Lighthouse Road
Maes-glas
Wentlooge Level
Duffryn
Kennel Covert
Ebbw River
South Dock
Uskmouth
Pound Farm House
2000 ft
500 m

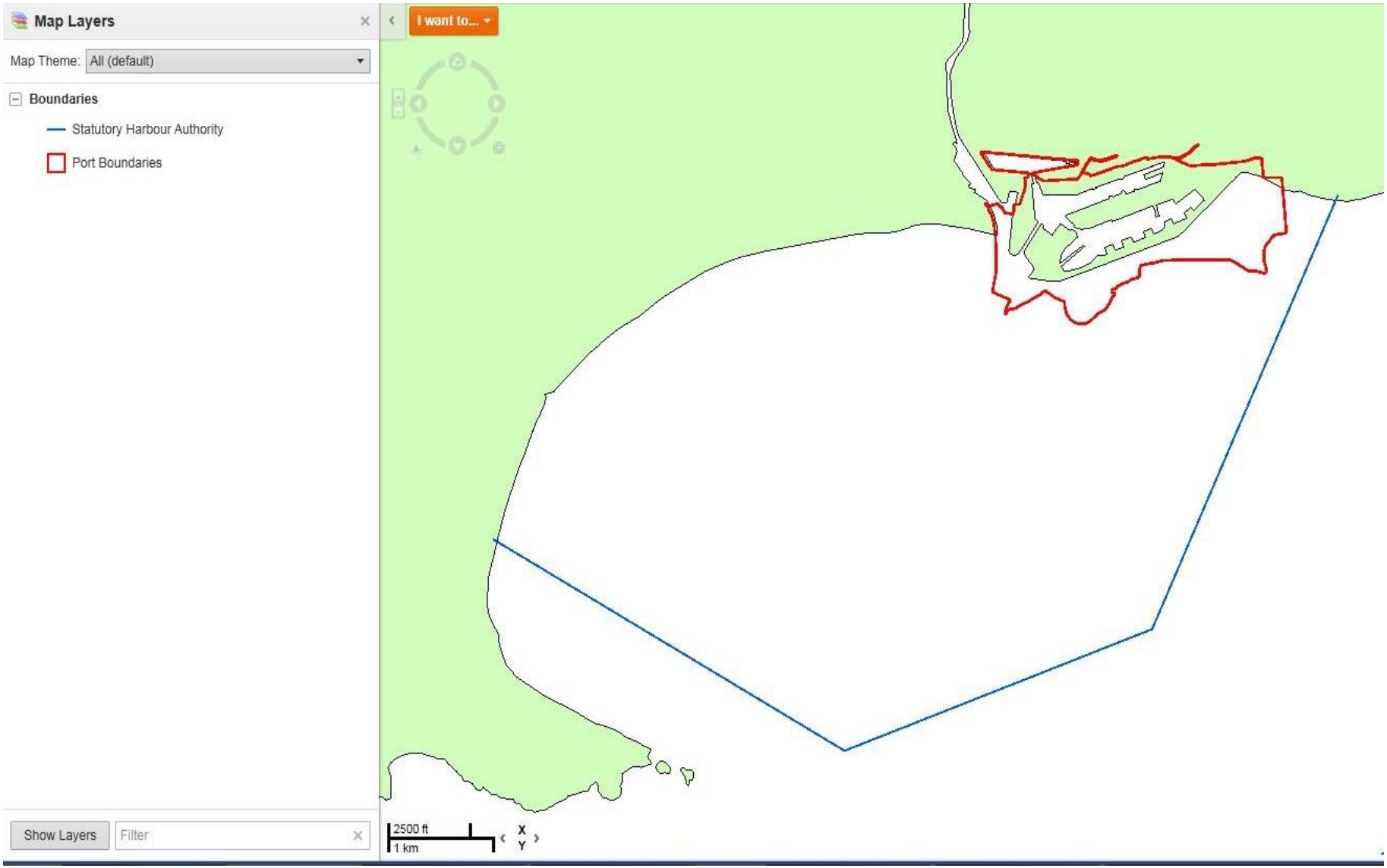
Port of Swansea

Maps provided as follows: -

1st Port Boundary and Statutory Harbour Authority

2nd Port Boundary, SHA, ABP Dredge areas and disposal sites, Designates shellfish waters, Local Nature Reserves, RSPB Reserves, Sites of Special Scientific Interest, Special Areas of Conservation and Special Protection Areas, RAMSAR.

. 3rd Close up of Area of Jurisdiction (Port Boundary)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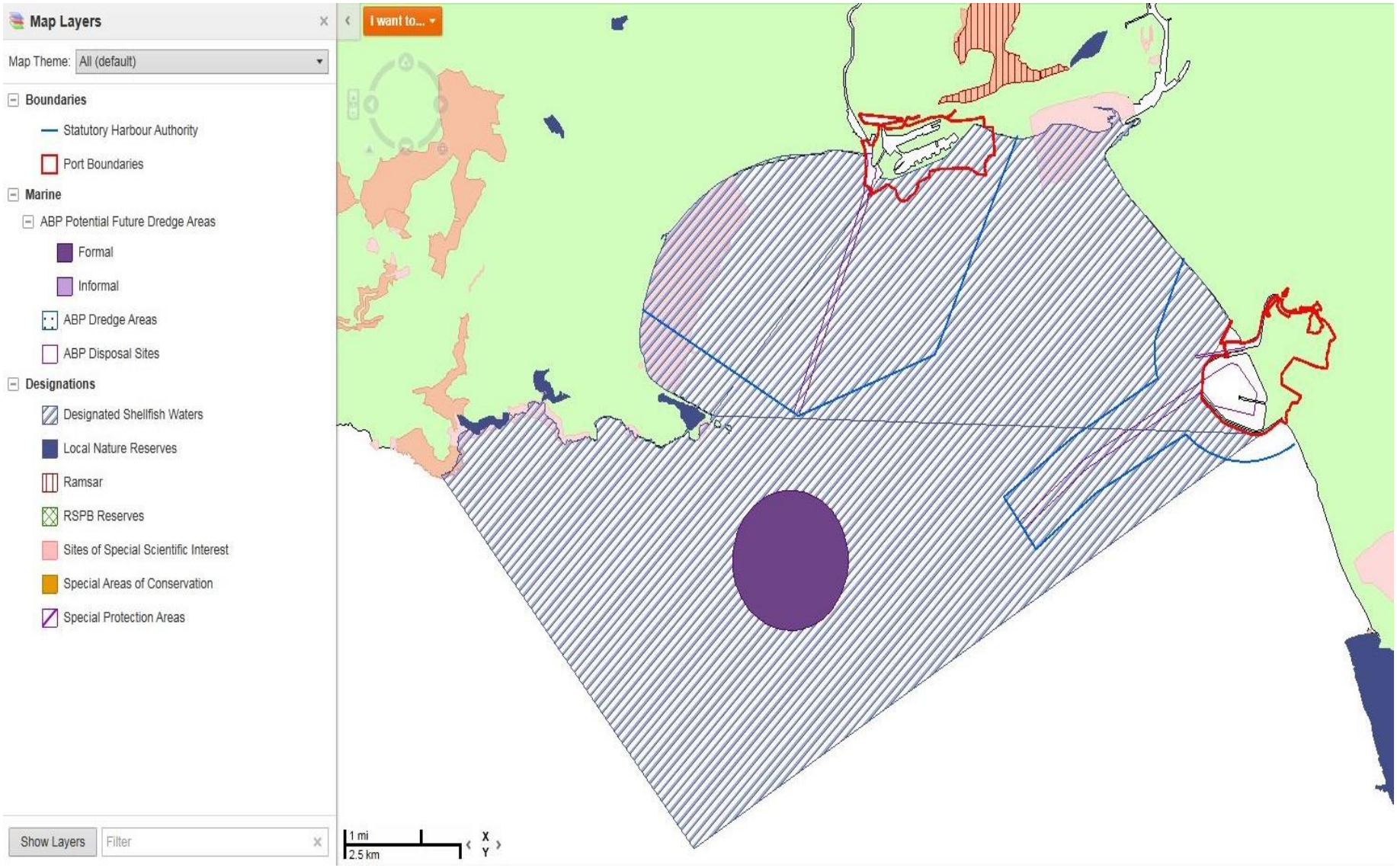
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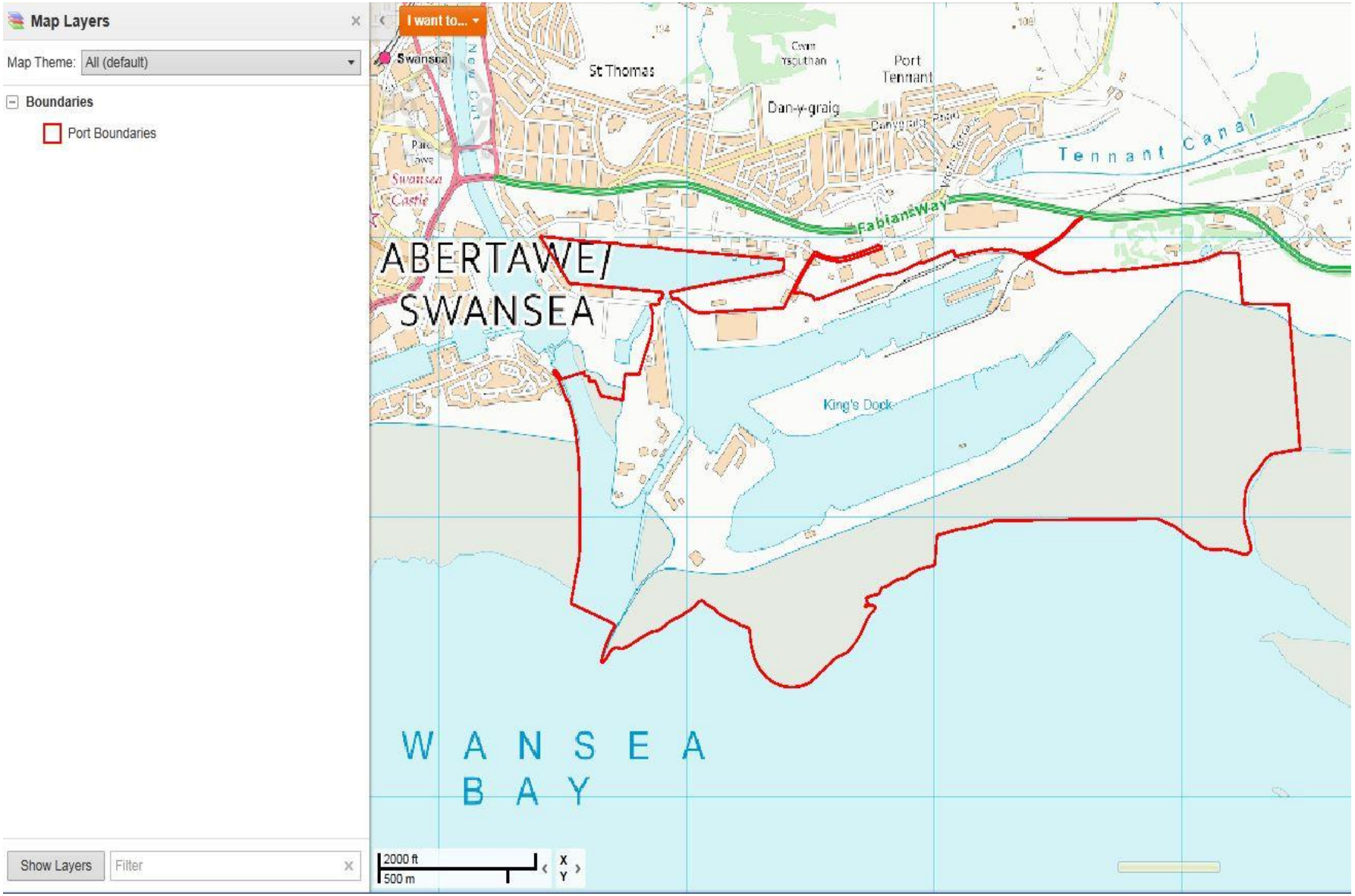
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Swansea Castle
Fabian Way
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SWANSEA
King's Dock
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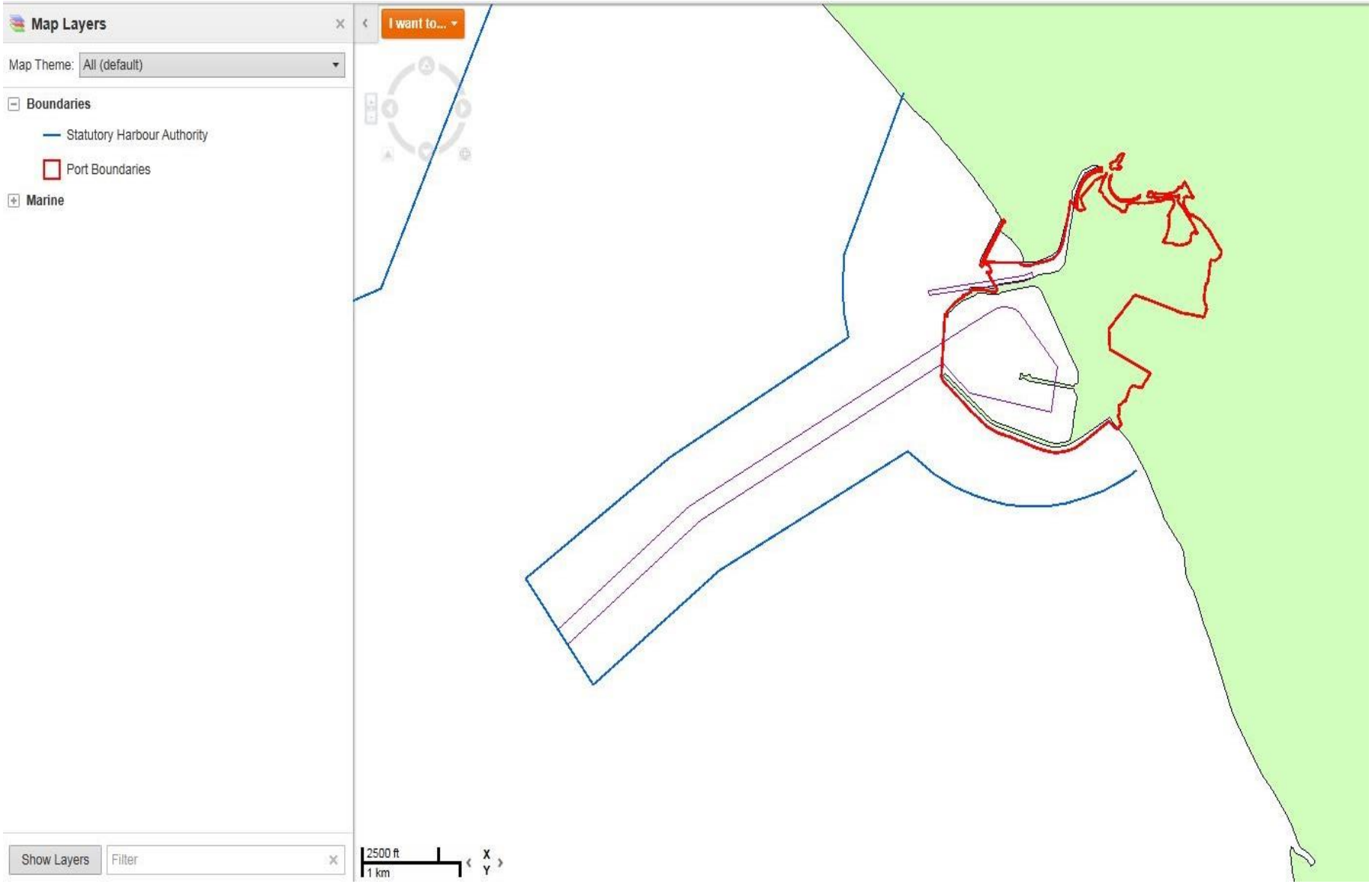
Port of Port Talbot

Maps provided as follows: -

1st Port Boundary and Statutory Harbour Authority

2nd Port Boundary, SHA, ABP Dredge areas and disposal sites, Designates shellfish waters, Local Nature Reserves, RSPB Reserves, Sites of Special Scientific Interest, Special Areas of Conservation and Special Protection Areas, RAMSAR.

3rd Close up of Area of Jurisdiction (Port Boundary)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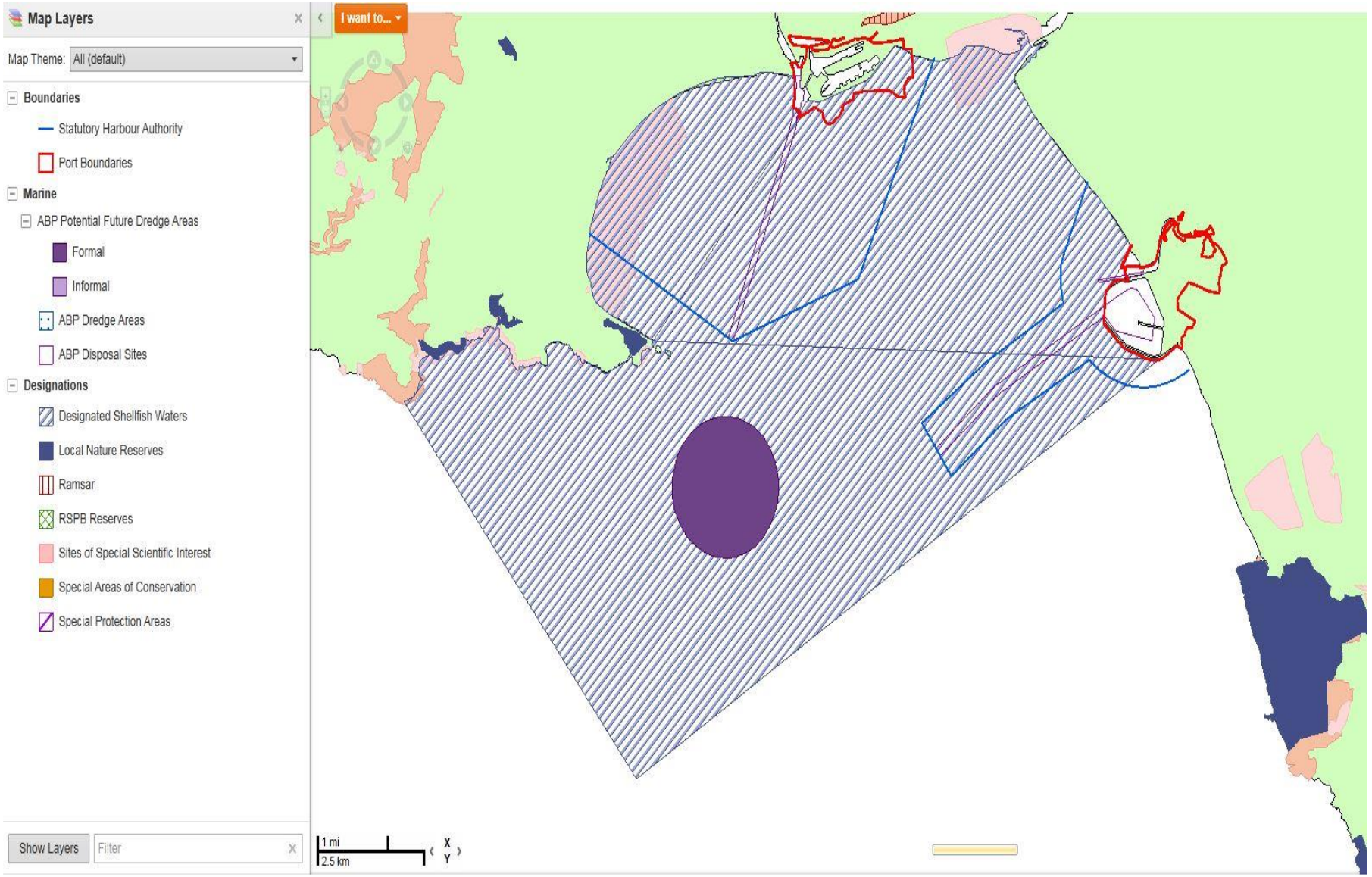
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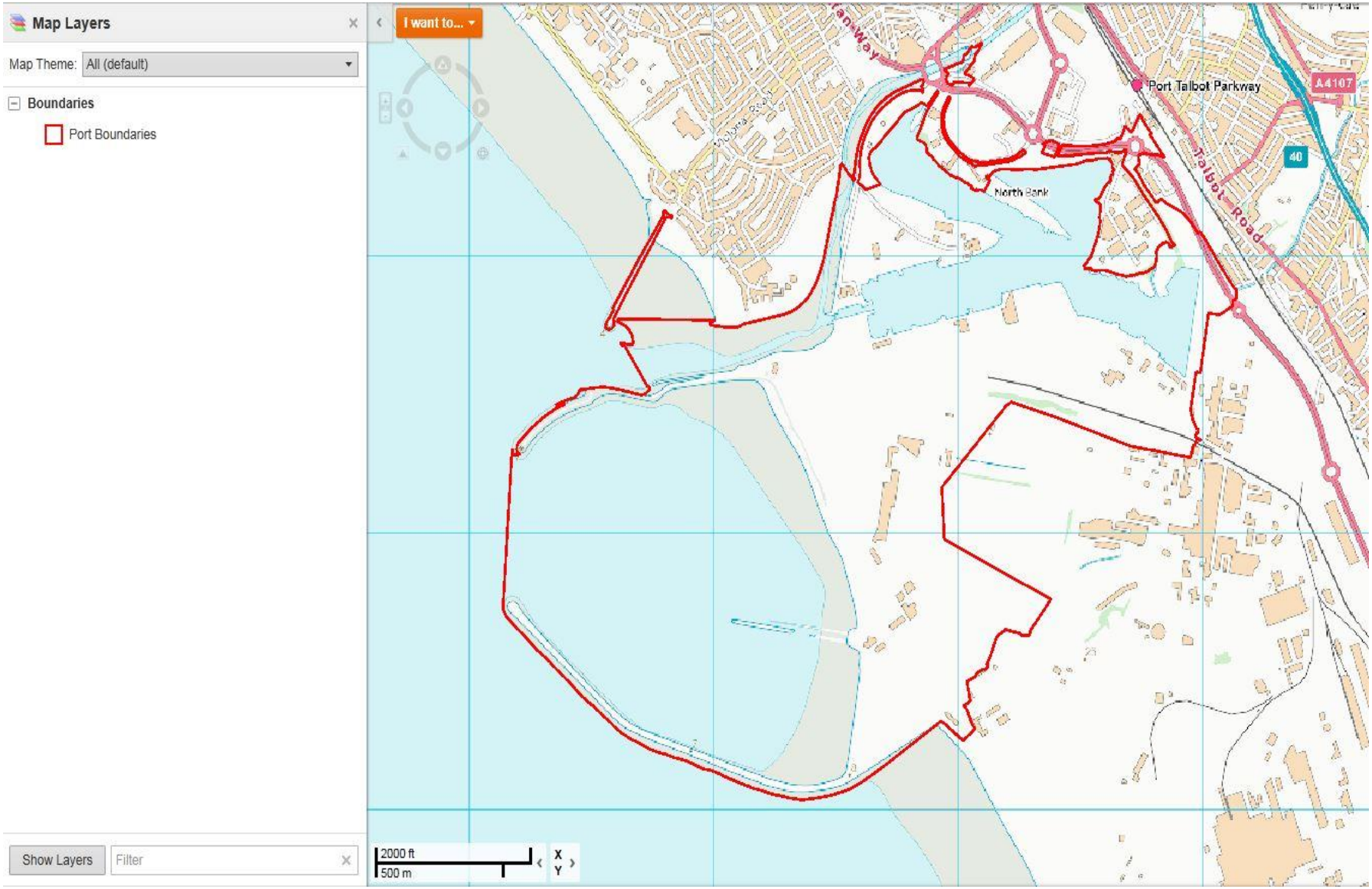
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North Bank
Talbot Road
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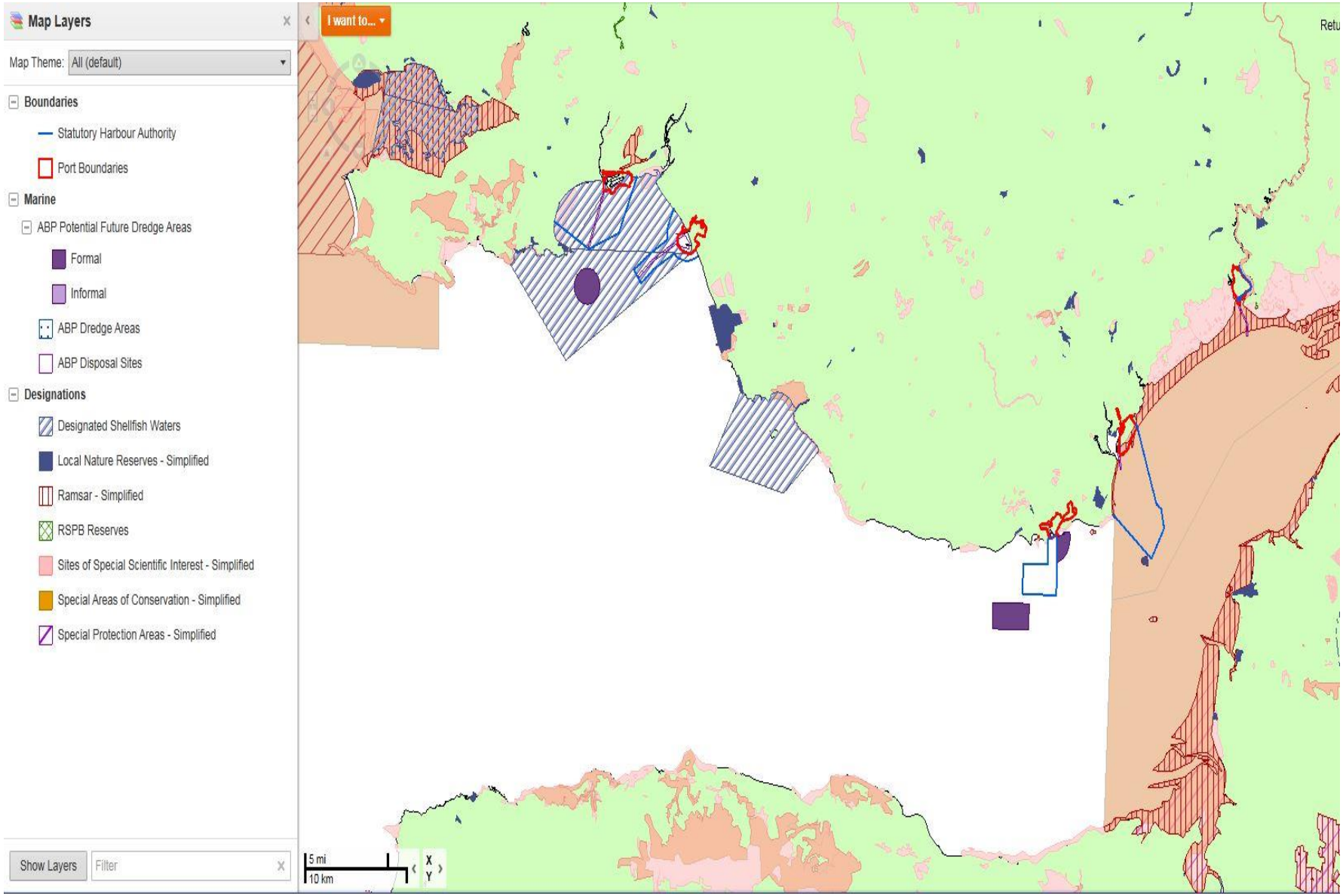
South Wales

Maps provided as follows –

1st Port Boundary's, SHA, ABP Dredge areas and disposal sites, Designates shellfish waters, Local Nature Reserves, RSPB Reserves, Sites of Special Scientific Interest, Special Areas of Conservation and Special Protection Areas, RAMSAR.


Map Layers
Map Theme: All (default)
Boundaries
Statutory Harbour Authority
Port Boundaries
Marine
ABP Potential Future Dredge Areas
Formal
Informal
ABP Dredge Areas
ABP Disposal Sites
Designations
Designated Shellfish Waters
Local Nature Reserves - Simplified
Ramsar - Simplified
RSPB Reserves
Sites of Special Scientific Interest - Simplified
Special Areas of Conservation - Simplified
Special Protection Areas - Simplified
Show Layers
Filter
I want to...
5 mi
10 km
X
Y

12.4 Port approaches

The approaches to the Ports of Port Talbot, Swansea, Barry, Cardiff, Newport and the River Usk are surrounded by environmentally sensitive areas.

Sensitivity Maps have been included for each port approach, detailing the following Sites

- Shellfish Waters
- Nature Reserves
- RSPB Reserves
- Sites of Special Scientific Interest
- Special Areas of Conservation
- Special Protection Areas
- RAMSAR

It is considered that any attempt at deflection booming would only be deflecting the problem to another sensitive site.

Swansea and Port Talbot approaches

The ports of Swansea and Port Talbot do not service any liquid bulk hydrocarbon trade. Risk assessments show that any expected spills would be relatively small .

The following are noteworthy:

- The coastlines are exposed to Atlantic swells and prevailing Westerly and South Westerly winds and are considered high energy.
- Tidal streams of 3+ knots are experienced in the vicinity
- Tidal range is in excess of 8m (spring) and 5m (neap)

Any spill in the approaches to the ports covered in the plan would require the Services of the contracted tier 2 responder, The requirement for tier 2 response is 4 hrs, during this response time it is considered that oil from the type of spill reasonably expected would have dispersed over a large area.

For the above reasons it is not considered practical to identify predefined booming sites and plan.

Barry Cardiff, Newport and River Usk approaches.

The port of Barry, and River Usk do not service any liquid bulk hydrocarbon trade. Risk assessments show that any expected spills would be relatively small. However Cardiff has 2 liquid hydrocarbon bulk terminals and there is a potential for a significant spill in the approaches to Cardiff. Puma Bitumen operate in Newport from middle quay, with the max capacity of their barges holding 5300 m3. They operate a Tier 1 Oil Spill Response on site. Their inventory can be found in section 13.8.

The following are noteworthy:

- The Upper Bristol Channel / Severn Estuary has the 2nd largest tidal range in the world. Tidal range at Newport is in excess of (12m springs and 7m neaps)
- The area experiences tidal streams in excess of 5 kts (springs) (3kt neaps)
- The estuary from Barry and Cardiff is a high energy environment.
- The coastline between Cardiff and Barry consists mainly of low cliffs and rocky foreshore, and from Newport to cardiff, mainly salt marsh and mud flats.

Any spill in the approaches to the ports covered in the plan would require the Services of the contracted tier 2 responder, The requirement for tier 2 response is 4 hrs, during this response time it is considered that oil from the type of spill reasonably expected would have dispersed over a large area.

For the above reasons it is not considered practical to identify predefined booming sites

Summary

There are large areas in the vicinity of Newport which are highly sensitive for nature conservation and these areas are mapped in Section 12.3 and listed below. The implications for managing any oil spill vary considerably from site to site, and treatment options are set out in sections 12.5 to 12.7.

International Nature Conservation Designations

- Severn Estuary Special Protection Area (SPA)
- Severn Estuary Wetland of International Importance (Ramsar site)

Note: in the vicinity of Newport, the SPA and Ramsar boundary is the same as the Severn Estuary SSSI. The site has been classified / notified with a mobile lower boundary, so that all areas above Mean Low Water and in local planning authority jurisdiction are designated.

- The Severn Estuary (SAC).
- River Usk (SAC).

National Nature Conservation Designations

- Severn Estuary Site of Special Scientific Interest (SSSI)
- River Usk (Lower Usk) (SSSI)
- Gwent Levels – St Brides (SSSI)
- Gwent Levels – Nash and Goldcliff (SSSI)
- Gwent Levels – Whitson (SSSI)
- Newport Wetlands (SSSI)

Severn Estuary SPA / Ramsar / SSSI / SAC

Note: boundary is mainly along the top of the sea wall in the vicinity of Newport

Important Features

The overall geomorphology and dynamics of the estuary are part of the interest, which also includes saltmarsh, mudflats, shingle, rocky shores, subtidal habitats, over-wintering bird populations and their supporting habitats and fish species.

12.5 Coastal Habitat Types

Mudflats and shingle with areas of rocky shore and saltmarsh.

Treatment

Physical cleaning (eg hot water and sorbents) of rocks, shingle and man-made structures may be possible in some locations need to be agreed with NRW, but oil on saltmarsh and mudflats should be left to disperse and degrade naturally. No dispersants should be used. If an Environmental group is convened, it will be the EG that advises on clean up strategies.

Dispersants

(Please see section 5.3 for use of dispersants)

12.6 River Usk

Important Features

The site is of international importance for its population of migratory fish and also otter. Also important are river habitats with saltmarsh, mudflats and other bankside habitats, and rare plant and invertebrate species.

Coastal Habitat Types

Estuarine mudflats, saltmarsh and reed beds.

Treatment

Physical cleaning (eg hot water and sorbents) of rocks, shingle and man-made structures may be possible in some locations need to be agreed with NRW, but oil on saltmarsh, mudflats and reed beds should be left to disperse and degrade naturally. No dispersants should be used. If an Environmental group is convened, it will be the EG that advises on clean up strategies.

12.7 Gwent Levels

Note: these areas are behind the sea defences but need to be included here because access to the coastline may be sought across them. Their seaward boundary is mainly along the top of the sea wall in the vicinity of Newport.

Important Features

Freshwater and brackish ditch habitats with rare plant and invertebrate species.

Coastal Habitat Types

None.

Treatment

All vehicular access routes to the coastline must be approved by NRW. Any temporary oil storage will also need NRW approval and, where temporary storage is agreed, extreme caution will be required to prevent pollution of ditch habitats.

