Non-Technical Summary - Bespoke Installation Permit Application: Pattemore's Dairy, Mosterton Road, Misterton, Crewkerne, Somerset, TA18 8NT

On behalf of: Pattemore's Transport (Crewkerne) Ltd

ETL886/2024

Earthcare Technical Ltd
Manor Farm
Chalton
Waterlooville
Hants PO8 0BG

Tel: 02392 290 488

Office@earthcaretechnical.co.uk

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Abbreviations

AMP	Accident Management Plan
AQIA	Air Quality Impact Assessment
AQMA	Air Quality Management Area
AW	Ancient Woodland
BOD	Biological Oxygen Demand
BRCGS	Brand Reputation through Compliance Global Standard
CIP	Cleaning in Place
CO_2	Carbon dioxide
COD	Chemical Oxygen Demand
COSHH	Control of Substances Hazardous to Health
CQA	Construction quality assurance
cSAC	Candidate Special Area of Conservation
DAF	Dissolved air flotation
DWSZ	Drinking Water Safeguard Zone
EA	Environment Agency
EMS	Environmental Management System
EN	European Standard
ETL	Earthcare Technical Limited
EWC	European Waste Catalogue
ETP	Effluent Treatment Plant
IBC	Intermediate Bulk Container
m AOD	Metres Above Ordnance Datum
MBR	Membrane Bioreactor
MCPD	Medium Combustion Plant Directive (2015)
MLSS	Mixed liquor suspended solids
MPH	Miles per hour
MWh	Mega watt hour
MWth	Mega watt thermal (unit for net rated thermal input)
N	Nitrogen
NGR	National Grid Reference
NMP	Noise Management Plan
OMP	Odour Management Plan

P	Phosphorus
PAC	Poly Aluminium Chloride
PHI	Priority Habitat Inventory
ppm	Parts per million
SCADA	Supervisory Control and Data Acquisition
SAC	Special Area of Conservation
SOP	Standard Operating Procedure
SPA	Special Protection Area
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
TPA	Tonnes per annum

1 Introduction

This Non-Technical Summary has been prepared by Earthcare Technical Ltd (ETL) on behalf of Pattemore's Transport (Crewkerne) Limited in support of an application for a bespoke installation permit (Permit ref: EPR/NP3127SX) at Pattemore's Dairy site, Mosterton Road, Misterton, Crewkerne, Somerset, TA18 8NT ('the Site') operated by Pattemore's Transport (Crewkerne) Limited (Pattemore's), herein termed 'the Operator'.

A full Environmental Risk Assessment has been prepared and submitted to support this permit application.[1]

This Non-Technical Summary highlights the key control measures that are employed on Site proposed to minimise any impacts from the Site operations and signposts the reader to the key supporting documents for the permit application.

2 Planning

The site has been subject to several planning permissions during its development over time the first recorded on the South Somerset District Council (SSDC) planning portal for the erection of a canopy for the haulage depot in October 1989 (89/01405/FUL) and the most recent being for the proposed dry store/packaging warehouse approved in August 2024.

3 Permitting

3.1 Site current Environmental Permits

Pattermore's Transport (Crewkerne) Limited currently hold the following permits associated with onsite activities:

- Permit EPR/NP3124SP for MCP under a SR2018 No 7 Standard Rules for new, low risk, stationary Medium Combustion Plant between 1 to less than 20MWth (in operation on or after 20/12/2018) for one new boiler on site.
- U6 Exemption (WEX378383) using sludge to re-seed a wastewater treatment plant.
- Permit SW/EPR/ZB3799NK Discharge to surface water (Site Grid Reference ST4597807133).

3.2 Requested Environmental Permit

The operation requires an Installation permit for the following listed activities under Schedule 1 of the Environmental Permitting Regulations (England & Wales) 2016:

[1] Environmental Risks at Pattemore's Site, Pattemore's Transport (Crewkerne) Limited, 28th December 2023

- Section 6.8 Part A(1)(e) -Treating and processing milk, the quantity of milk received being more than 200 tonnes per day (average value on an annual basis), namely the production of pasteurised milk, cream and concentrated skimmed milk from cream production.
- Section 5.4 Part A(1) (a) (i) - Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving biological treatment, namely the primary and secondary treatment of effluent produced on site with the treated effluent being discharged into the River Parrett.

The Directly Associated Activities are detailed in Table 1 below:

Table 1: Directly Associated Activities

Directly Associated Activity (DAA)	Description of Activity	Limits of activity
Packaging of plant-based milk	Pasteurisation and packaging of plant- based milk	Under 300 tonnes per day.
Steam supply	The operation of 4 No. boilers fuelled by kerosene to produce steam for cleaning and pasteurisation.	From storage of fuel to emission of combustion gases.
Cleaning	Cleaning-in-place systems	The cleaning of storage and production areas, associated equipment and vehicles.
Use of refrigerants	Use of refrigerants in cooling, chilling and/or freezing systems at the installation.	The storage and handling of refrigerants and the operation of refrigeration plant.
Storage of raw material	This activity relates to storing raw materials.	Raw materials will be stored securely, away from vehicle impact and with secondary containment as appropriate.
Oils and chemicals storage	Storage of oils and chemicals on site in dedicated areas.	From receipt of raw materials to disposal of wastes arising.
Waste storage, handling and dispatch	Storage and handling of waste materials	The storage and handling of liquid and solid wastes associated with the processing of raw whole milk and production of pasteurised milk, skim, concentrate and cream and with the operation of the Effluent Treatment Plant.
Lorry wash	Lorry wash	The storage, handling and disposal of liquid wastes and cleaning chemicals associated with the cleaning of vehicles onsite.

Directly Associated Activity (DAA)	Description of Activity	Limits of activity
Emergency back-up generator	Emergency back-up generator	Emergency back-up diesel generator operated for the purpose of testing for no more than 50 hours per year and no more than 500 hours of operation in an emergency
Surface water collection, storage and discharge	Collection and discharge of clean surface water.	Collection of rainwater from building roofs and clean external concrete areas. Treatment of surface water via a reed bed and settling system where appropriate. Discharge of water to the tributary of the River Parrett and via Soakaway.

Basic pre-application advice was initially sought from the Environment Agency (EA) with respect to this permit variation application in July 2024 (Reference: EPR/NP3127SX/P001). The Nature and Heritage Conservation Screening Report provided by the EA are included as Appendix A.

There are existing trade discharges into the River Parrett from the Site, currently regulated under an existing Discharge Consent (Ref: EPR/ZB3799NK). The existing consent permits the discharge of:

- Sewage effluent and trade effluent comprising dairy effluent (treated within the Effluent Treatment Plant), dairy evaporator condensate water, boiler blowdown water, and the lower yard site drainage. This is discharged through emission point A1 under the current discharge consent, proposed to be renamed emission point W1 under the consolidated Installation permit.
- Settled surface water arising from the upper site yards. This is discharged through emission point A2 under the current discharge consent, proposed to be renamed emission point W2 within the consolidated Installation permit.

An additional sewage effluent discharge from a new Klargester will be compliant with General Binding Rules: small sewage discharge to surface water,[2] serving a maximum of 85 part time staff with a worst-case discharge volume of 4.25m^3/day in accordance with 'Flows and Loads'[3](Industrial office/factory without canteen).

Application Form B6 has been completed to support this application given that the proposed installation will include emissions to surface water. This permit application seeks to include the existing regulated discharge within the new installation permit. The application is not for a new water discharge activity. As such, 'Sections 5: Should your discharge be made to foul sewer' and 'Section 9: Environmental risk assessments and modelling', have been left blank as they are deemed not applicable in this case and no H1 Risk Assessment or modelling has been carried out because the discharge of trade effluent via emission point W1 (referenced A1 under the

[2] https://www.gov.uk/guidance/general-binding-rules-small-sewage-discharge-to-a-surface-water
[3] Code of Practice, Flows and Loads – 4 Sizing Criteria, Treatment Capacity for Sewage Treatment Systems

current discharge consent) would have been risk assessed at the time of the initial permit application. There are no proposed changes to the discharge volumes or makeup of the effluent that would trigger re-modelling of the emission. The discharge of surface water only via emission point W2 (referenced A2 under the current discharge consent) would also have been assessed at the time of the original application.

For completeness, the feasibility of connecting to a Wessex Water public foul sewer was explored and the response received from Wessex Water (email dated 29/10/2024) and accompanying sewer map (reference: SSNC 1646 – Pattemore's Transport) are included with the application. Wessex Water state:

'As shown on the attached Wessex Water asset map we have no public foul sewers in the area within a reasonable distance to your site to offer you a connection to.'

The SR2018 No 7 Standard Rules for new, low risk, stationary Medium Combustion Plant between 1 to less than 20MWth (in operation on or after 20/12/2018) currently held Ref EPR/NP3124SP) is for Boiler No.2. The permit application seeks to consolidate the permit for Boiler No. 2 into the proposed installation permit. The existing Medium Combustion Plant permit will be surrendered once the Installation permit has been issued.

The proposed installation includes emissions to air from 4 No. Boilers and 1 No. emergency Back-up Diesel Generator and therefore the application documents include an H1 risk assessment of emissions to air.[4] Pollutants shown to require further assessment were considered further in an Air Quality Assessment[5] (AQA) using detailed dispersion modelling.

A Site Condition Report (SCR) has been produced and is submitted as a supporting document to the permit application. The SCR includes details of the previous land uses and current site condition.[6] A Groundsure Enviro Insight report forms Appendix A of the SCR and is referenced in this document.

