

FIRE PREVENTION PLAN

Mona AD Plant, Mona, Gwalchmai, Anglesey

Grays Biogas Ltd

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|------------|------------|---------|--------------|----------|--|
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THIS DOCUMENT IS DUE FOR REVIEW IN **MARCH 2018** OR AS A RESULT OF ANY INCIDENTS WHICH MAY LEAD TO THE REQUIREMENT FOR IMMEDIATE REVIEW, WHICHEVER IS THE SOONER

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ANNEX A

Receptors Plan

Fire Plan

Explosion Zone Plan

Comments from local fire and rescue service

This Fire Prevention and Response Plan has been formed with the assistance of the Natural Resources Wales (NRW) and the local fire and rescue service. A member of the ***** visited the site on ***** and was provided with a copy of this document. Their comments can be found below.

| Name | |
|----------|--|
| Comments | |
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Signed

Date

Site Information & Key Contacts List

| | | | |
|-----------------------|--|---------------------------|--|
| Site Address: | Mona AD Plant, Mona, Gwalchmai, Anglesey | | |
| Site Operator: | Grays Biogas Ltd | National Grid Ref: | |

| <u>CONTACT</u> | <u>Description</u> | <u>Office Hours</u> | <u>Out of Hours</u> |
|---|--|---------------------------------|----------------------|
| <i>Matthew Davis</i> | <i>Site Operations Manager</i> | <i>077309 20 206</i> | <i>077309 20 206</i> |
| | <i>Local NHS Hospital (Main)</i> | | <i>999</i> |
| | <i>Accident & Emergency (A&E)</i> | <i>111</i> | <i>999</i> |
| <i>Gwalchmai Surgery Crown Street LL65 4RS</i> | <i>Local Doctor Surgery (GP)</i> | <i>01407 720202</i> | <i>999</i> |
| <i>Gaerwen Police Station Holyhead Road LL60 6BL</i> | <i>Local Police Non-Emergency</i> | <i>101 or 01492 517 171</i> | |
| | <i>Police Emergency</i> | <i>999</i> | <i>999</i> |
| <i>Fire and Rescue Service,</i> | <i>Fire and Rescue Service (in Emergency Dial 999)</i> | | <i>999</i> |
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1 INTRODUCTION

1.1 General

- 1.1.1 This document considers the risks associated with fire on site at the Anaerobic Digestion (AD) plant located at Mona AD Plant, Mona, Gwalchmai, Anglesey which is fuelled by up to 35,000 tonnes/annum of food waste.
- 1.1.2 Oaktree Environmental Ltd have been employed to produce this FPRP as part of the permit variation submission to vary the existing permit for the site. In accordance with latest Technical Guidance (including WISH Waste Industry Safety & Health 'Reducing Fire Risks AT Waste Management Sites'). This document will outline fire hazards on site and a number of accompanying measures which will be implemented to ensure every action is taken to prevent fire, contain fire on site if it does occur and ensure quick suppression and detection.
- 1.1.3 In addition to this document the site will be operated by Grays Biogas Ltd in accordance with a fully comprehensive Environmental Management System (EMS) and a bespoke Environmental Permit (EP).
- 1.1.4 All site staff and contractors must be aware and understand the contents of the Fire Prevention Plan (FPP) and what they must do during a fire. The content of this plan will be communicated to all through induction and tool box talks and the plan itself is a key tool in the management structure for the site.
- 1.1.5 This FPP document will be kept in the site office as shown on the 'Fire Plan' in the Annexe to this document.

1.2 Site description

- 1.2.1 The site is situated approximately 3 miles west of Llangefni, Anglesey SH419 755 and is part of the Mona Industrial Estate. The site is located at the northern boundary of the industrial estate and is accessed via the estate road, which runs past the western site boundary. Within the industrial estate the site is located next to a poultry farm and a council run gritting yard, a waste transfer station (operated

by Grays Waste Management Ltd) and RAF Mona Training Centre beyond. The site is predominately surrounded by open fields, separated by stock proof fences. On the eastside of the site is a concrete base and remnants of an old road. On the eastern boundary there is a culvert/drain running roughly north to south which flows under the un-named road.

- 1.2.2 AD is a biological process, which breaks down organic matter within biodegradable wastes in the absence of oxygen, through the actions of a variety of micro-organisms. The result of these processes is the production of biogas, which consists predominantly of methane (CH₄) and carbon dioxide (CO₂) and a useable digestate product which has environmental benefits when used in place of fertilisers.
- 1.2.3 The site is located on Mona Industrial Estate which is accessed off the A5 Holyhead Road.
- 1.2.4 The location of the operational areas and storage areas are shown on the 'Site Layout & Fire Plan' in the Annexe to this document (referred to subsequently as the 'Fire Plan'.
- 1.2.1 The site is not open to the general public and there are no public rights of way through the site.
- 1.2.5 The Site will be operational from 07:00 am until 19.00 pm Monday to Friday and 07:00 am until 16:00 pm on Saturday and 09:00 am until 16:00 pm Sunday and Bank Holidays. The only activities on site which will be permitted outside of these hours are maintenance works and general office use. The digestion plant will operate on a 24hour basis and access may be required for the delivery of occasional emergency loads outside normal working hours.

1.3 Staffing and management

- 1.3.1 The table below details the staff structure of the site when operating at full capacity and shows that a total of 8 staff are available to tackle a fire on site

during operational hours. Only the site manager, machine/plant operators and general operatives will be permitted to tackle fires on-site.

| POSITION | EMPLOYEES | RESPONSIBILITIES |
|-----------------------------|------------------|--|
| <i>Site Director (TCM)</i> | <i>1</i> | <i>Overseeing all activities which take place at the site, waste handling/loading, AD plant operation/management, staff training</i> |
| <i>Admin / Office Staff</i> | <i>2</i> | <i>Managing site administration</i> |
| <i>Site Manager</i> | <i>1</i> | <i>Waste handling/loading and AD plant operation/management</i> |
| <i>General Operatives</i> | <i>4</i> | <i>Waste handling/processing</i> |

- 1.3.2 Matthew Davis is the Technically Competent Manager (TCM) for the site and responsible for the general management of the site and ensuring that operations are carried out in compliance with the site's EP. He also has full control of the plant via remote access.

1.4 **Plant and equipment**

- 1.4.1 The table below details the plant/equipment on site. Only trained operators will be permitted to drive/operate the plant/equipment listed below.

| <i>ITEM</i> | <i>NUMBER</i> | <i>FUNCTION</i> |
|---|-----------------|--|
| <i>Feed Hopper(s)</i> | <i>2</i> | <i>Reception/loading of solid feedstocks to digester</i> |
| <i>Rubber wheeled shovel</i> | <i>2</i> | <i>Transfer of feedstocks to process</i> |
| <i>Tractor/Trailer</i> | <i>3</i> | <i>Transfer of chicken litter to site</i> |
| <i>JCB</i> | <i>2</i> | <i>Transfer of materials</i> |
| <i>Primary digesters</i> | <i>2</i> | <i>Anaerobic digestion of wastes</i> |
| <i>Secondary digester</i> | <i>1</i> | <i>Anaerobic digestion of wastes</i> |
| <i>Gas storage domes (double membranes roofs)</i> | <i>3</i> | <i>Collection and storage of biogas arising from digesters</i> |
| <i>Storage tank</i> | <i>1</i> | <i>Storage of digestate</i> |
| <i>Surface water lagoon</i> | <i>1</i> | <i>Balancing pond</i> |
| <i>CHP unit</i> | <i>1</i> | <i>Combustion of biogas to produce heat and power</i> |
| <i>Pumps</i> | <i>multiple</i> | <i>Circulation of materials through process</i> |
| <i>Storage clamps</i> | <i>3</i> | <i>Storage of maize and rye</i> |
| <i>Flare</i> | <i>1</i> | <i>Burning off biogas during CHP maintenance/malfunction</i> |
| <i>Transformer</i> | <i>1</i> | <i>Transferring electrical energy from alternator to cable</i> |

2 POTENTIAL FIRE HAZARDS AND RECEPTORS

2.1 Potentially Combustible Materials

2.1.1 The AD process is fuelled by biomass, chicken litter, dairy DAF and glycerol. The following feedstocks have been proposed:

- 12,00 tonnes of poultry manure;
- 10,000 tonnes of maize and rye silage;
- 25,000 tonnes of dairy DAF; and,
- 3,000 tonnes of glycerol.

