SW IED Site Condition Report - Ashford

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	30/03/21	H Dixon	S George	A Manns	For client comment
B	25/05/21	H Dixon	S Stone	A Manns	Second Draft
C	22/06/21	G Peel	S Stone	A Manns	Final Draft
D	04/12/24	S Musa	S Blackman	A Manns	Update for NDM response Nov 24

Document reference: | 790101_MSD_SCR_ASH December 2024|

Information class: Standard

Document purpose:

A Site Condition Report (SCR) provides information regarding the condition of the land and groundwater at permitted sites at particular points in time throughout its permit history. It is an on-going record of the potential and known contamination risks before a permit is granted, whilst activities are carried out under a permit and at the time of surrounding the permit.

The SCR will be submitted as required for Form B2/C2, Question 5b and will be completed following the Environment Agency's Environmental permitting: H5 Site condition report guidance (2013)[1]. The template structure is directly from the Environment Agency's H5 Site Condition Report word template.

For all new permits **sections 1 to 3** will be completed.

For sites that are currently permitted **section 1 to 7** will be completed, updating sections from the previous Site Condition Report where available.

Section 8 to 10 are not to be edited; these address surrender of the permit at a later date.

[1] https://www.gov.uk/government/publications/environmental-permitting-h5-site-condition-report

1.0 SITE DETAILS	
Name of the applicant	Southern Water
Activity address	Ashford Wastewater and Sludge Treatment Works Kinneys Lane, Canterbury Road, Ashford, Kent, TN24 9QB
National grid reference	TR 02107 43407

Document reference and dates for Site Condition Report at permit application and surrender	Site Condition Report: 790101_MSD_SCR_ASH Date of Permit Application: TBC Date of Surrender: TBC

Document references for site plans (including location and boundaries)	790101_MSD_SiteLayoutPlan_ASH

2.0 Condition of the land at permit issue	
Environmental setting including: • geology • hydrogeology • surface waters	**Land use** The site is located to the northeast of the town of Ashford. The areas hosts the Ashford Wastewater Treatment Works (WWTW), within which the Sludge Treatment Centre (STC) (hereby referred to as the site) is located. The first evidence of sewage treatment works on site is shown in 1898 historic mapping, with a significant expansion from 1964. The M20 is situated to the south of the site with Henwood Industrial Estate located immediately south beyond that. The River Great Stour runs approximately 250m northeast of the site along the site perimeter to the south west. To the north of the river, there are rugby playing fields and a few residential properties. The site layout is depicted in Figure 1.1

Figure 1.1: Site location plan for the Sludge Treatment Centre (i.e the site)

Geology

Artificial Ground

No artificial ground is mapped to be on the site or within 250m.

Superficial Geology

The site lies upon an area of Alluvium formed up to 2 million years ago during the Holocene, consisting largely of soft to firm consolidated, compressible silty clay, but may also include layers of silt, sand, peat and gravel. The local environment would previously have been dominated by rivers. In the western areas of the site, Alluvium is absent and a pocket of River Terrace Deposits from the quaternary period is marked, comprising sand and gravel with layers of silt, clay or peat.

Bedrock Geology

The site lies upon the Sandgate Formation from the Aptian Age. The base is taken from the Easebourne Member, Fittleworth Member or Rogate Member where present. The upper boundary is taken from the Marehill Clay Member. The bedrock presents fine sands, silts and silty clays, typically glauconitic. Some soft sandstones are present with some sands limonitic or calcareous.

Underlying the Sandgate Formation are the Hythe Formation (interbedded sandstone and limestone), Atherfield Clay Formation (mudstone) and the Weald Clay Formation (mudstone).

Structural Geology

A fault is found 270m southwest between the Sandgate Formation and the Hythe Formation/Atherfield Clay Formation.

Hydrogeology

The superficial aquifers underlying the site are designated by the Environment Agency as Secondary A aquifers. The bedrock aquifers comprise of Secondary A, which is associated with the Sandgate Formation, and Principal Aquifers related to the underlying bedrock units

