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Section 1: Introduction and Policy

1.1 Purpose of the Plan

Clyde Clean is designed to guide response personnel through the processes required to manage an oil spill originating from vessels and/or operations within or approaching the River and Firth of Clyde (Clydeport Statutory Harbour Area).

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The requirement to have an Oil Spill Contingency Plan for Harbours, Ports and Oil Handling Terminals around UK waters has been formalised by the Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998, which implement the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC, 1990). This Convention, adopted by the International Maritime Organisation (IMO) is aimed to “mitigate the consequences of major oil pollution incidents involving, in particular, ships, offshore units, sea ports and oil handling facilities”.

The Maritime and Coastguard Agency (MCA) is the competent national authority designated to oversee all matters pertaining to the OPRC convention under the Merchant Shipping Act 1995 as amended by the Merchant Shipping and Maritime Security Act 1997. This plan has been prepared in accordance with the ‘Oil Spill Contingency Plan Guidelines for Ports, Harbours & Oil Handling Facilities’ issued by the Maritime and Coastguard Agency (MCA) which is responsible for applying the regulations to all harbours, ports and oil handling facilities in the UK.

1.2 Document Control and Plan Revision

This Oil Spill Contingency Plan is a controlled document. Clydeport Senior Manager Marine Operations will be responsible for maintenance and plan review. All document holders, detailed in the distribution list, are assigned a specific copy number. Any changes to the situation at the harbour, to the plan or any other updates will be issued as amendments to all holders of the plan within 3 months of such change. The plan will be reviewed on an annual basis so as to incorporate changes occurring during the year including lessons learned from exercises and incidents. This Plan has an approved life span of 5 years from the date of approval by MCA and it shall be submitted in its entirety for re-approval during year four to maintain continuity.

This document is compiled in consultation with the following authorities:

- HM Naval Base Clyde
- Nature Scot
- Scottish Environment Protection Agency
- Marine Scotland
- Argyll & Bute Council
- Glasgow City Council
- Renfrewshire Council
- North Ayrshire Council
- Inverclyde Council
- West Dunbartonshire Council

1.3 Use of the Plan

This Plan is specifically for operations within Clydeport Statutory Harbour Area (Figure 1). There are ports/berths lying within this area under authority of other Statutory Harbour Authorities (CMAI, Ardrossan Harbour Company and Clyde Dockyard Port). This Plan is intended to dovetail with the response of the respective Harbour Authority concerned.

The plan is designed to initiate an appropriate oil spill response in the event of an incident. It details a tiered response strategy that is in accordance with UK legislative requirements and takes into account the spill risk associated with the operation; the nature of the hydrocarbons that could be spilt; the prevailing meteorological and hydrographic conditions and the environmental sensitivity of the surrounding areas.

1.4 Area of Operation

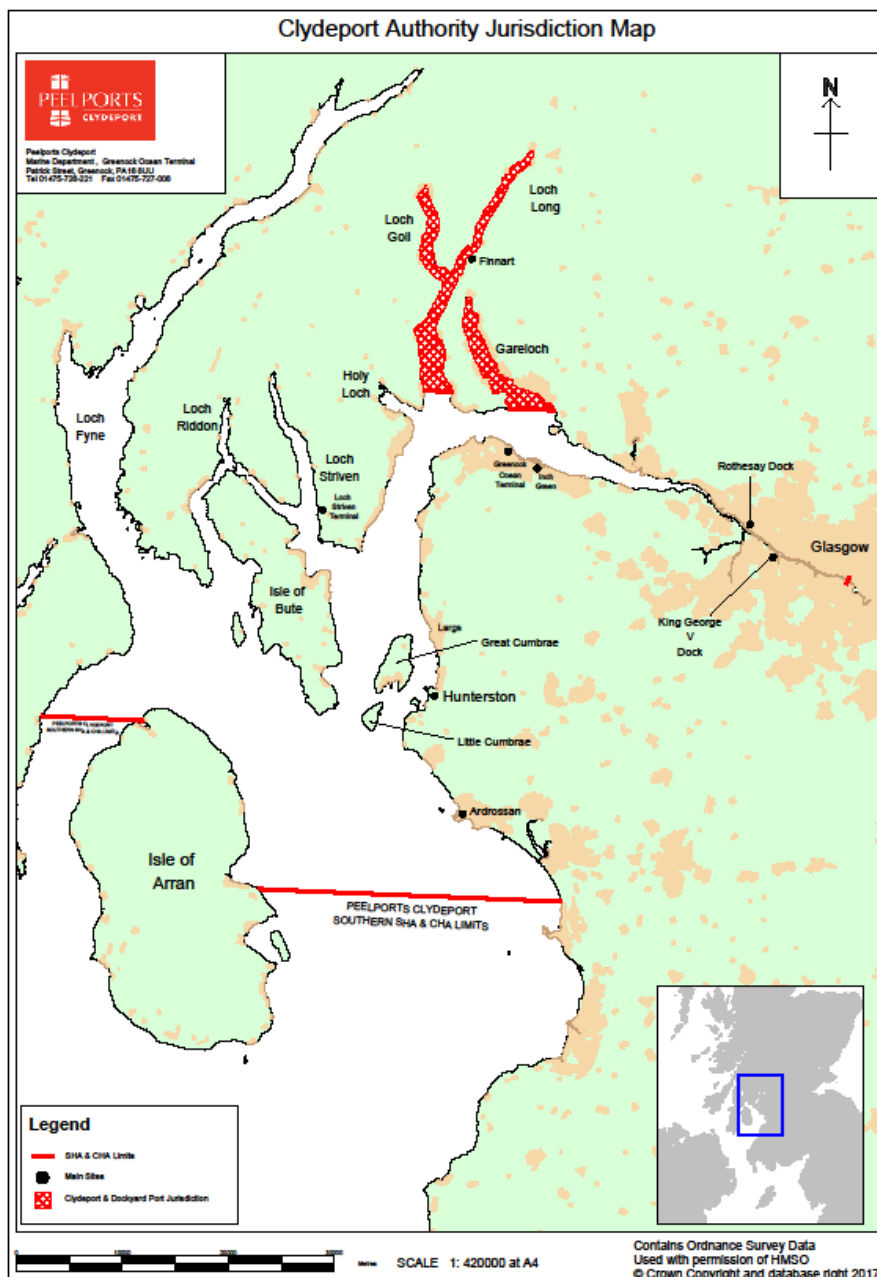


Figure 1: Location Map Illustrating the Boundaries of Jurisdiction
(clearer copy available on request)

Clydeport Operations Limited (COL) is the Statutory Harbour Authority for the River and Firth of Clyde as defined in the Clyde Port Authority Order Confirmation Acts 1965 and 1969. COL has a jurisdiction covering some 450 square miles. Clydeport is also the Competent Harbour Authority, with prime responsibility for pilotage and marine safety in the area, and acts as the Local Lighthouse Authority. The landward limit of jurisdiction is the west side of Albert Bridge in the City of Glasgow.

The seaward limits are:

- a. To the east of the Isle of Arran a line drawn due east and west across the river or firth of Clyde from the coast of Ayrshire to Corrygills Point on the east coast of the Isle of Arran.
- b. In Kilbrannan Sound a line drawn due east and west across the river or firth of Clyde from the north-west coast of the Isle of Arran to the coast of Kintyre being an extension of a line drawn due east and west from the southern-most point of the island of Little Cumbrae to the north-west coast of the Isle of Arran.

The Port Authority and the harbourmaster shall exercise jurisdiction within that part of the river and firth of Clyde between the landward limit and the seaward limits (other than the areas within the jurisdiction of the Ardrossan Harbour Company Limited, as defined in section 22 (Limits of Harbour defined) of the Ardrossan Harbour Consolidation Act 1864) and within all sea lochs and channels within that part and their jurisdiction shall extend up to the level of mean high water springs.

Oil spills to the marine environment in sea lochs forming part of HM Naval Base Clyde OSCPs will be supported through the PETROINEOS Finnart, KHM Clyde and this Plan. These plans have been drawn up to be compatible and interface both with Clyde Clean and the NCP.

Fast Facts

| Greenock Ocean Terminal | |
|--------------------------------|--|
| Contact | Senior Manager Marine Operations Terminal Manager See Contacts List for details |
| Harbour entrance position | Clydeport No.1 Buoy (see Chart, Supplementary Information A) |
| Admiralty chart numbers | 1994 |
| Minimum available depth | Refer to latest COL Sounding Sheets |
| Maximum available length | 350m |
| Maximum beam | N/A |
| Lock dimensions | N/A |
| Navigational access | Buoyed channel, Riverside quay with no significant access restrictions |
| Environmental sensitivities | Coastal areas. Bird, wildlife and fish populations |
| Tugs + OSR Support Craft | Tugs are available on request from Svitzer, CMS, Serco OSR support Craft as per Schedule |
| Berths | Greenock Ocean Terminal (E) and (W) |
| Repair facilities | None other than Terminal Workshop |
| Cargo handling facilities | Passenger, container, general |

| | |
|----------------|---|
| Hazards | Pipelines |
| Tidal range | Up to 4m Tidal Stream flows approx. parallel to the quay and at Rates up to 3 knots |
| ISPS compliant | Yes |

| Glasgow Berths | |
|-----------------------------|--|
| Contact | Senior Manager Marine Operations Terminal Manager See Contacts List for details |
| Harbour entrance position | (see Chart, Supplementary Information A) |
| Admiralty chart numbers | 2007 |
| Minimum available depth | Refer to latest COL Sounding Sheets |
| Maximum available length | Various |
| Maximum beam | Rothesay Dock 23.3m; KGV 32m |
| Lock dimensions | BAE Scotstoun drydocks |
| Navigational access | Buoyed channel |
| Environmental sensitivities | Coastal areas. Bird, wildlife and fish populations |
| Tugs + OSR Support Craft | Tugs are available on request from Svitzer, CMS and Serco and other OSR Craft per Schedule |
| Berths | <ul style="list-style-type: none"> • King George V Basin • Shieldhall/Riverside • Diesel Engine Wharf • Rothesay Dock • Princess Dock • BAE Berths • Pontoons at Braehead, Kelvin Harbour, Crowne Plaza, Pacific Quay, Broomielaw |
| Repair facilities | BAE docks at Govan and Scotstoun (Details as per Appendix) Rothesay Dock Boatyard |
| Cargo handling facilities | Scrap, fuel (diesel/petrol/aviation), bulk, general, passengers, project cargo |
| Hazards | Bridges, electricity cables, pipelines |
| Tidal range | Up to 5m Tidal flows parallel to berths other than within Princess Dock, BAE Scotstoun, KGV, Rothesay Dock |
| ISPS compliant | Yes |

| James Watt Dock, Garvel Dry Dock and Great Harbour, Inchgreen Dry Dock | |
|---|--|
| Contact | Senior Manager Marine Operations Terminal Manager Manager Jas Watt Dock Marina See Contacts List for details |
| Harbour entrance position | Clydeport No.1 Buoy (see Chart, Supplementary Information A) |
| Admiralty chart numbers | 1994 |
| Minimum available draft | Refer to latest COL Sounding Sheets |
| Maximum available length | Various |
| Maximum beam | N/A |
| Lock dimensions | Garvel Dry Dock 21.5m width; Inchgreen Dry Dock width 44.2m and Sill CD-9.2m |
| Navigational access | Buoyed channel |
| Environmental sensitivities | Coastal areas. Bird, wildlife and fish populations |
| Tugs | Tugs are available on request from Svitzer, CMS and Serco and other OSR support craft as per Schedule |
| Berths | <ul style="list-style-type: none"> • James Watt Dock • Great Harbour • Custom House Quay • Newark Quay |
| Repair facilities | Inchgreen Dry dock, Garvel Dry Dock, Ferguson Marine Repair Quay |
| Cargo handling facilities | Passenger, general, project |
| Hazards | Pipelines |
| Tidal range | Up to 4m Tidal flows across entrance to Great Harbour at Rates |
| ISPS compliant | Yes |

| Finnart Ocean Terminal | |
|-------------------------------|--|
| Contact | Senior Manager Marine Operations Marine Superintendent Finnart Ocean Terminal King's Harbour Master Clyde See Contacts List for details |
| Harbour entrance position | Clydeport Loch Long Buoy |
| Admiralty chart numbers | 3746, |
| Maximum available draft | 27.2m |
| Maximum beam | N/A |
| Lock dimensions | N/A |
| Navigational access | Buoyed channel, sector lights Access requires approval of KHM |
| Environmental sensitivities | Coastal areas. Bird, wildlife and fish populations |
| Tugs | Tugs are available on request from Svitzer, CMS and Serco and OSR support craft as per Schedule |
| Berths | <ul style="list-style-type: none"> • Jetty 3 • Jetty 2 |
| Repair facilities | DRB Roseneath Boatyard |
| Cargo handling facilities | Oil Crude and Products. Shore Storage Tanks may be supplemented by FSU for Crude imports |
| Hazards | Pipelines and overhead power cables |
| Tidal range | Up to 3.5m |
| ISPS compliant | Yes |

| Hunterston | |
|-----------------------------|---|
| Contact | Senior Manager Marine Operations Terminal Manager See Contacts List for details |
| Harbour entrance position | Cumbrae Elbow (55°43"N; 4°58"W) (see Chart, Supplementary Information A) |
| Admiralty chart numbers | 1907 |
| Minimum available draft | Refer to latest COL Sounding Sheets |
| Maximum length of jetties | 443m on outside jetty and 300m on inside jetty |
| Maximum beam | N/A |
| Lock dimensions | N/A |
| Navigational access | Buoyed channel |
| Environmental sensitivities | Coastal areas. Bird, wildlife and fish populations including Mussel and Oyster beds |
| Tugs + OSR Support Craft | Tugs are available on request from Svitzer, CMS and Serco and OSR support Craft as per Schedule |
| Berths | Hunterston inner and outer berths |
| Repair facilities | None |
| Cargo handling facilities | Coal/Layups |
| Hazards | Pipelines, shallow patches |
| Tidal range | Up to 3m |
| ISPS compliant | Yes |

| Ardrossan | |
|-----------------------------|---|
| Contact | Senior Manager Marine Operations CalMac Terminal Operations Manager Clyde Marina Manager See Contacts List for details |
| Harbour entrance position | W Crinan Buoy (see Chart, Supplementary Information A) |
| Admiralty chart numbers | 1866. |
| Minimum available draft | Refer to latest COL Sounding Sheets |
| Maximum beam | N/A |
| Lock dimensions | N/A |
| Navigational access | Buoyed channel, sector lights, PEL |
| Environmental sensitivities | Coastal areas. Bird, wildlife and fish populations |
| Tugs + OSR Support Craft | Tugs are available on request from Svitzer, CMS and Serco other OSR support Craft as per Schedule |
| Berths | Ro-Ro |
| Repair facilities | None other than Clyde Marina in inner harbour |
| Cargo handling facilities | Passenger, Small Commercial & Fishing Vessels, Leisure vessels from Marina |
| Hazards | Pipelines, shallow patches |
| Tidal range | Up to 3m |
| ISPS compliant | Yes |

| Rothesay Dock | |
|-----------------------------|---|
| Contacts | Clydeport Senior Manager Marine Operations Exolum Terminal Manager Clydebank Port Services See Contacts List for details |
| Harbour entrance position | (see Chart, Supplementary Information A) |
| Admiralty chart numbers | 2007 |
| Minimum available draft | Refer to latest COL Sounding Sheets |
| Maximum available length | 160m |
| Maximum beam | 23.3m |
| Lock dimensions | N/A |
| Navigational access | Buoyed channel |
| Environmental sensitivities | Coastal areas. Bird, wildlife and fish populations |
| Tugs + OSR Craft | Tugs are available on request from Svitzer, CMS and Serco and other OSR support Craft as per Schedule |
| Berths | <ul style="list-style-type: none"> • Rothesay Dock (Clydebank Port Services) • Fuelk Terminal (Exolum) |
| Repair facilities | Rothesay Dock Offshore Workboats Boatyard |
| Cargo handling facilities | Fuel, Bulk, General |
| Hazards | Bridges, electricity cables, pipelines |
| Tidal range | Up to 5m |
| ISPS compliant | Yes |

Operation of Ports, Harbours and Oil Handling Facilities within Clydeport Harbour Area

Clydeport Operations Limited is the Statutory Harbour Authority for the Clydeport area.

Peel Ports Clydeport operates the following ports/berths in this area:

- Port of Glasgow; KGV Dock and Shieldhall/Riverside berths. Dry Bulk Cargoes. 235 vessels per annum
- Port of Greenock; Ocean Terminal. Containers, Cruise, Pulp. 328 vessels per annum
- Hunterston Terminal; 20 vessel per annum, layups and project cargo
- Port of Ardrossan; Ferries. 1500 calls per annum

The Clydeport area contains three Oil-Handling facilities:

- Exolum Terminal Rothesay Dock. Refined products. 110 vessels per annum
- OPA jetty; Loch Striven. NATO fuel. 15 vessels per annum
- Finnart Ocean Terminal; Loch Long. Crude and Refined Products. PERONEOS Finnart lies within the Dockyard port of Loch Long. 110 product and crude oil to/from Finnart annually. FOT may also have a large FSU moored alongside the Crude Jetty and undertake STS Operations.

