



SEVERN ROAD RESOURCE RECOVERY CENTRE

CHAPTER 1 INTRODUCTION

Viridor

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INTRODUCTION

- 1.1 Viridor Waste Management Ltd (the applicant) is proposing to develop a Resource Recovery Centre incorporating a Materials Recycling Facility (MRF) and an Energy from Waste (EfW) facility on the northern part of the Sevalco Plant site in Avonmouth. The full address of the site is Severn Road, Chittening, Avonmouth, Bristol BS11 0YU. The site is located at National Grid Reference 353797, 181739 around 7 miles north west of Bristol city centre. The site location is shown in Drawing 1-1 Site Location Plan.
- 1.2 The site will be known as the Severn Road Resource Recovery Centre (SRRRC) and full description of the application is as follows:
- “The construction and operation of a Resource Recovery Centre including a Materials Recycling Facility, an Energy from Waste and Bottom Ash Facility, associated Office, Visitor Centre with new access road and weighbridge facilities, associated landscaping and surface water attenuation features.”*
- 1.3 The application site comprises about 8.3 hectares of land located adjacent to Severn Road and about 230 metres east of Chittening Road, which is the main road providing a north/south connection within the Avonmouth industrial area. The site is shown in its local context on the aerial photograph¹ set out below.
- 1.4 This Environmental Statement (ES) reports the results of an Environmental Impact Assessment (EIA) which has been undertaken by SLR Consulting Ltd.



¹ www.googleearth.com

Surrounding Area

- 1.5 Avonmouth is an extensive, long established industrial area that serves the West of England sub region and beyond. It hosts a wide range of general industrial uses, specialist industries, port facilities, storage and distribution, power generation and waste management uses and has excellent links to the strategic route network.
- 1.6 The Avonmouth area is clearly defined as part of the Severn and Avon flood plains separated from the rest of Bristol to the south east by the M5 Motorway. As an established industrial area it is well separated from residential development with only a few isolated properties to the east of the site on Minor's Lane approximately 1000 metres away. The closest property on Minor's Lane is derelict. The site is not within a water Source Protection Area and there are no surface water abstractions within 1 km of the site.

Access

- 1.7 The site is currently served from Severn Road via two priority T-Junctions. To the west of the site, Severn Road joins with the A403 via an at grade T junction, with the major road of the junction passing through a near 90 degree bend, with the minor arm being on the apex of the bend. It is proposed to upgrade this junction through the provision of traffic lights and a right hand turn lane as part of the development.

The Applicant

- 1.8 The proposed facility would be owned and operated by Viridor. Viridor, owned by the Pennon Group, is part of a major PLC that is focused on the water and waste management industries. Viridor is one of the UK's leading waste management companies and has 241 operational sites in the UK, including 24 landfill sites and 18 MRFs. Viridor was the first UK waste company to achieve ISO 14001, the highest international environmental management standard, across all its major operational sites. Under the Business Management System sites and services are accredited by BSI auditors to ensure the demanding international standards are met.
- 1.9 Waste management services offered by Viridor include:
 - Materials Recycling Facilities (MRF);
 - Bulking and transfer stations;
 - Materials collection;
 - Glass reprocessing;
 - Composting (Windrow and In-vessel);
 - Waste treatment;
 - Transportation;
 - Household Waste Recycling Centres;
 - Product destruction/recovery;
 - Residual waste disposal;
 - Landfill gas utilisation;
 - Energy from Waste (EfW)