Roles and Responsibilities

13.1 Harbour Authority

The Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998 came into force on 15 May 1998 (SI 1998 No. 1056).

3. - (1) of the Regulations states " In their application to harbours and oil handling facilities - these Regulations apply to:

(a) Any harbour for which there is a statutory harbour authority having an annual turnover, as defined in the schedule in the regulations, of more than £1 million.

4. - (1) states " Every -

(a) Harbour authority of a harbour to which these regulations apply:

- Shall have an oil pollution emergency plan in accordance with the regulations,
- There may be joint plans between the harbour authority and the operators of oil handling facilities within an area.
- A Harbour Authority must submit an oil pollution emergency plan for its harbour(s), within 15 months of the regulation coming into force, to the Maritime & Coastguard agency for approval.
- In preparing an oil pollution emergency plan, a harbour authority or shall take into account any guidance issued by the Maritime & Coastguard Agency.
- The Statutory Harbour Authority has a responsibility under Section 133 of the Merchant Shipping Act 1995 for bringing prosecutions for the offences of discharge of oil, or a mixture containing oil, into the waters of the harbour.
- Associated British Ports South Wales is a Competent Authority in respect of the Severn Estuary SPA and possible SAC under the Conservation (Natural Habitats, &c) Regulations 1994.

13.2 Local Authorities

The ABP South Wales Ports lie within areas administered by the various local authorities along that stretch of the south Wales coastline. All the relevant Authorities have accepted a non-statutory responsibility for dealing with oil on the shoreline and beaches down to the low water line, within the limit of their resources.

The Emergency Planning Officer for the relevant Authority manages joint oil spill contingency plans, Hazardous Materials and Chemicals Washed Ashore Plans, covering the coastal areas of all the Authorities.

13.3 Maritime and Coastguard Agency

The Maritime & Coastguard Agency, an executive agency of the Department of Transport, discharges DfT's responsibility for both the co-ordination of civil maritime Search and Rescue and counter-pollution operations in UK waters.

In the event of an oil spill incident that calls for a Tier 3 response, the National Contingency Plan (NCP) may be implemented. In this event, and after the formal transfer of responsibility, the Maritime & Coastguard Agency will take control of at-sea counter pollution measures from their Coastguard Operations Centre (CGOC); the Port's oil spill response resources and facilities will be made available to MCA.

13.5 Natural Resources Wales

Natural Resources Wales is a Welsh Government Sponsored body incorporating the duties and functions previously exercised by the Countryside Council for Wales, Forestry Commission Wales and Environment Agency Wales together with some functions of Welsh Government. Natural Resources Wales aims to ensure that the natural resources of Wales are sustainable maintained, enhanced and used, now and in the future.

Natural Resources Wales advises Welsh Government on countryside and wildlife matters, and has statutory responsibility for wildlife conservation on land and at sea; for certain landscape conservation matters, and for promoting enjoyment of the countryside. During a maritime incident part of NRW's role would be to advise Welsh Government on the conservation and wildlife implications of maritime incidents in Welsh territorial waters.

Additionally during an incident NRW will provide specialist environmental advice and monitor the effects of, and the response to an incident, to minimise the impact on the environment. If an EG is convened it will provide advice through them. NRW will also work with the health authorities to provide them with advice on environmental impacts, which will assist in their formulation of health advice.

Natural Resources Wales is also the competent Authority in Wales for waste disposal.

13.6 Oil Spill Management Team

Oil Spill Management Team (OMT) is the nomenclature used to describe the command and control team established for a spill incident within the docks complex or harbour waters, with representatives of organisations attending in accordance with the category of oil spill response established, as described in section 2.2.

The OMT will convene at the designated Marine Response Centre under the chairmanship of the Harbour Master, and will consist of a Management Team and a Support Team as noted in section 2.2.

13.7 Environment Group

Following the formation of an TCG/ResCG an Environment Group may be required to provide advice to any response unit set up to deal with the incident. The National Contingency Plan for maritime incidents identifies that any unit set up to deal with a maritime incident must contain a representative of the Environment Group, referred to as the Environment Liaison Officer. Currently there are two active Environment Groups within the ABP – South Wales Area of operation;

(i) Bristol Channel Standing Environment Group – Cover the Barry, Cardiff, Newport and River Usk Operational port areas.
(ii) West Wales Environment Group – cover the Port Talbot and Swansea operational port areas.

Each Environment Group is primarily is made up of representatives from the following organisations, however members of other organisations may be involved depending on the nature of the incident;

- Natural Resources Wales
- Public Health Wales
- Public Health England
- Public Health England CRCE

To ensure continuity, an Environment Group will be set up in incidents declared Tier 2 or 3 where it is likely that support will be required. It is also likely that the West Wales and Bristol Channel Group will also want to be informed and involved in any Tier 1 Pollution that will impact on shoreline or an environmentally sensitive area, in case it escalates into a higher tier. The Environment Group will be purely advisory but response units should take all reasonable steps to consult on any proposed action.

13.8 ABP Oil Spill Response Equipment

ABP have 2 Oil Spill Response Trailers, usually situated in Cardiff and ready to mobilise when required.

Trailer 1	Quantity
80ltr black bin	1

Chemical Spill Bin 250ltr	1
Goggles	3
Glasses	3
Balls of twine	8
Polythene sheets	3
Polythene bags	12
Overalls XXXL	2
Overalls L	4
Spill Pads	3
Pink Socks 1m x 75mm	10
White Socks 1m x 75mm	10
Rakes	2
Brooms	2
Shovels	2
Spill response kits in green bags	2
Darcy Mini Boom blue	8
Darcy Maxi Booms 3m x 180mm	2
Fence boom reusable 60m x 250mm	1

Trailer 2	Quantity
80ltr black bin	2
Safety goggles	3
Safety glasses	3
Balls of twine	6
Coil of rope 10m	1
Stanley Kife	0
Guantlets	6
Overalls XXXL	2
Overalls L	4
Polythene sheets	3
Polythene bags	12
Rakes	2
Brooms	2
Shovels	2
Spill response kits in green bags	2
Darcy Mini Boom blue	2
Darcy Maxi Booms	2
Oil Absorbent Pads	7
Yellow re-useable fence boom 4m x 500mm	11

Cardiff

In addition to the trailers, Cardiff has a Bubble Barrier in the Roath Dock and 90 metres of Triolboom GP 750.

Vessels in Dock:

2 x Tugs & UKD Survey Boat*

Newport

Spill Kit Bin - Lockside	
Absorbent Pads	75
Absorbent Socks 1.2m	9
Absorbent Pillows 3.5ltr	8
Disposal bags and ties	10

Vessels in Dock:
Boatmens launch & 2 Tugs*

Barry

Spill Kit Bin - Lockside	
Absorbent Pads	75
Absorbent Socks 1.2m	9
Absorbent Pillows 3.5ltr	8
Disposal bags and ties	10

Vessels in Dock:
Navigator moored in Basin

Swansea

Number 1 Pumphouse	
Absorbent Boom 3mtr	3
Absorbent Boon 4mtr	7
Mats	1
Disposal bags and ties	10

Vessels in Dock:
Pilot Cutters Beaufort & Robina Fisk, 3 Tugs & Boatmens Launch

Port Talbot - South Inner Gatehouse

South Inner Gatehouse	
Mats	2
Absorbent Socks 1.2m	11
Absorbent Pillows 3.5ltr	7
Disposal bags	5

Vessels in Dock:
Boatmens Launch x 2

*Depending on current operations they be located elsewhere regionally.

Prax - Cardiff

Oil	Jetty	Oil Gantries	Boiler House
Pads 40 cm x 52 cm	50	50	200
Boom 7.5cm x 125cm		10	20
Boom 7.5cm x 300 cm	10		

Cushions 42cm x 37 cm	4	2	12
Large Roll Absorbent			1
Waste Bags/ Ties	10	10	0
Zoab Tubs	2	1	5
4000 Tonnes Slop tanks			

Chemical	Jetty	Caustic Gantries	Boiler House
Pads 40 cm x 52 cm	50	50	50
Boom 7.5cm x 125cm		10	20
Boom 7.5cm x 300 cm	10		
Cushions 42cm x 37 cm	4	2	12
Large Roll Absorbent			1
Waste Bags/ Tiies	10	10	0
Zoab Tubs	2	2	5

Valero – Cardiff

Valero	
Absorbent Granules (Bags)	4
Spill Booms Disposable (Bags)	4
Sand Bags	20
Nylon Rope (Feet)	50

Puma Bitumen - Newport

Puma	
Absorbent Booms	24
Absorbent Socks	28
Absorbent Pads	2 boxes
Absorbent Granules/Powder	10 Bags/5 Bags
Plug and Seal Putty	2 Pots
Drain Covers	2 Covers
Hazardous Waste Bags	4 Boxes
Additional Equipment	20 Pillows
Spill Kits	2 on Quayside
Spill Kits	5 on Barges

Adler and Allan (Tier 2 Contractor)

Adler and Allan provide a comprehensive response equipment inventory, including shoreline clean-up equipment capable of dealing with spillages of both heavy and light oils. A schedule of inventory and charges can be found in appendix 8.

0800 592 827

Note: the Tier 2 Contractor's anticipated response time from call-out is 2 hours.

Biffa
Biffa are registered contractors to ABP and provide waste operations across South Wales, they also have an inventory of Oil Spill Equipment that can be used if needed during an emergency response. This can be found in the Appendix 2.

They have a Hazard Response team on call 24/7 to provide advice and waste solutions including storage, tankers and Spill Response Equipment within a few hours. **08455 216 666**.

13.9 Product Information Sheets

This Section contains Material Safety Data Sheets for the following products that are handled within the docks complexes:

- Unleaded Petrol
- Gas Oil
- Derv
- Fuel oil

See Appendix 3

Appendix 1 – Suppliers of Waste Services

Wales environment Ltd - 02920 456456 (24 Hours a day)
3 Regents Court | Nettlefold Road | Cardiff | CF24 5JQ
e-mail: info@walesenviro.com
www.walesenviro.com

Vacuum Tanker Services

A range of vacuum tankers allow Wales Environmental Limited the capability of dealing with the removal of waste and deposits from all different of structures.

Most of our vacuum units have a high pressure water jetting facility often preventing the need for a separate unit.

We provide a fleet of vacuum tankers to manipulate commercial, municipal and industrial bulk liquid wastes, ranging from trade effluents, off spec and contaminated products, sewage and material from spills etc.

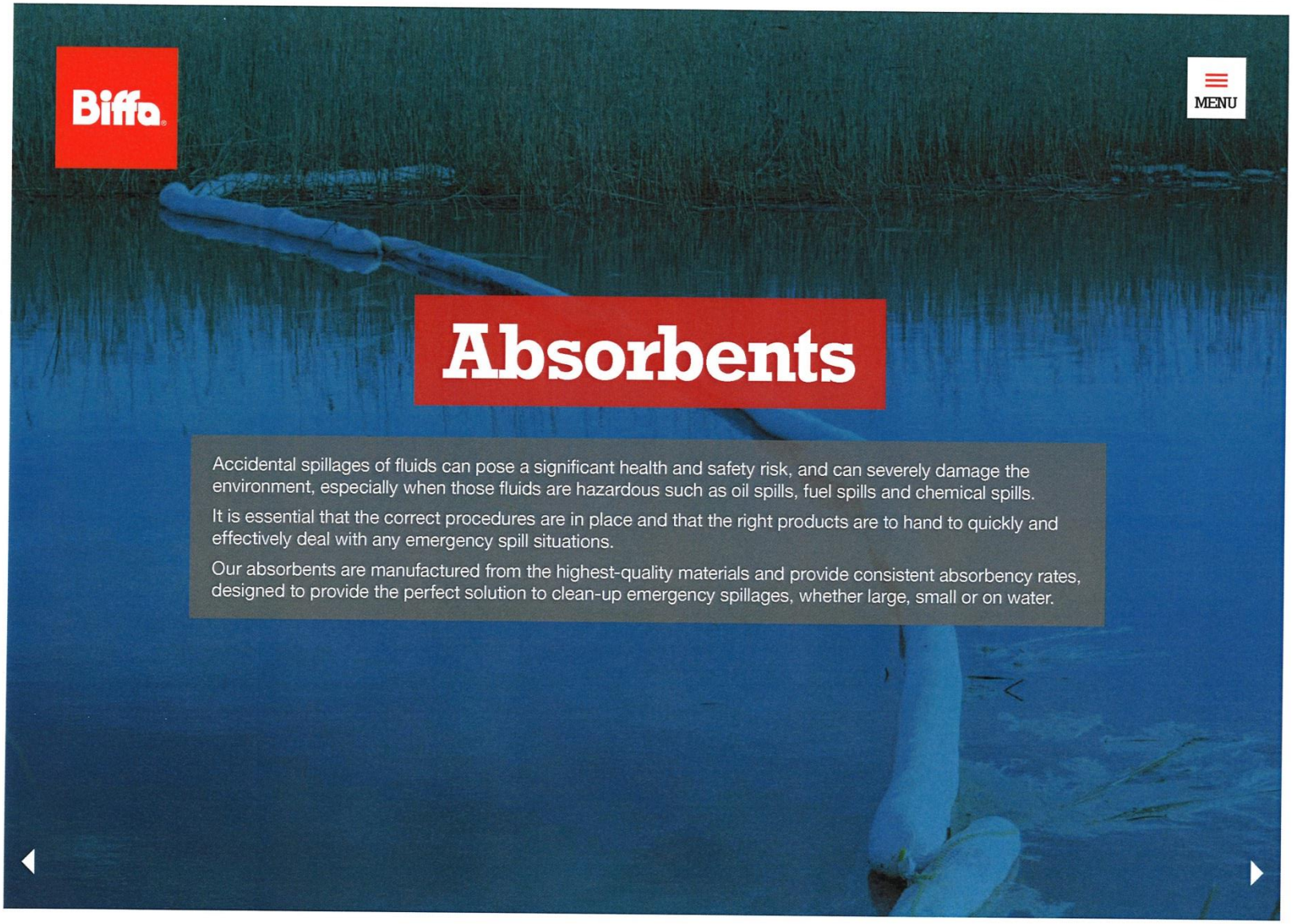
Tanker capacities range from 1500 gallons to 7000 gallons.

Welfare Unit Service

Wales Environmental Limited provide Welfare Unit Servicing of your own units no matter where they are in Wales, on a one off basis or on a weekly service schedule.

This service is also available for your own portable site toilets, cabins, septic tanks, cesspits and waste holding tanks. Wales environment Ltd - 02920 456456 (24 Hours a day)

Appendix 2 – Biffa Waste Spill Catalogue


Biffa
MENU
Absorbents
Accidental spillages of fluids can pose a significant health and safety risk, and can severely damage the environment, especially when those fluids are hazardous such as oil spills, fuel spills and chemical spills.
It is essential that the correct procedures are in place and that the right products are to hand to quickly and effectively deal with any emergency spill situations.
Our absorbents are manufactured from the highest-quality materials and provide consistent absorbency rates, designed to provide the perfect solution to clean-up emergency spillages, whether large, small or on water.

Booms

Our range of absorbent marine booms are designed to be effective on oil spills into water, such as streams, rivers and lakes, as well as spills in wet weather conditions due to their ability to float even when saturated, preventing further contamination and pollution into water courses. Effective barrier to oil and floating debris.

Marine Boom
Standard OB2015

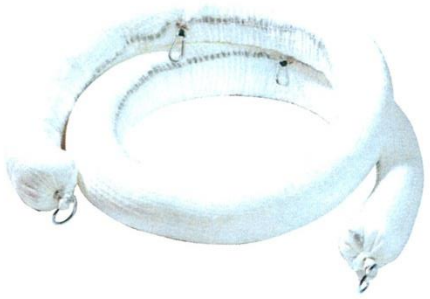
Size	Units
20cm x 1.5m	pack of 8

Marine Boom
Large OB2003

Size	Units
20cm x 3m	4

Marine Boom
Extra Large OB2030

Size	Units
Size 20cm x 5m	4



Cushions

With a large surface area, the cushion filler absorbs large amounts of liquid quickly. Can be used with drip pans or in conjunction with pads and socks to tackle larger spills. Available in grey, general maintenance cushions for use on spills of water- and oil-based fluids. White oil only cushions designed to repel water but contain any oils, fuels, solvents and most petrochemicals. Yellow chemical cushions for use on chemical spills, such as acids, caustics, oil coolants and solvents.

Maintenance Cushions
Large MCU1034

Size	Units
30cm x 35cm	20

Oil Only Cushions
Large OCU2030

Size	Units
30cm x 35cm	20

Chemical Cushions
Large CCU3020

Size	Units
30cm x 35cm	20

Granules

Our absorbent granule range is designed specifically for the fast and efficient absorption of liquids including general liquids spills, oil, fuel and most chemicals. We have three types of absorbent granules available for dealing with a wide variety of spills, ensuring you have the right product to hand should a spill occur, whether inside or outside.

Clay Granules
White Clay Granules LAB4002

Size	Units
14.5kg / 20L	1 bag

Clay Granules
Pallet Clay Granules LAB4002/2

Size	Units
14.5kg / 20L	70 bags

Plus Cellulose Granules
Non Marking
Non Dusting LAB4003

Size	Units
30L	1 bag

Highly absorbent cost effective granule that is manufactured from 100% recycled materials. The lightweight granules are ideally suited to indoor use and specifically formulated for the absorption of oil, fuel and water based spillages.

Safe Soak Sawdust LAB4001

Size	Units
8kg / 30L	1 bag

Safesoak Granules are a non-flammable granule that is created from treated sawdust. They are manufactured from 100% recycled materials and are an environmentally acceptable by-product which fulfils government guidelines on recycling.

Spill-Aid
High Quality
Powder Absorbent SA5LTR

Size	Units
5ltr	1 pouch

Spill-Aid
High Quality
Powder Absorbent SA30LTR

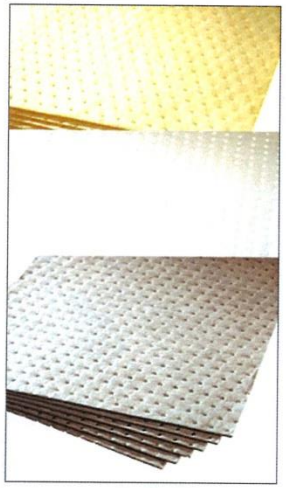
Size	Units
30ltr	1 bag

Spill-Aid is a fast-acting 'super absorbent', ideal for absorbing spills of liquids really quickly, leaving any floor or surface dry within seconds. Quick and easy to use, just pour Spill-Aid onto the spill and brush in. It can then be swept up leaving the surface perfectly dry with no residue.

Spill-Aid absorbs a wide range of liquids, such as:
Oil, petrol, diesel, pesticides, herbicides, solvents, acids, alkalies, human and animal wastes, blood, vomit, paints including oil and water based, polymers, glycols including anti-freeze, vegetable oils, butter, all liquids and semi liquids.

Lightweight.
Use absolutely anywhere.
Reduce disposal costs.
Minimise the risk of slips, trips and falls.
Will absorb up to 20 times more liquid, by weight, than clay granules.
Much faster than the conventional mop and bucket.

Pads



Maintenance Pads
Supreme MP1001

Size	Units
40cm x 50cm	pack of 100

Maintenance Pads
Heavyweight MP1003

Size	Units
40cm x 50cm	pack of 100

Maintenance Pads
Mediumweight MP1004

Size	Units
40cm x 50cm	pack of 100

Maintenance Pads
Lightweight MP1005

Size	Units
40cm x 50cm	pack of 200

Oil Only Pads
Heavyweight OP2003

Size	Units
40cm x 50cm	pack of 100

Oil Only Pads
Lightweight OP2008

Size	Units
40cm x 50cm	pack of 200

Chemical Pads
Heavyweight CP3025

Size	Units
40cm x 50cm	pack of 100

Chemical Pads
Leightweight CP3026

Size	Units
40cm x 50cm	pack of 200

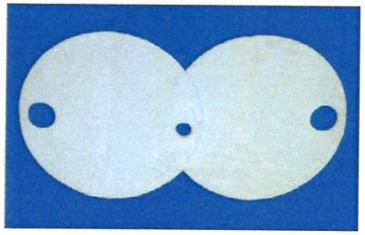
Chemical Pads
Mediumweight CP3027

Size	Units
38cm x 50cm	pack of 100

Convenient, fast absorbing, strong even when saturated and essential for a cleaner and safer working environment.

Ideal for use under leaking machinery and for wiping surfaces. General maintenance pads for absorbing non-aggressive fluids, such as water- and oil-based fluids.

Chemical absorbent pads for use on chemical spills of acids, caustics, oil coolants and solvents.
Oil only pads designed to repel water but contain or adsorb any oils, fuels, solvents and most petrochemicals.
Lightweight pads also available.



Oil Only Drum Toppers
Heavyweight ODRT2021

Size	Units
58cm Ø	20

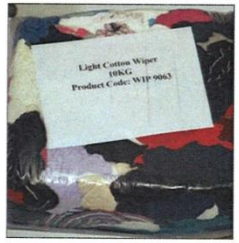
Chemical Drum Topper
Heavyweight CDRT3019

Size	Units
58cm Ø	20

Absorbent drum-top pads make the perfect solution to spills and drips when pouring oil into or out of an oil drum. The right size to fit a 205 litre drum, with pre-cut opening hole. Prevent the spread of oil leaks at the source

Rags

We offer a range of rags for cleaning and polishing purposes.



Mixed Engineering Rags
WIP9062

Size	Units
10kg	1

Mixed-coloured engineers rag provides a cost-effective solution for varying applications. Produced from different cotton-rich materials and cut into wiper-size pieces. These cotton rags are perfectly suitable for heavy industrial and commercial cleaning.

T-Shirt Rags
WIP9063

Size	Units
10kg	1

General purpose mixed-coloured rags are produced from cotton-rich material cut into wiper-size pieces. Ideal for garages and workshops where a cos-effective solution is required. Coloured cotton bags of rag are perfectly suitable for heavy industrial and commercial cleaning.

Premium White Cotton Rags (Boxed)
WIP9061

Size	Units
10kg	1

Get more of what you're paying for with Rags In Bags! Strict selection criteria and lightweight packaging mean you get more usable, quality rags in every package.

White T-Shirt Cloths
WIP9064

Size	Units
10kg	1

Our Rags In Bags are made out of recycled, high-quality white sheeting to give you the delicacy you need. These lint-free rags are ideal for polishing.

Coloured Towelling Rags
WIPTT

Size	Units
10kg	1

Rolls

A range of multi-purpose, colour-coded rolls for the cleanup of larger spills of all kinds of liquids. Perfect for covering large areas and highly versatile, our absorbent rolls come in a variety of widths and are perforated to provide flexibility and economy of use.

Grey, general-purpose absorbent rolls for absorbing a wide range of water- and oil-based fluids as well as non-aggressive chemicals.

Maintenance Roll
Heavyweight MR1009

Size	Units
36cm x 46m	Twin pack

Maintenance Roll
Heavyweight MR1049

Size	Units
50cm x 43m	Twin pack

Maintenance Roll
Lightweight MR1013

Size	Units
48cm x 88m	Twin pack

Maintenance Roll
Heavyweight MR1014

Size	Units
76cm x 46m	1

Yellow chemical absorbent rolls for use on spills of more aggressive chemicals such as acids, caustics, oil coolants, solvents and solutions.

White oil only rolls which repel water but contain any oils, fuels, solvents and most petrochemicals. Perforated to tear off just the right amount for the job.

Oil Only Roll
Heavyweight OR2018

Size	Units
38cm x 46m	2

Oil Only Roll
Heavyweight, OR2011

Size	Units
48cm x 44m	2

Oil Only Roll
Heavyweight, dimpled, perforated OR2019

Size	Units
48cm x 46m	2

Oil Only Roll
Heavyweight, unperforated OR2014

Size	Units
1m x 44m	1

Oil Only Roll
Heavyweight, dimpled & perforated OR2020

Size	Units
1m x 44m	1

Oil Only Roll
Heavyweight OR2080

Size	Units
76cm x 46m	2

Chemical Roll
Heavyweight CR3007

Size	Units
38cm x 46m	2

Chemical Roll
Heavyweight CR3008

Size	Units
48cm x 44m	2

Chemical Roll
Heavyweight CR3009

Size	Units
96cm x 44m	1

Socks

Robust and specifically designed to trap and hold fluids. An essential component of your spill response plan.

Grey, general-maintenance socks to use against spill of water and oil based fluids.
Yellow chemical socks for use with chemical spills, such as acids, caustics, oil coolants and solvents.
White oil only socks designed to repel water but contain any oils, fuels, solvents and most petrochemicals.

Chemical Sock CS3014

Size	Units
8cm x 1.2m	20

Chemical Sock CS3016

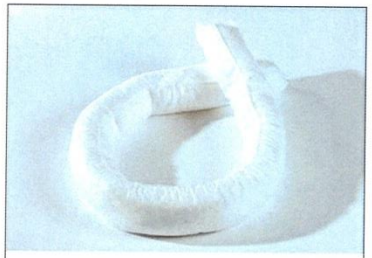
Size	Units
8cm x 3m	8

Maintenance Socks MS1024

Size	Units
8cm x 1.2m	20

Maintenance Socks MS1027

Size	Units
8cm x 3m	8

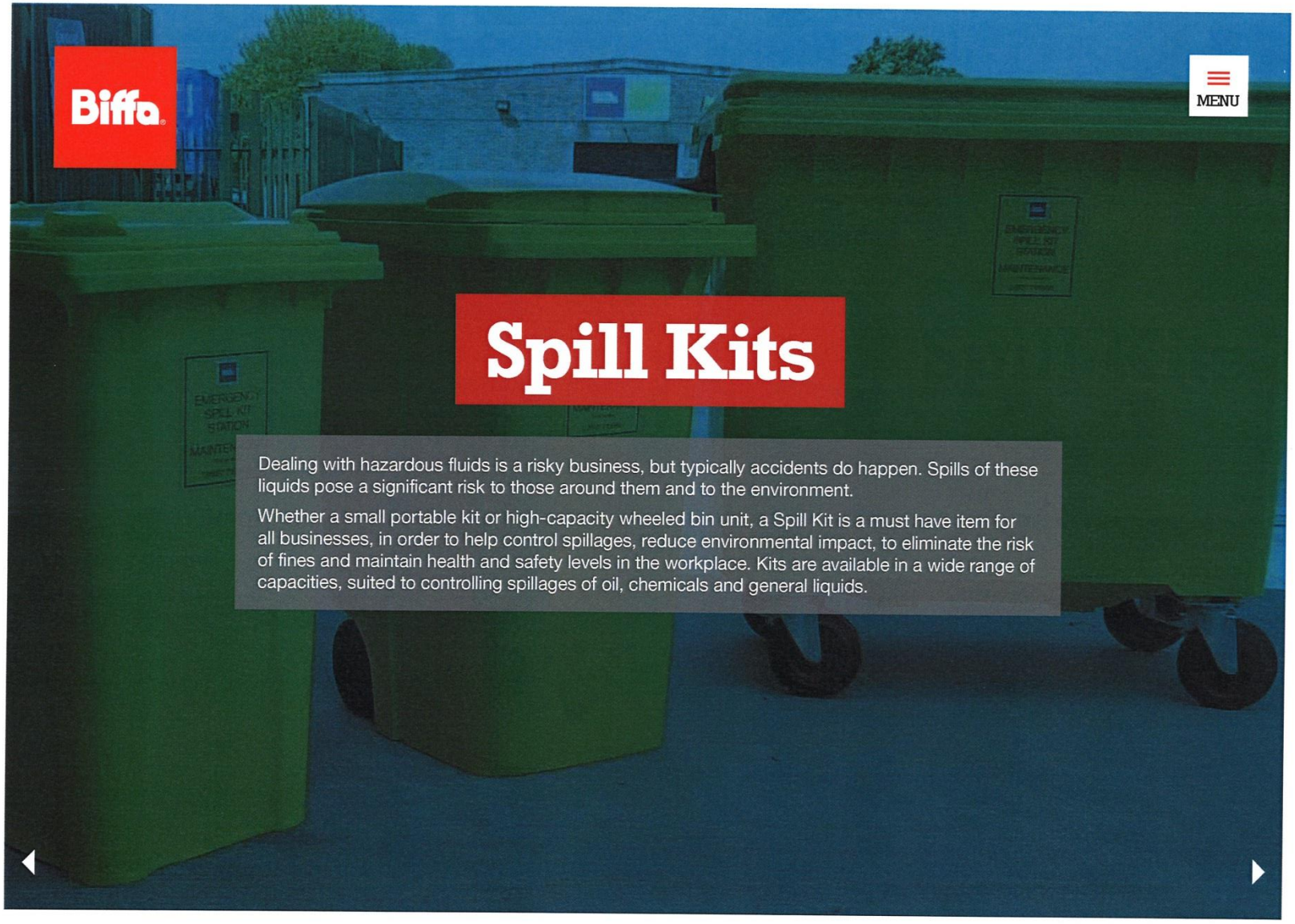


Oil Sock Fast Absorption OS2022

Size	Units
8cm x 1.2m	20

Oil Sock Fast Absorption OS2024

Size	Units
8cm x 3m	8


Biffa
MENU
Spill Kits
Dealing with hazardous fluids is a risky business, but typically accidents do happen. Spills of these liquids pose a significant risk to those around them and to the environment.
Whether a small portable kit or high-capacity wheeled bin unit, a Spill Kit is a must have item for all businesses, in order to help control spillages, reduce environmental impact, to eliminate the risk of fines and maintain health and safety levels in the workplace. Kits are available in a wide range of capacities, suited to controlling spillages of oil, chemicals and general liquids.

Oil Spill Kits

240L
Oil and Fuel 240 — OSK240

Dimensions	58.3cm x 73.7cm x 107.9cm
Contents	**Units**
Spunbond Spilkleen Oil Only Absorbent Sock	6
Spunbonded Oil Only Absorbent Cushion	2
Spilchoice Oil and Fuel Pads	120
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	4
240Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	4
1 x Laminated Instruction & Contents Sheet	1

360L
Oil and Fuel 360 — OSK360

Dimensions	88cm x 58.5cm x 112cm
Contents	**Units**
Spunbond Spilchoice Oil Only Absorbent Sock	15
Spunbonded Spilchoice Oil Only Absorbent Cushion	20
Spunbond Spilkleen Oil and Fuel Absorbent Pads	115
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	6
360Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	6
Laminated Instruction & Contents Sheet	1

660L
Oil and Fuel 660ltr Wheeled Locker — OSK660

Dimensions	76.7cm x 136cm x 120cm
Contents	**Units**
Spilkleen Spunbond Oil Only Absorbent Sock	25
Spilkleen Spunbonded Oil Only Absorbent Cushion	10
Spilchoice Oil and Fuel Pads	120
Spilkleen Oil Only Absorbent Versiroll (2 per pack)	1
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	6
660Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	6
Laminated Instruction & Contents Sheet	1

1200L
Oil and Fuel 1200ltr Wheeled Locker — OSK1200

Dimensions	138cm x 145cm x 107.5cm
Contents	**Units**
1100Ltr Wheeled Locker Bin – Yellow	1
Spilkleen Oil and Fuel Absorbent Pads	150
Oil Only Absorbent Cushion	30
Oil Only Absorbent Sock	28
Oil Only Absorbent Roll	3
Bag Ties	8
Yellow Disposal Bags	8
Barrier Tape	1
Pair Disposable Nitrile Gloves	4
Goggles – Splash Resistant	1
Laminated Instruction & Contents Sheet	1

1200L
Oil and Fuel 1200 Drop Front — OSK1200D

Dimensions	107.3cm x 137.3cm x 135.4cm
Contents	**Units**
Spilkleen Spunbond Oil Only Absorbent Sock	28
Spilkleen Spunbond Oil Only Absorbent	30
Spilkleen Oil and Fuel Rolls	1
Spilkleen Spunbond Absorbent Rolls (2 per pack)	2
Spilkleen Oil and Fuel Pads	150
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	8
1100Ltr Wheeled Bin – Yellow	1
Lid Lock Fitted To 4 Wheeled Bin	1
Yellow Disposal Bag	8
Laminated Instruction & Contents Sheet	1

Refill Kits available

Specialist Spill Kits

ADR Spill Kit

ADR100

The ADR Spill Kit contains all of the necessary PPE and absorbents required to contain, absorb & safely clean up spills in accordance with the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR 2009)

The safety equipment required on vehicles carrying dangerous goods loads is amended from the implementation of ADR 2009 with some general additional items of safety equipment specific to the classes of goods being carried.

The equipment required is dependent upon the nature of the load being carried however the driver also has an obligation to carry Personal Protective Equipment with them whilst carrying Dangerous Goods. All vehicles carrying dangerous goods must have wheel chocks, two self standing warning signs, high visibility vest, torch, gloves, and eye protection. In addition (dependant on danger labels), the following items are also required: Eye rinsing fluid, emergency escape mask, drain seal, shovel and plastic collecting container.

Contents	Units
Printed Bag	1
Neorug	1
Tube to Neorug	1
Warning Triangle	1
Shovel	1
Chemical Socks	2
Chemical Pads	10
Chemical Cushion	1
20L Pail	1
Mask	1
500ml Eyewash	1
Hi-Vis	1
Pair Neoprene Gloves	1
Goggles	1
Bags & Ties	2
Wind Up Touch	1
Laminated & Contents Sheet	1

2L

Body Fluid Spill Kit With Wipes BFSKW2

Dimensions	28cm x 21cm

The Body Fluid Spill Kit with Wipes deals with spills that pose a sanitary or infectious hazard and are very unpleasant to clean. The body fluid spill kit is suitable for use on vomit, urine, excrement and blood quickly, safely and effectively.

The spill kit also includes Super Sani-Cloth Wipes that can kill pathogens in 2 minutes or less. They can also combat a huge range of bacteria and viruses such as Hepatitis B, C, Salmonella enteric, HIV-1 and many more.