Hydrology and flooding

The Great Stour River flows south west to north east around the perimeter of the site. The river enters the North Sea just east of Herne Bay. Field drains are

	present to the north of the site, although it is not clear if these run into the Great Stour River. There are a further five OS Water Network lines within 50m of the site. The site lies within an area of groundwater flooding capability with potential flooding to property situated below ground level and at the surface. The majority of the site is located within Flood Zone 1 (less than 1 in 1,000 annual probability). The very North East corner of the site is within the Flood Zone 2 boundary due to the site's proximity to the Great Stour river. . There are several discharge consents reported to have been issued to Southern Water Services Ltd for the site, all for sewage discharge, dating back to 1991. The discharge of treated sewage effluent and settled storm sewage from Ashford WwTW to the River Great Stour is permitted under water discharge activity permit reference A805/K/98. **Sensitive land use** The site lies within the River Great Stour and Maidstone Nitrate Vulnerable Zones. Ashford Green Corridors Local Nature Reserve is also found 155m west of the site.
Pollution history including: • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination • evidence of damage to pollution prevention measures	**Pollution incidents to controlled waters** There have been six pollution incidents to controlled waters within 250m: • Between junctions 9 and 10 southbound, M20 – 46m south east. Pollutant: chemicals – other organic. Lorry overturned causing diesel and polyester resin to enter drains. July 1995. Category 3 – Minor Incident. • Just upstream of Bybrook WWTW, 183m north. Pollutant: oils – unknown. Oil or diesel entered River Stour. May 1996. Category 3 – Minor Incident. • Shalmesford Bridge, Chartham – 195m east. Pollutant: miscellaneous – foam. Entered stour. March 1996. Category 3 – Minor Incident. • Chemical Industry – 237m north east. Pollutant: chemicals – unknown. Category 3 – Minor Incident. • Footbridge at Heathfield Road – 224m east. Pollutant: oils – other fuel oil. October 1996. Category 3 – Minor Incident. • Chemical Industry – 229m east. Pollutant: Chemicals – acid. October 1993 Category 3 – Minor Incident. **Nearby industrial land uses** There are twelve active contemporary trade directory entries within 250m, including cladding suppliers, machine shops, commercial cleaning services and photocopiers. Listed below are those within 200m: • Moss Fabrications – 170m south, (NGR 601922, 143109). Wrought Ironwork. • Dinneck Garage – 180m south east, (NGR 602055, 143021). Garage Services. • Andrews Sykes – 200m south, (NGR 601966, 143029). Air conditioning equipment and systems. **Recorded Landfill and Historic Landfill**

Croftyard Dumpers (a historic landfill) is situated approximately 350m west of the site. Last input was in December 1980 with specified waste defined as deposited waste including inert waste and liquid sludge. No other records of an active or historical landfill can be found within 500m of the site.

Registered Waste Treatment or Disposal Sites

There are two licensed waste management facilities situated on site:

- Southern Water Services Limited – License was issued in 2013. Site category: Combined Heat and Power Unit EPR/KP3736GS.
- Ashford WWTW – License last modified in 2012. Site Category: Waste Treatment – biological EPR/BP3296SB.

A further four licensed waste management facilities are found within 250m:

- Aircraft Salvage and Disposal Limited located 150m south west – License issued in 2011, site category: mobile plant.
- Ashford Highway Depot located 180m south east – License last modified in 2019, Site category: mechanical biological treatment.
- Alpha Fry Ltd located 190m south – license surrendered in 2010, site category: metal recycling sites.
- Unit 18, Henwood Industrial Estate located 190m south west – license issued 2011, now expired, site category: vehicle depollution facility.

There is one registered waste transfer site within 250m:

- Caffyns Plc located 160m south. Site category: Transfer. Site is exempt from license. Authorised waste includes cellulose thinners waste, contam. With paint from spraying and prohibited waste includes Waste N.O.S.

Local Authority Pollution Prevention and Controls

The following integrated pollution prevention and controls are found within 500m of the site and are classed as effective, valid, permitted, authorised or surrender effective:

- Southern Water Services Limited – Ashford WWTW. On site. Effective: December 2010. Activity description: combustion, waste derived fuel greater or equal to 3Mw but less than 50Mw.
- Southern Water Services Limited – Ashford WWTW. On site. Valid. Activity description: associated process.
- Alpha Fry Limited – Ashford Chemical Flux Manufacturer. 402m south of site. Status: Surrender Effective (April 2011). Activity Description: Inorganic chemicals – using halogens etc. Primary Activity.
- Caffyns Plc – Concept House. 200m south of site. Status: authorised (June 1993). Description: Respraying of road vehicles. Process Type: Local Authority Air Pollution Control.
- Headley Bros Ltd – The Invicta Press. 486m south west of site. Status: Permitted (February 1995). Description: PG6/16 Printworks. Process Type: Local Authority Pollution Prevention and Control.

Mining and quarrying

Risk of coal mining in area is deemed rare. There is one recorded BGS Mineral Site within 500m:

- Little Burton Gravel Pit located 444m north east. Historic opencast mine, current status: ceased. Commodity – sand and gravel.