2.1.1 Details of the site layout can be found within the Annexe to this document.

2.2 Potential Ignition Sources

2.2.1 The following list outlines potential sources of ignition or causes of fire on site:

- a) Arson or vandalism
- b) Self combustion (e.g. due to chemical oxidation)
- c) Plant or equipment failure (e.g. spillages of fuel, sparks from machinery)
- d) Electrical faults or damaged/exposed electrical cables
- e) Discarded smoking materials
- f) Open burning on site or no adjacent sites
- g) Overheating of stored waste (sources of heat may include heating pipes, hot exhausts, light bulbs, space heaters or direct)
- h) Damaged or exposed electrical cables
- i) Reactions between incompatible materials
- j) Neighbouring site activities
- k) Sparks from loading buckets/shovels
- l) Fireworks/Chinese lanterns
- m) Explosion zones – see plan in Annex
- n) Flare stack

2.3 Overhead lines/structures

- 2.3.1 There are no overhead power lines/structures traversing the site.

2.4 Hazardous materials

- 2.4.1 Materials stored on site that are identified as being hazardous by the COSHH Regulations (such as grease and lubricating oils, for example) Material Data Sheets and COSHH Assessment will be completed by the Site Manager and copies held in the site office and will be accessible by the Site Manager/Director. Results will be communicated to staff as part of training.

2.5 Sensitive receptors

- 2.5.1 A Sensitive Receptors Plan has been provided in the Annexe to this document to highlight all receptors within 1 km of the site.
- 2.5.2 Within close proximity of the site to the north is the council's salt store, to the northeast there is a poultry unit which will supply the chicken litter to the AD facility, to the north west there is a waste transfer station operated by Grays Waste Management Ltd), to the west lies Mona Flying Club.
- 2.5.3 The nearest residential receptors are the properties located approximately 250 metres to the east of the proposed AD site.
- 2.5.4 To minimise the impact on the local area and associated receptors from a fire on site, this document details mitigation measures which will decrease the likelihood of a fire occurring on site and limit the size and duration if it does occur. These measures will ensure the potential impact on any of the surrounding land is as minimal as practically possible.
- 2.5.5 The primary sensitive receptors for any fire event would be the site itself and any site users and the adjacent site and its users.

3 MONITORING AND MITIGATION

3.1 Site inspection programme

- 3.1.1 Regular inspections of all site areas will be undertaken in accordance with the site's EMS (which will also include areas just outside of the site boundary).
- 3.1.2 These inspections will be conducted by a person who is familiar with the requirements of the EMS, EP and this document. This will keep the levels of dust, and other loose combustible materials, which could aid in the acceleration of a fire, on site surfaces to a minimum and ensure all containment of wastes on site (i.e. bays, piles or stacks) are functioning effectively in accordance with the storage limitations provided in the Stockpile Detail Table in the Annexe. Chicken litter only stored within the chicken reception shed and the biomass stored in covered clamps. The remaining feedstocks are liquid dairy DAF and glycerol which are all stored in designated sealed storage tanks. Locations of all the storage areas are shown on the site layout plan found in ANNEX A.
- 3.1.3 The results of site inspections will be recorded either on the appropriate record form or in the site's diary and made available to NRW, Fire Service and Local Authority upon request.

3.2 Waste Acceptance

- 3.2.1 Strict waste acceptance procedures are in place at the site and will be used to detail how long waste has been on site and how long other wastes are stored prior to removal from the site.
- 3.2.2 The following details will be recorded for every load deposited at the site:
- a) The date and time of delivery.
 - b) The name and address of the waste producer.
 - c) The detailed and accurate description of the waste including type, quantity (in tonnes and/or cubic metres) and EWC codes.
 - d) How the waste is contained e.g. loose, container type.

- e) The carrier's name and address.
- f) Driver's name, signature and vehicle registration No.
- g) Signature or initials of person(s) producing/ accepting/ inspecting/ carrying the waste.
- h) Additional handling details/notes made by the driver after inspection of the load.
- i) SIC code of the premises which produced the waste (where relevant).
- j) Waste hierarchy declaration.
- k) Information on previous treatment of the waste e.g. manual or mechanical.

3.2.3 Any wastes identified during the incoming waste inspections which are likely to be either particularly combustible or reactive will be removed and quarantined immediately to await safe removal from site and NRW will be contacted (where necessary) if the non-conforming waste discovered is likely to lead to a breach of permit conditions.

3.3 Burning of waste on site

3.3.1 No waste will be burnt on site at any time.

3.3.2 Extensive training will be provided to all site staff and contractors on fire prevention, protection and occurrence procedures.

3.3.3 Employment contracts and staff handbooks recognise the severity of any instances of unauthorised burning of waste and would lead to immediate dismissal and threat of prosecution through civil/criminal courts depending on the circumstances.

3.3.4 Firefighting equipment (owned by the applicant) and/or mains water supply points including a fire hydrant located on the main Mona Industrial Estate Road between the Mona AD site and the Truck Company will be available if required. In addition, fire extinguishers will be located elsewhere on site to aid the quick suppression of a fire if detected.

3.4 Overheating of stored waste

- 3.4.1 Sources of heat will be kept isolated from any stockpiles of suspected combustible or flammable materials.

3.5 Site security

- 3.5.1 The site has an entrance gate and fencing, which is locked out of hours to prevent unauthorised vehicular and/or pedestrian access.

- 3.5.2 Additional security measures in place includes the following:

- Supervision of people entering site during normal working hours;
- Visitors are required to sign in and receive a site induction procedure before being permitted to enter the site;
- Signs are in place warning unauthorised people not to enter the site; and,
- The Combined Heat and Power (CHP) building is locked unless authorised personnel require access.

- 3.5.1 The site security infrastructure will be inspected on a daily basis and any defects which impair the effectiveness of the security will be repaired to the same or better standard within 7 working days. All repairs will be noted on the site diary within 24 hours of the event.

3.6 Plant and equipment maintenance

- 3.6.1 Any spillages of fuel will be cleared immediately by depositing sand or absorbents on the affected area.
- 3.6.2 External separation distances of 6m will be observed between plant and stored material when the site is not staffed. All mobile plant will be powered-down and completely shut off prior to cessation of operations on any given day.
- 3.6.3 All items of plant and equipment listed in Section 1.4 are subject to preventative maintenance checks to ensure their safe operation and to prevent any potential situations which may give rise to faults or malfunction.

- 3.6.4 The plant, equipment and all vehicles in the fleet on site are subject to periodic manufacturer maintenance to ensure proper working order in the form of service contracts.
- 3.6.5 Site management will undertake or delegate additional preventative maintenance checks on a more frequent basis to ensure, where possible, the machinery is mechanically sound.