In addition there are the following main wharves and harbours in the Clydeport Harbour Area:

- Great Harbour; Lease to SERCO
- James Watt Dock; vessels under repair Dales Marine and JWD Marina
- Rothesay Dock (W), Clydebank and dry bulk cargo
- Diesel Engine Wharf; scrap. 16 vessels per annum
- CMAL Ports; Passenger RoRo
- Holy Loch Port; timber and Cruise vessels. 50 vessels per annum
- Rothesay, Isle of Bute, an Argyll and Bute Council Port
- BAE Systems (Scotstoun/ Govan), new build warships
- Fairlie Quay
- Recycling Lives (scrap) Adams Quay part of Shieldhall/Riverside.

There are a number of Marinas within Clydeport area:

Clyde Marina (Ardrossan), Fairlie Quay, Largs Yacht Haven, Kip Marina (Inverkip), Bowling Sea Lock, Rhu Marina (Helensburgh), Holy Loch Marina and other Leisure facilities at locations including Portavadie, Millport, Rothesay, Port Bannatyne, Lochranza, Brodick and Lamlash.

Oil Spill Response arising from these locations is undertaken in accordance with their respective OSCP. These Plans may include provision for both Tier 1 and 2 response measures. Clydeclean will support Tier 2 response where this is necessary.

1.5 Identification of the Roles and Responsibilities of Parties Associated with this Plan

Within the UK there is an adopted structure and procedure for response to marine oil spills, which clearly defines the roles and responsibilities of industry, UK Government (including environmental agencies) and Maritime Authorities. Each statutory body has a designated area of jurisdiction within zones extending from the High Water Mark to 200nm or the UK Territorial Limit.

Table 1: Statutory Jurisdiction

| Authority | Jurisdiction | | | | | | |
|-----------------------|---|-----|-----|-----|-----|------|-------|
| | HWS | LWS | 1nm | 3nm | 6nm | 12nm | 200nm |
| Harbour | All operations within harbour limits | | | | | | |
| Local ¹ | Oil spill response on shore | | | | | | |
| MCA | Oil spill response, monitoring, advice | | | | | | |
| MCA (HMCG) | Search and Rescue | | | | | | |
| SNH/JNCC ² | Conservation of the natural heritage | | | | | | |
| MS ³ | Marine environment and fisheries protection | | | | | | |
| SEPA ⁴ | Water quality | | | | | | |
| HMR&C | Import duty | | | | | | |

| | |
|------------------------------------|---|
| Local Authority¹ | Has a duty of care to prepare and implement an oil spill contingency plan for response to oil spillage on the coastline from HWS to LWS. |
| SNH / JNCC² | SNH require to be notified up to 12nm. JNCC's remit extends from 12nm to 200nm. |
| MS³ | Approves dispersants and their use in shallow water and advises on their use in deeper waters – e.g. at least 1 nm beyond the 20 metre contour. |
| SEPA⁴ | Require to be notified on water quality issues up to 3nm. |

Roles and Responsibilities of Concerned Authorities

The roles and responsibilities of all authorities requiring notification in the event of a spill and the appropriate paths of communication to be followed in the event of a spill are shown in Section 3.6 of this Plan.

In the event of oil spill incident, COL will be responsible for clean-up and the overall co-ordination of spill response within the area of jurisdiction. The National Contingency Plan provides guidance on the responsibilities that have been imposed or accepted for the clean-up of pollution within the jurisdiction of a Harbour Authority/ Terminal. COL has responsibility on the water as well as beaches, shorelines, jetties, wharves and structures where owned by the Peel Group companies.

The foreshore owned by a private individual or group would have the responsibility for their area (i.e. clean-up of private wharves and jetties is the responsibility of the facility owner). Furthermore, the Local Authority(ies) concerned are responsible for shoreline clean-up including land exposed by falling tide and other structures.

In Scotland, on shore, the relevant Local Resilience Partnership will co-ordinate the multi-agency response to a marine emergency. The roles of local and regional partners, as well as regional and national support arrangements, will follow the guidance contained within 'Ready Scotland- Preparing Scotland' (<http://www.gov.scot/Publications/2012/03/2940>). Local and Regional Resilience Partnerships, dependent upon the scale of the incident or emergency, will cover the functions previously carried out by the Shoreline Response Centre. These partnerships will establish the required management teams at all relevant levels i.e. Operational, Tactical and Strategic, and, if required, implement the linkages into Scottish national structures.

Spills - Vessels in Transit

The statutory duty for reporting and dealing with pollution from any vessel en route to Clydeport, prior to entering limits or pilotage area lies with the Master and vessel owners. After commencing pilotage to destination within Clydeport, through the designated area of jurisdiction covered by this plan, reporting and response to any pollution incident will be co-ordinated through the Clydeport Oil Spill Contingency Plan.

1.6 Scope of Plan

This plan has been compiled to cover the response to any spillage caused by a vessel during passage to or from the Clydeport Harbour Area and arising from operations within the jurisdiction of Clydeport. The scope of the plan covers response to all the "Essential Elements" contained within the MCA Oil Spill Contingency Guidelines for Ports, Harbours & Oil Handling Facilities.

The Plan describes the Tier 1 response available at the port, relevant to the perceived risk through normal operations as well as a mechanism for calling upon Tier 2 or 3 responses in the event of an abnormal incident or major accident requiring Clydeport involvement. A definition of the tiered levels used in this port is shown below and the process of response escalation is described in Section 1.9 with notifications in Part 2 Section 6.1.

Table 2: Tiered Response Definitions

| Response Tier | Definition |
|------------------------------|--|
| Contained Operational Spills | These are spills, which are contained on the vessel or dockside and do not enter the water. |
| Tier 1 | Operational spills at which events can be controlled using available on site resources. A Tier 1 spill still requires formal notification. |
| Tier 2 | Spills that cannot be handled by Harbour Personnel/available on-site equipment and require additional assistance.. Oil spill response to be co-ordinated by Clydeport. Nominated OSR Contractor (A&A), KHM and Local Authorities would be available to assist. |
| Tier 3 | Large spills or a loss of containment incident that will require full involvement of other authorities and possible mobilisation of Tier 3 and national stockpiles. A Tier 3 incident is beyond the capabilities of both local and regional resources. |

Table 3: Tiered Response – Responder Arrangements

| Facility | Definition of Facility Type | Plan Responsibility |
|---|-----------------------------|---|
| Port of Glasgow, including Rothesay Dock, King George V Dock, Shieldhall Riverside and other Quays east of the Erskine Bridge | Ports, docks and wharves | Tier 1 & 2 – Clyde Clean Tier 3 – Clyde Clean / MCA under NCP |
| Port of Greenock including James Watt Dock, East India Harbour and Great Harbour, Victoria Harbour | Ports and docks | Tier 1 & 2 – Clyde Clean Tier 3 – Clyde Clean / MCA under NCP |
| Port of Hunterston | Port | Tier 1 & 2 – Clyde Clean Tier 3 – Clyde Clean / MCA under NCP |
| Port of Ardrossan | Port | Tier 1 & 2 – AHC/Clyde Clean Tier 3 – Clyde Clean / MCA under NCP |
| River traffic and anchorages | - | Tier 1 & 2 – Clyde Clean Tier 3 – Clyde Clean / MCA under NCP |
| Exolum | Oil handling facilities | Oil Handling Facility Plan (onshore) Tier 1 & 2 – Clyde Clean Tier 3 – Clyde Clean / MCA under NCP |
| Finnart Oil Terminal | Oil Handling Terminal | Tier 1 - Oil Terminal Facility Plan Tier 2 - KHM OSR Plan/Clyde Clean both to extent Terminal's contracted Tier 2 responder may require Tier 3 – Clyde Clean/ MCA under NCP |
| Fairlie Quay | General quay | Tier 1 - Own Plan Tier 2 – Clyde Clean Tier 3 – Clyde Clean / MCA under NCP |
| Holy Loch Port | Timber export quay | Tier 1 - HLP Plan Tier 2 – Clyde Clean Tier 3 – Clyde Clean / MCA under NCP |
| OPA Loch Striven | Oil Storage Terminal | Tier 1 OPA Terminal Plan Tier 2 – Clyde Clean to extent Terminal's contracted Tier 2 responder may require Tier 3 Clyde Clean/ MCA under NCP |

1.7 Risk Assessment

A risk assessment to meet with OPRC Contingency Planning requirements for Ports & Harbours has been completed by Adler and Allan Ltd on the basis of a format previously agreed with MCA. The methodology has been extracted from Peel Ports companywide Marine Safety Management System.

Factors and Assessment

This risk assessment is designed to identify potential oil sources, the size of potential spills and to estimate the probability of events that may result in a release of oil into the marine environment. The result will be a targeted, specific investigation which will identify areas of unacceptable risk and potential mitigation methods.

The majority of historical spills occurring at Clydeport are very small, less than 0.5 tonnes.

Each principal hazard has been identified and graded with respect to the severity and consequences, taking into account the initial concern, cause and consequence. The majority of control measures apply to more than one risk and several risk control measures were applicable to a large number of risks, from this a control strength was derived and graded below:

Table 4: Control Strength

| | | |
|---|------------|---|
| 1 | Inadequate | Controls do not treat the risk as intended |
| 2 | Adequate | Controls shortfall which do not affect the level of residual risk |
| 3 | Optimal | Controls work as intended |
| 4 | Excessive | Controls exceed the level required |

In order to assess the consequence, and subsequent overall risk acceptance criteria of a spill, it is important to identify the oil containing systems associated with relevant operations. All oil containing systems (source) connected with the port operations, initiating events that could result in an accidental spillage and the potential maximum volume that could be released were identified and examined. Probability and consequence are then combined in a risk matrix model to ascertain overall risk acceptance criteria.

The frequency of a specific type of incident can be expressed as probability and when classified into criteria should provide an indication as to the most commonly occurring events. Control measures can reduce the probability of an event occurring. Therefore, the full range of control measures implemented by PPC to minimise the risk of an oil spill event have been considered before applying specific probability criteria.

The following tables (Table 5 and 6) describe the probability and consequence ratings used in this risk assessment.

Table 5: Probability of Scenario Occurrence

| Level | Frequency Description |
|-------|--|
| 1 | Rare This will probably never happen/recur |
| 2 | Unlikely Do not expect it to happen/recur but it is possible it may do so |
| 3 | Possible Might happen or recur occasionally |

| | |
|---|---|
| 4 | Likely Will probably happen/recur but it is not a persisting issue |
| 5 | Almost Certain Will undoubtedly happen/recur, possibly frequently |

Table 6: Consequences

| Level | Consequence | Description |
|-------|--------------|--|
| 1 | Negligible | Small area of sheen <10m ² Small gas release No clean up required No action by workforce |
| 2 | Minor | Area of metallic appearance <50m ² Tier 2 called out, no action Terminal workforce in containment area onsite |
| 3 | Moderate | Discontinuous true colour >50m ² Tier 2 called out, up to one day clean up Terminal workforce in containment area offsite |
| 4 | Major | Serious pollution (IMO): Tier 2 called out Up to 3 days clean up Local evacuation |
| 5 | Catastrophic | Serious pollution (IMO): Tier 3 called out Up to 7 days clean up Large scale evacuation |

The above table shows the severity level for the consequence of the potential damage to the environment and the release of hazardous substance to the water column or air.

Probability and consequence can be multiplied to produce an overall risk rating. This can then be applied to specific scenarios in order to prioritise potential control measures and risk minimisation procedures. The following table determines the overall level of risk. In principle, all risks should be within the negligible to minor categories. Moderate risks and above will require attention and improvement plans to reduce the risk.

Table 7: Overall Level of Risk

| Probability | Consequence | | | | |
|--------------------|------------------|----------------|--------------|-----------|----------------|
| | Catastrophic (5) | Major (4) | Moderate (3) | Minor (2) | Negligible (1) |
| Almost certain (5) | Very high (25) | Very high (20) | High (15) | High (10) | Low (5) |
| Likely (4) | Very high (20) | High (16) | High (12) | High (8) | Low (4) |

| | | | | | |
|---------------------|-----------|-----------|--------------|--------------|--------------|
| Possible (3) | High (15) | High (12) | High (9) | Low (6) | Very low (3) |
| Unlikely (2) | High (10) | High (8) | Low (6) | Low (4) | Very low (2) |
| Rare (1) | Low (5) | Low (4) | Very low (3) | Very low (2) | Very low (1) |

When potential hazards and the probability of their occurrence have been established the oil type and fate of the oil must be considered to evaluate the consequence hydrocarbons may have upon the resources within the marine environment and to establish the area of potential impact. It should be remembered that although the level of risk of an incident occurring may be low, the level of impact on the natural heritage can potentially be high (high volume or increased toxicity of the fuel etc.). The consequence each identified hazard is evaluated using the level of risk and the impact. Should the biological impact be rated high, the risk overall will have a higher rating.

Table 8: Actions to Mitigate Risk Based on the Risk Score

| Risk Score | 1-3 Very Low | 4-6 Low | 7-19 High | 20-25 Very High |
|--------------------------|---------------------|--|------------------------------|---|
| Actions to Mitigate Risk | Review periodically | Assessed as low as reasonably practicable. Manage and review | Additional controls required | Intolerable, immediate action to be taken |

Hydrocarbons are broadly grouped into four categories: group I oils such as diesels are non-persistent and will tend to dissipate completely within a few days. Group II and III oils are more persistent and have a tendency to form emulsions. Group IV oils are very persistent due to the lack of volatile constituents and will remain in the environment indefinitely (ITOPF 2006/2007). The volume and type of hydrocarbons released will determine the consequence for low to high probabilities. The consequence for all low to high probabilities will be mild to severe unless proven otherwise.

Table 9: Summary of Risk

| Source | Hazard | Potential Spill Sizes | Risk prior to control | Type | Consequence | Probability | Risk overall |
|--|--|--|-----------------------|--------------------------|-------------|-------------|--------------|
| Operational | | | | | | | |
| King George V Dock. Shieldhall Quay. Rothesay Dock. Other CP Quays | Grounding. Jetty collision. Hull failure. Bunkering | Spills due to hull failure <5 tonnes. Loss of containment of fuel tank 25-100 tonnes | High | Fuel Oil Gas Oil | 1 | 4 | Low |
| Port of Greenock. James Watt Dock. Victoria Harbour | Grounding. Jetty collision. Hull failure. Bunkering | Spills due to hull failure <5 tonnes. Loss of containment of fuel tank 25-100 tonnes | High | Fuel Oil Gas Oil | 1 | 4 | Low |
| Finnart Oil Terminal | Grounding. Jetty collision. Hull failure. Bunkering | Spills due to Hull failure >10,000t | High | Crude Petroleum Products | 4 | 2 | High |
| Port of Hunterston | Grounding. Jetty collision. Hull failure. Bunkering. | Spills due to hull failure <5 tonnes. Loss of containment of fuel tank 25-500 tonnes | High | Fuel Oil Gas Oil | 1 | 5 | Low |
| Port of Ardrossan | Grounding. Jetty collision. Hull failure. Collision. Transfer from road tanker | A few tonnes to 10's of tonnes | High | Marine Diesel Gas Oil | 2 | 3 | Low |
| Rothesay Dock | Loading manifold connection leak. Drip tray and scuppers overflow. Sea valve leak. Jetty collision. Grounding. Bunkering | A few tonnes to 1000's of tonnes | High | Jet Fuel Derv | 2 | 4 | High |
| Great Harbour | Grounding. Jetty collision. Hull failure. Bunkering | Spills due to hull failure <7 tonnes. Loss of containment of fuel tank 10-50 tonnes | High | Fuel Oil | 2 | 3 | Low |
| Diesel Engine Wharf | Grounding. Jetty collision. Hull failure. Bunkering | Spills due to hull failure <7 tonnes. Loss of containment of fuel tank 25-100 tonnes | High | Fuel Oil | 2 | 3 | Low |

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| Vessels Transit and Anchorages | Sea collision. Grounding. Hull failure | A few barrels to very large spills involving product/ crude oil carriers | High | Full range of hydrocarbons | 4 | 2 | High |
| BAE Systems (Scotstoun and Govan) | Jetty collision. Grounding. Hull failure. Bunker spills | Spills due to hull failure <7 tonnes. Loss of containment of fuel tank 250-500 tonnes | Low | Fuel Oil | 1 | 4 | Low |

Response Strategy

Small oil spills will be recovered using Tier 1 equipment (namely sorbent equipment) held in stock by Clydeport and as per other resources mentioned in this plan. Personnel should be trained to minimum MCA Level 1, if necessary owners can mutually assist each other. In the event of a Tier 2 spill, this will be contained, recovered and disposed of by the nominated PPC contractor, Adler and Allan who offer a <4.0hour response time in working hours and a <6.0hour response time out of working hours. Oily waste will be disposed of by a certified disposal route.