Mercury Spill Kit

MSKN

The Mercury Spill Kit (0.25ltr) is formulated for the easy containment and disposal of hazardous mercury spills. Our Mercury Spill Kit minimises the toxic effects of mercury in two ways;

The Vytac Mercury Immobiliser (VYTAC MIS) suppresses the emissions of mercury vapour by converting liquid mercury into a solid amalgam. The Mercury Vapour Suppressant (VYTAC MVS) protects against mercury vapours by binding liquid mercury and absorbing mercury vapours from the air.

32L

Battery Acid Spill Kit BASK32

Dimensions	50cm x 50cm x 50cm

The Battery Acid Spill Kit (32 Litres) is formulated for the containment, neutralisation and clean up of battery acid. The spill kit decontaminates the affected area and quickly returns it to a workable condition.

The acid neutraliser features a visual indication system that turns the spilled acid a bright pink colour to show when neutralisation is complete and the acid safe to clean up.

Contents	Units
Chemical Sock	4
Chemical Pads	16
Acid Neutralisation: 'Vytac Acid 4kg	2
Acid Neutralisation: 'Vytac Acid 1kg	8
Litmus Paper	5
Dustpan & Brush	1
Pair Heavy Duty Nitrile Gloves	2
Goggles – Splash resistant	2
Pail 60litre/ 14 Gal	1
Yellow Disposal Bag & Zip Tie	4
Laminated Instruction & Contents Sheet	1

Chemical Spill Kits

10L
Single Use - Oil and Fuel 10 — OSK10

Dimensions	
Contents	**Units**
Spilkleen Oil and Fuel Absorbent Pads	7
Spilkleen Spunbond Oil Only Absorbent Cushion	1
Bag Ties	1
Yellow Disposal Bag	1
Clip Handle Bag	1

25L
Handy Bag - Chemical 25 — OSK25

Dimensions	61.5cm x 71.5cm x 10cm
Contents	**Units**
Spilkleen Spunbond Chemical Absorbent Sock	2
Spilkleen Chemical Absorbent Pads	22
1 Bag Ties	1
Yellow Disposal Bag	1
Clip Handle Bag Clear	1

50L
Shoulder Bag - Chemical 50 — OSK50

Dimensions	2cm x 60cm x 46cm
Contents	**Units**
Spilkleen Spunbond Chemical Absorbent	2
Spilkleen Chemical Absorbent Pads	30
Oil Dri Chemical Absorbent Cushion	2
Pair Heavy Duty Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	1
Yellow Shoulder Strap Bag	1
Yellow Disposal Bag	1
Laminated Instruction & Contents Sheet	1

80L
Compact Chemical 80 — OSK80

Dimensions	66cm x 46cm x 53cm
Contents	**Units**
Spilkleen Spunbond Chemical Absorbent Sock	3
Spilkleen Spilkleen Chemical Absorbent Pads	60
Spilkleen Spunbond Chemical Absorbent Cushion	4
Barrier Tape	1
Pair Heavy Duty Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	3
75Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	3
Laminated Instruction & Contents Sheet	1

Maintenance Spill Kits

10L
Single Use - Maintenance 10 MSK10

Dimensions

Contents	Units
Spilkleen Maintenance Absorbent Pads	7
Spilkleen Spunbond Maintenance Absorbent Cushion	1
Bag Ties	1
Yellow Disposal Bag	1
Clip Handle Bag	1

25L
Handy Bag - Maintenance 25 MSK25

Dimensions 1.5cm x 71.5cm x 10cm

Contents	Units
Spilkleen Spunbond Maintenance Absorbent Sock	2
Spilkleen Maintenance Absorbent Pads	21
Bag Ties	1
Yellow Disposal Bag	1
Clip Handle Bag Clear	1

50L
Shoulder Bag - Maintenance 50 MSK50

Dimensions 12cm x 60cm x 46cm

Contents	Units
Spilkleen Maintenance Absorbent Cushion	1
Spilkleen Spunbond Maintenance Absorbent Sock	2
Spilkleen Maintenance Absorbent Pads	28
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	1
Yellow Shoulder Strap Bag	1
Yellow Disposal Bag	1
Laminated Instruction & Contents Sheet	1

80L
Compact Maintenance 80 MSK80

Dimensions 56cm x 48cm x 53cm

Contents	Units
Spunbond Spilkleen Maintenance Cushion Bagged	4
Spunbond Spilkleen Maintenance Absorbent Sock	4
Spilkleen Maintenance Absorbent Pads	55
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	3
75Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	3
Maintenance Kit Label	1
Laminated Instruction & Contents Sheet	1

Maintenance Spill Kit

120L
Maintenance 120 MSK120

Dimensions	48cm x 56cm x 93.5cm
Contents	**Units**
Spilkleen Spilkleen Maintenance Cushion Bagged	2
Spunbond Spilkleen Maintenance Absorbent Sock	6
Spilkleen Maintenance Pads	55
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	4
120Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	4
Maintenance Kit Label	1
Laminated Instruction & Contents Sheet	1

240L
Maintenance 240 MSK240

Dimensions	58.3cm x 73.7cm x 107.9cm
Contents	**Units**
Spunbond Spilkleen Maintenance Cushion	2
Spunbond Spilkleen Maintenance Absorbent Sock	7
Spilkleen Maintenance Pads	135
Spilkleen Maintenance Versiroll	0.5
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	4
240Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	4
Maintenance Kit Label	1

360L
Maintenance 360 MSK360

Dimensions	88cm x 58.5cm x 112cm
Contents	**Units**
Spunbond Spilkleen Maintenance Cushion	20
Spunbond Maintenance Absorbent Sock	13
Spilkleen Maintenance Pads	125
Spilkleen Maintenance Versiroll	0.5
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	6
360Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag ' Caution Handle with Care'	6
Laminated Instruction & Contents Sheet	1

660L
Maintenance 660ltr Wheeled Locker MSK660

Dimensions	76.7cm x 136cm x 120cm
Contents	**Units**
Spunbond Maintenance Absorbent Cushion	30
Spunbond Maintenance Absorbent Sock	30
Spilkleen Maintenance Absorbent Pads	150
Spilkleen Maintenance Absorbent Versiroll	1
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	6
660Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	6
Laminated Instruction & Contents Sheet	1

1200L
Maintenance 1200ltr Wheeled Locker MSK1200

Dimensions	138cm x 145cm x 107.5cm
Contents	**Units**
1100Ltr Wheeled Locker Bin – Yellow	1
Spilkleen Maintenance Absorbent Pads	150
Cold Form Maintenance Absorbent Pads	100
Maintenance Absorbent Cushion	50
Spilkleen Spunbond Maintenance Absorbent Sock	50
Maintenance Versirolls	2
Bag Ties	8
Yellow Disposal Bags	8
Barrier Tape	1
Pair Disposable Nitrile Gloves	4
Goggles – Splash Resistant	1
Drip Pan	2

1200L
Maintenance 1200 Drop Front MSK1200D

Dimensions	107.3cm x 137.3cm x 135.4cm
Contents	**Units**
Maintenance Absorbent Cushion	50
Spunbond Maintenance Absorbent Sock	50
Spilkleen Maintenance Absorbent Pads	200
Spilkleen Maintenance Versirolls	1
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	8
1100Ltr Wheeled Bin – Yellow	1
Lid Lock Fitted	1
Yellow Disposal Bag	8
Laminated Instruction & Contents Sheet	1

Refill Kits available

Oil Spill Kits

25L
Handy Bag - Oil and Fuel 25 — OSK25

Dimensions	61.5cm x 71.5cm x 10cm
Contents	**Units**
Spilkleen Spunbond Oil Only Absorbent Sock	2
Spilkleen Oil and Fuel Absorbent Pads	17
Bag Ties	1
Yellow Disposal Bag	1
Clip Handle Bag Clear	1

50L
Shoulder Bag - Oil and Fuel 50 — OSK50

Dimensions	12cm x 60cm x 46cm
Contents	**Units**
Spilkleen Spunbond Oil Only Absorbent Sock	5
Spilkleen Oil and Fuel Absorbent Pads	28
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	1
Yellow Shoulder Strap Bag	1
Yellow Disposal Bag	1
Laminated Instruction & Contents Sheet	1

80L
Compact Oil and Fuel 80 — OSK80

Dimensions	88cm x 46cm x 53cm
Contents	**Units**
Spunbond Spilkleen Oil Only Absorbent Sock	4
Spunbonded Spilkleen Oil Only Cushion	4
Spilkleen Oil and Fuel Absorbent Pads	40
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	3
75Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	3
Laminated Instruction & Contents Sheet	1

120L
Oil and Fuel 120 — OSK120

Dimensions	48cm x 56cm x 93.5cm
Contents	**Units**
Spunbond Spilkleen Oil Only Absorbent Sock	4
Spunbonded Spilkleen Oil Only Absorbent Cushion	3
Spilchoice Oil and Fuel Pads	40
Barrier Tape	1
Pair Disposable Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	4
120Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	4
Laminated Instruction & Contents Sheet	1

Specialist Spill Kits

ADR Spill Kit

ADR100

The ADR Spill Kit contains all of the necessary PPE and absorbents required to contain, absorb & safely clean up spills in accordance with the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR 2009)

The safety equipment required on vehicles carrying dangerous goods loads is amended from the implementation of ADR 2009 with some general additional items of safety equipment specific to the classes of goods being carried.

The equipment required is dependent upon the nature of the load being carried however the driver also has an obligation to carry Personal Protective Equipment with them whilst carrying Dangerous Goods. All vehicles carrying dangerous goods must have wheel chocks, two self standing warning signs, high visibility vest, torch, gloves, and eye protection. In addition (dependant on danger labels), the following items are also required: Eye rinsing fluid, emergency escape mask, drain seal, shovel and plastic collecting container.

Contents	Units
Printed Bag	1
Neorug	1
Tube to Neorug	1
Warning Triangle	1
Shovel	1
Chemical Socks	2
Chemical Pads	10
Chemical Cushion	1
20L Pail	1
Mask	1
500ml Eyewash	1
Hi-Vis	1
Pair Neoprene Gloves	1
Goggles	1
Bags & Ties	2
Wind Up Touch	1
Laminated & Contents Sheet	1

2L

Body Fluid Spill Kit With Wipes BFSKW2

Dimensions	28cm x 21cm

The Body Fluid Spill Kit with Wipes deals with spills that pose a sanitary or infectious hazard and are very unpleasant to clean. The body fluid spill kit is suitable for use on vomit, urine, excrement and blood quickly, safely and effectively.

The spill kit also includes Super Sani-Cloth Wipes that can kill pathogens in 2 minutes or less. They can also combat a huge range of bacteria and viruses such as Hepatitis B, C, Salmonella enteric, HIV-1 and many more.

Mercury Spill Kit

MSKN

The Mercury Spill Kit (0.25ltr) is formulated for the easy containment and disposal of hazardous mercury spills. Our Mercury Spill Kit minimises the toxic effects of mercury in two ways;

The Vytac Mercury Immobiliser (VYTAC MIS) suppresses the emissions of mercury vapour by converting liquid mercury into a solid amalgam. The Mercury Vapour Suppressant (VYTAC MVS) protects against mercury vapours by binding liquid mercury and absorbing mercury vapours from the air.

32L

Battery Acid Spill Kit BASK32

Dimensions	50cm x 50cm x 50cm

The Battery Acid Spill Kit (32 Litres) is formulated for the containment, neutralisation and clean up of battery acid. The spill kit decontaminates the affected area and quickly returns it to a workable condition.

The acid neutraliser features a visual indication system that turns the spilled acid a bright pink colour to show when neutralisation is complete and the acid safe to clean up.

Contents	Units
Chemical Sock	4
Chemical Pads	16
Acid Neutralisation: 'Vytac Acid 4kg	2
Acid Neutralisation: 'Vytac Acid 1kg	8
Litmus Paper	5
Dustpan & Brush	1
Pair Heavy Duty Nitrile Gloves	2
Goggles – Splash resistant	2
Pail 60litre/ 14 Gal	1
Yellow Disposal Bag & Zip Tie	4
Laminated Instruction & Contents Sheet	1

Chemical Spill Kits

10L
Single Use - Oil and Fuel 10 — OSK10

Dimensions	
Contents	**Units**
Spilkleen Oil and Fuel Absorbent Pads	7
Spilkleen Spunbond Oil Only Absorbent Cushion	1
Bag Ties	1
Yellow Disposal Bag	1
Clip Handle Bag	1

25L
Handy Bag - Chemical 25 — OSK25

Dimensions	61.5cm x 71.5cm x 10cm
Contents	**Units**
Spilkleen Spunbond Chemical Absorbent Sock	2
Spilkleen Chemical Absorbent Pads	22
1 Bag Ties	1
Yellow Disposal Bag	1
Clip Handle Bag Clear	1

50L
Shoulder Bag - Chemical 50 — OSK50

Dimensions	2cm x 60cm x 46cm
Contents	**Units**
Spilkleen Spunbond Chemical Absorbent	2
Spilkleen Chemical Absorbent Pads	30
Oil Dri Chemical Absorbent Cushion	2
Pair Heavy Duty Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	1
Yellow Shoulder Strap Bag	1
Yellow Disposal Bag	1
Laminated Instruction & Contents Sheet	1

80L
Compact Chemical 80 — OSK80

Dimensions	66cm x 46cm x 53cm
Contents	**Units**
Spilkleen Spunbond Chemical Absorbent Sock	3
Spilkleen Spilkleen Chemical Absorbent Pads	60
Spilkleen Spunbond Chemical Absorbent Cushion	4
Barrier Tape	1
Pair Heavy Duty Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	3
75Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	3
Laminated Instruction & Contents Sheet	1

Chemical Spill Kits

120L
Chemical 120 — CSK120

Dimensions	48cm x 56cm x 93.5cm
Contents	**Units**
Spilldeen Spunbond Chemical Absorbent Sock	3
Spilldeen Spunbond Chemical Absorbent Pads	90
Spilldeen Spunbond Chemical Absorbent Cushion	3
Barrier Tape	1
Pair Heavy Duty Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	4
120Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	4
Laminated Instruction & Contents Sheet	1

240L
Chemical 240 — CSK240

Dimensions	58.3cm x 73.7cm x 107.9cm
Contents	**Units**
Spilldeen Spunbond Chemical Absorbent Sock	7
Spilldeen Spunbond Chemical Absorbent Pads	180
Spilldeen Spunbond Chemical Absorbent Cushion	3
Barrier Tape	1
Pair Heavy Duty Nitrile Gloves	1
Goggles – Splash resistant	1
Bag Ties	4
240Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	4
Laminated Instruction & Contents Sheet	1

360L
Chemical 360 — CSK360

Dimensions	88cm x 58.5cm x 112cm
Contents	**Units**
Spilldeen Spunbond Chemical Absorbent Sock	16
Spilldeen Spunbond Chemical Absorbent Pads	125
Spilldeen Spunbond Chemical Absorbent Cushion	20
Barrier Tape	1
Pair Heavy Duty Nitrile Gloves	2
Goggles – Splash resistant	1
Bag Ties	6
360Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	6
Laminated Instruction & Contents Sheet	1

660L
Chemical 660ltr Wheeled Locker — CSK660

Dimensions	78.7cm x 136cm x 120cm
Contents	**Units**
Spilldeen Spunbond Chemical Absorbent Sock	40
Spilldeen Chemical Absorbent Pads	200
Oil Dri Chemical Absorbent Cushion	30
Barrier Tape	1
Pair Heavy Duty Nitrile Gloves	2
Goggles – Splash resistant	1
Bag Ties	6
660Ltr Wheeled Bin – Yellow	1
Yellow Disposal Bag	6
Laminated Instruction & Contents Sheet	1

1200L
Chermical 1200 Wheeled Locker — CSK1200

Dimensions	
Contents	**Units**
1100Ltr Wheeled Locker Bin – Yellow	1
Spilldeen Chemical Absorbent Pads	240
Chemical Absorbent Cushion	50
Spilldeen Chemical Absorbent Socks	90
Chemical Absorbent Roll	2
Bag Ties	8
Disposal Bags	8
Barrier Tape	1
Pair Heavy Duty Nitrile Gloves	2
Goggles – Splash Resistant	1
Laminated Instruction & Contents Sheet	1

1200L
Chemical 1200 Drop Front — CSK1200D

Dimensions	107.3cm x 137.3cm x 135.4cm
Contents	**Units**
Spilldeen Spunbond Chemical Absorbent Sock	30
Spilldeen Spunbond Chemical Absorbent Sock Long	25
Spilldeen Chemical Absorbent Pads	400
Oil Dri Chemical Absorbent Cushion	50
Barrier Tape	1
Pair Heavy Duty Nitrile Gloves	2
Goggles – Splash resistant	1
Bag Ties	8
1100Ltr Wheeled Bin – Yellow	1
Drop Front Kit Fitted	1
Lid Lock Fitted To 4 Wheeled Bin	1
Yellow Disposal Bag	8
Laminated Instruction & Contents Sheet	1

Refill Kits available

Appendix 3 - Product Data Sheets

if swallowed
R38:Irritating
to skin
R40:Limited evidence of
carcinogenic effect R45: May
cause cancer
R48/21: Harmful: danger of serious damage to health by prolonged exposure in
contact with skin R65: Harmful may cause lung damage if swallowed
R66: Repeated exposure may cause skin dryness or cracking
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the
aquatic environment R51/53: Toxic to aquatic organisms, may cause long-term adverse
effects in the aquatic environment

Guidance Notes: Prevention of Dermatitis at
work (INDG-233)
Occupational exposure
limits (EH 40)
Effects of mineral oil on the skin – Cautionary Notice
Assessing and Managing risks at work from skin exposed to chemical
agents (HSG205) The above publications are available from HMSO
and HSE Sources)

The information presented in this Data Sheet is based upon data believed to be accurate when the Data Sheet was prepared. However, no warranty of merchantability, fitness for any particular purpose, or any other warranty is expressed or is to be Implied regarding the accuracy or completeness of the information provided above, the results to be obtained from the use of This information, or the product, the safety of this product, or the hazards relating to its use. No responsibility is assumed for Any damage or injury resulting from abnormal use or from any failure to adhere to any recommended practices.
The information provided above, and the product, are furnished on the condition that the person receiving them shall make Their own determination as to the suitability of the product for their particular purpose and on the condition that they assume
The risk of their use.

MSDS –GB 003

Material Safety Data Sheet

SECTION 1

RESIDUAL MARINE FUELS, RMA-RMK

Product Use: Fuel Oil

Synonyms: 24114 BUNKER FUEL HS, 180 MM2/S MAX AT 50°C, 28090 BUNKER FUEL HS, 420 MM2/S MAX AT 50°C, 28276 BUNKER FUEL HS, 380 MM2/S MAX AT 50°C, 28724 BUNKER FUEL HS, 320 MM2/S MAX AT 50°C, 28800 BUNKER FUEL HS, 280 MM2/S MAX AT 50°C, 29066 BUNKER FUEL HS, 240 MM2/S MAX AT 50°C, 29068 FUEL HEAVY 380 CST, 29435 MARINE RESIDUAL FUEL - RMF 25, 29442 FUEL OIL, 65 MM2/S MAN (at 100C), 29754 FUEL OIL, 440 MM2/S MAX (AT 50C) - 3.5% S, 29785 FUEL OIL, 420 MM2/S MAX (AT 50C) - 1% S, 32788 BUNKER FUEL HS, 100 MM2/S MAX AT 50°C, 32789 BUNKER FUEL HS, 120 MM2/S MAX AT 50°C, 32790 BUNKER FUEL HS, 80 MM2/S MAX AT 50°C, 32791 BUNKER FUEL HS, 60 MM2/S MAX AT 50°C, 32792 BUNKER FUEL HS, 40 MM2/S MAX AT 50°C, 32793 BUNKER FUEL HS, 30 MM2/S MAX AT 50°C

Company Identification

Chevron Marine Products LLC 1500 Louisiana Street
Houston, TX 77002
United States of America

Transportation Emergency Response

USA: CHEMTREC (800) 424-9300 or (703) 527-3887
Asia: +65 6883 1111

Health Emergency

Chevron Emergency Information Center: Emergency Information Centers are located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

Product Information: USA: 832-854-6000
MSDS Requests: USA: 832-854-6000

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Fuel oil, residual	68476-33-5	100 %weight

SECTION 3 HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

- COMBUSTIBLE LIQUID AND VAPOR
- MAY RELEASE HIGHLY TOXIC AND FLAMMABLE HYDROGEN SULFIDE GAS (H2S)
- SUSPECT CANCER HAZARD - MAY CAUSE CANCER
- DO NOT ATTEMPT RESCUE WITHOUT SUPPLIED-AIR RESPIRATORY PROTECTION
- HARMFUL TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

****

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation. If this material is heated, thermal burns may result from eye contact.

Skin: Skin contact may cause drying or defatting of the skin. Contact with the skin is not expected to cause an allergic skin response. Symptoms may include pain, itching, discoloration, swelling, and blistering. Not expected to be harmful to internal organs if absorbed through the skin. If this material is heated, thermal burns may result from skin contact.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Hydrogen sulfide has a strong rotten-egg odor. However, with continued exposure and at high levels, H2S may deaden a person's sense of smell. If the rotten egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulfide causes irritation of the eyes, nose, and throat. Moderate levels can cause headache, dizziness, nausea, and vomiting, as well as coughing and difficulty breathing. Higher levels can cause shock, convulsions, coma, and death. After a serious exposure, symptoms usually begin immediately.

The U.S. National Institute for Occupational Safety and Health (NIOSH) considers air concentrations of hydrogen sulfide gas greater than 100 ppm to be Immediately Dangerous to Life and Health (IDLH).

DELAYED OR OTHER HEALTH EFFECTS:

Cancer: Prolonged or repeated exposure to this material may cause cancer.
See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water. If heated material should splash into eyes, flush eyes immediately with fresh water for 15 minutes while holding the eyelids open. Remove contact lenses, if worn. Get immediate medical attention.
Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse. If the hot material gets on skin, quickly cool in water. See a doctor for extensive burns. Do not try to peel the solidified material from the skin, or use solvents or thinners to dissolve it. The use of vegetable oil or mineral oil is recommended for removal of this material from the skin.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs. If exposure to hydrogen sulfide (H2S) gas is possible during an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
Note to Physicians: Administration of 100% oxygen and supportive care is the preferred treatment for poisoning by hydrogen sulfide gas. For additional information on H2S, see Chevron MSDS No. 301.

SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Combustible liquid.

NFPA RATINGS: Health: 1 Flammability: 2 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Pensky-Martens Closed Cup) 62 °C (143 °F) Minimum
Autoignition: 263 °C (505 °F) (Estimated)
Flammability (Explosive) Limits (% by volume in air): Lower: 0.7 Upper: 5 (Estimated)

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne

solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Sulfur .

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator. If this material is released into a work area, evacuate the area immediately. Persons entering the contaminated area to correct the problem or to determine whether it is safe to resume normal activities must comply with all instructions in the Exposure Controls/PersonalProtection section.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. If heated material is spilled, allow it to cool before proceeding with disposal methods.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive force. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 29C (85F). Do not get in eyes, on skin, or on clothing. Avoid contact of heated material with eyes, skin, and clothing. Wash thoroughly after handling.

Unusual Handling Hazards: Toxic quantities of hydrogen sulfide (H2S) may be present in storage tanks and bulk transport vessels which contain or have contained this material. Persons opening or entering these compartments should first determine if H2S is present. See Exposure Controls/Personal

Protection -Section 8. Do not attempt rescue of a person over exposed to H2S without wearing approved supplied-air or self-contained breathing equipment. If there is a potential for exceeding one-half the occupational exposure standard, monitoring of hydrogen sulfide levels is required. Since the sense of smell cannot be relied upon to detect the presence of H2S, the concentration should be measured by the use of fixed or portable devices.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to

harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice. If this material is heated, wear chemical goggles or safety glasses or a face shield.

Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Nitrile Rubber, Polyvinyl Alcohol (PVA) (Note: Avoid contact with water. PVA deteriorates in water.), Viton. If this material is heated, wear insulated clothing to prevent skin contact if engineering controls or work practices are not adequate to prevent skin contact. **Respiratory Protection:** No respiratory protection is normally required.

Determine if airborne concentrations are below the occupational exposure limit for hydrogen sulfide. If not, wear an approved positive pressure air-supplying respirator. For more information on hydrogen sulfide, see Chevron MSDS No. 301.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

No applicable occupational exposure limits exist for this material or its components.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Black **Physical State:** Liquid **Odor:** Petroleum odor **pH:** Not Applicable

Vapor Pressure: <0.04 psi (Estimated) **Vapor Density (Air = 1):** >1 (Estimated) **Boiling Point:** 160°C (320°F) - 600°C (1112°F)

Solubility: Insoluble in water.

Freezing Point: No Data Available

Specific Gravity: 1.005 @ 15°C (59°F) (Estimated)

Density: 1010 kg/m3 @ 15°C (59°F) Maximum

Viscosity: 10 - 55 cSt @ 100°C (212°F)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: Hydrogen Sulfide (Elevated temperatures)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM OIL, N.E.C.; NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR
Additional Information:NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: MAY BE REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER ICAO

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects:ES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: YES

4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

1-1 =IARC Group 1
1-2 A=IARC Group 2A
01-2B=IARC Group 2B
02=NTP Carcinogen

REGULATORY LISTS SEARCHED:
03=EPCRA 313
04=CA Proposition 65
05=MA RTK
06=NJ RTK
07=PA RTK

No components of this material were found on the regulatory lists above.
Fuel oil, residual 04

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), IECSC (China), PICCS (Philippines), TSCA (United States).

WHMIS CLASSIFICATION:
Class B, Division 3: Combustible Liquids
Class D, Division 1, Subdivision A: Very Toxic Material - Acute Lethality
Class D, Division 2, Subdivision A: Very Toxic Material - Carcinogenicity

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 1 Flammability: 2 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1, 16.

Revision Date: June 24, 2009

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

1 Identification of the Substance

Product Name: Gas Oil
Application: Heating & Fuels Oil for industrial applications

2 Hazards Identification

Classification of the substance or mixture:

CLP Classification (EC No. 1272/2008: H226 – Flammable Liquid - Category 3 H315 – Skin corrosion/irritation – Category 2 H304 – Aspiration Hazard – Category 1 H332 – Acute toxicity, Inhalation – Category 4 H350 – Carcinogenicity – Category 1B H336 – Specific target organ toxicity (Repeated exposure) – Category 2 H411 – Hazardous to the aquatic environment, chronic toxicity – Category 2

Superseded DSD Classification (67/548/EEC and 1999/45/EC
R10, Xi:R38, Xn:R65, Xn:R20, R65, R48/21, Carc. Cat1:R45, N:R51/53

Label Elements

DANGER

H226: Flammable liquid and Vapour
H304: May be fatal if swallowed and enters airways H315: Causes skin irritation
H332: Harmful if Inhaled
H350: May cause Cancer
H373: May cause damage to organs through prolonged or reapeated exposure H411: Toxic to aquatic life with long lasting effects

P201: Obtain special instructions before use
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P260: Do not breath dust/fume/gas/mist/vapours/spray
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTRE or Doctor/physician P331: Do not induce vomiting
P501: Dispose of contents/container to approved disposal facility

Does not meet the criteria for persistent,bioaccumulative and toxic (PBT) or very persistent very bioaccumulative (vPvB) substances.

3 Composition/Information on Ingredients

Component	CAS No.	EINECS No.	Concentration % W/W	CLP Classification	DSD Classification
Diesel Oil C9-20	68334-30-5	269-822-7	90 - 100	H351	Carc. Cat. 3 :R40
Naphthalene	91-20-3	202-049-5	<1	H351 H302 H410	Carc. Cat. 3 :R40 Xn:R22, N:R50/53

Total Sulphur: <0.1 wt%

4 First Aid measures

Inhalation: If inhalation of vapour causes irritation or drowsiness, remove to fresh air. In emergency situations a qualified person should administer artificial Respiration.
If breathing difficulties develop, oxygen should be administered by a competent and medically Qualified person. Seek immediate medical attention.

Skin: Wash skin as soon as possible with soap and water. Change contaminated clothing immediately and launder before re-use. Get medical advice if irritation persists.

Eyes: Wash out immediately with large amounts of water for at least 15 minutes. If redness and/or irritation continues, seek medical advice.

Ingestion: Do not give anything by mouth. DO NOT INDUCE VOMITING BECAUSE OF THE DANGER OF ASPIRATION. If the victim is drowsy or unconscious, place on the left side, head down, do not leave the victim unattended and observe closely for adequacy of breathing.
Seek medical attention.

Most important symptoms and effects:

Acute: Minor respiratory irritation at high vapour concentrations.

Chronic: Dry skin and possible irritation with repeated or prolonged exposure.

5 Fire Fighting Measures

Extinguishing Media

Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed material or Structures. Carbon dioxide can displace oxygen. Use caution when applying carbon

dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to avoided as water destroys the foam.
Water may be ineffective for extinguishment, unless used under favourable conditions by experienced fire fighters.

Special hazards arising from the substance or mixture
Flammable. This material can be ignited by heat, sparks flame or other sources of ignition (e.g. static electricity, pilot lights, mechanical/electrical equipment, electronic devices such as cell phones, computers, calculators and pagers that have not been certified as intrinsically safe) .
Vapours may travel considerable distances to a source of ignition where they can ignite, flash back, or explode.
May create vapour/air explosion hazard indoors, in confined spaces, outdoors or in sewers. This product will float and can be re-ignited on the surface water. Vapours are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous combustion products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulphur may also be formed.

Special protective actions for Firefighters.
For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protectice clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition wear other appropriate protective equipment as conditions warrant (see section 8)

6 Accidental Release Measures

Personal Precautions:	Spilt product presents a significant slip hazard. Avoid exposure of the product to sources of ignition. Chemical grade safety Glasses/goggles. nitrile/PVC gloves and protective coveralls should be worn when dealing with any spillages. Do Not Smoke, avoid inhaling vapours, avoid contact with skin & eyes. Ensure any electrical equipment used is intrinsically safe. Avoid wearing clothing that may generate static electricity. For large spillages persons downwind of the spill must be notified. Isolate immediate hazard area and keep unauthorised persons out. It may be necessary to wear respiratory equipment depending upon a risk assessment of the particular situation.
Environmental Precautions:	Prevent entry into drains, sewers and water courses. The appropriate authorities should be notified if it has contaminated soil/vegetation. Spillages occurring on water should be removed from the surface using suitable absorbents. If necessary dispose of absorbed residues as described in section 13.
Decontamination Procedures:	Soak up with inert absorbent or contain and remove by pumping or best available means. Ensure explosion-proof equipment is used. In case case of soil contamination, remove contaminated soil for remediation or disposal in accordance with local regulations.

7 Handling and Storage

Handling:

Take precautionary measures against static discharge. Non-sparking tools should be used. Keep away from ignition sources such as heat/sparks/open flame – no smoking. Wear protective gloves/clothing and eye/face protection. A high standard of personal hygiene should be maintained, Wash thoroughly after handling. If clothing or PPE becomes contaminated remove and ensure items are thoroughly cleaned before reusing. The product is flammable and may vaporise easily at ambient temperatures, the vapour is heavier Then air and may create explosive mixtures of vapour and air. Beware of accumulation in low lying areas and confined areas. The use of explosion-proof electrical equipment is recommended. Do not enter confined spaces such as tanks or pits without following the correct entry procedures. The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products and low oxygen levels.

Storage:

Store in containers designed to contain flammable liquids and ensure storage area is not close to heat or any sources of ignition. Drums should be stored on their sides preferably under cover, out of direct sunlight, in well ventilated conditions. Containers should be tightly closed and properly labelled. Empty containers retain residue and may be dangerous, do nor pressurise, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame or other sources of ignition. All containers should be disposed of in an environmentally safe manner in accordance with the appropriate disposal of hazardous waste regulations.

8 Exposure Controls/Personal protection

Where prolonged or repeated exposure is likely ANTI-STATIC PROTECTIVE CLOTHING should be worn including impervious gloves and eye protection

Respiratory Protection: Unlikely to be required in normal use but ensure good ventilation. However, where concentration in air may be excessive, approved respirators fitted with appropriate cartridges suitable for organic vapours may be required to BS EN 140)

Workplace exposure limits: Not assigned

Eye Protection: Chemical grade eye protection approved to BS EN 166 is recommended at all times.

Skin Protection: Hand & Skin protection is recommended at all times where exposure is likely. Protective clothing must be worn, including PVC or nitrile gloves to BS EN 374 with a breakthrough time of > 360 minutes.

Suggestions provided in this section for exposure control and specific types of PPE are based on readily available Information. Users should consult with the specific manufacturer to confirm the performance of their PPE. Specific situations May require consultation with industrial hygiene, safety, or engineering professionals.

9 Physical and Chemical Properties

Appearance:	Clear liquid (red)
Odour:	Diesel fuel
pH:	No Data
Flash Point:	<55°C (PMCC)
Boiling point range	180 – 390^{o} C
Density at 15°C	0.82 – 0.875
Solubility - Water:	Very Low
Viscosity cSt at 20°C:	4.8mm^{2}/s
Auto Ignition temp °C :	250
Pour point °C:	-24
Melting/freezing point	No data
Vapour Pressure	<0.3 kPa@20 ^{o}C
Upper Explosive Limits (vol.% in air)	5.0
Lower Explosive Limits (vol.% in air)	0.5

10 Stability and Reactivity

Conditions to Avoid - Heat (Note: Flash Point <55°C min). Prevent vapour accumulation.

The product is generally not chemically reactive and stable under normal ambient conditions of use. Hazardous Decomposition Products - thermal decomposition may lead to the formation of a multiplicity of compounds some of which may be hazardous. With incomplete combustion smoke and hazardous fumes and gases, including carbon monoxide may be formed.