3.7 Fuel storage

- 3.7.1 Any fuel tanks which are stored on site will be surrounded by a bund capable of containing a minimum of 110% of the volume of fuel stored in the tank. All pipework and associated infrastructure will be enclosed within the bund. A lock will be fitted to the tank valve to prevent unauthorised operation. All valves and gauges on the bund will be constructed to prevent damage caused by frost. The tank will be clearly marked showing the product within and also its capacity.

3.8 Electrical faults or damaged/exposed electrical cables

- 3.8.1 All electrical cabling on site will be inspected weekly and annually serviced to ensure they are not damaged or exposed.
- 3.8.2 Any potential ignition sources from suspected electrical faults should be isolated and an electrical engineer should be contacted immediately to rectify the situation. Where possible, staff should immediately remove any stored wastes from the vicinity of the fault area or cable traverse if safe to do so.

3.9 Explosion Zones

- 3.9.1 Given the nature of the process, certain areas of the site are designated as explosion zones, due to the potential presence of gas. Within these zones, potential sources of ignition are strictly prohibited. See Explosion Zones plan (A2529UK_MONA-00-04-Ex-Zone) in the Annexe for details. Within the designated explosion zones, the only equipment permitted for use (electrical, mechanical or protective systems) are items of plant and equipment which meet the requirements of the Equipment and Protective Systems intended for Use in

Potentially Explosive Atmospheres Regulations 1996. Signs should be erected on site to notify of explosion zones.

- 3.9.2 The use of portable electronic equipment including mobiles phones and cameras is strictly prohibited within the explosion zones.

4 FIRE CONTAINMENT AND INFRASTRUCTURE

4.1 Storage on flat ground

- 4.1.1 Site surfaces where wastes are to be stored are flat, therefore reducing the risk of falling materials accelerating the spread of fire.

4.2 Fire Breaks

- 4.2.1 Chicken litter will be contained within the chicken litter storage shed and due to the level of moisture content it can be regarded as medium to high risk combustion and the silage which has a higher moisture content and regarded as low to medium risk will be stored within clamps x3 within concrete bays approx 4m high in order to create significant permanent fire breaks between combustible materials and limit the spread of fire. The silage will be stored lower than the containment wall and will be covered and have a leachate containment system as shown on Drawings 2341/PH2/6000 & 2341/PH2/6003.
- 4.2.2 Waste and feedstock storage locations are clearly shown on the 'Fire Plan' which can be found in the Annexe to this document.
- 4.2.3 If a fire on site were to be discovered, site operatives will be trained to create additional fire breaks on site under the guidance of the emergency services which may involve the clearance of any adjacent bays/stacks.
- 4.2.4 Site surfaces which are not used for plant or waste storage, and are therefore providing a fire break, will be cleared using a road sweeper as required, to ensure that any potentially combustible material between waste storage areas, which would undermine the effectiveness of fire breaks, is removed.

4.3 Infrastructure

- 4.3.1 The following measures are in place to ensure that fires are detected and tackled quickly on site:

- a) **PPE & First Aid Kits** – These will be located in the site office
- b) **Manual fire alarm system** – Will be activated on discovery of a fire
- c) **Fire Extinguishers** – Each building will have a fire extinguisher stand with the necessary extinguishers mounted in accordance with the likely fire types. Powder (ABC), foam (AFFF) and carbon dioxide fire fighting equipment will be provided and stored at a number of designated areas on site as shown on the Fire Plan in the Annexe to this document and appropriate and regular training will be given for their use in tackling small fires. In addition, vehicles used for the processing and moving of material will be fitted with fire extinguishers, as required by the EA's FPP guidance. Extinguisher stations will be located as a minimum in the chicken litter shed, pump/ systems room between the digesters.
- d) CHP engine has built in fire suppression
- e) All engines and gen-sets will have on board fire suppression
- f) **Plant shut off** – If a fire is discovered the plant can be immediately shut down, including remotely via the IT management system.
- g) **Mains water supply** – There is a constant mains water supply for the site in the event that a fire was to occur and that fire was extinguishable using water. If a fire does occur and the site operatives are unsure of the nature of the fire, guidance will be taken from the local fire service. There is sufficient equipment on site to effectively utilise the water for fighting fires or impeding its spread (e.g. hosepipes).
- h) **On site underground storage tanks** process water may be used
- i) **Visible worded signs** - Will be placed strategically around the site, giving full and clear instructions for fire alarm and means of escape (Meeting point, 999 instructions).

4.4 Containment of firewater runoff

4.4.1 The site has self contained drainage system to prevent spillages or any potential contaminated run-off escaping off site. The containment measures are clearly shown on Drawings No 2341/PH2 6000 and 2341/PH2/6003 in ANNEX A.

4.4.2 The site is served by three systems:

A) Uncontaminated Surface Water Drainage, collecting:

- Access road and hardstanding
- Roof drainage
- Empty and clean silage clamps
- Tested and clean containment area runoff

B) Leachate Drainage, collecting:

- Silage clamp runoff
- Un tested or polluted containment area runoff
- Reception building floor
- Dairy products off-loading area

C) Foul Drainage, collecting:

- Domestic effluent from the office welfare facility

4.4.3 There are valves within certain areas of the surface water and leachate systems which allow the operator to control the direction of flow subject to the water quality. The drainage at the facility has been designed to prevent uncontrolled discharges from the site. Appropriate pollution prevention measures have been incorporated into the drainage design. Site bunding will be in line with EA/NRW requirements. All bunded areas will have impermeable surfaces with sealed construction joints. The bunded area will have a capacity of at least 110% of the largest vessel or 25% of the total tankage volume, whichever is the greater. Connections and fill points will be within the bunded area and no pipework will penetrate the bund wall. Any underground tanks will have secondary containment.

Uncontaminated Surface Water

4.4.4 The system discharges into the adjacent watercourse at a controlled rate of 5l/s. Control is achieved by the installation of a vortex flow control device on the outfall. Upstream of the outfall is a lined storage lagoon with capacity to attenuate flows for 1 in 100 Annual Event Probability rainfall. The outfall also contains a penstock which can be closed to retain surface water within the on-site system.

- 4.4.5 The containment area is drained by a single large gulley which connects to an 8,000 litre holding tank. The valve connecting the containment area to the SW system will normally be closed. Rainwater will either be held in the tank or directed to the leachate holding tank. If confirmed clean the water will be directed to the surface water system. The assessment of the surface water attenuation storage requirement allows for the containment area runoff. The access road drains into a filter strip and yard areas drain via trapped gullies, and all drain through a full retention petrol oil interceptor towards the storage lagoon.

Leachate Drainage

- 4.4.6 The leachate drainage is held in an 80,000 litre storage tank, from where it is pumped into the AD process.
- 4.4.7 Silage Clamps- The silage clamp volume is 8,925m³. They are drained by central trapped gullies, with a cut off drainage channel at the clamp entrance. Normally leachate and rainfall runoff will be directed to the leachate holding tank. Penstocks are provided on each of the connections so that clean runoff can be directed to the surface water system.
- 4.4.8 A perimeter open channel around the outside of the silage clamp base is connected to the leachate system.
- 4.4.9 Reception Building- A single trapped gulley to collect wash-down or leachate is connected to the leachate system

Foul Drainage

- 4.4.10 Domestic effluent from the welfare facilities will drain to a cess tank which will be regularly emptied by the operator.