Historical Land use

- Railway is found adjacent east of the site in 1871. The site itself is fields with an area of woodland to the north east. A small brook is found running along the north of the site, with the River Great Stour found further from the site.
- A pump house is shown immediately east of the site in 1898. A small sewage works is located on the very west of the site (location of the present day Bybrook storm tanks). This was shown expanded in 1907 to cover the area to the east of the storm tanks, up to the river.
- A raised embankment is shown to the most north-easterly point of the site in 1958. A dual carriageway is shown to the south of the site.
- The 1966-1972 historic map shows the 1907 sewage infrastructure to have been mostly removed, and more infrastructure to be located around the present day locations. It also shows a furniture factory, engineering works and Henwood Industrial Estate immediately south of the M20. These factories change production, with the 1973 map showing an electronic components factory, shop fitting works, light engineering works and metal works.
- The present day extent of the sewage treatment works was shown to be introduced in the 1975 historic mapping, although some current infrastructure has changed since then.

Contaminants of concern

The site is within a lower probability radon area (less than 1% of homes are estimated to be at or above the action level).

Soil Chemistry

The following soil concentrations are found on site, as detailed in the Envirocheck Report:

- Arsenic: <15mg/kg to 15-25mg/kg;
- Cadmium: <1.8mg/kg;
- Chromium: 40-90mg/kg;
- Lead: <100mg/kg; and
- Nickel: 15-30mg/kg.

Contaminants associated with current and historic land use

The following contaminants are of concern regarding the industrial activities stated above, in addition to the current use of the site:

- total petroleum hydrocarbons (TPH);
- polycyclic aromatic hydrocarbons (PAH):
- heavy metals and inorganics;
- pathogens;
- asbestos;
- polychlorinated biphenyls (PCBs);
- chlorinated solvents and phenols; and

	• volatile and semi-volatile organic compounds (VOC/SVOC). There may also be ground gases present, likely comprising CO_2 and CH_4.
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	**Site walkover** A site visit was conducted in January 2021. A summary of the findings are as follows: • This site does not accept hazardous waste. • Sludge is accepted from several satellite sites, predominantly from Broomfield Bank and Weatherlees Hill. • S1, S2 and U6 exemptions are used on site. • Cake is stored in one large main bay (Bay 10) and six large alternative bays. Bay 10 was shown to be in generally good condition. There is limited cracking of hardstanding in alternative bays. • The site uses three gas oil fuelled generators, these are used during primary treatment, works return and tertiary treatment activities. • The site has one Combined Heat and Power (CHP) plant and two boilers. CHP exports excess to grid. • Noise mitigation on site includes sound enclosures for CHP and blowers. No further abatement as main works are away from sensitive receptors. Two noise complaints relating to road noise north east of the site. • Odour control using two wet and one dry vapour system. Bio-scrubbers use plastic shells. Carbon filters at sludge reception and Cess reception. Sludge treatment processes are connected to the OCU plant. OCU readings, daily sniff tests and monthly Gerome testing around the site. • Current site odour management plan under review due to significant issues and complaints (148 complaints in 2020). **Site data** No known previous ground investigation or monitoring has been undertaken at the site. Cracks in alternative cake bays may lead to leachable contaminants being present in the subsurface, but this has not been confirmed. **Planning applications** A search of the Ashford Borough Council planning portal was conducted in November 2024. There have been 14 planning applications since 2004. Applications include installation of ferric dosing kiosk, construction of lighting conductor masts, CHP installation and changes to site operations. None of the applications had conditions relating to contamination. No other records of relevant planning applications are recorded within 250m of the site.
Baseline soil and groundwater reference data	No reference data is currently available for the site.
Supporting information	Sources used in the production of this SCR: • Landmark (2020), Envirocheck Report – Ashford, ref: 273817799_1_1.

	• British Geological Survey, GeoIndex www.bgs.ac.uk consulted November 2024; • British Geological Survey, Borehole Scans www.bgs.ac.uk consulted November 2024; • Magic Map http://magic.gov.uk/ consulted November 2024; • Site walkover notes – Ashford (Appendix A); • Southern Water (2020) Operating Plan for Ashford WTW/STC; • National Odour Team – Ashford WWTW OMP Review Comments

