


TECHNICAL APPENDIX 14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy <small>Harnessing Shetland's natural resources</small>
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page i

SITE ENVIRONMENTAL MANAGEMENT PLAN


VIKING WIND FARM

TECHNICAL SCHEDULE 3

SITE WASTE MANAGEMENT PLAN


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TECHNICAL APPENDIX 14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harnessing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page ii

CONTENTS

1	INTRODUCTION.....	1
1.1	Scope and Requirements	1
1.2	Objectives	1
1.3	Reference Documentation	2
2	SWMP MINIMUM REQUIREMENTS	4
2.1	Implementation of a SWMP	4
2.2	Planning	4
2.3	Implementation	5
2.4	Checks & Records	5
2.5	SWMP Monitoring & Auditing.....	6
2.6	Completion Audit & Review.....	6
2.7	Training.....	6
3	GENERAL WASTE MANAGEMENT PRINCIPLES	7
3.1	Generation, Storage and Disposal of Waste Materials	7
4	ANTICIPATED CONSTRUCTION WASTE STREAMS.....	8
4.2	Waste from Welfare Facilities	8
4.3	Concrete	8
4.4	Waste Chemicals, Fuel and Oils.....	8
4.5	Packaging	9
4.6	Waste Metals	9
4.7	Cleaning Activities.....	9
4.8	Excavated Materials.....	9
5	EXCAVATED MATERIALS	10
5.1	Classification of Excavated Materials.....	10
5.2	Estimated Volumes of Peat.....	11
5.3	Waste or Not Waste?.....	12
5.4	Waste Management License Exemptions.....	14
5.5	Mobile Plant License and Recovery of Waste.....	17

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harnessing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 1

1 INTRODUCTION

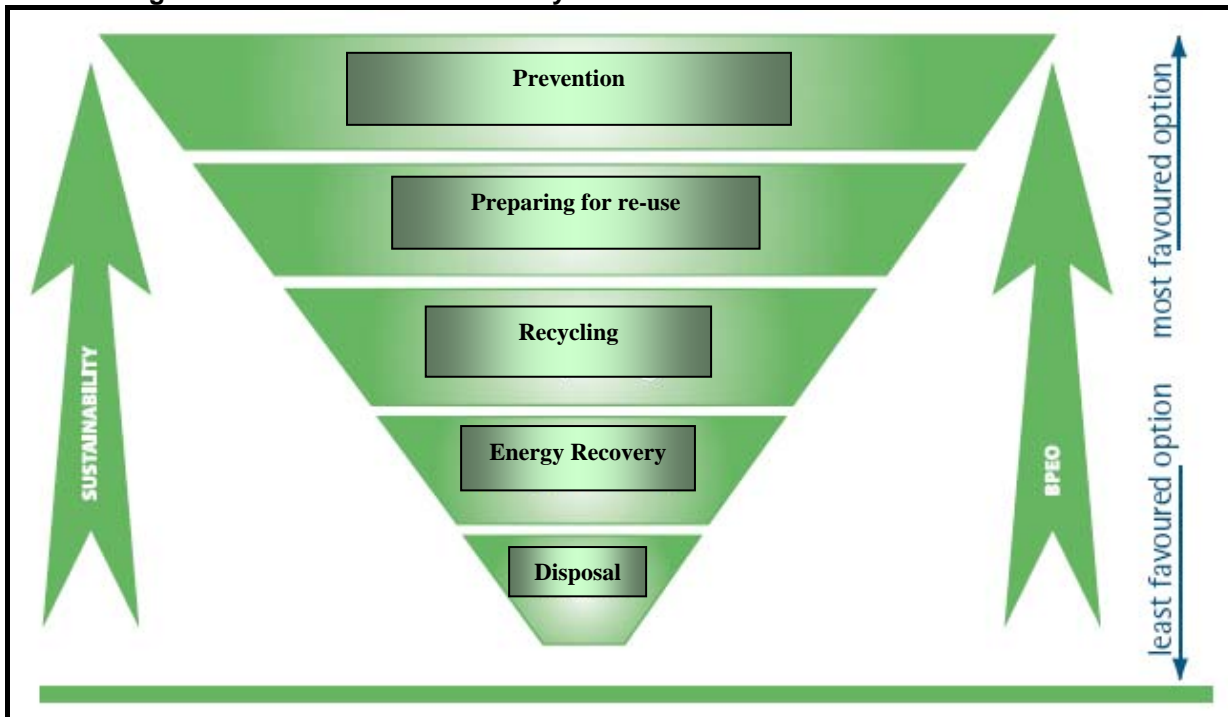
1.1 Scope and Requirements

- 1.1.1 The information contained herein forms Technical Schedule (TS3), Site Waste Management Plan (SWMP) of the Viking Wind Farm Site Environmental Management Plan (SEMP). The SEMP is provided as Technical Appendix 14.6 to the Viking Wind Farm Addendum Environmental Statement (ES).
- 1.1.2 The SEMP replaces the original Technical Appendix 14.4 (Site Environmental Management Plan / Pollution Prevention Planning) submitted with the original ES.
- 1.1.3 The SEMP, including the information and measures contained within this SWMP along with any updates required as part of any relevant planning conditions, will form part of the main civil engineering construction *Contract* and will be made available to those tendering for construction works. All tendering *Contractors* will therefore be obligated to consider the requirements for waste management contained herein and allocate costs and resources accordingly.
- 1.1.4 Prior to commencement of works, the appointed *Contractor* will prepare a number of environmental plans to support and supplement the SEMP with detailed procedures and processes of his own design. This includes the requirement to prepare a detailed SWMP prior to commencement of construction works.
- 1.1.5 The *Contractor's* SWMP will be submitted to the planning officer at Shetland Islands Council, Scottish Environment Protection Agency (SEPA), Viking Energy Partnership Project Manager, Environmental Manager and the Environmental Clerk of Works (ECoW) for review, approval and comment where appropriate.
- 1.1.6 The general methods and principles contained herein, as well as within referenced legislative instruments and published guidance documents, will be adhered to by the *Contractor* in developing the SWMP as required by the Contract. The information contained herein provides an outline of the minimum requirements to be contained within the *Contractor's* detailed SWMP.
- 1.1.7 In preparation of the SWMP, the *Contractor* will liaise with SEPA to determine requirements for, and obtain, waste management license exemptions and consents associated with waste management and foul water discharge from the site where appropriate.

