FICHTNER

Consulting Engineers Limited

Kingmoor ERF

Fortum Carlisle Limited

Schedule 5 Response

ENGINEERING CONSULTING

Document approval

	Name	Signature	Position	Date
Prepared by:	Katie Hampton		Environmental Consultant	06/05/2021
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Document revision record

Revision no	Date	Details of revisions	Prepared by	Checked by
00	26/04/2021	First revision for Client	KLH	JRS
01	07/05/2021	Updated following Client comments	KLH	JRS

Contents

1 EMS

1. **There are a number of potential inaccuracies in the Application documents, as shown below. Please check, clarify and amend as appropriate:**
   a. **The second page of Appendix D, "Ecological interpretation of AQA" shows the document status as "DRAFT".**

      It can be confirmed that this is the correct/latest version of the ecological interpretation. The first draft document was approved with no additions or revisions considered necessary.

   b. **The same page includes this statement "This report is not to be used for contractual purposes unless this approval sheet is signed and designated as 'FINAL'."**

      It can be confirmed that this is the correct current/latest version of the ecological interpretation; however, the cover page was not updated to reflect the fact that the document was in its final form. An updated report is presented within Appendix A – the contents of the report are identical to that submitted with the EP application, but the disclaimer quoted above has been removed for the avoidance of doubt.

   c. **The Human Health Risk Assessment included with the Air Quality Assessment is marked as revision 0 and "First Issue for client review" this suggests that the document has not been properly considered and accepted by the client.**

      It can be confirmed that this is the correct/latest version of the AQA. The document has been reviewed and approved by the Client, with no additions or revisions considered necessary.

   d. **On the title page of the Noise Assessment Review, the report no. is given as R19.1109/DK but in the footer of the contents page the report number is R18.1107/DRK.**

      It is acknowledged that a typographical error was made on the footer of the contents page. It can be confirmed that the correct report number is R19.1109/DRK as per the front cover of the report.

   e. **The document entitled "Site Condition Report" written by Fichtner included with the application is dated 03/01/2020, the survey reports on which it relies are dated 2016.**

      The site investigation that was undertaken in 2016 remains the most recent intrusive investigation undertaken at the site. As there have not been any activities undertaken at the site since 2016 which may have impacted on the ground conditions, and the site has remained 'undisturbed', the results of this intrusive investigation are considered to be an accurate representation of ground conditions at the site when applying for the permit. Any additional site investigations required to be undertaken to inform the design of the Facility will be used to provide additional information to inform the baseline ground conditions prior to commencement of construction.

   f. **Appendix A (Installation Boundary) of the Odour Management Plan is blank.**

      An installation boundary drawing, identical to that provided within Appendix A of the Supporting Information, was submitted with Appendix A of the Odour Management Plan. For the avoidance of doubt, the drawing is provided again within Appendix B of this document.

   g. **There are numerous examples where the date in the footer of the documents does not match the date in the document revision record (including but not limited to the Non-Technical Summary). Please confirm all documents submitted with inconsistent dates are most up to date documents.**

      The date field within the footer of the documents automatically updates when the documents are converted to PDF. Therefore, this date may be shown as more recent

compared to the date stated within the document revision record. It can be confirmed that the correct date to reference is that within the document revision record, as this provides an accurate record of when each revision of the document was finalised.

h. Weather Data Used for Results in the Air Quality Assessment: clarify why tables 26 and 27 refer to different years than the text of section 8.2 Results.

It can be confirmed that a typographical error was made within section 8.2 of the AQA. The text within section 8.2 regarding weather data should refer to the years '2014 to 2018', to align with Tables 26 and 27.

i. Table 32 in the Air Quality Assessment is titled "Annual Mean VOCs (as Benzene) Impact at Identified Sensitive Receptors" but that section of the report is about PAHs.

It can be confirmed that a typographical error was made in the caption for Table 32. For the avoidance of doubt, the caption should read "*Annual Mean PAHs Impact at Identified Sensitive Receptors*".

j. Provide information to show how global warming potential calculations in table 2-2, paragraph 2.2.5 of the BAT assessment were calculated.

As described within section 2.2.5 of the BAT assessment, the global warming potential of each option is defined as the reduction in greenhouse gas emissions due to the displacement of power generated by other power stations. The use of 0.349 tCO_2e/MWh as the electricity displacement factor is justified within the greenhouse gas assessment.

The global warming potential is therefore calculated as follows:

$$Carbon\ intensity\ of\ displaced\ electricity\ \times net\ power\ generation$$

For the grate option, this is as follows:

$$0.349\ tCO_2e/MWh \times (234{,}000 - 15{,}000) = 76{,}431$$

The global warming potential for both options was rounded to the nearest 1,000 for the purposes of presenting the results of the assessment – this is why the grate option was presented as a GWP of 76,000 within the BAT assessment.

k. Varying statements of the length of time the facility will operate annually clarify why this it differs throughout the application documents.

The actual annual availability of the Facility will depend on the number of planned and unplanned shutdowns and as such will vary from year to year. For the purposes of the BAT Assessment, Greenhouse Gas Assessment and Heat and Power Plan, an availability of 8,000 hours per year was assumed, based on typical experience of availability for this type of plant.

It is important to consider start-ups and shutdowns (and hence reduced availability) within the BAT assessment and Heat and Power Plan as this allows for a more accurate assessment of costs, power and heat generation, etc. It is also important to include for periods of start-up and shutdown within the Greenhouse Gas Assessment, in order to determine the relative carbon impact of auxiliary firing for start-up and shutdown.

Air Quality Assessments (AQAs) are typically undertaken based on continuous operation throughout the year (8,760 hours) to ensure for a conservative assessment. With regards the Abnormal Emissions Assessment, abnormal operation was assessed for 60 hours a year (assuming that the Facility operates 'normally' for the other 8,700 hours per year) as this is the maximum (cumulative) allowable period of abnormal operation in accordance with the requirements of the Industrial Emissions Directive and hence allows for a conservative assessment. Similar to the AQAs, the noise assessment also assumes operation "*24 hours a day and 7 days a week*" to allow for a conservative assessment.

The supporting information lists both the 'nominal' annual capacity and the 'maximum' annual capacity that is being applied for, based on 8,000 hours and 8,760 hours respectively.

2 FPP

Please provide responses to the following questions and provide an updated FPP to reflect the answers:

To address the points raised in this section, an updated Fire Prevention Plan is presented within Appendix C and is referred to where appropriate.