3.0 Permitted activities	
Overview of site processes	The site currently serves the population of Ashford (approx. 110,000) and surrounding areas. The site's operation is a non-hazardous waste activity which is currently carried out under a registered waste permit, with the CHP activities under a separate permit. The waste activity comprises of imports, physio-chemical and anaerobic digestion (AD) treatment, and the storage of waste, all for recovery purposes. The STC solely handles waste derived from the wastewater treatment process, either indigenously produced on-site or imported from other Southern Water owned assets. Currently Ashford accepts indigenous sludge, imported liquid sludge and imported cake. Imported and indigenous sludge is transferred to the sludge reception tank and is processed before being fed to the four digesters. The digesters produce biogas which is piped to the one gas holder. The biogas produced is burnt in the existing CHP engines to produce electricity (powering the site's electrical equipment) and heat to maintain temperature within the digestion process. In times of low site demand electricity is exported to the grid. In the event of CHP failure, back up heat is provided by two boilers. A flare is available to burn any excess biogas. Imported sludge is received in 3 No. sludge reception tanks (100m^3 each). Indigenous sludge and imported liquid sludge are screened via 2 No. strain presses and are then stored in 2 No. post screened sludge tanks (1,300m^3 each). The sludge is pumped to 1 No. gravity belt thickener to be thickened. Imported sludge cake is then blended with the screened sludge in 1 No. cake blending tank (50m^3) and stored in 2 No. thickened sludge storage tanks (1920m^3 total) which feed 4 No. conventional mesophilic anaerobic digesters (totalling 10,100m^3). Digested sludge is stored in 2 No. post-digested sludge storage tanks (766m^3 each) prior to being dewatered by 1 of 2 No. centrifuges. Dewatered digested cake can then be limed and taken off-site to use on farmland from Cake Bay 10 or stored in the alternative cake storage bays for a period of time prior to be being used on farmland. Sludge liquor from the gravity thickeners and sludge centrate is stored in 1 No. liquor balance tank and is fed to 1 No. AMTREAT® liquor treatment plant for treatment. Treated liquor is returned to the primary settlement tank distribution chamber. Biogas produced from the four digesters is transported to one gas holder (2,200m^3). The biogas produced gas is burnt in the existing CHP engine and 2 No. back-up boilers (0.94MWth and 1.16MWth rated) to produce electricity and

	heat for use on-site or export to the grid. The current waste biogas burner (or flare) will be retained and available to burn excess gas during breakdown and maintenance at a rate of 1500m^3/hr.
Permitted activities	The site currently operates under a bespoke waste permit (EPR/BP3296SB/V003), allowing reception, storage and treatment of sewage sludge, sewage cleaning, sewer fats, cesspool liquors, septic tank sludge, domestic-type wastes (such as chemical toilet liquors), and sludge cake, with throughput up to 690,000T/year. This was last varied in 2012. The site also operates under a permit (EPR/KP3736GS/V003) for CHP activities. This was last varied in 2013. Exemptions S1 and S2 are registered under reference WEX256777.
Non-permitted activities undertaken	Waste activities comprising physio-chemical and anaerobic digestion treatment are currently non-permitted activities on site. Anaerobic digestion is to be permitted under the Industrial Emissions Directive under a Bespoke Installation Permit as Anaerobic Digestion is no longer operational under T21 exemptions. Permitted Directly Associated Activities include waste import, physio-chemical treatment of sludges and storage of indigenous and imported sludges.
Document references for: • plan showing activity layout; and • environmental risk assessment.	• Southern Water IED Permitting Environmental Risk Assessment 790101_ERA_ASH December 2024 • Southern Water (2020) Operating Plan for Ashford WTW/STC • 790101_MSD_SiteLayoutPlan_ASH December 2024 • 790101_MSD_Schematics_ASH December 2024(Process flow diagram)

Note:

In Part B of the application form you must tell us about the activities that you will undertake at the site. You must also give us an environmental risk assessment. This risk assessment must be based on our guidance (*Environmental Risk Assessment - EPR H1*) or use an equivalent approach.

It is essential that you identify in your environmental risk assessment all the substances used and produced that could pollute the soil or groundwater if there were an accident, or if measures to protect land fail.

These include substances that would be classified as 'dangerous' under the Control of Major Accident Hazards (COMAH) regulations and also raw materials, fuels, intermediates, products, wastes and effluents.

If your submitted environmental risk assessment does not adequately address the risks to soil and groundwater we may need to request further information from you or even refuse your permit application.