- 4.4.11 Surface water protection measures should be checked by a designated person regularly throughout the duration of the fire incident whilst water is being applied by the Fire Service. Periodic inspections should continue after the Fire Service have left until all run off has pooled. Breaches in control should immediately be notified to the site management and to the EA to allow additional measures of control to be considered and deployed.
- 4.4.12 Control measures should remain in place until after the clean-up operation has been completed and all contaminated fire water removed from site.

4.5 Quarantine area

- 4.5.1 In accordance with the EA's FPP guidance a 5 x 5 metre area has been designated as a quarantine area **as shown on the 'Fire Plan'**. This area also has a 10 metre buffer around it where no materials are stored.
- 4.5.2 In the event of a fire, this area will be used either to isolate wastes which are smouldering to allow safe dissipation of heat without placing other areas on site at risk of ignition.
- 4.5.3 The area may also be used as a fire prevention tool where particularly combustible or reactive wastes are discovered – these materials will be quarantined to this area whilst the operator and/or Environment Agency decide upon the best course of action for removal from site.

4.6 Adequate supply of water / sand for fire suppression

- 4.6.1 In addition to the fire fighting equipment, mains water and sand is available on site as shown by the plan in the Annex.

5 FIRE RESPONSE PROCEDURES

5.1 Staff training

- 5.1.1 Staff will be suitably trained in how to raise a fire alarm with site management. Staff will be trained on how to use the extinguishing equipment should the fire be small enough to tackle. Staff would also seek formal fire extinguisher training for anyone specifically designated to use such equipment.
- 5.1.2 A full understanding of the site's EMS and the procedures outlined in this FPP document will be required to be demonstrated as part of the site induction for all new staff.
- 5.1.3 Ongoing training will also be provided to ensure site staff are informed of any changes to any of the site management documentation subject to regular review.

5.2 Access for emergency services

- 5.2.1 The site is accessed off the B4224 which is to the South of the site.
- 5.2.1 The width of the surrounding roads and the gateway provide sufficient access onto the site for the FRS.
- 5.2.2 Access routes for emergency services around the site are clearly shown on the 'Fire Plan' in the Annexe to this document.

5.3 Fire detection procedure

- 5.3.1 If a fire is detected or suspected it must be immediately reported to the site manager or TCM. The site manager will then conduct the following procedure:
 - a) Raise the fire alarm (if not already done by another staff member).
 - b) Initiate evacuation of staff and visitors on site to the meeting point and instruct delegated person(s) to conduct a roll-call to ensure all site users are accounted for.

- c) Assess the intensity and scale of the fire and make a judgment as to whether the fire can be managed without the requirement for assistance from the emergency services.
- d) If viable and safe, instruct necessary site staff to commence extinguishment or removal of affected waste to quarantine area to isolate the source.

If successfully extinguished, follow procedure in Section 6.

- e) If not viable or safe, call the Fire Response Service (FRS) immediately using 999.
- f) Prior to the FRS arriving, inform all neighbouring premises likely to be affected.
- g) If not previously informed, senior management of the company should be informed at this point of the details, nature and extent of the fire and whether assistance from staff from other depots is required.
- h) Ensure access routes are clear.
- i) If safe to do so, the TCM or a senior member of staff will inspect the location of the fire, to identify immediate risks to surrounding premises and the FRS.
- j) Ensure operators of appropriate machinery are standing by in a safe location to help create fire breaks, under the direction of the FRS when they arrive.
- k) Ensure relevant site staff are standing by in a safe location to deploy surface water protection equipment under the direction of the FRS when they arrive.
- l) The site manager / TCM will identify themselves to the fire service as soon as they arrive on site and will provide them with a copy of this document and update them with relevant information that will assist them in dealing with a fire more effectively.
- m) Implement pollution control measures only when safe to do so.

5.3.2 In the event of the site manager or TCM being absent from the site, the operator will ensure a suitable person is employed and familiar with the site.

5.4 General staff/visitor procedure

5.4.1 The following actions will be undertaken by site operatives when a fire is detected or suspected on site:

- a) DON'T PANIC
- b) INFORM THE SITE MANAGER OR TECHNICALLY COMPETENT MANAGER IMMEDIATELY
- c) RAISE THE ALARM (IF NOT DONE SO ALREADY)
- d) DO NOT TRY TO TACKLE THE FIRE YOURSELF UNLESS YOU ARE TRAINED IN DOING SO AND YOU ARE SURE OF THE NATURE OF THE FIRE
- e) LEAVE THE SITE USING THE NEAREST EXIT AS QUICKLY AND AS ORDERLY AS POSSIBLE
- f) ASSEMBLE AT THE SPECIFIED FIRE ASSEMBLY POINT
- g) THE SITE MANAGER OR DELEGATED OPERATIVE WILL BE IN CHARGE OF CALLING THE EMERGENCY SERVICES ON "999" AND ENSURING THAT ALL PERSONS WHO WERE WORKING ON OR VISITING SITE ARE ASSEMBLED SAFELY AND ACCOUNTED FOR
- h) DO NOT RETURN TO THE SITE UNTIL YOU HAVE BEEN GIVEN THE 'ALL CLEAR' BY THE EMERGENCY SERVICES AND/OR THE SITE MANAGER

5.5 Evacuation of staff

5.5.1 The fast and effective evacuation of staff to the Meeting Point as shown on the Fire Plan in the document Annexe will work towards increasing safety on site and limit the impact of a fire on human life.

5.5.2 Regular fire drills will be carried out on site as per article 15 of the Regulatory Reform (Fire Safety) Order 2005 to ensure evacuation times are acceptable and that site staff remain informed of evacuation procedures. The operator may also appoint and train fire marshals on site, to aid in the above.

5.6 Out-of-hours fire procedure

- 5.6.1 If a fire is detected on site outside of normal operating hours, the site manager or out-of-hours emergency contact will be notified of the fire by the Fire Service, NRW or a member of the public.
- 5.6.2 The site manager/out-of-hours contact will then conduct the following procedure:
- a) Irrespective of whether a company presence is required at the site by the FRS, the out of hours appointed contact (or delegated responsible person) will attend the site to assist in any way possible and to ensure that surface water protection and control measures are deployed, if safe to do so, under the instruction of the FRS.
 - b) The site appointed out-of-hours contact will subsequently contact as many additional members of staff as required to ensure that surface water protection, smothering and/or separation measures may be effectively deployed. Ideally this should be a minimum of three other staff members (enabling safe working in pairs) with at least one machine operator.

5.7 Contingency Planning

- 5.7.1 In the event of a fire the site, no further waste/feedstocks would be accepted until all post-fire site recovery procedures had been implemented. In the interim, feedstocks/wastes would be diverted as follows:
- **Maize** – Informal agreements in place to divert maize to other farms in the local area;
 - **Manures (Chicken litter)**– can be exported and stored on applicants land in accordance with the Code of Good Agricultural Practice, or sent for disposal at an authorised facility;
 - **Dairy DAF** – will be disposed/recovered at an alternative, appropriately authorised facility

- 5.7.2 No waste will be accepted on site until the post-fire site recovery procedures outlined in Section 6 below have been fully implemented and the site is authorised to re-open for trade and waste acceptance.

