Logistics Planning Guide (LPG)
UKCS Dispersant Stockpile

Revision 00

Oil Spill Response

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Contents

Revision History

Revision	Date	Author	Reviewer	Approver
Revision 00	26/09/18	Dave Redington	Simon McCosh	Ian Midgley

1 Introduction

1.1 UKCS Dispersant Stockpile Overview

The United Kingdom Continental Shelf Dispersant Stockpile (UKDS) is an Oil Spill Response Ltd (OSRL) supplementary Service.

OSRL owns, stores and maintains the dispersant and associated support equipment (Equipment) in a response ready state, providing the Client with readily available Equipment, freight and logistical support and technical support when required.

500 m^3 of dispersant is pre-positioned at two locations. The Equipment is transportable by road, air and sea for deployment. Any UKDS member may request 100% of the stockpile at any time.

Key facts:

- 500 m^3 of Slickgone NS dispersant types located at Inverness and Scalloway, Shetland Islands.
- 100% of the stockpile can be mobilised for a single incident.
- Dispersant type in the UKDS have approval for the UKCS.
- Any member of OSRL can subscribe to the UKDS via a supplementary agreement.
- The Client has full responsibility for the approval and application of the dispersant, however OSRL will assist as required.
- OSRL will arrange stockpile resupply as soon as dispersant has left the storage warehouse.
- Client is responsible for insurance and freight from Primary Storage, OSRL will assist if required.
- The Equipment is a sale to the Client on mobilisation from the Primary Storage.
- Following mobilisation of the Equipment from the Primary Storage, OSRL will arrange resupply of the Equipment. The Equipment purchase costs from the supplier associated freight and duties to replenish the Equipment to the Primary Storage will be invoiced to the Client.

1.2 Purpose

This Logistics Planning Guide (LPG) may be used as an aid memoire during a mobilisation. This guide may also be used during exercises or contingency planning. The guide covers details of the following:

- Locational information
- Storage media (containers and types etc)
- Potential transport configuration requirements (air, road and sea)
- Logistical procedures
- Mobilisation guidance
- HSEQ
- Resupply
- Equipment return

1.3 Audience

This LPG is designed to be a simple to use, informative document for use by OSRL and Client personnel.

2 Equipment

2.1 Locations

The UKDS is located at the following locations:

Figure 1 UKDS Locations

2.2 Equipment Inventories

Table 1 UKDS Inventories

Inverness	Scalloway, Shetland Islands
200 x Slickgone NS 1000 litre IBCs	300 x Slickgone NS 1000 litre IBCs
Boat Spray 50 vessel spray system	Boat Spray 50 vessel spray system
TC3 helo spray system	TC3 helo spray system
Forklift truck	Forklift truck
Going Away (GA) box (see section 9.1 for contents)	Going Away (GA) box (see section 9.1 for contents)
IBC sump	IBC sump
1000 litre spillage bin	1000 litre spillage bin
2 x spare empty IBCs	2 x spare empty IBCs

2.3 Stockpile Support Equipment

UKDS stockpiles are aligned to ensure suitable stockpile response support equipment is available at the primary and secondary storage locations in the event of a dispersant spillage as well as a means of transferring the dispersant into bulk storage with the high-volume diesel transfer pump and associated hoses and valves. Figure 2 below illustrates a typical stockpile support equipment layout at the Primary Storage location.

Figure 2 Primary Storage Support Equipment

The Primary Storage location is facilitated with a 1000 litre capacity wheeled chemical spillage bin, double IBC bund and a spare empty IBC – this equipment shall be located and maintained at the Primary Storage location. The bins include spillage instructions/absorbent pads/boom/drainage covers/putty sheets or pots/PPE. The bin is located at an accessible location or should be relocated to a location of high risk during IBC movements.

The GA box and one spare empty IBC will be mobilised with the first mobilisation of IBCs, to support the stockpile during freight transport and onwards to the Clients location. The GA box inventory is described in Section 9.1. If the secondary storage location becomes fragmented, the GA box and spare empty IBC shall remain with the largest volume. Figure 3 below illustrates the Equipment that will be loaded with the first IBC road freight load.

