



SCOTTISH EXECUTIVE

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METOC

Note: This document is only a section of the Final Environmental Report

Scottish Marine Renewables SEA
Environmental Report Section C SEA Assessment: Chapter C14 Disposal Sites

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Table of Contents

C14	Disposal Areas	1
	C14.1 Introduction	1
	C14.2 Baseline Environment.....	1
	C14.3 Potential Key Effects.....	2
	C14.4 Sensitivity of Receptors	2
	C14.5 Potential Significance of Effects	3
	C14.6 Mitigation Measures.....	4
	C14.7 Likelihood of Occurrence	4
	C14.8 Confidence and Knowledge Gaps	4
	C14.9 Residual effects	5
	C14.10 Recommendations for Monitoring.....	5

Tables

Table C14.1: Summary of Potential Effects - Disposal Sites	2
Table C14.2: Significance Assessment Criteria – Disposal Sites	3
Table C14.3: Potential Significance of Effects – Disposal Sites	4
Table C14.4: Mitigation Measures.....	4
Table C14.5: Potential and Residual Significance of Effects – Disposal Sites	5

Figure

Figure C14.1: Disposal Sites in the Study Area – Active within the Last 10 Years

Figure C14.2: Significance of Impacts – Permanent Access Disruption during Device Operation

Glossary & Abbreviations

FEPA	The Food and Environment Protection Act
FRS	Fisheries Research Services
MHWS	mean high water springs

C14 Disposal Areas

C14.1 Introduction

The deposit of substances or articles in the sea or under the sea-bed within UK territorial waters or controlled waters is regulated by licensing under Part II of the Food and Environment Protection Act 1985 (FEPA) (as amended). The main purposes of Part II of FEPA are the protection of the marine environment, the living resources that it supports and human health; and to prevent interference with other legitimate sea users. In Scotland, Fisheries Research Services (FRS) is the licensing authority, on behalf of the Scottish Ministers, with regard to activities below the tidal level of mean high water springs (MHWS).

There are, however, exemptions from requiring a FEPA licence for certain activities regulated by other legislation such as the aquaculture and oil and gas industries.

In addition the licensed sea disposal of processed fish waste generated from landed fish can no longer be regulated by FEPA since the introduction of the Animal By-Products Regulations (2005).

Typically it can be assumed that there will be minimal interaction between marine renewable energy developments and disposal sites. Active disposal sites will almost certainly be avoided in site selection and it is also likely that out of use disposal sites may also be avoided due to the potential complexities (e.g. variable bathymetry, potential for disturbing contaminants) of installing in areas where materials have been previously been disposed.

Figures C14.1 and C14.2 accompany this chapter.

C14.2 Baseline Environment

A number of statutory changes governing the types of waste that can be disposed of at sea have occurred over recent years. Since 1994, the dumping of most types of industrial waste has been prohibited and the disposal of sewage sludge was phased out at the end of 1998 under the Urban Waste Water Treatment Directive (91/271/EEC). Dredged material from port and navigation channel excavation and coastal engineering works now constitutes the majority of material that remains eligible for disposal at sea (Metoc, 2006).

Data detailing the location of all designated disposal sites in the study area that have been used in the last 10 years was provided to the SEA by the Fisheries Research Service (FRS). These are shown on Figure C14.1. The frequency of use of the sites varies considerably. For example, some of the sites may have only been used once while others are used annually, and any one of the sites could be used in the future, irrespective of how frequently it has been used in the past (Pers. Comm. Peter Hayes, FRS). The majority of the sites shown in Figure C14.1 have only been used for the disposal of silt, sand, gravel or rock. One site in the study area has been used in the past for the disposal of sewage sludge (the Garroch Head disposal site), and two sites have been used for the disposal of fish waste (Stromness B and Stromness C). The practice of dumping sewage sludge is now prohibited, but the disposal of fish waste can still be licensed if the risk to the environment and other users is considered to be within safe limits.

