Clinical Waste Incinerator

Working Plan

States of Jersey

Document Control (Any revisions must be recorded below)						
Revision No.	**Date of change**	**Detail of change**	**Change author**	**Effective date and superseded document**	**Approved by: (Name, position & date)**	**Next review due date**
1.1	03/01/18	Addition of cover and document control table	LW	03/01/18 – Final v1	[redacted] Assistant Director Solid Waste. 21/12/17	6 months after completion date
1.2	29/01/18	Changes following meeting with D. Monks Friday 19/01/18	TLG	29/01/18	[redacted] Richard Fauvel Assistant Director (Solid Waste) 29/01/18	6 months after completion date

CWI Working Plan

Introduction

This working plan is a live document which will be reviewed from time to time to keep the Working Plan relevant, and will reflect changes in operations and/or the surrounding environment.

0 WP0 Site Incident Plan and Contacts

0.1 Key Site Information

Key Information	Response
Name of site	La Collette Clinical Waste Incinerator
Type of site	Clinical Waste Incinerator
Address	Clinical Waste Incinerator La Collette Phase II Reclamation Site La Collette, St Helier.
Jersey Grid Reference	X:41658 Y:63939
Directions	From Liberation Square, head south along the A16 past Commercial buildings. Proceed onto the La Collette Reclamation Site. Turn left onto La Rue du Veule towards EFW plant just before the Fuel Farm. Follow this road past the Liberty Bus garage, towards the Recycling Park. Turn right at the Recycling Park and the Clinical Waste Incinerator is located on the right hand side.
Water	Site benefits from mains water on site
Date of Working Plan	31 July 2017

0.2 Emergency Contact details

Contact	Telephone Contact Details
Emergency Services	999 or 112
Local Police (Non-Emergency)	Jersey Police - 01534 612612
Department of the Environment	01534 441600
Pollution Hotline	01534 709535

0.3 Department for Infrastructure contacts

Contact	Telephone and Contact Details
Office Hours (Monday – Thursday 8.45am – 5.15pm Friday 8.45am – 4.45pm)	Department for Infrastructure 01534 445509
Out of Hours	Emergency Contact 01534 725351

0.4 Incident Procedures

Incident Type	Likely Consequences	Action required
Release of Lubricating, Fuel or Hydraulic Oil during Plant Maintenance or Plant Breakdown (lifting/loading equipment, mobile plant etc.) Spillage of Wastes or maintenance chemicals (oils, lead acid, chemicals, liquid from waste containers etc.)	Contamination of the Facility Surface. Contamination of the normal run off. Contamination of Waste	Block off drainage system – sand, clay mats, bund socks etc. Using the on-site spill kit, use granules and matting from the appropriate spill kit (oil/fuel/acid) to soak up the spillage. Work from the outside of the spillage inwards. If spill is large, concentrate on containing the spill first by creating a bund to stop the spill spreading. DO NOT 'wash away' with water or detergent. Once spillage is absorbed remove granules, matting etc. to a sealed container. For lead acid use lead acid battery spill kit. For chemicals use chemical spill kit. Where other waste has been contaminated by the spill this shall be isolated and removed to a sealed container. Make arrangements for the correct disposal of the spent absorbent materials / contaminated wastes (if from clinical waste incinerate). Make arrangements to restock absorbent materials. Record incident in Site Diary.
Damage to Engineered Containment (Surfacing, drainage, containers) Due to Vehicle Strike / Other	Reduction in Pollution Control Effectiveness	Implement the requirements of Management System Section 3.6. Where the strike has led to a breach of the containment that allows release of materials or run-off beyond the facility boundary the temporary measures outline in Section 3.6 should be constructed to prevent or minimise that release until full repairs can be undertaken. Record incident in Site Diary
Fire	Atmospheric Pollution Engineering damage Polluted Fire water Run Off from Facility.	If the scale of the fire warrants attendance by the Fire and Rescue Service call them immediately. Use the address data in this section. Contact the Department of the Environment. Refer to section 6.7 If safe to do so isolate the fire. If safe to do so fight the fire using on-site firefighting equipment
Activation of La Collette evacuation sirens	Incident on the Fuel Farm	Make the site safe and secure Evacuate to assembly point in Fort Regent, via signposted route

1 WP1 Introduction

1.1 Site Background

1.1.1 The La Collette Clinical Waste Incinerator (CWI) is located within the La Collette Recycling Park, on the La Collette Phase II Reclamation Site, which has been created using inert land fill. The Recycling Park consists of facilities for the recycling of household items, green waste, aggregates and metals. Please refer to Appendix D (Drawing No. 10565/WML/001 Rev. I1) and Appendix E (Drawing No. 9759-011 Rev. F) for details of the site location and layout.

1.1.2 The CWI address is:

Clinical Waste Incinerator
La Collette Phase II Reclamation Site
La Collette Recycling Park
St Helier
Jersey
JE2 3NX

1.1.3 The CWI is provided and operated by the Department for Infrastructure (DfI), a department of the States of Jersey, for the management of pre-segregated clinical waste from healthcare operations on Jersey.

1.1.4 Construction and commissioning of the facility is expected to complete by mid-April 2018.

1.1.5 The CWI is contained within a single building approximately 31m long, 18m wide and up to 10m tall, with a flue stack of 0.6m in diameter and 15m tall.

1.1.6 Clinical waste to be consigned to the CWI are segregated and appropriately bagged at the facilities that generate them before consignment to the CWI for incineration. No clinical waste is to be tipped or stored outside of CWI building.

1.1.7 A limited specific range of wastes are permitted to be received by the Waste Management Licence (WML) including wastes with hazardous properties.