Figure 3 Secondary Storage Location Support Equipment

3 HSEQ

3.1 Safety Data Sheet

Safety Data Sheets (SDSs) will be provided as appropriate within the GA box. SDS's are an important component of product stewardship and occupational safety and health. It is intended to provide workers and emergency personnel with procedures for handling or working with that substance in a safe manner, and include information such as:

- Physical and chemical data (e.g. melting point, boiling point, flash point etc.)
- Toxicity
- Health effects
- First aid
- Reactivity
- Toxicological information
- Storage
- Disposal
- Transport
- Protective equipment
- Spill handling procedures

The SDS follows a 16-section format which is internationally agreed. However, SDS formats can vary from source to source within a country depending on national requirements.

Sufficient SDS will be included in the GA box in the event the mobilised stockpile becomes fragmented.

3.2 Hazard Codes

The United Nations' Globally Harmonised System (GHS) provides a voluntary agreement for the classification and labelling of chemicals. GHS becomes legally binding through a suitable national or regional legal mechanism.

There is no risk to human health or the environment whilst dispersants are stored in their correct packaging, aided by suitable spillage mitigation measures. The risk of exposure or potential environmental impact only occurs in cases of spillages, handling and the operational application of the product. More recent packaging labels and SDS may be marked with the signal words 'Danger' or 'Warning' and carry UN GHS pictograms to identify the hazards. UKDS IBCs carry at least one of the following pictograms:

Pictogram	Hazard
	• Corrosives
	• Carcinogen • Respiratory Sensitizer • Reproductive Toxicity • Target Organ Toxicity • Mutagenicity • Aspiration Toxicity
	• Irritant • Dermal Sensitizer • Acute toxicity (harmful) • Narcotic Effects • Respiratory Tract • Irritation

Figure 4 Common Dispersant Hazard Codes

The same symbols are used by the UN for Dangerous Goods transport, however dispersant itself is not classed as a Dangerous Good for transport by road, sea or air and as such is not regulated.

4 Mobilisation

4.1 Contact Details

In the event of a Client incident or general advice, either email eoc@oilspillresponse.com or contact the Southampton Duty Manager by phone on the following number:

Southampton +44 2380 331551

4.2 General Considerations

The Duty Manager will request:

- a completed and signed (by a nominated call out authority) OSRL Mobilisation Form
- ensure the Client is a member to the UKDS

UKDS Equipment will be mobilised from the most appropriate Primary Storage location depending on the incident location. In most circumstances the Equipment will be mobilised by road then loaded onto a vessel for the UKCS.

The Primary Storage warehouse will be restocked with replacement Equipment from the relevant suppliers as soon as possible following mobilisation by the Client. The replacement Equipment costs as well as associated freight delivery of the replacement Equipment to the warehouse will be chargeable to the Client.

For cost budget information, Slickgone NS is approximately £2400/IBC and the GA box is approximately £3000.