6 POST-FIRE SITE RECOVERY

6.1 General recovery procedure

6.1.1 When the fire has been successfully dealt with the following actions will take place:

- a) Any fires will be reported to NRW on the working day that they occur and will be confirmed in writing by fax or letter within 3 working days, including all steps taken by site staff, management and/or emergency services to deal with the fire.
- b) Removal of burnt material using appropriate and lawful disposal.
- c) Investigation into the cause of the fire, to ensure it does not reoccur.
- d) A review of the FPP, associated amendments will be implemented.
- e) Review of any additional training requirements for site personnel as a result of the incident.
- f) All fire extinguishers used to tackle the fire will be serviced and replaced after use.

6.1.2 In addition to the abovementioned procedures, the sections below outline specific procedures following a fire.

6.2 Fire debris

6.2.1 Fire debris should continue to be turned using the on-site plant and dowsed as necessary with the loading shovel and hosepipe or bowser if necessary until site management confirm that the embers are cooled and there is no chance of a flare up.

6.2.2 Debris can then be cleared and isolated to a series of storage piles for onward temperature monitoring until they have cooled to an acceptable level for landfill disposal (<40 degrees C). Once cooled to an acceptable temperature, as described above, bulk haulage should be arranged for the removal of the ash from the site.

6.3 Surface water containment

6.3.1 Surface water protection measures should remain in place and regular checks on them should be maintained until the clean-up and removal of all fire water has occurred and the final brushing up of the affected area has been undertaken. It is the site management who are responsible for deciding when an appropriate level of clean-up has been achieved to remove the surface water protection measures.

6.3.2 Surface water on site will be cleared using the following methods.

- a) Using a bowser, all standing fire water should be sucked up and taken off site or stored in a tank/bowser prior to removal off site.
- b) Using all available resources, manually clean out any surface water gullies removing the debris to the pile of fire damaged waste for removal to landfill or other appropriately permitted site.
- c) Using a road sweeper, sweep the yard (damp as required using the bowser) until all ash and clinker has been removed.
- d) All debris has now been isolated and all contaminated water holding areas have been cleaned and emptied.
- e) Wash the yard down in entirety using clean water, or allow a reasonably heavy rain shower to wash the yard down.
- f) It is at this stage that site management should decide whether it is appropriate to remove any additional surface water protection measures, or repeat areas of the clean-up.

6.3.3 If the clean-up operation has been deemed complete, the surface water protection measures can now be removed. This will be achieved using the following methods.

- a) Remove any temporary bungs.
- b) Remove any sand bags/booms.
- c) Surface water discharge system can now resume to function as detailed in the Drainage Plans, ensure that surface water checks are made during the next rainfall event to validate that clean-up has been undertaken satisfactorily. Record all findings and actions in the site diary.

- d) Account for all consumables that have been used in the fire and re-order / replace immediately.
- e) Restock, and re-locate all items used for the surface water protection during the fire to their storage locations ready for future deployment.
- f) Check monthly that items are still present and correct and still serviceable for use in an emergency.

6.3.4 The operator will liaise with NRW throughout the event ensuring they are satisfied with the cleanup programme and notify the operator when the site can begin accepting waste again onto site.

6.4 Investigation procedures and remediation

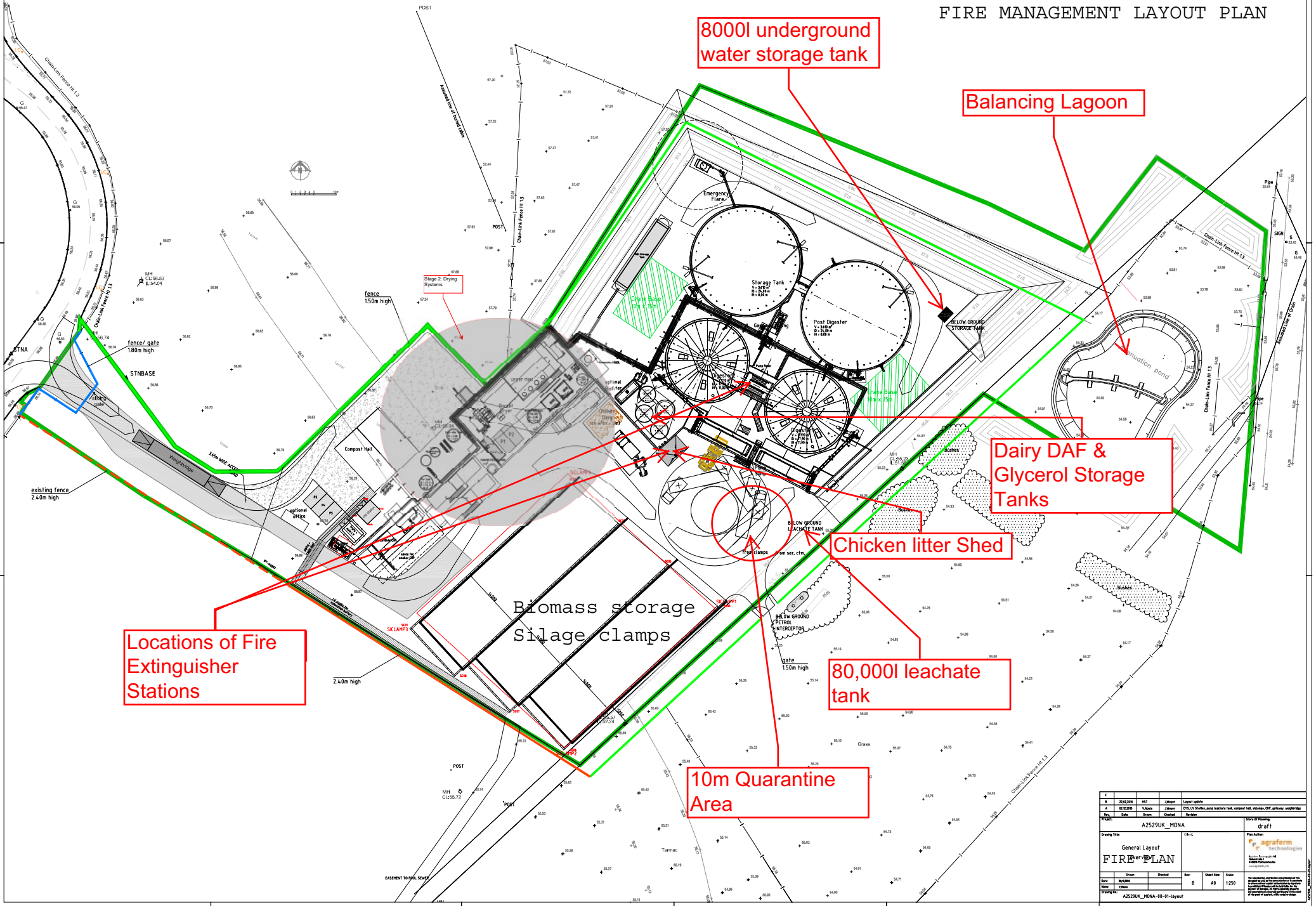
6.4.1 Following a fire event, the affected area will be subject to the following:

- a) Any Ground sampling if requested by NRW around the vicinity of the affected area – the frequency, location and depth of the samples required would be agreed between the operator, ground investigation contractor and NRW.
- b) The samples would be sent for analysis at an MCERTS accredited laboratory to ascertain the nature and extent of contamination (if any).
- c) Following receipt of the analysis results a remediation strategy would be submitted to NRW for consideration (if required).
- d) Following agreement of the remediation strategy, it will be implemented as agreed and any contaminated material removed from the site will be sent to a facility suitably permitted to accept the material.
- e) Following remediation, a completion report will be submitted to NRW.

6.4.2 If any significant contamination is found to be present, the operator will work with NRW to implement further measures which may be necessary should a subsequent event occur.