Mitigation Measures

A wide range of procedures are in place to ensure that risks to vessels and therefore risks of oil spillages to sea are minimised. These include the following:

- All vessels carrying hydrocarbons are subject to compulsory pilotage
- Tankers bound for Finnart have passive tug(s) escorts from the Loch Long buoy
- Bunkering at Hunterston is only allowed during daylight hours
- All requests to bunker must be approved by the Senior Manager Marine Operations
- Clydeport are required under the Port Marine Safety Code to have a marine safety management system in place
- All near misses or incident of a minor nature that have the potential to create a larger incident are fully investigated and new procedures put in place if required
- Clydeport is ISO 9001 accredited with a full range of operating procedures and work instructions. Regular internal and external audits are undertaken
- 24/7, 365 days per year Port Information Service at Estuary Radio

Procedures

The following procedures are strictly adhered to in the River Clyde, Firth of Clyde and Clydeport ports and greatly decrease the chances of large scale spillages to sea:

- At least 24 hours before a ship arrive in the river or firth it must provide pre-arrival information. A ship must have a passage plan to the site to which they are bound. Checks verifying information sent on pre-arrival are made at the Anchorage and recorded on VHF
- Dedicated Clyde pilotage or managed Pilotage Exemption Scheme
- Mooring procedures during berthing (including tug provision)
- Jetty regulations for individual jetties
- Preloading checklists for the jetties
- Visual inspections and safety checklists for the vessel
- Constant supervision and checks during loading/ unloading

- Maintenance of defined commercial navigable channels
- Regular hydrographical surveys of the main shipping channel areas
- Regular monitoring of shipping buoys
- Provision of dedicated OSCP
- Provision of Tier 1 equipment for the ports and Firth of Clyde
- Provision of Tier 2 response resources to ensure rapid mobilisation to spill locations.

Overall Conclusion

Clydeport is considered to be a very well controlled port area. Proper controls exist through set procedures (i.e. pilotage). Although there is significant tanker movement within the Port limits it is considered that there are adequate control measures in place to ensure that the chance of an operational spill is reduced as low as reasonably practicable.

1.8 Environmental Sensitivities and Priorities for Protection

General strategy

On all occasions SNH and SEPA must be contacted if an incident occurs.

The River and Firth of Clyde feature numerous sensitive habitats and environmentally designated areas of national and international importance. The River and Firth feature sensitive shoreline types which provide habitats for plant communities, over-wintering waders and wildfowl, and rocky islands that hold nationally important numbers of seabirds. Sensitivity maps are located within Supplementary Information Packs B and C. If further information on environmentally sensitive areas is required, the Coastal and Marine Resource Atlas or the Nature Scot Information Service should be consulted (<http://magic.defra.gov.uk> or <https://www.nature.scot/>).

The Clydeport Harbour area is one of the most important shipping areas in the west of Scotland and amenity beaches, marinas and yachting activities form integral parts of the socio-economic environment. The following table provides the habitat type, ecological value and conservation status' and socio-economic importance.

Habitat Type

Habitats are listed in order of decreasing vulnerability to oil spill damage. Potential vulnerability to oil spill damage is measured on a scale of 1 to 10. A value of 1 indicates lesser vulnerability and likelihood of self-cleansing and a value of 10 indicates very high vulnerability and inability to self-cleanse.

Ecological Value

Ecological value may relate to the presence and importance of features of marine biological, coastal biological, geological or botanical conservation interest. Ecological value may vary both spatially and temporally, such as with breeding, wintering or migrating bird populations or with fish nursery areas and nursery periods.

Conservation Status

Environmentally designated areas may be of international, national or local conservation importance. Internationally important designations include:

- Ramsar sites;
- SPAs (Special Protection Areas); and
- SACs (Special Area of Conservation).

Nationally important designations include:

- SSSIs (Sites of Special Scientific Interest);
- RSPB (Royal Society for the Protection of Birds) sites;
- National Parks; and
- NNRs (National Nature Reserves).

Locally important designations include:

- LNRs (Local Nature Reserves).

Socio-Economic Importance

Features of socio-economic importance include those associated with commercial shipping, commercially important shellfisheries and fin fisheries, areas of recreational importance and areas of amenity value, such as beaches.

Table 10: Environmental Database

| Habitat Types | | |
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| Vulnerability Index: 10-1 in order of decreasing vulnerability to oil spill damage | | |
| 10- Saltmarsh | 7- Gravel beach | 4/3- Coarse/ fine sand beaches |
| 9- Sheltered tidal flats | 6- Mixed sand and gravel beach | 2- Eroding wave cut platform |
| 8- Sheltered rocky coast | 5-Exposed compacted tidal flats | 1- Exposed rocky headland |
| Distribution of Selected Habitat Types | | |
| Saltmarshes | Saltmarshes are among the most natural habitats in Great Britain. Twice daily cycles of inundation bring in varying quantities of silt and sand which are trapped by specialist salt-tolerant (halophytic) plants. Saltmarshes in the Clydeport region represent just 3 % of the total for Scotland. The majority of saltmarshes in the region are found in the upper estuary. Saltmarshes in the Clydeport region are found at the following areas: <ul style="list-style-type: none"> • Loch Fyne (8.44 ha); • Auchalich Bay (7.25 ha); • Ruel Estuary (6.64 ha); • Loch Striven (6.6 ha); • Holy Loch (16.32 ha); • Ardmore Point (4.56 ha); • R. Clyde (West) (44.08 ha); • R. Clyde (East) Newshot Island (18.48 ha); • Brodick Bay (Arran) (2.0 ha); and • Bogside Flats (30.04 ha). | |
| Sheltered Tidal Flats | Sheltered tidal flats are found at the following locations: <ul style="list-style-type: none"> • Clyde Estuary (north and south banks); • Head of Loch Long; • Head of Loch Goil; • North of Inveraray (Loch Fyne); • Loch Gair (Loch Fyne); • Lochgilphead (Loch Fyne); • Loch Ranza (Arran); and • Bogside Flats (Irvine). | |

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| Sheltered Rocky Coast | <p>Sheltered rocky shorelines are found at the following locations:</p> <ul style="list-style-type: none"> • Much of the Arran coastline within the Clydeport region, including: Newton Point to Rubha Creagan Dubha, Cock of Arran, Laggan, Sannox, Corrie, Merkland and Corriegills; • The North Ayrshire coast: Saltcoats, Horse Isle, West Kilbride, Seamill, Little Cumbrae and Great Cumbrae; • Island of Bute: Southern Tip, Kerrytonlia Point and the West coast; • The majority of the coastline that forms the western limit of the Clydeport region from Kilbrannan Sound to Tarbet (Loch Fyne); and • Most of the south west coast of Cowal. |
| Coarse/Fine Sand Beaches | <p>Sand beaches are present at the following locations:</p> <ul style="list-style-type: none"> • The North Ayrshire coast from the southern limit of the Clydeport region to Saltcoats; • Between Saltcoats and Farland Head (interspersed by sections of sheltered rocky coast); • Scalpsie Bay, Etrick Bay and Kilchattan Bay on the Island of Bute; and • Kames Bay on Great Cumbrae. |
| Ecological Value | |
| Waterfowl | <p>Breeding Waterfowl</p> <p>The following locations in the region are of importance to waterfowl, defined as waders and wildfowl (divers, grebes, ducks, geese and swans together with coot) during their breeding periods:</p> <ul style="list-style-type: none"> • Horse Island: breeding eider; • Little Cumbrae: breeding eider, mallard, shelduck, teal and red-breasted merganser; • North of Great Cumbrae: breeding eider, mallard, ringed plover and oystercatcher; • The coastal areas of Bute: large numbers of breeding eider; • South-west tip of Inchmarnock: large numbers of breeding eider; and • Small islands to the north of Bute: breeding eider. <p>Migrant and Wintering Waterfowl</p> <p>A number of locations in the region are of importance to waterfowl, defined as waders and wildfowl (divers, grebes, ducks, geese and swans together with coot) during their non-breeding periods.</p> <ul style="list-style-type: none"> • The Inner Clyde Estuary is a site of international importance for waterfowl. The site qualifies by supporting over 20,000 waterfowl, overwintering redshank populations and important numbers of passage and wintering wader species. • Mallard, wigeon and teal are the three most abundant species occurring on rocky shores of the region. The species are commonly found at the heads of the larger sea lochs (i.e. Loch Fyne and Loch Long). • The Inner Clyde Estuary supports nationally important populations of cormorant, scaup, goldeneye, curlew, eider, oystercatcher and red-breasted merganser. • In the Inner Clyde Estuary, numerous shelduck, oystercatcher, lapwing, dunlin and redshank are present along the south shore between Langbank and Longhaugh Bay and the north shore between Milton and Ardoch. |

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| | <ul style="list-style-type: none"> • Oystercatcher and curlew exploit mussel beds between Woodhall and Finlaystone around low tide. • The flats between Milton and Dumbarton and at Erskine support high concentrations of feeding birds such as redshank. • Pillar Bank supports large numbers of eider and oystercatcher, which feed on the rich bivalve and gastropod populations. • The Inner Clyde sea lochs are of particular importance to eider. • Irvine supports national important populations of eider and goldeneye. <p>Wader Roosting Areas</p> <ul style="list-style-type: none"> • Most redshanks and dunlins roost on the motorway wall at Langbank. If these roosts are disturbed they tend to move to the saltmarsh at East Ferry, Longhaugh Point, the beach at Erskine, Milton Island, or the harbour and oil terminal walls at Bowling. In spring redshanks generally shift to roost near preferential feeding areas close to the upper end of the estuary, at Erskine. • Oystercatchers roost at East Ferry, Milton Island, Erskine or Newshot Island. They move further up the Clyde if disturbed at roost but the Newshot Island roost site is very rarely disturbed. • Curlews generally roost at West Ferry and lapwings at Langbank, but these species will disperse to other sites or roost inland if seriously disturbed. • Redshanks are only wader on Clyde of international importance (>1% West European population). |
| Seabirds | <p>The Clydeport region features three significant seabird breeding sites:</p> <ul style="list-style-type: none"> • Black backed gulls and nationally important numbers of herring gulls; • Inchmarnock (Isle of Bute) has nationally important numbers of lesser black backed gulls; • Little Cumbrae has internationally important numbers of lesser black backed gulls; and • Horse Isle has internationally important numbers of lesser black backed gulls. <p>There are locally important breeding seabird populations located at:</p> <ul style="list-style-type: none"> • Ardrossan (black guillemot); • Port Glasgow (black guillemot); • Little Cumbrae (fulmar); • Great Cumbrae (fulmar); • Inchmarnock (fulmar); and • The Isle of Bute (fulmar). <p>Two notable sites for breeding seabirds are Holy Isle and Lady Isle which lie within 10 km of PPCs southern limit.</p> |
| Seals | <p>Grey seals are regularly seen along most suitable shores of the Clydeport region, including much of the coast of Kintyre, Arran, Bute, several of the small Clyde islands, and far up the great sea lochs, e.g. Loch Fyne, Loch Striven and Loch Long. Common (harbour) seals are more common in the Clydeport region than grey seals. <i>Refer to SNH Commissioned Report 929 (2016) for more information.</i></p> |
| Fisheries Nursery and Spawning Areas | <p>The Clydeport region serves as an important area for nursery and spawning fish and crustaceans throughout the year.</p> <ul style="list-style-type: none"> • The entire Clydeport region serves as a nursery area for herring, however, the sea lochs are the most important nursery areas. |

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| | <ul style="list-style-type: none"> • Spawning herring are present in Loch Fyne, Loch Striven and Loch Long between March and April. • Spawning and nursery areas for sandeels are located in the Firth of Clyde between Gourock and Little Cumbrae and also around the Isle of Bute. Sandeel spawning takes place between November and February. • The section of the Firth of Clyde south of Little Cumbrae, together with the Sound of Bute, is a Nephrops spawning and nursery area throughout the year. • Loch Fyne, the Sound of Bute and Kilbrannan Sound are nursery areas for cod. • The Sound of Bute, Kilbrannan Sound and the waters to the east of Arran are nursery areas for whiting. • The entire Clydeport region serves as a nursery area for saithe. |
| Conservation Status | |
| SPAs | <p>SPA sites are designated under EC Directive 79/409 on the Conservation of Wild Birds. The Inner Clyde is the only coastal SPA in the Clydeport region covering areas of Argyll and Bute, West Dunbartonshire, Renfrewshire, and Inverclyde. The Inner Clyde SPA, which features extensive intertidal flats, qualifies for SPA status by regularly supporting an internationally important wintering population of redshank. The colony has one of the highest density wintering populations of redshank in the Britain.</p> <p>The SPA extends 20km westward from Newshot Island to Craigendoran Pier on the north shore and Newark Castle on the south shore.</p> |
| Nature Conservation Marine Protected Areas (NCMPA) | <p>In 2014, Scottish Ministers designated a suite of NCMPAs under the Scotland Act and Marine and Coastal Access Act. These will cover Scotland's seas and provide protection for a wide range of important marine habitats, wildlife, geology and geomorphology (Further information can be accessed via the following hyperlink: http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/national-designations/mpas/).</p> <p>Within the PPC jurisdiction lies the Upper Loch Fyne and Loch Goil NCMPA (combined area of 88km²). The aim is to recover the flame shell bed and conserve all other features in order to make a long lasting contribution to the MPA network.</p> <p>The South Arran NCMPA (280km²) is just outside of the Clydeport area but is still potentially vulnerable to any spill that occurs within the area. This is highlighted in 'Supplementary Information C- drawing 13'. The waters around the southern end of Arran are home to a diversity of habitats and species characteristic of the Clyde Sea. The aim is to recover the maerl beds and conserve other features.</p> |
| SACs | <p>SAC sites are designated under EC Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) Tarbert Woods covers an area of 1595.97 Ha and is the only SAC in the Clydeport region.</p> <p>The site features broad-leaved, mixed and yew woodland with Ilex and Blechnum western acidic oak woodland.</p> |
| Ramsar Sites | <p>Ramsar sites are designated areas which fall under the Convention on Wetlands of International Importance. Ramsar sites were introduced to protect sites of importance to waterfowl in particular but have since expanded in their scope to cover all aspects of wetlands conservation and wise use.</p> <p>The Inner Clyde Ramsar site is designated based on the large populations of wintering redshank as detailed for the Inner Clyde SPA.</p> |
| National Park | <p>The Loch Lomond and the Trossachs National Park was created in July 2002 under the National Parks (Scotland) Act 2000. The National Park was created to</p> |

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| | <p>safeguard an area of outstanding and diverse landscapes, habitats and communities, parts of which were coming under severe visitor and recreational pressure.</p> <p>The Loch Lomond and Trossachs National Park covers approximately 1865 km², with sealochs adding a distinct ecosystem to the Park. The Park boundary extends to the low water mark on the seawater lochs, therefore the marine element below low water is not included in the National Park; however, the Park includes 39 miles of coastline around Loch Long, Loch Goil and Holy Loch.</p> <p>The National Park is home to otters, water vole, freshwater pearl mussels and several pairs of breeding Osprey.</p> |
| NNR | <p>National Nature Reserves (NNRs) are declared by the country agencies under section 19 of the National Parks and Access to the Countryside Act 1949, or section 35 of the Wildlife and Countryside Act 1981 in order that their habitats be preserved. All NNRs are also Sites of Special Scientific Interest (SSSIs).</p> <p>There is one coastal NNR in Clydeport, located at Mealdarroch. Mealdarroch is noted for its scattered woodland on steep slopes, gorges, Atlantic bryophytes and fern species.</p> <p><i>Note that the NNR is entirely above the high water mark.</i></p> |
| SSSI | <p>Sites of Special Scientific Interest (SSSIs) are notified under the Wildlife & Countryside Act 1981. They are intended to form a national network of areas, representing in total the parts of Britain in which the natural features are most highly concentrated or of highest quality.</p> <p>Clydeport has 16 coastal SSSIs that extend below the high water mark (HWM), and 5 coastal SSSIs that are entirely above the HWM.</p> |
| Coastal SSSIs that extend below the HWM | <ol style="list-style-type: none"> 1. Western Gales (North Ayrshire) <ul style="list-style-type: none"> • Features a foreshore backed by dunes which support a rich invertebrate fauna. 2. Bogside Flats (North Ayrshire) <ul style="list-style-type: none"> • Features the only extensive expanse of merse and mudflats between the Solway Firth and the Clyde. The saltmarsh is considered the best example in Ayrshire and supports large wintering flocks of golden plover and redshank. Lapwing, dunlin, oystercatcher, shelduck and wigeon also occur in large numbers. 3. Ardrossan – Saltcoats (North Ayrshire) <ul style="list-style-type: none"> • A site of geological interest with records of an important phase of alkaline vulcanism in the Permo-Carboniferous igneous province of the Midland Valley of Scotland. 4. Portencross Coast (North Ayrshire) <ul style="list-style-type: none"> • Features mud flats considered exemplary for wildfowl and waders in the Clyde. Exposures of Upper Old Red Sandstone with striking outcrops of igneous intrusions and rucked sediments and of geological interest. 5. Kames Bay (North Ayrshire) <ul style="list-style-type: none"> • A classic Scottish site for the study of intertidal marine biology. 6. Ballochmartin Bay (North Ayrshire) <ul style="list-style-type: none"> • Considered the most varied section of coast on Great Cumbrae. Site of considerable importance the study of intertidal marine biology. 7. Largs Coast Section (North Ayrshire) <ul style="list-style-type: none"> • An important site for the understanding of the structure of braided-stream deposits. 8. Laggan (Isle of Arran) |