1.2 Objectives

- 1.2.1 Viking Energy Partnership is committed to managing activities to reduce the resources we use and, where possible, to re-use, recycle or recover resources, in accordance with best practice in waste management and SEPA's "The Waste Hierarchy (2006)". The Waste Hierarchy promotes selection of the Best Practical Environmental Option (BPEO) and preferred options for management of wastes as follows:

Figure TS3-1: The Waste Hierarchy




1.2.2 The principal objective of this SWMP is to provide details on the minimum requirements to be incorporated within the *Contractor's* detailed SWMP such that all possible preventative measures will be taken to adhere to the policies and commitments detailed above.

1.2.3 In achieving the principal objective noted above, the ultimate aim is to implement reduction and effective management of resources and waste during the early design stages of the wind farm construction, through to completion, such that:

- legal obligations are met;
- waste production is minimised and waste is recognised as a resource
- project build costs are minimised;
- a framework for continuous improvement and best practice is implemented and maintained; and
- carbon emissions and other negative environmental impacts associated with the production and management of waste materials are minimised.

1.3 Reference Documentation

1.3.1 In addition to legislative instruments, the information, methods and general principles contained within the following published guidance documents will be taken into

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	

consideration in the Contractor's detailed SWMP:

1.3.2 SEPA Pollution Prevention Guidelines (PPG):

- PPG02 Above ground oil storage tanks
- PPG04 Treatment and disposal of sewage where no foul sewer is available
- PPG08 Safe storage and disposal of used oils

1.3.3 SEPA Regulatory Position Statement, Developments on Peat, National Waste Policy Unit, 9 February 2010.

1.3.4 The Waste Hierarchy, National Waste Strategy: Scotland. SEPA, September 2006. (http://www.sepa.org.uk/waste/moving_towards_zero_waste/waste_hierarchy.aspx).


1.3.5 Institute of Environmental Management and Assessment (IEMA) Practitioner Series No.11: Waste Management: A Guide for Business in the UK, September 2008.

1.3.6 WRAP (Waste & Resources Action Programme):
http://www.wrap.org.uk/construction/tools_and_guidance/site_waste_2.html

1.3.7 www.wasteonline.org.uk

1.3.8 www.wasteawarescotland.org.uk

1.3.9 www.defra.gov.uk/Environment/waste/

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harnessing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 4


2 SWMP MINIMUM REQUIREMENTS

2.1 Implementation of a SWMP

- 2.1.1 In April 2008, the Site Waste Management Plan Regulations 2008 (The Regulations) came into force in England requiring a Site Waste Management Plan (SWMP) to be prepared and implemented on all construction projects with an estimated cost greater than £300,000 (exc. VAT).
- 2.1.2 Although these regulations currently only apply in England, in accordance with industry best practice and Viking Energy Partnership requirements, a SWMP is to be implemented by the *Contractor* on the Viking wind farm construction project.
- 2.1.3 A Site Waste Management Plan (SWMP) involves the following key stages:
- Planning;
 - Implementation;
 - Monitoring; and
 - Review.

2.2 Planning

- 2.2.1 The SWMP must record any decision taken before the Plan was drafted on the nature of the project, its design, construction method or materials employed in order to minimise the quantity of waste produced on site.
- 2.2.2 The current layout of the wind farm has been subjected to rigorous assessment against numerous potential environmental constraints such that the optimum layout is selected and approved by the Planning Authority. This optimum layout takes into account aspects such as ecology, geology, hydrology, hydrogeology, landscape and visual impact, noise etc. The wind farm is therefore designed in order to avoid or minimise impact on these aspects, while taking into account practical and commercial considerations. Practical and commercial considerations include minimisation of construction material requirements and associated wastes at the initial design stage.
- 2.2.3 Following submission of the original ES, the wind farm layout has been amended in order to address initial objections from various statutory and non-statutory bodies relating to a range of environmental constraints. The resultant reduction in scale of the wind farm (reduction in turbines numbers and track lengths), along with adherence to current construction best practice methods for excavation and handling of the material, will significantly reduce the potential for generation of waste materials in the first place. Part of the review process for amending the wind farm layout included a re-assessment of the opportunities for minimising peat excavation, a review of the volumes of peat excavated and opportunities to re-use peat (refer to ES Appendix A14.4, Estimated Peat Extraction and Reuse Volumes). This report identified that all excavated peat is required for use in

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy <small>Harnessing Shetland's natural resources</small>
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 5

the works (as described in SEMP Technical Schedule TS7, Excavated Materials and Reinstatement Plan). Where excavated material is immediately suitable for reuse it is not considered to be waste. Where the material may prove to be unsuitable for the intended use it may be classified as waste and the appropriate regulatory controls will be imposed by SEPA¹. This is discussed in more detail in Section 5.

- 2.2.4 The planning process can therefore be seen as the initial stage in the waste avoidance / minimisation process. This SWMP and the requirement for completion of a *Contractor's* detailed SWMP, presents the next stage in the process.
- 2.2.5 Designing out waste before it arises is one of the most efficient ways to reduce project waste arisings. When finalising the detailed design of wind farm infrastructure, including selecting construction methods and material requirements, the *Contractor* will consider all options for minimising peat excavation. This process will also focus on maximising opportunities to reuse peat on site where excavation cannot be avoided.


2.3 Implementation

- 2.3.1 The SWMP will identify: the Client; the *Contractor*; the person(s) who drafted the SWMP and the person(s) who will be responsible for its implementation, monitoring and review during and upon completion of construction works.
- 2.3.2 The SWMP must provide a waste inventory and procedures to address the following:
- i. A description of each waste type expected to be produced in the course of the project;
 - ii. An estimate of the quantity (volume) of each different waste stream / type of waste expected to be produced;
 - iii. A written statement demonstrating what actions were taken to minimise the volume of each type of waste produced prior to commencement of the activity generating the waste.
 - iv. Procedures for identification of the waste management actions proposed for each different waste type, including re-using, recycling, recovery and disposal.