SUMMARY OF DEVELOPMENT

- 1.10 In essence the development is for the construction of a Materials Recycling Facility (MRF) which will sort and bulk up recyclable waste and an Energy from Waste facility that would generate energy and heat from the treatment by combustion of residual waste. The EfW will incinerate 350,000 tonnes per annum of non hazardous, residual Municipal Solid Waste (MSW), Commercial and Industrial waste (C & I) and residues from other waste treatment processes. Residual waste is that which remains after materials suitable for recycling and composting have been removed. Bottom ash generated by the process will be treated on site to produce a secondary aggregate.
- 1.11 The EfW facility will generate up to 30MW of electricity annually, which will be sufficient for the energy needs of the facility and allow for the export of the substantial surplus to the National Grid. The heat from combustion of the waste will be recovered initially to form steam and ultimately as electrical energy. This is enough to serve around 42,000 households². The heat that is produced is recovered within a waste boiler to form high pressure steam, which is used to drive turbines to generate electricity. The Heat Plan in Volume 3 identifies commercial, industrial and public institutions within 5km of the site which could benefit from the energy produced by the SRRRC.
- 1.12 The EfW facility will be totally enclosed within a purpose-built new building that is appropriately designed for its surroundings. The main structure (including the MRF) will be 200 metres long and vary between 21.8m and 49 metres in height at the apex of the main roof. The width of the building will vary from 60.4m to 83.1m. The associated chimney stack is proposed to be 90m high. The bottom ash facility will be located to the north of the EfW.
- 1.13 The remaining land would be used for traffic management and circulation and landscaping. All reception and treatment of wastes would take place within the building. The entire facility and its immediate setting has been designed by Architecture and Planning Solutions; an architectural practice with extensive experience in the design of similar facilities.
- 1.14 The construction and commissioning period for this development is in the region of 3 years so it is anticipated that the plant would become operational in 2014, subject to planning approval.

Traffic and Transport

- 1.15 The Technical Assessments in the ES have assumed that all waste will be brought into the site by road. Waste will be imported on a range of vehicles, including direct delivery by refuse collection vehicles (RCVs) and articulated bulk imports from waste transfer stations.
- 1.16 The proposed SRRRC is designed to deal with around 500,000 tonnes of waste per annum. It is estimated that the operation of the EfW will generate 64 HGV trips a day (128 two way movements) and 26 RCV (52 two way

² Ofgem average electricity use per household

movements) a day. This figure is based on an average of 8 tonne loads for RCVs, 20 tonne loads for bulk imports and a 5 and a half day working week. Waste is likely to be brought into the site consistently throughout the day and will not peak in line with traffic on the surrounding roads. The EfW facility would operate continuously on a 24-hour, seven days per week basis. However, it is anticipated that waste will mainly be delivered to the site between 6am and 8pm.

- 1.17 The MRF will generate a maximum of 142 RCV movements and 56 HGV movements per day daily vehicle trips with a similar pattern to the EfW. Of the 150,000 tonnes imported to the MRF, 60,000 tonnes of waste imported to the MRF will be transferred to the EfW and this accounts for the relatively low number of lorry movements to the EfW when compared to the MRF. In total, the SRRRC will generate an estimated 378 HGV and RCV movements per day.
- 1.18 The Transport Assessment undertaken, see Chapter 6 of the ES (Volume 2), concludes that following mitigation, the proposed development will not have significant impacts on the highway network. Mitigation is primarily provided by the proposed highway improvements and a Travel Plan, including a ban on all traffic associated with the development going through Hallen.

DESIGN OF THE FACILITY

- 1.19 The aim of the design is an attractive, sustainable, environmentally friendly, exemplar waste management facility that fits well into the industrial setting. The materials will be attractive but durable and self cleaning.
- 1.20 The building will be angular, with the highest sections to the west and the lowest to the east, where the site can be viewed from semi open countryside and villages to the east.
- 1.21 Translucent panels will be used in the roof and facades, to bring natural light into the building and reduce the need for artificial lighting. The use of translucent panels will also reduce the visual 'bulk' of the building as it will not appear as such a solid shape.
- 1.22 It is proposed to retain as many of the mature trees on the south east boundary as possible and increase the planting along the southern edge, where the site meets Severn Road. The less industrial aspects of the facility e.g. offices and Visitor Centre will also be located on this southern edge. More industrial facilities, such as the bottom ash plant will be located on the northern edge of the site, adjacent to a scrapyard. The MRF will be integrated into the main building in order to ensure that all waste handling and storage operations are contained within a building.