ANNEX A

FIRE MANAGEMENT LAYOUT PLAN

[illegible]

| SURFACE WATER CHAMBER SCHEDULE | | | | | | | Remarks | | |
|--------------------------------|----------------------------|--------------------|-------------------|----------|-------------------------|-------------|----------|-----|-------------------------------|
| Chamber No. | Proposed Cover Level (mAO) | MH Depth to IL (m) | Construction Type | Dia/Lx/B | Cover Ref Class/Opening | Pipe Out PN | | | |
| | | | | | | IL (mAO) | Dia (mm) | | |
| S1 | 56.60 | 1.20 | CP | 900x675 | D400-600-600 | S1.000 | 55.60 | 150 | |
| S2 | 57.00 | 1.05 | CP | 900x675 | D400-600-600 | S2.000 | 55.95 | 150 | |
| S3 | 56.70 | 1.28 | CP | 900x675 | D400-600-600 | S1.001 | 55.42 | 150 | |
| S4 | 56.70 | 1.49 | CP | 1200 | D400-600-600 | S1.002 | 55.21 | 225 | |
| S5 | 56.70 | 1.35 | CP | 1200 | D400-600-600 | S3.000 | 55.35 | 150 | |
| S6 | 57.00 | 1.00 | D | 900x675 | D400-600-600 | S4.000 | 56.00 | 150 | |
| S7 | 56.60 | 1.65 | CP | 1200 | D400-600-600 | S1.003 | 54.95 | 225 | |
| S8 | 56.35 | 1.51 | CP | 1200 | D400-600-600 | S1.004 | 54.84 | 225 | |
| S9 | 56.20 | 1.45 | CP | 1200 | D400-600-600 | S1.005 | 54.75 | 225 | |
| S10 | 56.15 | 1.55 | CP | 1200 | D400-600-600 | S1.006 | 54.60 | 225 | |
| S11 | 55.85 | 1.31 | CP | 1200 | D400-600-600 | S1.007A | 54.54 | 300 | Connects to Interceptor |
| Interceptor | 55.90 | 1.49 | N/A | | D400-600-600 | S1.007 | 54.41 | 300 | 2m chambers |
| S12 | 54.50 | 1.00 | D | 900x675 | D400-600-600 | S1.008 | 53.50 | 300 | Connects to outfall into pond |
| S13 | 54.35 | 1.18 | | | D400-600-600 | S1.009 | 53.18 | 150 | |
| S14 | 54.35 | 1.20 | Hydratank Chamber | 1200 | D400-600-600 | S1.010 | 53.15 | 150 | Hydratank chamber |

| LEACHATE CHAMBER SCHEDULE | | | | | | | | |
|---------------------------|----------------------|--------------------|-------------------|---------------|-------------------------|-------------|------------|--------------------------|
| Chamber No. | Proposed Cover Level | MH Depth to IL (m) | Construction Type | Dia/Lx/B (mm) | Cover Ref Class/Opening | Pipe Out PN | IL Dia (m) | Remarks |
| RE1 | 56.50 | 1.00 | HDRE | N/A | D400-450-450 | L1.000 | 55.50 | 150 |
| L1 | 56.40 | 1.80 | CPE | 1200 | D400-600-600 | L1.001 | 54.60 | 150 |
| L2 | 56.35 | 1.77 | CPE | 1200 | D400-600-600 | L1.002 | 54.58 | 150 |
| L3 | 56.40 | 1.50 | CPE | 1200 | D400-600-600 | L2.000 | 54.90 | 150 |
| RE2 | 56.50 | 1.00 | HDRE | N/A | D400-450-450 | L3.000 | 55.50 | 150 |
| L4 | 56.35 | 1.85 | CPE | 1200 | D400-600-600 | L1.003 | 54.40 | 150 |
| L5 | 56.20 | 1.82 | CPE | 1200 | D400-600-600 | L1.004 | 54.38 | 225 |
| RE3 | 56.50 | 1.00 | HDRE | N/A | D400-450-450 | L4.000 | 55.50 | 150 |
| L6 | 56.10 | 1.77 | CPE | 1200 | D400-600-600 | L1.005 | 54.33 | 225 |
| L7 | 56.00 | 1.69 | CPE | 1200 | D400-600-600 | L1.006 | 54.31 | 225 |
| Leachate Tank | 56.35 | 56.35 | N/A | N/A | D400-600-600 | N/A | N/A | Under 5 pump action pipe |
| L8 | 56.40 | 1.20 | | 1200 | D400 600 sq Grating | L5.000 | 55.20 | 225 |
| Storage Tank | 56.40 | 2.55 | N/A | N/A | D400-600-600 | L5.001 | 53.85 | 225 |
| L9 | 56.40 | 2.50 | CPE | 1200 | D400-600-600 | L5.002 | 53.90 | 225 |
| L10 | 54.70 | 2.00 | D | 1200 | D400-600-600 | L5.003 | 53.70 | 300 |
| L11 | 55.40 | 2.00 | CPE | 1200 | D400-600-600 | L5.004 | 53.40 | 300 |

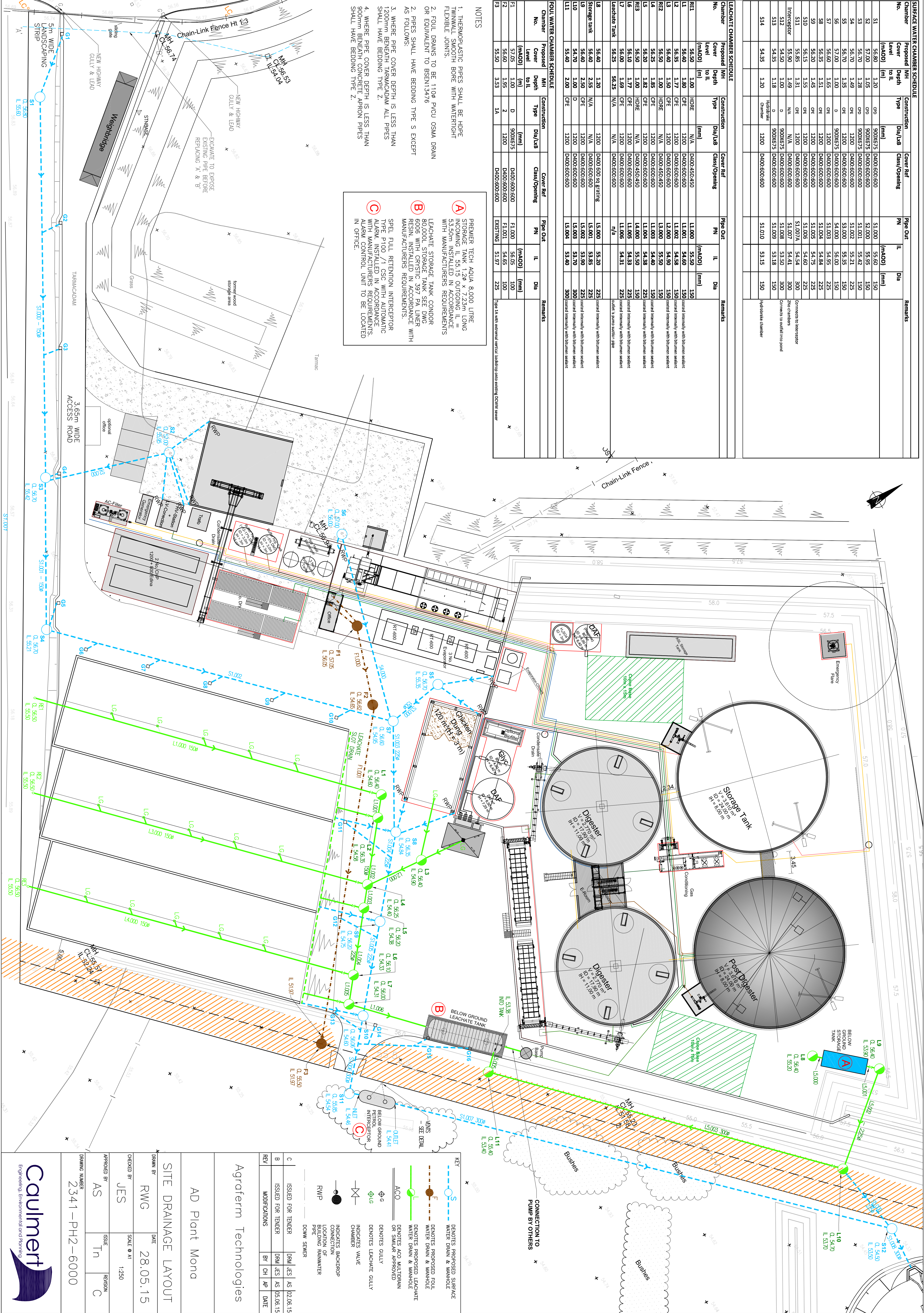
| FOUL WATER CHAMBER SCHEDULE | | | | | | | |
|-----------------------------|----------------------|----------------|------|-------------------------|--------------|------------------|---------|
| Chamber No. | Proposed Cover Level | Construction | | Cover Ref Class/Opening | Pipe Out | | Remarks |
| | | MH Depth to IL | Type | | PN | IL Dia | |
| | (mAO) | (m) | (mm) | | (mAO) | (mm) | |
| F1 | 57.05 | 1.00 | D | 900x675 | F1.000 | 56.05 100 | ✖ |
| F2 | 56.60 | 1.95 | Z | 1200 | D400-600-600 | F1.001 54.65 100 | |
| F3 | 55.50 | 3.53 | 1A | EXISTING | 51.97 225 | | |