2.4 Checks & Records

- 2.4.1 Any waste fuel, oil or chemical storage area will be checked regularly (with additional checks in the event of extreme weather conditions) for evidence of leaks and spills. The required frequency for such "environmental checks" is detailed within Section 3 of the SEMP. Checks will include visual inspection for evidence of contamination / on the ground, in sediment or in surface water. These checks will also verify the integrity of storage facilities and the effectiveness of their storage and containment procedures.

¹ Refer to SEPA Position Statement on Developments on Peat, February 2010. Which states that "*while there can be uses for peat within a development, peat is not always suitable for proposed uses. In such cases it may be regarded as waste in law*".

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harnessing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 6

2.4.2 Records will be kept of all inspections / findings for review by the ECoW and external parties where requested. Waste management will be an agenda item on all regular meetings as required by the SEMP (again refer to Section 3 of the SEMP for required frequency of meetings).

2.4.3 The waste inventory will be maintained and kept up to date and will include a record of all waste materials arising from site works and all waste materials leaving the site for disposal.

2.5 SWMP Monitoring & Auditing

2.5.1 The SWMP will provide details on how waste reduction is to be implemented at the site and also how this is to be monitored throughout the construction phase. The *Contractor* will nominate an appropriate person to take responsibility for implementation and monitoring of the SWMP. This may be a Site Environmental Manager or otherwise appropriately qualified person(s).

2.5.2 As noted above (Section 2.3.2), the SWMP must provide an inventory and initial estimate of waste quantities for the various waste streams likely to be produced on the site. The ultimate aim will be to ensure the actual volumes of waste generated are managed below the estimate. Site progress will be monitored against the estimate set within the *Contractor's* detailed SWMP and changes will be implemented in order to revise site activities based on performance where necessary.

2.5.3 An element of waste auditing will be conducted with each SEMP audit conducted by the Employer, however additional waste specific audits will be carried out once every 6 months.

2.6 Completion Audit & Review


2.6.1 Following completion of construction works, and before the end of the defects correction period, a project Waste Management review will be undertaken. This will involve the *Contractor's* and Employer's Environmental Manager, Project Manager or other nominated person(s) as appropriate on both sides.

2.6.2 The purpose of this review is to identify project progress, areas for improvement with regards waste management and also measure compliance with any licensing conditions as required. Lessons learned from this process will be used to inform 'best practice' procedures on future projects.

2.7 Training

2.7.1 All employees, subcontractors and suppliers will be fully briefed regarding the general site waste management strategy as part of the site induction procedures and as appropriate to the task to be undertaken.


2.7.2 Littering on site will not be tolerated and all employees, suppliers and visitors will be briefed on the appropriate waste storage and disposal procedures on the site (including locations and appropriate use of recycling bins and skips).

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harassing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 7

3 GENERAL WASTE MANAGEMENT PRINCIPLES

3.1 Generation, Storage and Disposal of Waste Materials

- 3.1.1 As with any large scale construction project, the generation of waste from wind farm development is inevitable. However, the types and quantities of waste produced will be dependant on the local conditions and scale and type of development.
- 3.1.2 All possible actions will be taken by the *Contractor* to avoid or minimise the volume of waste generated.
- 3.1.3 Waste materials will not be stored within 50metres of a watercourse wherever possible. Where this may not be practically achievable, the Contractor will provide detailed justification for a reduction in this specified buffer distance, however, irrespective of the justification provided, on no account will this buffer distance be reduced to less than 20metres.
- 3.1.4 All areas used for storage of waste materials will comply with the SEPA Pollution Prevention Guidelines (PPG's). Waste storage and disposal will be carried out in such a manner as to prevent pollution and ensure compliance with current waste legislation.
- 3.1.5 Transport of waste will be carried out in accordance with legal and Duty of Care requirements. Transport of any waste requires completion of a Duty of Care Waste Transfer Note (WTN). WTNs can be in any format, but they must include a detailed record of the waste source and destination, description (including correct European Waste Catalogue (EWC) code), load volume and how it is contained.
- 3.1.6 Where hazardous waste is to be transported, SEPA must be notified and specific hazardous Waste Consignment Notes (WCNs) are required to be purchased.
- 3.1.7 Where hazardous waste is involved separate containers must be provided appropriate to the material being stored, used, transported or disposed of. Emergency procedures must also be clearly documented.
- 3.1.8 Material storage areas will be clearly located and signed. Space permitting, key waste streams should be segregated. The segregation scheme should include appropriate training, monitoring and enforcement with clear signage and using the National Colour Coding Scheme.
- 3.1.9 Where possible, the *Contractor* will arrange for just in time delivery and double handling will be avoided. Delivery vehicles should aim to remove waste materials on return trip.
- 3.1.10 All waste will be transported from site at an appropriate frequency by a registered waste carrier to prevent overfilling of waste containment facilities and will be reused/recycled where practical.

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy <small>Harnessing Shetland's natural resources</small>
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 8

4 ANTICIPATED CONSTRUCTION WASTE STREAMS

- 4.1.1 A number of difference waste streams are likely to arise during construction of the wind farm. As per the requirements of Section 2 herein, the *Contractor* will identify all waste streams and provide an estimate of expected waste volumes for each waste type generated within the waste stream.
- 4.1.2 The *Contractor* will ensure that all relevant information obtained subsequent to the Addendum ES submission either by himself or other parties is taken into account in preparing his SWMP (for example intrusive ground investigation data, additional site investigation information, supply chain assessments, options appraisals etc).
- 4.1.3 The section below sets out further requirements in relation to those waste streams that typically arise during construction of an on-shore wind farm:

4.2 Waste from Welfare Facilities


- 4.2.1 This will primarily be food waste, paper, plastics, glass and other typically domestic refuse generated in the offices and canteen areas within the site compound, as well as on site. All waste of this type will be stored in an appropriate location, protected from wind, rain and wild animals. Facilities will be provided to segregate waste into appropriate waste streams (glass, paper etc) and minimise volumes of material stored (e.g. folding and baling of cardboard waste).
- 4.2.2 Sewage will also be generated at welfare facilities. Disposal of sewage from the site will be carried out by methods recommended in SEPA PPG4.
- 4.2.3 There is currently no anticipated requirement for a separate construction workers camp at the Viking Wind Farm. However, should such a facility be required at any stage, all waste streams from the welfare facilities and other general domestic refuse from such a facility will also be included within the *Contractor's* SWMP.