[4] ETL (2024) H1 Assessment to Support a Bespoke Installation Permit Application: Pattemore's Dairy, Mosterton Road, Misterton, Crewkerne, Somerset, TA18 8NT, Document reference: ETL886/H1/V1.0/Pattemore's Dairy/Nov2024

[5] ETL (2024) Air Quality Assessment to Support a Bespoke Installation Permit Application: Pattemore's Dairy, Mosterton Road, Misterton, Crewkerne, Somerset, TA18 8NT. Document reference: ETL886/AQA/V1.0/Pattemore's Dairy/Nov2024

[6] Earthcare Technical Ltd Site Condition Report (SCR) Bespoke Installation Permit Application: Pattemore's Dairy, Mosterton Road, Misterton, Crewkerne, Somerset, TA18 8NT. Document reference: ETL886/SCR/V1.0/Pattemore's Dairy/Nov2024.

4 Site Details

4.1 Location

Address:	Pattemore's Dairy, Mosterton Road, Misterton, Crewkerne, Somerset, TA18 8NT
National Grid Reference (NGR):	ST 46007 07193
Local Authority:	Somerset Council

The Site Location is shown in Figure 1 - Site Location Plan.

The Site footprint (proposed permitted area) is approximately 6.3 hectares (15.5 acres).

The Site is in a rural location with the villages of Misterton approximately 1 km to the north west and South Perrett 1.3 km to the south east.

The southern boundary of the Site is bordered by a tributary of the River Parrett and the Dorset Area of Outstanding Natural Beauty. To the east of the Site there is a solar farm with an area of 2 hectares (5 acres) which is operated by Pattemore's Transport (Holdings) Ltd and from which energy is used on site and any excess exported to the National Grid. Much of the Site boundary contains vegetation which provides a visual screen from the A3066 from which the Site is accessed.

4.2 Environmental Sensitivities

4.2.1 Geology

The bedrock geology is Ooidal Limestone[7] with an overlying soil type classified as freely draining, shallow lime-rich soils with a loamy texture.[8]

4.2.2 Hydrogeology

The entire site sits upon a bedrock aquifer which is classified as a principal aquifer; geology of high intergranular and/or fracture permeability, usually providing a high level of water storage which may support water supply/river base flow on a strategic scale.

The area of clay, silt, sand and gravel associated with the tributary of the River Parrett along the southern side boundary and extending east and north along the route of the tributary of the River Parrett are classified as a superficial Secondary A aquifer.

Both the superficial and bedrock aquifers are classified as high vulnerability.

[7] https://geologyviewer.bgs.ac.uk/ Accessed 12 September 2024
[8] https://magic.defra.gov.uk/MagicMap.aspx Accessed 12 September 2024

The Site is not within either a Groundwater Source Protection Zone nor a Drinking Water Safeguard Zones (Groundwater) (England).[9]

There is an onsite borehole used by the Operator in accordance with an Environmental Permit (Ref: 16/52/003/G/166) to abstract a maximum of 55m^3 per day and 16,500m^3 per year of water for cleaning down and mixing with polymers.

4.2.3 Surface Water

The Site lies to the north of a tributary of the River Parrett and the proposed southern boundary of the Site lies along the route of the watercourse. The Site drainage enters this tributary via two permitted emission points (emission points W1 & W2).

The catchment area is the Parrett - headwaters to Broad River Water Body and was classified in 2022 under the Water Framework Directive as follows:

- Ecological status – moderate
- Physico-chemical quality elements – high
- Hydromorphological Supporting Elements – supports good
- Chemical – does not require assessment.[10]

4.2.4 Flood Risk

The Site is in a Flood zone 1 which means that overall, there is a low probability of flooding from rivers or sea.[11]

4.2.5 Ecological Receptors – Statutory Designated Sites

Ecological receptors are shown in Figure 2 - Ecological Receptor Plan and in the EA Nature and Heritage Conservation Screening Report Appendix A.

In accordance with the EA Nature and Heritage Conservation Screening Reports Appendix A there are two statutory designated sites within 10 km of the permitted boundary, namely:

- Bracket's Coppice Special Area of Conservation (SAC) is approximately east 4.2 km from the Site at the nearest point.
- West Dorset Alder Woods SAC which is 8.9 km south east of the Site.

Both SAC sites are also designated as Sites Special Scientific Interest (SSSIs). There are several SSSIs within 10 km of the Site but none within 2 km.

[9] Enviro Geo Insight Report, Groundsure (July 2024)
[10] https://environment.data.gov.uk/catchment-planning/WaterBody/GB108052015260 Accessed 30 July 2024
[11] https://flood-map-for-planning.service.gov.uk/ Accessed 30 July 2024

The EA Nature and Heritage Conservation Screening Report identifies the sites in Table 2 below for consideration within the permit application:

Table 2 Nature and Heritage Conservation sites within relevant screening distance

Site name and type	Screening distance (km)
Special Areas of Conservation (cSAC or SAC)	
Bracket's Coppice Special Area of Conservation	10
West Dorset Alder Woods	10
Local Wildlife Sites	
New Bridge Meadows	2
Ten Acre Copse	2
Langmoor Lane	2
Hawkhems Copse Meadow	2
Picket Farm Cops	2
Ten Acre Field	2
Misterton Plantation	2
Picket Plantation	2
Crondle Hill Plantation	2
Kithill	2
Cathole Bridge Meadow	2
Crondle Hill Coppice	2
River Parrett	2
Crondle Hill Field	2

4.2.6 Ecological Receptors – Priority Habitats & Species

There are no Priority Habitats within 50m of the Site. The closest area of Priority Habitat is an area of Traditional Orchard 122m to the north below Knowle Farm.

There are 14 No. Local Wildlife Sites (LWS) within 2 km of the Site, and these are listed and shown on a plan in the EA Nature and Heritage Conservation Screening Reports Appendix A.

There are no areas of Ancient Woodland within 2 km of the Site.

4.2.7 Air Quality Management Areas

The Site is not within an Air Quality Management Area (AQMA). South Somerset District Council (SSDC) have declared an AQMA for nitrogen dioxide in Yeovil approximately 10 km to the north east of the Site.12

[12] https://uk-air.defra.gov.uk/aqma/ Accessed 12 September 2024.

4.3 Human Receptors

The nearest residential dwelling to the Site is Owls Barton approximately 100m west of the Site boundary to the property boundary, and 120m to the property (dwelling).

Human receptors within proximity to the Site are captured in Table 3 below and are shown on Figure 3 – Human Receptor Plan.

Table 3: Human receptors within approximately 1 km

ID	Location	Type of receptor	NGR X	NGR Y	Distance from site boundary (m)	Direction from site
R1	Owls Barton	Residential	345843	107331	100 *	West
R2	Knowle Farm & NS Used Car Dealer	Residential & Commercial	345956	107494	220	North
R3	Houses off A3066 south of Misterton	Residential	346066	107563	275	North
R4	R V S Accident Repair	Commercial	345972	107666	385	North
R5	Bluntsmoor Farm	Residential	345479	106701	515	South west
R6	Chapel Court Farm including plant hire company	Residential & Commercial	345685	106433	640	South south west
R7	Misterton village	Residential	346011	107973	700	North and west
R8	Misterton Church of England First School	School	345820	108030	758	North north west
R9	Badgers Glory	Residential	345114	107152	772	West
R10	Tumberlands, Lecher Lane	Agricultural & Residential	346868	106844	717	South south east
R11	Downbarn Farm – Dairy Farm	Residential & Agricultural	344995	106602	979	South west
Notes: 100m from site boundary to property boundary, 120m from site boundary to property (dwelling).						

4.4 Process Summary

This section should be read in conjunction with the Process flow for cream, homogenised cream, stabilised cream (Appendix B).

Raw materials are defined by a specification and then delivered to the Pattemore's Dairy. All deliveries are checked and recorded before acceptance, and records of all purchases are retained. A rejection procedure is in place if any problems occur with the raw material at any stage and appropriate action is taken with the supplier.

Raw materials are stored under controlled conditions prior to use. The stores are regularly inspected, and maintenance requirements are captured within the Maintenance and Service Planner (**PAT-MP-01**). Raw materials are tested on the regular basis to ensure they are suitable for use in processing.

Raw milk is accepted in bulk and stored within the Milk Silos.

4.4.1 Cows' Milk Processing

A proportion of the raw milk is diverted directly to the Pasteurisation Unit. The Pasteuriser uses heat from the Steam Boilers (see Section below on steam production).

The pasteurised milk is then homogenised, then either dispatched in bulk or packaged and sent off site.

The milk that is not pasteurised and is routed via 3 No. lines to the 3 no. Separators which work using centrifugal force to separate the cream from the milk ('skim').

Depending on market demands, the resulting cream is either stored in the Cream Holding Tanks, dispatched off site in bulk or packed for dispatch.

Depending on market demands, the resulting skim from the separators is either:

- Dispatched off site in bulk; or
- Packaged and dispatched off site; or
- Piped to the skim silo for storage (See Table 5 below) and then to the Evaporators to produce concentrate, which is either dispatched in bulk or packaged.

4.4.2 Goat Milk Processing

At the time of writing a new production line is being installed which will include the following steps:

- Acceptance of unpasteurised goat milk in bulk
- Pasteurisation
- Packaging into cartons
- Dispatch

4.4.3 Packaging of Plant- based Milks

This activity is proposed at the time of writing and will involve the following steps:

- Reception of plant-based milk from bulk tankers

- Storage of plant- based milk in storage silos
- Pasteurisation
- Packaging of plant-based milk
- Storage of packaged plant-based milk prior to dispatch
- Dispatch

4.4.4 Storage and Dispatch of Products

Qualified staff and appropriate equipment are used to ensure that products are properly handled during production and subsequent operations. Finished products are stored prior to dispatch in a designated and suitable area. The storage areas are secure and maintained in a condition to prevent damage of the product pending delivery. Products are stored within a controlled temperature range of 1-5°C.