4.0 Changes to the activity	
Have there been any changes to the activity boundary?	No

Have there been any changes to the permitted activities?	Due to impending changes in the way the Waste Management industry is regulated by the Environment Agency and Natural Resources Wales, STCs are obliged to apply for Fixed Installation Permits under the Industrial Emissions Directive (IED) and comply with new permit conditions. Fixed Installation Permits will amalgamate and supersede all current permits and exemptions under which waste is treated on the STC sites (including Environmental Permitting Regime (EPR), Medium Combustion Plant Directive (MCPD), old style Waste Management Licenses, and T21 exemptions). Activities at Ashford WTW and STC will continue, as prior to the introduction of the updated and amalgamated permit, although under any new requirements imposed by the permit.
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	No prior site condition report (SCR) is known to exist for the site, due to the length of time that the site has been in operation. This SCR presents the condition of the site at the point of the amalgamation of the existing permits on site and the introduction of additional requirements relating to sludge processing, as required under the IED. 'Dangerous substances' that are used or produced at the site include: • Gas oil (generators) • Lime (sludge treatment before centrifuge) • Ferric sulphate (in ferric dosing units (primary treatment and tertiary treatment (near sand filters – for phosphorous control)) • Sodium hydroxide, sodium hypochloride (used in scrubbers) • Polymer – Highmark C498HMW (for dewatering) • Antifoams – Flowfoam 681F (digester) and 139F (centrifuge) • Antiscale – Flowsperse PX60N • Odour suppressant (dry = Oximax neutraliser, wet = atom neutraliser) • Methane (produced from the digestors and stored in the on-site double membrane gas holder);
Checklist of supporting information	• Site walkover notes – Ashford (Appendix A) • Southern Water (2020) Operating Plan for Ashford WTW/STC

5.0 Measures taken to protect land

Use records that you collected during the life of the permit to summarise whether pollution prevention measures worked. If you can't, you need to collect land and/or groundwater data to assess whether the land has deteriorated.

Checklist of supporting information	• **Inspection records and summary of findings of inspections for all pollution prevention measures** • **Records of maintenance, repair and replacement of pollution prevention measures**

6.0 Pollution incidents that may have had an impact on land, and their remediation
Summarise any pollution incidents that may have damaged the land. Describe how you investigated and remedied each one. If you can't, you need to collect land and /or groundwater reference data to assess whether the land has deteriorated while you've been there.

Checklist of supporting information	• **Records of pollution incidents that may have impacted on land** • **Records of their investigation and remediation**

7.0 Soil gas and water quality monitoring (where undertaken)
Provide details of any soil gas and/or water monitoring you did. Include a summary of the findings. Say whether it shows that the land deteriorated as a result of the permitted activities. If it did, outline how you investigated and remedied this.

Checklist of supporting information	• **Description of soil gas and/or water monitoring undertaken** • **Monitoring results (including graphs)**

8.0 Decommissioning and removal of pollution risk
Describe how the site was decommissioned. Demonstrate that all sources of pollution risk have been removed. Describe whether the decommissioning had any impact on the land. Outline how you investigated and remedied this.

Checklist of supporting information	• **Site closure plan** • **List of potential sources of pollution risk** • **Investigation and remediation reports (where relevant)**

9.0 Reference data and remediation (where relevant)	
Say whether you had to collect land and/or groundwater data. Or say that you didn't need to because the information from sections 3, 4, 5 and 6 of the Surrender Site Condition Report shows that the land has not deteriorated. If you did collect land and/or groundwater reference data, summarise what this entailed, and what your data found. Say whether the data shows that the condition of the land has deteriorated, or whether the land at the site is in a "satisfactory state". If it isn't, summarise what you did to remedy this. Confirm that the land is now in a "satisfactory state" at surrender.	
Checklist of supporting information	• **Land and/or groundwater data collected at application (if collected)** • **Land and/or groundwater data collected at surrender (where needed)** • **Assessment of satisfactory state** • **Remediation and verification reports (where undertaken)**

10.0 Statement of site condition
Using the information from sections 3 to 7, give a statement about the condition of the land at the site. This should confirm that: • **the permitted activities have stopped** • **decommissioning is complete, and the pollution risk has been removed** • **the land is in a satisfactory condition.**

A. Site Walkover Record

Site Name	**Ashford WTW and STC**
Date	29/01/2021
Attendees	S George (MM) S Hughes (SW Permitting Team) A Morley (SW Field Performance Manager) J Simmons (SW Site Process Controller)
Permit and exemption references	CHP permit Waste permit

Follow the process through the site – Start with sludge import area and walk the site going through the process. Make notes on condition of site infrastructure and assets such as bunds, tanks, impermeable surface, storage areas etc.
Make notes of the general site housekeeping, is it kept clean and tidy.
Notes relating to surrounding area

River at entrance to site – only entrance and need to pass over bridge to access site gates. Apparently does not get covered by river in high flow, however risk to operations should it be damaged/need replacing etc. Manual gate to site Across river to north are rugby playing fields and path along river which was seen to be used by multiple dog walkers during the visit. Houses along entry road. M20 runs along south-western boundary with industrial area beyond (chainlink fencing along southern site boundary). According to site staff, odour complaints are not received from here – only to the north of site. Palisade and chainlink fencing along railway to river. Nothing along riverbank 24 CCTV cameras (at entrance, fenceline, bulk storage tanks and generators, bottom of site) Southern Water admit sewage 'imported' to Ashford works (kentonline.co.uk)	
No of site staff (day and shift operators etc)	Total of up to 5 workers, on-site 24 hrs Currently 2 shift, 1 day operative and Jamie (process controller)