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| | <ul style="list-style-type: none"> • A site which is critical for understanding the structure and diversity of the early Carboniferous lycopods. <p>9. Corrie Foreshore and Limestone Mines (Isle of Arran)</p> <ul style="list-style-type: none"> • An outstanding site of geological interest for lithological and facies studies in the Scottish Lower Carboniferous. <p>10. North Newton Shore (Isle of Arran)</p> <ul style="list-style-type: none"> • Features one of the unconformities described and used by James Hutton to demonstrate the importance of earth movements in earth history. <p>11. Arran Northern Mountains</p> <ul style="list-style-type: none"> • The site's vegetation displays the same kind of patterns seen on the higher mountains of West Scotland. The plant and animal communities show oceanic and altitudinal characteristics not seen on the mainland of South Scotland, and an uninterrupted sequence of plant communities from sea level to mountain tops can be found over a short distance. <p>12. Inner Clyde Site of Special Interest (Argyll and Bute/West Dunbartonshire/Inverclyde, Renfrewshire). The Inner Clyde SSSI is comprised of three existing SSSIs.</p> <ul style="list-style-type: none"> • Extensive mud flats and saltmarsh areas which in conjunction with Dumbuck Foreshore – Pillar Bank SSSI support large numbers of wintering wildfowl and waders. Area supports internationally important concentrations of wintering redshank and is of national importance for its concentrations of oystercatcher, goldeneye and eider. There are regionally important populations of mallard, shelduck, dunlin, greenshank, lapwing and black-headed gull; and • A Lower Carboniferous volcanic plug composed of hawaiitic basalt at the site is of geological interest. <p>13. Clauchlands Point – Corrygills (North Ayrshire)</p> <ul style="list-style-type: none"> • The biologically diverse site features a transition from beach-head saltmarsh through flushed grassland and fen to wet alder/will woodland at the base of the Permian sandstone cliffs • The site incorporates one of the most significant coastal deciduous woodland areas remaining on the Clyde coast <p>14. Ruel Estuary (Argyll & Bute)</p> <ul style="list-style-type: none"> • A site considered to be one of the best examples in the west of Scotland of the transition from estuarine to terrestrial habitats. Silt and sand flats supports dwarf eel grass <i>Zostera noltii</i>. Saltmarsh, although small, displays interesting contrasts due to variations in grazing intensity. <p>15. Strone Point, North Loch Fyne (Argyll & Bute)</p> <ul style="list-style-type: none"> • A site of stratigraphic importance. <p>16. Claonaig Wood (Argyll & Bute)</p> <ul style="list-style-type: none"> • A small site which provides a representative coastal relic of native oakwood. The site is also of interest for the transition from woodland to raised beach marshes. |
| <p>Coastal SSSIs that are entirely above the HWM</p> | <p>1. North End of Bute (Argyll & Bute)</p> <ul style="list-style-type: none"> • Site displays a continuum from open moorland to oak woodland through sporadic birch and developing birch scrub woodland. Mosaic of habitats has given rise to remarkably high diversity of breeding birds (>70 species). <p>2. Ardchylene Wood (Argyll & Bute)</p> |

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| | <ul style="list-style-type: none"> • Features one of the largest areas of semi-natural woodland in Argyll. The wood supports the largest area of wet birch – purple moor grass woodland community in Argyll. <p>3. Artilligan & Abhain Strathain Burns (Argyll & Bute)</p> <ul style="list-style-type: none"> • Deeply cut wooded gorges, with coastal oak and birch woodlands and a well-developed hazel and holly under-storey. <p>4. Tarbet – Skipness Coast (Argyll & Bute)</p> <ul style="list-style-type: none"> • Large coastal strip of broadleaved woodland mainly of ancient or long established origin. Underlying rocks frequently outcrop, forming low cliffs and large boulder scree. <p>5. Glen Ralloch to Baravalla Woods (Argyll & Bute)</p> <ul style="list-style-type: none"> • Located 18km south of Lichgilphead at the head of West Loch Tarbert. The site is notified for upland oak woodlands, bryophyte assemblage and lichen assemblage. |
| Area of Special Protection | <p>An Area of Special Protection (AoSP) is a designation created under the Wildlife & Countryside Act 1981 which replaced Bird Sanctuary Orders under the 1967 Protection of Birds Act. The designation aims to prevent the disturbance and destruction of the birds.</p> <p>There is one AoSP in the Clydeport region, Horse Isle. The AoSP is designated based on the island breeding seabirds, waterfowl and wintering grounds.</p> <p><i>The Lady Isle AoSP lies approximately 8 km south of limit of Clydeport's jurisdiction.</i></p> |
| National Scenic Areas | <p>National Scenic Areas are designated by Nature Scot to conserve the best of Scotland's landscapes, deserving special protection in the nation's interest. The seaward boundary of National Scenic Areas is the mean low water of spring tides.</p> <p>There are two National Scenic Areas that include areas within the coastal zone in the Clydeport region located at North Arran (23,800 ha) and the Kyles of Bute (4,000 ha).</p> |
| Country Parks | <p>Country Parks are primarily intended for recreation and leisure opportunities close to population centres and do not necessarily have any nature conservation interest. Nevertheless, many are in areas of semi-natural habitat and so form a valuable network of locations at which informal recreation and the natural environment co-exist. They are statutorily declared and managed by local authorities under section 7 of the Countryside Act 1968.</p> <p>In the Clydeport region there is one Country Park, located at Brodick Castle (Isle of Arran).</p> |
| Geological Conservation Review Sites | <p>Geological Conservation Review (GCR) sites are non-statutory sites identified by statutory conservation agencies as having national or international importance for earth science.</p> <p>There are 17 designated GCR sites in the Clydeport region, including:</p> <p>North Ayrshire</p> <ul style="list-style-type: none"> • Ardrossan to Saltcoats Coast; and • Largs. <p>Arran (North Ayrshire)</p> <ul style="list-style-type: none"> • Laggan; • Corrie Shore (2 sites); • Corrie Foreshore; • Corrygills Shore; and • North Newton Shore. <p>Dunbartonshire</p> <ul style="list-style-type: none"> • Dumbarton Rock. |

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| | <p>Argyll & Bute</p> <ul style="list-style-type: none"> • Geilston; • Rhu Point; • Kilcreggan Coast; • Baron's Point; • Glen Dhualt; • Portincaple; • Toward Quay, South Dunoon; • Strone Point, North Loch Fyne; and • Mealdarroch Point, Tarbet. |
| Marine Consultation Areas | <p>The non-statutory Marine Consultation Area (MCA) designation identifies areas considered by Nature Scot to deserve particular distinction in respect of the quality and sensitivity of the marine environment within them.</p> <p>There are two MCAs in the Clydeport region, located at Cumbræes (2,823 ha) and Upper Loch Fyne (1,705).</p> |
| Regional Landscape Designations | <p>Regional Landscape Designations (RLDs) provide a mechanism whereby Scottish planning authorities can identify sites where there should be a strong presumption against development. The designation recognises that these areas have considerable unexploited potential for tourism and therefore for benefiting local economies.</p> <p>In the Clydeport region there are six RLDs (divided into Regional Scenic Coasts and Regional Scenic Areas).</p> <p>Regional Scenic Coasts are located at the following locations:</p> <ul style="list-style-type: none"> • Loch Long and Loch Goil (22 km); • East Loch Fyne (36 km); and • West Loch Fyne (39 km). |
| Preferred Conservation Zones | <p>Preferred Conservation Zones (PCZs) are non-statutory coastal areas in Scotland, of particular national, scenic, environmental or ecological importance. Within PCZs major new oil and gas related developments would in general be inappropriate or would have a socio-economic impact on a small community, and would only be justified in exceptional circumstances.</p> <p>There are four PCZs in the Clydeport region present at the following locations:</p> <ul style="list-style-type: none"> • Cloch Point (North of Largs); • Loch Goil and Loch Long; • The Clyde: North of Campbeltown (Port Lamont); and • Arran, Bute and the Cumbræes. |
| National Trust for Scotland Sites | <p>The National Trust for Scotland is a charitable organisation, established for the purpose of promoting the permanent preservation of Scotland's heritage of fine buildings, beautiful landscape and historic places, and to encourage public enjoyment of them.</p> <p>There is one coastal National Trust for Scotland site in the Clydeport region located at Parklea Farm, Inverclyde (28 ha).</p> |
| RSPB Sites | <p>The Royal Society for the Protection of Birds (RSPB) has substantial non-statutory reserve holdings and currently manages over 150 reserves in Britain.</p> <p>There are four RSPB sites present in the Clydeport region at the following locations:</p> <ul style="list-style-type: none"> • Dumbuck (Inner Clyde) (91 ha); • Bishopton/Longhaugh (Inner Clyde) (37 ha); and • Finlaystone (Inner Clyde) (153 ha) • Horse Island (Firth). |

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| MoD Sites | <p>The Ministry of Defence (MoD) gives high priority to nature conservation on the Defence Estates, subject to the overriding importance of military training. There are 10 MOD sites in the Clydeport region located at:</p> <ul style="list-style-type: none"> • Fairlie (6 ha); • Greenock (2 sites – SERCO & Sea Cadets) (12 ha); • Faslane (136 ha); • Garelochhead (3,350 ha); • Rhu (3 ha); • Rosneath (6 ha); • Coulport (743 ha); • Arrochar (1 ha); • Loch Goil (3 ha); and • Loch Long (1 ha). |
| Socio-Economic Importance | |
| Commercial Waterways, Ports and Wharves | <p>Ardrossan Harbour:</p> <ul style="list-style-type: none"> • Clydeport's main centre for coastal traffic. The port has two berths for ro/ro traffic. Total area is 44.6 ha. <p>Hunterston Terminal (deep-water Ore terminal):</p> <ul style="list-style-type: none"> • Jetty extends more than a mile offshore. Two berth, Outer (443 m in length) and Inner. Facility used for dry bulk cargoes. Total area is 200 ha. <p>Greenock Ocean Terminal:</p> <ul style="list-style-type: none"> • Terminal provides facilities for distribution of forest products and containers and berthing of cruise liners. Total area 20.3 ha. <p>Glasgow Rothesay Dock;</p> <ul style="list-style-type: none"> • Facilities for the export and import of bulk cargoes. Total area is 22.8 ha. <p>Glasgow Meadowside Quay:</p> <ul style="list-style-type: none"> • Equipped for handling clean, dry bulk cargoes. Total area is 13.7 ha. <p>Glasgow's King George V Dock/Shieldhall Riverside Quay:</p> <ul style="list-style-type: none"> • Located in the City of Glasgow it provides wide range of facilities for exporting and importing. Total area is 32.6 ha. |
| Fisheries | <p>Pelagic Fisheries</p> <p>Following the almost complete demise of the Clyde herring fishery in the 1980's, local fishermen shifted most of their efforts to catching more demersal and shellfish species. The small number of local trawlers that target herring (and sprat) do so from summer through to the end of the year. Fishing for these species in the region takes place primarily in the Arran Trench and the waters to the east thereof.</p> <p>Demersal Fisheries</p> <p>Otter trawls, seine nets, pair trawls, fixed nets and long lines are used to catch cod, haddock, whiting, saithe, plaice, rays, conger eels and dogfish. Landings of cod, haddock and whiting are greatest in the winter. The deep waters of the region provide excellent fishing grounds for hake, which is targeted in the summer months. Fishing for demersal species primarily takes place in the Arran Trench and in the waters to the east thereof, the Sound of Bute, and lower section of Loch Fyne.</p> <p>Shellfisheries</p> <p>Shellfish, such as Nephrops, lobsters, edible and velvet crabs and scallops, are now the most important resource to the inshore fleet of the Clydeport region. The majority of the inshore trawling fleet are dependent on Nephrops, which are predominantly landed in the winter. Pink and whip prawns are also taken in Nephrops trawls. Nephrops are fished for widely in the Clydeport region</p> |

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| | <p>including the lower section of Loch Fyne, Sound of Bute, Kyles of Bute and the Firth of Clyde.</p> <p>Rocky grounds suitable for lobsters are limited in the Clydeport region and as a consequence lobster landings from the region make a very small contribution to the Scottish total. The principle fishing grounds for edible and velvet crab are in Kilbrannan Sound, the upper section of which is within the Clydeport region. Edible crab and lobster are landed during the summer and early autumn, with velvet crabs being landed towards the end of the year and into the spring.</p> <p>Great scallops and queen scallops occur wherever the sea bed consists of clean sand, fine gravel or sandy gravel. The queen scallop is considerably more abundant than the great scallop.</p> <p>There is little fishing for mussels in the region, with the majority of that taking place in the lochs.</p> <p>Diadromous species</p> <p>Two diadromous species, salmon and sea trout, support rod and line fisheries in rivers, as well as netting stations, in the Clydeport region. In practice, most diadromous fisheries in the region operate in estuaries or rivers, rather than on the open coast. A small number of salmon and sea trout netting stations situated are however present along the Clydeport coast, at the following locations:</p> <ul style="list-style-type: none"> • Askinish (Loch Fyne). From Auchgoyle Bay to one fifth of a mile south west of Furnall; • Stonefield, Tarbet (Loch Fyne); and • From a point half way between the pier and Creagan na Bairnich to a point known as Rubha Driseach, near Minard (Loch Fyne). |
| Mariculture | There are 21 Salmon farms and 13 shellfish farms located within the Clydeport region. |
| Water Intake | There are water intakes for Hunterston Power Station, Allied Distillers (Dumbarton) and from the River Clyde (by the Glasgow Science Centre) at NS175507, NS396750 and NS565653 respectively. |
| Amenity Beaches | The following beaches are popular tourist beaches in the summer: South Bay (Saltcoats), beach to south east of Saltcoats, Scalpsie Bay (Bute), Etrick Bay (Bute), Kilchattan Bay (Bute), Kames Bay (Great Cumbrae), Millport (Gt Cumbrae), Largs Bay and Lunderston Bay (north of Inverkip). |
| Watersports Areas | <p>The following areas are recognised as watersports areas:</p> <p>Arran Sannox Rock, Wreck of Cumbrae, Sannox Bay – Merkland Point, Brodick, Corrygill Point, Pirnmill to Millstone Point, Lochranza and Wreck of the puffer “Tuscan”.</p> <p>Bute Ardmaleish Point, Kames Bay, Port Bannatyne, Rothesay, Rothesay Bay, Horse Cave, Garroch Head, Kilchatton Bay, Bogany Point, Askog Bay, Glencallum Bay, Hawk’s Nib, Bruchag Point, Ascog Patches, Ferry House, Buttock Point, Inchmarnock Isle, North Side of Kames Bay and Port Dornach.</p> <p>Kyles of Bute Kames Hotel, Tighnabruaich Hotel, Royal Hotel, Kyles of Bute Hotel, Rudha Ban, Burnt Island, Colintrave and Colintrave (East Kyle).</p> <p>Loch Riddon Caldah Harbour, Eilean Dubh, Eilean Dearg, Pinnacles East of Eilean Dubh and Rubha na Crioche.</p> <p>Loch Striven Brackleymore.</p> <p>Loch Fyne</p> |

Strachur Bay, Creagans Pier, Creag a'Phuill, St Catherine's, Dundarave Point, Strone Point, Inveraray Pier, Creag na h-Iolaire, Kenmore Point, Stallion Rock, Pennymore Point, Ardrishaig, Rudha Mhinidhe Beg, Erines, Lochgilphead, East Loch Tarbet, Stonefield Castle, Sgeir Mhaola Cinn, Wreck of "Arran III", Barmore Island, East Loch Tarbert Pier, East Loch Tarbert, Bay South of Mealdarrach Point, Eilean a Chomhraig, Basking Sharks, Bagh Buic (North West of Bay), West of Otter Spit, Glas Eilean, Skipness Point, Eilean a'Bhuic, Kilfinan Hotel, Sgat Beag, Rughan Caoirich, Gorton Point, Creagan Dubh, Small peninsula Creagan Dubh, An Oitir Shoal, Fraoch Eilean, Eilean Aoghainn, Minard Narrows, Sgeir an Eirionnaich, Barnacary, Blackstone Bay South End, River Aray (Inveraray End), Kinglas Water (Crindow End), Kilbride Island, North of Black Lass Cove, Furnace and Newton Bay.

