CAULMERT LIMITED

Engineering, Environmental & Planning
Consultancy Services

Daneshill Soils Treatment Facility

FCC Recycling (UK) Limited

Activities & Operating Techniques Report

Environmental Permit Variation Application

Prepared by:

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APPROVAL RECORD

Site: Daneshill Landfill - Soils Treatment Facility

Client: FCC Environment Ltd

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Document Title: Activities & Operating Techniques Report

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DISCLAIMER

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1. INTRODUCTION

1.1 Document context

1.1.1 This Activities and Operating Techniques Report is in response to the environmental permit application form C3 for bespoke installation permits.

1.1.2 The C3 form requests information about the activities the application relates to and the operating techniques that will apply to them. Information is requested on: -

a) Types of activities;

b) Types of waste to be accepted;

c) Emissions;

d) Operating techniques including technical standards;

e) General requirements in relation to amenity and accident risks;

f) Types and amounts of raw materials;

g) Information for specific sectors (hazardous and non-hazardous waste recovery and disposal sector);

h) Monitoring of point source emissions;

i) Resource efficiency and climate change.

1.2 Document structure

1.2.1 This 'Activities and Operating Techniques Report' has been prepared to provide responses to the environmental permit application form part C3 which relates to the issues listed above. To aid cross-referencing between this 'Activities and Operating Techniques Report' and the application form, the various issues are presented in the same order as in the application form and the headings in this document include reference to the specific question number to which the information relates.

2. ACTIVITIES

2.1 Activities to be varied (Part C3 question 1)

2.1.1 The activities proposed includes physico-chemical and biological waste treatment of hazardous wastes for recovery, together with the temporary storage of hazardous waste.

Table 1: Types of activities

Name	Installation Schedule 1 reference	Description of the installation activity	Activity Capacity	Annex I and Annex II codes	Hazardous Waste Treatment Facility
Bioremediation process for hazardous waste	Section 5.3 Part A(1) (a)(i)	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment;	29,999 tonnes	R5 D8	29,999 tonnes
Handpicking & Pre-screening of asbestos contaminated soils	S5.3 A(1) (a) (ii)	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment	29,999tonnes	R5 D8	29,999 tonnes
Bioremediation process for Non-hazardous waste	Section 5.4 Part A(1) (a)(i)	Disposal or recovery of non-hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment;	20,001 tonnes	R5 D8	20,001 tonnes
Temporary Hazardous Waste Storage	S5.6 A (1) (a)	Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2 and 5.3;	<29,999 tonnes	R5 D8	29,999 tonnes

Table 2 Directly associated activities

Directly associated activities	
Name of DAA	Description of the DAA (including which Schedule 1 activity it serves)
Fuel Storage	Storage of diesel.
Water storage	Collection and storage of process water
Storage of Waste	Temporary storage of non-haz waste
Screening waste	Screening of non-hazardous waste to remove oversized material after the completion of bioremediation for use in the restoration areas
For installations that take waste	
Total storage capacity	50,000 tonnes
Annual throughput	Waste treatment: 50,000 t

2.2 Types of waste accepted (Part C3 question 1)

2.2.1 The waste types proposed are listed below in Table 3 and 3A. Raw materials for the use as part of the treatment process is detailed in Section 9 'Resource Use – Raw Materials' of the "Treatment Process & SGN 5.06 Indicative BAT review" report document ref: 3982-CAU-XX-XX-RP-V-0306.

Table 3: Wastes to be accepted for physical treatment of waste

01	**Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals**
01 05	**drilling muds and other drilling wastes**
01 05 05*	oil-containing drilling muds and wastes
01 05 06*	drilling muds and other drilling wastes containing hazardous substances
05	**Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal**
05 01	**wastes from petroleum refining**
05 01 05*	oil spills
05 01 15*	spent filter clays
13	**Oil wastes and wastes of liquid fuels (except edible oils, and those in chapters 05, 12 and 19)**
13 05	**oil/water separator contents**
13 05 01*	solids from grit chambers and oil/water separators
13 05 02*	sludges from oil/water separators
13 05 03*	interceptor sludges
13 05 08*	mixtures of wastes from grit chambers and oil/water separators
17	**Construction and demolition wastes (including excavated soil from contaminated sites)**
17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 03*	soil and stones containing hazardous substances
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 05*	dredging spoil containing hazardous substances