Hazardous waste treatment capacity (tonnes per day) for each site	None treated
Non- Hazardous waste treatment capacity (tonnes per day) for each site	Estimated to be 700m^3 sludge (8 cake bins each taking ~15T)
Total waste storage capacity (tonnes) for each site Annual waste throughput (tonnes each year) for each site	Need to speak to Waste Team (Sam Yard/Nigel Heward or Mark Worsfold)
Types of waste to be requested to be listed on each permit to authorised to be accepted at the site (EWC codes)	Need to speak to Waste Team (Sam Yard or Mark Worsfold)
How many years is each permit expected to be required for?	Permanently
Sludge import	
Does the site accept trade waste (commercial tankers)?	No
How many tankers arrive at the site per day? Where are the tankers unloaded? Is an odour control hose used during unloading?	Need to speak to Waste Team (Sam Yard or Mark Worsfold) CESS unloading near entrance – odour spray system used
Where is sludge imported from? Sludge imported from other satellite sites? How many?	Need to speak to Waste Team (Sam Yard or Mark Worsfold) Predominantly Broomfield Bank and Weatherlees Hill
Exemptions	
What exemptions are used on site? Typically SW have T21, D5 and S1. Do they know what these are for?	S1, S2, U6
Cake storage	
Is any cake imported? If so, how is it unloaded from trucks and where is it unloaded?	Yes, roll-on/roll-off bins into cake hoppers – odour controlled OCU Cake reception areas 1 & 2 on plan. One for each of Broomfield Bank and Weatherlees Hill
Where is cake stored? How is cake stored? E.g. Cake bays, silos, directly into skips etc	Cake ‘bay 10’ adjacent to centrifuge is main storage however taken to alternative cake bays in south-east of site if does not pass tests – left here until does pass tests (usually a few weeks, maximum 90 days)
How many cake bays/silos/other are there on site?	Bay 10 = main large bay in north Alternative bays = 6 large in south-east
How is cake moved to the cake bays (enclosed truck etc)?	Straight to bay 10 from centrifuge via pivot conveyor Wheel loader moves it around the bay

How frequently is cake moved around the site?	Ongoing as cake produced, as only 1 main cake bay
Is the cake treated further after the centrifuge e.g. liming of cake within cake bays?	No – all treatment including liming done before centrifuge
When cake is within the bay, is the cake turned/disturbed at all? How often? Why?	Bay 10 – cake only in there for <24 hrs so only moved when lorries come to collect it or if buildup needs moving away from conveyor. Cake in alternative bays being left for re-tests generally not turned.
How is cake removed from the site? How often? Over what timeframe? e.g. 2 weeks constantly	Sheeted tipping lorries 8-20 lorries per day to collect from bay 10 depending on production rate.
What is the condition of the cake bays? Eg condition of base, height of walls? Does this sufficiently contain the cake? Are there any known issues?	Yes sufficient to contain cake at current production/removal rates Bay 10 generally good condition. Some limited cracking of hardstanding in alternative bays
Water usage	
What sources of water does the site use? E.g. potable, secondary washwater, other process water etc What proportion/% of the site's water usage is from this source?? E.g. 2% potable water for polymer make-up and drinking, 98% primary or secondary wash water for other i.e. cleaning etc? What is it used for e.g. poly make-up, washing down etc? Is specifically potable water required for any of the site processes? (e.g. poly make-up)	Potable – polymer makeup and carrier water in centrifuge Final washwater – washing down No guess on % Richard Ridgeway (Optimisation Team)

Does the site get water from other sources? Abstraction from river etc? How much is permitted to be abstracted/day/hr etc? What is it used for e.g. poly make-up, washing down etc?	No
Generators	
Are there any generators on site? How many and what size (MW)? What are they used for e.g. primary/secondary. Site running, exporting power to grid?	Three: 1 – in primary treatment – 300kva 1 – in works return – 250kva 1 – in tertiary treatment (can be operated in triad) – 630kva
Do they export to grid or import from grid to run the site?	All generators import from grid
What are their fuel sources? E.g. diesel, biogas, other source	Gas oil
How many hours per year do they operate?	Only when power cut. Tertiary treatment generator on when using triad
Any monitoring undertaken? If so, what for and what are the standards used?	Maintenance scheduled task (MSC) throughout the year
CHP engines/boilers	
How many CHPs/boilers on site?	1 CHP 2 boilers (both near CHP)
What size (MW)? What are they used for e.g. primary/secondary. Site running, exporting power to grid?	CHP exports to grid (thought to be 1MW but not sure) excess exported
Are there any flares? If so how often is the flare used? E.g. during emergency or maintenance of the engines or all the time?	2 flares – only when CHP not running in emergency (<10% of time) Planning to drop to 1 larger flare this year
Are the CHP's/boilers/ generators adequate for the amount of gas produced by the site?	Yes – CHP too big – possible replacement in the future (2 smaller units?)
Any monitoring undertaken? If so, what for and what are the standards used?	Yearly services by specialists – has just been serviced