4.3 Concrete

- 4.3.1 Methods for dealing with concrete waste and wash out water are provided within Technical Schedule TS4, Drainage Management Plan. Where possible a settlement and re-circulation system for water reuse will be considered for water used in concrete batching and wash out areas.
- 4.3.2 Any waste water generated from concrete batching will be adequately treated to deal with suspended solids and high alkalinity before discharge under conditions and methods as agreed with SEPA.

4.4 Waste Chemicals, Fuel and Oils

- 4.4.1 Engine and hydraulic oil waste will be stored on site and disposed of in accordance with SEPA PPG2 and PPG8, as well as general mitigation measures described within Technical Schedule TS2, Pollution Prevention Plan.

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy <small>Harnessing Shetland's natural resources</small>
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 9

4.4.2 **The Contractor will prepare and maintain a Chemical and Waste Inventory as part of the SWMP.** This inventory will include:

- List of all substances stored on-site (volume and description);
- Procedures and location details for storage of all materials listed; and
- Waste disposal records, including copies of all Waste Transfer Notes (WTN) detailing disposal routes and waste carriers used.

4.4.3 Fuels and other oils, including waste oils, will be stored and handled in accordance with procedures detailed in TS2, Pollution Prevention Plan.

4.5 Packaging

4.5.1 This includes waste materials arising from packaging of equipment or materials brought onto site, including paper, plastics and wood used for packaging turbine components, reinforcing rods, concrete formwork, cement and other raw materials.

4.5.2 In line with the Waste Hierarchy, wherever possible, packaging will be returned to originator for reuse ahead of recycling or disposal. Othey will be stored on site in a sealed skip within the construction compound and disposed of in accordance with PPG6 and general mitigation measures described within Technical Schedule TS2, Pollution Prevention Plan.

4.6 Waste Metals


4.6.1 Where there is residual metal such as from steel reinforcing rods for concrete and cabling, it is expected to have some commercial value and be suitable for re-use or recycling.

4.7 Cleaning Activities

4.7.1 Cleaning activities (e.g. for plant, vehicles, wheel washes, concrete truck wash out etc) can produce large volumes of polluted water. All cleaning activities must therefore be carried out in an appropriate enclosed area and waste water captured for treatment and appropriate discharge as per the requirements of Technical Schedules TS2 and TS4 (Pollution Prevention Plan and Drainage Management Plan).

4.8 Excavated Materials


4.8.1 Excavated materials, and in particular peat, may or may not be classed as waste in accordance with the legal definition of waste. This is discussed in more detail in Section 5.

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harnessing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 10

5 EXCAVATED MATERIALS

5.1 Classification of Excavated Materials


- 5.1.1 The methods to be employed during excavation, storage and subsequent use of excavated materials are described within Technical Schedule TS7, Excavated Materials and Reinstatement Plan of the SEMP.
- 5.1.2 Excavated soils, peat and rock are required for reinstatement on site in landscaping and re-profiling works and in order to minimise visual impacts and facilitate habitat and ecological restoration, improvement and enhancement. However, in order to ensure compliance with relevant waste legislation, excavated materials will require to be classified on site and a use determined for those materials prior to excavation.
- 5.1.3 As indicated on Figure TS3-2, four initial classes of excavated materials may be identified during construction:
- i) **Mineral Soil:** Highly variable composition which may depend on underlying geology, depositional environment or provenance if made ground. Refer to British Soil Classification System BS5930: 1999, Code of Practice for Site Investigations" (Table 13).
 - ii) **Turf:** surface layer of living vegetation and underlying fibrous subsoil.
 - iii) **Acrotelmic peat:** the upper layer of a peat bog in which organic matter decomposes aerobically. Material may be fibrous or pseudofibrous (plant remains recognisable), spongy, strength is lost but retains integral structure and can stand unsupported when stockpiled >1m. Acrotelmic material is generally found within the top 1m of peat, although may extend beyond this to depths of up to 2m depending on the degree of decomposition and fibrous nature of the peat.
 - iv) **Catotelmic peat:** the deeper layers of peat in which organic matter decomposes anaerobically. Material is amorphous (recognisable plant remains absent), plastic, has high water content and low tensile strength and is unable to stand unsupported >1m when stockpiled.
- 5.1.4 Figure TS3-2 outlines the general procedures that will be taken on site to classify excavated materials and determine whether they will be classed as waste, and, if so, what the anticipated regulatory controls are likely to be.
- 5.1.5 The first step in the process, and in advance of each main phase of works or 100m of constructed track (or as agreed on site), the *Contractor* (in conjunction with ECoW, GCoW or other specialists where required), will provide a method statement detailing expected volumes, material classification, storage and reuse procedures for the excavated materials anticipated from that particular work area. This will require a detailed walkover and data review (peat depth, habitat surveys etc) in order to determine likely characteristics of excavated materials and identify appropriate temporary storage or treatment areas.

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harnessing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 11

- 5.1.6 All classification procedures and potential waste management routes referred to in this plan are provided as an outline guide only. The actual mechanisms employed on site during the construction works will be subject to revised volume estimates, detailed Method Statements as provided by the *Contractor* and actual site conditions encountered during the works.
- 5.1.7 The *Contractor* will liaise with SEPA on all aspects of waste management relating to excavated peat to ensure compliance with all appropriate regulatory controls prior to and during construction works.