1.2 Purpose of Working Plan

1.2.1 This Working Plan (WP) sets how the Operator (DfI) will meet the conditions of the WML issued by the Department of the Environment (DoE) that permits specific waste operations to be undertaken.

1.2.2 This Working Plan will describe how those operations are undertaken including the control measures to be employed. The combination of the WML and the WP are designed to sufficiently control the receipt, storage and treatment of waste in a manner so as not to:

- Cause pollution of the Environment;
- Cause harm to human health; and
- Cause serious detriment to the amenity of the locality.

1.2.3 The operation practices and mitigation described in this WP are based on a risk assessment for the licensed operations. The risk assessment is contained within Appendix A.

1.2.4 The WP does not include details on the management of Health & Safety for the members of staff nor users, as this is outside the remit of the WML system. Site rules are however indicated in Appendix C for references.

2 WP2 Control of licensed operations

2.1 Plant Description

2.1.1 Auto Load 200 kg/h Stepped Hearth two staged Pyrolytic Gasification and Combustion Clinical Waste Incineration Facility. Please refer to Appendix F (Drawing No. 10565/WML/002 Rev. I1) and Appendix G (Drawing No. 4608-GA-004 Rev. C) for details of the plant and equipment located within the facility (both internal and external).

2.2 Process Plant Operational Overview

2.2.1 Clinical Waste is delivered to the facility in 240l and 770l lockable wheeled bins. The bins are bar coded and scanned and are therefore trackable from origination to disposal ('cradle to grave'). The bins are weighed and the weights are stored in the system for billing and operational records. They are then stored in refrigerated cold rooms prior to incineration.

2.2.2 In operation and when the incinerator is online bins are engaged into a bin tipper elevator and on the demands of the control system the bin will be elevated and tipped into the ram loader. A series of hydraulic functions will then deliver the waste into the incinerator via the charge door.

2.2.3 The primary combustion chamber of the incinerator incorporates a stepped hearth design and the waste is cascaded down a series of hydraulically actuated steps through the incinerator primary chamber to the conditioning vestibule where combustion is completed and it is rendered to ash. Dehydration and ignition of the waste is provided by two temperature controlled diesel-fired ignition burners. Ash is periodically discharged through the sealed ash doors into a water bath incorporating a chain link conveyor which transfers and deposits the ash into an external skip.

2.2.4 Products of combustion then flow into the floor-mounted Secondary Combustion Chamber where the gases are further heated, oxidised and subjected to turbulence to ensure complete destruction of the combustion emissions.

2.2.5 The gases then exit the secondary chamber along a refractory lined hot gas ductwork which incorporates an emergency bypass damper. In normal operation this damper remains closed, however in the event that a critical emergency occurs such as power loss, the damper will fail safe open, causing the products of combustion to bypass the heat dissipation and abatement plant, direct to atmosphere.

2.2.6 Gas within the secondary chamber to boiler transfer duct is injected with Urea solution to reduce the levels of NOx. To ensure the optimum reaction temperature the duct incorporates a dilution fan interfaced with the temperature control system.

2.2.7 Treated gases then pass into the two pass hot water boiler (low pressure hot water boiler). The resulting exchange of energy cools the gases to approximately 180°C in preparation for the abatement system.

2.2.8 The boiler is a two pass heat exchanger with damper activated internal bypasses to enable the gases to short circuit areas of the cooling surface to enable exhaust temperatures to be maintained at a constant desirable temperature, even during low demand conditions.

2.2.9 Heavily insulated and clad in aluminium, the boiler is mated to the abatement plant by a series of stainless steel insulated and clad flanged duct sections which transfer the gases from the boiler outlet via the reaction tower to the inlet of the filter house.

2.2.10 To eliminate dew point conditions, during start up conditions gases are routed around the abatement plant until the gases reach a desirable temperature.

2.2.11 The 135°C heated water/glycol mix produced by the cooling of the gases in the heat exchanger is pumped through a series of pipes in recirculation by a pump and expansion set located on a skid adjacent to the boiler and through a 4-fan blast cooler before being returned to the heat exchangers at 105°C. Gases exiting the boiler are then injected with sodium bicarbonate and activated carbon. The purpose of these chemicals is to neutralise the acid content of the gases and to capture the vapour phase heavy metals before entering the abatement plant.

2.2.12 The abatement plant consists of a filter house which captures both the combustion particulates and the chemicals injected to control the acid gases and heavy metals. The powders are retained on the filters before being discharged automatically by a blast of compressed air through a series of solenoid valves. The resulting clean gases are then monitored by an continuous emission monitoring system flue gas analyser (CEMS) and finally discharged to the atmosphere via the main induced draught fan and exhaust chimney.

2.3 Fire Alarm

2.3.1 The building is fitted with a proprietary fire alarm system which is linked to the fuel lines suppling the process plant. On activation the fuel supply will be shut off. There are also fusible links on each burner and the main fuel line which will also shut off the fuel supply in the event of a fire.

2.3.2 The incinerator plant incorporates an automatic temperature activated water spray and quenching nozzle located in the primary chamber waste feed system which is activated in the event of a fire.

2.4 Receipt of Clinical Waste

2.4.1 The CWI is open for receipt of clinical waste during the following times:

- Monday – Friday 07:30 – 14:00 hrs

2.4.2 Deliveries outside these times are only permitted by special arrangement with the site manager or a designated representative. The Hospital will deliver waste on Saturdays 08:00-12:00, but the facility will not be open for general deliveries of waste.