11 Toxicological Information

High concentrations may cause respiratory irritation, headache, drowsiness, dizziness, loss of co-ordination, disorientation And fatigue.
Aspiration is considered to be a hazard, may be fatal if swallowed and enters airways
Vapours and spray may be irritating to the respiratory tract and for mucous membranes. The product is not classified as sensitising or allergenic. Prolonged and repeated contact with the product may cause drying of the skin and possibly dermatitis. Causes mild eye irritation.
May cause cancer. Petroleum middle distillates have been shown to cause skin tumours in mice following Repeated and prolonged skin contact. Follow up studies have shown that these tumours are produced through a Non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumours In the absence of prolonged skin irritation.

Middle distillates with low polynuclear aromatic hydrocarbon content have not been identified as carcinogens by the International Agency for Research on Cancer (IARC).
Specific Target Organ Toxicity (Single exposure): Not expected to cause organ effects from a single exposure.
Specific Target Organ Toxicity (Repeated exposure): May cause damage to organs through repeated exposure.
Dermal application of a distillate fuel component at doses >125mg/Kg, 5d/wk, for 13 weeks resulted in decreased Liver, thymus and spleen weights, and altered bone marrow function. Microscopic alterations included liver hypertrophy And necrosis, decreased hematopoesis and lymphocyte depletion.

Information on hazardous components:
Naphthalene
Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The US National Toxicology Programme (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

Inhalation: >4.65 mg/L (mist) LC50/LD50

Skin absorption:	> 4.1g/Kg LC50/LD50
Ingestion:	> 5g/KG LC50/LD50

Not expected to cause genetic heritable effects. Not expected to cause reproductive toxicity.

12 Ecological Information

Ecotoxicity:	Acute aquatic toxicity studies on samples of gas oils show acute Toxicity values of 2 -20mg/L . these values are consistent with the predicted Aquatic toxicity of these substances based on their hydrocarbon compositions. should be regarded as toxic to aquatic organisms, with the potential to cause long-term adverse effects in the aquatic environment. Classification H411: Chronic Cat 2
Mobility:	Releases to water will result in a hydrocarbon film floating and spreading on the surface. For the lighter components, volatilisation is an important loss product and reduces the hazard to aquatic organisms. In air, the hydrocarbon vapours react readily with hydroxyl radicals with half life of less than one day. Photoxidation on the water surface is also a significant loss process particularly for polycyclic aromatic compounds. In water the majority of components will be adsorbed on sediment. Adsorbtion is the most predominant physical process on release to soil. Adsorbed hydrocarbons will slowly degrade in both water and soil.
Degradability:	Inherently biodegradable by Micro-organisms.
Bioaccumulation Potential:	Gas oil components have measured or calculated low Kow values ranging from 3.9 to 6 and therefore would be regarded as having the potential to bioaccumulate. Lower molecular weight compounds are readily metabolised and the actual bioaccumulation potential of higher molecular weight compounds is limited by the low water solubility and large molecular size.

An assessment revealed that this product was not a Persistent, bioaccumulative or Toxic substance.

13 Disposal Considerations

European Waste Code; 13 07 01 Fuel oil and diesel

This product, if discarded as produced would be considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that directive unless Article 1(5) of that directive applies.

This code has been assigned based upon the most common uses for this material and may not reflect contaminants Resulting from actual use. Waste generators/producers are responsible for assessing the

actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code.

Container contents should be completely used and emptied prior to disposal. All containers should be disposed of in an Environmentally safe manner and in accordance with all applicable Regulations.

14 Transport Information

UN Prper shipping name GAS OIL or DIESEL FUEL or HEATING OIL ,LIGHT UN Number (Substance Identification Number): 1202
Transport class: 3
Packing Group: III
Environmental Hazards: Marine Pollutant

If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL annex 1.

15 Regulatory Information

Health, safety & Environmental Regulations pertaining to the product:

EC 1272/2008 – Classification, Labelling and Packaging of Substances & Mixtures EN 166:2002 – Eye Protection
EN 529:2005 – respiratory Protective Devices
BS EN 374-1:2003 Protective gloves against chemicals and micro-organisms Workplace Exposure Limits, (EH40/2005), Control of Substances Hazardous to Health
Directive 91/689/EEC on Hazardous Waste (European Waste codes)
Directive 2000/76/EC on the incineration of waste Directive 1999/31/EC on Landfill of waste

16 Other Information

List of relevant Hazard Statements under CLP classification:

H226: Flammable liquid and vapour H302: Harmful if swallowed
H304: May be fatal if swallowed and enters airways H315: Causes skin irritation
H332: Harmful if inhaled
H350: May cause cancer
H351: Suspected of causing cancer
H373: May cause damage to organs through prolonged or repeated exposure H411: Toxic to aquatic life with long lasting effects

List of relevant Hazard Statements under DSD Classification:

R10:Flammable R20: Harmful by

inhalation
R22:Harmful
if swallowed
R38:Irritating
to skin
R40:Limited evidence of
carcinogenic effect
R45:Maycause cancer
R48/21: Harmful: danger of serious damage to health by prolonged exposure in contact with skin
R65: Harmful may cause lung damage if swallowed
R66: Repeated exposure may cause skin dryness or cracking
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Guidance Notes: Prevention of Dermatitis at work (INDG-233)
Occupational exposure limits (EH 40)
Effects of mineral oil on the skin – Cautionary Notice
Assessing and Managing risks at work from skin exposed to chemical agents (HSG205) The above publications are available from HMSO and HSE Sources)

The information presented in this Data Sheet is based upon data believed to be accurate when the Data Sheet was prepared. However, no warranty of merchantability, fitness for any particular purpose, or any other warranty is expressed or is to be Implied regarding the accuracy or completeness of the information provided above, the results to be obtained from the use of This information, or the product, the safety of this product, or the hazards relating to its use. No responsibility is assumed for Any damage or injury resulting from abnormal use or from any failure to adhere to any recommended practices.
The information provided above, and the product, are furnished on the condition that the person receiving them shall make Their own determination as to the suitability of the product for their particular purpose and on the condition that they assume The risk of their use.

MSDS –GB 002

1 Identification of the Substance

Product Name: Derv
Application: Fuel

2 Hazards Identification

Classification of the substance or mixture:

CLP Classification (EC No. 1272/2008: H226 – Flammable Liquid - Category 3 H315 – Skin corrosion/irritation – Category 2 H304 – Aspiration Hazard – Category 1 H332 – Acute toxicity, Inhalation – Category 4 H350 – Carcinogenicity – Category 1B H336 – Specific target organ toxicity (Repeated exposure) – Category 2 H411 – Hazardous to the aquatic environment, chronic toxicity – Category 2

Superseded DSD Classification (67/548/EEC and 1999/45/EC
R10, Xi:R38, Xn:R65, Xn:R20, R65, R48/21, Carc. Cat1:R45, N:R51/53

Label Elements

DANGER

H226: Flammable liquid and Vapour

H304: May be fatal if swallowed and enters airways H315: Causes skin irritation

H332: Harmful if Inhaled

H350: May cause Cancer

H373: May cause damage to organs through prolonged or reapeated exposure H411: Toxic to aquatic life with long lasting effects

P201: Obtain special instructions before use

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P260: Do not breath dust/fume/gas/mist/vapours/spray

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTRE or Doctor/physician

P331: Do not induce vomiting

P501: Dispose of contents/container to approved disposal facility

Does not meet the criteria for persistent,bioaccumulative and toxic (PBT) or very persistent very bioaccumulative (vPvB) substances.

3 Composition/Information on Ingredients

Component	CAS No.	EINECS No.	Concentration % W/W	CLP Classification	DSD Classification
Diesel Oil C9-20	68334-30-5	269-822-7	90 - 100	H351	Carc. Cat. 3 :R40
Naphthalene	91-20-3	202-049-5	<1	H351 H302 H410	Carc. Cat. 3 :R40 Xn:R22, N:R50/53

Total Sulphur: <0.1 wt%

4 First Aid measures

Inhalation: If inhalation of vapour causes irritation or drowsiness, remove to fresh air. In emergency situations a qualified person should administer artificial Respiration.
If breathing difficulties develop, oxygen should be administered by a competent and medically Qualified person. Seek immediate medical attention.

Skin: Wash skin as soon as possible with soap and water. Change contaminated clothing immediately and launder before re-use. Get medical advice if irritation persists.

Eyes: Wash out immediately with large amounts of water for at least 15 minutes. If redness and/or irritation continues, seek medical advice.

Ingestion: Do not give anything by mouth. DO NOT INDUCE VOMITING BECAUSE OF THE DANGER OF ASPIRATION. If the victim is drowsy or unconscious, place on the left side, head down, do not leave the victim unattended and observe closely for adequacy of breathing.
Seek medical attention.

Most important symptoms and effects:

Acute: Minor respiratory irritation at high vapour concentrations.

Chronic: Dry skin and possible irritation with repeated or prolonged exposure.

5 Fire Fighting Measures

Extinguishing Media

Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed material or Structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to avoided as water destroys the foam.

Water may be ineffective for extinguishment, unless used under favourable conditions by experienced fire fighters.

Special hazards arising from the substance or mixture
Flammable. This material can be ignited by heat, sparks flame or other sources of ignition (e.g. static electricity, pilot lights, mechanical/electrical equipment, electronic devices such as cell phones, computers, calculators and pagers that have not been certified as intrinsically safe) .
Vapours may travel considerable distances to a source of ignition where they can ignite, flash back, or explode.
May create vapour/air explosion hazard indoors, in confined spaces, outdoors or in sewers. This product will float and can be re-ignited on the surface water. Vapours are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous combustion products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulphur may also be formed.

Special protective actions for Firefighters.
For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protectice clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition wear other appropriate protective equipment as conditions warrant (see section 8)

6 Accidental Release Measures

Personal Precautions: Spilt product presents a significant slip hazard. Avoid exposure of the product to sources of ignition. Chemical grade safety Glasses/goggles. nitrile/PVC gloves and protective coveralls should be worn when dealing with any spillages. Do Not Smoke, avoid inhaling vapours, avoid contact with skin & eyes. Ensure any electrical equipment used is intrinsically safe. Avoid wearing clothing that may generate static electricity. For large spillages persons downwind of the spill must be notified. Isolate immediate hazard area and keep unauthorised persons out. It may be necessary to wear respiratory equipment depending upon a risk assessment of the particular situation.

Environmental Precautions: Prevent entry into drains, sewers and water courses. The appropriate authorities should be notified if it has contaminated soil/vegetation. Spillages occurring on water should be removed from the surface using suitable absorbents. If necessary dispose of absorbed residues as described in section 13.

Decontamination Procedures: Soak up with inert absorbent or contain and remove by pumping or best available means. Ensure explosion-proof equipment is used. In case case of soil contamination, remove contaminated soil for remediation or disposal in accordance with local regulations.

7 Handling and Storage

Handling: Take precautionary measures against static discharge. Non-sparking tools should be used. Keep away from ignition sources such as heat/sparks/open flame – no

smoking. Wear protective gloves/clothing and eye/face protection. A high standard of personal hygiene should be maintained, Wash thoroughly after handling. If clothing or PPE becomes contaminated remove and ensure items are thoroughly cleaned before reusing. The product is flammable and may vaporise easily at ambient temperatures, the vapour is heavier Then air and may create explosive mixtures of vapour and air. Beware of accumulation in low lying areas and confined areas. The use of explosion-proof electrical equipment is recommended. Do not enter confined spaces such as tanks or pits without following the correct entry procedures. The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products and low oxygen levels.

Storage: Store in containers designed to contain flammable liquids and ensure storage area is not close to heat or any sources of ignition. Drums should be stored on their sides preferably under cover, out of direct sunlight, in well ventilated conditions. Containers should be tightly closed and properly labelled. Empty containers retain residue and may be dangerous, do nor pressurise, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame or other sources of ignition. All containers should be disposed of in an environmentally safe manner in accordance with the appropriate disposal of hazardous waste regulations.

8 Exposure Controls/Personal protection

Where prolonged or repeated exposure is likely ANTI-STATIC PROTECTIVE CLOTHING should be worn including impervious gloves and eye protection

Respiratory Protection: Unlikely to be required in normal use but ensure good ventilation. However, where concentration in air may be excessive, approved respirators fitted with appropriate cartridges suitable for organic vapours may be required to BS EN 140)

Workplace exposure limits: Not assigned

Eye Protection: Chemical grade eye protection approved to BS EN 166 is recommended at all times. Skin Protection: Hand & Skin protection is recommended at all times where exposure is likely. Protective clothing must be worn, including PVC or nitrile gloves to BS EN 374 with a breakthrough time of > 360 minutes.

Suggestions provided in this section for exposure control and specific types of PPE are based on readily available Information. Users should consult with the specific manufacturer to confirm the performance of their PPE. Specific situations May require consultation with industrial hygiene, safety, or engineering professionals.

9 Physical and Chemical Properties

Appearance: Clear liquid (Straw coloured)

Odour:	Diesel fuel
pH:	No Data
Flash Point:	<55°C (PMCC)
Boiling point range	165--375^{O} C
Density at 15°C	0.82 – 0.875
Solubility - Water:	Very Low
Viscosity cSt at 20°C:	4.8mm^2/s
Viscosity cSt at 40°C:	2-4.5 mm^2/s
Auto Ignition temp °C :	250-270
Pour point °C:	-24
Melting/freezing point	No data
Vapour Pressure	<0.3 kPa@20 ^{O}C
Upper Explosive Limits (vol.% in air)	5.0
Lower Explosive Limits (vol.% in air)	0.5

10 Stability and Reactivity

Conditions to Avoid - Heat (Note: Flash Point <55°C min). Prevent vapour accumulation.

The product is generally not chemically reactive and stable under normal ambient conditions of use.
Hazardous Decomposition Products - thermal decomposition may lead to the formation of a multiplicity of compounds some of which may be hazardous. With incomplete combustion smoke and hazardous fumes and gases, including carbon monoxide may be formed.

11 Toxicological Information

High concentrations may cause respiratory irritation, headache, drowsiness, dizziness, loss of co-ordination, disorientation And fatigue.
Aspiration is considered to be a hazard, may be fatal if swallowed and enters airways
Vapours and spray may be irritating to the respiratory tract and for mucous membranes. The product is not classified as sensitising or allergenic. Prolonged and repeated contact with the product may cause drying of the skin and possibly dermatitis. Causes mild eye irritation.
May cause cancer. Petroleum middle distillates have been shown to cause skin tumours in mice following Repeated and prolonged skin contact. Follow up studies have shown that these tumours are produced through a
Non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumours In the absence of prolonged skin irritation.

Middle distillates with low polynuclear aromatic hydrocarbon content have not been identified as carcinogens by the International Agency for Research on Cancer (IARC).
Specific Target Organ Toxicity (Single exposure): Not expected to cause organ effects from a single exposure. Specific Target Organ Toxicity (Repeated exposure): May cause damage to organs through repeated exposure.
Dermal application of a distillate fuel component at doses >125mg/Kg, 5d/wk, for 13 weeks resulted in decreased Liver, thymus and spleen weights, and altered bone marrow function. Microscopic alterations included liver hypertrophy And necrosis, decreased hematopoesis and lymphocyte depletion.

Information on hazardous components:
Naphthalene
Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The US National Toxicology Programme (NTP) concluded that there is clear evidence of carcinogenicity in male and female
rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in
male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

Inhalation:	>4.65 mg/L (mist) LC50/LD50
Skin absorption:	> 4.1g/Kg LC50/LD50
Ingestion:	> 5g/KG LC50/LD50

Not expected to cause genetic heritable effects. Not expected to cause reproductive toxicity.

12 Ecological Information

Ecotoxicity: Acute aquatic toxicity studies on samples of Diesel show acute Toxicity values of 2 -20mg/L . these values are consistent with the predicted Aquatic toxicity of these substances based on their hydrocarbon compositions. should be regarded as toxic to aquatic organisms, with the potential to cause long-term adverse effects in the aquatic environment.
Classification H411: Chronic Cat 2

Mobility: Releases to water will result in a hydrocarbon film floating and spreading on the surface. For the lighter components, volatilisation is an important loss product and reduces the hazard to aquatic organisms. In air, the hydrocarbon vapours react readily with hydroxyl radicals with half life of less than one day. Photoxidation on the water surface is also a significant loss process particularly for polycyclic aromatic compounds. In water the majority of components will be adsorbed on sediment. Adsorbtion is the most predominant physical process on release to soil. Adsorbed hydrocarbons will slowly degrade in both water and soil.

Degradability: Inherently biodegradable by Micro-organisms.

Bioaccumulation Potential: Diesel components have measured or calculated low Kow values ranging from 3.9 to 6 and therefore would be regarded as having the potential to bioaccumulate. Lower molecular weight compounds are readily metabolised and the actual bioaccumulation potential of higher molecular weight compounds is limited by the low water solubility and large molecular size.

An assessment revealed that this product was not a Persistent, bioaccumulative or Toxic substance.

13 Disposal Considerations

European Waste Code; 13 07 01 Fuel oil and diesel

This product, if discarded as produced would be considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that directive unless Article 1(5) of that directive applies.

This code has been assigned based upon the most common uses for this material and may not reflect contaminants Resulting from actual use. Waste generators/producers are responsible for assessing the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code.

Container contents should be completely used and emptied prior to disposal. All containers should be disposed of in an Environmentally safe manner and in accordance with all applicable Regulations.

14 Transport Information

UN Prper shipping name	GAS OIL or DIESEL FUEL or HEATING OIL ,LIGHT
UN Number (Substance Identification Number):	1202
Transport class:	3
Packing Group:	III
Environmental Hazards:	Marine Pollutant

If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL annex 1.

15 Regulatory Information

Health, safety & Environmental Regulations pertaining to the product:

EC 1272/2008 – Classification, Labelling and Packaging of Substances & Mixtures EN 166:2002 – Eye Protection
EN 529:2005 – respiratory Protective Devices
BS EN 374-1:2003 Protective gloves against chemicals and micro-organisms
Workplace Exposure Limits, (EH40/2005), Control of Substances Hazardous to Health Directive 91/689/EEC on Hazardous Waste (European Waste codes)
Directive 2000/76/EC on the incineration of waste Directive 1999/31/EC on Landfill of waste

16 Other Information

List of relevant Hazard Statements under CLP classification:

H226: Flammable liquid and vapour H302: Harmful if swallowed
H304: May be fatal if swallowed and enters airways H315: Causes skin irritation
H332: Harmful if inhaled
H350: May cause cancer
H351: Suspected of causing cancer
H373: May cause damage to organs through prolonged or repeated exposure H411: Toxic to aquatic life with long lasting effects

List of relevant Hazard Statements under DSD Classification:

R10: Flammable
R20:Harmful by inhalation
R22:Harmful

1 Identification of the Substance

Product Name: Unleaded/Super Unleaded Petrol
Application: To be used exclusively as fuel for spark ignition engines

2 Composition/Information on Ingredients

Chemical nature: Substances composed of paraffin hydrocarbons, Naphthalene (=<35%) and olefin hydrocarbons (=<18%), with mainly hydrocarbons from C4-C12, including benzene, toluene & n-hexane. Possibly: The following oxygenates compounds: Methanol =< 3% vol. Iso-propyl alcohol
=<10% Isobutyl alcohol =<10% vol. Terbutyl alcohol =<7% vol. Ethers (5 or more C atoms) including ETBE/MTBE =<15% vol. –multi-purpose additives to boost performance.

	Composition comments	Classification
Benzene	Concentration	F, T :R11,45,46, R48/23/24/25, 65, 36/38 =<1% in volume
N-hexane		F,Xn,N:R11-R38,48/20,62,65,67,51/53 <5% in volume
Toluene		Xn,Xi Rep. Cat 3 R11,48/20,65,48,38,67,63 <10%

Dangerous ingredients	Classification	Content	CAS No.	EC No.
Gasoline	T,F,N:R12,45,46,63,38,65,67,51/53	>90%	86290-81-5	289-220-8

3 Hazards Identification

Health Hazards:

Eyes: Likely to cause irritation if splashed into the eye with redness and stinging.

Skin: May cause irritation on brief or occasional contact; prolonged, repeated and heavy direct contact with the skin over a long period of time can cause defatting of the skin erythema, dermatitis, oil acne.

Inhalation: inhalation of fumes or vapours may have a narcotic effect on the nervous system may cause headaches, nausea, drowsiness and irritation to the breathing passages and lungs with possible effects to the central nervous system. As gasoline contains Benzene which is a known carcinogen continuous exposure to high levels of vapours may be toxic and in extreme cases may cause Leukaemia.

Ingestion: Likely to cause nausea and diarrhoea if small amounts are swallowed, larger amounts may effect the central nervous system. Signs and symptoms of central nervous system effects may include the following; headaches, dizziness, loss of appetite, weakness and loss of concentration. The product may be harmful due to the aspiration of the liquid into the lungs following ingestion which may cause chemical pneumonitis and can be fatal.

Extremely flammable liquid which is highly volatile and may form flammable or explosive vapour/air mixtures from uncontrolled releases.

This product is classified as Extremely flammable, Carcinogenic, Harmful & irritating and dangerous for the environment.

4 First Aid Measures

Ingestion: Wash mouth out with water. Get medical advice immediately. DO NOT INDUCE VOMITING BECAUSE OF THE DANGER OF ASPIRATION.

Skin: Wash skin as soon as possible with soap and water. Change contaminated clothing and launder before reuse. Get medical advice. Any injection of fuel under the skin should be considered an EMERGENCY – get Medical Advice URGENTLY.

Eyes: Wash out thoroughly with large amounts of water, for at least 15 minutes. If redness and/or irritation continues get medical advice.

Inhalation: In case of exposure to intense concentrations of vapours, fumes or spray move to fresh air. and allow to rest, seek medical attention immediately.

5 Fire Fighting Measures

Extinguishers: Foam, dry chemical powder, carbon dioxide, water spray

Hazards: Extremely flammable, high hazard. The liquid can release vapours at temperatures below ambient which form flammable mixtures. Vapours settle to ground level and may reach ignition sources remote from the point of escape via drains and other underground passages. Static discharge material can accumulate static charges which may cause an incendiary electrical discharge.

Measures: Use water fog or spray to cool fire exposed surfaces (containers) and to protect personnel. Only personnel trained in fire fighting should use water sprays (DO NOT USE WATER JETS). Respiratory and eye protection is essential for fire-fighting personnel exposed to smoke and fumes.

Hazardous decomposition products include smoke, sulphur oxides and carbon monoxide.

6 Accidental Release Measures

Treat any spillage as a fire hazard. Spray, vapour or mist can be a potential fire or explosion hazard.

Personal Precautions: Spilt product presents a significant slip hazard. Avoid exposure of the product to sources of ignition. Chemical grade safety Glasses/goggles. nitrile/PVC gloves and protective coveralls should be worn when dealing with any spill. Where ventilation is inadequate wear suitable breathing apparatus.

Environmental Precautions: Prevent entry into drains, sewers and water courses. The appropriate authorities should be notified if it has contaminated soil/vegetation. Spillages occurring on water should be removed from the surface using suitable absorbents. If necessary dispose of absorbed residues as described in section 13. All sources of ignition must be eliminated immediately.

Decontamination Procedures: Soak up with inert absorbent or contain and remove by pumping or best available means. Ensure explosion-proof equipment is used. In case of spillage on water contain by a boom and collect by skimming or absorption.

SAFETY DATA SHEET

7 Handling and Storage

The design and operation of bulk storage and fuel systems must comply with national legislation and recognised codes of practice. In smaller quantities containers such as drums should be stored in cool, well ventilated surroundings, away from all sources of ignition. Electrical equipment and fittings must comply with local fire prevention regulations for this class of flammable product.
Store at room Temperature away from moisture, heat or any ignition sources. DO NOT SMOKEAVOID INHALATION OF VAPOURS AVOID CONTACT WITH THE SKIN OR MUCOUS MEMBRANES DO NOT USE MOBILE PHONES DURING HANDLING

Keep the product away from food and beverages.
Prevent the formation of vapours, mist and erosols.
Wear safety shoes and fully covering protective clothing GENERATING NO STATIC ELECTRICITY. Never weld, drill, grind or saw any empty containers
Avoid repeated contact with the skin as this may cause skin conditions, which may also be aggravated by Contact with soiled clothing.
Avoid contact with oxidisers. Remove any contaminated clothing immediately and launder before re-use.

Always use the correct grounding procedure. Store and handle in closed or properly vented containers. Ensure compliance with statutory requirements for storage and handling. Regularly check for and prevent potential leaks from containers. Installations should be designed to avoid pollution of soil and water. Use only containers, joints pipes etc. made of material which is suitable for use with aromatic hydrocarbons.

8 Exposure Control/Personal Protection

If frequent or continuous contact is likely PROTECTIVE CLOTHING should be worn. A chemical resistant overall or apron, impervious gloves and eye protection.

Any electrically operated ventilation equipment must be BASEEFA, UL or approved for use in potentially Explosive atmospheres

Workplace Exposure limits:	**8 hour TWA**	**Source**
Benzene	1ppm	EH/40 2005 (amendment 2007)
n-Hexane	20ppm	EH/40 2005 (" " ")

Hand and skin protection - Hand and skin protection recommended at all times. Where exposure is likely protective clothing must be worn, including nitrile/PVC or neoprene gloves approved to BS EN 374 with a breakthrough time of >360 minutes.
Eye protection - Eye protection approved to BS EN 166 is recommended at all times.

9 Physical and Chemical Properties

Typical properties:

Appearance	Clear pale yellow liquid
Odour	Pungent petroleum odour
pH	Not applicable
Boiling Range °C	25-215
Flash Point (TAGC) °C	< -40
Flammability Limits % vol	1.4 – 8.7
Auto ignition temperature °C	>300

Density at 15°C		720-770 Kg/m3
Solubility - water		Very low (0.01 g/l)
Viscosity cSt @ 20°C		0.5 – 0.75
Vapour density (relative to air)		3-4 (air=1

Revision 05 **Super Unleaded Petrol** Date Sept. 2008

10 Stability and Reactivity

This product is stable under normal operating conditions.

Conditions to avoid: Sources of ignition, elevated temperatures, water.

Materials to avoid: Strong oxidising agents such as chlorates, nitrates and peroxides.

No hazardous decomposition products will be evolved at ambient temperatures. However, incomplete Combustion and thermolysis produces potentially toxic gases such as, carbon monoxide, carbon dioxide, Various hydrocarbons, aldehydes and soot.

11 Toxicological Information

Health effects:

Eyes: Slightly irritating but does not damage eye tissue

Skin: Prolonged or repeated exposure may lead to defatting of the skin, erythema, dermatitis or oil acne. Irritation, but a low order of toxicity.

Inhalation: Contains Benzene and complex hydrocarbons. Repeated or prolonged exposure to high levels of Bezene can be toxic and in extreme cases can lead to leukaemia. Any risks will be negligible under normal conditions provided all recommended hygiene precautions are followed. This product can be harmful due to aspiration of liquid into lungs following ingestion which may cause chemical pneumonitis and can be fatal.

Ingestion: Low order of acute/systemic toxicity.
Chronic: The long term toxicity evaluation for this product is based on testing results from similar atmospheric petroleum distillates.

Acute: Based on animal testing data from similar products, the acute toxicity is expected to be: ORAL

	(rat)	LD50	>5000mg/Kg (slightly toxic)
INHALATION	(rat)	LD50	>2500mg/Kg (moderately toxic)
DERMAL	(rabbit)	LD50	>2000 mg/Kg (moderately toxic)

12 Ecological Information

This product is classified as dangerous for the environment. On release to water gasoline (petrol) floats and Hydrocarbons are lost through volatilization. Toxic to fish and invertebrates.

Ecotoxicity: Some components of gasoline are water soluble, and harmful to aquatic organisms. Acute aquatic toxicities of gasoline are in the range 1-10 mg.l

Mobility: Mobile in soil and may contaminate groundwater. The product evaporates in the air and dissipates more or less depending Upon local conditions. However, it may stagnate in pools in low lying Areas, in an undisturbed or confined atmosphere.

Degradability:	Rapid removal of gasoline from the environment result from a combination Of evaporation, physical partitioning with flowing water and degradation. Volatile components are phyto-degraded in air by reaction with hydroxyl radicals.
Bioaccumulation Potential:	From the known properties of the hydrocarbon components, gasolines are expected to be inherently biodegradable.

13 Disposal Considerations

Place contaminated materials/packaging in suitable containers and dispose of according to the appropriate Regulations for Hazardous/Special waste. Always use a licensed disposal company. Take care as "empty" May contain flammable or explosive vapours.

14 Transport Information

Symbol: Flammable Liquid 3 Y
E Shipping name ; Gasoline
unleaded UN: Flammable liquid
packaging group II
UN Number (Substance Identification Number):
1203 IMO Hazard Class: 3.1
ICAO Hazard Class: 3 IATA Hazard Class 3
ADR/RID Hazard Class: 3.1

15 Regulatory Information

Symbol(s):	Labelling: Skull & crossbones on orange background, Dead Fish and Tree (n) Flames on orange backround
Classification	Toxic, Extremely flammable, Dangerous for the environment Extremely flammable May cause cancer Harmful may cause lung damage if swallowed. Irritating to skin Vapours may cause drowsiness and dizziness Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment If Swallowed do not induce vomiting, seek medical advice. Do not breath vapour Keep away from sources of ignition – No smoking Wear suitable clothing and gloves Avoid contact with skin Avoid release to the environment. Refer to special instructions/Safety data Sheet

16 Other information

The data and advice given apply when the product is sold for the stated application or applications. The product is not sold as suitable for any other application. Use of the product for any applications other than that as stated in this sheet may give rise to risks not mentioned in this sheet. You should not use the product other than for the stated application or applications without seeking advice from us.

If you have purchased the product for supply to a third party for use at work, it is your duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet.

If you are an employer, it is your duty to inform your employees and others who may be affected by any of the hazards described in this sheet and of any precautions which should be taken.

Approved Code of Practice: Waste Management Duty of Care.

Risk Phrases Full Text:

R12	Extremely flammable
R45	May cause cancer
R65	Harmful may cause lung damage if swallowed.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

R38 Irritating to skin
R46 May cause heritable genetic damage R63 Possible risk of harm to the unborn child
R67 Vapours may cause drowsiness and dizziness

Guidance:

Prevention of Dermatitis at work (INDG-233)
Assessing and Managing risks at work from skin exposed to Chemical agents (HSG 205).
Occupational Exposure Limits (EH40)
Effects of Mineral Oil on the Skin—Cautionary Notice.

The above are available from HMSO and HSE sources.

EU Directives

Hazardous preparation Directive 1999/45/EC modified (Directive2001/60/EC) D. 67/548/EC Modified by D. 2004/73/EC (29thATP)

All reasonable care has been taken to ensure that the information in this publication is accurate at the time of printing. However, although certain hazards may be described we cannot predict all hazards that may exist whilst using the product in a workplace.

This MSDS should be used as a component of a risk assessment which is the responsibility of the user of the product to prepare and record before use.