5.2 Estimated Volumes of Peat

- 5.2.1 As the wind farm layout has altered significantly since the 2009 ES was submitted, Appendix A14.4 of the Addendum ES provides a revised preliminary estimate of the volumes of peat to be extracted and reused at the site. The design assumptions and engineering principles used to derive the volumes are discussed in detail in Appendix A14.4.
- 5.2.2 Based on a design scenario of constructing floating roads where peat depths generally exceed 1.0m, the total excavated volume of peat has been estimated to be around 742,000 m³. Of this around 434,000m³ will be required for reuse in reinstatement and restoration of infrastructure, while the remaining 308,000m³ will be required for restoration of borrow pits. Assuming all remaining material is utilised, the restoration depth within the borrow pits may be within the region of 1.7m.
- 5.2.3 While there is a significant volume of peat to be excavated during the course of the construction works, Appendix A14.4 has demonstrated that there is a legitimate requirement to reuse all of the estimated excavated volumes in essential reinstatement and restoration works. This is in line with SEPA's guidance in their Position Statement on peat, which states: "*Developers should attempt to re-use as much of the peat produced on site as is possible.*"
- 5.2.4 Of the total volume of peat excavated, it has been estimated that approximately 217,000m³ may be catotelmic peat. Due to its physical characteristics (low tensile strength etc) this material may be unsuitable for reuse without prior treatment. If this is the case then this material may be classed as waste. However, as the volume of material is still required for completion of restoration activities, including borrow pit restoration, the waste will require to be reused or treated such that is recovered prior to reuse. Reuse or treatment of this material will require to be agreed with SEPA and will be undertaken in compliance with all relevant waste legislation.
- 5.2.5 It should be noted that these excavation volumes are an estimate. In preparing his detailed SWMP, the *Contractor* will undertake a review of these preliminary volume estimates and will take into account all relevant information obtained subsequent to the Addendum ES either by himself or other parties (e.g. further ground investigations and peat depth surveys etc).
- 5.2.6 It is imperative that, prior to excavations, the *Contractor* identifies in his detailed Method Statement where and how excavated peat will be used in reinstatement or landscaping

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harnessing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 12

works. Furthermore, throughout the construction process, the *Contractor* (and / or *Designer*) will demonstrate that all possible methods have been employed to prevent or minimise the volumes of excavated peat; this will include, but is not necessarily limited to:

- Assessment and consideration of all potential alternative engineering methods which would minimise the excavation of peat (e.g. piling as opposed to excavating turbine bases and hard standing areas);
- Micro-siting of access tracks to avoid deep peat;
- Minimisation of excavation extents and land disturbance during the works; and
- Appropriate handling and storage of excavated materials such that their integrity and subsequent reuse is not jeopardised prior to their reuse.


5.3 Waste or Not Waste?

- 5.3.1 The wind farm design, revised layout and Environmental Impact Assessment has taken into account all measures to avoid or reduce the potential for generation of waste excavated material and, in particular, peat. Prevention of the generation of waste is the first step in the waste hierarchy followed by minimisation and reuse.
- 5.3.2 In line with the SEPA Position Statement on Developments on Peat, and the SEPA “Land Remediation and Waste Management Guidelines”, any excavated material (whether peat, mineral soil or rock) which is not intended to be disposed of or discarded will not be considered as waste will not be regulated under waste management controls provided the following six criteria are met:
- i) The use is a necessary part of the planned works.
 - ii) The material is suitable for that use.
 - iii) The material does not require any processing or treatment before it is reused.
 - iv) No more than the quantity necessary is used.
 - v) The use of the material is not a mere possibility but a certainty.
 - vi) The use of the soil will not result in pollution of the environment or harm to human health.
- 5.3.3 Excavated material that does not meet any one of the above six criteria, but undergoes some form of treatment to ‘recover’ the waste, such that it does become suitable for use, will be classed as waste initially; however, following treatment and reuse on site it will no longer be a waste. Anticipated regulatory license requirements for this site are discussed further below.
- 5.3.4 All excavated peat can justifiably reused on site as part of the construction works, hence criteria (i) and (iv) in the list above are likely to be met in all instances. However, dependant on the material description (refer above to classification) and intended reuse, other criteria may not be met in all instances as described in Table TS3-1 below.

Table TS3-1: Is it Waste?	
“Not Waste” Criteria	“Not Waste” Criteria met?
i) The use is a necessary part of the planned works.	Yes. Appendix A14.4 demonstrates that all excavated peat can be reused on site (more peat is estimated to be required for re-use than is to be excavated).
ii) The material is suitable for that use.	Not always. Where peat loses integrity and structure upon excavation and handling, subsequent reuse may be limited without further treatment (dewatering or mixing) or other specific engineering controls at the site of reuse. If treatment or engineering controls are required this may be classed as waste.
iii) The material does not require any processing or treatment before it is reused.	Not always. Refer ii) above.
iv) No more than the quantity necessary is used.	Yes. Appendix A14.4 demonstrates that all excavated peat can be reused on site and it is unlikely that surplus quantity will be generated that does not have a required use.
v) The use of the material is not a mere possibility but a certainty.	Yes. All reinstatement works are certain to be required as detailed within TS7.
vi) Use of the material will not result in pollution of the environment or harm to human health.	Not always. Material that is unsuitable for use without treatment due to its low structural integrity could result in peat slide or excessive run off that may cause pollution of water courses. Similarly, the liquefied nature of this material may pose a hazard to humans or livestock walking over the area if deposited at significant depth without mitigating measures put in place.

5.3.5 For the purposes of waste description, excavated peat that does not meet all of the above criteria would fall under Chapter 17 of the European Waste Catalogue (EWC), ‘Construction and demolition wastes’, and the EWC Code ‘17 05 04, soil and stones’ (non-hazardous) would apply.

5.3.6 At all stages in the development and construction process, the principles of the waste hierarchy will be strictly adhered to in order to avoid and/or minimise production of excavated peat, and ensure that all materials are recovered and reused on site. Waste

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy <small>Harnessing Shetland's natural resources</small>
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 14

peat will not be sent for disposal, recovery and / or reuse off site². This reflects the requirements of EC Directive 2006/12/ED, which states:

“Movements of waste should be reduced”.

5.4 Waste Management License Exemptions

- 5.4.1 Activities exempt from waste management licensing are detailed within the Waste Management Licensing Regulations 1994 (WML) (as amended). It is noted that there is currently a Scottish Government consultation out on consolidation of the Waste Management Licensing Regulations in Scotland which will allow for the transposition of the provisions of the revised Waste Framework Directive (2008/98/EC). These provisions must be transposed into Scots law before 12 December 2010. The draft Waste Management Licensing (Scotland) Regulations 2010 are available to review as part of this consultation. Relevant to the use of peat on wind farm developments, the consultation document proposes removal of the essentially arbitrary 2 metre depth restriction on a Paragraph 9 Exemption.
- 5.4.2 Activities exempt from waste management licensing are set out in Schedule 1, Regulations 2(1) and 17) of the WML Regulations. Of these, Paragraph 9 may be relevant to the use of peat in borrow pits under certain circumstances only.
- 5.4.3 In applying this exemption, it is assumed that the excavated catotelmic peat will be only be used in restoration works where the topography allows straight forward deposition with no pre-treatment or containment measures and without risk to the environment. Suitable scenarios may present in those disturbed areas where natural topography or borrow pit pre-restoration profile allows such use.
- 5.4.4 Table TS3-2 describes the conditions that apply to the use of a Paragraph 9 exemption and the implications on the use of untreated catotelmic peat in restoration works.