2. Provided an updated site plan showing the following:

a. Location of quarantine area;

This is now presented within Appendix A7 of the updated Fire Prevention Plan.

b. Unacceptable and non-compliant waste;

It can be confirmed that any waste detailed as unacceptable or non-compliant will be stored within the quarantine area. A drawing showing the location of the quarantine area is presented within Appendix A7 of the updated Fire Prevention Plan.

c. Location of any areas, if any, where hazardous materials will be stored;

This is now presented within Appendix A8 of the updated Fire Prevention Plan.

d. Location of drain covers and any pollution control features such as drain closure values and firewater containment systems;

A plan showing the indicative location of the drain closure valves and firewater containment is presented within Appendix A9 of the updated Fire Prevention Plan. The location of drain covers and other pollution control features will be subject to the detailed design of the Facility. Upon completion of detailed design, it is proposed to update the drawing to include for these features.

e. Site drainage plan;

The exact drainage systems will be subject to the detailed design of the Facility. An indicative site drainage plan is presented within Appendix A10 of the updated Fire Prevention Plan. Upon completion of detailed design, it is proposed to update this drawing to include for the 'final' site drainage. Furthermore, the indicative drainage strategy as submitted with the planning application is presented within Appendix F.

f. Firewater containment system;

As stated within the response to point d, a drawing showing the indicative location of the firewater containment provisions is presented within Appendix A9 of the updated Fire Prevention Plan. Upon completion of detailed design, it is proposed to update this drawing to include for the 'final' drainage and containment features.

g. Location of gas cylinders;

It is expected that gas cylinders for welding machinery will be stored at the mechanical workshop. However, no spare gas cylinders will be stored at the site.

A drawing showing the locations of gas cylinders at the Facility is presented within Appendix A13 of the updated Fire Prevention Plan.

h. Mobile plant;

The front loader and forklift will be parked at the ash (slag) storage hall. A separate space will be allocated for the parking of this mobile plant. The vehicles will not be serviced within the site.

A drawing showing the locations of mobile plant at the Facility is presented within Appendix A14 of the updated Fire Prevention Plan.

A14

i. **Location of drainage pits for hot water; and**

A plan which shows the indicative locations for the drainage pits for the site, including the location of the 'hot' process water pit(s), is presented within Appendix A10 of the Fire Prevention Plan.

j. **Location clean water pit.**

A plan which shows the indicative drainage locations at the site, including the location of the 'clean' process water pit(s), is presented within Appendix A10 of the Fire Prevention Plan.

3. **Confirm whether there is no natural or unmade ground onsite, and update the site plan to reflect this.**

A drawing is presented within Appendix A11 of the Fire Prevention Plan which shows the natural or unmade ground at the site.

4. **It is not clear if the quarantine area will be used for both unacceptable waste and hot loads. Please confirm if this is the case and clarify how this will be managed.**

The quarantine area will be used for the temporary storage of any wastes identified as unacceptable, prior to transfer off-site. This may include hot loads.

Any waste placed within the quarantine area will be removed in a timely manner (i.e. within 24 hours), so it is highly unlikely for a situation to arise whereby the quarantine area is already 'full' and another load needs to be placed within the quarantine area. Any hot loads would be placed in a location within the quarantine area which is away from any loads which have already been transferred to this area. If the waste is burning when it is transferred to the quarantine area, it will be extinguished immediately upon placing in the quarantine area to prevent the spread of fire to any loads already within the quarantine area.

5. **Include a map of all nearby sensitive receptors.**

A Fire Receptor Plan is now included within Appendix A12 of the updated Fire Prevention Plan.

6. **Clearly state all the potential waste storage areas and confirm that the FPP is applicable to all of these. All solid, non-hazardous, combustible waste on site must be outlined and considered in the FPP.**

The waste storage areas are all clearly stated within section 3.1 of the FPP. Incoming waste to the Facility will be transferred directly into the waste bunker for storage. Any unacceptable wastes which is identified within the waste loads within the bunker will be transferred to the dedicated quarantine area. Fire prevention and suppression measures for these areas are clearly set out within the relevant sections of the FPP. A drawing showing the location of the waste storage bunker is presented within Appendix A3 of the FPP and a drawing showing the location of the quarantine area is presented within Appendix A7 of the FPP.

It is acknowledged that incinerator bottom ash (IBA) and Air Pollution Control residues (APCr) are also considered to be wastes. However, as stated within section 3.4.2 of the FPP, due to the high thermal temperatures in which the IBA has been combusted, the IBA will not contain any residual combustible materials; therefore, it will not be possible for the IBA to self-combust. Furthermore, section 3.4.3 of the FPP describes how the APCr is not expected to contain any combustible materials; therefore, it would not be possible for the APCr to self-combust. Therefore, as these wastes are non-combustible, they are not considered further within the FPP.

Taking the above into consideration, it is considered that all solid, non-hazardous, combustible waste stored at the Facility have been considered within the FPP.

7. **Confirm timescales unacceptable waste will be onsite.**

   As stated within section 3.2.2 of the FPP, unacceptable waste will typically not be stored within the quarantine area for more than a few hours. However, it can be confirmed that Fortum will co-ordinate with the Waste Supplier to ensure that unacceptable waste is removed from the site as soon as possible .

8. **Confirm all fire walls will have a minimum of 4 hours fire resistance rating.**

   As described in section 4.4 of the FPP, fire walls on-site will have a minimum 2-hour fire resistance rating in accordance with the NFPA 850 standard. This is also understood to be in accordance with the requirements of the EA's FPP guidance which states that fire walls must "*have a fire resistance period of at least 120 minutes to allow waste to be isolated and to enable a fire to be extinguished within 4 hours*".

9. **Clarify what is meant by 'where feasible, where appropriate and where practicable' in the following statements and provide more specific details for each scenarios:**

   the pile separation distances will be adopted as good practice where feasible

   As described within section 4.3 of the FPP, it is understood that pile separation distances only apply to the external storage of wastes. All wastes delivered to the Facility will be within stored within enclosed buildings; therefore, this requirement does not apply. However, in the unlikely event that there is more than one pile of waste within the Facility (for example, two loads requiring storage in the quarantine area), a separation distance of 6 m between the two piles will be maintained as good practice, unless the size of each waste pile is too large to accommodate this.

   and

   where appropriate, the quarantine areas will be in accordance with the requirements of the fire prevention plan (FPP) guidance, i.e. it will:

   • hold at least 50% of the volume of the largest pile, row or block of containers at the Facility;

   The maximum capacity of the quarantine area is subject to the detailed design and will be confirmed to the EA when this has been completed. As pile size requirements and separation distances do not apply to the waste bunker, this is not considered to fall under the definition of a waste 'pile' as per the FPP guidance. The largest pile or container of waste at the site will therefore be waste contained within delivery vehicles.

   It can be confirmed that the quarantine area will have sufficient capacity to hold at least one waste delivery vehicle load. This will allow the segregation of the whole waste delivery should a hot load be identified upon arrival at the Facility.