4.4.5 Steam Production & Use

There are 3 No. fixed Boilers and 1. No Mobile (standby) Boiler on site, used to produce steam. All of the Boilers are fuelled by kerosene. The boilers are detailed in Table 4 below:

Table 4: Boilers for steam production

Boiler number	Size (MWthi)	Grid reference (X, Y)	Fuel tank used
Boiler 1	3.34	346014, 107167	Fuel tank No. 27
Boiler 2	3.33	346004, 107176	Fuel tank No. 27
Boiler 3	0.72	345938, 107180	Fuel tank No. 46
Boiler 4 (mobile standby boiler)	3.27	345999, 107191	Fuel tank No. 27

The locations of each fuel tank used by each Boiler can be seen in Figure 4 - Raw Material Locations. The steam from the boilers is used on site for pasteurisation of milk and for the Cleaning In Place (CIP) systems.

4.5 Infrastructure

The Site infrastructure comprises:

- Access road
- Weighbridge
- Lorry Wash Bay
- 2 No. Parking Areas
- Office Buildings
- 13 No. Milk Silos
- 16 No. Cream Silos
- 8 No. Skim Silos
- Milk Reception Building
- Separator Building (containing 4 No. centrifuges to separate milk from cream)
- Main Dairy Building including:
    - Lorry Loading Bay
    - Pasteuriser Room
    - Evaporator 1

  - Long Life Cream Area
  - Pergul Lines (filling machine for bags)
  - Cream Filling Room
  - Cold Storage
  - Pallecon Storage (clad IBC)
  - 2 No. Mains Water Storage on roof
  - 3 No. Air Conditioning Units
  - 3 No. Chillers
- 1 No. Chiller (on plinth)
- Tray Wash (tented structure)
- Mechanical Vapour Recompression (MVR) Building (Evaporator 2)
- 5 No. Cleaning in Place (CIP) systems
- 2 No. Bulk Storage Tanks for caustic (30%)
- 2 No. Bulk Storage Tanks for prime CIP (30% caustic)
- 1 No. Bulk Storage Tank for nitric acid
- IBC Storage Areas for chemicals
- Cooling Tower
- Mechanics Workshop including engine oil storage
- Maintenance workshop containing back-up generator
- 3 No. Kerosene Boilers for steam production (fixed)
- 1 No. Kerosene Boiler for steam production (mobile)
- 2 No. bunded Kerosene Tanks
- 3 No. bunded Diesel Tanks
- 1 No. bunded Ad Blue Tank
- 1 No. Back-up Generator (inside Maintenance Workshop)
- 1 No. Glycol Tank
- 3 No. Water Storage Tanks
- Effluent Treatment Plant including:
  - 6 No. Back Tanks (for storage of effluent)
  - 2 No. Stainless Steel Tanks (associated with the Back Tanks)
  - Balance Tank
  - Dissolved Air Flotation (DAF) Plant
  - Biomass (BIO) DAF Plant
  - Anoxic Tanks
  - Sludge Tanks
  - Screw Press for sludge in shed
  - Membrane Bioreactor (MBR)
- 1 No. Sewage Treatment Plant
- Borehole
- 1 No. Clean Water Storage Pit
- Site Drainage Containment
- Dirty Water Storage Pit & Tank (Emergency Overflow Pit & Emergency Overflow Tank)
- Reed bed and 3 No. Ponds for final polishing of effluent prior to discharge

Proposed additional infrastructure to be added comprises:

- New line for goat milk and associated:
  - 1 No. Goat Milk Silo
  - CIP system
  - Robotic Packaging Plant

- 2 No. Raw Milk Silos (140m^3 each)
- 2 No. Skim Silos (140m^3 each)
- Additional CIP to serve as an Upgrade to CIP set 1
- New development to the east of site including:
  - Dry store and Packaging Warehouse
  - 1 No. Sewage Treatment Plant
  - New Workshop
  - Fuel Storage
  - Waste Oil Store
  - Additional Effluent and Water Storage
  - 3 No. Concrete Surface Water Settlement Ponds with Clarifier, Dewatering Bag and Soakaway

5 Management

The Site is operated by Pattemore's Transport Limited under the direction of the Operations Director who is the line manager to the Factory Manager who in turn manages an Engineering, Facilities, Health and Safety Manager, a Production Manager, a Technical Manager and an Engineering Project Manager.

The Site operates in accordance with an Environmental Management System (EMS). The Engineering, Facilities & Health and Safety Manager is responsible for integrating the EMS within the business, ensuring its requirements are maintained and approving and endorsing any amendments.

The staffing structure is shown on the Staff Organogram (Appendix C).

6 Control of Emissions to Land and Water

6.1 Overview

There are emissions to water currently regulated under an existing environmental permit (Ref: EPR/ZB3799NK). The existing consent permits the discharge of:

- Sewage effluent and trade effluent comprising dairy effluent, treated within the Effluent Treatment Plant (ETP), dairy evaporator condensate water, boiler blowdown water, and the lower yard site drainage. This is discharged through emission point A1 under the current discharge consent, proposed to be renamed emission point W1 under the consolidated Installation permit.
- Settled surface water arising from the upper site yards. This is discharged through emission point A2 under the current discharge consent, proposed to be renamed emission point W2 within the consolidated Installation permit.

Emissions of dairy effluent are managed via the ETP. Effluent streams entering the ETP are treated by Dissolved Air Flotation (DAF) within the DAF Tank and then undergo secondary treatment within either the Membrane Bioreactor (MBR) or the BIO (Biomass) DAF.

Within the DAF Tank, most solids are removed through a combination of adding Poly Aluminium Chloride (PAC), Sulphuric Acid and Polymer in conjunction with the white-water system and paddles to scrape off the sludge that has risen to the surface. The partially treated liquid component of the effluent is directed to the Anoxic tank and subsequently to the Activated Sludge and Aerobic Tank (AS Tank) before undergoing secondary treatment within either the MBR or the BIO DAF.

Within the MBR, 400 filter screens allow the flow of liquid across the membranes to filter out the mixed liquor suspended solids (MLSS) which are directed to the Anoxic tank, with the clean water then discharged to the ponds.

The BIO DAF system operates in parallel to the MBR, receiving liquid MLSS from the Activated Sludge and Aerobic Tank (AS Tank) and by adding Polymer in conjunction to the white-water system, separating the MLSS from the liquid. The clean liquid can then be discharged to the

ponds and the majority of the MLSS sent back to the AS tank. The Sludge Tank receives the sludge from the Main DAF but also a percentage of the BIO DAF scrapings. Material from the Sludge Tank is sent to the Screw Press whereby adding Polymer and then forcing it through a helicoid rotating screw and pressing it against the filter plates, the liquid is removed from the solid. The liquid is in turn fed into the Main DAF tanks under controlled conditions (as slowly as possible) and the solids are sent to an Anaerobic Digestion (AD) plant for treatment and recovery.

All treated trade effluent is discharged from the pond to the tributary of the River Parrett via V-Notch at Emission Point W1 (emission point A1 under the current discharge consent).

There are plans to increase storage and treatment capacity of the ETP. New effluent and process water storage is proposed to be incorporated within eastern section of the existing Site footprint and will be constructed to the relevant industry standard. The proposed effluent storage will allow additional buffer storage for waste water prior to treatment within the Effluent Treatment Plant (ETP). This will offer significant operational and environmental benefits, providing contingency storage should there be issues or breakdowns within the ETP. The existing Balance Tank is proposed to be repurposed as an Activated Sludge Tank, building further treatment capacity within the ETP system. The Screw Press, BIO DAF and Sludge Tank are all proposed to be relocated to the east of the site. The proposed locations are shown on Figure 5 – Site Layout Plan. The intended location is favourable as it is further away from human receptors located to the north of the Site.

The Upper Yard Area has separate clean water drainage which exits via a concrete settlement (60m^3) tank prior to being discharged to the watercourse at Emission Point W2 (emission point A2 under the current discharge consent).

The current surface water drainage system is being upgraded in line with the further development easterly adjacent to the 'Top Yard' which will include a new Maintenance Workshop / Warehouse. The surrounding yard to the east is to be concreted, with rainfall directed to a series of three Concrete Settlement Tanks and a Clarifier to remove solids prior to the discharge of clean water via both the existing consent Emission Point W2 (emission point A2 under the current discharge consent) and via Dewatering Bags (to capture any soil particles) and Soakaway located at fields within the south eastern corner of the Site.

There is an Oil Separator and Soakaway within the 'top yard' which serves the fuel tank bund. Rainwater collecting here is positively released to the interceptor following a visual check to confirm the absence of any spillages.

A drainage plan has been provided Figure 6: Site Wide Drainage System Plan.

6.2 Primary Containment

Site primary containment measures are described below.

6.2.1 Storage tanks

Storage Silos are constructed of stainless steel base, shell and roof as per the industry standard.

Skim Tanks benefit from high level sensors. On dispatching loads into the Silos, the pump will automatically shut off on reaching the high level, preventing overfilling. Within the Dairy Factory itself, the Planning Team will dictate the quantities to be dispatched to each production Silo for each production cycle. Flow meters are in place which allow operatives to input the correct amounts into each Silo.