Loch Long

The Caves, Pier on the West side of Loch Long, Ardgarten, Rendezvous café, Loch Long by Glen Mallan – Jetty, Ardentinn Hotel, Coulport, Toll a' Bhuie to Knap, Auchengower Jetty, Cove Bay, South of Portincaple, Carraig nan Ron (Dog Rock), Portincaple, North of Carraig nan Ron from West side of Loch Long, Finnart, Pyramid Marker, Fisherman's carpark, Loch Long - West Side and Craggen.

Loch Goil

Lochgoil – Carrow Bay area, Mountview, Head of Loch Goil, Rubha Ardnahien, Wreck of degaussing barge, Rubha na Beithe, North –east shore of Loch Goil, Rubha nam Eoin, Loch Goil Bay at North Entrance and Remains of Torpedo.

Gare Loch

Gare Loch – South of Garelochhead, Gareloch – Faslane Bay, Gareloch – Rhu, Barremman to Hattonburn, Clynder (Site 1), Clynder (Site 2), Shandon, Gully Bridge and Wreck of the Rhu ferry.

Cowal

Ardyne Point, Wreck of SS "Wallachia", Innellan, Holy Loch – Sailbase Hut, Dunoon West Bay, Ferngrove Bistro, Lazeretto Point, Off Dunoon Point, Dunoon, Wreck of "Akka", Kirn Jetty, Hunters Quay, Halfton Estates and The Gantocks.

Little Cumbrae

Steadholm Point, Wreck of "Lady Isabella", Gull Point, Long Bay, Wreck of SS "Beagle", Lythe Rock, The Tan Buoy and Sheanawally Point.

Great Cumbrae

Fintray Bay, Millport Bay, Skate Point, Farland Point, Keppel Pier, Lion Rock, Tomont End, Fairhaven, Wreck of Catalina seaplane and Clashfarland Point.

Inverclyde

Skelmorlie Bank, Wemyss Bay, Skelmorlie, Wreck of SS "Kintyre", Wreck of "Greenock", Inverkip, Cloch Point, Wreck of "Europa", Gourrock Yacht Club, Gourrock Bay trawler, Wreck of PS "Iona", Wreck of Sunderland seaplane, R W of S Amateur Boat Club and McInroy's Point.

North Ayrshire

Portencross Pier, Farland Head, Red Rocks, Ardrossan Outer Reef, Largs Bay, Largs Yacht Haven, Horse Isle, Wreck of Clyde Puffer, Eagle Rock, Ardrossan, Irvine Bay, Irvine Watersports Club and Fairley Bay.

Loch Goil

Castle Carrick.

Loch Long

Baron's Point.

Dumbarton District

| | |
|--------------------------------------|---|
| | Kilcreggan Bay, Meikleross Bay, Wreck of “Captayannis” and Rosneath Point Unknown Wreck. |
| Watersports Centre | National Centre Cumbrae (Great Cumbrae). |
| Yachting/ Sailing Centres | Yachting centres are located at the following locations: James Watt Dock Marina, Royal Gourock Yacht Club, Garvel Point (Inverclyde), Cardwell Bay Yacht Club (Inverclyde) and Inverkip Marina. Sailing schools / centres are located at the following locations: Holy Loch Sailing Club, Viking Sail Largs (North Ayrshire), Largs Sailing Club (North Ayrshire), Clyde Marina Ardrossan (North Ayrshire), Tighnabraich Sailing School (Kyles of Bute) and Blairvadach Sailing Centre Gare Loch). |
| Angling Area | ‘Flying Eagle’ of Largs (North Ayrshire). |

Priority Sensitive Areas

In the event of a major incident in the Clydeport area, it may not be possible to protect all shores from pollution. The response priority rating identified in the tables below and summarised in the priority sensitive areas map will determine which areas should receive priority protection/clean-up in the event of an oil pollution incident.

The selection of priority response areas should result in a net environmental benefit. Net environmental benefit analysis forms the basis of the methodology for defining priority protection areas in the UK. This methodology is outlined in full in the EA/MCA ‘Coastal & Estuarine Booming Contingency Planning Best Practices’.

“A” priority areas should be protected before all other areas. “A” priority areas are designated based on the following characteristics:

- Sensitivity to oil pollution;
- Inappropriateness of shoreline clean-up methods; and
- Lack of self-cleansing abilities (generally sheltered).

“B” sites should be addressed following protection of “A” priority areas. “B” sites remain sensitive to oil pollution and are designated based on the following characteristics:

- Sited along more exposed coasts which are liable to self-cleansing;
- Are less sensitive to oil pollution; and
- Can be more readily cleaned.

Sites may change priority with season; for example, a high amenity beach may be considered a high priority in summer months, but a lower priority in winter months. The priority sensitive areas have been pre-agreed with plan consultees.

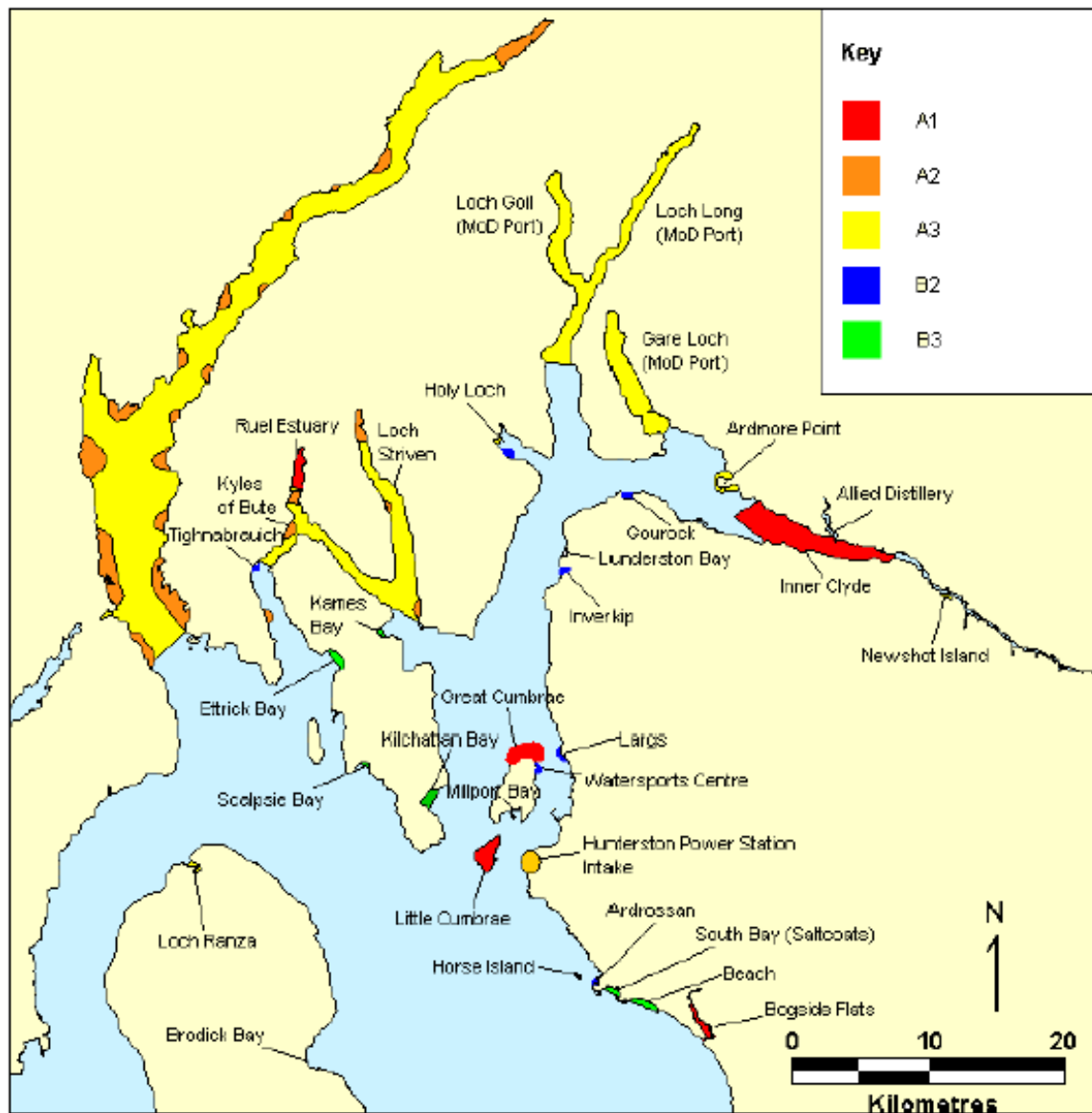
| A – Priority Areas | | |
|---|--|-----------------------------------|
| Area | Key Sensitive Features & Importance | Main Period of Sensitivity |
| A1 Areas | | |
| Inner Clyde (Argyll and Bute/West Dunbartonshire/ Inverclyde/ Renfrewshire) | <ul style="list-style-type: none"> Internationally important concentrations of redshank and nationally important concentrations of oystercatcher, goldeneye and eider; and Locally important concentrations of mallard and shelduck. | Winter |
| Bogside Flats (Irvine) | <ul style="list-style-type: none"> Nationally important numbers of breeding eider and goldeneye; and Large wintering concentrations of golden plover and redshank. Lapwing, dunlin, oystercatcher and wigeon also occur. | Summer Winter |
| Ruel Estuary | <ul style="list-style-type: none"> Considered one of Scotland's best examples of transition from estuarine to terrestrial habitats with areas of dwarf eel grass (SSSI). | All Year |
| Little Cumbrae | <ul style="list-style-type: none"> Internationally and nationally important breeding numbers of lesser black backed gulls and herring gulls respectively, breeding arctic and common terns; and ☐ Breeding eider, mallard, shelduck, teal and red-breasted merganser. | Summer Summer |
| North Coast of Great Cumbrae | <ul style="list-style-type: none"> Breeding eider, mallard, ringed plover and oystercatcher. | Summer |
| Horse Isle | <ul style="list-style-type: none"> Island fringed by sheltered rocky coast that supports internationally important breeding numbers of lesser black backed gulls; and Breeding eider. | Summer Summer |
| A2 Areas | | |
| Hunterston Power Station | <ul style="list-style-type: none"> Water Intake located at NR175507. | All Year |
| Allied Distillery Dumbarton | <ul style="list-style-type: none"> Water Intake located at NS396750. | All Year |
| Mariculture Installations | <ul style="list-style-type: none"> There are 21 salmon farms in the Clydeport region; | All Year |

| | | |
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| | <ul style="list-style-type: none"> • There are 13 shellfish farms in the Clydeport region; and • There are designated Shellfish Growing Waters at the Ayrshire Coast (north of Ardrossan), the whole of Loch Fyne and parts of Loch Long. | All Year All Year |
|--|---|--------------------------|

| A – Priority Areas | | |
|---|--|--|
| Area | Key Sensitive Features & Importance | Main Period of Sensitivity |
| A3 Areas | | |
| Loch Fyne | <ul style="list-style-type: none"> • Majority of coastline is fringed with sheltered gravel/shingle shores; • Saltmarsh of local importance at head of loch; • Saltmarsh of locale importance at Auchalich Bay; • Sheltered tidal flats north of Inveraray; • Sheltered tidal flats around Loch Gair; • Sheltered tidal flats at Lochgilphead; and • An NCMPA | All Year All Year All Year All Year All Year All Year |
| Loch Striven | <ul style="list-style-type: none"> • Majority of coastline is fringed with sheltered gravel/shingle shores; and • Saltmarsh of local importance at head of loch | All Year All Year |
| Kyles of Bute (including Loch Ruel) | <ul style="list-style-type: none"> • Majority of coastline is fringed with sheltered gravel/shingle shores. | All Year |
| Loch Long (Ardentilly – head of loch) and Loch Goil | <ul style="list-style-type: none"> • Majority of coastline is fringed with sheltered gravel/shingle shores; • Sheltered tidal flats at head of Loch Long; • Sheltered tidal flats at head of Loch Goil; and • An NCMPA. | All Year All Year All Year All Year |
| Gare Loch | <ul style="list-style-type: none"> • Majority of coastline is fringed with sheltered gravel/shingle shores. | All Year |
| Ardmore Point | <ul style="list-style-type: none"> • Locally important feeding area for wildfowl, particularly shelduck, and waders, particularly oystercatcher and dunlin. | All Year |
| Newshot Island (River Clyde) | <ul style="list-style-type: none"> • Locally important saltmarsh and intertidal flats | All Year |
| Loch Ranza (Arran) | <ul style="list-style-type: none"> • Sheltered tidal flats of local importance | All Year |
| Brodick Bay (Arran) | <ul style="list-style-type: none"> • Saltmarsh of local importance | All Year |
| Holy Loch | <ul style="list-style-type: none"> • Saltmarsh of local importance | All Year |

| B – Moderate Priority Areas | | |
|------------------------------------|--|-----------------------------------|
| Area | Key Sensitive Features & Importance | Main Period of Sensitivity |
| B2 Areas | | |
| SWSpC Cumbrae (Watersports Centre) | <ul style="list-style-type: none"> Area of intense use by pleasure boats/leisure craft | (March – September) |
| Royal Gourock Yacht Club | <ul style="list-style-type: none"> Area of intense use by pleasure boats/leisure craft | (March – September) |
| Inverkip Marina | <ul style="list-style-type: none"> Area of intense use by pleasure boats/leisure craft | (March – September) |
| Sailing Schools / Centres | <ul style="list-style-type: none"> There are six sailing schools/centres in the Clydeport region: Holy Loch Sailing Club, Sailaway Sea School, Viking Sail Largs, Largs Sailing Club, Clyde Marina Ardrossan, Tighnabruaich Sailing School. | (March – September) |
| B3 Areas | | |
| Millport Bay | <ul style="list-style-type: none"> Designated Bathing Water | (May – September) |
| Lunderston Bay and Largs | <ul style="list-style-type: none"> Proposed Designated Bathing Waters | (May – September) |
| South Bay (Saltcoats) | <ul style="list-style-type: none"> Amenity beach of high tourist value | (May – September) |
| Beach to south east of Saltcoats | <ul style="list-style-type: none"> Amenity beach of high tourist value | (May – September) |
| Scalpsie Bay (Bute) | <ul style="list-style-type: none"> Amenity beach of high tourist value | (May – September) |
| Ettrick Bay (Bute) | <ul style="list-style-type: none"> Amenity beach of high tourist value | (May – September) |
| Kilchattan Bay (Bute) | <ul style="list-style-type: none"> Amenity beach of high tourist value, although not utilised as much as Scalpsie Bay or Ettrick Bay. | (May – September) |
| Kames Bay (Great Cumbrae) | <ul style="list-style-type: none"> Amenity beach of high tourist value | (May – September) |

Figure 2: Priority Sensitive Areas Map



Impacts of Oil on Wildlife

The sea and shoreline bird populations can be severely affected from oil impacting their habitat. The first and generally most important effect on birds is external contamination of the feathers from contact with oil. Often the birds ability to thermo-regulate is impacted and they become hypothermic. In seeking shelter, they can be washed ashore and left vulnerable and detached from their food source. Many of the effects on mammals are similar to those on birds. Oil can coat the fur of some marine mammals such as fur seals, which they depend on for thermo-regulation once again leading to hypothermia. Inhalation and ingestion of oil can potentially damage the liver and kidneys as well as leading to pneumonia. Clinical signs may include conjunctivitis, ulcers and skin ulceration.

Dead or dying wildlife attract and contaminate predators/ scavengers, thus the prompt removal of oiled bodies will reduce secondary exposure and bioaccumulation. Oiled carcasses must be disposed of in accordance to the correct legislation. The wildlife response effort may insist upon documenting each corpse and storage for later identification and analysis. Even though the public may be stimulated to aid struggling wildlife themselves, this should remain the remit of an organised response team as untrained personnel can often place their families and the animals at even greater risk.

The impact of oil on marine organisms depends on the life stage of the organism and the characteristics of the oil spill such as toxicity, viscosity, quantity and the time of exposure to the organism. The direct toxicity of oil to organisms is attributable mainly to light aromatic compounds. Light oils tend to evaporate fairly quickly, however, oil reaching the shore soon after spillage is likely to be more intoxicating to the intertidal population than weathered oil.