Type 1A with external vertical stacking onto existing DCWW sewer

NOTES

1. THERMOPLASTIC PIPES SHALL BE HDPE TWINWALL SMOOTH BORE WITH WATER TIGHT FLEXIBLE JOINTS.
2. PIPES SHALL HAVE BEDDING TYPE S EXCEPT AS FOLLOWS:
3. WHERE PIPE COVER DEPTH IS LESS THAN 1200mm BENEATH TARMACADAM ALL PIPES SHALL HAVE BEDDING TYPE Z.
4. WHERE PIPE COVER DEPTH IS LESS THAN 900mm BENEATH CONCRETE APRON PIPES SHALL HAVE BEDDING TYPE Z.

- (A)** PREMIER TECH AQUA 8,000 LITRE STORAGE TANK 1.20 x 7.23m LONG INCOMING IL 55.15 OUTGOING IL = 53.50m INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS
- (B)** LEACHATE STORAGE TANK CONDOR 80,000L STORAGE TANK SEE DWG 8006 INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS
- (C)** SPEL FULL RETENTION INTERCEPTOR TYPE P100 /1 CSC WITH AUTOMATIC ALARM, INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS. ALARM CONTROL UNIT TO BE LOCATED IN OFFICE.



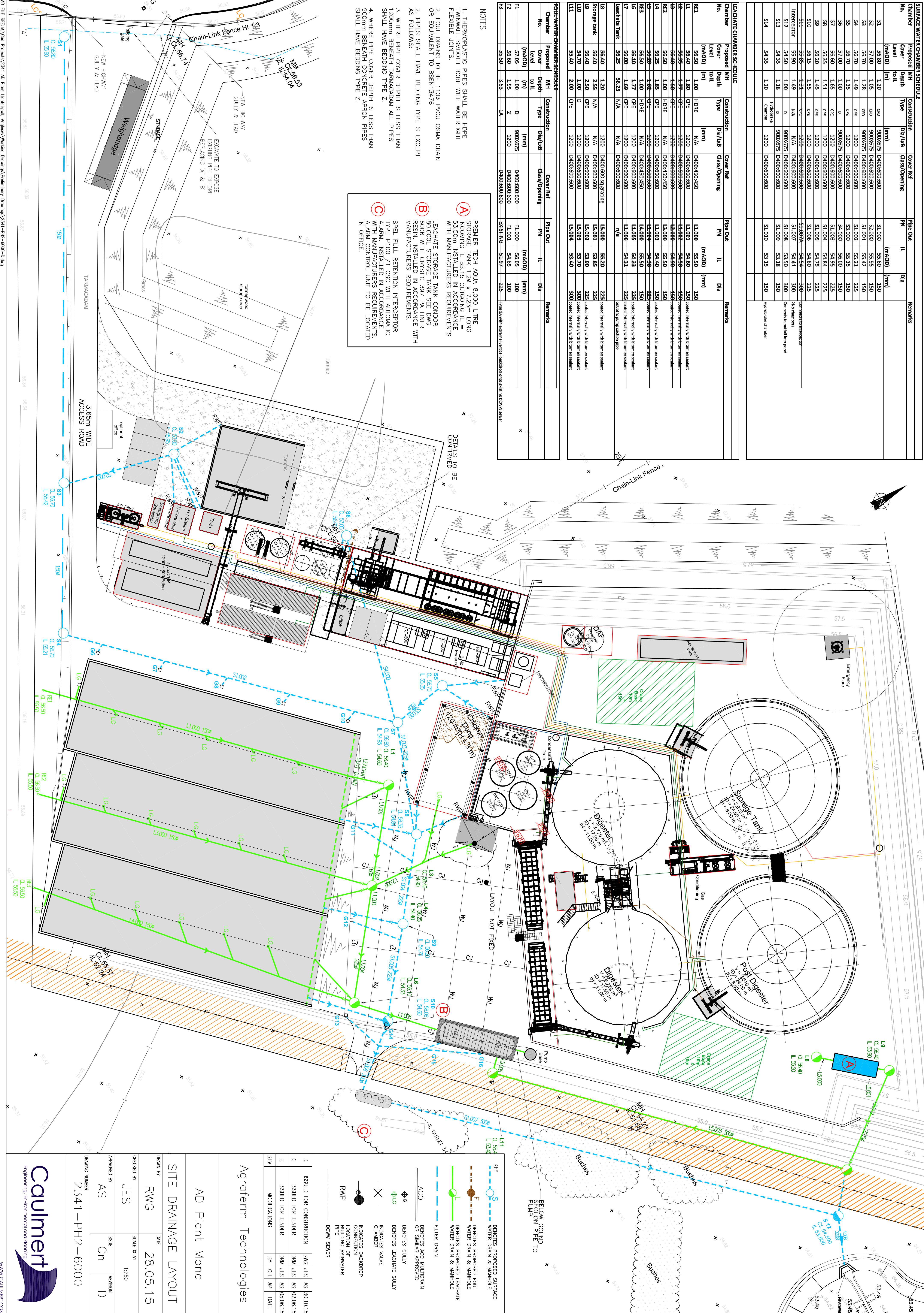
| SURFACE WATER CHAMBER SCHEDULE | | | | | | |
|--------------------------------|-------------------------------|-------------------|-----------------------|----------------------|-------------|-----------|
| Chamber No. | Proposed MH Cover Level to IL | Construction Type | Cover Ref Dia/Lx/B | Class/Opening | Pipe Out PN | IL Dia |
| S1 | 56.80 | 1.20 | CPD | 900X675 D400/600/600 | 11.000 | 55.60 150 |
| S2 | 57.00 | 1.05 | CPD | 900X675 D400/600/600 | 12.000 | 55.95 150 |
| S3 | 56.70 | 1.28 | CPD | 900X675 D400/600/600 | 11.001 | 55.42 150 |
| S4 | 56.70 | 1.49 | CPD | 1200 D400/600/600 | 11.002 | 55.21 225 |
| S5 | 56.70 | 1.35 | CPD | 1200 D400/600/600 | 13.000 | 55.33 150 |
| S6 | 57.00 | 1.00 | D | 900X675 D400/600/600 | 11.003 | 56.00 150 |
| S7 | 56.60 | 1.65 | CPD | 1200 D400/600/600 | 11.003 | 54.95 225 |
| S8 | 56.35 | 1.51 | CPD | 1200 D400/600/600 | 11.004 | 54.84 225 |
| S9 | 56.20 | 1.45 | CPD | 1200 D400/600/600 | 11.005 | 54.75 225 |
| S10 | 56.15 | 1.55 | CPD | 1200 D400/600/600 | 11.006 | 54.60 225 |
| S11 | 55.85 | 1.31 | CPD | 1200 D400/600/600 | 11.007 | 54.54 300 |
| Interceptor | 55.90 | 1.49 | N/A | D400/600/600 | 11.007 | 54.41 300 |
| S12 | 54.50 | 1.00 | D | 900X675 D400/600/600 | 11.008 | 53.50 300 |
| S13 | 54.35 | 1.18 | D | 900X675 D400/600/600 | 11.009 | 53.18 150 |
| S14 | 54.35 | 1.20 | Hydrostatic Catchment | 1200 D400/600/600 | 11.010 | 53.15 150 |