The ETP comprises 5 No. process tanks in addition to the Main DAF Plant and BIO DAF Plant as detailed in Table 5 below.

Table 5: ETP Tanks

ETP tank	Storage capacity (m^3)	Construction material
6 No. Back Tanks	60 (each)	Glass lined steel tanks
2 No. Silver Stainless Steel Tanks	20 (each)	Stainless steel
Balance Tank	250	Vitreous enamel steel tanks
Activated Sludge and Aerobic Tank (AS Tank)	493	Vitreous enamel steel tanks
Membrane Bio Reactor (MBR)	88	Vitreous enamel steel tanks
Anoxic Tank	25	Fibreglass
Sludge Tank	30	Fibreglass
Dissolved Air Flotation (DAF) Tank	25	Stainless steel
BIO DAF	35	Stainless steel
Total ETP storage capacity (m^3)	**1,346**	

6.2.2 Fuel Storage

All fuel is stored within two main bunded areas; located at the west of the top yard adjacent to the re-fuelling station and immediately to the north of the Maintenance Workshop. Within each designates area, Kerosene and Diesel are stored within designated Fuel Tanks.

The Fuel Tanks benefit from high- and low-level sensors which trigger a flashing beacon and siren when activated, alerting staff to a potential issue.

6.2.3 Storage of oils and chemicals

Chemicals are stored within a designated Chemical Storage Area, both within barrels housed on bunded pallets and within IBCs. The Chemical Storage Area is located on concrete impermeable surfacing; adjacent to the Vehicle Cleaning Station. The Vehicle Cleaning Station is served by CIP set 3, with all drainage directed to the ETP. Any chemical spillages would be captured within the CIP set 3 drainage system and would enter the ETP.

An Inventory of Substances is maintained within the Accident Management Plan (**PAT-OD-04**).

6.3 Secondary Containment

The whole Site benefits from impermeable surfacing and drainage containment in the case of a spillage.

The Milk Silos benefit from breeze block bunding on three sides with a sump on the open side which directs any spillages to the ETP.

Emergency containment systems are in place, which utilise the Emergency Overflow Pit (Emergency Pit) and Emergency Silo for temporary storage of spillages prior to treatment within the ETP. A series of three drain valves are located immediately adjacent to the Emergency Pit at the south of the Site.

In the event of a spill a notification board displayed in the area provides clear directions as to how to open and shut valves to divert and direct the spillage to the Emergency Pit, preventing contamination of the Ponds and ultimately the watercourse. As a further contingency, should any spillage reach the pond system, each of the three Ponds can be individually closed off and contents diverted to the ETP for treatment, preventing accidental discharge into the stream.

6.4 Monitoring of Emissions to Water

The existing permit (Ref; EPR/ZB3799NK) includes consented discharge limits for a number of parameters including Biological Oxygen Demand (BOD), Suspended solids, Ammoniacal Nitrogen, Total Phosphorus and pH. Pattemore's understand that on consolidating the existing permit within the proposed Installation permit, the Associated emission levels (BAT-AELs) will apply. This is discussed in detail within the conclusions of the BAT Assessment.[13]

Best Available Techniques (BAT 4) requires monthly Chloride and BOD monitoring and daily monitoring of Chemical Oxygen Demand (COD), Suspended Solids, Total Nitrogen and Total Phosphorous. Monthly monitoring of both BOD and Chloride will be undertaken at a UKAS accredited laboratory.

The daily monitoring of COD, Suspended Solids, Total Nitrogen (TN) and Phosphate, however, is not externally accredited with all daily monitoring undertaken internally at the on-site laboratory. There is already a rigorous monitoring schedule in place with process monitoring of the ETP undertaken at various intervals as well as from the V-Notch that serves the ETP (emission point W1 (A1 on existing discharge consent)).

Currently the Suspended Solids, TN and Phosphate analyses are undertaken using Hach Cuvette Tests. COD analysis is undertaken using Hach Cuvettes in combination with the HT200S High temperature thermostat which expedites the analysis. There are written procedures for the existing sampling and analysis, which includes the training required for any new employees before being deemed competent to undertake each test. Training undertaken by each employee is documented and details their current level of competency.

Monthly validation analysis is undertaken at undertaken at a UKAS accredited laboratory. Samples from both the MBR outlet and the V-Notch (emission point W1) are analysed for pH, Total Suspended Solids, Ammonium as N, Ammonium as NH_4 and Total Phosphorus.

[13] Pattemore's Dairy, Best Available Techniques Assessment, Earthcare Technical Ltd, November 2024

The current testing regime has been deemed acceptable by the Environment Agency to date and as such Pattemore's would like to continue the current sampling regime which is well understood by all employees.

With regard to the BAT-AELs for direct emissions to a receiving water body detailed within BAT 12; the limits for both COD and total suspended solids can be met. The average COD for the year to date is 63.7mg/l. The existing discharge permit limit contains a suspended solids limit for both the ETP emission and the surface water emission points (emission point W1 and W2 respectively (A1 and A2 on existing discharge consent)) which is 40 mg/l and is routinely achieved.

The existing permitted limit for Total phosphorus as P is 4mg/l. Pattemore's currently monitor Phosphate levels rather than total organic P with a value of under 1mg/l being routinely achieved.

The existing discharge permit imposes a limit for Ammoniacal nitrogen (as N) rather than Total nitrogen (TN) for emission point W1 (A1 in current permit) only and this limit is routinely met. The BAT-AEL for TN is 20mg/l with a possibility of an upper end limit of 30mg/l if abatement is in place and is greater than 80% efficient as a yearly average or over a production period. Total nitrogen is monitored from the settlement pond as part of ongoing process monitoring. The average figure for the year is 57.26mg/l which is acknowledged as more than the BAT AEL. Pattemore's is committed to reducing total Nitrogen levels within the ETP discharge and are investigating potential solutions, including the possibility of incorporating an additional dosing station within the process.

7 Control of Emissions to Air

7.1 Overview

The emission points to air A1 to A5 inclusive are shown on Figure 7 – Permit Boundary and Emission Point Plan and are shown in Table 6 below:

Table 6: Emission Points to Air

Emission point reference	Source
A1	Boiler 1
A2	Boiler 2
A3	Boiler 3
A4	Boiler 4
A5	Standby generator

Emissions will be monitored in accordance with any given permit. With regard to the monitoring requirements stipulated within Form B3, Question 4, confirmation of the suitability of sampling locations has been sought from Atesta Ltd, the MCERTS accredited emissions testing contractor. They will visit the Site and advise where to install sample test ports that fully comply with BS EN

15259. Pattemore's will arrange for these sample test ports to be installed, prior to any further compliance emissions testing being undertaken.

7.2 Control of Combustion Emissions

Emissions from combustion plant; Boilers (A1, A2, A3 and A4) and Standby generator (A5) are controlled through a planned preventative inspection and maintenance regime.

7.3 Control of Fugitive Emissions from ETP

Fugitive emissions from the ETP are controlled through ensuring that the ETP is operating optimally. This is achieved through a planned preventative maintenance schedule and through thorough process monitoring of the system and its inputs as described in Section 12.2 of the EMS: Process Monitoring.

7.4 Control of Emissions to Air under Abnormal Operations

Control of emissions to air under abnormal operating conditions are further detailed in the Accident Management Plan **(PAT-OD-04)** and associated procedures.

8 Control of Amenity Impacts

8.1 Odour

Odour emissions are minimised through:

- Controlled operation of the Screw Press. Sludge separation and storage is within an enclosed bunker with a sliding door. Door openings are controlled in accordance with the Odour Management Plan **(PAT-OD-03).**
- Monitoring of the inputs into the ETP to understand the characteristics of the effluent. This allows the ETP team to feed the ETP at a controlled rate that will not adversely impact its operation.
- Contingencies are in place to protect the functionality of the ETP, such that if high volumes of concentrated water require treatment, any quantities above which the ETP can process is diverted to appropriate contractors for landspreading for agricultural benefits.
- Process monitoring to ensure optimal operation of the ETP. All sampling results are documented on the ETP Water Dailys Sheet **(PAT-MP-06)** to facilitate the observation of trends by the ETP Team.
- Regular inspection and maintenance critical plant and infrastructure in accordance with manufacturers recommendations and the Maintenance and Service Planner **(PAT-MP-01).**

Odour emissions will be controlled in accordance with the Odour Management Plan (**PAT-OD-03**).[14]