   Due to the robust waste pre-acceptance and acceptance checks in place at the site, it is highly unlikely that large quantities of unacceptable wastes will be accepted at the site and subsequently require segregation and storage in the quarantine area. Furthermore, a number of procedures will be in place to identify and deal with any hot loads at the Facility to prevent fire spreading throughout the waste. These are described in further detail within the FPP. Accordingly, there will not be large quantities of hot loads that require segregation and storage in the quarantine area. Despite this, the quarantine area will still have the capacity to contain a whole waste delivery in a worst-case scenario.

and

- ***where practicable, have a separation distance of at least 6 metres around the quarantined waste.***

The dimensions of the quarantine area are approximately 7m (width) x 18m (length). The location of the quarantine area is directly adjacent to the waste bunker, in the crane maintenance area. Depending on the pile size of the quarantined waste, it may not be feasible to have a separation distance of 6m between the quarantined waste and the bunker walls. However, a thick, high concrete wall will lie between the waste bunker and the quarantine area, which will act as a fire wall and prevent the spread of fire should a hot load be stored within the quarantine area. The quarantine area and the waste bunker will also have different height floor levels which will further increase separation between the wastes.

When depositing waste in the quarantine area, the site operative will attempt to place the waste so that a reasonable separation distance is maintained around the waste and it does not lie directly adjacent to any walls. Suitable fire detection and suppression systems will be installed in the quarantine area to reduce fire risk within this area.

and

Where appropriate, waste storage areas will be designed with automatic fixed fire detection and suppression systems.

The fire detection and suppression measures in place at the site are described in detail within section 4.8 of the FPP. In relation to waste storage areas, the waste bunker will be fitted with thermal imaging cameras which will continuously scan the surface of the waste pile and identify any hotspots. In the event of hotspots being identified, the crane will be used to turn/rotate the waste and dissipate the heat within the waste. In addition, automated firewater cannons will provide fire suppression capability to reduce the temperatures within the bunker.

The only other area which will store combustible waste is the quarantine area. The fire detection and suppression measures to be installed within the quarantine area will be confirmed during the detailed design stages for the Facility, and the FPP will be updated accordingly to reflect this. However, these are expected to comprise smoke and/or flame detectors, and either sprinklers, hose reels and/or firewater cannons for fire suppression.

10. Confirm all sources of ignition will be keep at least 6 metres away from any combustible or flammable waste or clarify what is meant by 'Where feasible' in the following statement:

Where feasible, the guidance of keeping all sources of ignition at least 6 metres away from any combustible or flammable waste will be followed as part of this management system.

As part of the hot work management system, the potential for sources of ignition to cause fires will be managed on a case-by-case basis. There may be some instances where it is not feasible to keep all sources of ignition at least 6m away from any combustible or flammable waste, for example when using or transporting mobile plant or when driving site vehicles (where the hot exhaust may present a potential ignition source). However, a hot works management system will be implemented for the use of mobile plant, and site operatives will be trained in the operation of site vehicles with a fire watch system implemented to detect signs of fires from dusts settling on hot exhausts. Mobile plant and site vehicles will be stored at least 6m away from any combustible wastes when not in use. A drawing showing the location of mobile plant is presented within the response to question 2(h). There will be suitable fire detection and

suppression systems installed in areas where this separation distance cannot be maintained – these will be discussed and agreed with the fire insurers as part of the final fire strategy during the detailed design phase of the project.

11. **Provide details on the of fires in electrical control systems including the use of fireproofed cabling.**

    The site will be constructed and operated in accordance with recognised standards for fire prevention, detection and control within electrical control systems. The exact types of fire detection and suppression systems for electrical control systems will be subject to the detailed design of the Facility; however, it is expected that the following measures will be implemented in accordance with current best practice for this type of facility:

    - All rooms with concentrations of electrical equipment such as switchgear rooms, low voltage rooms, distributed control system (DCS) rack room, uninterruptible power supply (UPS) / battery rooms, crane control cabinet rooms will be fitted with suitable fire detection systems. Fire detection will be by means of a 'double knock' system, composing of ionisation (or heat and smoke) detectors to minimise the risk of false activation. Furthermore, Manual Call Points will be installed in all areas. The detection systems will be designed for ease of regular testing to demonstrate correct operation.
    - Electrical equipment will be installed within e-housing rooms which are of a steel construction with dedicated fire detection and suppression systems.
    - Suitable automatic fire protection systems will be located within the rooms. For electrical rooms, it is expected that inert gas suppression systems will be used. These will be installed and operated in accordance with a recognised standard, such as EN 15004. Gaseous supply bottles and local control/isolation panels for the systems will be located outside the enclosed area (i.e. the electrical e-housing room) being protected by the system.
    - All cable trays or piping systems passing through fire barriers will be fitted with fire stops. Cable spreading rooms and cable tunnels which are long, or otherwise difficult to access for firefighting, will be protected with appropriate automatic fire suppression systems (such as automatic gaseous extinguishing systems, or sprinklers or water spray systems).

12. **Provide evidence that inspection of vehicles and electrical items necessary for the operation of the Facility will be appropriate to minimise fire risk.**

    The following measures will be implemented at the Facility to minimise the fire risk associated with the operation of the waste incineration process:

    a. Regular inspections of equipment will be undertaken and logged as part of the documented management systems in place at the site. The frequency of inspections will be decided based on the relevant fire risks associated with the activity.

    b. With regards mobile plant and site vehicles, a fire watch system will be implemented to detect signs of fires from dusts settling on hot exhausts. This will include daily visual checks of dusts settling on hot exhausts as part of the operational checks by operational staff for each shift. Waste deliveries will be continuously supervised by operational staff and any hot loads identified will be dealt with immediately.

    c. For specific items of electrical equipment, these will be inspected at regular durations in accordance with the manufacturer's instructions and as part of planned preventative maintenance regimes. Inspections of the main operational areas (as a whole) will be carried out, as a minimum, during every operating shift, with maintenance work instructions raised for any items identified.

Due to the robust procedures it has in place for the prevention, detection and mitigation of fires at its existing operational facilities, Fortum has not had any major fires.

13. **Provide information on what procedures will be used to prevent liquids leaking or trailing from vehicles on site and what actions will be taken to respond to any leaks or spillage of chemicals.**

    As stated within section 3.13 of the FPP, emergency response procedures will be developed as part of the emergency procedures for the Facility. The procedures will include actions to be undertaken to respond to spills and leaks of chemicals, including liquids leaking or trailing from site vehicles.

    Spill kits will be made easily available at different locations throughout the site. The documented management procedures for the Facility will include for accident management measures and will set out procedures to be followed in a spill event. All staff and contractors would be trained in site-wide emergency response procedures.