Disused disposal sites which potentially contain contamination, such as sewage sludge or munitions disposal sites are included and discussed in the chapter C4 – Contamination and Water Quality.

C14.3 Potential Key Effects

Consultation with device developers has indicated that they would seek to avoid developing (arrays or cables) close to (e.g. within 500 m of) a disposal site. With this in mind the key potential effects identified are as follows:

C14.3.1 Installation Effects

Temporary disruption to vessels transiting to and from disposal sites during installation of device arrays and cables located in close proximity to disposal sites. The potential significance of restricting access to the sea disposal sites will be major for ports and harbours both during installation and operation. Significant costs would be incurred by the port or harbour authority if the distance to the disposal site was increased.

Direct disturbance of previously disposed material where device arrays are located in close proximity to disposal sites. The effects of disturbing contaminated sediments are discussed in Chapter C4 – Contamination and Water Quality. Strictly speaking, this is not an effect on the activities associated with the disposal site, but it is relevant in terms of potential effects on marine wildlife located in the vicinity of any disturbed sediment. These effects are discussed in Chapters C6 – Benthic Ecology, C7 – Fish and Shellfish, C8 – Marine Birds and C9 - Marine Mammals.

C14.3.2 Operation Effects

Long term disruption (in terms of increased journey lengths and times) to vessels transiting to and from disposal sites due to the existence of a device array. Developers have indicated that they would seek to avoid disposal sites by a distance of approximately 500 m.

A summary of the potential effects identified for disposal sites is given below.

Table C14.1: Summary of Potential Effects - Disposal Sites

Effect	Development Phase	Direct/Indirect	Duration	Extent
Disruption to access during installation	CC CD	Direct	Temporary (during installation)	Cable and device installation area
Direct disturbance of contents of disposal sites	CC CD	Direct	Temporary (during installation)	See Chapter C4
Disruption to access during operation	OC OD	Direct	Long term (device life)	Array size (4 km ² – wave; 0.5 km ² – tidal) and potentially cable swathe

CD = Construction/decommissioning impact – devices

CC = Construction/decommissioning impact - cables

OD = Operation impact – devices

OC = Operation impact – cables

C14.4 Sensitivity of Receptors

Disposal sites *per se* are not sensitive to change. However, the activity of disposal is sensitive to change in terms of reduced access. This may occur during installation when safety zones will be used around activities or during operation of devices and cables if they are developed very close to disposal sites.

If a development were to be sited within a disposal site then it would no longer be available for disposal uses. It would therefore be reasonable to assume that disposal sites are highly sensitive to loss of disposal area, and moderately sensitive to reduced access.

C14.5 Potential Significance of Effects

C14.5.1 Assessment Criteria

The assessment of effect significance has been undertaken based on the criteria below. These have been developed specifically for the SEA and take into account the information and take into the information available to inform the assessment of significance.

Table C14.2: Significance Assessment Criteria – Disposal Sites

Significance Level	Determining Criteria
Major	Long term (for the life time of the development) loss of access to disposal site, or reduced access causing a significant cost to be incurred by a port or harbour authority.
Moderate	Long term (for the life time of the development) reduced access to disposal site.
Minor	Temporary (during installation) reduced access to disposal site.
Negligible/No Impact	No displacement of commercial fishing activities.

C14.5.2 Mapping of Effect Significance

Significance of key effects on disposal activities has been mapped and the results are shown on the figure noted in the table below.

It should be noted that that the assessment of significance has been undertaken at a strategic level, based on maximum estimated effects on the key known locations important or protected habitats in the area.

Significance of effects has been determined by creating a buffer around active known disposal site locations. Based on discussions with FRS, it has been assumed that any of the sites used within the last 10 years are active, or could become active in the future if currently dormant. The exception is the site previously used for sewage sludge disposal, which is no longer licensable. The size of the buffer in this case is related to the fact that developers have indicated that they would seek to avoid disposal sites by a distance of approximately 500 m.