2.4.3 The site is not open for the receipt of clinical waste on Sundays, public or bank holidays.

2.4.4 The facility is not open to members of the public without express permission from DfI in advance of the delivery.

2.5 Hours of operation

2.5.1 During normal operations the process operates as and when required to dispose of the clinical waste delivered.

2.5.2 The process normally operates for periods between the hours of 06:00hrs to 22:00hrs Monday to Friday. In exceptional circumstances it may be necessary to operate the process for periods outside of these times.

2.6 Notice Board

2.6.1 A notice board easily readable from outside the site entrance, in daylight and night hours, will display the following information.

- Site name and address;
- Waste management licence number and holder name;
- Emergency contact name and telephone number of licence holder;
- A statement that the site is licensed by the Department of the Environment; and
- Days and hours when the site is open.

2.7 Facility staffing

2.7.1 The WML requires that the Operator shall manage and operate the site using sufficient competent persons and resources. Table 2.4 lists the site personal and details of their role and responsibility.

Table 2.4 Competent Persons

Position	Role and Responsibility
Site Manager	Overall responsibility to manage the site in compliance with the WML To ensure that the reporting required by the WML is correctly completed and submitted to the Department of the Environment To ensure that the staff are fully conversant with the content and reasons for the WML and this WP Ensure incineration is undertaken within design parameters including management of emissions monitoring
Site Operators	To manage site 'on the ground' To undertake facility inspections and emissions monitoring / logging To maintain the facility Site Diary Waste logging (waste weighing and logging) Unloading of the waste Pakawaste loading system (Bin Tipper system used to transfer to Larger bins if required) Operation of process elements of the plant To report any issues that could lead to pollution, harm to human health or nuisance to the Site Manager.
Maintenance Operators	Undertake planned maintenance of plant Undertake breakdown maintenance

2.8 Waste Operations

2.8.1 The operations permitted to be undertaken are those outlined in the current Waste Management Licence.

Table 2.5 Waste Operations

Description of Activities	Limits of Activities
D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced) D10: Incineration on Land D14: Repackaging prior to submission to any of the operations numbered D1 to D13	The incineration of clinical waste within plant which has an aggregate design capacity less than 200 kilogrammes per hour. Waste to be incinerated shall be placed into the storage unit within the CWI facility

D9: Physio-chemical treatment not specified elsewhere in Annex II A which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D8 and D10 to D12	and stored until transfer to the incinerator feed. D14 and D9 operation are only to be undertaken on incinerator residues post combustion.

2.9 Waste Types and quantities

2.9.1 The primary activities which will take place at the facility are the reception and incineration of clinical waste. The WML specifies the range of waste permitted. Table 2.6 below specifies the detail.

Table 2.6 Waste Types and Quantities

Maximum Quantities The total quantity of waste accepted at the site shall be less than 350 tonnes a year.	
Exclusions Wastes having any of the following characteristics shall not be accepted Consisting solely or mainly dusts, powders or loose fibres	
Waste Code	**Description**
09	WASTES FROM THE PHOTOGRAPHIC INDUSTRY. (This is limited to wastes of this type arising from medical practices or associated research activities)
09 01	Wastes from the photographic industry
09 01 01*	Water-based developer and activator solutions
09 01 02*	Water based offset plate developer solutions
09 01 03*	Solvent based developer solutions
09 01 04*	Fixer solutions
09 01 05*	Bleach and bleach fixer solutions
09 01 07*	Photographic film and paper containing silver or silver compounds
09 01 08*	Photographic film and paper free of silver or silver compounds
18	WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (EXCEPT KITCHEN AND RESTURANT WASTES NOT ARISING FROM IMMEDIATE HEATH CARE)
18 01	Wastes from natal care, diagnosis, treatment or prevention of disease in humans
18 01 01	Sharps (except 18 01 03)
18 01 02	Body parts and organs including blood bags and blood preserves (except 18 01 03)
18 01 03*	Wastes whose collection and disposal is subject to special requirements in order to prevent infection.
18 01 04	Wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers) (This is limited to non-clinical human offensive / hygiene waste and autoclaved waste from laboratories only)
18 01 06*	Chemicals consisting of or containing dangerous substances (excluding X-ray photochemicals)

18 01 07	Chemicals other than those mentioned in 18 01 06 (excluding X-ray photochemicals)		
18 01 08*	Cytotoxic and cytostatic medicines		
18 01 09	Medicines other than those mentioned in 18 01 08		
18 01 10*	Amalgam waste from dental care		
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR, COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS		
20 01	Separately collected fractions (except 15 01)		
20 01 31*	Cytotoxic and cytostatic medicines		
20 01 32	Medicines other than those mentioned in 20 01 31		
20 01 99	Other fractions not otherwise specified (comprising of separately collected fractions of municipal clinical waste (not arising from health care and/or related research i.e. not including waste from natal care, diagnosis, treatment or prevention of disease) which is subject to special requirements in order to prevent infection).		
Notes Table Explanation			
03	WASTES FROM WOOD PROCESSING …etc.	←	Waste Code Chapter Heading only is not a specific waste
03 01	Wastes from wood processing and the production of panels and furniture	←	Waste Codes Sub Chapter Heading only is not a specific waste
03 01 01	Waste bark and cork	←	Specific wastes that can be accepted
(*) An asterisk at the end of a code means the waste is hazardous			
The waste codes above are based on those listed in United Kingdom Legislation: The List of Wastes (England) Regulations 2005.			

2.10 Excluded Wastes

2.10.1 The following waste types will not be accepted at the site:

- Wastes that are in a form which is either sludge or liquid, other than paint, ink, varnish, resin, oils, and acid contained in batteries;
- Waste consisting solely or mainly of dusts, powders or loose fibres;
- Waste as classified in the EWC as explosive or radioactive;
- Domestic waste;
- Liquid wastes (larger than 5L containers);
- Animal carcasses; or,
- Waste of a nature which makes it unsuitable for the incineration process.