17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 07*	track ballast containing hazardous substances
17 05 08	track ballast other than those mentioned in 17 05 07
17 06	**Insulation materials and asbestos-containing construction materials**
17 06 05*	construction materials containing asbestos
17 09	**other construction and demolition wastes**
17 09 03*	other construction and demolition wastes (including mixed wastes) containing hazardous substances
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
17 06	**Insulation materials and asbestos-containing construction materials**
17 06 05*	construction materials containing asbestos
17 09	**other construction and demolition wastes**
17 09 03*	other construction and demolition wastes (including mixed wastes) containing hazardous substances
19	**Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use**
19 02	**wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)**
19 02 04*	premixed wastes composed of at least one hazardous waste – wastes suitable for biological treatment only
19 02 05*	sludges from physico/chemical treatment containing hazardous substances – wastes suitable for biological treatment only
19 02 11*	other wastes containing hazardous substances – wastes suitable for biological treatment only
19 08 13*	sludges containing hazardous substances from other treatment of industrial wastewater
19 13	**wastes from soil and groundwater remediation**
19 13 01*	solid wastes from soil remediation containing hazardous substances
19 13 03*	sludges from soil remediation containing hazardous substances

Table 3A: Wastes to be accepted for treatment in the bioremediation process

01	**Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals**
01 05	**drilling muds and other drilling wastes**
01 05 05*	oil-containing drilling muds and wastes
01 05 06*	drilling muds and other drilling wastes containing hazardous substances
05	**Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal**
05 01	**wastes from petroleum refining**
05 01 05*	oil spills
13	**Oil wastes and wastes of liquid fuels (except edible oils, and those in chapters 05, 12 and 19)**
13 05	**oil/water separator contents**
13 05 01*	solids from grit chambers and oil/water separators
13 05 02*	sludges from oil/water separators

13 05 03*	interceptor sludges
13 05 08*	mixtures of wastes from grit chambers and oil/water separators
17	**Construction and demolition wastes (including excavated soil from contaminated sites)**
17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 03*	soil and stones containing hazardous substances
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 05*	dredging spoil containing hazardous substances
17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 07*	track ballast containing hazardous substances
17 05 08	track ballast other than those mentioned in 17 05 07
19	**Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use**
19 02	**wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)**
19 02 04*	premixed wastes composed of at least one hazardous waste – wastes suitable for biological treatment only
19 02 05*	sludges from physico/chemical treatment containing hazardous substances – wastes suitable for biological treatment only
19 02 11*	other wastes containing hazardous substances – wastes suitable for biological treatment only
19 08	**wastes from wastewater treatment plants not otherwise specified**
19 08 13*	sludges containing hazardous substances from other treatment of industrial wastewater
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 11*	other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances
19 13	**wastes from soil and groundwater remediation**
19 13 01*	solid wastes from soil remediation containing hazardous substances
19 13 03*	sludges from soil remediation containing hazardous substances
20	**Municipal Wastes (household waste and similar commercial, industrial and institutional wastes) Including separately collected fractions**
20 03	**Other municipal wastes**
20 03 03	Street cleaning residues

3. EMISSIONS (PART C3 QUESTION 2)

3.1 Point source emission to air

3.1.1 Air forced down through the biopiles via the extraction pipework system will pass through a biofilter before being released to air.

3.1.2 The blower connects to a manifold with several perforated pipes covered in stone sitting on an impermeable surface. Overlying these pipes is oversize compost or woodchip mixture, nutrients and small amount of contaminated soil (<5%) to inoculate the biofilter placed to an average height of 1.5m. The compost/nutrient/soil mixture is overlain by an

irrigation pipe network on top to maintain the moisture content and covered with a tarpaulin to ensure the biofilter does not dry out. It is then tested every month to ensure the process parameters are within the optimal range. Olfactory odour checks are also undertaken daily.

3.2 Point source emission to sewers, effluent treatment plants or other transfers off site

3.2.1 Water draining from beneath the biopiles or from the impermeable pad will pass into a holding tank, waters will be treated and stored prior to reuse in the biotreatment works or collection and disposed off site to a suitable treatment facility.

3.2.2 There will be no other point source emissions.

3.3 Point source emission to water (other than sewers)

3.3.1 There are existing surface water emission points relating to the landfill activity, however no direct discharge to surface water is proposed as part of this activity.

