

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	15/12/20	H Dixon	S George	A Manns	For client comment
B	03/06/21	H Dixon	S Stone	A Manns	For client comment
C	18/06/24	S Blackman	S Stone	A Manns	Following NDM letter June 2024
D	04/07/24	S Stone	A Manns	A Manns	Following NDM letter June 2024

Document reference: | 790101_MSD_SCR_SAN July 2024|

Information class: Standard

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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 surrendering 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	Sandown Water Treatment Works/Sludge Treatment Centre, East Yar Road, Sandown, Isle of Wight PO36 9AS/9AX
National grid reference	SZ 60221 85285

Document reference and dates for Site Condition Report at permit application and surrender	Site Condition Report: 790101_MSD_SCR_SAN Date of Permit Application: July 2021 Date of Surrender: TBC
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Document references for site plans (including location and boundaries)	Sandown Wastewater Above Ground Capacity Assessment (April, 2014), AM 410 – Part 2. Site walkover notes: Sandown (Appendix A)
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2.0 Condition of the land at permit issue	
Environmental setting including: <ul style="list-style-type: none"> • geology • hydrogeology • surface waters 	<p><u>Land use</u></p> <p>The Sandown Water Treatment Works (WTW) and Sludge Treatment Centre (STC) is located at the north-eastern extent of Sandown town and has occupied the land since around 1940. To the west of the WTW and STC is a caravan park and small industrial estate, as well as a limited number of residential properties. The area to the north and east remains as undeveloped fields.</p> <p>Within this SCR, the “site” refers to the land within the green permit boundary.</p> <p><u>Geology</u></p> <p><u>Superficial Geology</u></p> <p>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. Within 250m of the site, areas of peat, Head deposits and Beach deposits are present, adjacent to the Alluvium.</p> <p>Made ground is also shown to be present on the eastern half of the site (associated with landfilling – see later sections), which indicates the thickness of made ground in this area exceeds 2.5m. There may, however, be lesser thicknesses of made ground across the site associated with development.</p>

	<p><u>Bedrock Geology</u></p> <p>The site lies upon the Wessex Formation of the Wealden Group, constituting interbedded mudstone and subordinate unconsolidated sandstone and some ironstones. This sedimentary bedrock formed between 126 and 145 million years ago in the Cretaceous Period. Sandstone units generally fine-upwards grading up into mudstones from basal conglomerates. The Wessex Formation thickness is estimated to be around 580m on the Isle of Wight².</p> <p><u>Structural Geology</u></p> <p>There is a fault located 670m west of the site.</p> <p><u>Hydrogeology</u></p> <p>The Bedrock and superficial aquifers underlying the site are both designated by the Environment Agency as Secondary A aquifers. The Wealden Group, however, presents rocks with essentially no groundwater present. Very small yields of water have been obtained from subordinate sandstones and limestones.</p> <p>The site lies within an area of groundwater flooding capability with potential flooding to property situated below ground level and at the surface</p> <p>The site is susceptible to extreme flooding from rivers or sea without flood defences. There are no flood defences present.</p> <p><u>Hydrology and flooding</u></p> <p>The River Yar flows west to east along the north-eastern boundary of the site, connecting into Bembridge Harbour approximately 5km downstream. A ditch network is present in the fields to the east of the site, with one ditch following the western boundary of the water treatment works, although it is unclear if this connects with the River Yar. There are a further 10 OS Water Network lines within 50m of the site. The English Channel is present approximately 650m to the south of the site.</p> <p>Three discharge consents are reported to have been issued to Southern Water Services Ltd for the site, all for sewage discharge, although only one is currently active. Two consents discharged into the Channel, whilst the other discharged to a freshwater river (likely the River Yar). Southern Water Services Ltd have also operated an additional two sewage discharge consents within 250m that discharge into the River Yar (Eastern Yar).</p> <p><u>Sensitive land use</u></p> <p>The site lies within the Bembridge Nitrate Vulnerable Zone. The site also lies 163m north of the Isle of Wight Area of Outstanding Natural Beauty. Between 500-1000m, there is one ancient woodland, Brading Down Local Nature Reserve, Bembridge Marine Nature Reserve, South Wight Maritime Special Area of Conservation and Solent and Dorset Coast Special Protection Area.</p>
<p>Pollution history including:</p>	<p><u>Pollution incidents to controlled waters</u></p> <p>There have been no pollution incidents to controlled waters on site. One pollution incident occurred 398m east of the site in 1994. Chemicals including</p>

² British Geological Survey. Accessed online at: <https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=WSEX> (October 2020)