2.10.2 Any deliveries identified as containing such material that would be redirected to the Island facilities designated to handle these wastes.

3 WP3 Waste containment

3.1 General

3.1.1 The primary mitigation measure to prevent pollution of the environment is one of containment. The principal containment measure is the use of a suitable site surface that acts as a barrier between wastes and the ground under the site. The site surfacing protection is supplemented by a sealed drainage system that is designed to only discharge potential contaminated run-off to a predetermined discharge point into the foul sewer network, and then be treated at the Bellozanne Sewage Treatment Works (STW).

3.1.2 Secondary mitigation consists of a further containment through the use of specialist waste containers (received waste storage fridges) and bins, each designed to contain clinical waste.

3.1.3 All incoming wastes will be stored in an appropriate container or bag and then within the refrigerated stores.

3.2 Disinfection and cleaning

3.2.1 All surfaces and containers will be designed for use in connection with clinical waste handling and will facilitate effective disinfection to be undertaken.

3.2.2 The CWI surfacing, rigid containers, storage areas or any surface that comes into clinical waste will be cleaned and disinfected once per week.

3.2.3 All wiping cloths and other cleaning consumables will be incinerated within the CWI when spent.

3.3 Site Surfacing

3.3.1 All operational areas of the site will be engineered with an impermeable hardstanding.

3.3.2 Waste will only be handled on impermeable hard standing.

3.3.3 The CWI surfacing will have a smooth finish with minimal joints to allow for effective surface disinfection

3.3.4 Please refer to Appendix H (Drawing No. 9759-034 Rev. C) for details of the external slabs and paving.

3.4 Drainage

3.4.1 Contaminated surface run-off from the CWI facility is directed to the foul drainage system. Uncontaminated surface run-off is directed to a soakaway located beneath the external slabs.

3.4.2 Please refer to Appendix I (Drawing No. 10565/WML/003 Rev. I1) for details of the segregation of contaminated / uncontaminated surface runoff, and Appendix J (Drawing No. 9759-100 Rev. E) for details of the facility's drainage system.

3.5 Bunded Containment

3.5.1 Process plant chemicals used for maintenance will be stored in a lockable chemical safe.

3.5.2 Any bulk liquid including fuel oils located above ground will be kept in bunded tanks on impervious bases to contain 110% by volume of the stored substance.

3.5.3 They will be constructed and operated in accordance with the guidelines set down in the Environment Agencies Pollution Prevention Guidelines for Above Ground Storage Tanks which can be found at www.Gov.uk in lieu of specific Jersey guidance.

3.6 Waste Containment Maintenance Schedule

3.6.1 Maintenance is the key to the continued performance for both primary and secondary containment systems.

3.6.2 The specific detail of the containment systems and their maintenance is described in the table 3.1

Table 3.1 – Waste Containment Maintenance Schedule

Action	Frequency
Routine visual inspection of engineered containment (surfacing, drainage, gullies etc.)	Daily
Visual inspection of suspected damage	As soon as practicable after suspicion is raised

3.6.3 Where damage or degradation is discovered by means of visual inspection repairs will be carried out in accordance with the time scale outlined in Table 3.2.

Table 3.2 Waste containment (including building envelope) maintenance schedule

Level of damage or degradation	Repair within
Damage or degradation identified but not considered to affect the protection afforded by the engineered containment system	One Month
Damage or degradation identified considered likely to affect the protection afforded by the engineered containment system	For wastes containing fluids – a temporary repair / isolation as soon as practicable. Also use spill kit to cordon off area. Permanent repair as soon as practicable. Consider having container formally emptied. For solid wastes – a temporary repair / cordoned off by the end of the working day following identification. Permanent repair within 7 working days.
Rigid waste containers – cracks or other damage.	The damaged waste container should be taken out of service.

3.7 Incinerator Maintenance Schedule

3.7.1 The incinerator plant including the waste processing equipment will be maintained in line with the manufacturer's specifications and recommendations and includes operation of the flue gas filter system and other management systems. The manufacturers operational and maintenance manual is held in the facility office. A second copy is held by the DfI maintenance workshops.

3.8 Site Layout

3.8.1 Details of the facility's location and layout are contained in Appendix D (Drawing No. 10565/WML/001 Rev. I1) and Appendix E (Drawing No. 9759-011 Rev. F).

3.8.2 The structures and containers which are present on the site area are:

- Flue Gas Treatment and APC Drum Collection (Filter Unit);
- Refrigerated Stores;
- Weighing Stations;
- IBA storage (skip);
- Incinerator (Primary and Secondary Chamber);
- Waste Heat Boiler;
- Waste Ram Loader; and
- Specialist waste containers used for the storage of clinical wastes.

4 WP4 Site operations

4.1 Staffing and management

4.1.1 For daily operation the following staffing levels will pertain:

Title	Function	Qualifications / Experience
Site Manager	Site management, record keeping, and Licence compliance.	Specified through a role specification and role specification
Site Operative	To manage reception of wastes and to log incoming wastes data Store waste in the refrigerated store. Operation of the incinerator and support system Management and consignment of process by-products.	Specified through a role specification and role specification

4.1.2 There will be a minimum staffing level during facility operation of:

- One technically competent person on site;
- DfI Duty Officer (24/7); and
- Manager contactable by telephone.