Light oils can have direct lethal effects and also cause deaths by inducing a state of narcosis in which animals can be dislodged from their substrates. Some organisms may be washed into the strandline where they cannot survive but others may recover and re-establish themselves. Heavier oils can be termed 'persistent pollutants' where degradation by natural processes take a considerable amount of time for complete decomposition. Therefore, it is dependent on several factors including shore exposure to wave action and biodegradation by micro-organisms. Well-weathered crude oils have little effect, however if in great quantities, intertidal populations may be smothered.

1.9 Categories of Incident

Clydeport has in place a three tiered incident response system for oil spillage. The responsibility of escalating an incident from Tier 1 to Tier 2 lies with the Senior Manager Marine Operations.

Levels of Call-out

Tier 1 Spills

For minor spills, where the response is addressed within the port, the Senior Manager Marine Operations will take the appropriate action and arrange for safe storage and legal disposal of waste arising.

- (i) For a loading arm (Chicksan)/ transfer failure, assistance would also be sought from the other terminal operators, not involved with the particular vessel from which the incident originates.

- (ii) For a bunkering spill, assistance would be sought from the other terminal operators. Since all spills, regardless of size, have to be reported to the Authorities, the Senior Manager Marine Operations will always alert the MCA.

Tier 2 and Tier 3 Spills

For all spills of a higher level, the Senior Manager Marine Operations will alert the Incident Response Organisation according to this Plan.

1.10 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. The Environmental Protection Act 1990;
2. The Waste Management Licensing Regulations 1994;
3. Special Waste Regulations (as amended) 1996.

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 Revenue & Customs 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 Revenue & Customs; however, the operator should maintain a careful log on quantity and nature of the recovered oil.

In the event of a fuel or oil pollution incident where clean-up is required, the wastes arising should as far as possible be segregated to minimise cross contamination and as an aid to effective waste recycling and recover. Where all wastes arising from a pollution incident are co-mingled it can significantly increase disposal costs and can make the effective recovery of certain wastes much more difficult.

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

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

a) Direct to Appropriate Disposal Site

All disposal sites require a Waste Management Licence. The licence specifies the type of material that can be disposed of at the site. There are only a few sites that are licensed to receive organic or chemically polluting materials (includes oily waste). Waste for disposal would be handled by the nominated waste contractor, i.e. Sureclean. Sureclean, in consultation with SEPA would arrange to transfer the material to an appropriate Sureclean Licensed Waste Transfer Station and quarantine the material awaiting laboratory analysis results. On receipt of analysis report the material would be consigned to appropriate SEPA/EA licensed disposal/landfill sites approved to accept such waste. At present this would be to Zero Waste Ltd, Port Clarence Landfill site, Stockton-on-Tees, TS2 1UE. There will be a charge levied by the site operator for depositing material at the site. In addition there is landfill tax / levy applied to all waste deposited in a landfill.

Furthermore, waste crude oil is likely to be classified as Special Waste and should be treated as such until otherwise determined. It would therefore be subject to the Special Waste Regulations (as amended) 1996. Mixes of crude oil / sand and oil / seawater etc. would probably be considered as Special Waste if the percentage of carcinogenic compounds is above 0.1%. It is therefore likely that oily beach materials and oil / water liquids would have to be handled as Special Waste.

The transportation of Special Wastes generally requires that the Scottish Environment Protection Agency (SEPA) be informed before the waste is removed. This is done by filling in parts A, B and D of a Special Waste Consignment Note, available from SEPA, which is sent to the Department responsible for the receiving facility. This should be done at least three clear working days before the waste is to be moved.

However, in the event of an 'emergency' SEPA may waive the requirement for pre-notification. The licensed waste carrier completes part C of the Consignment Note and takes it with the load to the receiving facility. The licensed operator of the receiving facility then signs the consignment note to indicate that it has accepted the load and that they are authorised to manage it properly.

The requirement for pre-notification does not apply to the first movement of special waste from ships to shore although a consignment note for which there is no change must still be completed and submitted to SEPA. Therefore oil recovered at sea by a dedicated Oil Recovery Vessel could be discharged within a harbour to an appropriate waste reception facility without having to pre-notify SEPA. However a consignment note will have to be supplied with each load sent for disposal.

To ensure that oily waste material is transported and disposed of in an appropriate manner, a licensed waste carrier and disposal company should be contracted. The Operator and Waste Disposal Company should then liaise with SEPA to confirm that the disposal route identified meets with their satisfaction.

Each of the following options for disposal will be subject to all the factors listed above.

b) Temporary Storage/Clean, Treat, Stabilise, Recover, Reuse

This option aims to store temporarily the material and then, slowly over the ensuing period, to clean it or stabilise it and then to recover or reuse it. In most cases this is the best practical environmental option (BPEO). It avoids the risk of changing what was a marine pollution into an inland surface pollution problem or groundwater pollution problem.

From temporary storage the contaminated material can be stabilised with cement, lime, clay, organic binders, asphalt and composting. The characteristic of each product needs to be considered when determining the ultimate disposal route or any perceived end use. It is important to note that the treatment of wastes also comes under the waste management licensing system. Therefore, any strategy to deal with the waste in this manner can only be developed through close liaison with SNH, Local Authorities and SEPA.

Table 11: Storage Methods

| Type of Oil/Waste | Storage Facility | Comments |
|-----------------------------|--------------------------------|--|
| Liquid | <i>Barges</i> | <i>Suitable for initial storage</i> |
| | <i>Road Tankers</i> | <i>Ideal for routing to final disposal site</i> |
| | <i>Pits</i> | <i>Must be lined with sand to protect essential heavy duty plastic liner</i> |
| | <i>Bunds</i> | <i>Cheaper than pits, liners required</i> |
| Liquid/ solid mixture | <i>Pits</i> | <i>As above</i> |
| | <i>Bunds</i> | <i>As above</i> |
| | <i>Skips</i> | <i>Versatile, robust and cheap</i> |
| | <i>Oil Drums</i> | <i>Difficult to handle when full</i> |
| | <i>Plastic Containers</i> | <i>Quick deployment and useful for inaccessible areas</i> |
| | <i>Heavy Duty Plastic Bags</i> | <i>Ideal for manual clean up, cheap & easy to deploy; they can however create disposal problems themselves</i> |
| Solids | <i>Hardstanding</i> | <i>Preferably use on sloping site with drainage</i> |
| | <i>Lorries</i> | <i>Restricted to solid debris and access problems may occur</i> |

c) Temporary Storage and Appropriate Disposal Site for Burial

The reasons for constructing a temporary storage site are as follows:

1. There is no immediate disposal outlet for large quantities of oil/sand mixture or for oil/water mixtures and clean-up cannot be slowed or stopped.
2. The equipment used to clean beaches is usually labour intensive and therefore requires an immediate transfer area adjacent to the site to be provided.
3. The nature of the roads precludes high traffic densities.
4. The in situ treatment of contaminated material is often preferable to removing large quantities of material from the shoreline.

In creating a temporary storage site it is essential that consideration be given to the positioning of the sites to ensure that there will be no spread of pollution. A flat clear area needs to be set aside (car park or similar). Preparation should include the isolation of the area by blanking drains, stoppering outlets and laying impermeable membrane so as to provide laydown area for skips or suitable bunkering for waste containment. In addition, under the above legislation, the temporary storage site itself may require a Waste Management License. Each site will have to be constructed in a specific manner. It is therefore essential that the construction of temporary storage sites be done through close liaison with the Local Authority concerned and SEPA.

d) Take to a Refinery/Incinerator (mainly for oily liquids only)

This material should be removed from site by a licensed waste handling company who will then arrange for its disposal in an appropriate manner. If there is suitable access, oily liquids produced from a shoreline clean-up operation can be removed from site by road tanker.

If the oily liquids are on-board a dedicated recovery vessel following an at sea containment and recovery operation then it can be transferred across the quay, at a suitable berth to a road tanker or other suitable waste reception facility. Alternatively, this waste can be fed directly into the reception facility at a marine terminal if an oil refinery. It is the responsibility of the recovery vessel Master to ensure that this waste is disposed of appropriately. However, the Harbour Authority must confirm that any contractors have the necessary licenses to handle and dispose of the waste. The disposal route should also be agreed with SEPA to ensure it meets with their satisfaction.

Section 2: Training and Exercise Policy

2.1 Training Policy

In order to familiarise personnel in the use of this Oil Spill Contingency Plan and comply with MCA guidelines, Oil Spill Response training courses will be held for selected employees of PPC, their contractors and Harbour operators with an identified role within the plan. In addition, there will also be awareness briefings with other harbour users and the Agencies who were involved in the consultation process.

After initial training, instruction will be specific; with the use of the Tier 1 oil spill response equipment located at Clydeport facilities. This will be tested and deployed using those personnel who will be responsible for operating this equipment in the event of a spill.

Consideration should be made to ensure that the harbour workforce are trained to be familiar with the detail of the OSCP to cover periods of leave. In order to meet the minimum levels as recommended in the MCA guidelines, the training and exercising of key personnel is detailed below:

Table 12: Training in the use of this Plan

| Training in the use of the this Plan | | | | |
|--|---|---------------|--------------------|--|
| Position | Awareness | Minimum hours | Ports and Harbours | Target audience |
| Port Operators | Basic use of Tier 1 sorbents and understanding contingency plans and operations | 8 | MCA 1p | First responder – absorbent response |
| Port Management (i.e. Senior Manager Marine Operations, Operations Managers) | Ability to control and put a specific contingency plan into action as OSC | 32 | MCA 4p | A training course providing in-depth knowledge of the main functions of an oil spill management team |

| | | | | |
|---------------|-----------|---|-------|---|
| All personnel | Refresher | 8 | MCA R | Those who have undertaken training not more than 3 years previous |
|---------------|-----------|---|-------|---|

A range of personnel who may become involved in larger incident attend induction courses. These personnel include administration staff and management personnel who are not specific plan duty holders.

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There must be a minimum of two people who may act as on scene commander and hold a level 4p qualification. Those who will be involved in the deployment of the Tier 1 equipment are to hold a minimum level 1p qualification. These qualifications are valid for three years when a refresher course must be attended. If the refresher course is not attended within 39 months of the date of the original qualification, the whole course must be sat again.

2.2 Exercise Programme

To ensure that the Oil Spill Contingency Plan is understood by all those involved in its use, communications and practical exercises should be undertaken on an annual basis. This will be undertaken using those personnel who will be responsible for operating this equipment in the event of a spill, namely Clydeport personnel and Tier 2 contractors.

Table 13: Exercise in the use of this Plan

| Exercise type | Frequency |
|--|--------------------|
| Notification | Twice per year |
| Mobilisation Exercises | Twice per year |
| Table-top Exercise (may incorporate mobilisation and deployment of local response equipment) | Once per year |
| Incident Management Exercise (IME) (will incorporate mobilisation and deployment of resources up to Tier 2 Level) | Once every 3 years |

2.3 Forms to be Completed – Post Exercise

Below is a post exercise/ incident report form which should be completed and forwarded to CPSO and all relevant plan holders, each time an exercise is carried out. Similarly if a real incident were to occur, details should be logged and copied to the MCA.

| Post Exercise / Incident* Report | | | |
|---|--|------------------------------|--|
| Name of Port/Harbour/Oil handling facility: | | | |
| Tier level (1, 2 or 3): | | Name exercise / incident: | |
| Names of any other participating ports, harbours or oil handling facilities if joint equipment deployment exercise / incident: | | | |
| Date of exercise / incident: | | Time of exercise / incident: | |
| Location of exercise / incident: | | | |
| Name of exercise / incident co-ordinator: | | | |
| Name of personnel participating in exercise / incident and role played: | | List of equipment deployed: | |
| Name of any other organisations or authorities participating in exercise / incident: | | | |
| Details of amendments to be made to the Contingency Plan resulting from this exercise / incident: | | | |
| | | | |
| <small>I can confirm that the details on this form provide a realistic summary of the exercise / incident. Any action points resulting from this exercise / incident have been dealt with accordingly, the relevant documents updated and copies provided to the appropriate bodies for their attention</small> | | | |
| Authorised by: (block capitals) | | Position / job title: | |
| Signature: | | Date: | |

*Delete as appropriate

2.4 Forms to be completed on an Annual Basis

To ensure that MCA's records remain up-to-date, Port / Harbour Authorities should complete an annual return of changes made (e.g. exercise conducted, new personnel trained etc.) at the end of each calendar year by the 31st January and returned to the CPSO. 'Nil' returns should also be submitted. Electronic copies of the following form can be obtained from the MCA.

OPRC Ports and Harbours Annual Return Form

| | | |
|--|-----------------------------|----------------|
| Peel Ports Clydeport | | |
| Annual return for period: | | to: |
| Plan approval date: | Plan re-approved by: | |
| Summary of exercise undertaken: | | |
| <p><i>(NB: response to actual incidents which require activation of the plan should also be summarised here)</i></p> | | |
| New pollution training undertaken: | | |
| (signed) | (print) | (dated) |

Section 3: Incident Response Organisation

3.1 Introduction

This plan has been compiled to cover the response to any spillage caused during operations within the jurisdiction of PPC, co-operating with other SHA's including Dockyard Port, including spills emanating either from shore side operations, vessels alongside in transit or passage. The Plan indicates the Tier 1 response available at the port relevant to the perceived risk through normal operations as well as a mechanism for calling upon Tier 2 or Tier 3 responses in the event of an abnormal incident or major accident affecting the Harbour Authority. All harbour users and contractors should be encouraged to report any spills of oils or fuels to the Senior Manager Marine Operations as part of valuable data on incident management, trends and rolling incident reduction targets.

3.2 Responsibilities and Incident Control Arrangements

The Clydeport Response Team will be led by the Senior Manager Marine Operations or his Deputy; taking the role of Incident Controller or co-ordinating the Clydeport support measures. A Response Centre (CICC) may be established at Greenock Ocean Terminal where there is adequate communications (e.g. mobile phone coverage) for Tier 1 and smaller Tier 2 incidents. For larger Tier 2 and all Tier 3 incidents, the response centre would be set up at the direction of MCA, with the Big Partnership forming PPCs PR Unit. The Incident Command System for PPC is compatible with that of PETROINEOS Finnart and HMNB Clyde if a major spillage were to occur.

Incident response team members may include:

- COL; PPC;
- HMNB Clyde;
- PETROINEOS Finnart;
- Oil handling facilities at Rothesay Dock;
- Media contractors;
- Towage contractors and salvors;
- Oil spill response contractors;
- Environmental contractors;
- Local Authorities;
- Government agencies;
- SOSREP.

3.3 Dispersant Use

Under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act (2009), Marine Scotland coordinates environmental advice within the Scottish Government to inform decisions on dispersant use. The deposit of any substance or article in the sea, unless exempted under the Marine Licensing (Exempted Activities) Order 2011, requires a marine licence. No licence is required however for the deposit of a substance used for the purpose of treating oil on the surface of the sea assuming it meets the following conditions:

- a) The substance is approved by the Licensing Authority;

- b) Is used in accordance with any conditions of its approval, and
- c) The specific permission of the Licensing Authority (Marine Scotland Licensing) is obtained for use in shallow waters (less than 20 metres depth, or within 1 nautical mile of any such area).

No deposit of any marine chemical treatment substance or marine oil treatment substance may be permitted below the sea surface except with approval from the Licensing Authority (Marine Scotland Licensing).

To request approval to dispersant spraying please contact the Marine Scotland Duty Officer as detailed below:

Duty Officer

Mobile - 07770 733423 Fax - 01224 295524

In the event that a call to the mobile phone fails to connect with the Duty Officer then a call should be made to the Marine Scotland Marine Laboratory switchboard: (01224) 876544.

All enquiries about this information should be addressed directly to either:-

MARINE SCOTLAND

Marine Planning Branch
Marine Planning & Policy Division
Area 1-A(S)
Victoria Quay
EDINBURGH
EH6 6QQ

Tel: 0131 244 6233
Fax: 0131 244 7163

OR

MARINE SCOTLAND

Marine Laboratory
PO Box 101
375 Victoria Road
ABERDEEN
AB11 9DB

Tel: 01224 295579
Fax: 01224 295524

THERE ARE NO STANDING AGREEMENTS IN PLACE FOR USING DISPERSANTS IN THIS PLAN. MARINE SCOTLAND MUST ALWAYS BE CONSULTED.

3.4 Interface with other Contingency / Emergency Plans

There are a number of key OSCPs that could be activated to respond to incident dependent on the location and scale of the incident within the Clydeport area of jurisdiction. These are referenced in the Strathspill Oil Pollution Guidance Document which is a co-ordinating document issued by the West of Scotland Regional Resilience Partnership (WoSRRP) and is intended to provide information about the roles, responsibilities and actions of all the partner organisations, and to give guidance on which relevant oil pollution plan(s) should be used during any incident.