3.4 Point source emission to land

3.4.1 Treated soils will be used for the restoration of the landfill as treatment for recovery purposes; no disposal will be carried out with the exception of inclusions removed during the physical treatment of soils. This activity will be permitted as a recovery operation through a Waste Recovery Restoration Plan associated with the landfill activity.

4. OPERATING TECHNIQUES - LEACHATE TREATMENT

4.1 Technical standards (Part C3 question 3a)

Table 4: Technical standards – waste treatment

Description of Schedule 1 activity or directly associated activity	Relevant technical guidance note or Best available techniques as described in BAT conclusions under IED	Document reference
Activity ref A1: Activities detailed in Table 1	Sector Guidance Note IPPC S5.06: Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste. Best Available Techniques (BAT) Reference Document for Waste treatment Industrial Emissions Directive (Integrated Pollution Prevention and Control)	Process description in section 5 of this document & '*SGN 5.06 indicative BAT review*' (doc. ref. 3982-CAU-XX-XX-RP-V-0306) included within this application H1 Assessment: - Amenity and Accident Risk Assessment (document ref 3982-CAU-XX-XX-RP-V-0303) FCC Management System

4.1.1 For many installation activities, a 'sector guidance note' (SGN) have been published which sets out in detail the indicative 'best available techniques' (BAT) standards for how to carry out those activities. The sector guidance notes are based on European BAT reference document (BREFs) that are intended to ensure European consistency in the understanding of what is BAT for a certain sector.

4.1.2 There is a specific SGN for waste treatment, which is 'Sector Guidance Note IPPC S5.06. Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste' and 'Best Available Techniques (BAT) Reference Document for Waste Treatment' IPPC, 2018.

4.1 Operating Techniques – Existing Permit (Part C3 question 3a1)

4.1.1 Operating techniques relating to the landfill operation will remain unchanged. The acceptance of soils from the STF to be used in the restoration of the landfill.

4.2 General requirements – amenity and accidents (Part C3 question 3b)

4.2.1 It is a general requirement for all applications to consider the risk of emissions in relation to possible accidents, fugitive emissions, odour and noise and vibration. Risk assessments were carried out using the Environment Agency's templates for amenity and accident risk assessments as set out in guidance:

'Daneshill Noise Impact Assessment' doc ref: R20.13365-2-AG

'Amenity and Accidents Risk Assessment' doc ref: 3982-CAU-XX-XX-RP-V-0303

'Odour Management Plan' doc ref: 3982-CAU-XX-XX-RP-V-0308

'Emissions Management Plan doc ref: 3982-CAU-XX-XX-RP-V-0309

4.3 Types and amounts of raw materials (Part C3 question 3c)

Raw materials

4.3.1 The use of raw materials is proposed as part of the treatment process.

Raw materials other than water

4.3.2 The types and quantities of raw materials used are detailed within the BAT assessment but consist primarily of the following substances:

- Standard NPK fertiliser 25:05:05 ratio, typically added at 1kg/tonne of soil per application so for 3 applications for 29,999t of hazardous hydrocarbon impacted soil this would be 100t/yr of nutrient use as a worst-case scenario.
- An organic additive such as woodchip is occasionally added, anticipated a maximum of up to 1,500tonnes per annum, a maximum of ~5% amendment to clayey soils to break up the cohesive nature of the soils and aid aeration. The biodegradation of the organic contaminants can be enhanced by addition of very low concentrations of organic material such as woodchip. Other raw materials include the use of street cleaning residues and off-specification compost. Use of these raw materials replaces virgin materials such as manufactured fertiliser and using 'waste raw materials' which would otherwise be landfilled. – Further details are included in Section 9 'Resource Use- Raw Materials' of the 'Treatment Process & SGN 5.06 Indicative BAT review, document ref: 3982-CAU-XX-XX-RP-V-0306.
- Flocculants maybe used to remove suspended solids from surface water runoff
- Sand and activated carbon used as part of the water treatment process

4.3.3 The operator will select the least harmful products to use in the operation wherever possible.

4.3.4 The operator will keep Material Safety Data Sheets for all products used at the facility and will monitor the quantity of materials used. This will provide data for regular reviews of raw materials usage at the facility.