4.2 Incident Management and Health and Safety

4.2.1 All operations on site will be carried out in accordance with the relevant legislative requirements. Site safety rules are attached to this working plan within Appendix C which will be available to site visitors. An Incident Plan containing basic information and procedures relating to this site is contained within section WP0

4.3 Fit and Proper Person

4.3.1 The site will be managed by a person of technical competence sufficient for the operation of the CWI. Competence level will be specified through the role specification for the employee and through assessment of persons against the person specification.

4.4 Non-conforming wastes

4.4.1 Should non-conforming wastes be identified upon deposit of a load, the operator will follow the process below in this instance:

- If it is safe to do so, the waste will be removed to a quarantine sealed container (Euro-bin) within the site or where it is not safe to move the non-conforming waste to an exclusion area which will be set up in-situ;
- The Site Manager to be informed;
- The Licence holder will decide upon the course of action and details will be entered in the site diary; and
- The Department for Environment will be notified where appropriate.

4.5 Waste Reception

4.5.1 No incoming waste is to be transferred from delivery vehicles to the CWI from outside of the building envelope

4.5.2 All wastes that arrive in bags or other non-rigid containers shall immediately be transferred to rigid containers that will prevent the escape of liquid and can be secured to prevent unauthorised access.

4.5.3 All wastes awaiting incineration will be stored in the allocated area and processed on a first in first out basis.

4.5.4 The facility doorways will only be opened to allow waste to be transferred to the building. At all other times the facility doors will be kept shut.

4.6 General

4.6.1 The site will be inspected once a day by the Site Operator

4.6.2 Spill kits containing absorbent granules, socks, and matting will be located within the CWI site.

4.6.3 Please refer to Appendix C for Site Safety Rules.

4.7 Disinfection and Cleaning

4.7.1 All surfaces and containers will be designed for use in connection with clinical waste handling and will facilitate effective disinfection to be undertaken.

4.7.2 The CWI surfacing, rigid containers, shuts, refrigerated stores or any surface that comes into contact with clinical waste will be cleaned and disinfected once per week using an approved disinfectant.

4.7.3 Cleaning and disinfection will be undertaken within the building envelope so that washings can be captured by the CWI's drainage system.

4.7.4 All cleaning cloths and other cleaning consumables will be incinerated within the CWI when spent.

4.7.5 The drainage system will be cleaned and disinfected once per month using an approved disinfectant.

5 WP5 Environmental Management

5.1 General

5.1.1 Operational environmental controls which will be put in place are described in the following subsections.

5.1.2 Please refer to Appendix C for Site Safety Rules.

5.1.3 All waste handling and processing will take place within the CWI building.

5.1.4 Process by-products are stored in suitable containers for onward transport.

5.1.5 Except for the receipt of wastes the CWI doors will be kept shut.

5.1.6 The site will be inspected once a day when receiving or incinerating waste. The site will be swept, as required as part of general house-keeping.

5.1.7 An environmental risk assessment is included in Appendix A and the Site safety Rules are detailed in Appendix C.

5.2 Drainage System

5.2.1 The drainage system will be monitored regularly and cleaned as required. Please refer to Section 3.4 above.

5.3 Breakdowns and Spillages

5.3.1 In the event of an incinerator breakdown, DfI has an arrangement to call in an appropriately skilled technician to carry out repairs. If immediate repairs cannot be made on site, waste will be stored on site. If longer term repairs are required then wastes will cease to be received. Any liquid spillages will be cleared as soon as practicable by depositing absorbents on the affected area.

5.3.2 Spill kits will be provided and clearly signed. Used absorbents will then be suitably contained prior to being taken to an appropriately licensed site for disposal, where the spillage relates to liquids from clinical wastes the absorbent will be incinerated at the CWI. See section 0.4 for more details.

5.4 Site Inspection and Maintenance

5.4.1 A site inspection form (see Appendix B) will be completed by a person who is familiar with the requirements of the site management system and Licence for the site. The frequency of inspection will be commensurate with the level of activity but at least weekly. All details of any defects, problems and remedial actions taken will be recorded within the site inspection form as soon as practical following the occurrence.

5.5 Control of Security

5.5.1 The entrance to the facility is protected by steel gates that complement the security provided by the palisade fencing. It is considered that the perimeter security system will provide a security standard that will reasonably prevent unauthorised access to the facility.

5.5.2 Mobile plant, stores and site building will be locked and secured when not in use to prevent unauthorised access out of hours.

5.5.3 The site is monitored by CCTV.

5.6 Security Maintenance

5.6.1 The perimeter security will be visually inspected for damage or degradation in accordance with table 5.1

Table 5.1 Security System Inspection Frequency.

Action	Frequency
Routine Visual Inspection of Perimeter Security System	Daily
Visual Inspection of suspected damage	As soon as practicable after suspicion raised

5.6.2 Where damage or degradation is discovered by means of visual inspection repairs will be carried out in accordance with the timescale outlined in table 5.2

Table 5.2 Timescale for Security System Repair

Level of Damage or Degradation	Repair within
Damage or degradation identified but not considered to effect the protection afforded by the security system	One month
Damage or degradation identified considered likely to effect the protection afforded by the security system	A temporary repair by the end of the working day following identification. Permanent repair within 7 working days.

6 WP6 Amenity Management and Monitoring

6.1 Control of Mud and Debris

6.1.1 All operational areas of the site are covered with impermeable hard-standing. All the waste handling operations will take place within the licensed area. Considering the nature of the permitted wastes and the nature of the main deliveries (by commercial and States contractors) and the access arrangements it is considered unlikely that mud will be an issue. It will, however, be monitored and any occurrence will be recorded in the site diary and the mud immediately cleared.