    Mobile plant and vehicle operators will be provided with suitable training for the equipment they are operating. Supervision of mobile plant operation and regular site inspections will ensure that any leaks or trailing from vehicles are quickly identified and suitably maintained to prevent leaks. Where specific responsibilities are given to specific staff, training will be provided to those employees. Training records in the emergency response procedures for all staff and contractors will be retained on-site.

    Should a spill occur at the site, contained drainage systems in process areas will ensure that any contaminated effluent is not released to the aquatic environment. Storage of liquid chemicals will be within bunded areas with the secondary containment having sufficient capacity to contain a spill. Regular inspections will be undertaken of storage vessels as part of the regular preventative maintenance of the Facility.

3 EWC codes

14. Please provide additional information on the proposed waste types as set out below:

a. Show whether wastes 02 01 03, 02 01 07, 02 03, 02 03 04 and 02 06 are suitable for incineration or would be more suited to be treated with other methods such as composting or anaerobic digestion.

EWC codes 02 01 03 and 02 01 07 fall under sub-category 02 01: '*wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing*'.

Sub-category 02 03 is '*Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation*'. Only one EWC code was applied for under this category: 02 03 04.

Sub-category 02 06 is '*wastes from the baking and confectionary industry*'. Only one EWC code was applied for under this category: 02 06 01.

It is acknowledged that all the EWC codes described above may initially appear to be suitable for alternative treatment e.g. in an anaerobic digestion plant. However, should these wastes be rejected for alternative treatment (for example, due to contamination or other issues), an alternative treatment method will be required. The Facility will provide that alternative treatment method in accordance with the waste hierarchy, to avoid the wastes otherwise going to landfill for disposal. Fortum anticipates that the quantity of waste received at the Facility under these EWC codes will small compared to the other wastes processed at the Facility.

b. To show whether wastes 02 01 04, 03 01, 03 01 01, 03 01 05, 03 03 07, 03 03 08, 15 01 02, 15 01 05, 15 01 06, 17 02 03, 19 12 04 and 20 01 39 are suitable for incineration due to potential to affect emissions.

EWC codes 02 01 04, 17 02 03, 19 12 04 and 20 01 39 relate to waste plastics. These wastes would be contaminated or otherwise unsuitable for recycling. The quantity of these wastes is anticipated to be small compared to other wastes processed at the Facility. Although it is acknowledged that the combustion of plastics has the potential to release emissions of dioxins and furans, PCBs and mercury, the wastes will be mixed within the waste bunker to ensure a homogeneous fuel feed to the furnace. This will lie within the capability of the flue gas treatment system, therefore maintaining emissions to within the limits prescribed by the EP.

Sub-category 03 01 is 'wastes from wood processing and the production of panels and furniture'. Only two EWC codes were applied for under this category: 03 01 01 and 03 01 05. Furthermore, EWC codes 03 03 07 and 03 03 08 are wastes resulting from pulp, paper and cardboard production and processing. It is acknowledged that these wastes will have a relatively high calorific value. However, the wastes will be mixed within the waste bunker to ensure a homogeneous fuel feed to the furnace, thereby avoiding upset to the boiler as a result of spikes in CV. The Facility will be designed to process wastes with a range of NCVs – refer to the Firing Diagram presented within Appendix A of the Application. Taking the above into consideration, the resulting emissions will be within the capability of the flue gas treatment system, therefore maintaining emissions to within the limits prescribed by the EP.

EWC codes 15 01 02, 15 01 05 and 15 01 06 are waste packaging including plastic packaging, composite packaging and mixed packaging. These wastes would be contaminated or otherwise unsuitable for recycling, with the quantity of these wastes anticipated to be small

compared to other wastes processed at the Facility. The same arrangements described above will be applied to the processing of these waste codes – the waste will be mixed within the bunker to ensure a homogeneous fuel feed, with emissions maintained within the limits prescribed within the EP.

c. **Explain what wastes will be received under the following codes 18 01 04, 18 02 03, 19 06 04 and 19 06 06.**

With regards EWC code 18 01 04 (wastes resulting from human treatment whose collection and disposal is not subject to special requirements in order to prevent infection), these are expected to comprise typical healthcare wastes also found in household municipal waste (for example dressings, plaster casts, linen, disposable clothing, diapers). With regards EWC code 18 02 03 (wastes resulting from animal treatment whose collection and disposal is not subject to special requirements in order to prevent infection), these will comprise general wastes resulting from veterinary surgeries or similar. Both EWC codes will comprise wastes that are not subject to special requirements in order to prevent infection; and therefore, will be suitable for incineration on a conventional moving grate.

Waste under EWC codes 19 06 04 and 19 06 06 will comprise digestates that are unsuitable for processing in an alternative treatment facility, for example due to contamination. The digestates received will be digestate that does not meet the requirements of PAS 110 (or is otherwise unsuitable for spreading on land as a fertiliser). It is anticipated that the quantity of these wastes will be small compared to other wastes processed at the Facility. These wastes would be mixed with the rest of the waste in the bunker to ensure that it is suitable for incineration. The digestate may need to be dewatered to reduce its moisture content and make it suitable for handling at the Facility, but this would need to occur prior to transfer to the Facility. Taking this into consideration, Fortum considers that the digestates that will be accepted at the Facility are suitable for combustion in a moving grate system.

d. **Whether wastes 02 02 03, 02 03, 02 03 04, 02 06 01, 18 01 04, 18 02 03, 19 06 04, 19 06, 19 06 06, 19 08, 20 03, 20 03 01 and 20 03 04 will result in increased risk to odour.**

A number of two-digit waste codes (i.e. 02 03, 19 06 & 19 08) are referenced in the question, rather than 6 digit EWC codes. For the avoidance of doubt, in responding to this question, the response will only consider the 6 digit EWC codes which have been applied for within the application (i.e. 02 02 03, 02 03 04, 02 06 01, 18 01 04, 18 02 03, 19 06 04, 19 06 06, 19 08 01, 20 03 01, 20 03 02, 20 03 03, 20 03 04 and 20 03 07).

The quantities of these waste types which will be received at the Facility will be small compared to the overall waste capacity of the Facility.

Digestate, represented by EWC codes 19 06 04 and 19 06 06 will be dewatered, if required, to reduce its moisture content prior to transfer to the Facility. The wastes will be mixed within the bunker to wastes would be mixed with the rest of the waste in the bunker to ensure that it is suitable for incineration.