Water use

4.3.5 Water usage is small and limited to, general cleaning and domestic use.

5. INFORMATION FOR SPECIFIC SECTORS (PART C3 QUESTION 3D)

5.1 Part C3 Question 1: Pre-acceptance procedures

5.1.1 Detailed within section 5 of Treatment Description & SGN 5.06 Indicative BAT Review.

5.2 Part C3 Question 2: Waste acceptance procedures

5.2.1 Detailed within Treatment Description & SGN 5.06 Indicative BAT Review.

5.3 Part C3 Question 3: Waste storage procedures and infrastructure

5.3.1 Detailed within Treatment Description & SGN 5.06 Indicative BAT Review

5.4 Part C3 Question 4: Layout plan

5.4.1 Please refer to 'Proposed Site Layout' plan drawing ref: 3982-CAU-XX-XX-DR-V-1805 which details the proposed layout and treatment operations of the site. Drawing ref: 3982-CAU-XX-XX-DR-V-1806 details the proposed section drawings of the treatment pads and drainage systems.

5.5 Part C3 Question 5: Summary of the treatment activities

5.5.1 Detailed within section 2 of Treatment Description & SGN 5.06 Indicative BAT Review

5.6 Part C3 Question 6: Layout plans and process flow diagrams

5.6.1 Detailed within section 2 of Treatment Description & SGN 5.06 Indicative BAT Review

6. MONITORING

6.1 Measures for monitoring point source emissions (Part C3 question 4a)

Emissions to air

6.1.1 Daily olfactory monitoring of biofilter is proposed in addition to the biofilter sampling and testing. See section 7 of the Treatment Description & SGN 5.06 Indicative BAT Review. In addition, particulate asbestos fibre monitoring will be carried out during asbestos processing operations, albeit this has not been shown to be elevated above the detection limit at any point during asbestos impacted soils treatment on the Operator's other site.

Emissions to sewers, effluent treatment plants or other transfers off site

6.1.2 Excess process and surface water will be directed to on-site holding tanks for treatment prior to any reuse in the biotreatment works with any surplus collected and disposed of at a suitable treatment facility.

Emissions to water (other than sewers)

6.1.3 There are no discharges to surface water resulting from this application.

7. RESOURCE EFFICIENCY AND CLIMATE CHANGE

7.1 Basic measures for improving energy-efficiency of activities (Part C3 Question 6a)

7.1.1 The company will operate in accordance with ISO50001 Energy Management System.

7.1.2 Please refer to treatment process description & SGN 5.06 indicative BAT review document (Ref: 3982-CAU-XX-XX-RP-V-0306) included with this application for further detail.

7.2 Breakdown of changes to the energy used and created (Question 6b)

7.2.1 The anticipated changes in energy use are not considered to be significant.

7.3 Climate-change levy agreement or specific measures (Part C3 Question 6c)

7.3.1 Not applicable to this application.

7.4 Raw and other materials, other substances and water to be used (Part C3 Question 6d)

Raw materials other than water

7.4.1 The types and quantities of raw materials were provided in response to question 3c.

7.4.2 Raw materials use within the treatment facility are detailed in section 4.3.

7.4.3 The operator will select the least harmful products to use in the operation wherever possible.

7.4.4 The operator will keep Safety Data Sheets (SDS) for all products used at the facility and will monitor the quantity of materials used. This will provide data for regular reviews of raw materials usage at the facility.

7.5 Compliance with the Council Directive 2006/12/EC on waste (Part C3 Question 6e)

7.5.1 With respect to the Waste Framework Directive, the installation is operated to optimise efficiency with regards to the hierarchical approach required by the Directive.

7.5.2 In relation to the prevention of waste generation these activities onsite do not generate significant volumes of additional waste. Treated soils will be used in the restoration of the landfill which will be undertaken as a recovery activity.

8. REFERENCES

8.1.1 Directive 2008/98/EC of the European and of the Council of 19 November 2008 on waste and repealing certain Directives.