[14] PAT-OD-04 Odour Management Plan V1.0

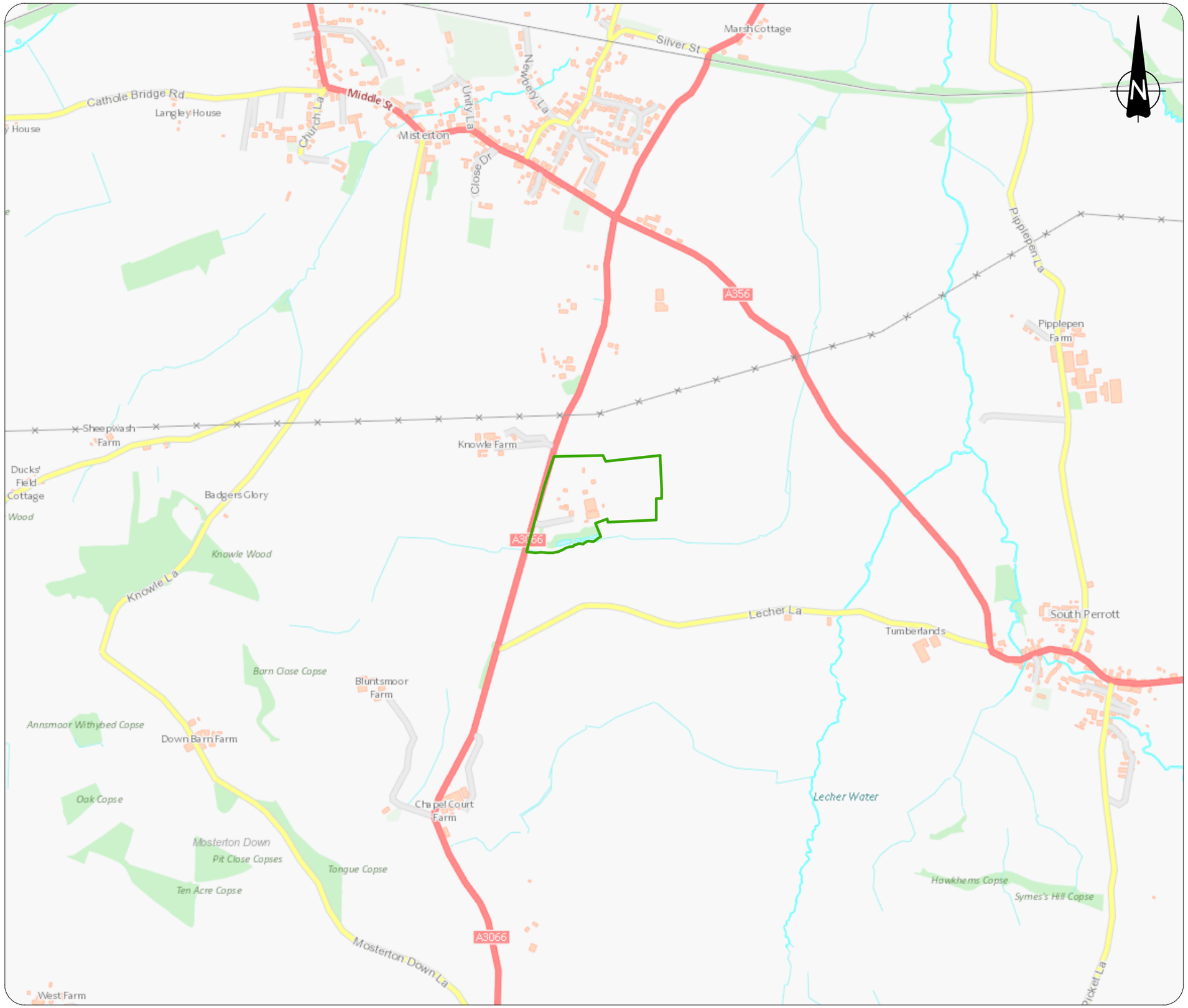
8.2 Noise

Noise emissions will be minimised through planned preventative maintenance for all equipment including the boilers which are potential sources of noise emissions, in accordance with the Maintenance and Service Planner **(PAT-MP-01**).

9 Resource Efficiency

Resource efficiency including raw materials, water and energy are fully considered in the BAT Assessment that accompanies the permit variation application.[10]

Figures



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REVISIONS

REV	DATE	DESCRIPTION	DWN	CHK	APP
-	15/11 2024	First Issue	JJ	MF	MF

LEGEND

Permit boundary

0 100 200 300 400 500 m

Scale at A3: 1:10,000

Client
Pattemore's Transport (Crewkerne) Ltd

Project
Environmental Permit Application

Title
Site Location Plan

Earthcare TECHNICAL
Manor Farm
Chalton
Waterlooville
Hants PO8 0BG
Tel: 02392 290488
enquiries@earthcaretechnical.co.uk
www.earthcaretechnical.co.uk

Drawn	Checked	Approved	Revision
JJ	MF	MF	

Date	Scale	Sheet Size
November 2024	1:10,000	A3

Drawing Number	File Reference
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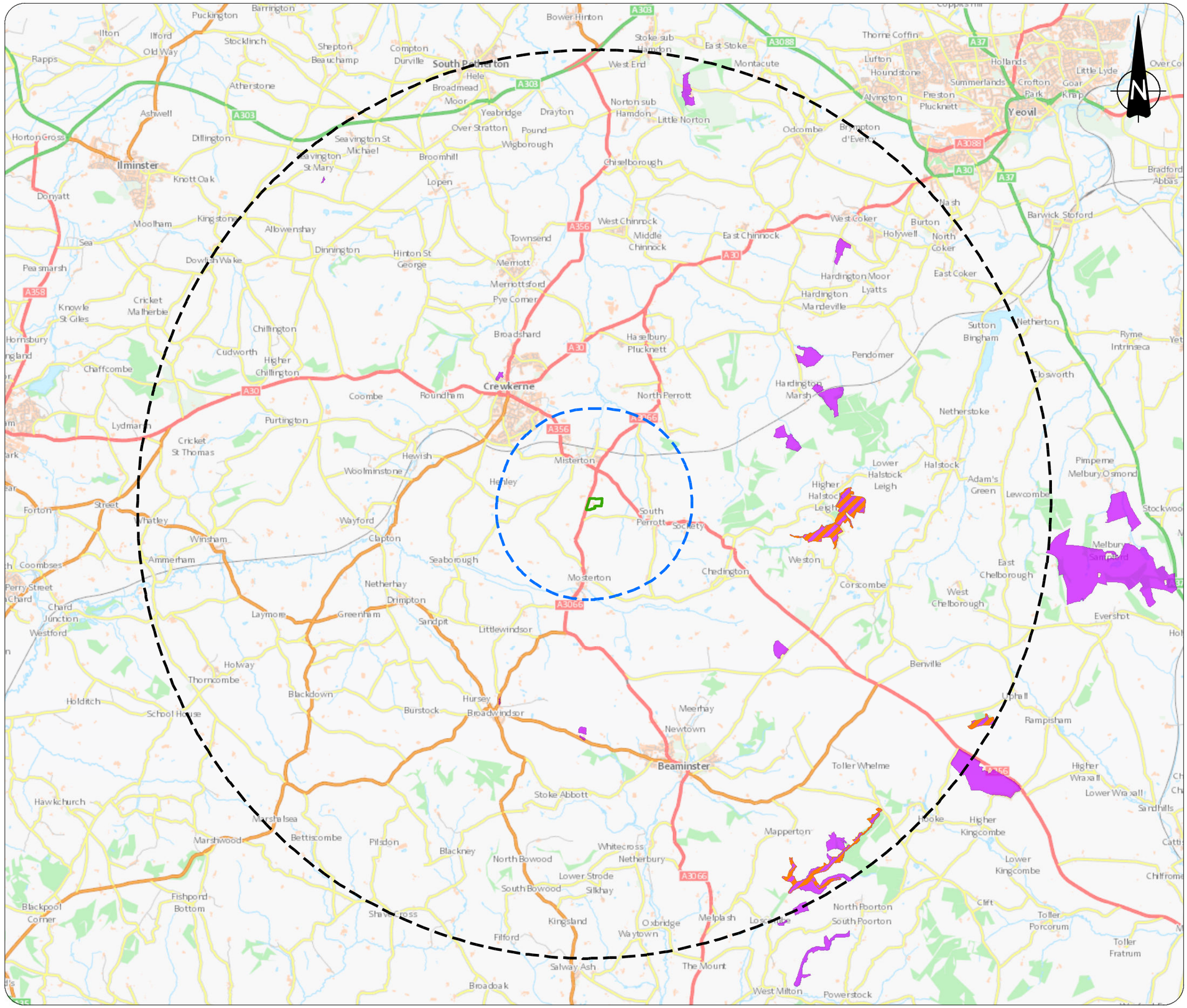

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REV	DATE	DESCRIPTION	DWN	CHK	APP
-	15/11 2024	First Issue	JJ	MF	MF

LEGEND

- Permit boundary
- 2km buffer
- 10km buffer
- Site of Special Scientific Interest (SSSI)
- Special Areas of Conservation (SAC)

Client
Pattemore's Transport (Crewkerne) Ltd

Project
Environmental Permit Application

Title
Ecological Receptors Plan

Earthcare TECHNICAL
Manor Farm
Chalton
Waterlooville
Hants PO8 0BG
Tel: 02392 290488
enquiries@earthcaretechnical.co.uk
www.earthcaretechnical.co.uk