In addition to the above, waste acceptance procedures will be developed for all incoming wastes. It is the responsibility of the Facility management to ensure that odour control can and is maintained. If upon arrival at the site, it is deemed that odour control cannot be maintained due to the nature of the waste, the waste will not be accepted at the Facility. Finally, there will be procedures in place for the implementation of an odour abatement system should odour be deemed a problem at the Facility.

e. Justify receiving the following wastes rather than them being recycled: 02 01 04, 02 01 07, 04 02 21, 03 01, 03 01 01, 03 01 05, 03 03 08, 04 02 22, 15 01 01, 15 01 02, 15 01 03, 15 01, 15 01 05, 15 01 06, 15 01 09, 17 02 01, 17 02 03, 19 12 01, 19 12 04, 19 12 07, 19 12 08, 20 01 01, 20 01 10, 20 01 11, 20 01 39 and 20 02 01.

A number of two-digit waste codes (i.e. 03 01 & 15 01) are referenced in the question, rather than 6 digit EWC codes. For the avoidance of doubt, in responding to this question, the response will only consider the 6 digit EWC codes which have been applied for within the application.

With regards the waste codes described above, and those listed within the question, the quantity of these wastes received at the Facility will be small compared to other wastes processed at the Facility. In accordance with the waste hierarchy, these materials will only be received at the Facility if they are contaminated or otherwise unsuitable for recycling. The Facility will provide an energy recovery solution for these waste types to avoid disposal of these wastes in a landfill.

4 Waste management

15. Air Pollution Control (APC) residues:

Provide details of the 'chute system that will be used for unloading the APCr

APCr will be unloaded from its respective storage silo in an enclosed area, with all APCr unloading operations supervised by site operatives. Potential fugitive emissions from the unloading process will be contained within the tanker/silo. The unloading chute from the APCr silo will be designed with an inner core, which will be used for the unloading of APCr of the silo, and an outer 'bellow' which will extract displaced air from the silo and pass it through a filter with the air subsequently vented back into the silo.

The site operatives will assist the delivery driver in positioning the tanker underneath the loading chute. The delivery driver will be responsible for connecting the unloading chute to the tanker. Site operatives will be responsible for checking that the loading chute is closed following completion of unloading and will be required to clear up any spilled material. Cleaning of the tanker is prohibited outside the enclosed loading area. The APCr unloading area will have a dedicated drainage system, with all runoff/leachate collected for reuse as process water within the Facility.

An example datasheet for the APCr unloading chute from a reference project is presented within Appendix H. Although the technology provider for the Facility has not yet been selected, it is expected a similar system will be used.

16. Bottom Ash:

Confirm whether the metal fractions will be recovered from the bottom ash. Please also provide details of this process

At this stage, it is not currently proposed to recover metals from the bottom ash. Municipal solid waste (MSW) or commercial and industrial (C&I) waste accepted at the Facility will have undergone either source segregation (i.e. kerbside recycling) and/or pre-treatment (for example at a waste transfer station) prior to transfer to the Facility. Therefore, the quantities of metals within the waste will be small having been removed prior to delivery to the site.

The IBA will be transferred off-site for processing at a suitable licensed waste management company prior to re-use (e.g. as a secondary aggregate). Metals recovery may be undertaken at the IBA processing facility.

5 Water management

17. Please confirm whether areas where receipt handling and storage of waste take place are within a sealed water drainage system.

Waste will be received, handled and stored within the main waste reception building.

As stated within section 2.7.2 of the Supporting Information submitted with the application; specifically, the response to BAT 32, it can be confirmed that process drainage from these areas will be contained and subsequently re-used within the process. In the unlikely event that excess process effluents are generated, these will be discharged to sewer in accordance with a Trade Effluent Consent first obtained from the Sewerage Undertaker.

18. The direction and source of the clean washdown water is unclear on the Water flow Diagram Please provide details / clarify what clean process in particular:

a. The direction of water flow;

b. Where the water for the washdown will be stored;

c. Where the water from the washdown will be stored; and

d. Is the more than one direction the water can flow and how are these directions isolated.

An updated indicative water flow diagram is presented within Appendix D which clarifies the direction and storage of washdown waters.

It is acknowledged that washdown waters may arise from multiple process areas – these will be split into 'clean' washdown waters and 'dirty' washdown waters. 'Clean' washdown waters may result from washdown of areas where waste, raw materials or residues are not stored and there is little potential for contamination or pollution. 'Dirty' washdown waters will result from areas such as the tipping hall or ash rooms, where waste and residues are likely to be stored and there is greater potential for the washdown waters to be contaminated with various pollutants.

The raw water tank will be the initial/primary source of water for washdown activities. Once washdown activities have been undertaken, the 'used' waters will be stored in either 'clean' water pits or a 'dirty' water pit, prior to either re-use or discharge off-site.

The water flow directions are shown within the updated Indicative Water Flow Diagram presented within Appendix D. As can be seen from the diagram, the waters can only flow in one direction with the exception of the dirty water pit. Excess water from the ash quench system may be re-directed back into the dirty water pit for further re-use.

19. The site drawings labelled Installation Boundary indicate that the surface water storage tank is 840m^3. The same diagram lists the raw and fire water tank as 2400m^3 with 1500m^3 for fire and 700m^3 for raw.

The fire water tank exceeds the surface water storage tank please provide details on:

a. How fire water will be prevented from entering ground water and cargo beck; and

Although firewater and raw water will be combined into one tank, approximately 1,500 m^3 of the capacity will be available for firefighting purposes. Therefore, this is considered to be the capacity of the 'firewater tank'.

The greatest risk of fire at the site will be fires resulting from the waste bunker. The bunker itself will be the primary source of firewater containment for bunker fires. The below-ground volume of the bunker is 4,700 m^3 which provides for containment of firewater. This volume will be reduced depending on the quantity of waste stored within the bunker.

The surface water storage tank will provide up to 840 m^3 of attenuation capacity for used firewater resulting from external areas; however, additional capacity will also be provided

by the balancing pond located above the surface water storage tank. Isolation valves will be in place to prevent the discharge of contaminated firewater off-site and hence from being released to Cargo Beck. The surface water storage tank will be design and constructed as a water retaining structure in accordance with EN 1992-3:2006, Eurocode 2, thereby preventing the release of any potentially contaminated firewater in the event that the attenuation tank was used for the containment of firewater.

The flood risk assessment submitted with the planning application states that, in total, a free capacity of 1,195 m^3 will always be maintained for surface water storage. Additional capacity will also be provided by site kerbing and hardstanding and the surface water drainage pipework itself. When combined, it is anticipated that this will provide more than the 305 m^3 of 'required' capacity. Therefore, in the unlikely event that the full contents of the firewater tank is discharged for firefighting purposes in external areas, there is sufficient storage capacity for the containment of potentially contaminated firewater at the Facility.

b. Clarity on discrepancies that the raw and fire tank sizes do not total the figure given for raw & fire water tank.

The storage capacities of the tank are as follows:

- raw water - 700 m^3;
- firewater - 1,500 m^3.

Allowing for the external measurements of the tank, and for any air void within the tank when full, the volume of the tank is 2,400m^3 .