Table C14.3: Potential Significance of Effects – Disposal Sites

Potential Effects	Device Characteristics	Development Phase	Receptor	Potential Significance of Effects	Likely Impact Extent	Source	Confidence	Figure Number
Disruption to access during installation	All devices and cables except for shoreline devices	CC CD	Disposal activities	Major	Cable and device installation area	Estimate based on expert knowledge	High	Not mapped
Direct disturbance of contents of disposal sites	All devices and cables except for shoreline devices	CC CD	Disposal activities	See Chapter C4	See Chapter C4	See Chapter C4	High	Not mapped
Disruption to access during operation	All devices and cables except for shoreline devices	OC OD	Disposal activities	Major	Major	Estimate based on expert knowledge	High	See Figure C14.2

CD = Construction/decommissioning impact – devices

CC = Construction/decommissioning impact - cables

OD = Operation impact – devices

OC = Operation impact – cables

C14.6 Mitigation Measures

Where potentially significant effects have been identified for a specific receptor, the following mitigation measures are appropriate for reducing/mitigating effects.

Table C14.4: Mitigation Measures

Potential effect	Project Phase	Mitigation Measures
Disruption to access during installation	CC CD	Avoid development within 500m of disposal sites Notification of port and harbour authorities of the proposed works
Direct disturbance of contents of disposal sites	CC CD	Avoid development within 500m of disposal sites
Disruption to access during operation	OC OD	Avoid development within 500m of disposal sites

C14.7 Likelihood of Occurrence

Generally it can be assumed that the standard mitigation of avoidance will be employed and therefore the likelihood of occurrence is likely to be very low.

C14.8 Confidence and Knowledge Gaps

No knowledge gaps have been identified in relation to disposal sites; there is therefore a high confidence in the existing information on the baseline environment and the assessment of potential and residual effects.

C14.9

Residual effects

Table C14.5: Potential and Residual Significance of Effects – Disposal Sites

Potential Effect	Device Characteristic	Development Phase	Receptor	Potential Significance of Effects	Industry Good Practice Mitigation	Likelihood of Occurrence	Residual Significance of Effects	Confidence
Disruption to access during installation	All devices and cables except for shoreline devices	CC CD	Disposal activities	Major	Avoid development within 500m of disposal sites	Low	Negligible	High
Direct disturbance of contents of disposal sites	All devices and cables except for shoreline devices	CC CD	Disposal activities	See Chapter C4	Avoid development within 500m of disposal sites	Low	Negligible	High
Disruption to access during operation	All devices and cables except for shoreline devices	OC OD	Disposal activities	Major	Avoid development within 500m of disposal sites	Low	Negligible	High