REQUIREMENTS FOR AN ENVIRONMENTAL IMPACT ASSESSMENT

- 1.23 The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, as amended by the Town and Country Planning (Environmental Impact Assessment) (England and Wales)

(Amendment) Regulations 2000, (hereafter jointly referred to as the EIA Regulations) implement Council Directive No 85/337/EEC (as amended) on the assessment of the potential effects of specified development proposals on the environment. The Regulations came into force on 14th March 1999. Prior to the grant of a planning permission in respect of any proposal to which the EIA Regulations apply, an Environmental Impact Assessment (EIA) is required. Responsibility for compiling information regarding environmental effects lies with the developer, and the information is presented as an 'Environmental Statement'.

- 1.24 The EIA Regulations specify the types of development for which an EIA is mandatory (Schedule 1 Projects) and categories of development where an EIA may be required (Schedule 2 Projects). In connection with the proposed SRRRC, it is considered to be a Schedule 1 development as specified in Category 10 of the Regulations:

“...waste disposal installations for the incineration or chemical treatment (as defined in Annex IIA to Directive 75/442/EEC (a) under heading D9) of non-hazardous waste with a capacity exceeding 100 tonnes per day.”

- 1.25 Accordingly Viridor has commissioned SLR Consulting Limited to prepare an Environmental Statement to accompany the planning application. SLR is a multi-disciplinary environmental consultant to, amongst others, the minerals and waste management industries, and also provides advice to local authorities and the Environment Agency on strategic issues. SLR is a registered Environmental Impact Assessor Member of the Institute of Environmental Management and Assessment (IEMA).
- 1.26 The ES is intended to provide the local planning authority (i.e. Bristol City Council) with sufficient information to determine the planning application having due regard to the protection of local amenity and the environment as a whole.

APPROACH TO ASSESSMENT

- 1.27 The EIA process has considered both the construction and operational impacts of the proposed SRRRC.
- 1.28 For this project, the prediction of potential impacts has been undertaken in parallel with the architectural design process. This iterative process has allowed for the incorporation of design measures with a view to minimising/avoiding any unacceptable environmental impacts, particularly during the construction and operation of the proposed development. Such design measures relate to the layout of the facility, the height of the stack, and the location of specific elements associated with the process.
- 1.29 As required by the EIA Regulations, the assessment of impacts has been carried out according to its type (beneficial or adverse) and duration (temporary or permanent). Residual and cumulative impacts have also been considered. These are described in the relevant ES chapters and summarised in the Cumulative Impact chapter.
- 1.30 For each environmental aspect, the detailed assessment methodology is discussed in the relevant ES Chapter. The criteria used for assessing the degree of significance are based on the relevant technical guidance from the

appropriate professional institute and/or industry good practice. Where well-documented significance criteria are not available, generic significance criteria (Table 1/1) have been used based on the requirements of the EIA Regulations. They have been developed following research and based on SLR's expertise and experience in carrying out EIA's.

Table 1/1 Generic Significance Criteria

| Significance | Criteria |
|---|--|
| <p>Severe – for adverse effects only Major* - for beneficial effects only</p> | <p>Severe or major* effects represent key factors in the decision-making process. They will principally occur where very important resources are subject to extreme effects. Such effects are generally, but not exclusively, associated with any recognised or designated sites/features of international or national importance. Mitigation measures are unlikely to remove or modify the adverse effects. Major* beneficial effects may occur if there is a substantial increase in the value of the environmental resource qualitatively or quantitatively on an international or national level.</p> |
| <p>Major</p> | <p>Major effects are important considerations on a regional or county level, principally affecting very important resources or creating extreme effects on important resources. Mitigation measures and detailed design work are unlikely to remove all the adverse effects by virtue of the magnitude of the predicted effects. Major beneficial effects may occur if there is a substantial increase in the value of the environmental resource qualitatively or quantitatively on a regional or county level.</p> |
| <p>Moderate</p> | <p>Moderate effects are important considerations at a district level, but are unlikely to be key decision making issues. They will principally occur where important resources are moderately or slightly affected, or where lesser resources are affected in the extreme. Mitigation measures and detailed design work may ameliorate some of the consequences on the affected communities or interests; however, some residual effects will still arise. Moderate beneficial effects may occur if there is a considerable increase in the</p> |

value of the resource on a district level.