20. The site drawings labelled Installation Boundary indicate a collector pits for water, however there are no details in the supporting documents. Please provide further details on this specifically:

a. The size of the pit;

b. What water is stored in the pit and why;

c. Include on the indicative water flow diagram;

d. What measures are in place to prevent water leaking into ground water from these pits; and

e. What measures are in place to prevent surface water entering these pits.

The indicative water flow diagram provides a general overview of the drainage arrangements at the site, with the exact design of the drainage systems subject to the detailed design of the Facility. For simplicity, the indicative water flow diagram assumes two pits for process water (clean and dirty), but in reality, there will be a number of pits located around the site that will hold different process waters. Nevertheless, the concepts set out in the indicative water flow diagram remain the same.

An indicative drainage drawing is presented within Appendix E which shows the locations of different collector pits around the site. The following drainage components are highlighted within the drawing:

- clean water pits (from which blowdown water or boiler feedwater is emptied to);
- underground tanks for dirty process waters (the 'dirty water pit');
- pumping pits for foul water and dirty process waters;
- drainage pit for oil (i.e. an oil sump);
- surface water storage tank; and
- attenuation/balancing pond.

Upon completion of detailed design, a detailed drawing presenting the full drainage arrangements will be developed and will be submitted to the EA (incorporated into the FPP

or otherwise), which will include for the specific routes of each process water stream and locations/capacities of all above and below ground storage vessels.

Drainage pits/storage vessels will be design so that they are impermeable to the liquid that is being stored (e.g., concrete or steel construction). Concrete structures will be designed in accordance with recognised standard '*Eurocode 2 – Design of Concrete Structures –Part 3 : Liquid retaining and containment structures*'. During construction and commissioning, quality assurance checks will be undertaken to prove the structural integrity of the drainage systems.

Regular preventative maintenance of the drainage systems at the site will ensure that its integrity is maintained throughout the lifetime of the Facility. Preventative maintenance will include for periodically emptying collector pits and undertaking visual inspections of the concrete or other material from which the pits are constructed. Should it be identified that damage has occurred to the structure, repairs will be undertaken to ensure that integrity is suitably maintained. These measures will ensure that liquids do not leak from the drainage pits/vessels and contaminate the underlying groundwater.

The surface water drainage system and process water drainage systems will be completely segregated, as described within section 2.7.2 of the supporting information (specifically, the response to BAT 32). The surface water drainage system will incorporate SUDS measures into its design to ensure sufficient capacity in the case of a flood event.

The measures described above have been designed to minimise, as far as possible, the risk of surface water entering process water pits.

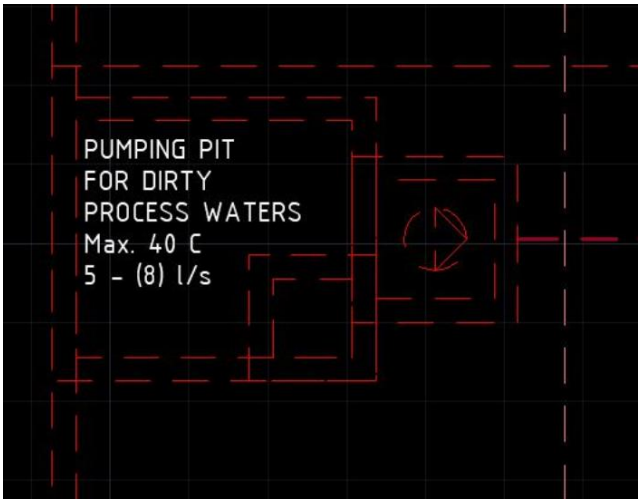
21. **The site drawings labelled Installation Boundary indicate an underground tanks for dirty hot processed water, however there are no details in the supporting documents. Please provide further details on this:**
    a. **What hot water will be stored in these;**
    b. **What size are they;**
    c. **Why are they not on the indicative water flow diagram;**
    d. **What measures are in place to prevent water leaking into ground water from these; and**
    e. **What measures are in place to prevent surface water entering these tanks.**

    Hot dirty process waters may include excess process effluents from the ash quenching system, for example. As described within the response to question 20, the indicative water flow diagram provides a general overview of the drainage arrangements at the Facility, with the exact design of the drainage systems subject to the detailed design. A detailed drawing presenting the full drainage arrangements will be submitted to the EA upon completion of detailed design, which will confirm the locations and capacities of individual storage vessels.

    Details on the measures in place to prevent leaks to the surrounding environment, and to prevent surface water from entering the process water drainage system, is provided within the response to question 20.

22. **The site drawings labelled Installation Boundary indicate pumping pit in the dirty process waters, this is followed by text that starts "5 – (8)" but the rest is not clear on the diagram. Please clarify what this is.**

    The text states "5 – (8) l/s" – i.e., litres per second. This is the anticipated flow rate for dirty process waters from this pit. The relevant part of the site drawing is provided below, with the hatching removed for clarity:


PUMPING PIT
FOR DIRTY
PROCESS WATERS
Max. 40 C
5 - (8) l/s

6 Flood risk

23. Describe what measures will be in place to prevent pollution in the event of a flood in particular:

a. Details of mitigation to the risk of contaminated water entering both groundwater and Cargo Beck (and therefore also the River Eden SAC/SSSI).

As stated within section 1.4.6 of the supporting information, the surface water storage tank will be designed for SUDS requirements. A copy of the Flood Risk Assessment (FRA) undertaken in support of the planning application is provided within Appendix G for reference. The FRA describes how the total storage volume for surface water attenuation (i.e. both the surface water attenuation tank and the attenuation pond) will be 1,195 m^3. This capacity has been designed to allow for the sensitive nature of the Cargo Beck and the River Eden – the attenuation capacity will accommodate the 1 in 100 year rainfall event including a 40% climate change allowance.

Surface water will be discharged from the site via silt traps and oil interceptors before storage in the surface water storage tank. This will reduce the quantity of pollutants present within the surface water prior to discharge. Isolation valves will be in place to prevent the release of any contaminated water off-site (e.g. in a fire event or a significant spillage event). Furthermore, the FRA states that "*settlement of solids will be promoted by the SUDS measures, by using a pond/lagoon*".

As stated in the response to question 20, the process drainage system and the surface water drainage system will be fully segregated. The surface water drainage system has been designed to provide sufficient attenuation capacity in a flood event. Therefore, the process drainage system would be unaffected in a flood event and so the risk of process effluents being released off-site due to flooding would be negligible.

7 Chemical delivery and storage

24. Please confirm that all storage tanks will be bunded to 110% capacity.

It can be confirmed that all storage tanks used for the storage of liquid raw materials (such as fuel oil, ammonia) will be bunded to 110% capacity. This does not include water tanks or silos containing dry raw materials such as lime, PAC.