CD = Construction/decommissioning impact – devices

CC = Construction/decommissioning impact - cables

OD = Operation impact – devices

OC = Operation impact – cables

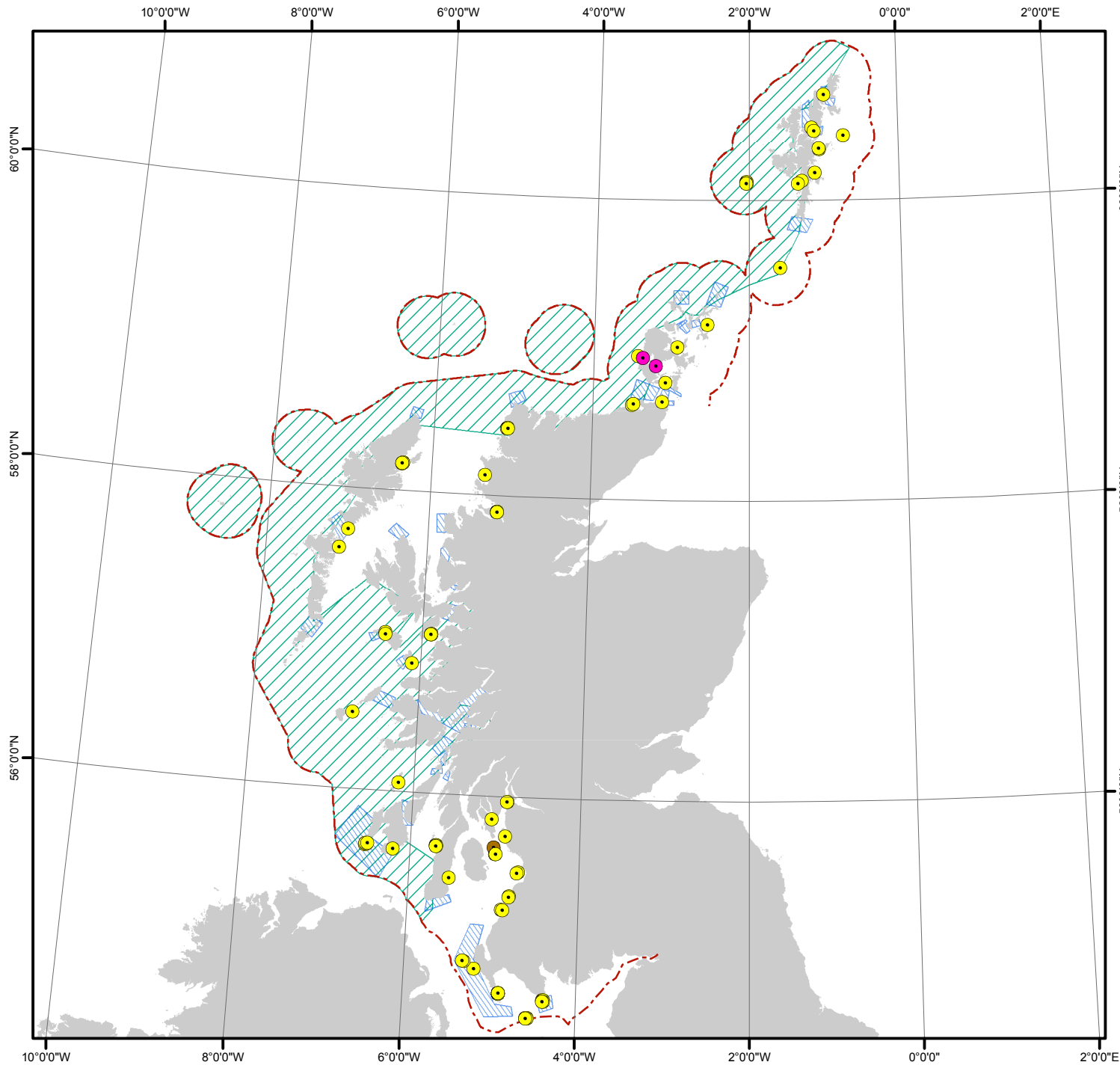
C14.10

Recommendations for Monitoring

No issues have been identified for monitoring.