Minor

Minor effects are experienced at the local level and do not represent important issues in the decision making process. Assignment of this level of significance will principally occur if less important environmental resources experience more limited effects.

Appropriate mitigation measures may reduce, remove or even reverse such effects.

Minor beneficial effects may occur if there is only a limited increase in the value of the resource at a local level.

Negligible

Effects are assigned to this level if they are nil, imperceptible, negligible, within normal bounds of variation, or within margins of forecasting error when compared to the existing situation.

- 1.31 In order to determine the degree of any effect, a series of baseline surveys have also been undertaken for the purpose of the EIA. These are referred to in greater detail within the relevant ES chapters.

THE PLANNING APPLICATION & ENVIRONMENTAL STATEMENT

- 1.32 In accordance with the Regulations, this ES accompanies the formal Planning Application and is 1 of 5 volumes. In total the submission consists of the following:

VOLUME 1 - PLANNING APPLICATION

- Application Forms;
- Ownership Certificates;
- Design and Access statement;
- Planning Supporting statement;
- BREEAM pre-assessment;
- Application drawings;
- Statement of community involvement; and
- Site waste management plan.

VOLUME 2 - ENVIRONMENTAL STATEMENT (ES)

Reports the findings of the Environmental Impact Assessment (EIA) and is presented as follows:

- | | |
|-----------|-----------------------------|
| Chapter 1 | Introduction; |
| Chapter 2 | Site and Surroundings; |
| Chapter 3 | Description of Development; |

| | |
|------------|---|
| Chapter 4 | Planning Policy Considerations; |
| Chapter 5 | Need and Alternatives; |
| Chapter 6 | Traffic and Transportation; |
| Chapter 7 | Air Quality; |
| Chapter 8 | Noise and Vibration; |
| Chapter 9 | Hydrology and Flood Risk Assessment; |
| Chapter 10 | Land Quality; |
| Chapter 11 | Landscape and Visual Impact Assessment; |
| Chapter 12 | Ecology and Nature Conservation; |
| Chapter 13 | Cultural Heritage; |
| Chapter 14 | Climate Change; |
| Chapter 15 | Socio Economic Impact Assessment; |
| Chapter 16 | Human Health Assessment; |
| Chapter 17 | Cumulative Impact; and |
| Chapter 18 | Conclusions. |

VOLUME 3 - APPENDICES TO TECHNICAL ASSESSMENTS

1.0 INTRODUCTION

Appendix 1A Request for a Scoping Opinion Report to Bristol City Council
Appendix 1B Adopted Scoping Opinion

2.0 SITE AND SURROUNDINGS

Site Location, Context and Survey Plans

3.0 DESCRIPTION OF DEVELOPMENT

Planning Drawings

4.0 PLANNING POLICY

No Appendix Document

5.0 NEED AND ALTERNATIVES

Table 1 Alternative Site Assessment Scoring Matrix
Annex A Sankey Diagram of Treatment Scenarios

6.0 TRAFFIC AND TRANSPORTATION;

Drawings

| | |
|-------------|-------------------------------|
| Drawing 6/1 | Site Location |
| Drawing 6/2 | Proposed Highway Improvements |
| Drawing 6/3 | Swept Path Analysis |
| Drawing 6/4 | Study Area Road Network |
| Drawing 6/5 | Personal Injury Accidents |

Appendices

| | |
|--------------|--------------------------------|
| Appendix 6/1 | Copy of Scoping Correspondence |
|--------------|--------------------------------|

| | |
|---------------|---|
| Appendix 6/2 | Proposed Development Layout |
| Appendix 6/3 | Traffic Survey Results |
| Appendix 6/4 | Surveyed Traffic Flow Network Diagrams |
| Appendix 6/5 | Committed Development Traffic Flow Network Diagrams |
| Appendix 6/6 | Baseline Traffic Flow Diagrams |
| Appendix 6/7 | Baseline Capacity Analysis of Existing Severn Road / Chittening Road Junction |
| Appendix 6/8 | Baseline Capacity Analysis of St. Andrew's Gate Roundabout |
| Appendix 6/9 | Baseline Capacity Analysis of Redwick Crossroads |
| Appendix 6/10 | Accident Data |
| Appendix 6/11 | Traffic Calculations |
| Appendix 6/12 | Net Development Traffic Flow Diagrams |
| Appendix 6/13 | Base + Development Traffic Flow Diagrams |
| Appendix 6/14 | Traffic Impact |
| Appendix 6/15 | 'With Development' Capacity Analysis of Improved Severn Road / Chittening Road Junction |
| Appendix 6/16 | 'With Development' Capacity Analysis of St. Andrew's Gate Roundabout |
| Appendix 6/17 | 'With Development' Capacity Analysis of Redwick Crossroads |