4.3 Primary Storage and Regional Information

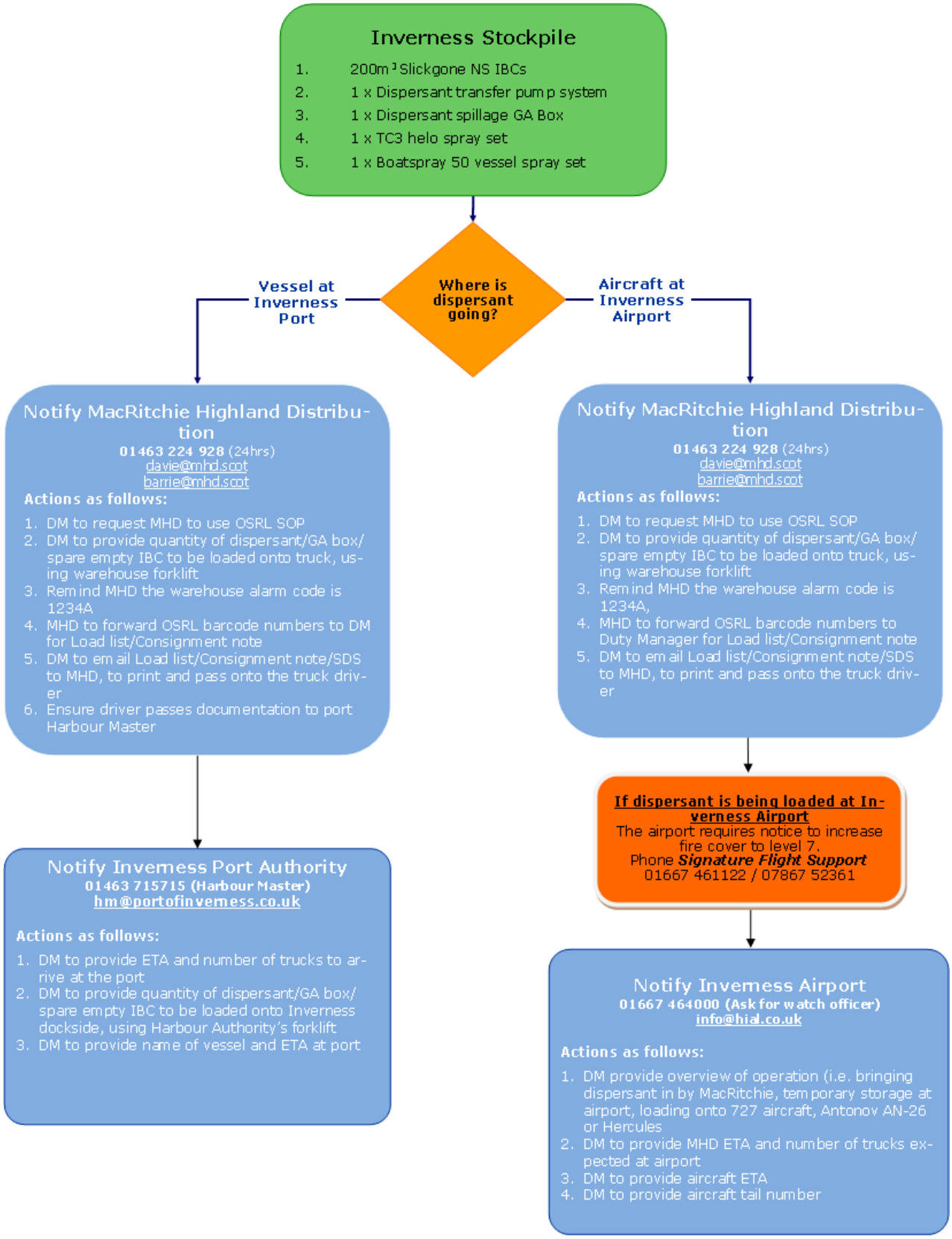
Table 2 UKDS Location Address and Volumes

Country	Address	Type and Volume	Notes
UK	Scalloway Harbour Office Saga Buildings Blacksness Scalloway ZE1 0TQ	Slickgone NS 300 m^3	The Harbour Master has access to forklifts. The dispersant will either be mobilised to Scalloway Port, Lerwick Port or Virkie Apron at Sumburgh airport. Streamline Hauliers are the usual freight company who transport from the Scalloway Warehouse to Sumburgh Airport or Lerwick Port. Streamline will supply a forklift if requested. Lerwick Port Authority also have a forklift at Lerwick port. If the dispersant is delivered to Sumburgh Airport, the Sumburgh Fire Service are required to escort the freight onto airside at the Virkie Apron gate.
UK	17A Dalcross Ind Est Inverness Highland IV2 7XB	Slickgone NS 200 m^3	There is a forklift located at the warehouse. The dispersant will either be mobilised to Inverness Port or Inverness airport. MacRitchie Highland Distribution (MHD) are the contracted freight company who transport from the Inverness warehouse to Inverness Airport or Inverness Port. MHD will provide a forklift to unload if requested.