Figures

Figure C14.1: Disposal sites in the study area - active within the last 10 years








Legend

Potential development area

-  Tidal resource
-  Wave resource

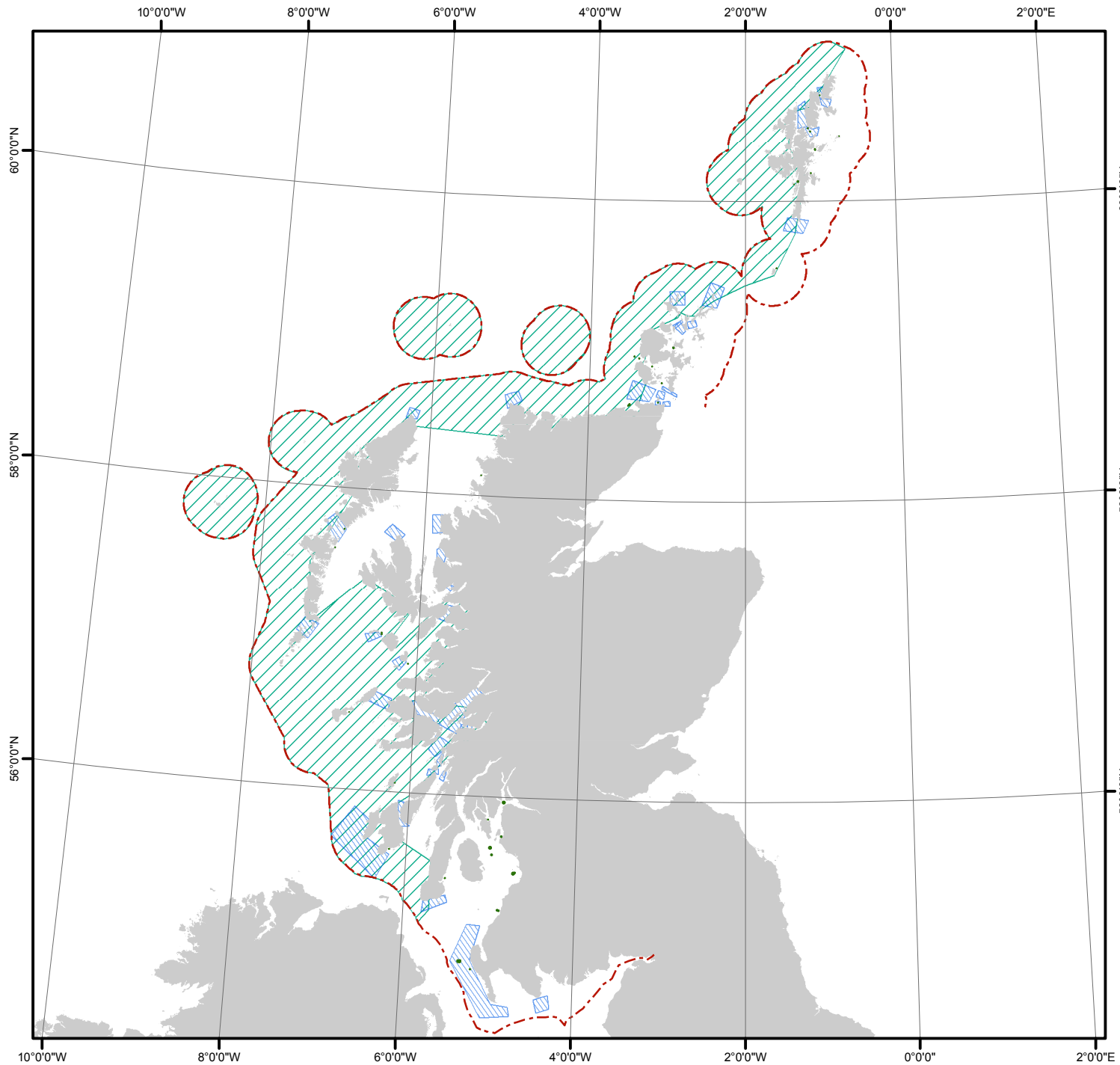
Marine disposal sites

-  Silt, sand, gravel or rock
-  Fish waste
-  Sewage sludge

-  Land
-  12 Nautical mile limit (study area only)



Date	19th February 2007	
Projection	Transverse Mercator	
Spheroid	Airy	
Datum	OSGB36	
Data Source	SeaZone Solutions Ltd; FRS	
File Reference	P736\GIS\Mxd\SEA\Baseline maps	
Checked	SH	GIS Specialist
	FLB	Project Manager

Figure C14.2: Significance of impacts - long term access disruption during device operation







Legend

Potential development area


-  Tidal resource
-  Wave resource

Significance of potential impacts

Disrupted access to disposal sites

-  Major
-  Moderate
-  Minor
-  Not significant

 Land

 12 Nautical mile limit (study area only)

Date	19th February 2007	
Projection	Transverse Mercator	
Spheroid	Airy	
Datum	OSGB36	
Data Source	SeaZone Solutions Ltd; FRS	
File Reference	P736\GIS\Mxd\SEA\Baseline maps	
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