7.0 AIR QUALITY;

- 7.1 Atmospheric Dispersion Modelling
- 7.2 Traffic Emissions Assessment

8.0 NOISE AND VIBRATION;

- 8/1 Glossary of terminology
- 8/2 Noise Monitoring Equipment
- 8/3 Noise Monitoring Locations
- 8/4 Full Survey Results
- 8/5 List of Plant
- 8/6 Limitations to the Report

9.0 HYDROLOGY AND FLOOD RISK ASSESSMENT;

- 9.1 Borehole Logs
- 9.2 Groundwater Hydrographs
- 9.3 Groundwater Quality
- 9.4 Summary of Environment Agency Surface Water Quality Monitoring
- 9.5 Flood Risk Assessment

VOLUME 3 (I) - APPENDICES TO TECHNICAL ASSESSMENTS (CONTINUED)

10.0 LAND QUALITY;

- 10.1 Phase 1 Contamination Due Diligence Report
- 10.2 Phase 2 Due Diligence Land Quality Assessment
- 10.3 Generic Land Quality Risk Assessment

11.0 LANDSCAPE AND VISUAL IMPACT ASSESSMENT;

- APPENDIX 11/1 – Detailed Landscape and Visual Methodology
- APPENDIX 11/2 – Magic Site Report
- APPENDIX 11/3 – Landscape Planning Policy
- APPENDIX 11/4 – Landscape Character Areas
- APPENDIX 11/5 – Glossary

- 11/1 - Landscape Receptors
- 11/2 - Landscape Character
- 11/3 - Topography
- 11/4 - Landscape Setting
- 11/5 - Zone of Theoretical Visibility, Chimney Stack
- 11/6 - Zone of Theoretical Visibility, EfW Building
- 11/7 - Viewpoint A
- 11/8 - Viewpoint B
- 11/9 - Viewpoint C
- 11/10 - Viewpoint D
- 11/11 - Viewpoint E
- 11/12 - Viewpoint F
- 11/13 - Viewpoint G
- 11/14 - Viewpoint H
- 11/15 - Viewpoint I
- 11/16 - Viewpoint J
- 11/17 Viewpoint K
- 11/18 Conceptual Landscape Masterplan
- 11/19 Viewpoint A Photomontage
- 11/20 Viewpoint B Photomontage
- 11/21 Viewpoint C Photomontage
- 11/22 Viewpoint D Photomontage
- 11/23 Viewpoint E Photomontage
- 11/24 Viewpoint F Photomontage
- 11/25 Viewpoint G Photomontage
- 11/26 Viewpoint H Photomontage
- 11/27 Viewpoint I Photomontage
- 11/28 Viewpoint J Photomontage
- 11/29 Viewpoint K Photomontage

12.0 ECOLOGY AND NATURE CONSERVATION;

- 12.1 Results of Extended Phase 1 Habitat Survey
- 12.2 Water Vole Survey
- 12.3 Reptile Survey
- 12.4 Amphibians Survey
- 12.5 Breeding Birds Survey

12.6 Invertebrates Survey

Drawing 12-1 Phase 1 Habitat Plan

13.0 CULTURAL HERITAGE;

Drawing 13-1 to 13-7

14.0 CLIMATE CHANGE;

14.1 Sustainability Appraisal

14.2 Heat Plan

15.0 SOCIO ECONOMIC IMPACT ASSESSMENT;

No Appendices for Chapter 15

16.0 HUMAN HEALTH ASSESSMENT;

Appendix A – Technical Data for HHRA Generic Assessment Criteria

Appendix B – CLEA v1.05 Record Sheets

Appendix C - CLEA Dioxin Worksheet – Infant/Child/Adult/Farmer

17.0 CUMULATIVE IMPACT;

No Appendices for Chapter 17

18.0 CONCLUSIONS

No Appendices for Chapter 18

VOLUME 4 - NON TECHNICAL SUMMARY

A Non-Technical Summary (NTS) of the ES has been produced as a separate document. This provides, in non-technical language, a brief summary of the proposed development together with the likely effects it would have on the environment.