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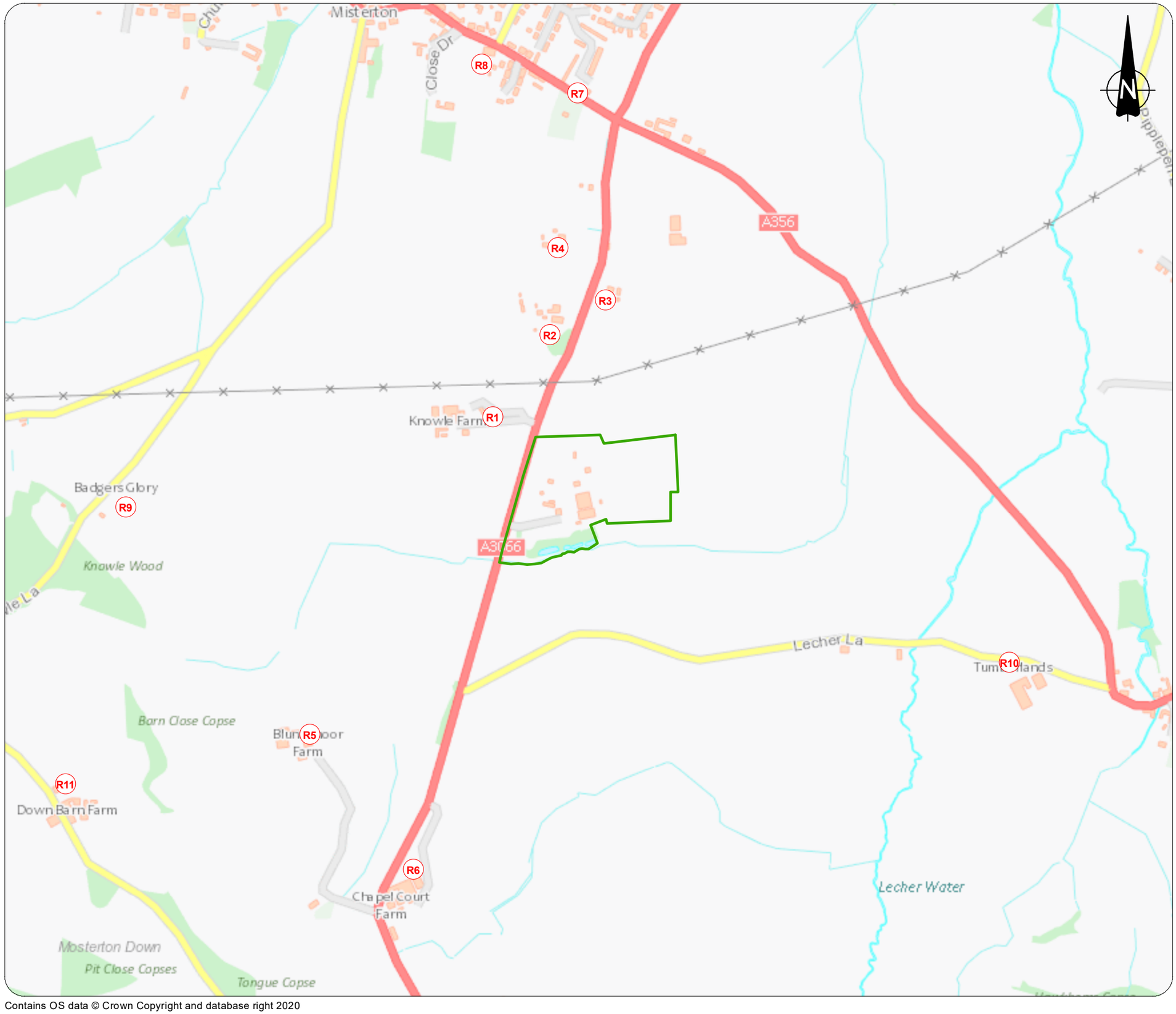

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REVISIONS

REV	DATE	DESCRIPTION	DWN	CHK	APP
-	15/11 2024	First Issue	JJ	MF	MF

LEGEND

- Permit boundary
- R Human receptor point

0 100 200 300 400 m

Scale at A3: 1:7,500

Client
Pattemore's Transport (Crewkerne) Ltd

Project
Environmental Permit Application

Title
Human Receptors Plan

Earthcare TECHNICAL
Manor Farm
Chalton
Waterlooville
Hants PO8 0BG
Tel: 02392 290488
enquiries@earthcaretechnical.co.uk
www.earthcaretechnical.co.uk

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JJ	MF	MF	

Date	Scale	Sheet Size
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Drawing Number	File Reference
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Site Block Diagram
This Drawing is not to scale,
Water, Milk, CIP and ETP liquid storage locations on site
Surface Water to River
Diesel, Kerosene and Oil
Boilers
Oil/Water Separater
Trade Effluent
Milk Silos
Cream Silos
Skim Silos
Rejected Milk for Pigs
CIP Systems
M15
M14
M13
M12
M11
M10
M2
M7
M6
M1
M3
M4
M5
M8
M9
CT15
CT14
CT16
CT11
CT12
CT10
CT8
CT9
CT1 to CT7
AT1
S5
S10
S9
S7
S8
S6
S4
S3
S1
S4
1
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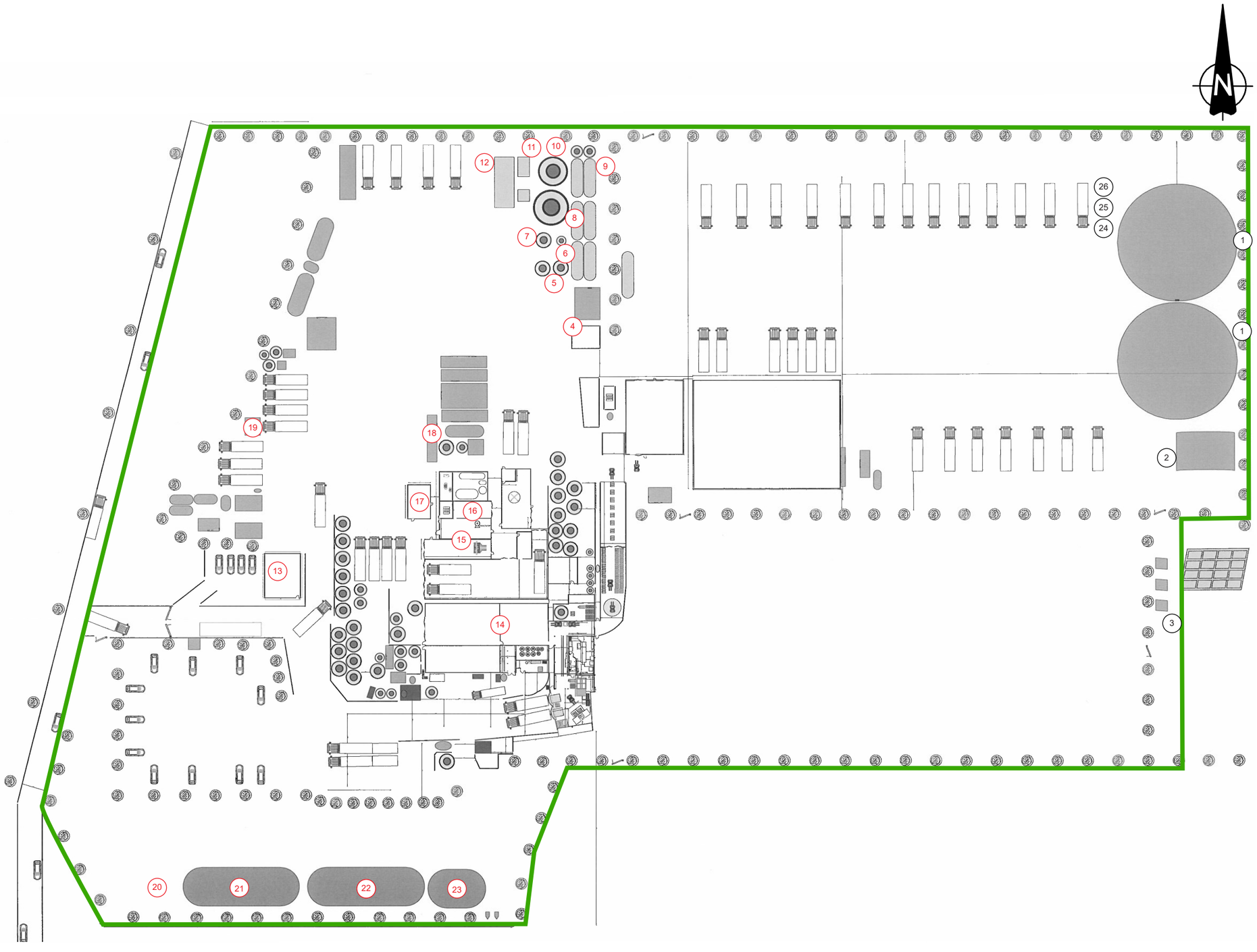

Not to Scale

REVISIONS

REV	DATE	DESCRIPTION	DWN	CHK	APP
-	09/01 2025	First Issue	JJ	MF	MF

LEGEND

Permit boundary

1 Exising

24 Proposed

1) New Effluent / Water Storage
2) Surface Water Settlement Ponds and Clarifier
3) Dewatering Bag
4) Dissolved Air Flotation (DAF) Plant
5) Sludge Tank
6) Anoxic Tank
7) Membrane Bioreactor (MBR)
8) Activated Sludge and Aerobic Tank
9) 6 No. Back Tanks
10) Balance Tank
11) Biomass (BIO) DAF Plant
12) Screw Press
13) Admin Office
14) Dairy Building
15) Boiler 1
16) Back-up Generator
17) Boiler 2
18) Boiler 4
19) Boiler 3
20) Reed Bed
21) Pond 1
22) Pond 2
23) Pond 3
24) Proposed new location for the Bio DAF
25) Proposed new location for the Screw Press
26) Proposed new location for the Sludge Tank

Client
Pattemore's Transport (Crewkerne) Ltd

Project
Environmental Permit Application

Title
Site Layout Plan

Earthcare TECHNICAL
Manor Farm
Chalton
Waterlooville
Hants PO8 0BG
Tel: 02392 290488
enquireies@earthcaretechnical.co.uk
www.earthcaretechnical.co.uk

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Date	Scale	Sheet Size
January 2025	NTS	A3