Is operation of the CHPs temperature sensitive? If yes, what is their optimum temperature range? Is there a temperature above/below which they will not operate?	Not particularly and once up to temperature it is fine (75oC in, 78oC out) Heat dumps to stop overheating – no low limit.
Noise	
Please describe any noise mitigation measures on site.	Sound enclosures for CHP and blowers
Other abatement?	No – main works away from sensitive receptors
Have any noise assessments been undertaken on the site?	Unknown – likely not
Have there been any noise complaints?	2 x related to road noise (local estate to NNE)
Any monitoring undertaken? If so, what standards are used?	No
Odour	
Please describe any odour mitigation measures on site e.g. processing of imported sludge immediately, odour control hoses for tankers, water suppression sprays, enclosed processes, doors to buildings kept closed, buildings under negative pressure?	2 wet systems (cobra) – at storm tanks and CESS reception near entrance, at northern border near cake bay 10 1 dry vapour (cobra) – at cake bay 10 OCU plant – all around site (large grey pipe) – takes STC tanks
What is the odour control system used – specific to locations on site? Bio-scrubbers/carbon filter etc? What is the media used? Which processes are odour controlled? How and when is the odour control maintained/inspected to ensure they remain effective?	Bio-scrubbers – uses plastic shells 1 Carbon filter at sludge reception 3 carbon filters at CESS reception Sludge treatment Monthly services by contractors
Is odour monitored? If so how?	OCU readings, daily sniff tests around site at boundary, Gerome testing around site (monthly)
Is there a site specific odour management plan?	Yes – currently under review as significant issues and complaints so action needed (under caution by Ashford Borough Council). Need to report to EA/ABC for plan to improve

Any odour complaints?	Yes – 70 per month (max), 148/year 2020 (10-12 average/month) 52/year 2019 64/year 2018
Other abatement?	Wet portable system Semi-permanent system wet near alternative cake bays
Pests	
Does the site experience pests and if so what are they (birds, vermin etc)? If so how often?	Rats, rabbits, pigeons, seagulls More in summer but year round.
What measures are in place to prevent pests?	Pest control General good housekeeping ie closed doors On-site cat helps with rats and rabbits
What measures are in place to remove pest issues?	Specialist contractors
Raw materials and resource efficiency	
What raw materials are used on site? List all including diesel, poly, lime etc Try to get the proper chemical name as well as what it is referred to.	Gas oil (generators) Lime (sludge treatment before centrifuge) Ferric sulphate (in ferric dosing units (primary treatment and tertiary treatment (near sand filters – for phosphorous control)) Sodium hydroxide, sodium hypochloride (used in scrubbers) Polymer – Highmark C498HMW (for dewatering) Antifoams – Flowfoam 681F (digester) and 139F (centrifuge) Antiscale – Flowsperse PX60N Odour suppressant (dry = Oximax neutraliser, wet = atom neutraliser)
What is their purpose? What are they used for?	As above
How and where are they stored? Bunded, stored undercover etc? Are they in IBC's, bags, tanks etc?	IBC at point of application, poly in storage unit Bunded at point of use
What is the storage capacity of tanks, IBC's etc, how many on site?	1000L IBC – 1 in use, 1 spare (2 max of each) 750kg bags poly
How much is stored on site at any one time?	37,000L ferric at primary treatment 30,000 ferric at tertiary treatment (15,000 x 2) 4,000 caustic in OCU 40,000 caustic in liquor treatment Sodium hypochl – 35,000 35,000 lime
How often are they replaced?	Primary ferric ~ 7-10 days Tertiary ferric ~ twice/year OCU – 3x caustic /year Caustic in LT
Describe the basic measures for improving energy efficiency of the activities carried out on site	Speak to optimisation team – Richard R Basic measures like triad and lights, mixer primers, feed loading in digesters
Any water saving measures?	Water reuse – final washwater
Digesters	
How many digesters on the site?	4 (all primary)