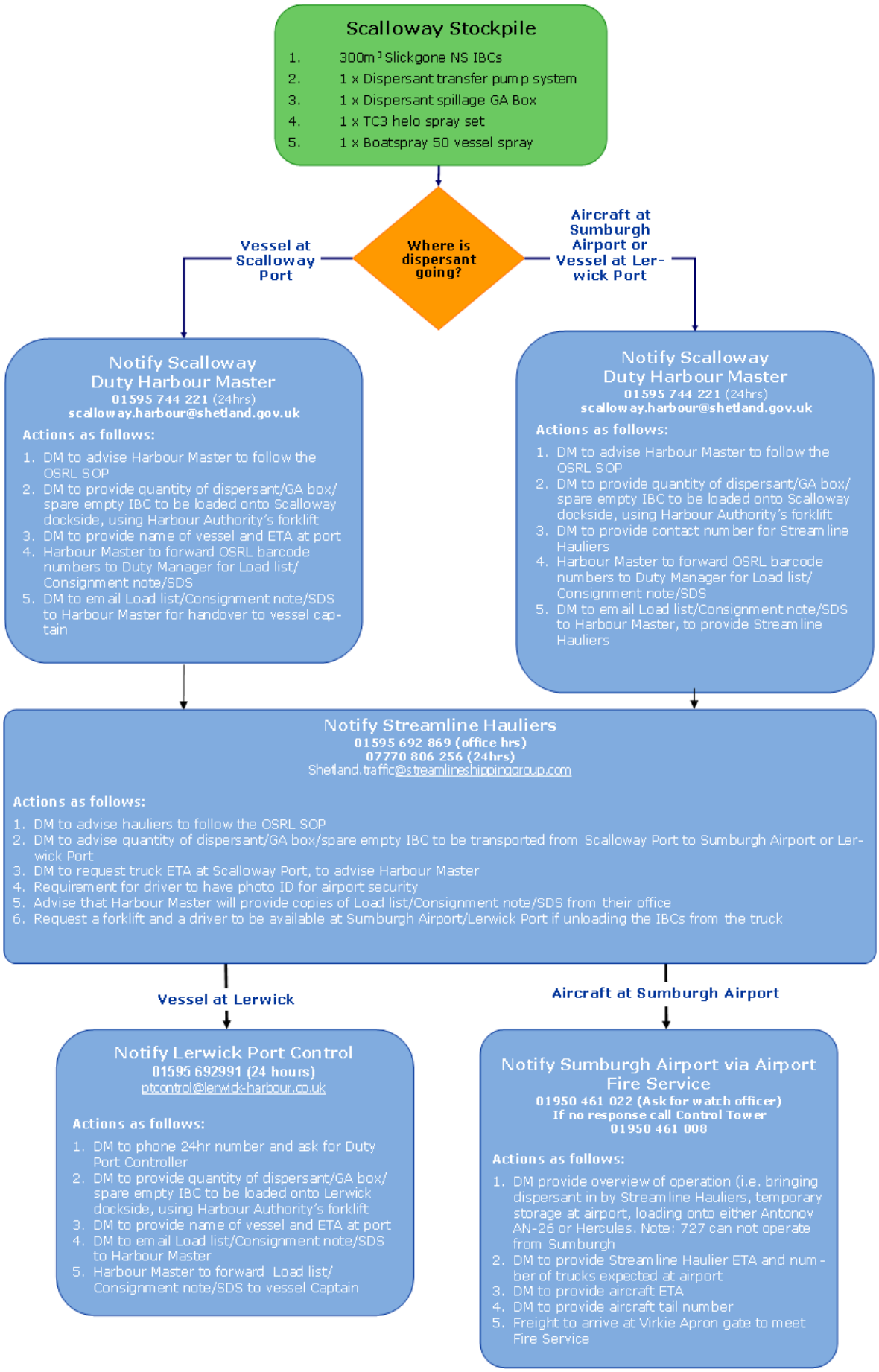
4.4 EOC Flow Diagrams

The OSRL Emergency Operations Centre (EOC) flow diagrams are an OSRL internal decision-making tool to assist the Duty Manager. These may also be useful to the remote storage bases as well as the Client.

4.4.1 Inverness



4.4.2 Shetland Islands



4.5 OSRL Responsibilities

OSRL will arrange the loading of the Equipment ready for initial road freight. In accordance with the UKDS supplementary agreement, it is the Client's responsibility to insure and freight the Equipment from the Primary Storage location, to either a temporary secondary storage location or onward to the Client's incident location. However, OSRL has freight relationships (as listed in Table 2) and would assist or arrange freight either to the initial port/airport or direct to the Client's location if requested.