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HM Naval Base Clyde in addition to Finnart (PETROINEOS), OPA Striven and Rothesay Dock (Exolum) handling facilities have their own plan whilst several of the Quays and Piers in the Clydeport Harbour Area also have dedicated plans. The following Shipboard Oil Pollution Emergency Plans (SOPEP) are operative for regular traders:

- Caledonian MacBrayne
- Svitzer Towage
- Serco Marine Services
- Clyde Marine
- The Waverley.

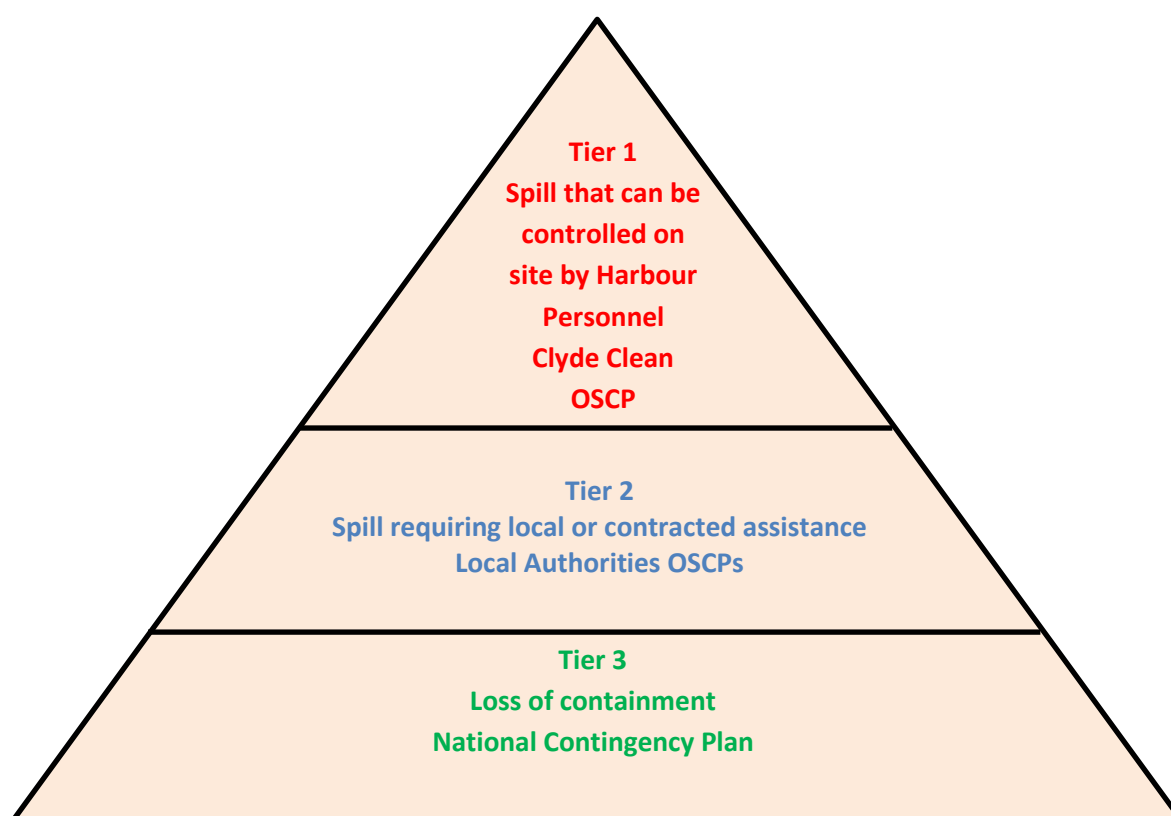
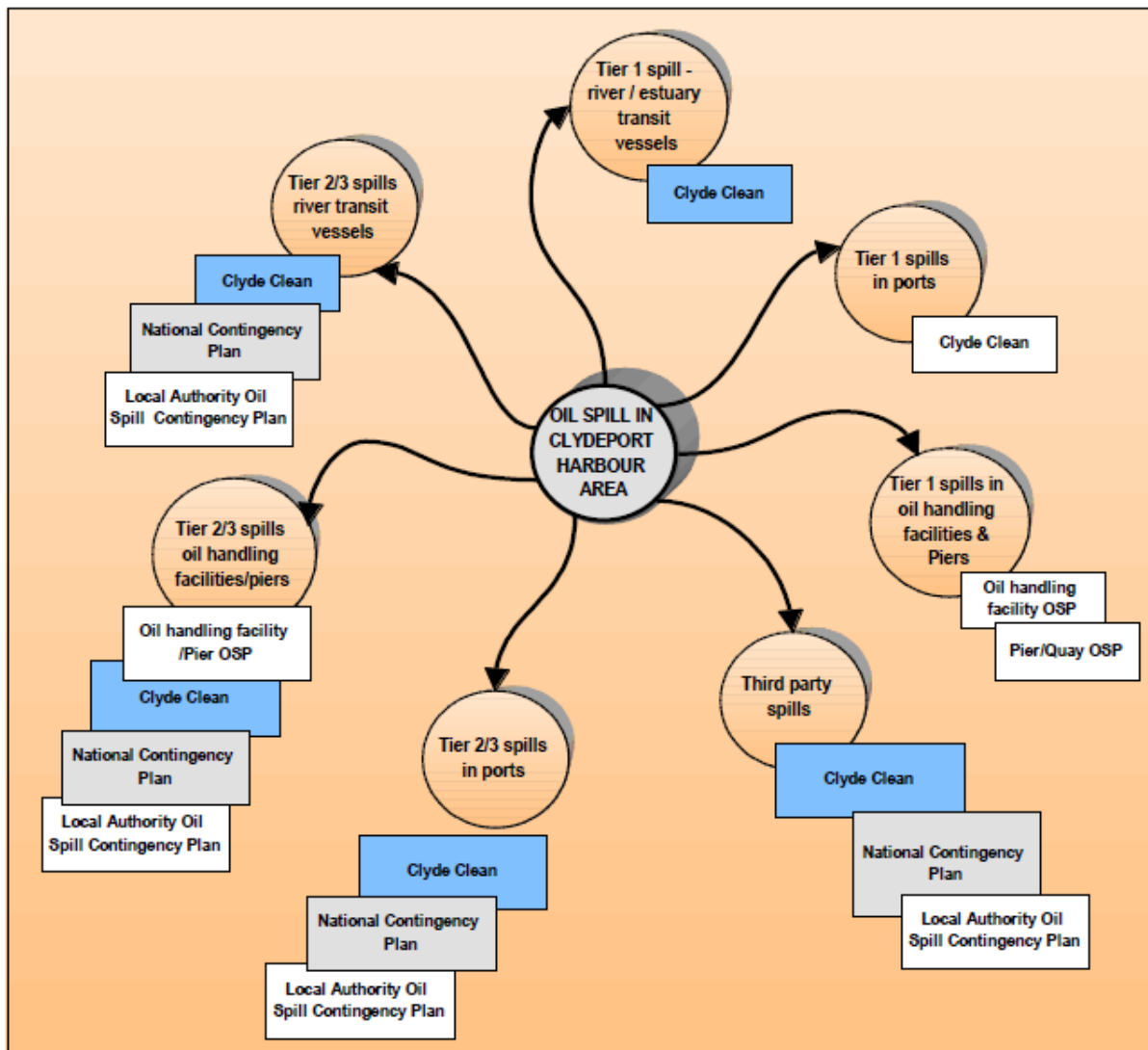


Figure 3: Oil Spill Scenarios and Contingency Plan Activation for Clydeport



3.5 The Role of the SOSREP

The Secretary of State’s Representative’s (SOSREP) role has been created as part of the Government’s response to Lord Donaldson’s Review of Salvage and Intervention and their command and control. The report identified that during salvage activities, ultimate control over all operations should become the responsibility of a single designated Secretary of State’s Representative (SOSREP) for purposes of maritime salvage and intervention and that the SOSREP could not abdicate his responsibility. Whether or not he exercised any intervention powers at all SOSREP would be in no doubt what so ever that he was in charge and would be held responsible for the outcome of all plans and decisions. Put simply - to ignore a situation is not an option.

The powers of Intervention with which SOSREP is invested could indeed not be more far reaching. They are however presently wider for response to pollution than for safety. They provide that SOSREP can direct a person to take, or refrain from taking "any action of any kind whatsoever. Indeed, if SOSREP is not convinced that the person directed can, or will, take the action then he may cause the action to be taken himself - even if this includes the total destruction of a vessel. The legislation also

creates criminal offences for noncompliance with a Direction. It should be noted that Directions must be given to specified persons who are those being in charge of a vessel, Port or Harbour Authority.

3.6 Internal Alerting and Call-out Procedures

An initial spill report will come in the first instance, during working hours, to the Clydeport Harbour Office/Estuary Radio. Out of working hours reports are liable to come via MCA, Police or the Duty Manager. The information received must be passed immediately to the Senior Manager Marine Operations. The Senior Manager Marine Operations will do his best to confirm the incident details and determine the level of clean-up operation necessary and the requirement as to whether to activate a Response Team. All calls and decisions made must be recorded, and an oil spill report form raised.

In the event of an incident requiring salvage operations the Secretary of State's Representative (SOSREP) will decide whether it is necessary to set up a Salvage Control Unit (SCU). If the size of the incident merits the establishment of a SCU, the SOSREP will travel to the scene at the appropriate time. Upon establishment of a SCU, the Operations Supervisor(s) will become an active member of the SCU team liaising with the SOSREP throughout the course of the incident. The members of the SCU are:

- SOSREP;
- the Salvage Manager from the salvage company appointed by the ship-owner;
- the Senior Manager Marine Operations, if the incident involves the harbour or its services;
- a single representative nominated by agreement between the ship-owner and the insurers (for both the physical property and their liabilities);
- a CPSO;
- an Environmental Liaison Officer, nominated by the Chair of the Environment Group; and
- if SOSREP decides to appoint one, SOSREP's personal Salvage Advisor.

The Environment Group

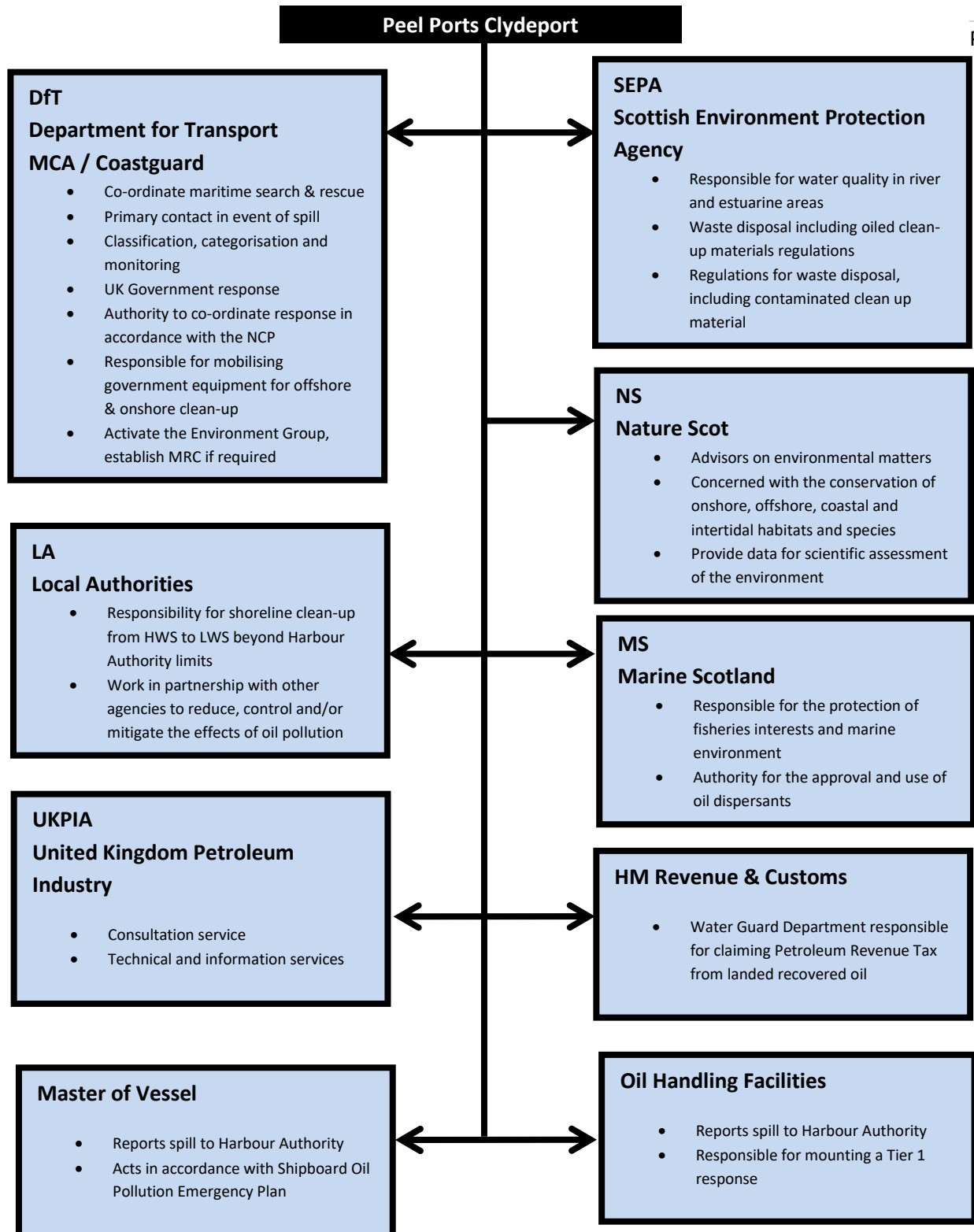
The purpose of the Environment Group (EG) is to minimise the impact of a marine incident on the environment and public health. In Scotland, Marine Scotland chair the standing Environment Group (EG).

The MCA will initiate the formation of an EG to provide advice during any incident requiring a regional or national response (i.e. Tier 2 and Tier 3). Key Roles in the EG will be filled by individuals most suited to the job and purpose. The scope of the EG functions will be directly proportional to the scale and nature of the incident, its geographical location, extent, severity, pollutant involved, potential hazard to human health and environmental sensitivities. The scale of the incident and response and their constituent phases are likely to evolve over time and the functions of the EG will need to be graduated to meet changing requirements, escalating or diminishing in the input to each phase over time (MCA STOp notice 2/15).

Core members of the EG will comprise as a minimum representatives from NHS Scotland, SNH, SEPA, Marine Scotland and the MCA.

3.7 Liaison Procedures with Other Agencies

Rapid passing of information to other affected agencies is essential for effective response. Shown below are agencies concerned and their roles.



3.8 Matrix of Roles and Escalation

The staffing will be dependent on the severity of the incident but in order to ensure integration of participating members to functional teams and units, roles have been pre-identified for participant members. The allocation of roles is not intended to be definite and is likely to change dependant on location of incident, availability and if the MCA are involved. Support can also be sought from elsewhere such as Adler and Allan, the Maritime Volunteer Service and IT Support.

Table 14: Matrix of Roles

| Team Role | Incident Command | Marine Operations | Logistics | Planning | Admin/ Finance | On Scene |
|---------------------------|-------------------------------------|----------------------------------|------------------------------------|--------------------------------|---------------------------|------------------------------------|
| Team Leader | Senior Manager Marine Operations | Manager Marine Operations | Terminal Manager | Group Marine Services Manager | Finance Manager | Marine Officer/ Pilot |
| Deputy Team Leader | Manager Marine Operations | Group Port Control Shift Manager | Port Operations Manager | Group Hydrographic Assistant | Finance Assistant | Health and Safety Manager |
| Team Member | Group Legal | Marine Officer/ Pilot | Workshop Manager | Health and Safety Manager | Group Insurance Manager | Clydeport Pilot Cutter Coxswain |
| Team Member | The Big Partnership | LPS Watch Officer | Pilot Cutter Marine Superintendent | Group Environmental Consultant | Group Procurement Manager | HR Rep |
| Secretary/ Clerk | Marine Administrator | | Secretary | Secretary | | |

Team Expansion and Down-Manning

If, because of the size of the incident, a Team function or unit is not directly staffed then that functional responsibility becomes the direct responsibility of the individual assigned to the position in the Incident Command Structure immediately above that function. Therefore, if one individual can manage all the areas of responsibility required for the incident response, no further response personnel will be required. If the incident is of a size that one or more of the areas of functional responsibility require additional support then personnel should be drafted in from the rota of trained personnel. If additional trained personnel are not available, top tier roles should be filled by a reallocation of available personnel with untrained staff providing support roles.

Section 4: Response Strategies

4.1 Health and Safety

It is essential that an effective health and safety management plan be maintained at all levels throughout oil spill clean-up operations.

Statutory Duties - Applicable Statutory Law and its Implications

The Health and Safety at Work Act 1974 places a clear duty on all employers and persons responsible for premises to ensure that the workplace is safe and in the case of the employer, to have a safe system of work. This duty is placed regardless of whether the workers are employees, sub-contract workers, temporary workers or self-employed persons.