<ul style="list-style-type: none"> • 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 	<p>detergent/surfactants were released via sewage release. There have been a further two pollution incidents within 1km of the site.</p> <p><u>Nearby industrial land uses</u></p> <p>There are 14 active Contemporary Trade Directories within 250m of the site. Two of these are within 100m:</p> <ul style="list-style-type: none"> • Kingsmead Printers, 19m south west, (NGR 460148 85233). • Lake Cleaning and Catering Supplies, 29m south west, (NGR 460149 85190). <p>There is one fuel station within 250m:</p> <ul style="list-style-type: none"> • Co-Op Broadway Petrol Station, 198m south west, (NGR 460041, 85069). <p>There are five further points of interest within 250m of the site:</p> <ul style="list-style-type: none"> • H J Bennett Ltd, 112m south west, (NGR 460173, 85069), Transport, Storage and Delivery. • J H Design and Trim, 153m south west, (NGR 460134, 85038), Repair and Servicing, Vehicle repair, testing and servicing. • College Car Centre, 174m south west, (NGR 460152, 85011), Repair and Servicing, Vehicle repair, testing and servicing. • Sandown Garage, 168m south west, (NGR 460017, 85145), Repair and Servicing, Vehicle repair, testing and servicing. • Car Wash, 198m south west, (NGR 460041, 85050), Personal, Consumer and Other Services, Vehicle Cleaning Services. <p><u>Contaminants of concern</u></p> <p>The following contaminants are of concern regarding the industrial activities stated above, in addition to the current use of the site:</p> <ul style="list-style-type: none"> • 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). <p>There may also be ground gases present, likely comprising CO₂ and CH₄.</p> <p><u>Recorded Landfill and Historic Landfill</u></p> <p>There is one BGS recorded landfill site shown to be located within the site boundary, known as 'Off Avenue Rd'.</p> <p>There are two historic landfill sites on-site, stated below. A further four historical landfills are recorded between 590m-1km from the site:</p> <ul style="list-style-type: none"> • Sandown WTW, License holder: South Wight Borough Council. First input: 1st January 1940, Last Input: 1st January 1980. Specified waste: Deposited waste including inert waste, industrial, commercial and household waste.
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	<ul style="list-style-type: none"> Waste Storage at Sandown Waste Water Treatment Works, License Holder: Southern Water Services. First Input: not supplied, Last Input: 7th May, 1973. Specified waste: Deposited waste including industrial, commercial and household waste, and liquid sludge. <p><u>Registered Waste Treatment or Disposal Sites</u></p> <p>There is one registered Waste Treatment or Disposal site on-site, known as Sandown W.W.T.Works. License Holder: Southern Water Services Plc.</p> <p><u>Local Authority Pollution Prevention and Controls</u></p> <p>There is a Local Authority Air Potion Control 198m south west of the site relating to a petrol station. There is a further Air Pollution Control Enforcement Notice registered 199m south west of the site.</p> <p><u>Mining and quarrying</u></p> <p>The site is located in a non-coal mining area. No mining or quarrying sites are located within a 250m radius of the site.</p> <p><u>Historical Land use</u></p> <ul style="list-style-type: none"> Gas works were present immediately adjacent to the west of the site between 1897 and 1986, including gas holders adjacent to the western site boundary. When removed, a fire station and depot were marked Sewage tanks were found adjacent to the west of the site in 1897, before a sewage works was introduced on site, evidenced by 1970 historical maps. On the east of the site area, a reuse tip was also established, marked on mapping since 1973. The 1999 aerial photography suggests a large area of infilled ground where the reuse tip was previously situated, although the site has not yet been restored. The present-day railway, 50m to the north west of the site but on the opposite bank of the River Yar, is shown on mapping from 1897. The petrol filling station 200m away is shown to be in its present location from 1999.
<p>Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)</p>	<p><u>Site walkover</u></p> <p>A site visit was conducted in October 2020. The walkover notes are provided in Appendix A. A summary of the findings are as follows:</p> <ul style="list-style-type: none"> The site does not accept hazardous waste. Permits are expected to be required permanently. Sludge is accepted from 18 satellite sites around Isle of Wight alongside domestic cess. Cake is stored in three bays. Visual inspection suggests hardstanding and walls are in good condition. 2% potable water use for office and polymer make up. 98% of water used comes from either primary or secondary washwater. Water is removed to river during flooding periods as requested by the Environment Agency. The site uses five generators (their use are currently excluded from being an Directly Associated Activity) one CHP plant. Not adequate for site gas output but two CHPs would be too many.

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	<ul style="list-style-type: none"> Majority of operations are fully enclosed to provide noise abatement. Odour is treating using specialist unit with chemicals added. No air quality monitoring assessments are undertaken. Overall, site deemed to be in good condition with a few areas of wear such as cracked pavements. <p><u>Site data</u></p> <p>No pollution incidents have been recorded on site to date and the majority of site operations are enclosed. No monitoring or assessment results are available.</p> <p>Cracks in pavement may lead to leachable contaminants being present in the subsurface, but this has not been confirmed.</p> <p><u>Planning applications</u></p> <p>A search of the Isle of Wight Council planning portal was conducted on the 29th October 2020. An application on the site (P/01203/09 - Extension to existing screen building; construction of GRP blower kiosk with external air pipe; extension to internal service road & temporary contractors' compound) has an associated Factual Site Investigation Report (Southern Testing, 2009).</p>
Baseline soil and groundwater reference data	No reference data is currently available for the site.
Supporting information	<p>Sources used in the production of this SCR:</p> <ul style="list-style-type: none"> Landmark (2020), Envirocheck Report – Sandown, ref: 263473644_1_1. British Geological Survey, GeoIndex www.bgs.ac.uk consulted October 2020; British Geological Survey, Borehole Scans www.bgs.ac.uk consulted October 2020; Magic Map http://magic.gov.uk/ consulted October 2020; Site walkover notes – Sandown (Appendix B) Southern Water (2013) Operational Continuity Plan – Sandown New WTW, issue 1