Main Responsibilities

- Provide a focal point to support the Client 24/7.
- Assist the Client completing the shipping and customs documentation as required for the incident destination whether by road, sea or air from the storage locations.
- If required assist with initial road transport to mobilise the Equipment to the nominated airport or port.
- If required provide transport routes, timings and costs.
- It is the Client's responsibility to gain approval to apply the dispersant at the incident location, however OSRL will provide assistance where required.
- In the event of a large incident, OSRL will manage the Burn Plan in order to monitor dispersant freight movements, deliveries and usage at the incident location so adequate dispersant is available to the Client at the incident.
- OSRL will organise the resupply of purchased dispersant back to the Primary Storage location.

If requested by the Client, OSRL will ensure that the required Equipment is mobilised to the most appropriate destination airport or seaport as agreed with the Client. Any costs and routings will be confirmed with the Client in writing prior to mobilisation.

4.6 Equipment Storage

If Equipment is mobilised from the Primary Storage location; either temporarily located at a port, airport, on a trailer or aboard a vessel – the following considerations must be observed:

- Temporary shelter to protect the dispersant from direct sunlight, high humidity and salt water. If solid shelter is unavailable, opaque sheeting should be applied to cover the IBCs.
- Considerations should be observed if storage location poses a potential environmental impact; such as gradient run off or open drains etc. If drainage systems are in the vicinity of the dispersant, then suitable drain covers must be utilised. Drain covers are available in the GA box, see Section 9.1.
- IBC relocated from the Primary Storage location must be accompanied with a spare empty IBC, gravity transfer hose and chemical spillage equipment, see Section 2.3.

4.6.1 Secondary Storage Weekly Checks

On mobilisation of the Equipment from Primary Storage; this could be during freight, temporary laydown area, at the incident location, in bulk storage or on a vessel – the following weekly checks should be observed:

1. Ensure there are no dispersant leakages from the containers or the discharge valves.
2. Ensure the Equipment is secure and weather tight, ensure either solid shelter or opaque sheeting is maintained.
3. Ensure IBCs are stored in accordance with manufacturer's instructions (stored between 10°C to +30°C, away from direct sunlight).

4.7 Documentation

OSRL will prepare the following documentation as part of standard procedures:

- Packing lists
- Pro-forma invoices
- Load summary
- Dangerous Goods Notes (for GA box only)
- Safety Data Sheets (SDS)
- Commercial Invoices

4.8 Mobilisation Times

The Equipment is stored in a configuration suitable for common transport to ensure a time efficient response via all modes of transport. OSRL would encourage early mobilisation of Equipment to allow the most efficient options for transport to be considered.

Road freight arrival times to the warehouses would usually be within two hours.

4.9 Bulk Storage

The GA box transfer package may assist the Client transferring the dispersant from the IBCs into bulk storage if required. If dispersant is transferred into bulk storage (ISO tanks/road tanker/vessels tanks/aviation storage system etc), dispersant types must not be mixed. The dispersant volume shall be assigned the earliest date of manufacture (DOM) and the largest previous IBC batch, by volume. The tanks should either be of a stainless-steel construction or coated with an epoxy paint. The tank headspace should be as minimal as practicable. A ships tank should ideally be fitted with baffles to reduce sloshing.

On completion of the incident and if the dispersant is required to be repackaged into IBCs, the following points should be observed:

- Previous bulk storage DOM and batch number shall be assigned to the IBCs
- If several batches have been mixed, the volume should be assigned the earliest DOM and associated batch number
- Gain a sample and conduct efficacy testing
- Ensure no additional particulate contamination is entrained and filter dispersant if required

5 Transport

5.1 General Considerations

The response timings for road freight to arrive at the UKDS warehouses is approximately two hours. The loading time for 24 IBCs per 40 ft trailer is approximately 30 minutes.

Road routes to and from airports and seaports of Equipment embarkation and disembarkation are to be proved to ensure that distribution of Equipment from arrival ports is possible.