25. Please provide clarification what is meant by the following statement in relation to the secondary and tertiary:

> ***All chemicals will be stored in an appropriate manner incorporating the use of suitable secondary and other measures (such as acid and alkali resistant coatings) to ensure appropriate containment and tertiary abatement measures.***

The design of the containment measures, is subject to detailed design. However, Fortum can confirm that all storage and containment facilities will be designed and operated in accordance with relevant guidance relating to the design and construction of containment systems, including the Guidance for Pollution Prevention (GPP) guidance notes and the relevant EA/Government guidance including '*Pollution prevention for businesses*'.

Fortum would be happy to provide details of the proposed containment measures following completion of detailed design.

The primary containment for raw materials will be the vessel in which the raw material is stored in. Secondary containment will be provided to contain a spill or leak. The secondary containment for liquid materials will provide at least 110% of the storage capacity, in accordance with the EA guidance '*Pollution prevention for businesses*.' Tertiary containment will be any additional measures to ensure that contaminants are not released from the site in the unlikely event that the secondary containment was to fail.

The exact materials from which chemical storage facilities will be constructed from is subject to the detailed design of the Facility. Therefore, it cannot be confirmed whether alkali or acid resistant coatings will be used at this stage. However, with regards liquid chemicals, it can be confirmed that the ammonia and fuel oil tanks will be metal tanks located within an area with secondary containment (i.e. bunding) which will be able to contain a spill. Further detail on the proposed arrangements for secondary and tertiary containment is provided within Table 2 of the Site Condition Report submitted with the application.

26. Please provide further details of the tanker off-loading area in relation to measures in place to contain a spill during delivery.

The site will be operated in accordance with the EA guidance '*Pollution prevention for businesses*'. Areas where the spillage of any stored substance could be harmful to the environment will be appropriately kerbed or bunded. External areas where fuel or chemicals are offloaded will be connected to the process drainage network.

As can be seen within the site layout drawing (refer to Appendix B), the ammonia and fuel tanks will each be located within an area with secondary containment (i.e. a bund). External unloading areas (e.g. for lime, carbon) will have contained drainage with falls to the process drainage system. In accordance with the EA guidance, delivery pipes will clearly be marked with the tank volume and substance stored to ensure deliveries are made to the correct tanks, reducing the risks of accidents and spillages during unloading operations.

Adequate quantities of spillage absorbent materials ('spill kits') will be made available at easily accessible locations where chemicals are stored. An accident management plan will be

incorporated into the documented management systems for the Facility which will set out measures and procedures to deal with any spills on-site.

The measures to contain a spill during delivery for the main raw materials used at the Facility are set out below.

Liquid raw materials (fuel oil, ammonia…)

Liquid raw materials will be stored within an area with suitable secondary containment to contain a spill during unloading operations. This will comprise a dedicated concrete sump or other bunding depending on the type of material that is being stored – to be confirmed during detailed design. The secondary containment will have the capacity to contain whichever is the greater of 110% of the tank capacity or 25% of the volume of the materials being stored. The storage tanks would be located within a covered area, with the hardstanding in this area having links to the process drainage system.

Dry raw materials (lime, PAC….)

Dry, powdered raw materials would be unloaded pneumatically from the delivery vehicle into their respective silo, with any dusts generated during the unloading operation abated by means of a fabric filter located on the top of the silo. The abated air will then be released to the atmosphere. The silo will also be fitted with a high-level alarm. This will prevent any spills associated with overfilling the silo. Following completion of unloading, site operatives will check that the loading chute is closed accordingly and will be required to clear up any spilled material.

The external areas where dry raw material unloading operations take place will be connected to the process drainage network.

8 Fugitive emissions

27. The following plans have not been submitted. Please provide details of measures to prevent fugitive emissions and justify why the Management Plans have not been submitted as part of the application:

a. Dust Management Plan (DMP); and

With regards waste facilities, EA guidance '*Control and monitor emissions for your environmental permit*' states that a dust management plan must be provided for the following activities:

- keeping and/or treating household, commercial or industrial waste in a waste transfer station;
- keeping and/or treating household, commercial or industrial waste in a materials recycling facility;
- disposing of household, commercial or industrial waste in a landfill;
- recovery of household, commercial or industrial waste by deposit for recovery; and
- receiving, processing or producing fine or dusty materials.

As the Facility is a waste incineration plant, it does not fall under any of the categories described above. Furthermore, fine or dusty materials would not be received at the Facility – only wastes which fall under the approved list of EWC codes within the permit would be accepted for processing at the Facility.

Finally, the EA guidance states that a dust management plan is only required for the facilities described above if the following criteria are met:

- in, or within 2km of, an air quality management area for PM10;
- within 500m of a sensitive receptor such as a home, school, hospital or nursing home, food preparation facility or similar; or
- within 250m of a sensitive receptor when treating biowaste.

It can be confirmed that the Facility does not lie within 2km of an AQMA for PM10. Although a number of industrial receptors surround the Facility, the nearest 'sensitive receptor' (such as residential areas) lies greater than 500m away.

Taking the above into consideration, it is understood that a Dust Management Plan is not required to be submitted in support of the application.

b. Pest Management Plan (PMP).

The EA guidance '*Control and monitor emissions for your environmental permit*' states that a Pest Management Plan must be produced when the activity "*causes pests (such as scavenging animals like birds or flies*". It is not expected that the activities to be undertaken at the Facility will attract significant amounts of pests.

Taking the above into consideration, it is understood that a Pest Management Plan is not required to be submitted in support of the application.

28. Please confirm if FOG sprays will be used to control dust and evidence to justify decision.

The reference to 'FOG sprays' is understood to mean a misting system which would deliver a fine water vapour to aid with dust suppression. These are often employed at facilities where dust has the potential to be generated in significant amounts, such as aggregate processing facilities.

A number of measures for dust suppression and mitigation will be implemented at the Facility. These will include the following:

- good housekeeping to minimise build up of dust and litter (such as regular washdown activities);
- abatement systems in place to treat and reduce emissions of particulates;
- negative pressure within the main waste reception and storage areas;
- fast-acting roller shutter doors at the entrance to the tipping hall;
- limiting the speed of vehicles on-site;
- vents on silos (such as the APCr silo) to reduce fugitive emissions of dust during unloading operations; and
- use of wet bottom ash quenching.

These are considered to provide sufficient dust control at the Facility and it is not considered that additional dust suppression measures will be required. In the unlikely event that dust poses a significant problem during the operational phase of the Facility, the use of dust suppression equipment will be re-examined and will be employed if necessary, subject to agreement with the EA.