6.1.2 Debris may be an issue where materials have escaped from delivery vehicles or vehicles taking residues from the CWI. Staff will be vigilant for debris on site. Should debris be identified arrangements shall be made to safely remove the debris as soon as practicable.

6.2 Control and Monitoring of Dust

6.2.1 Considering the scale of operations (low annual tonnage), the nature of the wastes delivered (contained, both the waste in bins or bags and within an enclosed vehicle) and the nature of the CWI itself (contained in a building), dust being raised by transport or waste reception is not considered to be a relevant consideration.

6.2.2 Particulates from the combustion process are described in Section 6.8.

6.3 Litter Control

6.3.1 The CWI is in an enclosed building, but good housekeeping will be undertaken to keep the facility tidy.

6.4 Control of Pests, Birds and other scavengers

6.4.1 The site will be inspected for the presence of vermin and the findings of the inspection noted in the site diary.

6.4.2 If an infestation of vermin be discovered, it will be managed using an approved pest controller.

6.5 Control and monitoring of noise

6.5.1 The following mitigation measures will be in place to minimise noise.

- Plant and equipment selection is carried out to ensure that any equipment installed is compliant with the Control of Noise at Work Regulations.
- The majority of the process plant is located within the CWI building, except for the cooler group including fans which is located on the north side of the building. No speed humps on site.
- The hard standing will be maintained to a good standard to avoid excessive rattle noise.
- Exposure of operators to noise will be monitored and any necessary remedial work carried out. Where necessary, operators will be required to wear suitable noise reducing ear defenders.
- Drop heights will be reduced to minimise vibration, unloading only takes place within building envelope.

6.6 Odour Control

6.6.1 Waste is only to be transferred and stored within the CWI building envelope.

6.6.2 Waste is only permitted to be received at the CWI when it has been pre-packaged by the consignor into sealed bags or containers.

6.6.3 Except for the receipt of wastes the CWI doors will be kept shut.

6.6.4 The CWI building envelope will be kept under a slight negative pressure (using the incinerator combustion fan). This is so that odours do not escape the building and any odours within the building are drawn into the incinerator.

6.6.5 Olfactory assessments (sniffing) will be made by the Site Operator or Site Manager at regular intervals throughout the working hours. The presence of a detectable odour at the boundary of the facility will be recorded in the site diary including any remedial measures as soon as practicable after the event.

6.6.6 Where a detectable malodour is detected but clearly associated with neighbouring facilities this will also be noted in the site diary, and inform the neighbouring facility of the odour issue.

6.6.7 Olfactory assessments should be made when site personnel have just arrived at the site and not after being on the site for some time to reduce the desensitising effect where people become use to an odour.

6.7 Control of Fire

6.7.1 Smoking is not allowed on site.

6.7.2 Fire extinguishers will be located in appropriate locations throughout the site. These will be used to control fires on site and will be checked on a daily basis as part of the regular site inspections.

6.7.3 A record will be kept, in the site diary, of fire drills carried out on site.

6.7.4 In the event of fire, the Fire and Rescue Service may be called.

6.8 Control and Monitoring of Emissions

6.8.1 The clinical waste incinerator is designed to burn up to 200kg per hour of clinical waste.

6.8.2 The likely atmospheric pollutants from this facility are as follows

- Particulates (PM10);
- Hydrogen Fluoride (HF);
- Hydrogen Chloride (HCl);
- Carbon Monoxide (CO);
- Sulphur Dioxide (SO2);
- Oxides of nitrogen (expressed as Nitrogen Dioxide (NO2);
- Organic compounds;
- Dioxins and furans;
- Cadmium and its compounds (expressed as cadmium);
- Mercury and its compounds (expressed as mercury); and
- Other heavy metals and their compounds.

6.8.3 Sampling and analysis of all pollutants including dioxins and furans will be carried out to The European Committee for Standardization (CEN) or equivalent standards (e.g. ISO, national, or international standards).

6.8.4 The Plant will be equipped with suitable monitoring and data logging devices to enable checks to be made of process efficiency.

6.8.5 The purpose of monitoring has three main objectives.

- To provide the information necessary for efficient and safe Plant operation;
- To warn the operator if any emissions deviate from predefined ranges;
- To provide records of emissions and events for the purposes of demonstrating regulatory compliance.

Pollutant	Emission limits (including unit)	Reference Period	Monitoring Frequency	Monitoring standard or Method
Total Particulate Matter (PM10)	30mg/m3 10mg/m3	½-hr average Daily average	Continuous measurement	BS EN 15267-3
Hydrogen Fluoride (HF)	2mg/m3	Periodic over minimum 1 hour period	Bi-annual	BS EN 15267-3
Hydrogen Chloride (HCl)	60mg/m3 10mg/m3	½-hr average Daily average	Continuous measurement	BS EN 15267-3
Sulphur Dioxide (SO2)	200mg/m3 50mg/m3	½-hr average Daily average	Continuous measurement	BS EN 15267-3
Oxides of nitrogen (expressed as Nitrogen Dioxide (NO2)	400mg/m3 200mg/m3	½-hr average Daily average	Continuous measurement	BS EN 15267-3
Carbon Monoxide (CO)	100mg/m3 50mg/m3	½-hr average Daily average	Continuous measurement	BS EN 15267-3
Organic compounds excluding particulate matter	20mg/m3 10mg/m3	½-hr average Daily average	Continuous measurement	BS EN 15267-3
Dioxins and Furans	0.1ng/m3	Periodic over minimum 6 hours, maximum 8 hour period	Bi-annual	BS EN 1948 Parts 1,2 and 3
Cadmium and its compounds	0.05mg/m3	Periodic over minimum 30 minute, maximum 8 hour period	Bi-annual	BS EN 14385
Mercury and its compounds	0.05mg/m3	Periodic over minimum 30 minute, maximum 8 hour period	Bi-annual	BS EN 13211
Other heavy metals and their compounds expressed as metal	0.5mg/m3	Periodic over minimum 30 minute, maximum 8 hour period	Bi-annual	BS EN 14385