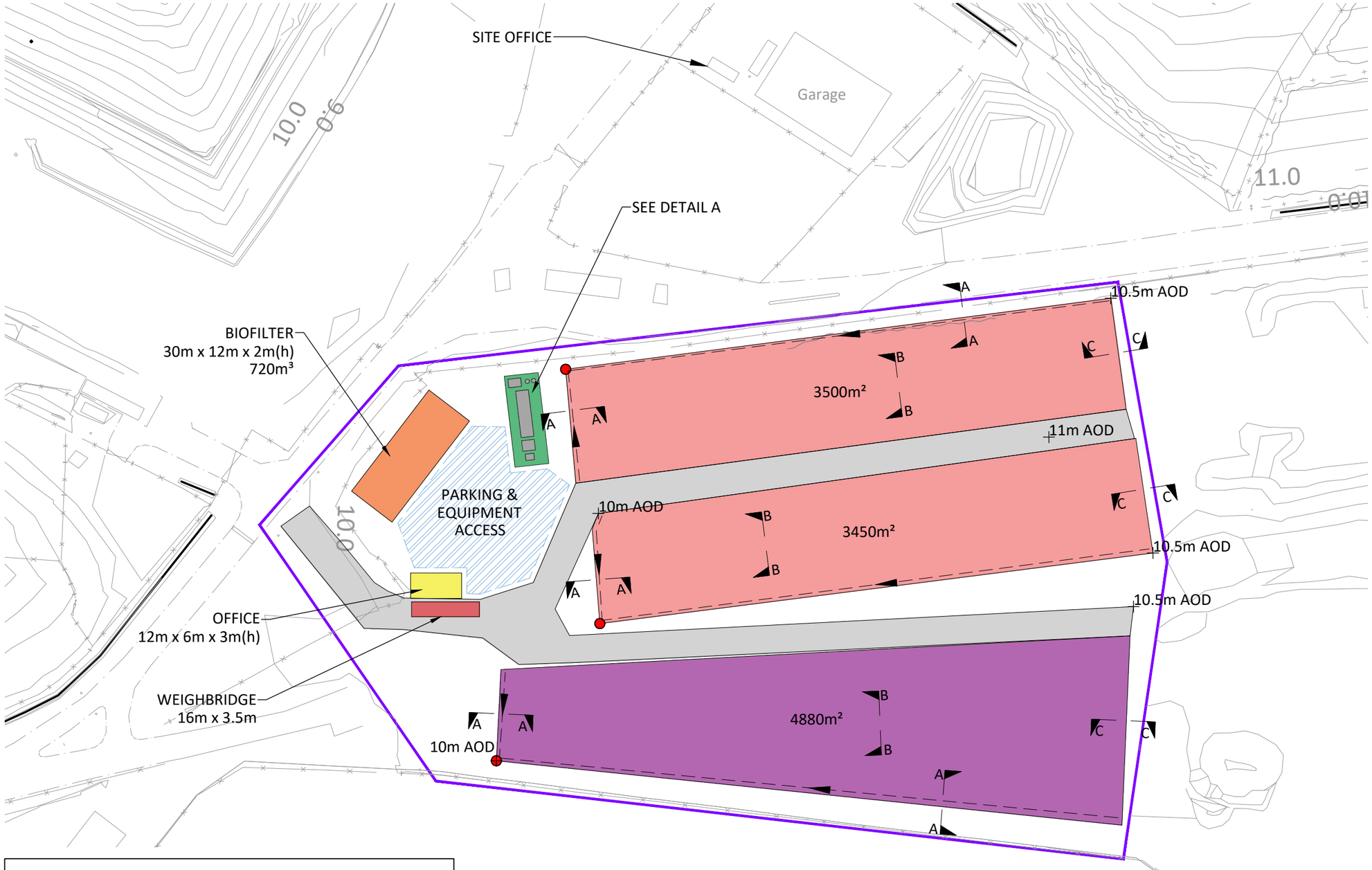
8.1.2 The Environmental Permitting (England and Wales) Regulations 2016

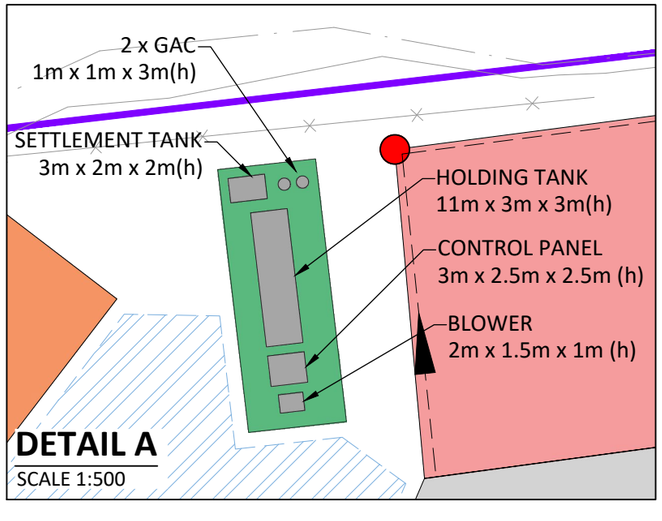
8.1.3 Environment Agency (2007): Sector Guidance Note IPPC S5.06. Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste.