9 Operator

29. Provide information, taking into account the points below, to show whether Fortum Carlisle Limited will be able to comply with the conditions of an Environment Permit should a permit be issued:

Compliance history of Fortum Carlisle Limited and its officers. When considering Fortum Carlisle Limited officers, compliance of other companies whilst those officers were officers of the other companies shall be considered. The response you submit shall include consideration of compliance with environmental and other legislation. In particular that led to late submission of the 31 December 2019 accounts for Fortum Carlisle Limited.

Fortum Carlisle Limited (FCL) is the company responsible for the development and delivery of the project, and will maintain the responsibilities of the 'Operator' as defined in Environment Agency guidance, titled '*Legal operator and competence requirements: environmental permits*'.

Prior to commencement of commissioning, FCL will appoint an Operations and Maintenance contractor (Fortum O&M UK Ltd) to operate the Facility under the instruction of FCL.

Third party operation and maintenance services have been part of Fortum's offering over three decades, during which it has successfully acted as O&M Contractor in three continents (Europe, Africa and Asia).

Table 1 sets out Fortum O&M UK Ltd's experience of operating waste incineration and combustion facilities in the UK.

Table 1: Fortum experience within the UK

Country	Customer	Power Plant	Fuel	MWe	Contract Period
United Kingdom	MGT Teeside	Teesside	Bio	299	2016 – present
United Kingdom	Lakeside Colnbrook	Lakeside	Waste	36	2006-2012
United Kingdom	Kent Enviropower Ltd	Allington	Waste	34	2004-2010
United Kingdom	Hythe BP CHP Ltd	Hythe	Gas	55	2003-2011
United Kingdom	Heartlands Power Ltd, c/o Rolls-Royce Power Ventures Ltd	Heartlands	Gas	100	2002-2008
United Kingdom	Bristol Power Limited, c/o Rolls-Royce Power Ventures Ltd	Bristol	Gas	50	2001-2008
United Kingdom	Exeter Power Limited, c/o Rolls-Royce Power Ventures Ltd	Exeter	Gas	50	2001-2008
United Kingdom	Croydon Energy Limited, c/o Rolls-Royce Power Ventures Ltd	Croydon	Gas	50	2001-2008

Country	Customer	Power Plant	Fuel	MWe	Contract Period
United Kingdom	Regional Power Generators Ltd	Brigg	Gas	240	1999-2002
United Kingdom	Peterborough Power Ltd	Peterborough	Gas	360	1990-1999
United Kingdom	Humber Power Ltd	South Humber Bank	Gas	1 260	1994-2001
United Kingdom	Grangemouth CHP Ltd	Grangemouth	Gas	140	1998 – present
United Kingdom	Regional Power Generators Ltd	Brigg	Gas	240	1991-1999

It is acknowledged that the accounts for FCL were regrettably filed late at Companies House. This was due to an administrative error – further details are provided below.

1. Following standard practice, FCL engaged a management company to act as FCL's company secretary.
2. A major accounting firm was engaged to audit FCL's accounts, in advance of submission of FCL's accounts to Companies House, due 31 December 2020.
3. As part of FCL's monitoring regime, the management company were regularly contacted to ensure progress in the audit and submission of the accounts.
4. On 22 December 2020, the management company advised the officers of FCL that the audit was completed and signed off, and that the accounts would be duly submitted in advance of the deadline.
5. The Companies House website does not publish submitted accounts immediately; there is a delay of several weeks, during which time it is not possible to confirm remotely whether accounts have been received.
6. FCL and the management company were subsequently notified by Companies House that the accounts had not been received. Once alerted to the oversight, the management company immediately identified the problem, located the accounts and couriered the audited, paper accounts to Companies House.
7. During a review of the error, FCL was advised that due to Covid-19 and a change of staff, the auditor had changed its accounts submission policy and would not submit paper copies of audited accounts. This change of policy was not communicated back to the management company.
8. Both the management company and FCL are keenly aware of the importance of filing submissions on time and every effort is being made to prevent the risk of a similar error happening again.

10 Other

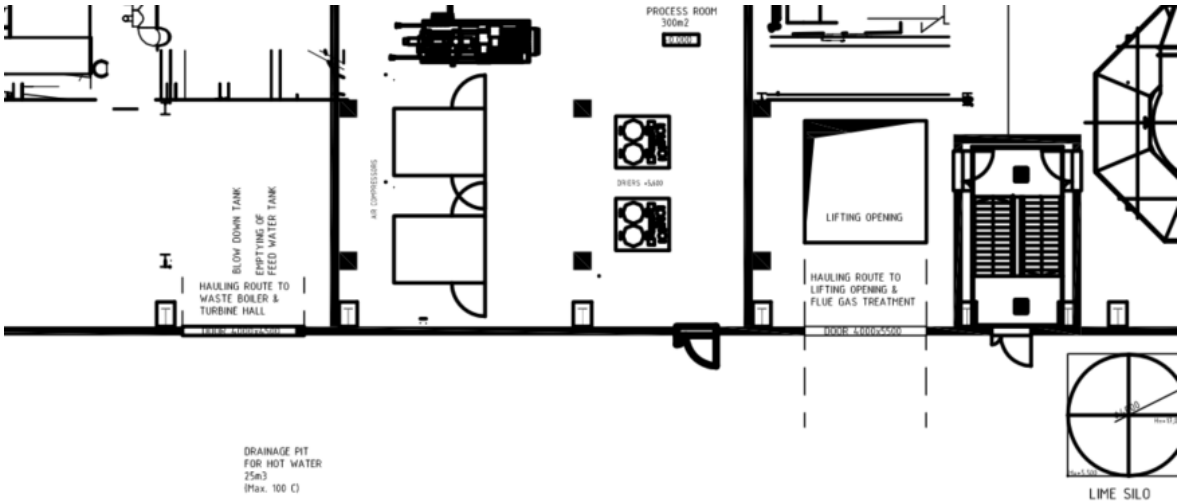
9. Please clarify where fuel oil will be stored section 2.1.2 of supporting documents state:

'Fuel oil will be used on site …fuel can be stored in dedicated storage tank'.

A 'materials storage areas' drawing has been incorporated into Appendix A8 of the updated Fire Prevention Plan (refer to Appendix C). As can be seen from the drawing, the oil tank (for fuel oil) is located to the left of the ammonia tank at the bottom half of the site.

10. Please explain what the hauling opening detailed in the site diagram is.

These are the access points to the building for maintenance vehicles, mobile plant, etc. For reference, the drawing below shows the 'hauling routes' from the site layout diagram.



Appendices

A Ecological Interpretation – Final

B Installation Boundary Drawing

C Fire Prevention Plan

D Indicative Water Flow Diagram

E Indicative Drainage Drawing

F Indicative Drainage Strategy

G Flood Risk Assessment

H Example APCr unloading chute datasheet

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