MSDS - G & B 004

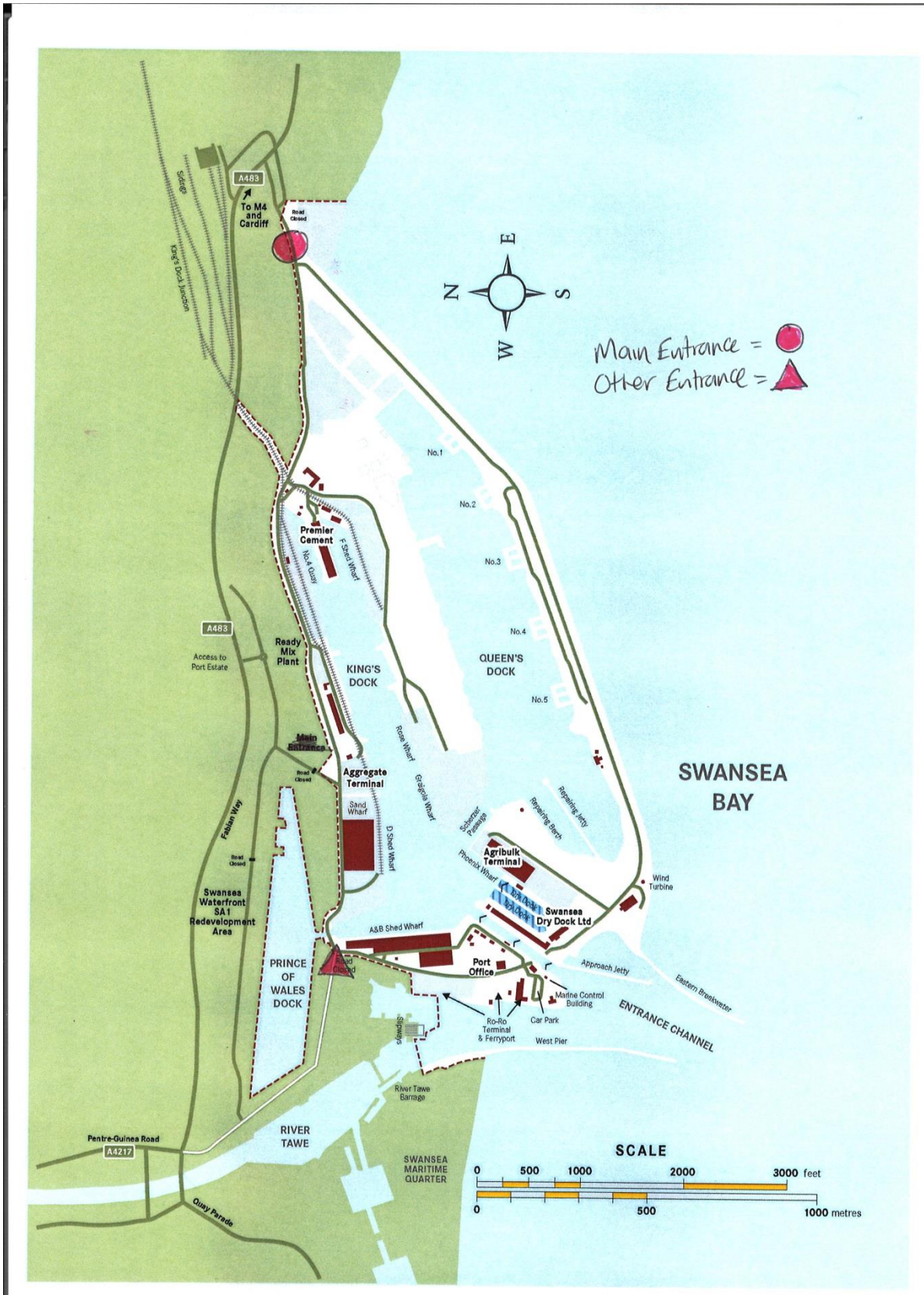
Appendix 4 - Dock Notifications

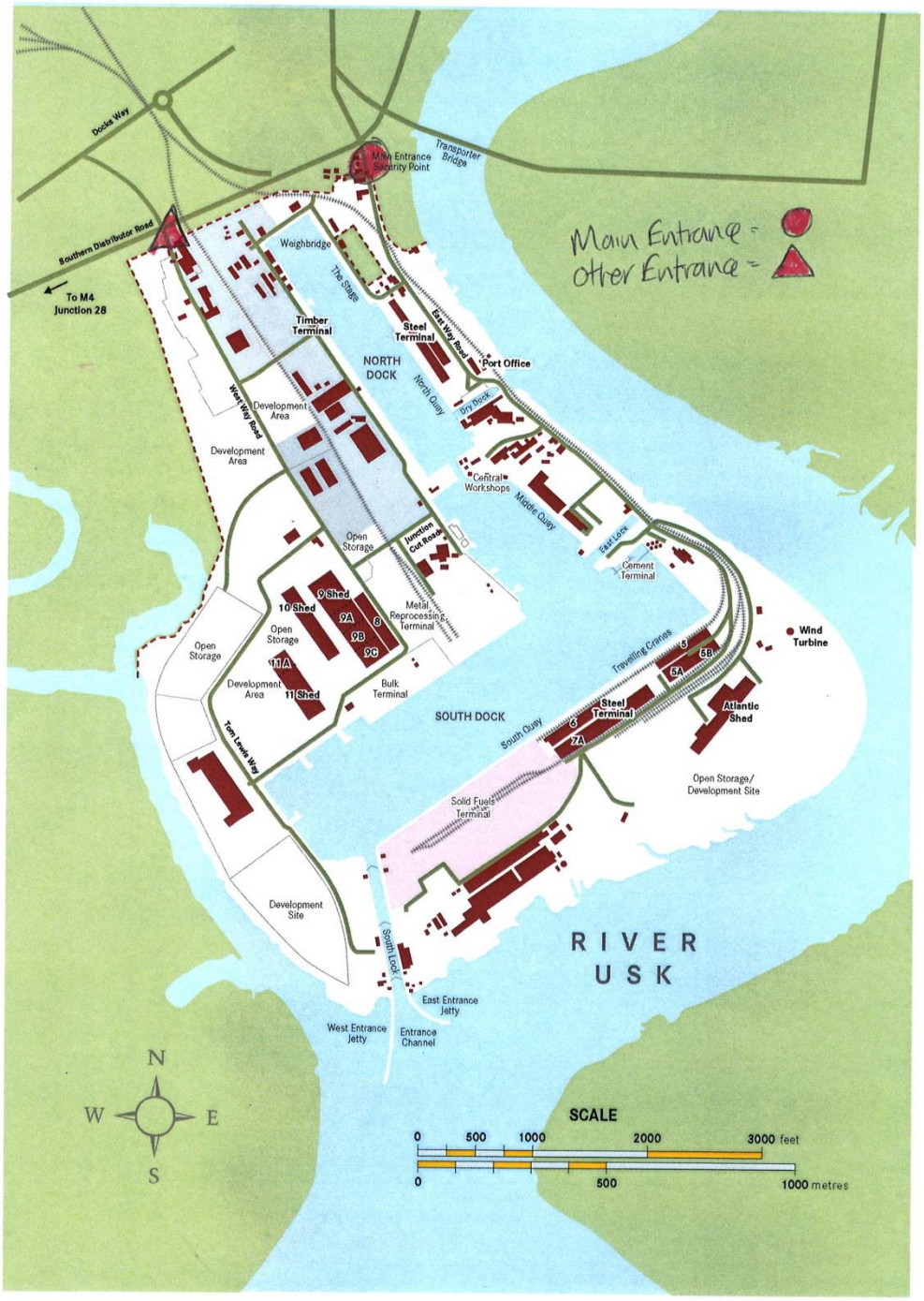
			Dock														
			Tier 1					Tier 2					Tier 3				
		Contact No	Newport	Cardiff	Barry	Port Talbot	Swansea	Newport	Cardiff	Barry	Port Talbot	Swansea	Newport	Cardiff	Barry	Port Talbot	Swansea
LPS		02920 835025	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Harbour Master		07958 908329	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operational Key Team Members		See sheet	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maritime and Coastguard Agency (MCA		02380 329480						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Adler and Allan		0800 592 827						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Milford Haven Coastguard		01646 690909						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environment Agency		0800 807060						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Natural Resources Wales (NRW)		0300 0655111						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Waste Contractor Biffa		0800 55 11 22						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ships Agents			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Berth Holders			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Police		999						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fire and Rescue		999						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Health and Safety Executive (HSE)		0151 922 9235											✓	✓	✓	✓	✓
International Maritime Organization (IMO)		0207 735 7611											✓	✓	✓	✓	✓
International Oil Pollution Compensation Fund (IOPCF)		0207 5927100											✓	✓	✓	✓	✓
International Tanker Owners Federation Ltd (ITOPF)		020 7566 6999											✓	✓	✓	✓	✓
P&I Club		07768 143 884											✓	✓	✓	✓	✓
National Chemical Emergency Centre		01235 753654											✓	✓	✓	✓	✓
Newport Harbour Commissioners		01633 265323						✓					✓				
Newport Civil Contingeny		07071 784347						✓					✓				
Cardiff Harbour Authority		02920 700234							✓					✓			
Cardiff County Council		029 2087 2087							✓					✓			
Vale of Glamorgan Council		01446 700111								✓					✓		
Neath Harbour Comissioners		01633 265702									✓					✓	
Neath Port Talbot Council		01639 686 868									✓					✓	
Swansea Council		01792 636000										✓					✓
Cardiff Council Emergency Management Unit		02920 871838												✓			
Newport Security		07734 071874	✓					✓					✓				
Cardiff security		07734 072190		✓					✓					✓			
Barry Security		07703 652139			✓					✓					✓		
Port Talbot Security		07810 806284				✓					✓					✓	
Swansea Security		07718 518663					✓					✓					✓
TATA		07836 611038				✓					✓					✓	
Local Shipping due								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ships in Port			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

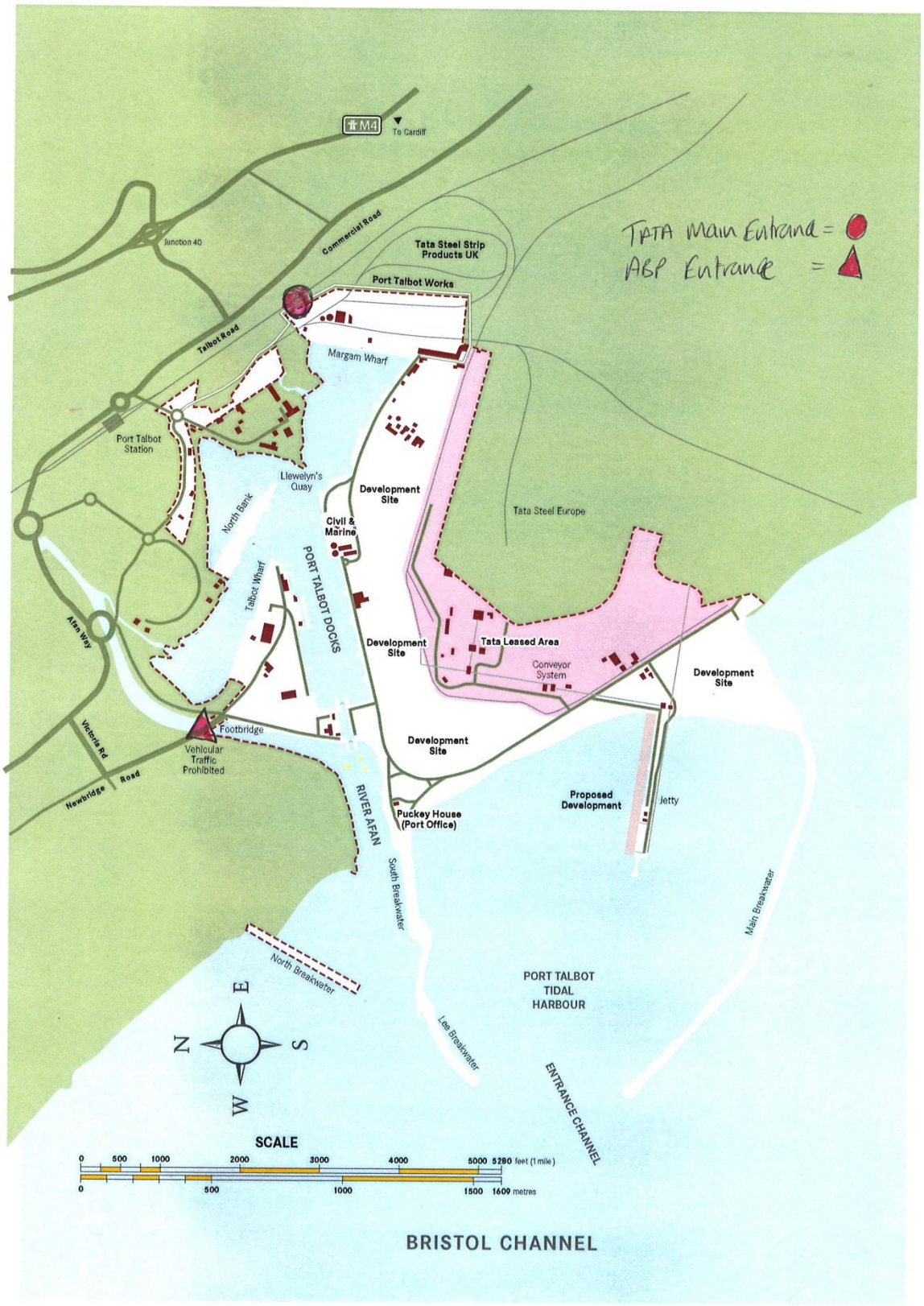
Appendix 5 – River notifications

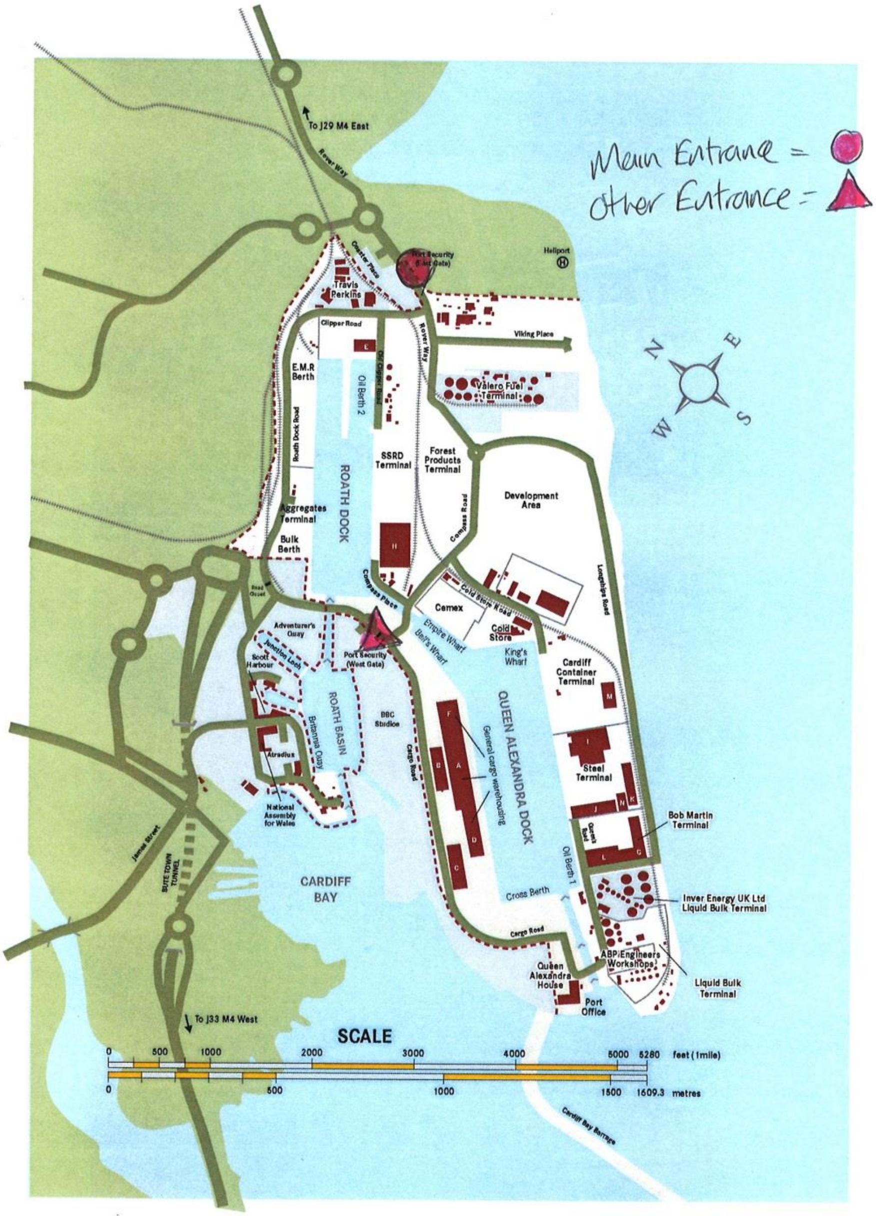
			River													
			Tier 1					Tier 2					Tier 3				
		Contact No	Newport	Cardiff	Barry	Port Talbot	Swansea	Newport	Cardiff	Barry	Port Talbot	Swansea	Newport	Cardiff	Barry	Port Talbot	Swansea
LPS		02920 835025	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Harbour Master		07958 908329	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operational Key Team Members		See sheet	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maritime and Coastguard Agency (MCA)		02380 329480	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Adler and Allan		0800 592 827	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Milford Haven Coastguard		01646 690909	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environment Agency		0800 807060	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Natural Resources Wales (NRW)		0300 0655111	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Waste Contractor Biffa		0800 55 11 22						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ships Agents								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Berth Holders													✓	✓	✓	✓	✓
Police		999						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fire and Rescue		999						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Health and Safety Executive (HSE)		0151 922 9235						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
International Maritime Organization (IMO)		0207 735 7611						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
International Oil Pollution Compensation Fund		0207 5927100						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
International Tanker Owners Federation Ltd		020 7566 6999						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
National Chemical Emergency Centre		01235 753654											✓	✓	✓	✓	✓
Welsh Assembly Agriculture and Fisheries		0292 0801332	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Food Standards Agency		0207 276 8829						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Offshore Pollution Liability Association Limited (OPOL)		02033 20228						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Newport Harbour Commissioners		01633 265323	✓					✓					✓				
Newport Civil Contingency		07071 784347	✓					✓					✓				
Cardiff Harbour Authority		02920 700234		✓					✓					✓			
Cardiff County Council		029 2087 2087		✓					✓					✓			
Vale of Glam' Council		01446 700111			✓					✓					✓		
Neath Harbour Commissioners		01633 265702				✓					✓					✓	
Neath PT Council		01639 686 868				✓					✓					✓	
Swansea Council		01792 636000					✓					✓					✓
Monmouthshire Council		01633 644092	✓					✓	✓				✓	✓			
Cardiff Council Emergency Management		02920 871838							✓					✓			
Newport Security		07734 071874	✓					✓					✓				
Cardiff security		07734 072190		✓					✓					✓			
Barry Security		07703 652139			✓					✓					✓		
Port Talbot Security		07810 806284				✓					✓					✓	
Swansea Security		07718 518663					✓					✓					✓
TATA		07836 611038				✓					✓					✓	
Local Shipping due			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ships in Port								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Appendix 6 – Port Plans and Access

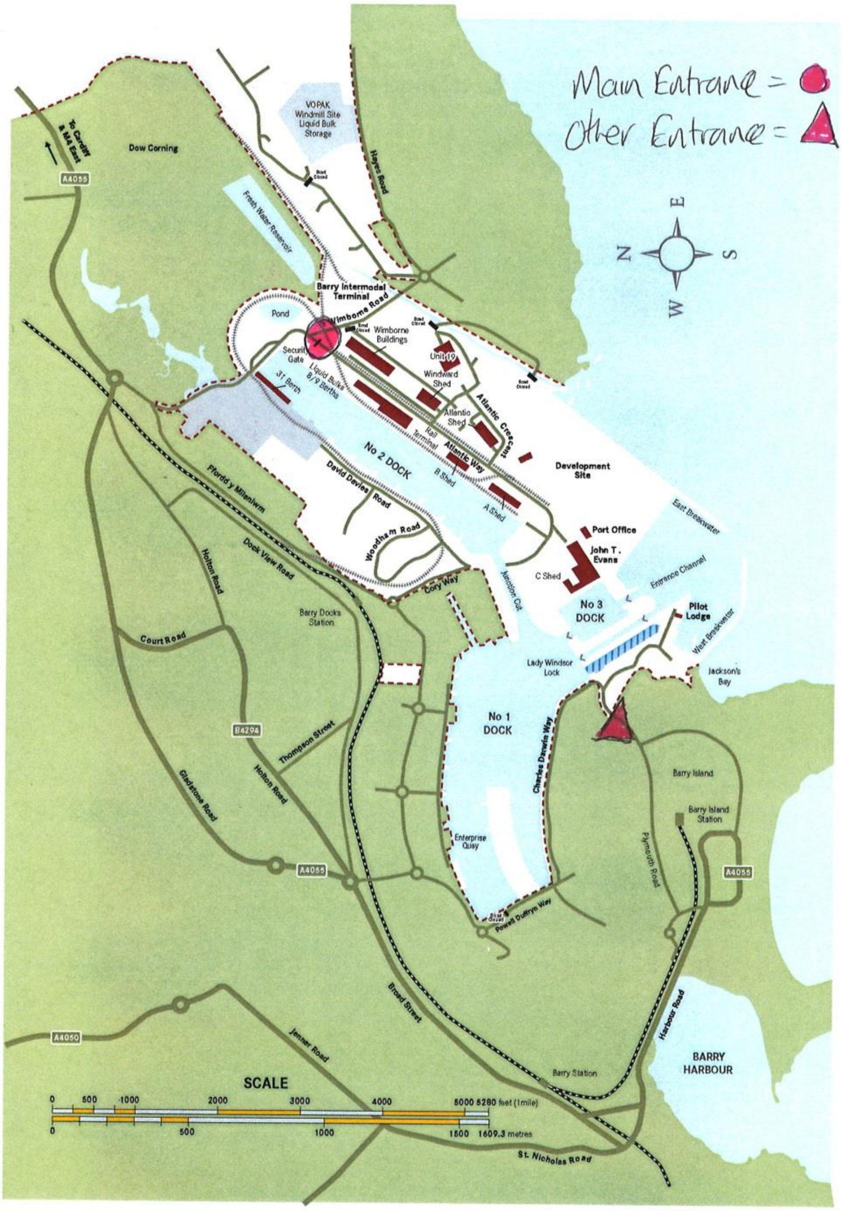



Docks Way
Main Entrance Security Point
Transporter Bridge
Southern Distributor Road
To M4 Junction 28
Weighbridge
Tire Stage
Timber Terminal
Steel Terminal
East Way Road
Port Office
NORTH DOCK
North Quay
Dry Dock
West Way Road
Development Area
Development Area
Central Workshops
Middle Quay
Open Storage
Junction Cut Road
East Lock
Cement Terminal
9 Shed
10 Shed
9A
8
9B
9C
Metal Reprocessing Terminal
Wind Turbine
Open Storage
Open Storage
11A
Development Area
11 Shed
Bulk Terminal
Travelling Cranes
5
5B
5A
SOUTH DOCK
Steel Terminal
6
7A
South Quay
Atlantic Shed
Tom Lewis Way
Open Storage/ Development Site
Solid Fuels Terminal
Development Site
South Lock
RIVER USK
East Entrance Jetty
West Entrance Jetty
Entrance Channel
Main Entrance =
Other Entrance =
N
W
E
S
SCALE
0 500 1000 2000 3000 feet
0 500 1000 metres


M4
To Cardiff
Junction 40
Commercial Road
Tata Steel Strip Products UK
Port Talbot Works
Talbot Road
Margam Wharf
Port Talbot Station
Llewelyn's Quay
North Bank
Development Site
Civil & Marine
Tata Steel Europe
PORT TALBOT DOCKS
Talbot Wharf
Development Site
Tata Leased Area
Conveyor System
Development Site
Development Site
Footbridge
Vehicular Traffic Prohibited
Victoria Rd
Newbridge Road
Aberavon Way
RIVER AFAN
Puckey House (Port Office)
Proposed Development
Jetty
South Breakwater
Main Breakwater
North Breakwater
PORT TALBOT TIDAL HARBOUR
Lee Breakwater
ENTRANCE CHANNEL
N
E
S
W
SCALE
0 500 1000 2000 3000 4000 5000 5280 feet (1 mile)
0 500 1000 1500 1609 metres
BRISTOL CHANNEL
TATA Main Entrance =
ABP Entrance =



Main Entrance =
Other Entrance =
To J29 M4 East
Rover Way
Coaster Place
Port Security (East Gate)
Heliport
Travis Perkins
Clipper Road
Viking Place
Oil Clipper Road
E.M.R Berth
Oil Berth 2
Valero Fuel Terminal
Roath Dock Road
SSRD Terminal
Forest Products Terminal
Compass Road
Development Area
ROATH DOCK
Aggregates Terminal
Bulk Berth
Longships Road
Compass Place
Cold Store Road
Cemex
Adventurer's Quay
Junction Lock
Port Security (West Gate)
Empire Wharf
Bell's Wharf
Cold Store
King's Wharf
Scott Harbour
Cardiff Container Terminal
ROATH BASIN
Britannia Quay
BBC Studios
Cargo Road
General cargo warehousing
QUEEN ALEXANDRA DOCK
Atradius
Steel Terminal
Queen's Road
Bob Martin Terminal
National Assembly for Wales
Oil Berth 1
CARDIFF BAY
Cross Berth
Inver Energy UK Ltd Liquid Bulk Terminal
James Street
BUTE TOWN TUNNEL
Cargo Road
ABP Engineers Workshops
Queen Alexandra House
Liquid Bulk Terminal
Port Office
To J33 M4 West
SCALE
0 500 1000 2000 3000 4000 5000 5280 feet (1mile)
0 500 1000 1500 1609.3 metres
Cardiff Bay Barrage


Main Entrance = [circle]
Other Entrance = [triangle]
N
E
S
W
To Cardiff & M4 East
A4055
Dow Corning
VOPAK Windmill Site Liquid Bulk Storage
Fresh Water Reservoir
Hayes Road
Barry Intermodal Terminal
Wimborne Road
Pond
Security Gate
Wimborne Buildings
Unit 19
Windward Shed
Liquid Bulks 8/9 Berths
31 Berth
Atlantic Shed
Atlantic Crescent
Rail Terminal
Atlantic Way
No 2 DOCK
B Shed
A Shed
Development Site
David Davies Road
Woodham Road
Ffordd y Mileniwm
Dock View Road
Holton Road
Cory Way
Junction Cut
C Shed
Port Office
John T. Evans
No 3 DOCK
East Breakwater
Entrance Channel
Pilot Lodge
West Breakwater
Lady Windsor Lock
Jackson's Bay
Barry Docks Station
Court Road
B4294
Thompson Street
No 1 DOCK
Charles Darwin Way
Barry Island
Barry Island Station
Gladstone Road
Enterprise Quay
Plymouth Road
Powell Duffryn Way
Broad Street
Harbour Road
A4050
Jenner Road
BARRY HARBOUR
Barry Station
SCALE
0 500 1000 2000 3000 4000 5000 5280 feet (1mile)
0 500 1000 1500 1609.3 metres
St. Nicholas Road

Appendix 7 – SW Bunkering Procedure

Bunkering Procedure for Vessels in South Wales Ports

Prior permission must be obtained from the Berth Operator.
LOCK CONTROLLER to be advised when alongside, when pumping, and when complete. Bunkering barges must notify when clear of the vessel.

During 'tide time' vessels are to inform the LOCK CONTROLLER by VHF, that they are about to commence bunkering operations confirming that a bunker checklist, as detailed in the Vessels ISM procedures, has been completed satisfactorily. During the Low water period, the information should be transmitted to the Duty LPS officer at Cardiff LPS directly by telephone.

Upon completion of bunkering operations, LOCK CONTROLLER or LPS Officer at Cardiff LPS (during low water periods) should be contacted and informed that bunkering operations have been completed and of the total amount of bunkers transferred.

Any spillage will be immediately reported to the LOCK CONTROLLER or LPS Officer at Cardiff LPS and all operations will cease and may not be allowed to recommence. This operation may then be required to be completed alongside or in an enclosed dock under supervision. All Bunker details including the supplier if know are to be entered in PAVIS and e-mailed to Finance – Stanislava Ivanovich and MARINE MANAGER and DEPUTY HARBOUR MASTER

Bunkering Vessels at Anchor

ABP do NOT allow any vessels not alongside in dock or Harbour to undertake bunkering operations within our SHA areas. Permission for Ship to Ship transfers outside of the ABP SHA areas should be directed to the MCA as the appropriate agency. ABP have no remit to advise bunker transfers outside of our SHA areas.

Appendix 8 – Adler and Allan Schedule of Invemtory Charges

Adler & Allan
Marine Response Counter Pollution Services

0800 592 827
www.adlerandallan.co.uk

MARINE RESPONSE
SCHEDULE OF CHARGES

2017
Issue 1

Description	Unit	Purchase/Hire Cost	Normal Rates Monday to Friday 0600hrs - 1600hrs	Monday to Friday 1600hrs - 0000hrs and on Saturdays	Monday to Saturday 0000hrs - 0600hrs and on Sundays
Call-out Charges (F.O.C. to A&A Response Membership Subscribers)					
Immediate Response	per team			No charge for subscribers	
Next day response	per team			No charge for subscribers	
Tanker Rates - min. 5 hour charge (unless previously agreed) including travelling time from/to base & to/from disposal site					
Vacuumation Unit	per day		POA		
Artic unit/trailer, combi jet/ vat tanker, ADR spec tanker	per hour		£93.10	£115.37	£135.61
Rigid vacuum, delivery/uplift tanker			£72.86	£93.10	£115.37
Holding barrels (exclusive of cab unit)	per day		£166.98	£166.98	£166.98
Tanker wash out (where applicable)	per tanker		£166.98	£166.98	£166.98
Vehicle Rates - min. 5 hour charge (unless previously agreed) including travelling time from/to base					
Pipeline Response Unit (PRU)	per day		£770.00	£770.00	£770.00
Response van/trailer/4WD/ welfare unit (vehicle only)	per day		£267.00	£267.00	£267.00
Tail lift/flatbed/hiab/grab lorry	per hour		£67.80	£88.04	£99.18
HP jetter van pack/ CCTV drain survey	price on request				
Transport of men & equipment to/from site and whilst travelling on site (mileage is not charged on tankers or vehicles that are billed by the hour)					
	per mile		£1.01	£1.01	£1.01
Manpower Rates - min. 5 hour charge (unless previously agreed) including travelling time from/to base					
Drivers mate/Labourer	per hour		£29.35	£38.46	£45.54
Spill Technician/Plant Operator	per hour		£38.46	£45.54	£52.62
Marine Responder	per hour		£42.50	£49.59	£56.67
Supervisor/Team leader	per hour		£48.58	£55.66	£62.74
Technical Supervisor/Engineer/ Chemist	per hour		£64.77	£74.89	£85.01
Consultant/Project Manager	per hour		£80.96	£91.08	£102.21
On Scene Commander	per hour		£119.42	£119.42	£119.42
Director	per hour		£166.98	£166.98	£166.98
Externally hired in consultants and sub-contractors		cost plus 15%			
Overnight Accomodation & Subsistence		cost plus 15%			
Daytime Subsistence	per 5 hours		£5.06	£5.06	£5.06
Out of hours opening of transfer facility	per 12 hour shift or part thereof			£519.16	£883.48
Working past 0000hrs may incur an additional charge for a day in lieu equivalent to 8 hrs per man at Normal Rates					

MARINE RESPONSE
SCHEDULE OF CHARGES

2017
Issue 1

Description	Unit	Day Rate	Weekly Rate
Equipment - Hire Charges (day rates apply for the first 7 days)			
PETREG uplift equipment incl. pump, compressor and ancillaries	per day	£519.16	£1,817.55
Ten minute escape set	per day	£62.74	£217.58
Breathing apparatus	per day	£207.46	£726.62
Trailer mounted mini-vac unit (300 litre capacity)	per day	£99.18	£349.14
Trailer mounted mini-jetvac unit (1800 litre capacity)	per day	£307.65	£1,076.77
Air mover / extractor fan	per day	£99.18	£346.10
Personal gas detector	per day	£67.80	£236.81
Photoionization Detector (PD)	per day	£104.24	£364.32
ATEX / EEX mobile radio	per day	£31.37	£109.30
Tripod and winch	per day	£115.37	£399.74
Air-driver transfer pump - for petrol uplifts & transfers - ATEX Compliant	per day	£99.18	£346.10
Water pump - diesel driven - trailer mounted - 2" or 3" camlock (Godwin)	per day	£99.18	£346.10
Water pump - petrol driven - 2" camlock (Honda)	per day	£52.62	£182.16
Electric pumps - various types and capacities (2" priced)	per day	£52.62	£182.16
Diesel site generator - 110v & 240v combined trolley mounted unit	per day	£99.18	£346.10
Diesel compressor (c/w Chalwyn valve & spark arrestor)	per day	£125.49	£437.18
Diesel compressor - compressed air only	per day	£99.18	£346.10
Cable avoiding tool (CAT)	per day	£62.74	£217.58
Pressure washer	per day	£47.56	£163.94
Super hot washer	per day	£145.73	£509.04
Permanent flotation (fence) boon - per metre	per day	£4.55	£14.17
Inflatable boom and water ballasted boom - per metre	per day	£6.58	£21.25
Dinghy	per day	£62.74	£217.58
Rigid site boat with outboard	per day	£187.22	£654.76
Self-erecting emergency storage tank - 7,000 litre capacity	per day	£47.56	£163.94
1,000 litre IBC unit (option to buy for £150)	per day	£31.37	£109.30
Roll-over containment bath	per day	£99.18	£346.10
Mobile Oil / Water Separator - on road trailer - excl hoses and pumps	per day	n/a	£311.70
Self-erecting Oil / Water Separator	per day	n/a	£207.46
Venturi aeration unit	per day	£52.62	£182.16
Splash aeration unit	per day	£42.50	£145.73
Compressor aeration unit	per day	£26.31	£91.08
Borehole Gas monitor	per day	£72.86	£255.02
Flow through cell & Hanna meter	per day	£125.49	£437.18
Interface meter	per day	£31.37	£109.30
Levelling kit	per day	£31.37	£109.30
Small well/borehole pump & control	per day	£52.62	£182.16
Large borehole pump & control	per day	£104.24	£364.32
Temporary oil storage tanks and bowsers (from 300g to 10,000g capacity)	price upon request		
Externally hired plant & machinery	cost plus 15%		

Prices quoted for equipment hire, materials, consumables and absorbents do NOT include delivery/collection/fuel charges/insurance/damage waiver.
All charges/rates/costs quoted are exclusive of VAT.
Adler & Allan Ltd. reserve the right to vary rates/costs in line with increases in supplier costs and changes in legislation/taxation.