8.1.4 Environment Agency (2013): Understanding the meaning of regulated facility. RGN 2 version 3.0.

8.1.5 Environment Agency (2017): Application for an environmental permit – Part C3 – variation to a bespoke installation permit. Version 9, January 2017.

Drawings





DETAIL A
SCALE 1:500

SITE LAYOUT
SCALE 1:1000

NOTES

1. DO NOT SCALE FROM THIS DRAWING, WORK FROM FIGURED DIMENSIONS ONLY. ALL DIMENSIONS ARE IN METRES AND ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM UNLESS NOTED OTHERWISE.

2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS.

3. DESIGN BASED ON PROVECTUS DRAWING - DANESHILL 1

4. SECTIONS SHOWN ON DRAWING 3982-CAU-XX-XX-DR-C-1806

LEGEND

- AREA OF PROPOSED ACTIVITY
- LEACHATE & DRAINAGE FLOW DIRECTION
- SECTION LINES
- BIOTREATMENT SCREENING AND PROCESSING AREA
- SCREENING / PROCESSING
- ACCESS ROAD
- WATER COLLECTION & PUMPING CHAMBER

REV					
P2	LEGEND UPDATED	EJD	KB	AS	24.03.20
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CLIENT: FCC Environment

PROJECT:
DANESHILL
SOILS TREATMENT
FACILITY

TITLE:
PROPOSED
LAYOUT
PLAN

DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY
JC	EJD	JC	JC
DATE	SCALE @ A3	JOB REF:	REVISION
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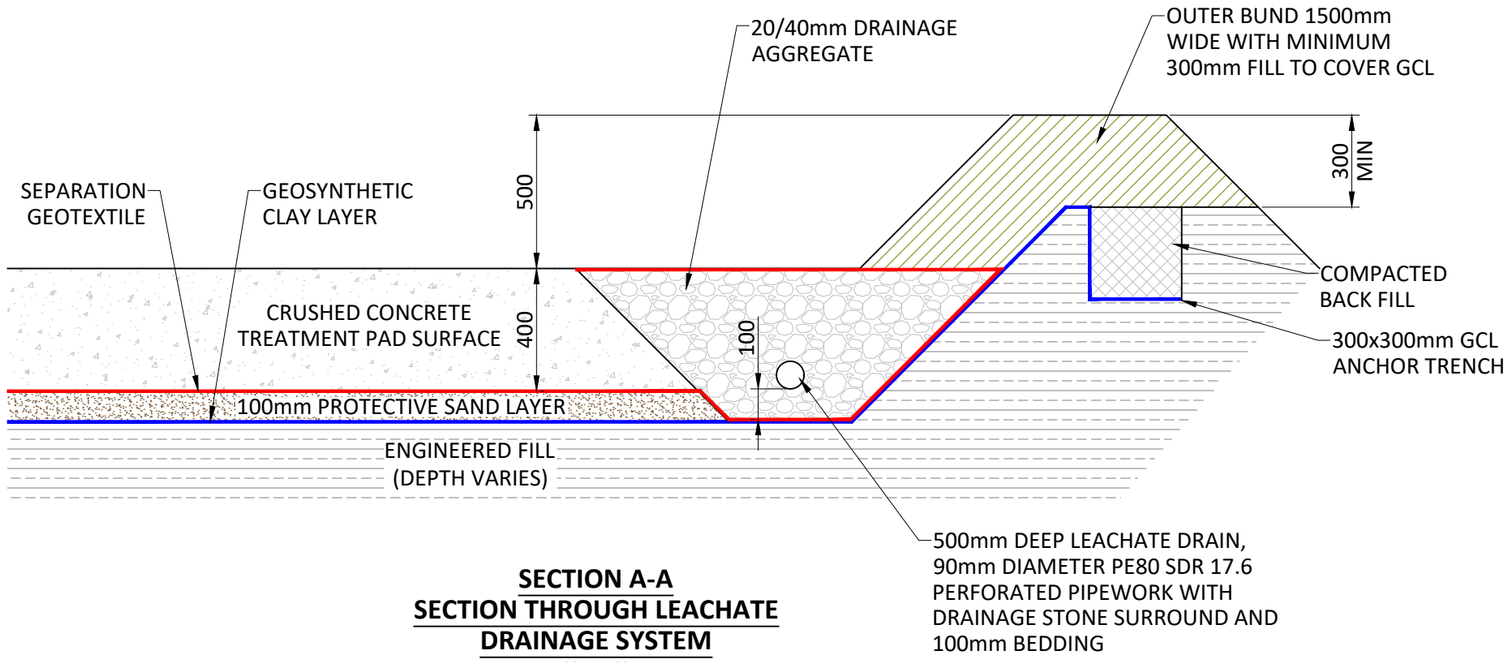
3. SECTIONS POSITIONS SHOWN ON DRAWING 3982-CAU-XX-XX-DR-C-1805