Digester capacity	1 – 2800m^3 2 – 1550m^3 3 – 1550m^3 4 – 4119m^3 Issue that all are different sizes in case of failure of one.
Any Whessoe valves? How many? Any temperature sensitivity observed in the Whessoe valves? (previously we have heard of Whessoe valves freezing below -5^{o}C)	Pair per digester Pair on gas bag No
Any monitoring of tanks/gas? Is there an alarm system attached to the Whessoe valves (inform SCADA when operational)?	SCADA but gas release not included on SCADA – only able to tell from release of pressure in system
What is the ground like surrounding the tanks? E.g. permeable gravel, concrete etc	Grass/soft landscaping, partially sunk
Underground pipework? Known condition?	Yes, unknown condition
Drainage	
Where do the drains go? E.g. Head of the works	Works return then head of works
Is site adjacent to a river or stream?	Yes – outlet to river (flow in river towards east)
Is the whole site bunded	No
Are there any cracks in the pavement	Roads in poor condition across the site Access road earmarked for improvement – but has been for last 2 AMP cycles
Please describe the drainage surrounding the cake storage bays and whether run off from there is also captured by the drainage system.	Drain running along edge of bay 10 – returns to head of works Drainage around alternative cake stores – returns to head of works
Has there been any flooding on site? When, how frequent, how severe has flooding been. Has the flooding lead to untreated wastewater being discharged to the watercourses due to high volume of water exceeding the storm storage capacity?	When heavy rain until the drains can accept all of the water – car park especially outside of offices (area of low topography). Limited to areas of hardstanding Does not impact site works. Water discharged to reedbeds to north of site when stormwater capacity exceeded – as seen on site during walkover in photos

Are there any isolation valves, penstock etc operational that can isolate flows? If so where and in what circumstances are these used?	Main inlet penstock and isolation valves throughout process to be able to segregate infrastructure for maintenance and hydraulic tests.
Abnormal conditions – extreme high temperature, flooding	
How large is the site's stormwater storage capacity? OR how much retention time do the storm storage tanks allow? Have there been any issues in the past with direct discharge to the watercourse when stormwater storage capacity has been exceeded, occurring repeatedly?	694 l/s flow above which goes to storm 5,482m^3 storm tank capacity No, direct discharge to irrigation/reedbeds where it will soakaway to ground over time. Does happen in winter but no issues – so dilute that no odour. Multiple times per year
Is the access route to the site (main road access) at risk of flooding? Has it flooded previously? Are there alternative access routes?"	No but over bridge – only access to site. No previous issues but risk if bridge is damaged
Does the site operate any temperature-sensitive processes? E.g. do any of the biological treatment processes have optimal operating temperature ranges? Does the AD plant or anything else have optimum temperature range for operation	Digesters optimum 32-36oC
Has the site experienced any issues related to high temperatures in the past – e.g. any odour control issues? Or Potable water availability issues during drought?	More complaints in summer. No issues with potable water availability unless mains supply disrupted – not happened in memory
Waste generation	
What wastes are generated by the site?	Office municipal waste, WEEE, metal, used IBCs, pallets, rags/grit screenings, waste oil
How is it stored?	In appropriate skips/cages/bins near offices and in north of site near centrifuge building
Describe waste avoidance and waste recovery measures (for the whole site operations, including staff generated waste). Describe how waste is disposed, by whom.	Recycling/segregation, grit screenings/rags to composting Excess heat from CHP used to heat offices Contractors collect when full

If possible, can you take photos of the rag skips – for Rowan and his plastics work?	
Other	
Has any ground investigation/monitoring been undertaken on the site eg for planning permissions? Are there any available monitoring boreholes?	None known
Planned AMP7 schemes for the site that may impact the permit application?	Not AMP7 but reduction to 1 larger flare (rather than 2 small), lime dosing rig coming to replace current system, access road improvements Odour reduction scheme
What is the general site infrastructure like? Any areas of concern?	Road condition Aging infrastructure generally eg thickeners and digesters (primary tanks old, digesters not standard sizes) Overloading of site – incoming flow (info available)
Are any infrastructure enclosed?	Centrifuge, Thickeners, Boilers Transfer pumps Cake receptions Works return MCCs / pumps NOT ENCLOSED: Inlet, Primary/final tanks Sand filter Emergency tanks Cake bays Storm tanks
Age of site?	Full site been present for >100 years but main infrastructure from about 1964
Any positive interventions witnessed on site?	No

Additional notes and questions

Potential options being considered for odour reduction:

- Residue in storm tanks
- OCU upgrade
- Covering cake bay 10

B. Landmark Envirocheck Report