Dispersants are not classified as Dangerous Goods under the following international agreements for transportation and are therefore not regulated by:

- ADR (European Agreement on International Carriage of Dangerous Goods by Road)
- IATA (International Air Transport Association)
- IMDG (International Maritime Dangerous Goods Code)

Under the ADN (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways), dispersants are regulated if their flash point is between 60 °C and 100 °C (typically this is the range into which dispersants' flash point falls). Scenarios leading to dispersant transportation on European inland waterways are likely to be very limited. Under the UN classification for transportation, dispersants are categorised as Packing Group III (least danger).

5.2 Road Transport

The Equipment is suitable for road transportation, however attention must be paid to the following as appropriate:

- Transit times
- Driving hours limitations
- Overhead clearance
- Weight limits
- Load lashings
- transport restrictions and regulations

5.2.1 General Considerations

The following considerations must be observed prior to and during road transport:

- Liability insurance for both the dispersant value as well as potential environmental damage and pollution exchanges to the Client following movement from the Primary Storage location for UKDS. Additional insurance is not required for routine maintenance and mobilisation exercises where the dispersant is under the ownership of OSRL, as this is covered by the OSRL Marsh insurance policy.
- IBCs must be single stacked when transported by road freight. Schütz Ltd advise full IBCs may be transported double stacked, however double stacking is likely to exceed trailer payload and axle weight distribution.
- Secured curtain sided carriers are to be used if IBCs are mobilised from an aviation secure location. Non-curtain sided trailers may be used for all other non-aviation secure locations; however screening of the IBCs must be conducted prior to airfreight.
- To prevent IBC frame distortion during road transit, IBCs must be lashed over the top of the HDPE container but under the top metal frame, see Figure 5 below. Slight HDPE container distortion may occur when lashing is tightened.

- It is ultimately the responsibility of the freight company to choose the method of Equipment lashing. The freight company is liable if any damage occurs.

Figure 5 IBC Lashing

5.3 Sea Transport

5.3.1 General Considerations

Mobilising Equipment by road freight then sea at a local port is the most likely transport scenario for the UKDS stockpiles. However mobilisation to another UKCS location by air is an option.

Dispersant IBCs can either be loaded for sea transport breakbulk as individual IBCs, loaded into DNV 2.7.1 (Offshore containers) or transferred into integrated ships tanks or ISO storage tanks. The pump package within the GA box may assist any dispersant transfers.

Storage and transport of full IBCs in sea containers must be limited to single stacking, due to the requirement for specialised forklifts to double stack loading and unloading.

The following are Client considerations:

- Charter the vessel/s and associated ships' agent
- Ensure all vessel port state clearances are carried out
- Form a contract with a stevedoring company to load equipment to vessel (details provided by OSRL)
- On site representative(s) to accept Equipment

5.3.2 Sea Fastening

The sea-fastening procedures will be the responsibility of the vessel crew. Welding of some equipment to decks may be required for safe at-sea storage.

5.4 Air Transport and Application

5.4.1 Inverness Airport

The 727 may operate from Inverness, however a Cat 7 fire procedure is required when the 727 operates from the airport. Signature Flight Support provide airside aircraft handling and operating staff liaison.

The TC3 application package located at the warehouse may be utilised with a helo.

5.4.2 Sumburgh, Shetlands

The 727 cannot operate from the Shetland Islands due to runway limitations, however, the Antonov AN-26 or Hercules may be chartered and can operate at the airport.

The TC3 application package located at the warehouse may be utilised with a helo.

6 Equipment Return

In accordance with the UKDS Supplementary Agreement, the Equipment is a sale to the Client at the Primary Storage location. The lead time to resupply the complete UKDS stockpile will take a number of weeks. OSRL are obliged to ensure the UKDS is restocked as soon as possible in the event another UKDS Client requires Equipment, or if the mobilising Client requires additional Equipment.

If the Client no longer requires the Equipment at the incident, OSRL will consider repurchasing the Equipment (depending on the warehouse resupply status) from the Client following successful dispersant efficacy testing, OSRL will assist with samples and delivery to test laboratory. The Client shall cover all costs associated with testing, return freight to the Primary Storage location. If any of the Equipment is subject to excessive corrosion or general damage, the Client shall bare the associated costs to ensure the Equipment is relocated in a suitable standard.