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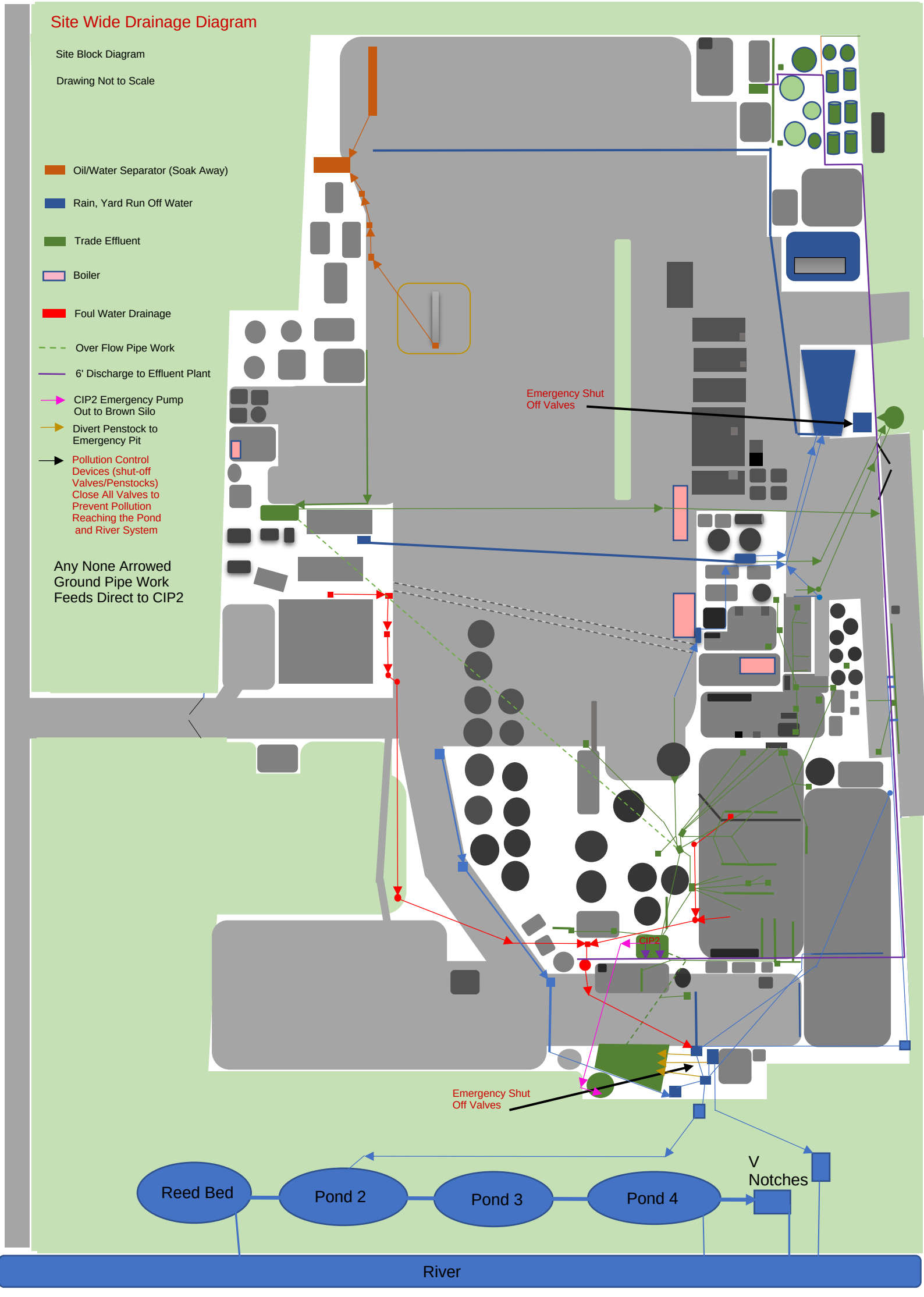
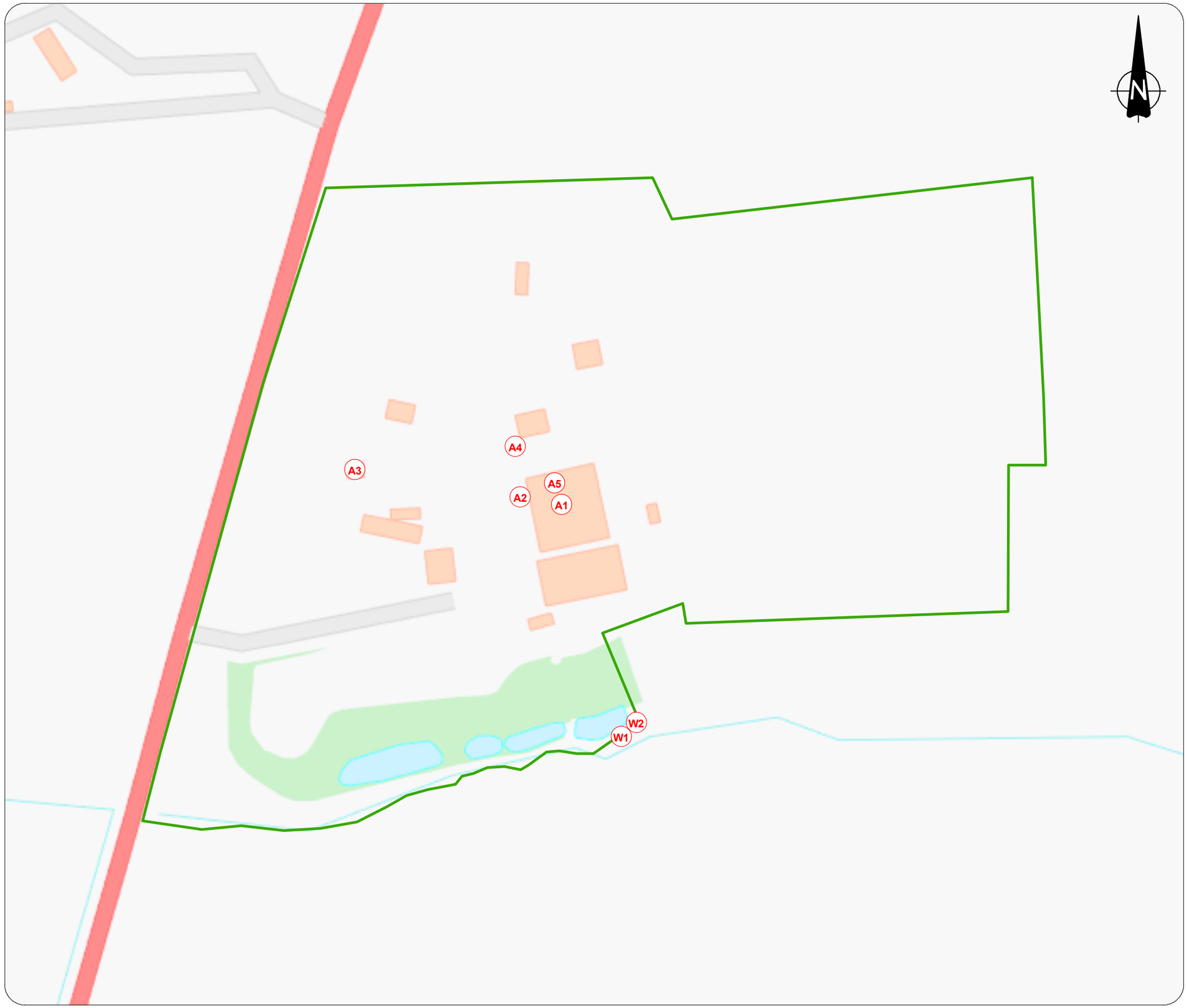
Site Wide Drainage Diagram

Site Block Diagram

Drawing Not to Scale





REVISIONS

REV	DATE	DESCRIPTION	DWN	CHK	APP
-	15/11 2024	First Issue	JJ	MF	MF

LEGEND

Permit boundary

Emission point

0 10 20 30 40 50 60 70 80 90 m

Scale at A3: 1:1,500

Client
Pattemore's Transport (Crewkerne) Ltd

Project
Environmental Permit Application

Title
Emission Point Plan

Earthcare TECHNICAL
Manor Farm
Chalton
Waterlooville
Hants PO8 0BG
Tel: 02392 290488
enquiries@earthcaretechnical.co.uk
www.earthcaretechnical.co.uk

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Appendix A – Nature and Heritage Conservation Screening Report & Maps

Nature and Heritage Conservation

Screening Report: Bespoke installation

Reference	**EPR/NP3127SX/P001**
NGR	**ST 46028 07159**
Buffer (m)	**90**
Date report produced	**03/07/2024**
Number of maps enclosed	**1**

This nature and heritage conservation report

The nature and heritage conservation sites, protected species and habitats, and other features identified in the table below **must be considered in your application**.

In the further information column, there are links which give more information about the site or feature type and indicate where you are able to self-serve to get the most accurate site boundaries or feature locations.

Most designated site boundaries are available on Magic map. Using Magic map allows you to zoom in and see the site boundary or feature location in detail, Magic map also allows you to measure the distance from these sites and features to your proposed boundary. Help videos are available on Magic map to guide you through.

Where information is not publicly available, or is only available to those with GIS access, we have provided a map at the end of this report.

Sites and Features within screening distance	Screening distance (km)	Further Information
Special Areas of Conservation (cSAC or SAC)	10	Joint Nature Conservation Committee and Magic map
Bracket's Coppice		
West Dorset Alder Woods		

Local Wildlife Sites (LWS) (see map below)	2	Appropriate Local Record Centre (LRC)

New Bridge Meadows

Ten Acre Copse

Langmoor Lane

Hawkhems Copse Meadow

Picket Farm Cops

Ten Acre Field

Misterton Plantation

Picket Plantation

Crondle Hill Plantation

Kithill

Cathole Bridge Meadow

Crondle Hill Coppice

River Parrett

Crondle Hill Field

Where protected species are present, a licence may be required from Natural England to handle the species or undertake the proposed works.