Table TS3-2: Paragraph 9 WML Exemption Conditions	
Conditions	Does this condition restrict the use of peat in restoration?
Paragraph 9-	
(1) Subject to the following provisions of this paragraph—	
(a) the treatment of land with any of the wastes listed in Part I of Table 3;	No Part II of Table 3 includes 17 05 04 (soil and stones) (non-hazardous).
(b) the treatment of land with any of the wastes listed in Part II of that Table where such treatment results in benefit to agriculture or ecological improvement;	

² Various alternative off-site options were previously considered in the original ES (Appendix 14.4) and it was concluded that, for reasons relating to practicality and environmental sustainability, export of peat for either disposal or recovery/alternative reuse is not feasible.



TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harnessing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	

Table TS3-2: Paragraph 9 WML Exemption Conditions	
Conditions	Does this condition restrict the use of peat in restoration?
(c) the secure storage, at the place where it is to be used and for a period not exceeding 6 months, of waste intended to be used in reliance upon the exemption conferred by paragraph (a) or (b).	<p>No</p> <p>Material will not be stored for more than 6 months prior to final use in restoration works.</p>
(2) Sub paragraph (1) does not apply to the use of waste at a site designed or adapted for the final disposal of waste by landfill at any time when such disposal is the subject of a waste management licence or a permit granted under regulation 7 of the 2000 Regulations ³ .	<p>No</p> <p>Borrow pits (or any other area) are not being used for final disposal of peat or any other material and will not be designed or adapted in any way. Only areas with suitable topographical, geological, hydrological and ecological conditions will be selected for reinstatement or restoration and fill-in work using peat or other suitable materials. On this basis the reuse site will not be the subject of a site license or landfill permit. Article e 3(2) of the Landfill Directive specifically excludes the <i>“use of inert waste which is suitable, in redevelopment/restoration and filling-in work, or for construction purposes, in landfills”</i> from the scope of the Directive. Restoration of the borrow pit would be classed as a recovery operation as the borrow pit has not been designed for the final disposal of waste.</p> <p>The Waste Framework Directive includes a recovery category of <i>“land treatment resulting in benefit to agriculture or ecological improvement”</i>. This is supported by Recitals 15 and 3 of the Landfill Directive which state respectively:</p> <p><i>“the recovery of inert or non hazardous waste which is suitable, through their use in redevelopment/restoration and filling-in work, or for construction purposes may not constitute a landfilling activity.”</i></p> <p>And</p> <p><i>“the prevention, recycling and recovery of waste should be encouraged as should the use of recovered materials and energy so as to safeguard natural resources and obviate wasteful use of land”.</i></p>
(3) Sub paragraph (1) applies only where—	
(a) the waste is used for the purpose of reclamation, restoration or improvement of land which has been subject to industrial or other man made development;	<p>No</p> <p>Borrow pit restoration with peat contributes to achieving biodiversity benefits, reducing landscape and visual impacts and is the most sustainable option in terms of carbon emissions and environmental impacts associated with alternative treatment options and / or off-site disposal or</p>

³ Refers to: Pollution Prevention and Control (Scotland) Regulations 2000 (PPC)

Table TS3-2: Paragraph 9 WML Exemption Conditions	
Conditions	Does this condition restrict the use of peat in restoration?
	reuses.
(b) the waste is suitable for use for the purposes mentioned in sub paragraph (a);	<p>No (refer paragraph (a) above), plus provisional on:</p> <p>Compliance with Waste Framework Directive which states waste must be “<i>recovered or disposed of without endangering human health and without using processes or methods which could harm the environment, and in particular:</i></p> <p><i>i) without risk to water, air or soil, or to plants or animals;</i></p> <p><i>ii) without causing a nuisance through noise or odours; and</i></p> <p><i>iii) without adversely affecting the countryside or places of special interest.”</i></p> <p>To meet the above provisions, only areas with suitable topographical, geological, hydrological and ecological conditions will be selected for use. Depths of liquefied peat will not exceed a maximum safe depth for either humans or animals who may be at risk, and will pose no risk of residual instability or pollution of the surrounding environment (either from mass movement, creep or leaching of deposited material).</p>
(c) the waste is used in accordance with the requisite planning permission (if any);	<p>No</p> <p>Within the ES it is stated that borrow pit restoration is required to minimise visual impacts and facilitate habitat and ecological restoration, improvement and enhancement. Should planning consent be granted on this basis then this would become a planning requisite.</p>
(d) the waste is used to a depth not exceeding the final cross sections shown on the plan submitted under regulation 25(2) or 26(2) of these Regulations; and	No (refer to Table 3 below).
(e) the waste used does not exceed 20,000 cubic metres per hectare.	<p>No</p> <p>Appendix 14.4A indicates that if all material excavated were to be used on site, the total depth required for reinstatement within borrow pits would not exceed 2m (20,000m³/ha equivalent). Furthermore, as with sub-paragraph (b) response above, the depth of (untreated) waste will not exceed 2m as this would pose an unacceptable risk.</p>


TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy <small>Harnessing Shetland's natural resources</small>
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 17

5.4.5 As detailed within Schedule 3, Regulation 25(2) of the WML Regulations, registration for a paragraph 9 exemption requires preparation and submission to SEPA of a number of plans and documents as detailed within Table TS3-3. These plans and documents will be prepared by the *Contractor* prior to the reuse of any untreated catoltelmic peat on site.