SCOPING EXERCISE

1.33 Having established that an Environmental Statement was required to be prepared to accompany the proposed scheme, the Town & Country Planning (Environmental Impact Assessment)(England & Wales) Regulations 1999 (EIA Regulations) stipulate that the Applicant may make a request for a formal Scoping Opinion (Part IV Regulation 10).

1.34 A formal request for a Scoping Opinion under Regulation 10 of the EIA Regulations was submitted to Bristol City Council on the 25th June 2009. This enabled the Authority to gain an initial understanding of the project and to undertake a scoping exercise with internal consultees and third-party bodies.

- 1.35 A copy of the “Request for a Scoping Opinion Report” is included in full at Appendix 1A in Volume 3 accompanied by the covering letter by the Authority.
- 1.36 The purpose of the scoping exercise was:
- to focus the EIA on the environmental issues and potential impacts which need the most thorough attention;
 - to identify those which are unlikely to need detailed study;
 - to provide a means to discuss methods of impact assessment and reach agreement on the most appropriate.
- 1.37 Following a consultation exercise that involved a number of statutory and non-statutory organisations, Bristol City Council County Council issued the Scoping Opinion on 29th July 2009. The full response, including supporting information provided by the various consultees is included at Appendix 1B in Volume 3. The adopted Scoping Opinion has fed into this exercise to ensure that the Environmental Statement accurately and comprehensively reflects the proposal.

Planning and Pollution Control Regime

- 1.38 In tandem with the planning process, the Integrated Pollution Prevention Control Directive (96/61/EC) instructs the manner and procedures for the licensing of Energy from Waste plants and other facilities. The EC Directive has been translated into national legislation by the Pollution Prevention and Control Act 1999 and the Pollution Prevention and Control (England and Wales) Regulations 2000 (as amended).
- 1.39 In the event that planning permission is forthcoming, the SRRRC will operate under an Environmental Permit (EP).

Public Consultation

- 1.40 In advance of the submission of the planning application, the Applicant has undertaken an exercise to engage with and inform the public of the proposed development of the SRRRC. The objective of the consultation exercise was four-fold:
- i) to raise awareness of general waste issues in Bristol and the surrounding area;
 - ii) to explain the need for the development at this location;
 - iii) to explain the type of RRC being proposed at the site; and
 - iv) to discuss the environmental issues and concerns associated with a development of this nature.
- 1.41 The consultation exercise involved a number of initiatives that are explained in full in the Statement of Community (see Volume 1) Involvement that accompanies the planning application.
- 1.42 The opinions of local residents and the wider community are essential and are valued by Viridor. The Statement of Community Involvement shows that engagement has been extensive during the preparation of the planning

application and Environmental Statement. It is the intention of Viridor that this will continue throughout the determination process. In the event that planning permission is forthcoming, on-going consultation is proposed during the construction and operational phases of the scheme.

Project Team

- 1.43 This ES has been prepared by SLR. SLR is a multi-disciplinary environmental consultant to the minerals and waste management industries, and also provides advice to local authorities and the Environment Agency on strategic issues³. SLR is a registered Environmental Impact Assessor Member of the Institute of Environmental Management and Assessment (IEMA).
- 1.44 In preparing this planning application and ES, SLR has drawn upon the expertise of an in-house team of specialists comprising planners, architects, landscape architects hydrogeologists and environmental scientists for the majority of the technical assessments. SLR has also worked closely with the management teams and technical staff of Viridor in a detailed and iterative process, to ensure that the working scheme is feasible as well as optimising environmental protection.

³ Further details regarding SLR Consulting Limited can be found on its web site www.slrconsulting.co.uk