MARINE RESPONSE
SCHEDULE OF CHARGES

2017
Issue 1

Description	Unit	Cost
Materials & Consumable Products - For Purchase		
Degreasing chemicals	per litre	£4.55
Odour Control	per litre	£6.58
BIX 2000 (oil breaker)	per litre	£6.58
Redsolve biotreatment	per 5ltr drum	£49.59
LT1800 biotreatment	per litre	£19.23
Biocat	20lt bag	£33.40
Disposable protective overalls	each	£5.57
Gloves	per pair	£3.54
Sawdust	18 kg bag	£16.19
Industrial Rags	per box	£31.37
Standard waste bags	per unit	£1.52
Heavy gauge "oily waste" bags	per unit	£2.53
1m cube yard bags	per unit	£19.23
205 Litre Drum	per unit	£27.32
25 Litre Plastic Container	per unit	£11.13
Plastic hand pump	per unit	£26.31
Externally purchased products & materials	cost plus 15%	
Waste Disposal		
Disposal - oily waste	per bag (max. 20kg)	£42.50
Disposal of bulk solid or bulk liquid waste	POA / cost plus 15%	
Premises Registration	per site	£47.56
Consignment Documentation	per note	£57.68
Hydrocarbon Absorbent Products - For Purchase		
Absorbent maxi booms - 20cm diameter x 3 metres long	pack of 2	£70.84
Absorbent maxi booms - 20cm diameter x 4 metres long	pack of 2	£82.98
Absorbent maxi booms - 12.5cm diameter x 3 metres long	pack of 4	£91.08
Absorbent cushions - 55 cm x 35 cm x 10 cm	pack of 10	£62.74
Absorbent pads - 40 cm x 52 cm x 0.35 cm	pack of 200	£79.95
Absorbent roll - 42 metres x 100 cm x 0.35 cm	per roll	£79.95
Small absorbent roll - 50 mètres x 42 cm x 0.35 cm	per roll	£40.48
Absorbent sweep - 15 metres x 93 cm	pack of 2	£106.26
Oil seal - 1.25 metres x 7.5 cm	pack of 10	£35.42
"Zorb" natural fibre absorbent / bio-remediation treatment	6kg bag	£17.20
Loose Wood Particulate	10kg bag	£50.60
Loose Polypropylene Particulate	10kg bag	£45.54
Disposable Drain Mats - 18" x 26" (45 cm x 65 cm) pack of 2	pack of 2	£45.54
Disposable Drain Mats - 18" x 18" (45 cm x 45 cm) pack of 2	pack of 2	£61.73
Leak block putty	0.8kg	£14.17
Leak block putty	1.8kg	£16.19
Oil water separator charcoal filter and absorbent replacement	per service	£141.68
Reports		
Environmental Damage Report	per service	£POA
Initial Site Investigation	per service	£POA

Adler & Allan
Marine Response Counter Pollution Services

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MARINE RESPONSE
SCHEDULE OF CHARGES

2017 Issue 1

Light Rapid Response Vehicle & equipment

Hire rate per day £1,168.86

Vehicle		Sprinter or equivalent	
Safety Boat, Oars and Outboard		2.65m infaltable, 4hp	1
Inflatable sea boom		Silverboom 10m 75i	10
Inshore fence boom		Rigid 10m (50p Boom)	5
Shore sealing boom		Silverbeach 10m 550	5
Air fan		Petrol air blower PB2400	1
Grab bags		Personal PPE / Comms	2
Water pump		Petrol driven centrifugal	1
First Aid kit		Boxed	1
Fire fighting		2kg dry powder	1
Ancillaries			
Anchors, chains & buoys	5 sets	Shovels	2
10mm rope x 200m	1 coil	12mm rope x 200m	1 coil
Rakes	2	Mops	1
Heavy duty waste bags	50	Polythene sheeting	1 roll
Boom towing bridles	2	Tool kit & spares	1
3m absorbent boom	2	Packs absorbent sheets	2
Oil absorbent roll	1	Rubber gaunlets	10
Safety glasses	10	Disposable overalls	10
Sand bags (empty)	25	Roll barrier tape	1
Foot pump	1	Fuel tanks	1
Wooden stakes	4	Post rammer	1

Hire of individual equipment is at the discretion of A&A

For longer term incidents hourly charge rates can be capped on agreement, subject to a minimum 48hr site demobilisation notice period.

Heavy Rapid Response Vehicle & equipment

Hire rate per day £1,864.10

Vehicle		8.5 tonnes with tail lift	
Safety Boat, Oars and Outboard		2.65m infaltable, 4hp	1
Inshore skimmer		Portable weir skimmer and hoses	1
Diesel driven pump		3" Spate diaphragm and hoses	1
Oil storage		2000 gallon Fasttank	1
Inflatable sea boom		Silverboom 10m 75i	4
Infaltable sea boom		Silverboom 20m 75i	8
Inshore fence boom		Rigid 10m (50p Boom)	8
Shore sealing boom		Silverbeach 10m 550	8
Decontamination		Decontamination tank	1
Air fan		Petrol air blower PB2400	1
Grab bags		Personal PPE / Comms	3
Water pump		Petrol driven centrifugal	1
First Aid kit		Boxed	1
Fire fighting		2kg dry powder	2
Lighting		500W 110v / generator	1 set
Ancillaries			
Anchors, chains & buoys	8 sets	Shovels	3
10mm rope x 200m	1 coil	12mm rope x 200m	1 coil
Rakes	3	Mops	1
Heavy duty waste bags	100	Polythene sheeting	1 roll
Boom towing bridles	3	Tool kit & spares	1
3m absorbent boom	4	Packs absorbent sheets	3
Oil absorbent roll	1	Rubber gaunlets	20
Safety glasses	20	Disposable overalls	20
Sand bags (empty)	50	Roll barrier tape	2
Foot pump	1	Fuel tanks	2
Notice boards	2	Flip chart	1
Wooden stakes	6	Post rammer	1

Individual Marine Equipment

Description	Hire rate per day	per week
Diesel driven rope mop skimmer/separator trailer	£115.37	£399.74
GT185 screw pump, hydraulically adjustable marine float system and light oil weir adaptor	£100.19	£343.07
30kw diesel/hydraulic - dual circuit powerpack - Chalwyn valve and spark arrestor, suction, discharge and hydraulic hoses on a reel	£135.61	£519.16
Vacuum Cleaning System - Diesel driven combined high pressure water pump and vacuum pump 11.7kw at 2600rpm. Vacuum hopper in frame for mounting above 45gal drums. Lance with 10m high pressure hose	£115.37	£414.92
Komara 12k disc skimmer system with ADI Powerpack. Hydraulically driven rotating discs - up to 12tph. 4kw diesel/hydraulic powerpack with integral spate 75C pump. Chalwyn valve and spark arrestor. Suction and discharge hoses and hydraulic hoses.	£222.64	£1,246.78
Komara 7k disc skimmer system with ADI Powerpack. Hydraulically driven rotating discs - up to 12tph. 4kw diesel/hydraulic powerpack with integral spate 75C pump. Chalwyn valve and spark arrestor. Suction and discharge hoses and hydraulic hoses.	£192.28	£1,020.10
Type 100 hydraulically driven boom reel. 200m of Sentinel 750 air boom. Powered from ADI powerpack (above). PB600 air infaltor	£205.44	£623.39
100m of Fence Boom 1.5m high in stillage	£155.85	£467.54
Road transportable Multicat with hydraulic crane. MCA workboat Cat 3 (20 miles). L.O.A. 15m, B.O.A. 6m, Draft 1.6m. 8 knots	£POA	

MARINE RESPONSE
SCHEDULE OF CHARGES

2017
Issue 1

Description	**Unit**	**Cost**
Sampling Kit		
Materials & Consumable Products - For Purchase		
Sampling kit	per kit	£202.40 + P+P
6 x replacement 500ml jars	per box	£12.14 + P+P
Other replacement items if and when required	£POA + P+P	
Storage - included wihin the price of the sampling kit (up to 12 months per sample)		
Collection - time charged as a 'drivers mate' plus mileage from nearest depot	per unit	
Oil fingerprinting - Samples sent to third party, leading accredited laboratory.	cost plus 10%	

Description	**Unit**	**Cost**
Chemical Response trailer	per day	£1,141.54
Chemical Absorbent Products - For Purchase		
Absorbent socks - 7.5 cm x 1.25 metres	pack of 20	£50.60
Absorbent socks - 7.5 cm x 3 metres	pack of 5	£71.85
Absorbent pads - 52 cm x 40 cm	pack of 100	£66.79
Absorbent roll - 50 cm x 42 cm	per roll	£44.53
Absorbent roll - 100 cm x 42 cm	per roll	£65.78
Absorbent pillow - 35 cm x 55 cm x 10 cm	pack of 10	£48.58
Chemical PPE - For Hire		
Hooded chemical resistant coverall	per day	£21.25
Chemical resistant sleeves (pair)	per day	£8.60
Full face cartridge respirator (excludes cartridge)	per day	£21.25
Chemical resistant enclosed boot (pair)	per day	£8.60
Specialist hire	£POA / £cost plus 15%	
Chemical PPE - For Purchase		
Heavy nitrile chemical gauntlet	pair	£9.61
Face mask respirator cartridge	each	£11.13
Disposable chemical suit (light use)	pair	£16.19
Specialist purchase	£POA / £cost plus 15%	

Appendix 9 - Clean up, Storage, Waste – Potential Sites

Sites would have to be selected using information such as spill size and slick direction to best support the clean up efforts.

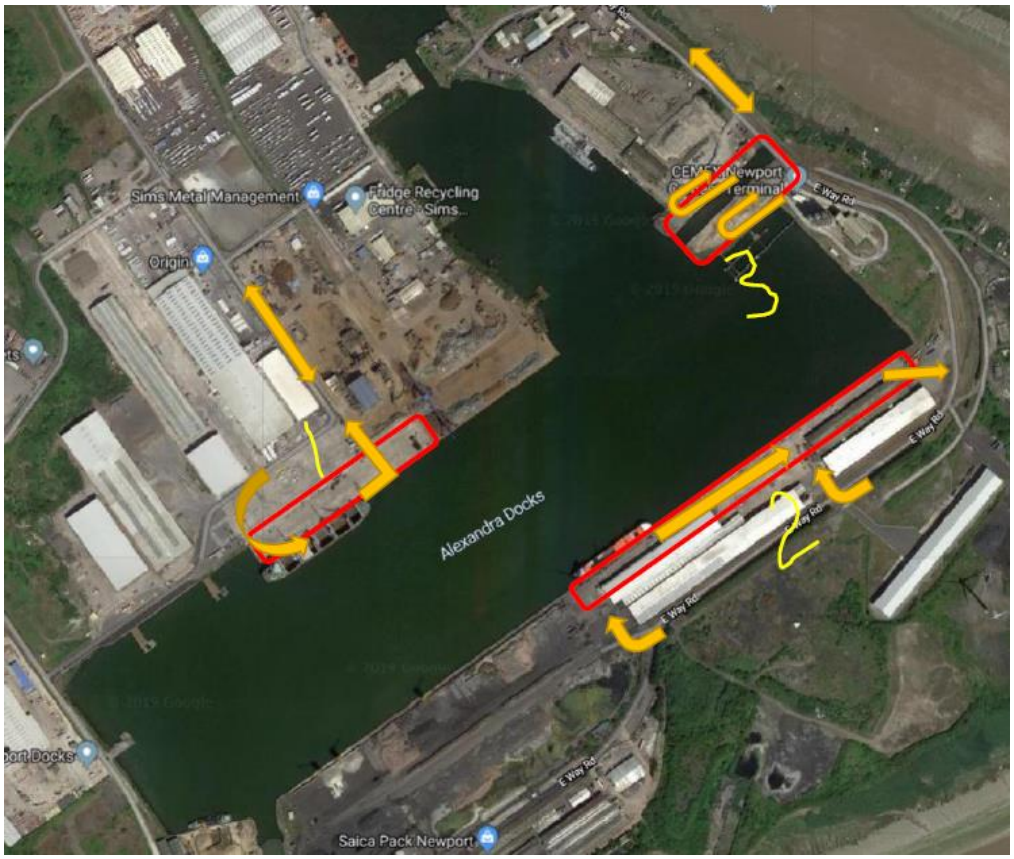
Newport

North side south dock – dependent on vessels / cargo ops at the time potential to use this area, one way system could be set up as per directions of arrows or reversed with added potential to increase size of the loop using roads to the left of the pic.

South side south dock - dependent on vessels / cargo ops at the time potential to use this area, one way system could be set up as per directions of arrows or reversed. Possible issues berths to the west TATA berths to the east operated by DOWDS so discussions and agreement needed.

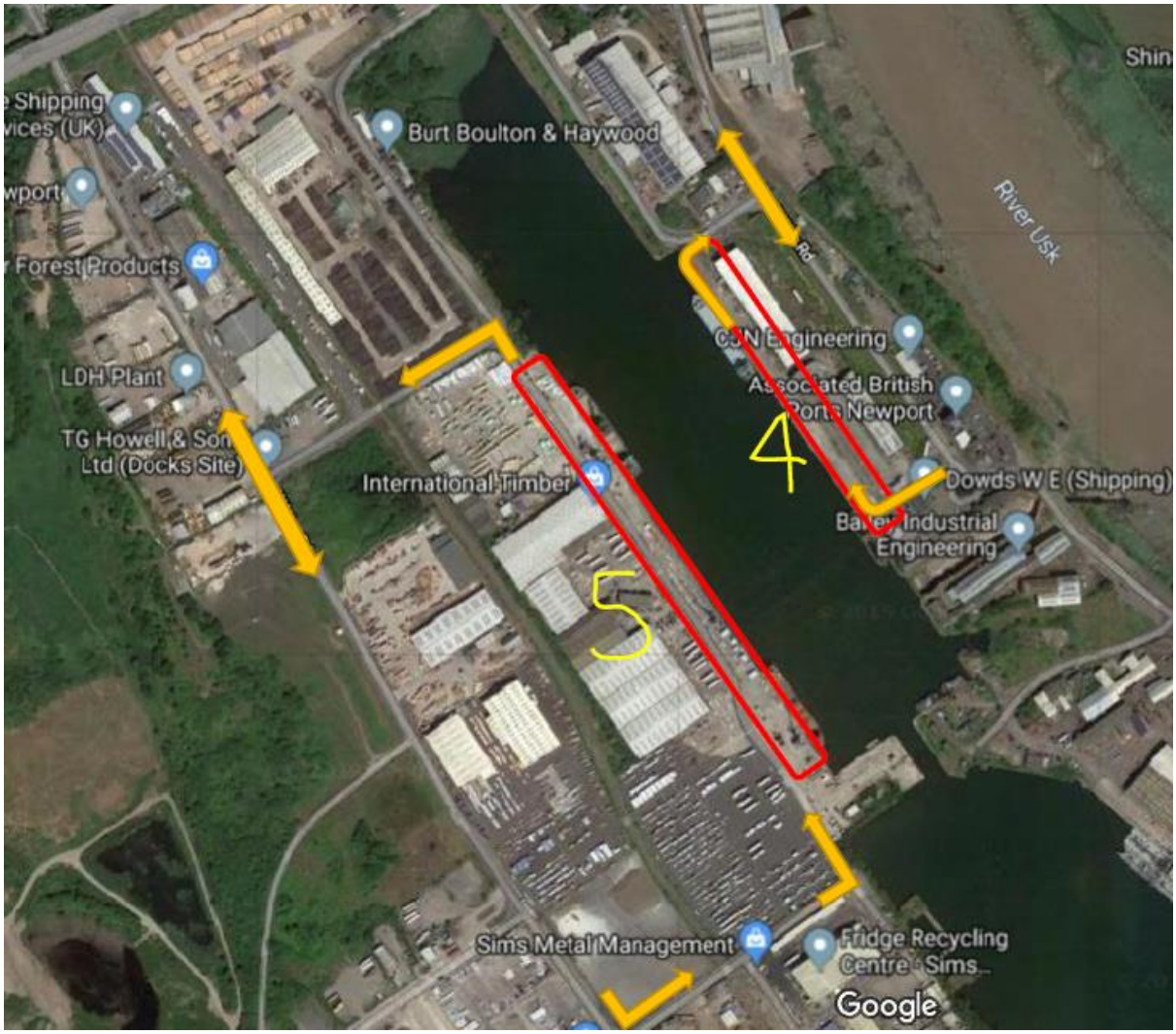
North and South side of East Lock - dependent on vessels / cargo ops at the time potential to use this area, one way system could be set up as per directions of arrows or reversed but room for vehicles to swing could be an issue as both sides are narrow also at present north side is also through access for bitumen road tankers and wood chip trucks and plant can be busy. South side is in process of resurfacing.

Possible issues berths to the west TATA berths to the east operated by DOWDS so discussions and agreement needed.



East side North dock – Another DOWDS berth quite busy but if agreed and north end can be opened up one way system could be achieved, again narrow.

West side North dock – Another tenanted berth International timber but as before if agreed a one way system could be achieved.



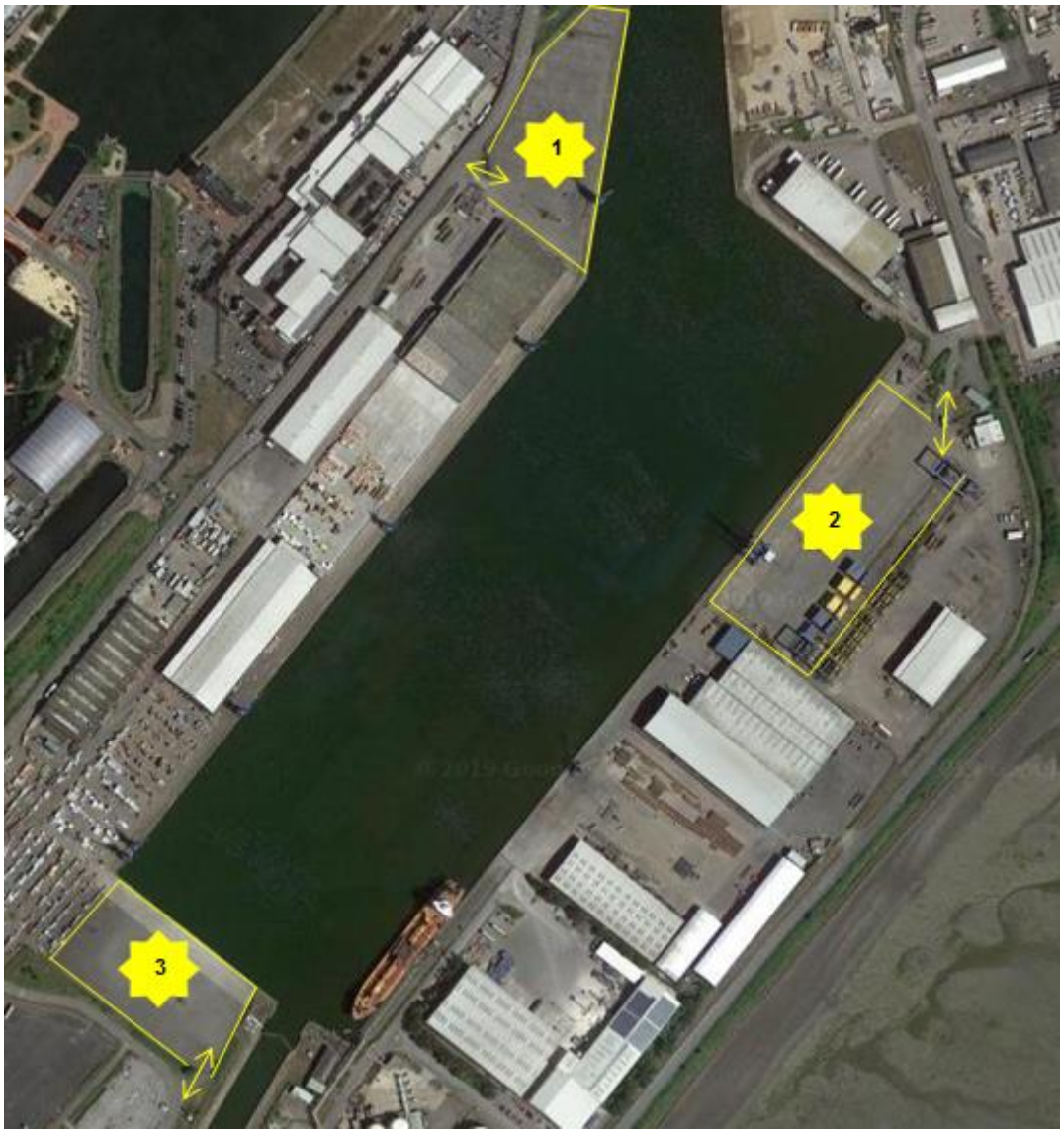
Cardiff

Queen Alexandra Dock

1. Good access and close to main port security gate, large space, hard surface.

2. Good access, close to main port security gate, Large space, hard surface, Biffa Waste close by, largely unused berth with own security gate house.

3. Large space but in use by aggregate cargo and plant frequently on site, good access but further from port entrance.

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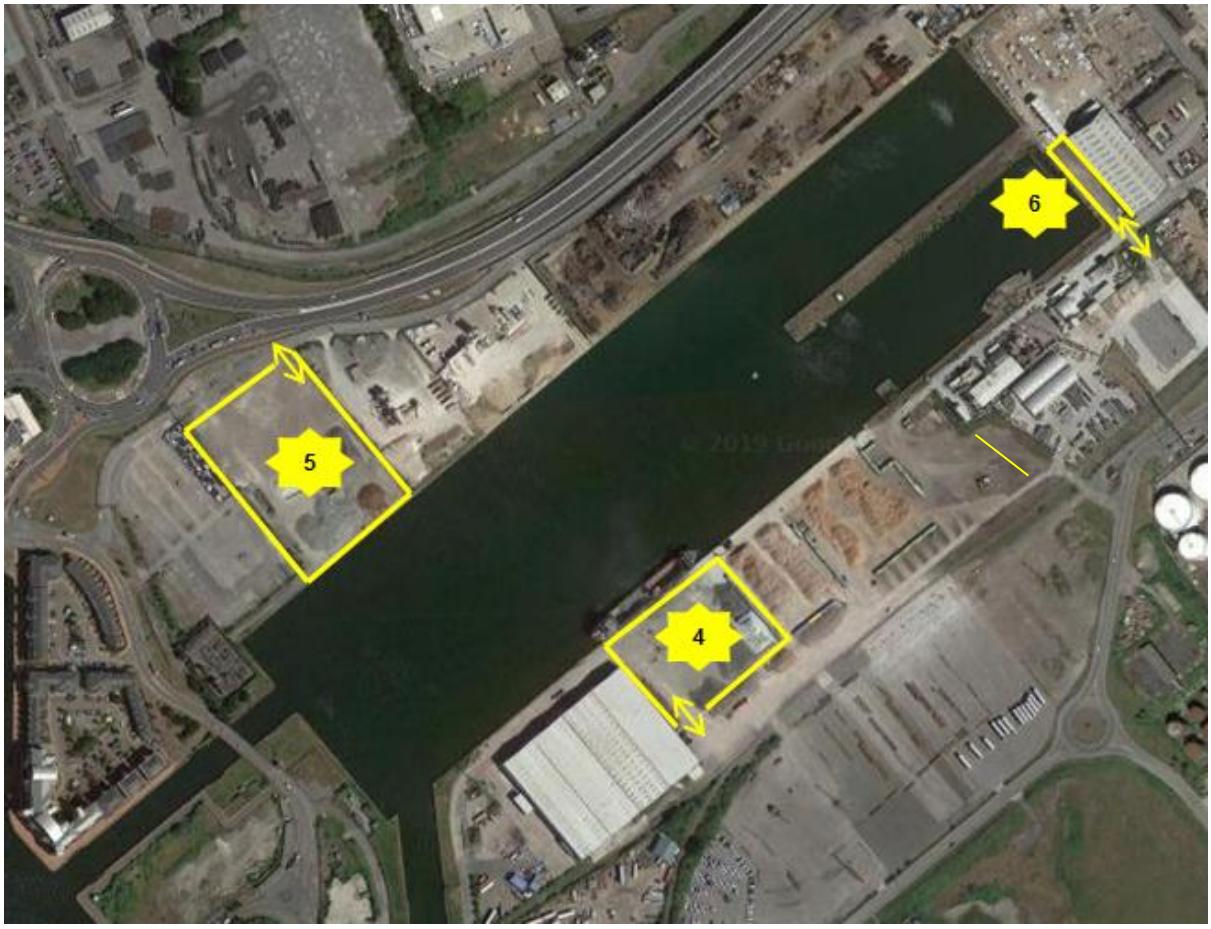
Roath Dock

4. Most likely place for site if there was a spill in Roath Dock as area largely tenanted.

5. Surface not concrete or tarmac so potential for absorbing waste. Good access and space.

6. Restricted by space, but only area an NE end of Roath Dock.

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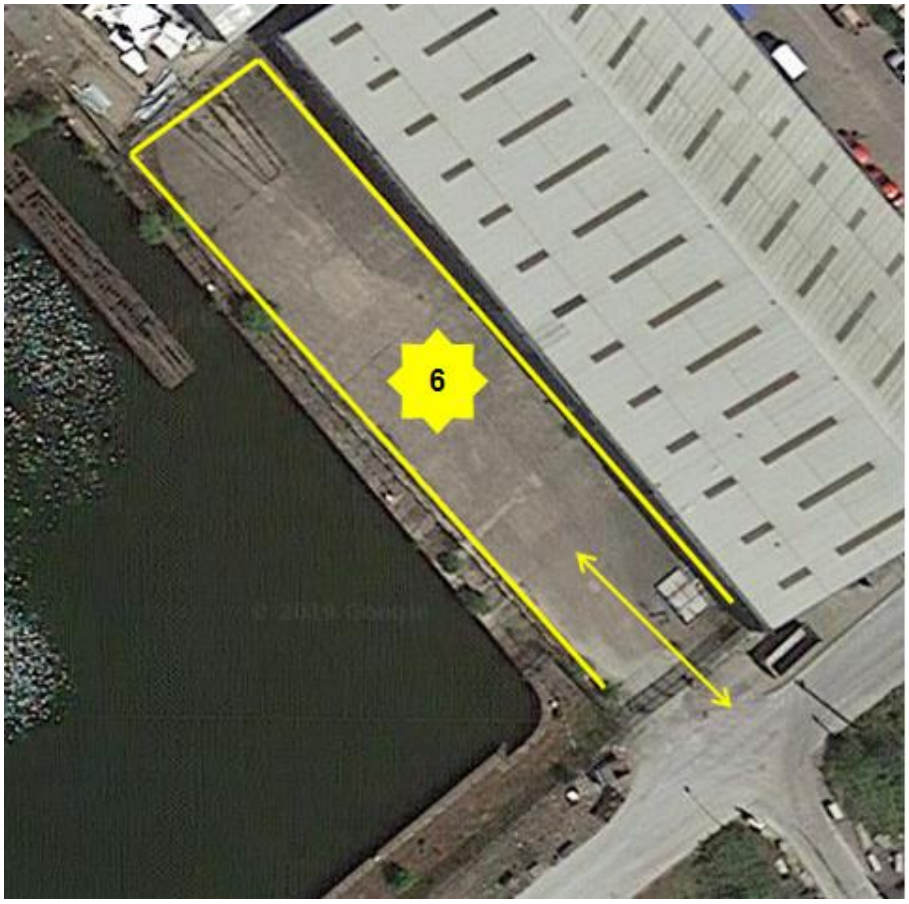
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Barry

We have very few options in Barry especially in No.1 Dock, as apart from 4 + 5 we own nothing else, and access is difficult to both. Access to 6 +7 better but not much option for storage and this is a public street.

1 is best option for No. 2 dock at present, as wide area of quay and we've retained use of the quay wall, but there is a tenant occupying the area and building an increasing it's presence, not sure what we will be left with once complete.

2 is usually fairly clear and a good berth but is tenanted, and access would need to be discussed with them, a lot of plant on the site constantly moving too but more around the shed to the east.

3 is OK but pass through busy area for HGV and quite narrow for one way system.


1
Atlantic Way
Atlantic Cres
Viv Lewis Caravans
Viv Lewis Caravan Sales


2
Scott Pallets
Atlantic Way


3
Associated British Ports Barry

Port Talbot Dock

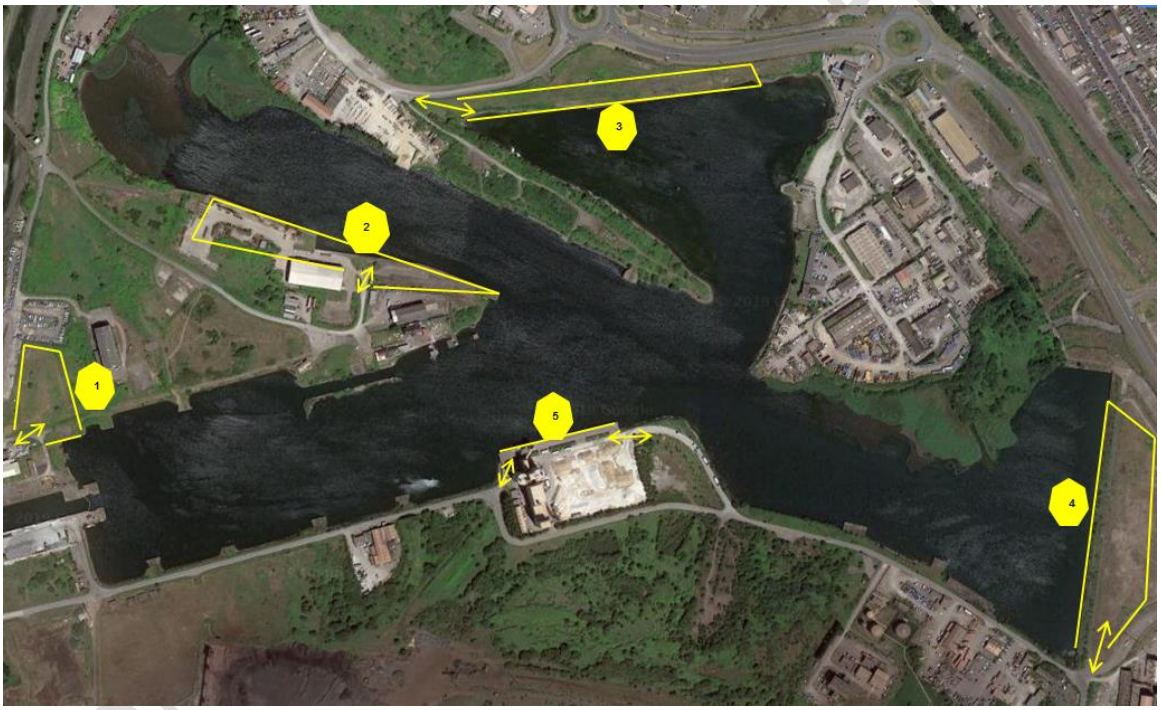
1. Very small Quayside area with potential storage space behind. Good access to main road.

2. Large quay area, tenanted on west side, suspended quay, access to both areas via one road, east side potentially condemned.

3. Large area but not hard surface, good access to main road, one entrance.

4. Margam wharf, large area, good access to main road, soft ground.

5. Tenanted so could prove problematic to use it, area restricted in size but good access in and out.

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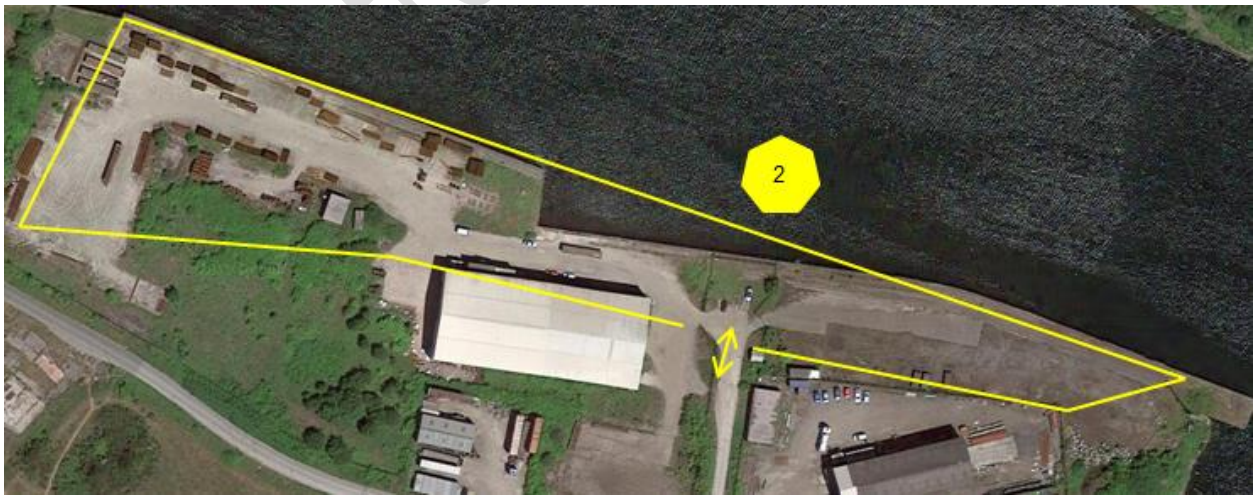
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Kings Dock

1. A Shed - Long stretch of quayside with solid ground, restricted in space, entry and exit at each end.

2. B Shed - Large area, solid ground, close to port exit, a good area for clean up or storage, but mussel boat working from quay..

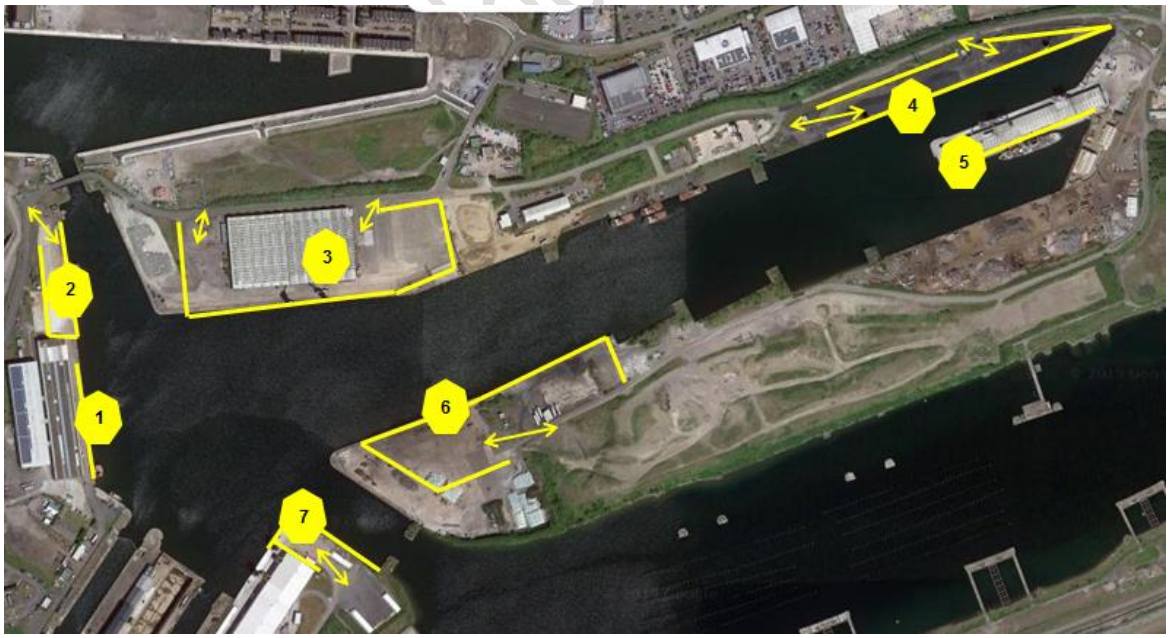
3. D Shed - Large area, solid ground, close to port exit, a good area for clean up or storage, possibility of cargo on quayside and area not where spill would gather.