Table TS3-3: Registration Requirements for Paragraph 9 Exemption (as per Schedule 3, Regulation 25(2) of WML Regulations)
<p>A plan of each place at which the exempt activity is to be carried on showing—</p> <p>(a) the boundaries of that place; and</p> <p>(b) the locations within that place at which the exempt activity is to be carried on.</p>
<p>1. The notice shall include the following particulars—</p> <p>(a) the establishment or undertaking's name, address and telephone number and, if applicable, its fax number and email address.</p> <p>(b) where less than 2,500 cubic metres of waste are to be used, a description of the treatment, the type and quantity of waste to be used and the location of the treatment;</p> <p>(c) where 2,500 or more cubic metres of waste are to be used—</p> <p style="padding-left: 40px;">(i) the total quantity of waste to be used;</p> <p style="padding-left: 40px;">(ii) the type of waste to be used, identified by reference to the descriptions in the second column of Table 3;</p> <p style="padding-left: 40px;">(iii) the location of the land where the waste is to be used or stored, identified by reference to a map and a six figure Ordnance Survey grid reference, including the name, address, telephone number and, if applicable, the fax number and email address of the landowner</p> <p style="padding-left: 40px;">(iv) a plan of the use with cross-sections showing the proposed levels of the land affected by the treatment;</p> <p style="padding-left: 40px;">(v) the intended start and completion date of the use or storage.</p>
<p>2. Where any of the wastes listed in Part II of Table 3 is to be used, the notice shall be accompanied by a certificate describing how the activity will result in benefit to agriculture or ecological improvement, which shall be prepared by or based on advice from a person who, in the opinion of the appropriate registration authority, has appropriate technical or professional expertise.</p>

5.5 Mobile Plant License and Recovery of Waste

5.5.1 Management of waste under a Paragraph 9 exemption must be investigated as a preferred route over a MPL as treatment of peat waste will require more handling and disturbance of the material and therefore increase in C emissions from atmospheric and aqueous losses from the peat itself (from dewatering and drying out of the

TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harnessing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	
		Page 18

excavated material required to render it suitable for use) as well as additional carbon emissions from additional mechanical plant required on site to undertake the treatment.

- 5.5.2 Where a Paragraph 9 waste management license exemption is not applicable (for example where the site of reuse requires modification or the waste requires treatment in order to be reused without posing a risk to the environment etc), waste catotelmic peat will be treated prior to reuse under a Mobile Plant License until the waste is fully 'recovered' and suitable for reuse in restoration and landscaping works.
- 5.5.3 The *Contractor* will prepare, submit and obtain approval from SEPA of his site specific 'Working Plan' for treatment of waste catotelmic peat. Treatment may comprise mixing with suitable non-waste material or dewatering to produce a fill material that is suitable for reuse in restoration works without any further specific engineering measures required at the site of reuse.
- 5.5.4 As a minimum the Working Plan will include all details as referred to in Section 3) of Tables TS3-4 below.

Table TS3-4: Mobile Plant License Guidance <i>(SEPA Interim Guidance on Mobile Plant, issued 19 June 2006, quoted in italics)</i>	
<p>1) A mobile plant licence applies to:</p> <p><i>"Under Regulation 12 of the Waste Management Licensing Regulations 1994, as amended, it is possible to apply for a mobile plant licence for, amongst other things, the treatment of waste soil.</i></p> <p><i>A mobile plant licence specifies the mobile plant that can be used for the treatment and disposal of specified controlled waste. Licence conditions cover the treatment and/or disposal activities.</i></p> <p><i>"A single mobile plant licence can cover several pieces of mobile plant and types of treatment on a number of different sites at the same time".</i></p>	
<p>2) A mobile plant licence will not apply where:</p> <ul style="list-style-type: none"> • <i>"the waste soil needs to be encapsulated eg. in a bund;</i> • <i>where technical precautions must be employed to make the waste soil fit for use eg. capping it to avoid water ingress or to prevent direct contact, or</i> • <i>where residual contaminants are likely to be mobilised".</i> 	
<p>3) A site specific working plan must include:</p> <ul style="list-style-type: none"> • <i>"The operation of the site. e.g. the specific plant and equipment necessary to facilitate the operation of the plant, the treatment process, the types and quantities of wastes to be treated including any wastes necessary for use in the</i> 	


TECHNICAL APPENDIX A14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy <small>Harnessing Shetland's natural resources</small>
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	

Table TS3-4: Mobile Plant License Guidance

(SEPA Interim Guidance on Mobile Plant, issued 19 June 2006, quoted in italics)