| LEACHATE CHAMBER SCHEDULE | | | | | | |
|---------------------------|-------------------------------|-------------------|--------------------|---------------------|-------------|-----------|
| Chamber No. | Proposed MH Cover Level to IL | Construction Type | Cover Ref Dia/Lx/B | Class/Opening | Pipe Out PN | IL Dia |
| RE1 | 56.50 | 1.00 | HDPE | D400/450/450 | 11.000 | 55.50 150 |
| RE1 | 56.50 | 1.80 | CPD | 1200 D400/600/600 | 11.001 | 54.60 150 |
| RE1 | 56.50 | 1.80 | CPD | 1200 D400/600/600 | 11.002 | 54.58 150 |
| RE1 | 56.50 | 1.77 | CPD | 1200 D400/600/600 | 11.002 | 54.50 150 |
| RE1 | 56.50 | 1.50 | CPD | 1200 D400/600/600 | 11.002 | 54.40 150 |
| RE2 | 56.25 | 1.45 | CPD | 1200 D400/600/600 | 11.003 | 55.50 150 |
| RE2 | 56.25 | 1.85 | CPD | 1200 D400/600/600 | 11.003 | 54.40 150 |
| RE2 | 56.25 | 1.85 | CPD | 1200 D400/600/600 | 11.004 | 54.38 225 |
| RE3 | 56.50 | 1.00 | HDPE | N/A | 14.000 | 55.50 150 |
| RE3 | 56.10 | 1.77 | CPD | 1200 D400/600/600 | 11.005 | 54.53 225 |
| RE3 | 56.10 | 1.77 | CPD | 1200 D400/600/600 | 11.005 | 54.33 225 |
| Leachate Tank | 56.25 | 56.25 | N/A | D400/600/600 | N/A | N/A |
| RE3 | 56.40 | 1.20 | CPD | D400 600 sq grating | 15.000 | 55.20 225 |
| RE3 | 56.40 | 2.55 | N/A | D400/600/600 | 15.001 | 53.85 225 |
| RE3 | 56.40 | 2.50 | CPD | 1200 D400/600/600 | 15.002 | 53.90 225 |
| RE3 | 54.70 | 1.00 | D | 1200 D400/600/600 | 15.003 | 53.70 300 |
| RE3 | 55.40 | 2.00 | CPD | 1200 D400/600/600 | 15.004 | 53.40 300 |

- NOTES
1. THERMOPLASTIC PIPES SHALL BE HDPE
 2. TWINWALL SMOOTH BORE WITH WATER TIGHT FEMALE JOINTS.
 3. FOLI DRAINS TO BE 1100 PVCU OSMO DRAIN OR EQUIVALENT TO BS EN 13476
 2. PIPES SHALL HAVE BEDDING TYPE S EXCEPT AS FOLLOWS:
 3. WHERE PIPE COVER DEPTH IS LESS THAN 1200mm BENEATH TARMACADAM ALL PIPES SHALL HAVE BEDDING TYPE Z.
 4. WHERE PIPE COVER DEPTH IS LESS THAN 300mm BENEATH CONCRETE APRON PIPES SHALL HAVE BEDDING TYPE Z.
- (A)** PREMIER TECH AQUA 8000 LITRE STORAGE TANK 1.28 x 7.23m LONG INCOMING IL 55.15 OUTGOING IL = 53.50m INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS

(B) LEACHATE STORAGE TANK CONDOIR 80,000L STORAGE TANK SEE DWG 6006 WITH CRUSTIC 397 PA LINER RESIN, INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.

(C) SPEL FULL RETENTION INTERCEPTOR TYPE P100 /1 CSC WITH AUTOMATIC ALARM, INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS. ALARM CONTROL UNIT TO BE LOCATED IN OFFICE.



AD Plant Mona

SITE DRAINAGE LAYOUT

DRAWN BY: RWG

CHECKED BY: JES

APPROVED BY: AS

DRAWING NUMBER: 2341-PH2-6000

Agroform Technologies

ISSUED FOR CONSTRUCTION: RWG JES AS 30.10.15

ISSUED FOR TENDER: DRW JES AS 02.06.15

ISSUED FOR TENDER: DRW JES AS 05.06.15

MODIFICATIONS: BY CH AP DATE

KEY

- S — DENOTES PROPOSED SURFACE WATER DRAIN & MANHOLE
- F — DENOTES PROPOSED FOLI WATER DRAIN & MANHOLE
- L — DENOTES PROPOSED LEACHATE WATER DRAIN & MANHOLE
- D — FILTER DRAIN
- ACO — DENOTES ACO WATER DRAIN OR SIMILAR APPROVED
- G — DENOTES GULLY
- V — DENOTES LEACHATE GULLY
- CH — INDICATES VALVE
- CHAMBER — INDICATES BACKDROP
- CONNECTION — INDICATES CONNECTION
- LOCATION OF PIPE — LOCATION OF PIPE
- DRAIN SERVER — DRAIN SERVER

Key to sensitive receptor type within 1km of Mona AD facility

| | |
|------|------------------------|
| SR 1 | Residential properties |
| SR2 | Residential properties |
| SR3 | Residential properties |
| SR4 | Residential property |
| SR5 | Public Highway |
| SR6 | Public Highway |
| SR7 | Flying Club |
| SR8 | Druid Farm |
| SR9 | Residential property |
| SR10 | Residential property |
| SR11 | Residential property |
| SR12 | Residential property |
| SR13 | Residential property |
| SR14 | Residential property |
| SR15 | Residential property |
| SR16 | Residential property |
| SR17 | Residential property |
| SR18 | Residential property |
| SR19 | Residential property |
| SR20 | Residential property |