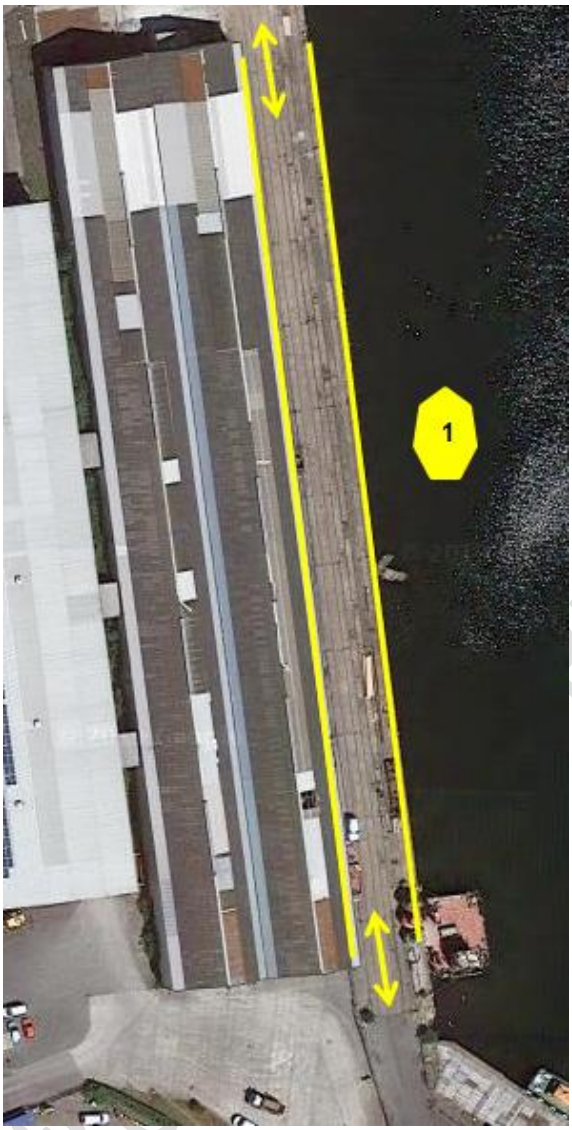
4. 4 Quay - Usually contains coal stock, however is a large area and in area where oil is likely to gather with prevailing wind.

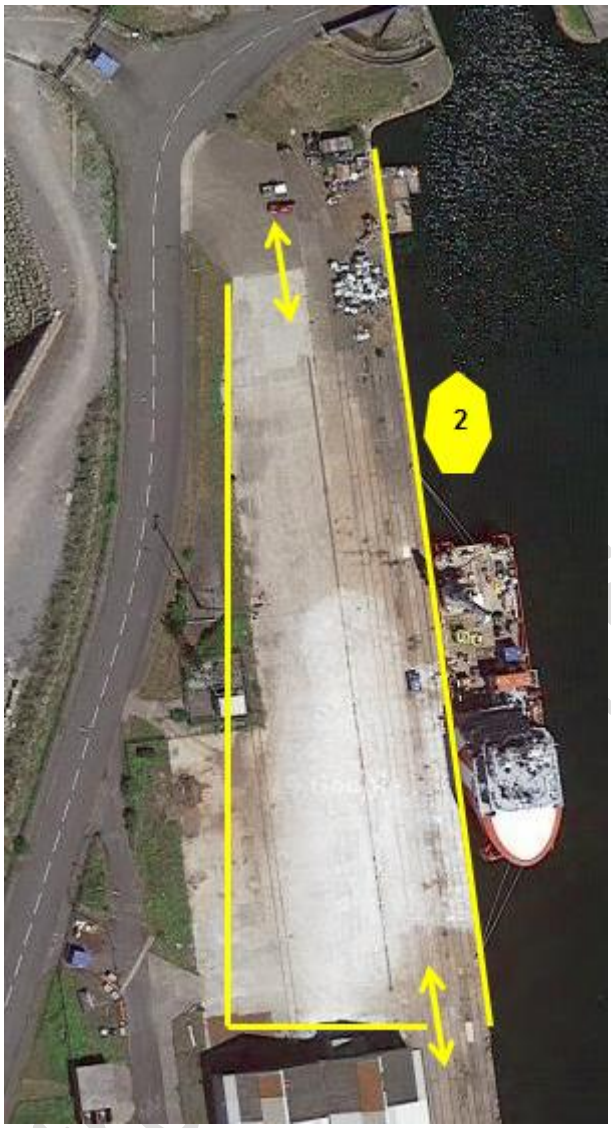
5. 6 Quay - Small area operated by Trinity house, possible to use for small clean ups with beth holders permission.

6. Graigola/Rose Wharf - Large area with mostly solid ground, no where that oil would gather but useful for storage potentially.

7. Phoenix Wharf - Usually quite busy area, but could be where spill would gather, also has hot jet wash close by.



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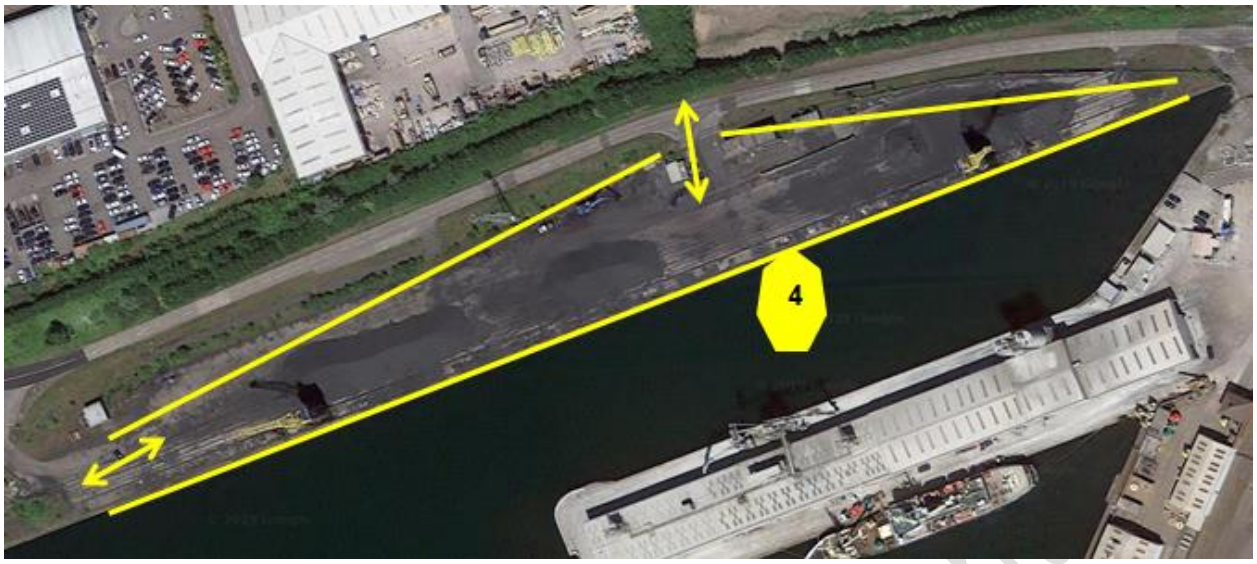
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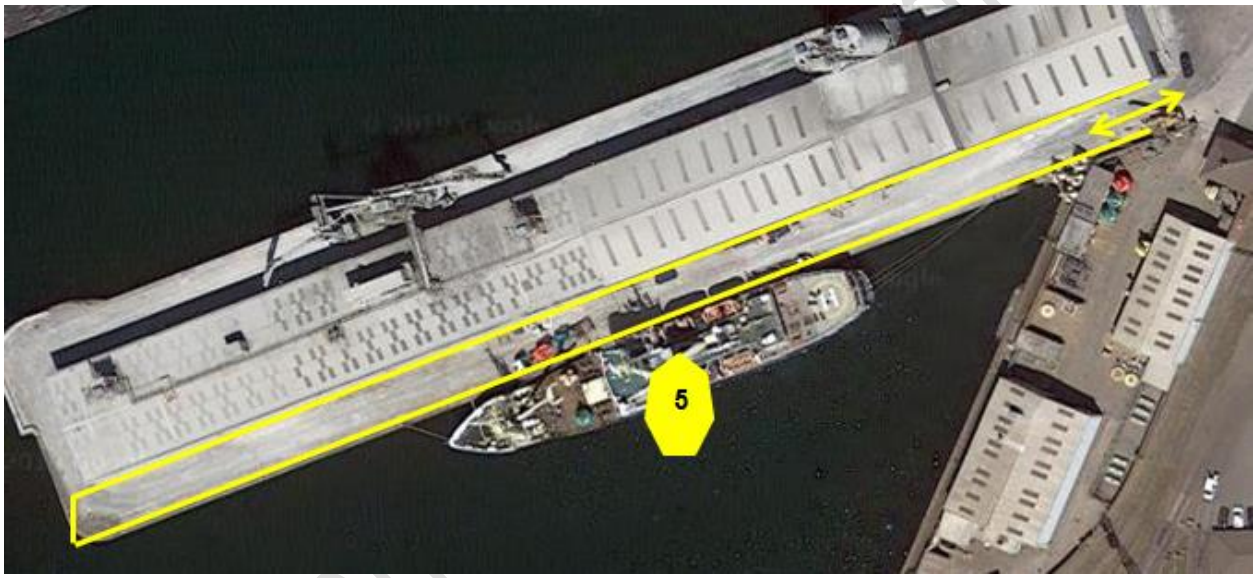
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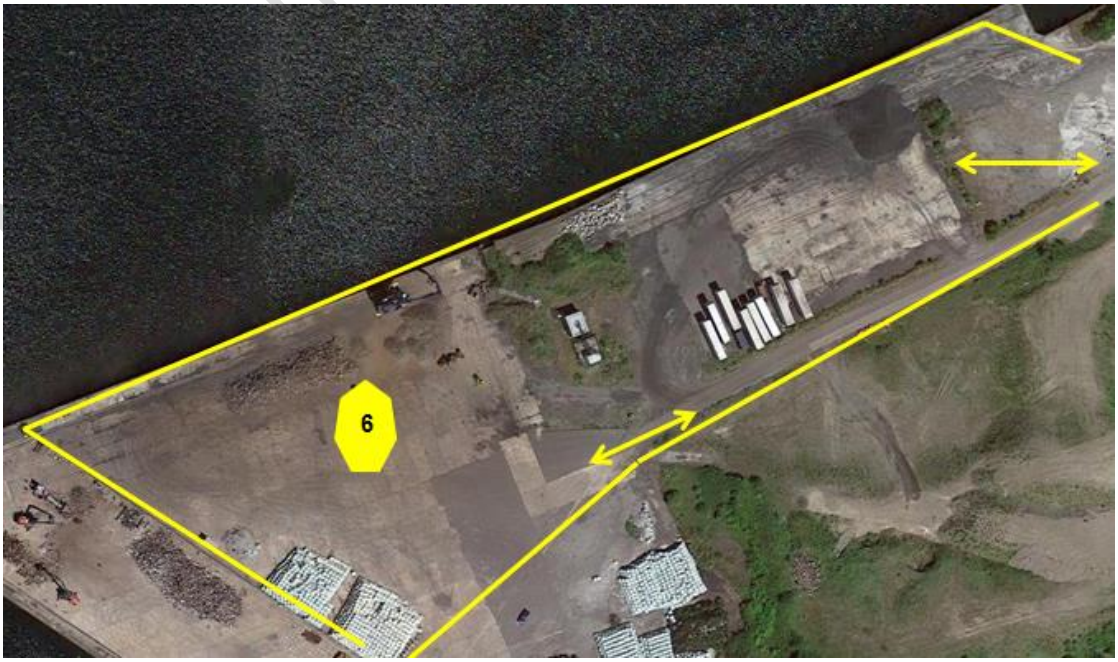
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Appendix 10 – Associated British Ports and Windmill Terminal (Navigator)

Procedure

Spillage on the Port Estate

Scope

The purpose of this document is to provide information to security staff working on Barry docks and also Local Port Services (LPS) regarding actions to take in the event of a spillage from one of the pipelines which cross the port of Barry estate.

Due to the risk of sabotage/terrorism the contents of this document should be treated as sensitive.

It should only be viewed by the minimum numbers of personnel and should not be reproduced.

Scenario detail

Navigator operate several pipelines used for the import/export of chemicals from their berth site, to their storage terminal (off Hayes Rd). Some of the products used in this operation are hazardous. As such there are potential scenario's which could result in a leak from the pipeline near to the port roads, which would need emergency response actions to be taken to protect persons in the vicinity.

All pipelines are normally empty. They are only filled when a ship is on the adjacent Navigator berth facility.

This document aims to provide enough detail to ensure that any reports of spills coming from the pipelines on the port estate are quickly escalated to the correct agencies. This should allow the release of material to be stopped and any emergency measures quickly taken.

Hazardous products

Several products are handled via the pipelines. Some have hazardous properties, some are non-hazardous.

An important factor when dealing with the release of a chemical is to not assume you know what it is until it can be confirmed. For this reason, this document will describe only the potential hazards that a released material may have.

A release from the pipelines could potentially be Flammable and Toxic, so quick reporting of any leaks is very important.

Associated MSDS

Safety Data Sheet

Methanol

Replaces date: 12-12-2012 Revision date: 18-01-2017

SECTION 1: Identification of the substance/preparation and of the company/undertaking

1.1. Product identifier

Trade name:	Methanol
CAS No:	67-56-1
EC No:	200-659-6
REACH Reg. No.:	01-2119433307-44
Index No:	603-001-00-X

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended uses:	Windshield cleaner. Process chemical. Laboratory chemical. Petrol. Fuel additiv. Additive for cleaning agents. Industrial spraying. Application with roller or brush. Treatment of items through dipping or pouring. By oil drilling. De-icing agent.

1.3. Details of the supplier of the safety data sheet

Supplier

Company:	Statoil ASA
Address:	Site: Tjeldbergodden, Forusbeen 50
Zip code:	N-4035 Stavanger
E-mail:	Statoil chemical competence center: chem@statoil.com
Phone:	+47 71 64 90 00

1.4. Emergency Telephone Number

0870 600 6266 (UK only) Only available to health professionals.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

CLP-classification:	Flam. Liq. 2;H225 Acute Tox. 3;H301/311/331 STOT SE 1;H370 (Liver., Central nervous system.)
Most serious harmful effects:	Highly flammable liquid and vapour. Toxic if swallowed, in contact with skin or if inhaled. Causes damage to organs. (Liver., Central nervous system.) The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication. Prolonged or repeated exposure by skin contact or inhalation of vapours may cause damage to the central nervous system.

2.2. Label elements

Pictograms

Signal word: Danger

Contains

Substance: methanol

CAS No: 67-56-1

H-phrases

H225	Highly flammable liquid and vapour.
H301/311/331	Toxic if swallowed, in contact with skin or if inhaled.
H370	Causes damage to organs. (Liver., Central nervous system.)

P-phrases

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/protective clothing.
P301/310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P308/311	IF exposed or concerned: Call a POISON CENTER/doctor.

2.3. Other hazards

The product does not contain any PBT or vPvB substances.
Burns with an invisible flame which increases risk in connection with fires.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance	CAS number	EC No	REACH Reg. No.	Concentration	Notes	CLP-classification
methanol	67-56-1	200-659-6	01-2119433307-44	100 %		Flam. Liq. 2;H225 Acute Tox. 3;H301 Acute Tox. 3;H311 Acute Tox. 3;H331 STOT SE 1;H370

Please see section 16 for the full text of H-phrases.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation: Seek fresh air. Immediately call a POISON CENTER or doctor/physician.

Ingestion: Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Immediately call a POISON CENTER or doctor/physician. If advised by poison control center or doctor administer 50 ml of pure ethanol in a drinkable concentration.

Skin contact: Remove contaminated clothing. Wash skin with soap and water. Immediately call a POISON CENTER or doctor/physician.

Eye contact: Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist.

Burns: Flush with water until pain ceases. Remove clothing that is not stuck to the skin - seek medical advice/transport to hospital. If possible, continue flushing until medical attention is obtained.

General: When obtaining medical advice, show the safety data sheet or label.

4.2. Most important symptoms and effects, both acute and delayed

Toxic in contact with skin. Toxic by inhalation. Toxic if swallowed. The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication. Prolonged or repeated exposure by skin contact or inhalation of vapours may cause damage to the central nervous system. Causes damage to eyes, central nervous system and liver.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms. Ensure that medical personnel are aware of the material involved, and take precautions to protect themselves.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media: Extinguish with powder, foam or water mist. Use water or water mist to cool non-ignited stock.

Unsuitable extinguishing media: Do not use water stream, as it may spread the fire.

5.2. Special hazards arising from the substance or mixture

Burns with an invisible flame which increases risk in connection with fires. Can generate harmful flue gases containing carbon monoxide in the event of fire.

5.3. Advice for fire-fighters

Wear Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit. Move containers from danger area if it can be done without risk. Avoid inhalation of vapour and flue gases - seek fresh air.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Smoking and naked flames prohibited. Take precautionary measures against static discharges. Use spark-free tools and explosion proof equipment. Wear gloves. Wear safety goggles if there is a risk of eye splash. In case of insufficient ventilation, wear respiratory protective equipment. Keep unnecessary personnel away. Stay upwind/keep distance from source.

For emergency responders: In addition to the above: Chemical protective suit equivalent to EN 943-2 is recommended.

6.2. Environmental precautions

Prevent spillage from entering drains and/or surface water. Notify proper authorities in case of contamination of soil or aquatic environment or discharge to drains.

6.3. Methods and material for containment and cleaning up

Contain and absorb spill with sand or other absorbent, non-combustible material and transfer to suitable waste containers.

6.4. Reference to other sections

See section 8 for type of protective equipment. See section 13 for instructions on disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Work under effective process ventilation (e.g. local exhaust ventilation). A safety shower should be available. Running water and eye wash equipment must be available. Smoking and naked flames are prohibited, except for tasks like welding where the gas needs to be ignited. Take precautionary measures against static discharges. Use spark-free tools and explosion proof equipment. Put lids on containers immediately after use. Use drum pumps or carefully pour from container. Avoid spillage when withdrawing pump. Drain down system prior to equipment break-in or maintenance. Do not eat, drink or smoke during work. Wash hands before breaks, before using restroom facilities, and at the end of work. A workplace assessment must be conducted to ensure that employees are not exposed to effects that may involve a risk during pregnancy.

7.2. Conditions for safe storage, including any incompatibilities

Store safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc. Store locked up. Do not store with the following: Oxidisers. Keep in tightly closed original packaging. Store in a dry, cool, well-ventilated area.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit

Substance name	Time period	ppm	mg/m3	Comment	Remarks
methanol	8h	200	266		Sk
methanol	15m	250	333		Sk

Sk = Can be absorbed throuh skin

Measuring methods: Compliance with the stated occupational exposure limits may be checked by occupational hygiene measurements.

Legal basis: EH40/2005 Workplace exposure limits. Last amended December 2011.

PNEC

methanol				
Exposure	Value	Assessment Factor	Extrapolation Method	Note
PNEC aqua (marine water)	15,4 mg/l	1000	Assessment factor	
PNEC aqua (freshwater)	154 mg/l	100	Assessment factor	
PNEC aqua (intermittent releases)	1540 mg/l	10	Assessment factor	
PNEC sediment	570,4 mg/kg		Statistic extrapolation	
PNEC soil	23,5 mg/kg		Partition coefficient	
PNEC STP (wastewater-treatment facilities)	100 mg/l	10	Assessment factor	

DNEL - workers

methanol					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note

Inhalation DNEL (acute/short-term exposure - systemic effects)	260 mg/m3			Acute toxicity	
Inhalation DNEL (long-term exposure - systemic effects)	260 mg/m3			Acute toxicity	
Inhalation DNEL (acute/short-term exposure - local effects)	260 mg/kg bw/day			Acute toxicity	
Inhalation DNEL (long-term exposure - local effects)	260 mg/m3			Acute toxicity	
Dermal DNEL (acute/short-term exposure - systemic effects)	40 mg/kg bw/day			Acute toxicity	
Dermal DNEL (long-term exposure - systemic effects)	40 mg/kg bw/day			Acute toxicity	

DNEL - general population

methanol

Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Inhalation DNEL (acute/short-term exposure - systemic effects)	50 mg/m3			Acute toxicity	
Inhalation DNEL (long-term exposure - systemic effects)	50 mg/m3			Acute toxicity	
Dermal DNEL (acute/short-term exposure - systemic effects)	8 mg/kg bw/day			Acute toxicity	
Dermal DNEL (long-term exposure - systemic effects)	8 mg/kg bw/day			Acute toxicity	
Oral DNEL (acute/short-term exposure - systemic effects)	8 mg/kg bw/day			Acute toxicity	
Oral DNEL (long-term exposure - systemic effects)	8 mg/kg bw/day			Acute toxicity	
Inhalation DNEL (long-term exposure - local effects)	50 mg/m3			Acute toxicity	

8.2. Exposure controls

Exposure controls: See enclosed exposure scenarios for further information.

Appropriate engineering controls: Wear the personal protective equipment specified below.

Personal protective equipment, eye/face protection: Wear safety goggles if there is a risk of eye splash. Eye protection must conform to EN 166.

Personal protective equipment, Wear coveralls.

skin protection:

Personal protective equipment, hand protection:

Light use (small volume, shortterm contact (below 10 min.)):
Use disposable gloves of butyl rubber. Change gloves immediately if contaminated, and wash hands with soap and water.

Medium use (medium volume, medium contact (1-2 hours)):
Wear gloves. Type of material: Butyl rubber.

Heavy use (high volume, longterm contact (more than 2 hours)):
Wear gloves. Type of material: Butyl rubber.

Penetration time: >8 hours. Gloves must conform to EN 374.

Personal protective equipment, respiratory protection:

Light use (small volume, shortterm contact (below 10 min.)):
Wear respiratory protective equipment. Filter type: AX.

Medium use (medium volume, medium contact (1-2 hours)):
Wear respiratory protective equipment. Filter type: AX.

Heavy use (high volume, longterm contact (more than 2 hours)):
Wear fresh air respiratory protective equipment.

Respiratory protection must conform to one of the following standards: EN 136/140/145.

Environmental exposure controls:

Ensure compliance with local regulations for emissions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Parameter	Value/unit
State	Liquid
Colour	Colourless
Odour	Solvent
Solubility	Solubility in water: Miscible
Explosive properties	Non-explosive Based on the chemical structure.
Oxidising properties	Non-oxidising. Based on the structural characteristics.

Parameter	Value/unit	Remarks
pH (solution for use)	No data	
pH (concentrate)	No data	
Melting point	-97.80 °C	(literature)
Freezing point	No data	
Initial boiling point and boiling range	64.70 °C	(1,013 hPa) (literature)
Flash Point	9.70 °C	(closed cup)
Evaporation rate	No data	
Flammability (solid, gas)	No data	
Flammability limits	455 °C	
Explosion limits	7.30 - 36	(literature)
Vapour pressure	169.27	(literature)
Vapour density	No data	
Relative density	0.7871 - 0.80	(20 °C) (literature)
Partition coefficient n-octonol/water	-0.77	(measured)
Auto-ignition temperature	455 °C	
Decomposition temperature	No data	
Viscosity	0.5540 - 0.59 mPas	(25 °C) (literature)
Odour threshold	2000 ppm	(literature)

9.2 Other information

Parameter	Value/unit	Remarks
Surface tension	22,6 mN/m (24,9 C)	

Other Information: Adsorption - water/soil: KOC 1 (calculated) Adsorption to solid soil phase not expected.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with the following: Oxidisers.

10.2. Chemical stability

The substance is stable when used in accordance with the supplier's directions.

10.3. Possibility of hazardous reactions

Reacts under heat generation with the following: Strong oxidisers.

10.4. Conditions to avoid

Avoid heating and contact with ignition sources.

10.5. Incompatible materials

Oxidisers.

10.6. Hazardous decomposition products

Product decomposes in fire conditions or when heated to high temperatures, and inflammable and toxic gases may be released.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

methanol

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		7914 mg/kg			

Toxic if swallowed.

Acute toxicity - dermal

methanol

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit	LD50		17100 mg/kg			

Toxic in contact with skin.

Acute toxicity - inhalation

methanol

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LC50	4h	128.2 mg/l			

Toxic by inhalation.

Skin corrosion/irritation

methanol

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit				Non-irritating		

May cause slight irritation. The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Serious eye damage/eye irritation

methanol

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit				Non-irritating		

Temporary irritation. The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Respiratory sensitisation or skin sensitisation

methanol

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Guinea pig				Non-sensitising		

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Germ cell mutagenicity

methanol

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
In vivo tests: Mammalian cells/ Microorganisms.				No mutagenic effects observed.		

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Carcinogenic properties

methanol

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
				Carcinogenic effects detected.		

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Reproductive toxicity

methanol

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
				No indications.		

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Single STOT exposure: Swallowing causes damage to eyes, the central nervous system and the liver. Causes damage to organs. The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication.

Repeated STOT exposure: Prolonged or repeated exposure by skin contact or inhalation of vapours may cause damage to the central nervous system. The product does not have to be classified. Test data are not available.

Aspiration hazard: The product does not have to be classified. Test data are not available.

Other toxicological effects: None known.

SECTION 12: Ecological information

12.1. Toxicity

methanol

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Fish	Leopomis Macrochirus	96h	96hLC50	15400 mg/l			
Crustacea	Daphnia magna	48h	48hEC50	> 10000mg/l			
Algae	Selenastrum capricornutum	96h	96hEC50	22000 mg/l			

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

12.2. Persistence and degradability

methanol

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
					Readily biodegradable.	OECD 301	
		5d	O2 consumption (marine water)	69 %			
		20d	O2 consumption (marine water)	97 %			
		5d	O2 consumption (wastewater)	76 %			
		5d	BOD/ThOD (wastewater)	82.7 %			
		20d	O2 consumption (wastewater)	95 %			

Readily biodegradable.

12.3. Bioaccumulative potential

methanol

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
			Partition coefficient n-octanol/water	-0.77			

No bioaccumulation expected.

12.4. Mobility in soil

Not expected to be mobile in soil.

12.5. Results of PBT and vPvB assessment

The product does not contain any PBT or vPvB substances.

12.6. Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Avoid discharge to drain or surface water. Collect spills and waste in closed, leak-proof containers for disposal at the local hazardous waste site.

Absorbent/cloth contaminated with the product: EWC code: 15 02 02 absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances

EWC code: Depends on line of business and use, for instance 14 06 03* other solvents and solvent mixtures

Empty, cleansed packaging should be disposed of for recycling. Uncleansed packaging is to be disposed of via the local waste-removal scheme.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN-No.:	1230	**14.4. Packing group:**	II
14.2. UN proper shipping name:	METHANOL	**14.5. Environmental hazards:**	The product should not be labelled as an environmental hazard (symbol: fish and tree).
14.3. Transport hazard class(es):	3 (6.1)		
Hazard label(s):	3+6.1		
Hazard identification number:	336	**Tunnel restriction code:**	D/E
Other Information:	-		

Inland water ways transport (ADN)

14.1. UN-No.:	1230	**14.4. Packing group:**	II
14.2. UN proper shipping name:	METHANOL	**14.5. Environmental hazards:**	The product should not be labelled as an environmental hazard (symbol: fish and tree).
14.3. Transport hazard class(es):	3 (6.1)		
Hazard label(s):	3+6.1		
Environmentally hazardous in tank vessels:		**Other Information:**	-

Sea transport (IMDG)

14.1. UN-No.:	1230	**14.4. Packing group:**	II
14.2. UN proper shipping name:	METHANOL	**14.5. Environmental hazards:**	The product is not a Marine Pollutant (MP).
14.3. Transport hazard class(es):	3 (6.1)	**Environmental Hazardous Substance Name(s):**	
Hazard label(s):	3+6.1		
EmS:	F-E, S-D	**IMDG Code segregation group:**	- None -
Other Information:	-		

Air transport (ICAO-TI / IATA-DGR)

14.1. UN-No.:	1230	**14.4. Packing group:**	II
14.2. UN proper shipping name:	METHANOL	**14.5. Environmental hazards:**	The product should not be labelled as an environmental hazard (symbol: fish and tree).
14.3. Transport hazard class(es):	3 (6.1)		
Hazard label(s):	3+6.1	**Other Information:**	-

14.6. Special precautions for user

None.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC code

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Special Provisions:

Special care should be applied for employees under the age of 18. Young people under the age of 18 may not carry out any work causing harmful exposure to this product.

Directive 2012/18/EU (Seveso), P5c FLAMMABLE LIQUIDS: Column 2: 5000 t, Column 3: 50000 t.
Directive 2012/18/EU (Seveso), H2 ACUTE TOXIC: Column 2: 50 t, Column 3: 200 t.
Directive 2012/18/EU (Seveso), H3 STOT SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE STOT SE 1: Column 2: 50 t, Column 3: 200 t.

Covered by:
Council Directive 92/85/EEC of 19 October 1992 on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding
Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.

15.2. Chemical Safety Assessment

Other Information:

Chemical safety assessments have been performed for the following substances:
67-56-1 / 200-659-6 Methanol

SECTION 16: Other information

Version history and indication of changes

Version	Revision date	Responsible	Changes
1.3.0	01-11-2012		
1.4.0	12-12-2012		
2.0.0	18-01-2017	CGJ/Bureau Veritas HSE Denmark A/S	1-16

Abbreviations:
DNEL: Derived No Effect Level
PNEC: Predicted No Effect Concentration
PBT: Persistent, Bioaccumulative and Toxic
vPvB: Very Persistent and Very Bioaccumulative
STOT: Specific Target Organ Toxicity

Other Information:
This safety data sheet has been prepared for and applies to this product only. It is based on our current knowledge and the information that the supplier was able to provide about the product at the time of preparation. The safety data sheet complies with applicable law on preparation of safety data sheets in accordance with 1907/2006/EC (REACH) as subsequently changed.

Training advice:
A thorough knowledge of this safety data sheet should be a prerequisite condition.

Classification method:
Calculation based on the hazards of the known components. Test data

List of relevant H-statements

H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H301/311/331	Toxic if swallowed, in contact with skin or if inhaled.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H370	Causes damage to organs. (Liver., Central nervous system.)
H370	Causes damage to organs.

Quality assurance of SDS:
Bureau Veritas HSE Danmark /HSV

SDS is prepared by

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Document language:
GB

SAFETY DATA SHEET

DOW EUROPE GMBH

Safety Data Sheet according to Reg. (EU) No 2015/830

Product name: XIAMETER™ PMX-0244 Cyclotetrasiloxane

Revision Date: 22.08.2019
Version: 8.0
Date of last issue: 21.08.2019
Print Date: 08.04.2020

DOW EUROPE GMBH encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier
Product name: XIAMETER™ PMX-0244 Cyclotetrasiloxane

Chemical name of the substance: octamethylcyclotetrasiloxane
CASRN: 556-67-2
EC-No.: 209-136-7
REACH Registration Number: 01-2119529238-36-0000
01-2119529238-36-0006
01-2119529238-36-0007
01-2119529238-36-0009
01-2119529238-36-0020
01-2119529238-36-0021
01-2119529238-36

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Manufacturing and on-site use. Use as an intermediate.
For details on use descriptors and exposure scenarios, please refer to the extended part of the Safety Data Sheet.

1.3 Details of the supplier of the safety data sheet
COMPANY IDENTIFICATION
DOW EUROPE GMBH
BACHTOBELSTRASSE 3
8810 HORGEN
SWITZERLAND

Customer Information Number: 31 115 67 2626
SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 00 41 447 28 2820
Local Emergency Contact: 00 31 115 69 4982

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:
Flammable liquids - Category 3 - H226
Reproductive toxicity - Category 2 - H361f
Long-term (chronic) aquatic hazard - Category 4 - H413
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:

Hazard pictograms

Signal word: WARNING

Hazard statements

H226	Flammable liquid and vapour.
H361f	Suspected of damaging fertility.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statements

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

2.3 Other hazards

This product contains octamethylcyclotetrasiloxane (D4) that has been identified by the Member State Committee of ECHA as fulfilling the PBT and vPvB criteria laid down in Annex XIII to Regulation (EC) No 1907/2006. See Section 12 for additional information.
This product contains decamethylcyclopentasiloxane (D5) that has been identified by the Member State Committee of ECHA as fulfilling the vPvB criteria laid down in Annex XIII to Regulation (EC) No 1907/2006. See Section 12 for additional information.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

This product is a substance.
Substance name: octamethylcyclotetrasiloxane
CASRN: 556-67-2
EC-No.: 209-136-7

CASRN / EC-No. / Index-No.	REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008
CASRN 556-67-2 **EC-No.** 209-136-7 **Index-No.** 014-018-00-1	01-2119529238-36	>= 99.0 - <= 100.0 %	octamethylcyclotetrasiloxane	Flam. Liq. - 3 - H226 Repr. - 2 - H361f Aquatic Chronic - 4 - H413
PBT and vPvB substance				
CASRN 541-02-6 **EC-No.** 208-764-9 **Index-No.** –	–	>= 0.1 - < 1.0 %	Decamethylcyclopentasiloxane	Not classified

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: No emergency medical treatment necessary.

4.2 Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Water spray. Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.

Unsuitable extinguishing media: High volume water jet. Do not use direct water stream..

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides. Silicon oxides.