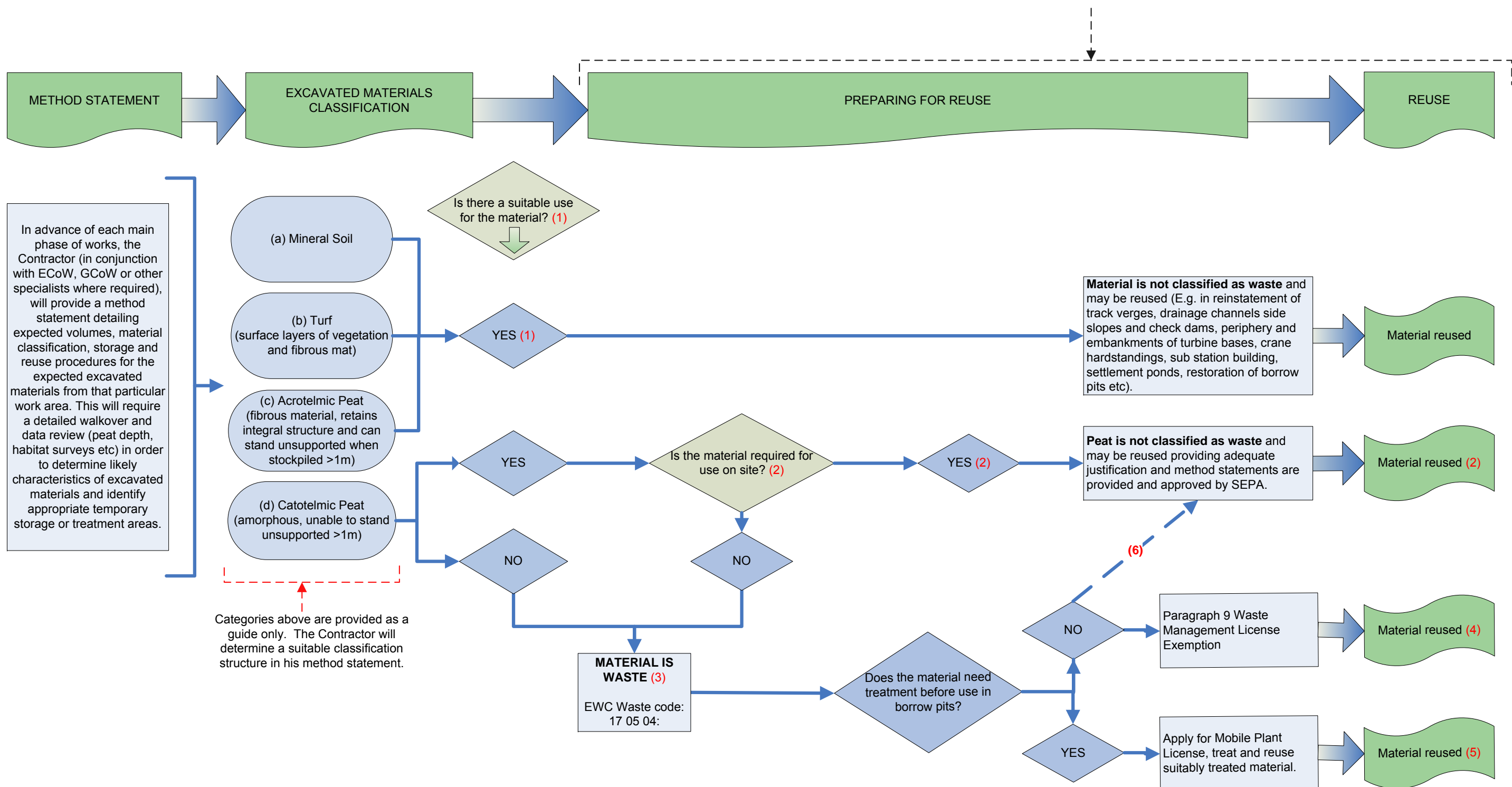
treatment of the wastes

- *Site infrastructure. e.g. Security provisions, location of waste storage and treatment*
- *Pollution control. e.g. procedures for dealing with pollution incidents and other emergencies, a groundwater risk assessment or justification that there is no potential for the mobilisation and/or discharge of list I or List II substances to groundwater, dust minimisation, litter control,*
- *Site completion e.g. procedures to be used to clean the Mobile Plant of all wastes and treatment chemicals before it is moved to another location.*
- *Monitoring. e.g. monitoring and pollution control methods to be utilised on Site.*
- *Site Location Plan. e.g. a location plan of the area where treatment is to be carried out“.*

The Working Plan will also include suitable material specification / reuse criteria and details of required materials inspection / compliance testing procedures.

Figure TS3-2: Excavated Materials - Outline Waste Classification and Procedures for Reuse

Handling, storage and re-use will be in line with current industry good practice and as outlined within SEMP TS7.




TECHNICAL APPENDIX 14.6 VIKING WIND FARM ADDENDUM ENVIRONMENTAL STATEMENT		 viking energy Harnessing Shetland's natural resources
SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP) TECHNICAL SCHEDULE No. 3 SITE WASTE MANAGEMENT PLAN (SWMP)		
Document Ref.	TS3	

Figure TS3-2: Excavated Peat - Outline Waste Classification and Procedures for Reuse

NOTES:

(1)

Is there a suitable use for the material without need for treatment and without risk to the environment or human health?

For categories (a), (b) and (c), based on the information provided in TS7, Excavated Materials and Reinstatement Plan and Appendix A14.4 (and summarised in Section 5.2 of this TS3. Site Waste Management Plan (SWMP)), the answer is expected to be "Yes" as these materials are required in reinstatement works. For category (d) preliminary volume estimates provided in Appendix 14.4 indicate that there will be a need to reuse catotelmic material to provide sufficient quantities of material to complete borrow pit and other restoration works as required as part of the works. However, due to the physical characteristics of this material, required treatment and reuse options must be carefully considered.

(2)

To answer "yes": the material must be required in its excavated state and the six criteria referred to in Table TS3-1 of the SWMP must be met. The use must not entail any form of treatment, specialist containment or engineering at the site of use.

Such uses for this type of material are limited, however there may be justification for use in some habitat management works such as gully or ditch blocking where saturated peat is required to mimic mire type habitats and encourage establishment of sphagnum. While containment may be required for ditch blocking this is not considered to be treatment or engineering required for the final disposal of waste, rather it is the objective of the raising water table.

Material such as this may also be required at the base of borrow pits for fill material, again to mimic wetland habitat; however the use must be fully justified and the borrow pit base profile must be such that the material will not be released or be of sufficient depth to pose a risk to humans, livestock or the environment.

(3)

Waste excavated materials must not leave site and must be reused in site reinstatement and restoration activities, including the restoration of borrow pits. Restoration is required for:

- i) Enhanced amenity value and reduction in landscape and visual impacts.
- ii) Bio-diversity enhancement through habitat restoration.
- iii) Removal and reduction in environmental (pollution from run off and erosion) and health & safety (high walls, pollution of water supplies etc) risks associated with exposed soil and rock faces.

Waste may either be reused under an exemption, or if treatment is required prior to use then treatment will be undertaken under a Mobile Plant license such that the material is 'recovered' and is no longer classified as waste prior to use. The essential characteristic of a waste recovery operation is that the waste must serve a useful purpose in replacing other materials which would have had to be used for that purpose, thereby conserving natural resources.

(4)

In order to reuse material under a Paragraph 9 exemption, ecological benefit must be fully justified for each site of reuse, the material must be reused in accordance with all exemption conditions and reuse must not pose any risks to environmental receptors, including humans and livestock.

(5)

It must be demonstrated that there is a requirement for the treated material. In this case, the preliminary volume estimates indicate a neutral or even potential deficit materials mass balance and therefore there is a need to create a suitable product (fill material) from the waste in order to complete site reinstatement activities, including borrow pit restoration.

(6)

In some site-specific situations, although material may be classed as a waste according to the legal definition, if it does not require treatment before disposal within borrow pits, SEPA may not require an exemption provided that it may be demonstrated that no harm will be caused by the deposit. This was discussed with SEPA during consultations held prior to submission of the ES Addendum and it is recognised by both parties that while this may be an option, this will require very detailed consideration and specific consultation on a site by site basis (i.e. localised areas within the Viking Wind Farm site).