7 Dispersant Resupply

Table 3 Dasic Re-supply Information

Supplier	Dispersant	Delivery Information
Dasic International	Slickgone NS	90 IBCs available within 24 hours. Following a 7 to 10-day lead time, the capacity would be 54 IBCs/day.
Notes		1. Capacity is based on the assumption that raw material suppliers can keep up supplies. True production capacity could be reduced dramatically, especially if dispersant is also being sourced from multiple manufacturers. Most dispersant manufacturers use sodium di iso octyl sulphosuccinate and sorbitan monooleate surfactants in their formulations. If several companies are sourcing these materials at the same time, the supply chain would be severely strained.
		2. All volumes listed above would be delivered in 1000 litre IBCs.
		3. There are no restrictions with Dasic products, as there are no end user indemnities.

8 Glossary

Logistics terminology used within the document is, where possible, universal.

For the purposes of the context of the document the following simplified terms and abbreviations are used:

Burn Plan – A model to plan and predict available, delivered and applied dispersant at location.

Deployment – Move and bring into effective action, i.e. deploying stores and Equipment to required destinations.

DNV 2.7.1 – Standards for Offshore containers, OSRL equipment referred to as DNV in this plan meets either DNV 2.7.1 (Offshore containers).

Equipment – The dispersant and stockpile support equipment.

GHS - The United Nations' Globally Harmonised System provides a voluntary agreement for the classification and labelling of chemicals.

IATA – International Air Transport Association.

Lead time - The period of time from when the item is ordered to when the item is delivered to, and received at the final destination ready for use (technically Supply Lead Time). The understanding of lead times is a critical management component.

Logistics - Management and flow of resources between point of origin and point of consumption.

Maintenance - The process of preserving a condition in respect of Equipment, associated items and other items in storage therefore ensuring items are fit for issue and subsequent use. Including planned and unplanned activities.

Material Handling Equipment - Equipment that relates to the movement, storage, control and protection of materials, goods and products.

Mobilisation - Make something movable or capable of movement, i.e. making stores and Equipment ready for deployment.

Primary Storage – The primary long term storage warehouse location of the Equipment prior to mobilisation.

Recovery - Move items back from deployment location to home storage base location.

Secondary Storage – Any Equipment location following mobilisation from Primary Storage; this could be during freight, temporary laydown area, at the incident location, in bulk storage or on a vessel.

SDS – A Safety Data Sheet is to provide OSRL, Client and associated contractors with procedures for handling or working with that substance in a safe manner.

Storage -
1. The action or method of storing something for future use.
2. A building and associated media used for storage.

UKCS – United Kingdom Continental Shelf.

UKDS – United Kingdom Dispersant Stockpile.

9 Appendices

9.1 GA Box Inventory

- 1 x Large forkliftable storage box
- 1 x High volume centrifugal diesel pump unit, mounted on a wheeled trolley
- 3 x 6m 2” hoses with 2” female-male camlock nylon connectors
- 1 x 1m plastic/poly pick up tube with 2” female camlock and 2” ball valve
- 1 x 1m x 2m pump bund
- 1 x GA spill kit (90 litres)
- 1 x Bale of absorbent pads

PPE Storage for three persons

  - 9 x impervious suits (3 x med. 3 x large, 3 x extra-large)
  - 3 x half face respirators
  - 3 x UVEX goggles
  - 1 x box nitrile gloves
  - 3 x pairs of gauntlets
  - 1 x reel of masking tape
  - 1 x Eyewash station
  - 1 x Dispersant information Folder (SDS, COSHH, emergency contact etc)

Spares & Ancillaries Storage Box

  - 2 x 2” ball valve with 2“ female-male connections
  - 1 x 2” T –piece with 2” male inlet and 2 x 2” female outlets
  - 1 x 2” double male adapter
  - 1 x 2” double female adapter
  - 1 x IBC Cap Spanner
  - 1 x 5lt diesel can
  - 1 x Toolkit
  - 1 x Medium funnel
  - 1 x pack of medium cable ties
- 1 x Dispersant effectiveness test kit
- 1 x bag of rags
- 2 x drain covers