Unusual Fire and Explosion Hazards: Flash back possible over considerable distance.. Exposure to combustion products may be a hazard to health.. Fire burns more vigorously than would be expected.. Vapours may form explosive mixtures with air..

5.3 Advice for firefighters

Fire Fighting Procedures: Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.. Do not use a solid water stream as it may scatter and spread fire.. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

6.2 Environmental precautions: Do not release the product to the aquatic environment above defined regulatory levels Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up: Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. Clean up remaining materials from spill with suitable absorbant. Local or national

regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, Sections 13 and 15 of this SDS provide information regarding certain local or national requirements. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur.

6.4 Reference to other sections:
See sections: 7, 8, 11, 12 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling: Avoid inhalation of vapour or mist. Do not swallow. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. Non-sparking tools should be used. Handle in accordance with good industrial hygiene and safety practice.
Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation. Ground and bond container and receiving equipment.

7.2 Conditions for safe storage, including any incompatibilities: Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

Do not store with the following product types: Strong oxidizing agents. Organic peroxides. Flammable solids. Pyrophoric liquids. Pyrophoric solids. Self-heating substances and mixtures. Substances and mixtures, which in contact with water, emit flammable gases. Explosives. Gases.
Unsuitable materials for containers: None known.

7.3 Specific end use(s): See the technical data sheet on this product for further information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
octamethylcyclotetrasiloxane	US WEEL	TWA	10 ppm
Decamethylcyclopentasiloxane	US WEEL	TWA	10 ppm

Derived No Effect Level
octamethylcyclotetrasiloxane
Workers

Acute systemic effects		*Acute local effects*		*Long-term systemic effects*		*Long-term local effects*	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
n.a.	73 mg/m3	n.a.	73 mg/m3	n.a.	73 mg/m3	n.a.	73 mg/m3

Acute systemic effects			*Acute local effects*		*Long-term systemic effects*			*Long-term local effects*	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation
n.a.	13 mg/m3	3.7 mg/kg bw/day	n.a.	13 mg/m3	n.a.	13 mg/m3	3.7 mg/kg bw/day	n.a.	13 mg/m3

Decamethylcyclopentasiloxane

Workers

Acute systemic effects		*Acute local effects*		*Long-term systemic effects*		*Long-term local effects*	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
n.a.	97.3 mg/m3	n.a.	24.2 mg/m3	n.a.	97.3 mg/m3	n.a.	24.2 mg/m3

Consumers

Acute systemic effects			*Acute local effects*		*Long-term systemic effects*			*Long-term local effects*	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation
n.a.	17.3 mg/m3	5 mg/kg bw/day	n.a.	4.3 mg/m3	n.a.	17.3 mg/m3	5 mg/kg bw/day	n.a.	4.3 mg/m3

Predicted No Effect Concentration

octamethylcyclotetrasiloxane

Compartment	PNEC
Fresh water	0.00044 mg/l
Marine water	0.000044 mg/l
Fresh water sediment	0.64 mg/kg
Marine sediment	0.064 mg/kg
Soil	0.13 mg/kg
Sewage treatment plant	> 10 mg/l

Decamethylcyclopentasiloxane

Compartment	PNEC
Fresh water	> 0.0012 mg/l
Marine water	> 0.00012 mg/l
Fresh water sediment	2.4 mg/kg
Marine sediment	0.24 mg/kg
Soil	1.1 mg/kg
Sewage treatment plant	> 10 mg/l

8.2 Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Natural rubber ("latex"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2 (meeting standard EN 14387).

Environmental exposure controls

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	
Physical state	liquid
Color	colourless
Odor	odourless
Odor Threshold	No data available
pH	No data available
Melting point/range	17.5 °C
Freezing point	No data available
Boiling point (760 mmHg)	175 °C

Flash point	**Tag closed cup** 57 °C
Evaporation Rate (Butyl Acetate = 1)	< 1
Flammability (solid, gas)	Not applicable
Lower explosion limit	0.75 % vol
Upper explosion limit	7.4 % vol
Vapor Pressure	0.12 hPa
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	0.95
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	400 °C
Decomposition temperature	No data available
Kinematic Viscosity	2.2 mm2/s at 25 °C
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

9.2 Other information

Molecular weight	No data available
Particle size	Not applicable

NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: Not classified as a reactivity hazard.

10.2 Chemical stability: Stable under normal conditions.

10.3 Possibility of hazardous reactions: Can react with strong oxidizing agents. Flammable liquid and vapour.

10.4 Conditions to avoid: Heat, flames and sparks.

10.5 Incompatible materials: Oxidizing agents

10.6 Hazardous decomposition products:
Decomposition products can include and are not limited to: Formaldehyde.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

11.1 Information on toxicological effects
Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

For this family of materials:
LD50, Rat, male and female, > 4,800 mg/kg No deaths occurred at this concentration.

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

For this family of materials:
LD50, Rat, > 2,400 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to mist. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

For this family of materials:
LC50, Rat, male and female, 4 Hour, dust/mist, 36 mg/l

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation
Essentially nonirritating to eyes.

Sensitization
For this family of materials:
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Contains component(s) which have been reported to cause effects on the following organs in animals:
Liver.
Kidney.
Respiratory tract.
Female reproductive organs.

Carcinogenicity
Results from a 2 year repeated vapour inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700 ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. Repeated exposure in rats to D4 resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

Teratogenicity
For this family of materials: Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity
For this family of materials: In animal studies, has been shown to interfere with reproduction. In animal studies, has been shown to interfere with fertility.

Mutagenicity
For this family of materials: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard
Based on available information, aspiration hazard could not be determined.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

12.1 Toxicity

octamethylcyclotetrasiloxane

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.
No toxicity at the limit of solubility
LC50, Oncorhynchus mykiss (rainbow trout), flow-through, 96 Hour, > 0.022 mg/l
No toxicity at the limit of solubility
LC50, Cyprinodon variegatus (sheepshead minnow), flow-through, 14 d, > 0.0063 mg/l

Acute toxicity to aquatic invertebrates
No toxicity at the limit of solubility
EC50, Mysidopsis bahia (opossum shrimp), flow-through test, 96 Hour, > 0.0091 mg/l
No toxicity at the limit of solubility
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 0.015 mg/l

Acute toxicity to algae/aquatic plants
No toxicity at the limit of solubility
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, > 0.022 mg/l

Chronic toxicity to fish
No toxicity at the limit of solubility
NOEC, Oncorhynchus mykiss (rainbow trout), 93 d, >= 0.0044 mg/l

Chronic toxicity to aquatic invertebrates
No toxicity at the limit of solubility
NOEC, Daphnia magna (Water flea), 21 d, >= 0.0079 mg/l

Decamethylcyclopentasiloxane

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.
No toxicity at the limit of solubility

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 16 µg/l, OECD Test Guideline 204 or Equivalent

Acute toxicity to aquatic invertebrates
No toxicity at the limit of solubility
EC50, Daphnia magna, 48 Hour, > 2.9 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
No toxicity at the limit of solubility
ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, > 0.012 mg/l
No toxicity at the limit of solubility
NOEC, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, 0.012 mg/l

Chronic toxicity to fish
No toxicity at the limit of solubility
LC50, Oncorhynchus mykiss (rainbow trout), 14 d, > 16 mg/l
No toxicity at the limit of solubility
NOEC, Oncorhynchus mykiss (rainbow trout), 45 d, >= 0.017 mg/l
No toxicity at the limit of solubility
NOEC, Oncorhynchus mykiss (rainbow trout), 90 d, >= 0.014 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna, 21 d, 0.015 mg/l

Toxicity to soil-dwelling organisms
This product does not have any known adverse effect on the soil organisms tested.
NOEC, Eisenia fetida (earthworms), >= 76 mg/kg

12.2 Persistence and degradability

octamethylcyclotetrasiloxane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Not applicable
Biodegradation: 3.7 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Stability in Water (1/2-life)
Hydrolysis, DT50, 69.3 - 144 Hour, pH 7, Half-life Temperature 24.6 °C, OECD Test Guideline 111

Decamethylcyclopentasiloxane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Not applicable
Biodegradation: 0.14 %
Exposure time: 28 d
Method: OECD Test Guideline 310

12.3 Bioaccumulative potential

octamethylcyclotetrasiloxane

Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient: n-octanol/water(log Pow): 6.49 Measured
Bioconcentration factor (BCF): 12,400 Pimephales promelas (fathead minnow) Measured

Decamethylcyclopentasiloxane
Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 5.2 Measured
Bioconcentration factor (BCF): 2,010 Fish Estimated.

12.4 Mobility in soil

octamethylcyclotetrasiloxane
Expected to be relatively immobile in soil (Koc > 5000).

Decamethylcyclopentasiloxane
Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient (Koc): > 5000 Estimated.

12.5 Results of PBT and vPvB assessment

octamethylcyclotetrasiloxane
Octamethylcyclotetrasiloxane (D4) meets the current REACh Annex XIII criteria for PBT and vPvB. In Canada, D4 has been assessed and deemed to meet the PiT criteria. However, D4 does not behave similarly to known PBT/vPvB substances. The weight of scientific evidence from field studies shows that D4 is not biomagnifying in aquatic and terrestrial food webs. D4 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D4 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms.

Decamethylcyclopentasiloxane
Decamethylcyclopentasiloxane (D5) meets the current REACh Annex XIII criteria for vPvB. However, D5 does not behave similarly to known PBT/vPvB substances. The weight of scientific evidence from field studies shows that D5 is not biomagnifying in aquatic and terrestrial food webs. D5 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D5 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms. Based on an independent scientific panel of experts, the Canadian Minister of the Environment has concluded that "D5 is not entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity, or that constitute or may constitute a danger to the environment on which life depends".

12.6 Other adverse effects

octamethylcyclotetrasiloxane
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Decamethylcyclopentasiloxane
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Do not dump into any sewers, on the ground, or into any body of water. This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

SECTION 14: TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):

14.1	**UN number**	UN 1993
14.2	**UN proper shipping name**	FLAMMABLE LIQUID, N.O.S.(Octamethyl Cyclotetrasiloxane)
14.3	**Transport hazard class(es)**	3
14.4	**Packing group**	III
14.5	**Environmental hazards**	Not considered environmentally hazardous based on available data.
14.6	**Special precautions for user**	Hazard Identification Number: 30

Classification for SEA transport (IMO-IMDG):

14.1	**UN number**	UN 1993
14.2	**UN proper shipping name**	FLAMMABLE LIQUID, N.O.S.(Octamethyl Cyclotetrasiloxane)
14.3	**Transport hazard class(es)**	3
14.4	**Packing group**	III
14.5	**Environmental hazards**	Not considered as marine pollutant based on available data.
14.6	**Special precautions for user**	EmS: F-E, S-E
14.7	**Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code**	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

14.1	**UN number**	UN 1993
14.2	**UN proper shipping name**	Flammable liquid, n.o.s.(Octamethyl Cyclotetrasiloxane)
14.3	**Transport hazard class(es)**	3
14.4	**Packing group**	III
14.5	**Environmental hazards**	Not applicable

14.6 Special precautions for user No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACh Regulation (EC) No 1907/2006
This product contains only components that have been either registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH)., The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer´s/user´s responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	Conditions of restriction for the following entries should be considered: Number on list 3, 40 octamethylcyclotetrasiloxane (Number on list 70) Decamethylcyclopentasiloxane (Number on list 70)

Authorisation status under REACH:
The following substance/s contained in this product might be or is/are subject to authorization in accordance with REACH:

CAS-No.: 556-67-2	Name: octamethylcyclotetrasiloxane

Authorisation status: listed in the Candidate List of Substances of Very High Concern for Authorisation
Authorisation number: Not available
Sunset date: Not available
Exempted (Categories of) Uses: Not available

CAS-No.: 541-02-6	Name: Decamethylcyclopentasiloxane

Authorisation status: listed in the Candidate List of Substances of Very High Concern for Authorisation
Authorisation number: Not available
Sunset date: Not available
Exempted (Categories of) Uses: Not available

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Listed in Regulation: FLAMMABLE LIQUIDS

Number in Regulation: P5c
5,000 t
50,000 t

Further information
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

15.2 Chemical safety assessment
Chemical Safety Assessments have been carried out for these substances.

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H226	Flammable liquid and vapour.
H361f	Suspected of damaging fertility.
H413	May cause long lasting harmful effects to aquatic life.

Revision
Identification Number: 4088846 / A305 / Issue Date: 22.08.2019 / Version: 8.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)
Aquatic Chronic	Long-term (chronic) aquatic hazard
Flam. Liq.	Flammable liquids
Repr.	Reproductive toxicity

Full text of other abbreviations
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the

Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW EUROPE GMBH urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
GB

Annex

Exposure Scenario

Number	Title
ES1	Manufacturing and on-site use
ES2	Use as an intermediate

ES1: Manufacturing and on-site use

1.1. Title section

Structured Short Title	:	Manufacture
Substance	:	octamethylcyclotetrasiloxane EC-No.: 209-136-7

Environment	
CS1	ERC1
Worker	
CS2	PROC2
CS3	PROC8b

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Manufacture of the substance (ERC1)

Product (article) characteristics		
Covers concentrations up to 100 %		
Amount used, frequency and duration of use (or from service life)		
Annual amount per site	:	80000000 kg
Release type	:	Continuous release
Emission days	:	300
Technical and organisational conditions and measures		
Use of air emission abatement equipments. Exhaust air scrubber Cooler and condenser Central biological waste water treatment Discharge to aquatic environment is restricted (see section 4.2). No discharge of substance into waste water		
Conditions and measures related to sewage treatment plant		
STP type	:	Onsite Sewage Treatment Plant
STP sludge treatment	:	Landfill or incinerated

		Spreading as a worst case scenario
STP effluent	:	3,100 m3/d
STP type	:	Municipal Sewage Treatment Plant
STP sludge treatment	:	Landfill or incinerated Spreading as a worst case scenario
STP effluent	:	3,100 m3/d
Conditions and measures related to treatment of waste (including article waste)		
Waste treatment	:	Aqueous waste to be treated in on-site or municipal secondary biological treatment plants prior to discharge. Waste gases treated in scrubbers.
Other conditions affecting environmental exposure		
Receiving surface water flow	:	3,100,000 m3/d
Local freshwater dilution factor	:	900
Local marine water dilution factor	:	1,000

1.2.2. Control of worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics		
Covers concentrations up to 100 %		
Physical form of product	:	Liquid
Vapour pressure	:	132 Pa
Amount used, frequency and duration of use (or from service life)		
Amount per Day	:	267000 kg
Duration	:	Exposure duration < 15 min
Use frequency	:	1 uses per day
Technical and organisational conditions and measures		
Process safety assessment General standard operating procedures to control routine activities Confined space entry permits General Permit to Work (PTW) for cleaning and maintenance activities Flush, purge and vent vessel lines before cleaning or maintenance. Plant integrity checks Operator monitoring		

Safety and environmental audits Regular training of workers Integrated safety management systems Chlorosilanes are used during the production of the registered substance. Due to the corrosive and flammable nature of the substance, all aspects of chlorosilane handling, including on-site storage and transfer, are subject to highly controlled conditions. The Centre Européen des Silicones (CES) manual on Safe Handling of Chlorosilanes is considered to be implemented at sites using the substance. Take measures to prevent the build up of electrostatic charge. On-site storage vessels should be located outside, away from buildings, overhead utilities or piping. All equipments must be thoroughly dried, and enclosed to prevent contact with atmospheric moisture. Risk management measures for the use of chlorosilanes are applicable. Containment measures Local exhaust ventilation
Conditions and measures related to personal protection, hygiene and health evaluation
Chlorosilanes are used during the production of the registered substance. Wear a full face respirator conforming to EN136. Wear suitable face shield. Tightly fitting safety goggles Fluorinated gloves or gauntlets Nitrile gloves or gauntlets Wear an impervious suit. Apron When prolonged exposure is expected: Self-contained, positive pressure breathing apparatus
Other conditions affecting workers exposure

Body parts exposed	:	Palms of both hands (480 cm2)
Indoor or outdoor use	:	Indoor use

1.2.3. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Product (article) characteristics		
Covers concentrations up to 100 %		
Physical form of product	:	Liquid
Vapour pressure	:	132 Pa
Amount used, frequency and duration of use (or from service life)		
Amount per Day	:	267000 kg
Duration	:	Exposure duration < 15 min
Use frequency	:	5 uses per day

Technical and organisational conditions and measures
Process safety assessment General standard operating procedures to control routine activities Confined space entry permits General Permit to Work (PTW) for cleaning and maintenance activities Flush, purge and vent vessel lines before cleaning or maintenance. Plant integrity checks Operator monitoring Safety and environmental audits Regular training of workers Integrated safety management systems Chlorosilanes are used during the production of the registered substance. Due to the corrosive and flammable nature of the substance, all aspects of chlorosilane handling, including on-site storage and transfer, are subject to highly controlled conditions. The Centre Européen des Silicones (CES) manual on Safe Handling of Chlorosilanes is considered to be implemented at sites using the substance. Take measures to prevent the build up of electrostatic charge. On-site storage vessels should be located outside, away from buildings, overhead utilities or piping. All equipments must be thoroughly dried, and enclosed to prevent contact with atmospheric moisture. Risk management measures for the use of chlorosilanes are applicable. Containment measures Local exhaust ventilation
Process safety assessment General standard operating procedures to control routine activities Confined space entry permits General Permit to Work (PTW) for cleaning and maintenance activities Flush, purge and vent vessel lines before cleaning or maintenance. Plant integrity checks Operator monitoring Safety and environmental audits Regular training of workers Integrated safety management systems Chlorosilanes are used during the production of the registered substance. Due to the corrosive and flammable nature of the substance, all aspects of chlorosilane handling, including on-site storage and transfer, are subject to highly controlled conditions. The Centre Européen des Silicones (CES) manual on Safe Handling of Chlorosilanes is considered to be implemented at sites using the substance. Take measures to prevent the build up of electrostatic charge. On-site storage vessels should be located outside, away from buildings, overhead utilities or piping. All equipments must be thoroughly dried, and enclosed to prevent contact with atmospheric moisture. Risk management measures for the use of chlorosilanes are applicable. Containment measures Local exhaust ventilation
Conditions and measures related to personal protection, hygiene and health evaluation
Chlorosilanes are used during the production of the registered substance. Wear a full face respirator conforming to EN136. Wear suitable face shield. Tightly fitting safety goggles Fluorinated gloves or gauntlets

Nitrile gloves or gauntlets Wear an impervious suit. Apron When prolonged exposure is expected: Self-contained, positive pressure breathing apparatus

Other conditions affecting workers exposure		
Body parts exposed	:	Palms of both hands (480 cm2)
Indoor or outdoor use	:	Indoor use

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Manufacture of the substance (ERC1)

Compartment	Exposure level	RCR
Freshwater	0.0000024 mg/L (EUSES)	0.006
Marine water	0.0000002 mg/L (EUSES)	0.005
Freshwater sediment	0.00087 mg/kg wet weight (EUSES)	0.001
Marine sediment	0.000077 mg/kg wet weight (EUSES)	0.001
Soil	0.00034 mg/kg wet weight (EUSES)	0.024

1.3.3. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0.31 mg/m³ (ECETOC TRA worker v2.0)	0.004
inhalative	local	long-term	0.31 mg/m³ (ECETOC TRA worker v2.0)	0.004

1.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

See ECHA guidance (http://guidance.echa.europa.eu/guidance_en.htm): "Guidance for downstream users"

ES2: Use as an intermediate

2.1. Title section

Structured Short Title	:	Use at industrial sites; Intermediate (PC19); Various sectors (SU8, SU9).
Substance	:	octamethylcyclotetrasiloxane EC-No.: 209-136-7

Environment	
CS1	ERC6a
Worker	
CS2	PROC1, PROC3
CS3	PROC2, PROC4
CS4	PROC8b
CS5	PROC9

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Use of intermediate (ERC6a)

Product (article) characteristics		
Covers concentrations up to 100 %		
Amount used, frequency and duration of use (or from service life)		
Annual amount per site	:	1320000 kg
Release type	:	Continuous release
Emission days	:	330
Technical and organisational conditions and measures		
Use of air emission abatement equipments. Exhaust air scrubber Cooler and condenser Central biological waste water treatment Pre-treatment of waste water: Bubbling aeration (90% efficiency) Discharge to aquatic environment is restricted (see section 4.2).		

No discharge of substance into waste water		
Conditions and measures related to sewage treatment plant		
STP type	:	Onsite Sewage Treatment Plant
STP sludge treatment	:	Landfill or incinerated Spreading as a worst case scenario
STP effluent	:	10,000 m3/d
STP type	:	Municipal Sewage Treatment Plant
STP sludge treatment	:	Landfill or incinerated Spreading as a worst case scenario
STP effluent	:	10,000 m3/d
Conditions and measures related to treatment of waste (including article waste)		
Waste treatment	:	Aqueous waste to be treated in on-site or municipal secondary biological treatment plants prior to discharge. Waste gases treated in scrubbers.
Other conditions affecting environmental exposure		
Receiving surface water flow	:	400,000 m3/d
Local freshwater dilution factor	:	40

2.2.2. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1) / Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics		
Covers concentrations up to 100 %		
Physical form of product	:	Liquid
Vapour pressure	:	132 Pa
Amount used, frequency and duration of use (or from service life)		
Amount per Day	:	4000 kg
Duration	:	Exposure duration 60 min
Use frequency	:	1 uses per day
Technical and organisational conditions and measures		
Process safety assessment		

General standard operating procedures to control routine activities Confined space entry permits General Permit to Work (PTW) for cleaning and maintenance activities Flush, purge and vent vessel lines before cleaning or maintenance. Plant integrity checks Operator monitoring Safety and environmental audits Regular training of workers Integrated safety management systems Take measures to prevent the build up of electrostatic charge. On-site storage vessels should be located outside, away from buildings, overhead utilities or piping. Additional Good Practice Advice Provide a basic standard of general ventilation (1 to 3 air changes per hour). Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.

Conditions and measures related to personal protection, hygiene and health evaluation
Safety glasses When prolonged exposure is expected: Wear suitable respiratory protection. Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Other conditions affecting workers exposure		
Body parts exposed	:	Palm of one hand
Indoor or outdoor use	:	Indoor use

2.2.3. Control of worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2) / Chemical production where opportunity for exposure arises (PROC4)

Product (article) characteristics		
Covers concentrations up to 100 %		
Physical form of product	:	Liquid
Vapour pressure	:	132 Pa

Amount used, frequency and duration of use (or from service life)		
Amount per Day	:	4000 kg
Duration	:	Exposure duration 60 min
Use frequency	:	1 uses per day

Technical and organisational conditions and measures
Process safety assessment General standard operating procedures to control routine activities

Confined space entry permits General Permit to Work (PTW) for cleaning and maintenance activities Flush, purge and vent vessel lines before cleaning or maintenance. Plant integrity checks Operator monitoring Safety and environmental audits Regular training of workers Integrated safety management systems Take measures to prevent the build up of electrostatic charge. On-site storage vessels should be located outside, away from buildings, overhead utilities or piping. Additional Good Practice Advice Provide a basic standard of general ventilation (1 to 3 air changes per hour). Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.
Conditions and measures related to personal protection, hygiene and health evaluation
Safety glasses When prolonged exposure is expected: Wear suitable respiratory protection. Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Other conditions affecting workers exposure

Body parts exposed	:	Palms of both hands (480 cm2)
Indoor or outdoor use	:	Indoor use

2.2.4. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Product (article) characteristics		
Covers concentrations up to 100 %		
Physical form of product	:	Liquid
Vapour pressure	:	132 Pa
Amount used, frequency and duration of use (or from service life)		
Amount per Day	:	4000 kg
Duration	:	Exposure duration < 15 min
Use frequency	:	1 uses per day
Technical and organisational conditions and measures		
Process safety assessment General standard operating procedures to control routine activities Confined space entry permits General Permit to Work (PTW) for cleaning and maintenance activities		

Flush, purge and vent vessel lines before cleaning or maintenance. Plant integrity checks Operator monitoring Safety and environmental audits Regular training of workers Integrated safety management systems Take measures to prevent the build up of electrostatic charge. On-site storage vessels should be located outside, away from buildings, overhead utilities or piping. Additional Good Practice Advice Provide a basic standard of general ventilation (1 to 3 air changes per hour). Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.

Conditions and measures related to personal protection, hygiene and health evaluation
Safety glasses When prolonged exposure is expected: Wear suitable respiratory protection. Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Other conditions affecting workers exposure		
Body parts exposed	:	Palms of both hands (480 cm2)
Indoor or outdoor use	:	Indoor use

2.2.5. Control of worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics		
Covers concentrations up to 100 %		
Physical form of product	:	Liquid
Vapour pressure	:	132 Pa

Amount used, frequency and duration of use (or from service life)		
Amount per Day	:	4000 kg
Duration	:	Exposure duration > 240 min
Use frequency	:	1 uses per day

Technical and organisational conditions and measures
Process safety assessment General standard operating procedures to control routine activities Confined space entry permits General Permit to Work (PTW) for cleaning and maintenance activities Flush, purge and vent vessel lines before cleaning or maintenance. Plant integrity checks

Operator monitoring Safety and environmental audits Regular training of workers Integrated safety management systems Take measures to prevent the build up of electrostatic charge. On-site storage vessels should be located outside, away from buildings, overhead utilities or piping. Additional Good Practice Advice Provide a basic standard of general ventilation (1 to 3 air changes per hour). Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.
Conditions and measures related to personal protection, hygiene and health evaluation
Safety glasses When prolonged exposure is expected: Wear suitable respiratory protection. Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Other conditions affecting workers exposure

Body parts exposed	:	Palms of both hands (480 cm2)
Indoor or outdoor use	:	Indoor use

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure: Use of intermediate (ERC6a)

Compartment	Exposure level	RCR
Freshwater	0.000046 mg/L (EUSES)	0.1
Marine water	0.000018 mg/L (EUSES)	0.4
Freshwater sediment	0.017 mg/kg wet weight (EUSES)	0.025
Marine sediment	0.0063 mg/kg wet weight (EUSES)	0.097
Soil	0.014 mg/kg wet weight (EUSES)	0.96

2.3.5. Worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	6.1 mg/m³ (ECETOC TRA worker v2.0)	0.084

inhalative	local	long-term	6.1 mg/m³ (ECETOC TRA worker v2.0)	0.084

2.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

See ECHA guidance (http://guidance.echa.europa.eu/guidance_en.htm): "Guidance for downstream users"
If the conditions of downstream use deviate from the measures or parameters described in the exposure scenario, the downstream use can still be considered to be within the conditions of the exposure scenario when the following criteria are met: The resulting risk characterisation ratios (RCR) for the deviating conditions, using the method described in the scenario or a compatible tool ("scaling tool"), have to be equal to or lower than the values given in the exposure scenario. Scalable parameters are restricted to those that a downstream user can actively change by adapting the process, and may vary depending on the method used for exposure assessment. Intrinsic substance properties like vapour pressure or diffusion rates and those parameters specific to the process, e.g. the exposed skin area, may not be scaled.

SAFETY DATA SHEET

DOW EUROPE GMBH
Safety Data Sheet according to Reg. (EU) No 2015/830

Product name: XIAMETER™ PMX-0156 Silanol Fluid

Revision Date: 02.05.2019
Version: 2.1
Date of last issue: 16.07.2018
Print Date: 08.04.2020

DOW EUROPE GMBH encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier
Product name: XIAMETER™ PMX-0156 Silanol Fluid

Chemical name of the substance: Polydimethylsiloxane hydroxy-terminated
CASRN: 70131-67-8

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Intermediate

1.3 Details of the supplier of the safety data sheet
COMPANY IDENTIFICATION
DOW EUROPE GMBH
BACHTOBELSTRASSE 3
8810 HORGEN
SWITZERLAND

Customer Information Number: 31 115 67 2626
SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 00 41 447 28 2820
Local Emergency Contact: 00 31 115 69 4982

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.3 Other hazards
No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

This product is a substance.
Substance name: Polydimethylsiloxane hydroxy-terminated
CASRN: 70131-67-8
EC-No.: Polymer
No hazardous ingredients

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures
General advice:
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: No emergency medical treatment necessary.

4.2 Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

4.3 Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media: Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides Silicon oxides

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health.

5.3 Advice for firefighters
Fire Fighting Procedures: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Follow safe handling advice and personal protective equipment recommendations.

6.2 Environmental precautions: Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up: Soak up with inert absorbent material. Clean up remaining materials from spill with suitable absorbant. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections:
See sections: 7, 8, 11, 12 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling: Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice.
Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

7.2 Conditions for safe storage, including any incompatibilities: Keep in properly labelled containers. Store in accordance with the particular national regulations.

Do not store with the following product types: Strong oxidizing agents.
Unsuitable materials for containers: None known.

7.3 Specific end use(s): See the technical data sheet on this product for further information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

8.2 Exposure controls
Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

Skin protection

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Other protection: No precautions other than clean body-covering clothing should be needed.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.
Use the following CE approved air-purifying respirator: Organic vapor cartridge, type A (boiling point >65 °C, meeting standard EN 14387).

Environmental exposure controls
See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	
Physical state	liquid
Color	colourless
Odor	slight
Odor Threshold	No data available
pH	No data available
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	> 35 °C
Flash point	**closed cup** 117.7 °C

Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	0.975
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	72 cSt at 25 °C
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

9.2 Other information

Molecular weight	No data available
Particle size	Not applicable

NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: Not classified as a reactivity hazard.

10.2 Chemical stability: Stable under normal conditions.

10.3 Possibility of hazardous reactions: Can react with strong oxidizing agents.

10.4 Conditions to avoid: None known.

10.5 Incompatible materials: Oxidizing agents

10.6 Hazardous decomposition products: Formaldehyde.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

11.1 Information on toxicological effects
Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

For this family of materials: Estimated.
LD50, Rat, > 5,000 mg/kg

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

For this family of materials: Estimated.
LD50, > 2,000 mg/kg

Acute inhalation toxicity
Brief exposure (minutes) is not likely to cause adverse effects.
As product: The LC50 has not been determined.

Skin corrosion/irritation
Prolonged contact is essentially nonirritating to skin.

Serious eye damage/eye irritation
May cause slight temporary eye irritation.
Corneal injury is unlikely.
May cause mild eye discomfort.

Sensitization
For skin sensitization:
Contains component(s) which did not cause allergic skin sensitization in guinea pigs.

For respiratory sensitization:
No relevant information found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity
For this family of materials: Did not cause cancer in long-term animal studies which used routes of exposure considered relevant to industrial handling. Positiveresults have been reported in other studies using routes of exposure not relevant to industrial handling.

Teratogenicity
For this family of materials: Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity
For this family of materials: In animal studies, did not interfere with reproduction.

Mutagenicity
For this family of materials: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

12.1 Toxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
No data available.

12.6 Other adverse effects
No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Do not dump into any sewers, on the ground, or into any body of water. This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

SECTION 14: TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):

14.1	UN number	Not applicable
14.2	UN proper shipping name	Not regulated for transport
14.3	Transport hazard class(es)	Not applicable
14.4	Packing group	Not applicable
14.5	Environmental hazards	Not considered environmentally hazardous based on available data.

14.6	Special precautions for user	No data available.

Classification for SEA transport (IMO-IMDG):

14.1	UN number	Not applicable
14.2	UN proper shipping name	Not regulated for transport
14.3	Transport hazard class(es)	Not applicable
14.4	Packing group	Not applicable
14.5	Environmental hazards	Not considered as marine pollutant based on available data.
14.6	Special precautions for user	No data available.
14.7	Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

14.1	UN number	Not applicable
14.2	UN proper shipping name	Not regulated for transport
14.3	Transport hazard class(es)	Not applicable
14.4	Packing group	Not applicable
14.5	Environmental hazards	Not applicable
14.6	Special precautions for user	No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACh Regulation (EC) No 1907/2006
Polymers are exempted from registration under REACH. All relevant starting materials and additives have been either registered, or are exempt from registration according to Regulation (EC) No. 1907/2006 (REACH)., The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer´s/user´s responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Listed in Regulation: Not applicable

15.2 Chemical safety assessment
No Chemical Safety Assessment has been carried out for this substance/mixture.

SECTION 16: OTHER INFORMATION

Revision
Identification Number: 4022772 / A305 / Issue Date: 02.05.2019 / Version: 2.1
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Full text of other abbreviations
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW EUROPE GMBH urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
GB

Glossary of Terms and Abbreviations

ABP - Associated British Ports
LPS - Local Port Services
NHC - Newport Harbour Commision
OSCP - Oil Spill Contingency Plan
SHA - Statutory Harbour Authority
NCP - National Contingency Plan
COSHH - Control of Substances Hazardous to Health
NRW - National Resources Wales
QAH - Queen Alexandra House
MCA - Maritime Coastguard Agency
PMRC - Port Marine Response Centre
CGOC - Coastguard Operations Centre
SOSREP - Secretary of State Representative
POLREP - Pollution Report
OMT - Oil Spill Management Team
ITOPF - International Tanker Owners Pollution Federation
CPSO - Counter Pollution & Salvage Officer
SCU - Salvage Control Unit
OCU - Operations Control Unit
SCG - Strategic Coordinating Group
TCG - Tactical Coordinating Group
ResCG - Response Coordinating Group
EG - Environment Group
GPMO - General Purpose Marine Operative
LC - Lock Controller
HM - Harbour Master
DHM - Deputy Harbour Master
MOM - Marine Operations Manager
MOS - Marine Operations Supervisor
PD - Port Director
PM - Port Manager
A&A - Adler and Allan
PPE - Personal Protective Equipment
MMO - Marine Management Organisation
POW - Prince of Wales
SAC - Special Areas of Conservation
PACC - Public Affairs and Corporate Communications
LOA - Length on Arrival
SPA - Special Protection Area
SSSI - Sites of Specific Scientific Interest
PB - Port Boundary
DfT - Department of Transport