Other Provisions

Determined	Provisions	Monitoring	Monitoring Frequency
Oxygen	Minimum 3% and average of 6% by dry volume	Measure at or after end of retention zone in secondary chamber	Continuously and recorded
Oxygen		Measure at the same location as annual manual extractive testing	Concurrently throughout annual manual extractive testing
Secondary chamber temperature and retention time	Minimum 1000^{o}C before first waste charge and maintained after last charge of the day until full burn out. Minimum residence time for gases in zone should not be less than 2 seconds	Measure at or after the end of retention zone in secondary chamber. Calculated in accordance with BS3316 part 2 : 1987	Continuously and recorded

6.8.6 The results on all emission monitoring will be logged and kept for record. These records will be made available to the Department of the Environment on request.

Appendix A: Risk Assessment

Date of working plan Risk Assessment	29/01/18
Risk Assessment Review date	01/07/18
Approved by	[redacted] Richard Fauvel Assistant Director (Solid Waste) 29/01/18
Date	29/01/18
Risk assessment should be reviewed where operations change, where the surrounding environment changes and in any case annually to keep the assessment relevant	

No.	Data and Information				Judgement			Action (by permitting)		
	Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequences**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
	What is at risk? What do I wish to protect?	*What is the agent or process with potential to cause harm?*	*What are the harmful consequences if things go wrong?*	*How might the receptor come into contact with the source?*	*How likely is the contact?*	*How severe will the consequences be if this occurs?*	*What is the overall magnitude of the risk?*	*On what did I base my judgement?*	*How can I best manage the risk to reduce the magnitude?*	*What is the magnitude of risk after management? (this residual risk will be controlled by Compliance Assessment)*

No.	Data and Information				Judgement			Action (by permitting)		
	Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequences**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
01	Local Human population	Releases of particulate matter (dusts) and micro-organisms (bio aerosols)	Harm to human health – respiratory irritation and illness	Air transportation then inhalation.	Low	Medium	Medium	Wastes to be accepted must be bagged or placed in containers before despatched. Transporting vehicles are sealed and all transfers of wastes takes place in a building under negative pressure. Small annual tonnages	Restriction on waste types and waste packaging Building and containment maintenance will be under taken.	Low

No.	Data and Information				Judgement			Action (by permitting)		
	Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequences**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
02	Local Human population	Releases of particulate matter (dusts) and other atmospheric pollutants	Harm to human health – respiratory irritation and illness	Air transportation then inhalation.	Low	Medium	Medium	Small annual tonnages – small scale burner. Incinerator operation in accordance with the manufacturer's specification. Basic combustion parameters are continuously monitored to verify combustion is within the appropriate limits.	Undertake to operate the incinerator in accordance with the manufacturer's specification including undertaking the manufacturers recommended maintenance regime.	Low

No.	Data and Information				Judgement			Action (by permitting)		
	Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequences**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
03	Local human population, livestock and wild life	Litter	Nuisance, loss of amenity and harm to animal health	Air transportation and then deposition	Low	Low	Low	Limited human receptors. Limited sources of litter and facility is enclosed within a building.	Site topography will limit release of litter. General house-keeping controls Loads leaving site are bagged.	Very Low
04	Local human population	Waste, litter and mud on local roads	Nuisance, loss of amenity , road traffic accidents	Vehicles entering and leaving site.	Low	Low	Low	The Site is surfaced. The site is serviced by well surfaced access roads. Users are commercial operators that will collect waste from consignors who are accessible from the highway.	The site access roads are regularly swept Good site management to include general housekeeping.	Very low

No.	Data and Information				Judgement			Action (by permitting)		
	Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequences**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
05	Local human population	Odour	Nuisance, loss of amenity	Air transportation and then inhalation	Medium	Low	Low	Local receptors often sensitive to odour. Limited waste types that could give rise to odours. Only small volumes of waste are stored on site and then will be refrigerated within the CWI building. The building envelope is kept under slight negative pressure.	Follow operating procedures so that waste is only transferred within the building and that wastes are stored in the refrigerators. Facility to be regularly cleaned and disinfected	Low

No.	Data and Information				Judgement			Action (by permitting)		
	Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequences**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
06	Local human population	Noise and Vibration	Nuisance, loss of amenity.	Noise through the air and vibration through the ground	Low	Low	Low	Local residents to these types of facilities are often sensitive to noise and vibration. However the site is some distance from residential properties. Facility is enclosed	Control through operational measures.	Low
07	Local human population	Scavenging animals and birds	Harm to human health – from wastes carried off site and faeces. Nuisance and loss of amenity	Air transportation and over land	Low	Low	Low	Waste is bagged or contained when it arrives and is then immediately place into refrigerated stores until it is to be incinerated. All of this is within a building.	High level of containment.	Very Low

No.	Data and Information				Judgement			Action (by permitting)		
	Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequences**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
08	Local human population	Pests (e.g. flies)	Harm to human health, nuisance loss of amenity	Air transportation and over land	Medium	Medium	Medium	Insect pests can multiply on allowed wastes but wastes are contained and when stored are in sealed containers within refrigerated stores.	High level of containment.	Low
09	Local human population and/or livestock after gaining unauthorised access to the waste operation	All on-site hazards; wastes; machinery and vehicles	Bodily injury	Direct physical contact	Low	Medium	Low	Limited amount of wastes are accepted and have specific storage requirements. CWI has security via building envelope and is within a secure compound.	Activities shall be managed and operated in accordance with the WP which includes site security measures to prevent unauthorised access.	Low