9.2 IBC Specification

Packaging - Specification

ECOBULK

SCHÜTZ

MX 1000 UN EVOH / DN150 closed /
butterfly-valve, FKM-g. / 2 label plates / Steel-framepallet

SCHÜTZ GmbH & Co.KGaA
Schützstraße 12
D 56242 Selters / Germany

Date: 15.06.2016 / TE-KO / ss
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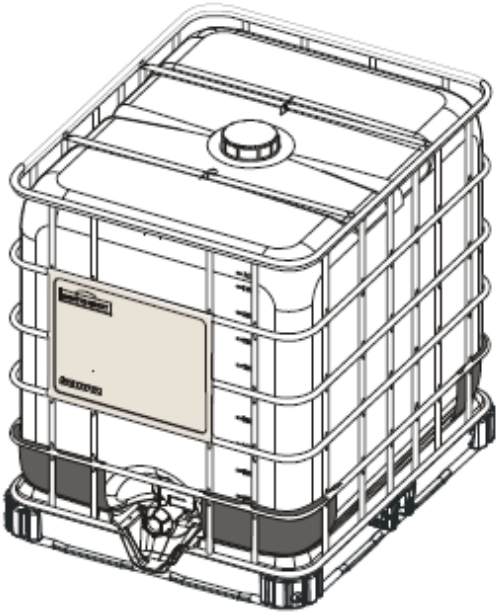
Article - No.: 4027214



Technical data:

Nominal Capacity:		1000	Litre
Brimful Capacity:		1060	Litre
Length:		1200	mm
Width:		1000	mm
Height with pallet:		1160	mm
Filling opening:		150	mm
Discharge opening:		50	mm
Fork opening:		100	mm
Label plate:		2	piece
Corner Protector:		4	piece
Weight:	Inner container:	15,5	kg
	Total approx:	56,0	kg

Technical subjects to change, all dimensions approximately

Packaging - Specification

ECOBULK

SCHÜTZ

MX 1000 UN EVOH / DN150 closed / butterfly-valve, FKM-g. / 2 label plates / Steel-framepallet

SCHÜTZ GmbH & Co.KGaA
Schützstraße 12
D 56242 Selters / Germany

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Construction:

Outer Container:	Rectangular grid box made of tubular Steel material, with bottom plate, connected on top with tie-bar, label plate with Schütz-Ticket on the front side, additional label plate on the back side.	
Material:	Grid / Bottom plate:	Steel, galvanized
	Corner Protector:	4 pieces made of PE-HD, black
Inner Container:	Rectangular blow molded tank of high density polyethylene. Six-layer technology. With filling opening in the middle of the top section. Discharge opening at the bottom of the front side.	
Material:	Outer layer:	PE-HD, natural
	Center layer:	PE-HD, natural, regrind EVOH and adhesive resin
	Interior layer:	PE-HD, natural
Filling Opening:	DN150 with external thread, closed with screw cap and gasket.	
Material:	Screw cap DN150:	PE-HD, red
	O-ring gasket:	TPE
Discharge Opening:	Screwed butterfly-valve DN50 with grey handle. Outlet sealed with PE-lined Alu-film. Valve closed with screw cap, PE-disk and flat-gasket. Outlet nozzle enclosed.	
Material:	Butterfly-valve housing:	PE-HD, natural
	Flap-gasket:	PP
	Flat-gasket:	FKM
	Screw cap DN50:	PE-HD, black
	Flat-gasket screw cap:	PE, foam
	PE-disk:	PE-HD, red
	Outlet nozzle:	PE-HD, natural
Pallet:	Steel-framepallet (1000 x 1200 mm), 4-way entry	
Material:	Steel, galvanized	
Heavy metals:	Concentration level of heavy metals (Pb, Cd, Cr VI and Hg) in packaging does not exceed 100ppm	
Delivery:	Ready to fill. The customer or filler is responsible for testing the material compatibility of the filling material with the packaging	
UN-Marking:	UN 31HA1/Y .../ BAM12868	

Technical subjects to change, all dimensions approximately