SECTION A-A
SECTION THROUGH LEACHATE DRAINAGE SYSTEM
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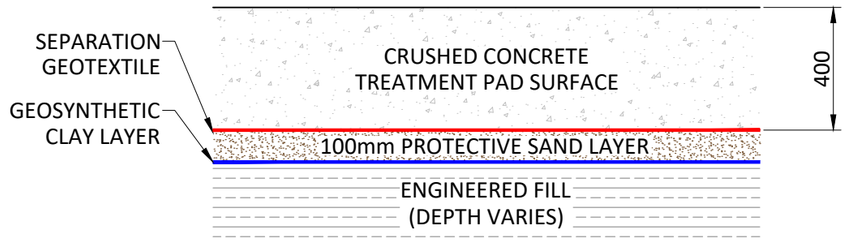

SECTION B-B
SECTION THROUGH TREATMENT PAD
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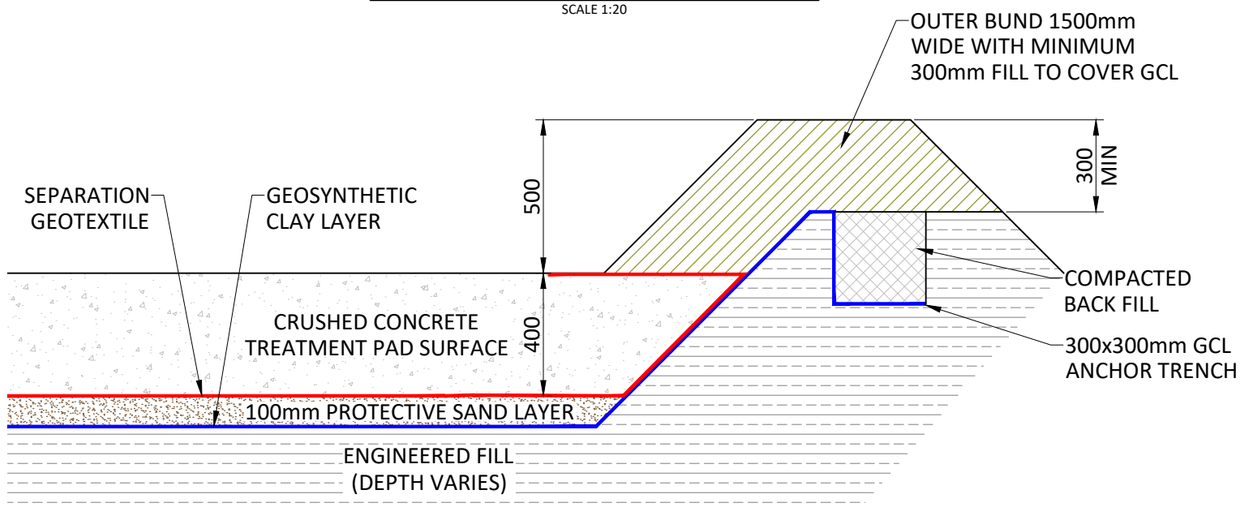

SECTION C-C
SECTION THROUGH TREATMENT PAD & EDGE BUND
SCALE 1:20

REV					
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