No.	Data and Information				Judgement			Action (by permitting)		
	Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequences**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
10	Local human population and local environment	Arson and/or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandal. Pollution of water or land.	Air transportation of smoke. Spillages and contaminated fire water by direct run-off from site.	Low	Medium	Low	Limited amount of wastes are accepted and have specific storage requirements. CWI is secured and is within a secure compound	WP contains measures to control fire and spillages. Site benefits from perimeter security and CCTV.	Low
11	Local human population and local environment	Accidental fire causing the release of polluting material to air(smoke or fumes), water or land	Respiratory irritation, illness to local receptors, injury to staff or fire fighters. Pollution of water or land	Air transportation of smoke. Spillages and contaminated fire water by direct run-off from site.	Medium	Medium	Low	Risk of accidental combustion of waste is moderate	WP contains measures to control fire and spillages. Smoking is not permitted on site.	Low

No.	Data and Information				Judgement			Action (by permitting)		
	Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequences**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
12	Water environment	Spillage of liquids, leachate from waste, contaminate rainwater run-off from waste e.g. containing suspended solids	Acute effects; oxygen depletion, fish kill and algae blooms.	Direct run-off from site across ground surface, via surface water drains, ditches etc.	Low	Medium	Low	Permitted waste types do not include sludge's so only a medium magnitude risk is estimated. Limited amount of wastes (including liquids) are accepted and have specific storage requirements - in sealed bags or containers – all placed in leak proof containers. All site foul drainage is to the Bellozanne STW via the Sewerage Network	All liquids should be provided with secondary containment (applies to non-wastes such as fuels). Site is surfaced and has a sealed drainage system that drains to a STW. Incident and spillage procedures to manage any spillages at source.	Very Low

No.	Data and Information				Judgement			Action (by permitting)		
	Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequences**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
13	Ground water	Spillage of liquids, leachate from waste, contaminate rainwater run-off from waste e.g. containing suspended solids	Chronic effects; contamination of groundwater, requiring treatment of water or closure of borehole	Transport through soil/ground water then extraction at borehole	Low	Medium	Low	There is a potential for contaminated rainwater runoff to leachate from permitted waste types. But site has engineered surface and waste are stored in sealed containers. CWI built on reclaimed land.	All liquids should be provided with secondary containment (applies to non-wastes such as fuels). Site process areas are surfaced and have a sealed drainage system that drains to the Sewerage Network Incident and spillage procedures to manage any spillages at source.	Low

Appendix B: Site Inspection Form

Site			Date
Checks to undertake	**Checked**	**Description**	**Comments or Actions**
Checked Site Engineering?	☐ tick	Check the condition of site surfacing, drainage, walls etc. (Visual)	
Checked Site Identification Board?	☐ tick	Check condition of Site Identification Sign (Visual)	
Checked Site Security?	☐ tick	Check condition of site fences and gates	
Checked for Odour?	☐ tick	Check for odour at or beyond site boundary	
Checked for Pests?	☐ tick	Check for evidence of pests	
Scavengers?	☐ tick	Check for evidence of scavengers	
Litter?	☐ tick	Complete daily litter check	
Dust/Noise?	☐ tick	Undertake check for dust or noise during operations (i.e. when tipping, sorting etc.)	
Emissions Monitoring Telemetry?	☐ tick	Check telemetry is working and readings are within limits	
General Issues	**Circle**	**Description**	**Comments or Actions**
General Maintenance Undertaken?	Yes/No	Has any general site maintenance been under taken? See maintenance schedule.	
Breakdowns/Spillages?	Yes/No	Has any site machinery / plant broken down? Have spillages resulted? (follow spillage plan)	
Emergencies/Incidents?	Yes/No	Have any Emergencies / Incidents occurred? (complete incident plan	

General Issues	Circle	Description	Comments or Actions
Problems with Waste received?	Yes/No	Have there been problems with wastes, difficult, not permitted?	
Any Complaints?	Yes/No	Nature of Complaint and action taken?	
Any other issues	Yes/No	Anything else of interest? E.g. Department for Environment Inspection?	

Appendix C: Site Safety Rules

All customers using this facility are only to access the unloading bay in which they are supervised by an operator of the facility.

Customers are expected to wear PPE as dictated by the latest site signage.

Unaccompanied Visitors and contractors must have completed a web based induction programme. Please contact DFI Health and Safety Section for web address and password for induction.

Permits to work are required by all staff and outside contractors entering the facility to work on the CWI process and plant.

Appendix D: Site Location (Drawing No. 10565/WML/001 Rev. I1)

Please refer to attached files.

Appendix E: Site Layout (Drawing No. 9759-011 Rev. F)

Please refer to attached files.

Appendix F: Facility Plant and Equipment (Drawing No. 10565/WML/002 Rev. I1)

Please refer to attached files.

Appendix G: Facility Plant and Equipment provided by Supplier (Drawing No. 4608-GA-004 Rev. C)

Please refer to attached files.

Appendix H: External Slabs and Paving (Drawing No. 9759-034 Rev. C)

Please refer to attached files.

Appendix I: Segregation of Contaminated and Uncontaminated Surface Runoff (Drawing No. 10565/WML/003 Rev. I1)

Please refer to attached files.

Appendix J: Facility Drainage System (Drawing No. 9759-100 Rev. E)

Please refer to attached files.