Implementation of the Health and Safety at Work Regulations 1999 requires that all employers carry out suitable and sufficient Risk Assessments of all tasks to be undertaken in the workplace. Where five or more employees are employed then the Assessment is to be recorded and those at particular risk must be informed accordingly.

These same regulations require that the employer executes a Safety Management System and that measurement of performance against standards is made. All employees must receive adequate training, information and supervision additionally, there is a requirement for all employees to receive suitable and sufficient health surveillance to ensure that they are fit to carry out the work and that the work and conditions do not cause them adverse effect.

The Provision and Use of Work Equipment Regulations 1998 requires that all equipment provided for use at work is safe and fit for purpose. The persons using the equipment must be adequately trained in its use and the operation must be properly supervised.

The Personal Protective Equipment Regulations 1992 requires that all equipment provided is fit for purpose and does not cause adverse effect. That all personnel are trained in its use and that all associated risks are recorded controlled and pointed out to those affected.

The Manual Handling Regulations 1992 requires that all work where lifting, pulling and pushing is involved, is assessed and all risks to the health and safety of those involved are reduced to a level as low as reasonably practicable.

The Control of Substances Hazardous to Health Regulations 2002 requires that all substances to which a worker may be exposed, including dusts and gasses are properly assessed and the risks to health reduced to a safe and acceptable level.

Material Safety Data Sheets are held at Greenock Ocean Terminal.

Site Safety Plan

To achieve a Safe Operations, those in charge of the Response must follow those generalised parts of the Contingency Plan, which apply in all circumstances. Additionally they must have available the means to prepare those elements of the Plan which are site and response specific.

The Site Safety Plan is intended to prevent uncontrolled incidents occurring which may cause further damage to the environment or loss due to damage, injury or illness. The Site Safety Plan should comprise the following sections:

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- a. Site Survey
- b. Operations Analysis
- c. Site Control
- d. Logistics and Supplies
- e. Personnel

Each Section should be addressed jointly and separately before work commences and the appropriate steps taken to ensure that requirements are adequately met.

a) Site Survey

A Site Survey Form should be available, which when followed correctly will add all of those site unique details which assist in the decision making process and remind staff of essentials which might otherwise be omitted. The site survey should address the safety of those personnel taking part in the clean-up as well as those members of the public who may also be involved. The following list indicates a few of those subjects which, should be assessed and reported in the survey. The list is by no means exhaustive.

- Communications requirements
- Exposure to temperature
- Feasibility of handrails or ropes
- Hazards to the eyes
- Lack of or shelter from weather
- Lighting conditions
- Machinery usage
- Manoeuvrability
- Manual handling
- Pedestrian traffic
- Requirement to access confined spaces
- Sample collection
- Terrain surface and incline
- Vehicle traffic
- Visibility
- Water hazards

b) Operations Analysis

Having surveyed the site and assessed the aspects which are influenced by the terrain, water conditions, and other pertinent factors. The on scene commander will assess the way in which the operation is to be conducted. The intention to use the following facilities can be stated and the reasons for and priorities of each facility established.

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- Booms and skimmers
- Cranes
- Boats
- Breathing apparatus
- Detergents
- Forklifts
- Hoses and pumps
- Low loaders
- Motor vehicles
- Raking and sweeping gear
- Winches

c) Site Control

It is essential that those in charge of the spill clean-up have control of the site as soon as possible and before any significant part of the clean-up operation begins. Access to the site must be restricted to those personnel who are essential to the clean-up operation. Arrangements must be made for the area to have a barrier, be closed and policed such that no one can enter the work area without reporting to the site supervisor. No workers should be allowed on site until they have received the full vetting and briefing with respect to the Safety Assessment. The Harbour Authority will remain in control unless delegated otherwise.

d) Logistics and Supplies

Specifically with respect to safety, it should be ensured that the appropriate equipment, materials and substances are available at the required times. Particular attention should be paid to the availability of the various sizes of protective clothing required. This sometimes cannot be established until the members of the workforce have been detailed and their individual roles and tasks decided.

Consideration must be given for a prolonged clean-up operation possibly stretching to 24 hours operations. In which case shelter, accommodation, feeding, refreshment, rest areas, sanitation and first aid, must be available.

Where training has to be delivered prior to work commencing, the necessary instructors and equipment must be available before work commences. It is an error to allow experienced workers to commence work whilst others are waiting for training.

Protective Clothing. If the weather is at all inclement, the protective clothing issued to workers must be warm, water and chemical-proof. It should include coveralls, gloves, boots, eye protection and

headgear. If the weather is warm, the use of the same protective clothing may be necessary, but the requirements for ventilation and cooling will be greater.

Personal Protective Equipment (PPE)

- Breathing apparatus including respirators
- Flotation suits and vests
- Gloves/ gauntlets
- Protective clothing
- Goggles, visors and safety glasses
- Hard hats
- Insulated clothing
- Reinforced boots, shoes and gloves

First Aid. The Health and Safety (First Aid) Regulations 1981, together with the New Code of Practice on First Aid, lay down the requirements for trained first aiders and the equipment that must be provided. A foreshore clean-up is considered as a special circumstance and the appropriate extra provisions should be taken into account.

e) Personnel

Selection of Personnel to carry out the clean-up must be dominated by safety considerations.

Safety on the Water

Agreements with the Coastguard should be reviewed and complied with. At the very least, they should be informed of the vessels operating in their area together with all necessary detail of vessel capability and persons on board.

Protective Clothing. Workers operating from sea-going vessels should be equipped with harnesses built to BS 1397. They should, at all times, wear a self or automatic inflating lifejacket and may be protected by a Survival Suit.

Safe Operations

Risk Assessment

Hazard Identification. The identification of all hazards at a worksite or spill location is a singular task that should be done by involvement of the people who are expected to carry out the work. The supervisor responsible for co-ordinating the risk assessment should ensure that all hazards are identified before the next step in the process is attempted. A hazard is an object, place, process or circumstance with the potential to do harm in the form of injury, damage, delay or pollution.

Decontamination

Conditions requiring decontamination

Where workers have been wearing waterproof and protective clothing, it is likely that the clothing will become contaminated by oil or chemicals that might have been used during the clean-up operation.

The clothing needs to be cleaned to prevent further contamination. Facilities for such cleansing should be made available either near to rest or feeding areas or close by, but clear of the work site.

Personal hygiene practices on the job

Workers should be instructed on the dangers of ingesting hydrocarbons and chemicals through contact of contaminated equipment or clothing, such as gloves via the mouth and nose. Facilities for removing protective clothing and washing before consuming food or smoking should be made available.

Decontamination Area Drainage

The decontamination area where clothing and personal equipment is cleansed should be arranged so that cleansing water and contaminants are drained into tanks. Care should be taken to ensure that contaminated waste does not drain into either the normal drainage system or into the soil under the decontamination area.

Disposal of Contaminated Clothing

Clothing, which is not fully washable or capable of having all traces of contaminant removed, may need to be disposed of safely. Such clothing may comprise special or hazardous waste. If incineration facilities do not exist at the site, the clothing may need to be bagged in suitable containers, stored within an identified temporary holding area before having delivered to the Local Authority or to a Special Waste Contractor.

4.2 Oil Spills

Introduction

An oil spill can occur almost anywhere – a leakage or accident during transportation or during use, which can affect many areas including sea, coastlines, ports, harbours and land.

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Oil contains a variety of different types of hydrocarbons. The exact composition is dependent upon its origin. Oil may also contain a variety of impurities such as sulphur and nitrogen products. Generally oil is of relatively low toxicity; however this is dependent upon the properties of the source oil. The route of human exposure is via inhalation and skin absorption.

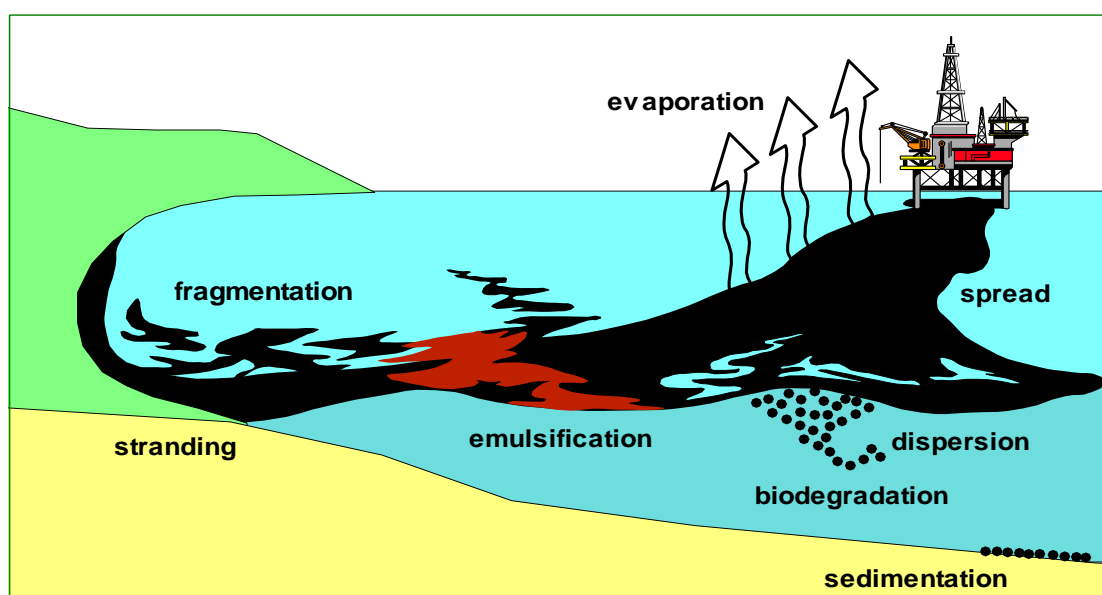
Oil when released in a spill will be subjected to various processes:

- Spreading
- Evaporation
- Oxidation
- Dissolution
- Emulsification
- Microbial degradation

The effect of all these actions is to reduce the original oil volume by evaporation but increase it by emulsification, also reduce its flammability and its toxicity. The rate of these actions is dependent upon the physical composition of the oil and environmental conditions prevailing at the time. Therefore to be able to effectively combat a spill these factors must be known.

The physical and chemical changes which spilled oil undergoes are collectively known as weathering (Figure 4). Knowledge of these processes and how they interact to alter the nature and composition of the oil with time is valuable in preparing and implementing this contingency plan for effective oil spill response.

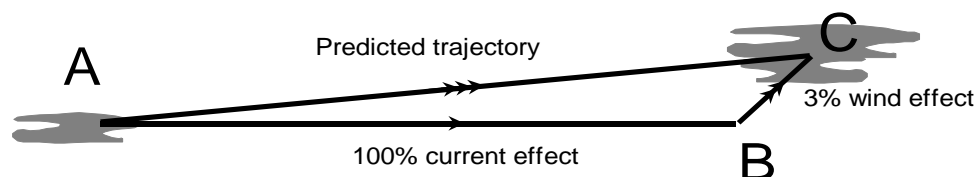
Figure 4: Combined Weathering Process of Spilled Oil



Fate and Movement of Spilled Oil

The fate and movement of spilled oil cannot be easily predicted because of several unknowns such as the point of spillage and prevailing wind conditions at the time of the spillage. Spilled oil on water moves as a function of the current and wind. The current has a 100% effect on the speed and direction of the oil slicks movement. For example, if the current heads north at 3 knots, then the oil slick will travel north at a rate of 3 knots. On the other hand, wind has only a 3% influence on the movement of the oil slick (shown in the figure below).

Figure 5: Oil Movements on Sea Surface



Oil spill sampling

Samples of the spilt oil should be taken as soon as possible before the oil has weathered. These samples may be required as evidence in legal proceedings. Guidance in the matter of collection samples is given in MCA STOP Notice 4/2001.

Oil quantity estimation guide

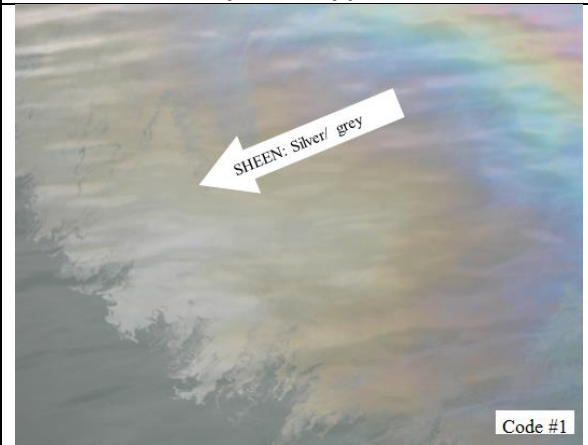
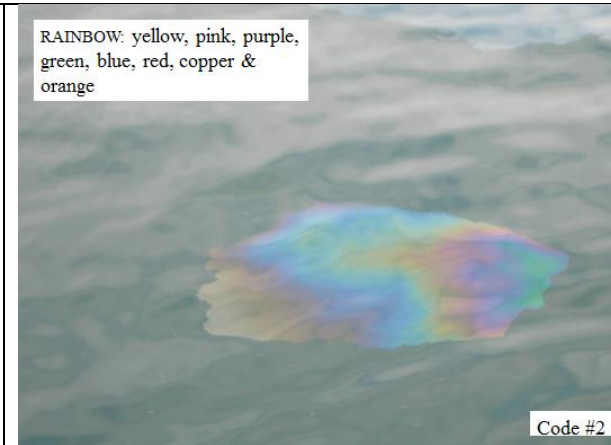


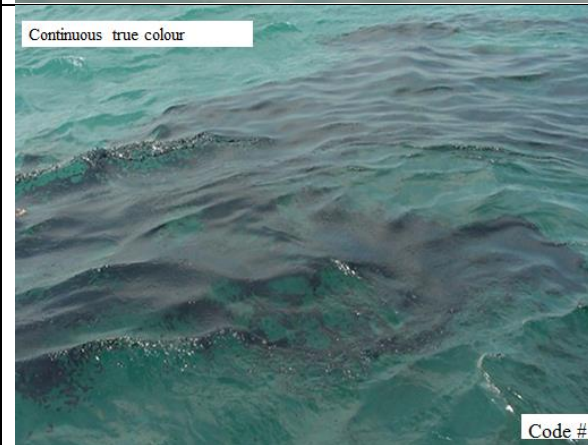

The quantity of spilt oil may be estimated using the following oil quantity table taken from the Bonn Agreement Oil Appearance Code (BAOAC). This should be used to estimate the amount of spilt product if direct information is not available. The table below details the BAOAC colours; calculation of the volume of spilt oil from the appearance of film on the water is as follows:

- Estimate total size of the area as a square/ rectangle in km
- Assess the area affected by the slick in km² calculated as a % of the total area
- Estimate the area covered by each colour, calculated as a % of the total area affected
- Multiply the area covered by each colour by the appropriate BAOAC
- Adding all of the colour figures will give the total quantity of oil in m³ within the slick

Table 15: Bonn Agreement Oil Appearance Code- Quantification by Colour

| | Code | Appearance | Thickness layer (mm) | Litre per km ² |
|-------------|------|---------------------------|----------------------|---------------------------|
| Optic range | 1 | Silver and grey | 0.00004 – 0.0003 | 40 – 300 |
| | 2 | Rainbow | 0.0003 – 0.005 | 300 – 5,000 |
| | 3 | Metallic | 0.005 – 0.05 | 5,000 – 50,000 |
| | 4 | Discontinuous true colour | 0.05 – 0.2 | 50,000 – 200,000 |
| | 5 | Continuous true colour | 0.2 - >0.2 | 200,000 – >200,000 |

Table 16: Examples of Appearance Codes

| | |
|---|---|
|  <p>SHEEN: Silver/ grey</p> <p>Code #1</p> |  <p>RAINBOW: yellow, pink, purple, green, blue, red, copper & orange</p> <p>Code #2</p> |
|  <p>METALIC: Blue, brown, purple</p> <p>Code #3</p> |  <p>Discontinuous true colour</p> <p>Code #4</p> |
|  <p>Continuous true colour</p> <p>Code #</p> |  <p>Continuous true colour</p> <p>Code #5</p> |

4.3 Disposal Plan

All waste arising from an oil spillage will be handled systematically and strictly in line with the current Regulations (Policy and instructions are identified in Section 1.10). A waste disposal action checklist is shown in Part 2 Section 8.3.

Within the resources of the Plan, initial holding and storage will be possible through use of portable storage tanks as listed in Part 3 Section 11 and thereafter the oil will be disposed of using a local licensed contractor.

In the event of a Tier 2 or Tier 3 spill response, the legal disposal of recovered oil will be undertaken through a disposal route agreed with SEPA, on behalf PPC. This will be managed by the nominated oil spill contractor (Adler and Allan) duly accredited to Level 3 under the SEPA / UK Spill Association.