The relevant Local Records Centre must be contacted for information on the features within local wildlife sites. A small administration charge may also be incurred for this service.

The following nature and heritage conservation sites, protected species and habitats, and other features have been checked for, where they are relevant for the permit type requested, but have not been found within screening distance of your site unless included in the list above.

Special Areas of Conservation (cSAC or SAC), Special Protection Area (pSPA or SPA), Marine Conservation Zone (MCZ), Ramsar, Sites of Special Scientific Interest (SSSI), National Nature Reserve (NNR), Local Nature Reserve (LNR), Local Wildlife Sites (LWS), Ancient Woodland, relevant species and habitats.

Please note we have screened this application for features for which we have information. It is however your responsibility to comply with all environmental and planning legislation, this information does not imply that no other checks or permissions will be required.

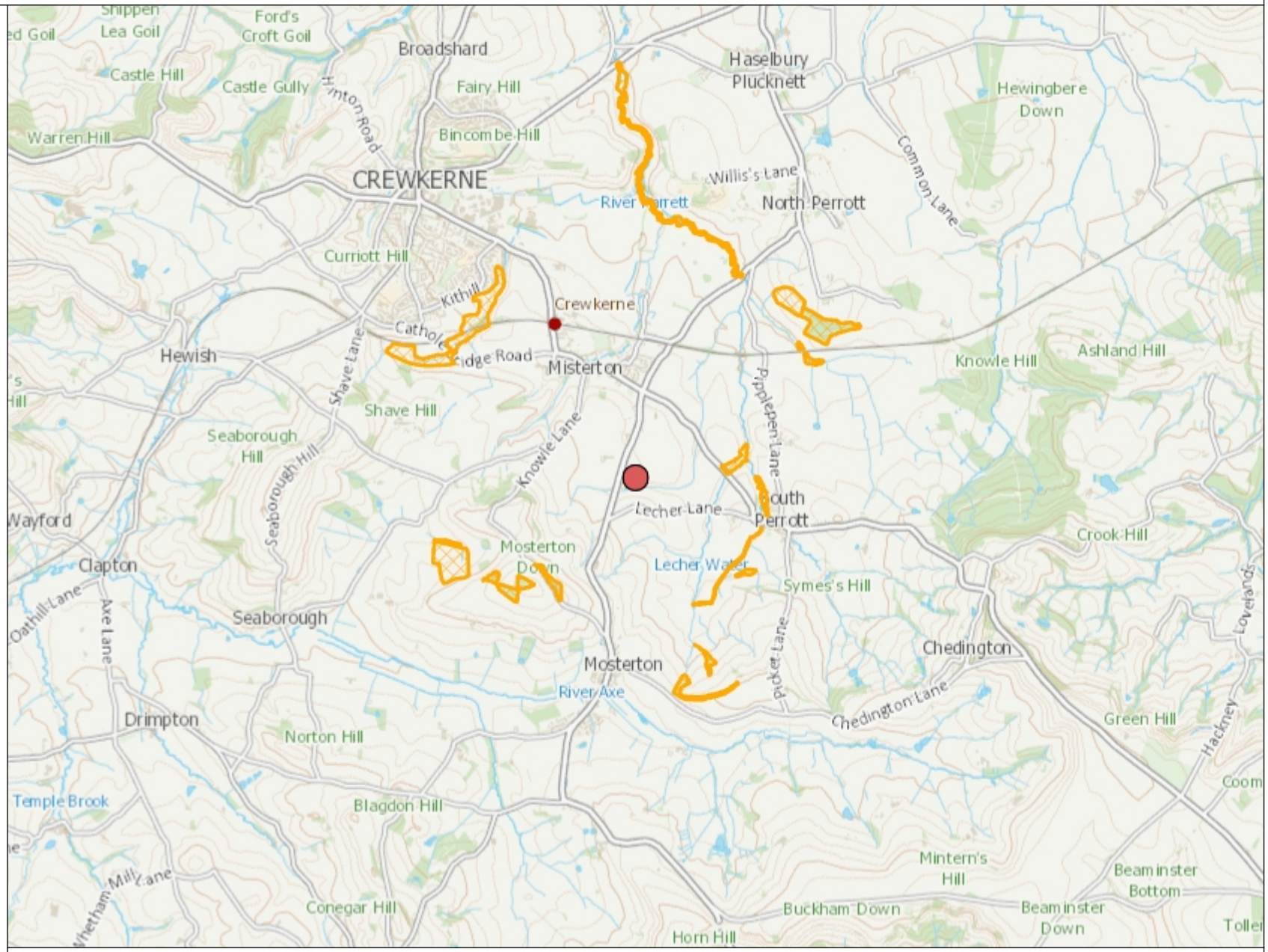
The nature and heritage screening we have conducted as part of this report is subject to change as it is based on data we hold at the time it is generated. We cannot guarantee there will be no changes to our screening data between the date of this report and the submission of the permit application, which could result in the return of an application or requesting further information

Local Wildlife Sites

Environment Agency

Legend

Local Wildlife Sites



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Metres

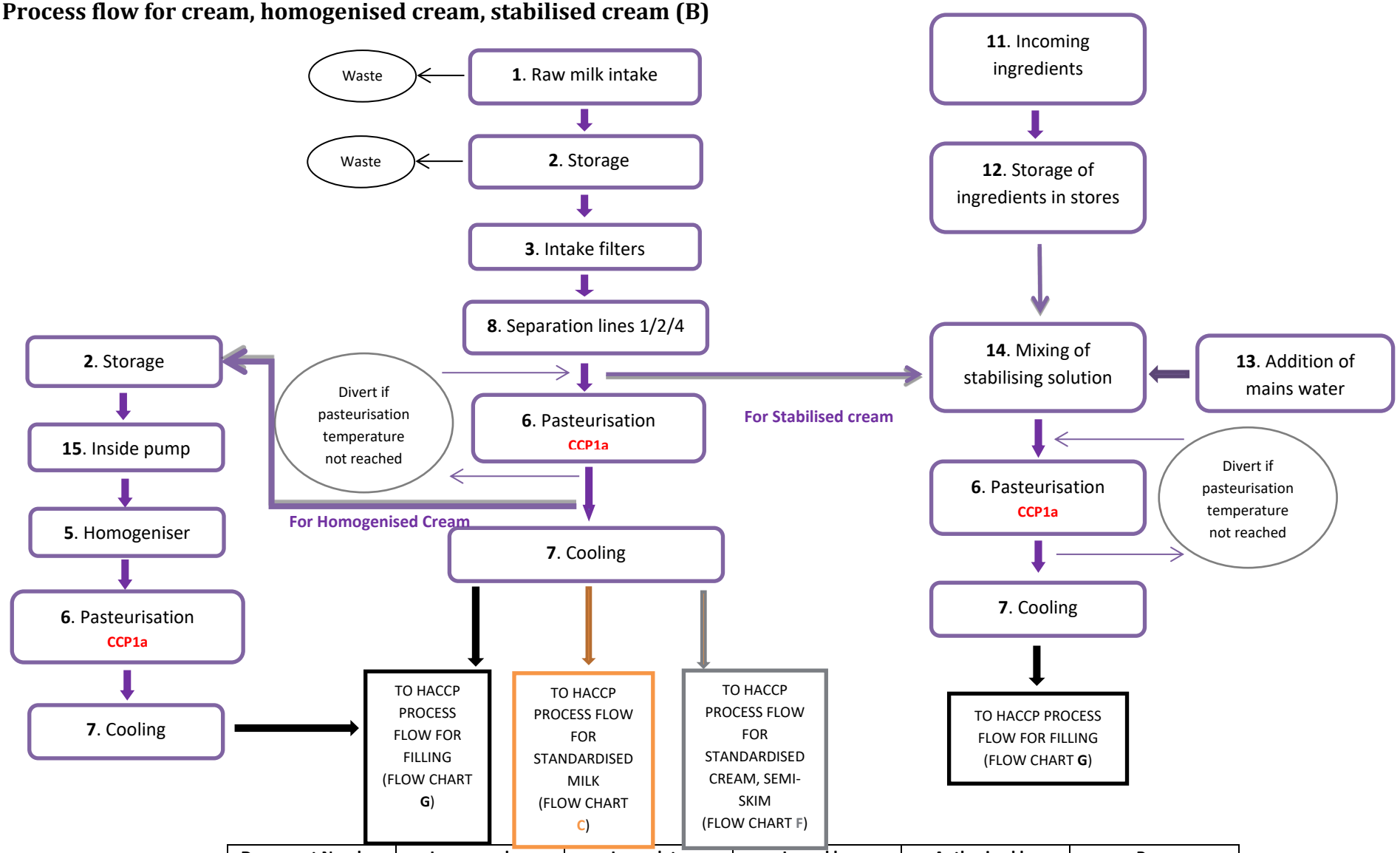
N W E S

Appendix B - Process Flow Diagram

PATTEMORES DAIRY
INGREDIENTS

Hazard Analysis Critical Control Points

Process flow for cream, homogenised cream, stabilised cream (B)



Document Number	Issue number	Issue date	Issued by	Authorised by	Page
QMP09 HACCP	20	15.01.2024	A. Jelonek	P. Williams	1 of 1

Appendix C -Staff Organogram

COMPANY STRUCTURE