3.0 Permitted activities	
Overview of site processes	Sandown catchment serves most of the Isle of Wight (IOW) with a population equivalent of 138120 (JR19). (The total population equivalent on IOW served by SW is 150688 (JR19). The sewage is collected by gravity sewers and wastewater pumping stations. Sewage is transferred by gravity sewer and 89 No. wastewater pumping stations followed by rising mains with a total length of 41481 m. Sewage is received at 8 No. wastewater transfer pumping stations which transfer sewage in relays to Sandown WTW. The transfer pumping stations are: LION POINT VENTNOR WPS, LANE END ROAD BEMBRIDGE

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WPS, APPLEBY PARK RYDE TRANSFER WPS, FAIRLEE TRANSFER WPS, SPRINGHILL COWES TRANSFER WPS, WOODVALE TRANSFER WPS, NORTON TRANSFER IOW WPS and SHALFLEET TRANSFER WPS. The sewerage transfer rising mains have a combined length of 65245 m. Nutrix is dosed at 6 No. wastewater transfer pumping stations to prevent septicity.

All flows are received at Sandown WTW via 2 No. rising mains and 1 No. 900 mm gravity sewers. The rising mains discharge into a low lift pumping station where the flow is lifted by 3 No. duty, assist and standby low lift pumps to 1 No. balance tank. Attenuated flow from the balance tank is then joined by flow from the gravity sewer and gravitates to the main inlet pumping station where sewage is lifted by 6 No. inlet pumps (5 duty and assist, 1 standby), rated at 632 l/s each, to 3 No. 6 mm, 2D band screens (duty, assist and standby). Screenings are washed and dewatered by 2 No. wash and dewater units (duty, standby). Screened sewage enters 2 No. grit channels (duty, standby) each with 1 No. grit pump.

Screened and de-gritted sewage pass through storm separation channel. Flows in excess of 840 l/s overflows to 2 No. storm tanks (Storm tanks 1&2). When storm tanks 1&2 are full, excess flow from the storm tank up to 165 l/s overflows to the final effluent chamber to be discharged with the final effluent via the long sea outfall. When storm tanks 1&2 are full incoming flows in excess of 1005 l/s overflow to a further 4 No. storm tanks (Storm tanks 3, 4, 5 and 6). When storm tanks 3,4,5 and 6 are full, excess flow from these 4 storm tanks overflows to the storm outfall. When incoming flow is less than 2 DWF settled storm sewage from all 6 storm tanks is returned upstream of the primary treatment by the storm return pumping station.

After storm separation, flow to full treatment then combines with works return flows and gravitates along a splitter channel to 4 No. primary settlement tanks. The primary tanks are served by 2 No. Degremont Densadeg coagulation tanks and 4 No. flocculation chambers and fitted with counter-current flow lamella separators. Ferric and polyelectrolyte are dosed into the coagulation tanks and flocculation chambers respectively. All 4 primary tanks operate as duty tanks. Sludge is drawn towards central hoppers by a continuously operating bridge scraper and is removed from the hoppers by 4 No. desludge pumps. Part of the sludge is recirculated by 4 No. sludge recirculation pumps to the flocculation chambers to assist sludge settlement. The flocculation chambers are fitted with a grease removal trough which collects grease and scum. Scum is pumped by 2 No. submersible pumps to the 1 No. grease (scum) tank.

Settled sewage passes through 2 No. 2 mm 2D secondary screens operating as duty, assist units, each rated at 1478 l/s. Screened settled and screened sewage enters the Inter-stage Pumping Station where it is lifted by 3 No. duty, assist and standby variable speed pumps, each rated at 739 l/s, to the inlet Chamber of the Biofor Plant comprising 6 No. cells of the Degremont "Biofor C" technology. Each cell receives influent from a common inlet channel with even flow distribution by weirs. The cells contain a bed of biological support media (Biolite) supported on a bed of gravel. Fine bubble aeration is provided via Degremont "Oxazur" membrane fine bubble diffusers located in the gravel layer. Process air is provided by 2 No. duty, assist process air blowers; scouring air is provided by 2 No. duty, assist scouring air blowers; a shared standby blower serves for both process air and scouring air. During normal

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operation, influent is introduced underneath the floor of each Biofor Cell and flows upwards through the Biolite media towards the top surface. Each Biolite granule acts as a support for a coating of active biomass. Final effluent from the Biofor Plant flows under gravity into the Final Effluent Sump and then to the Outfall Pumping Station or to the Clean Washwater Tank. The number of cells that are on-line is regulated in proportion to the incoming flow from the Inter-stage Pumps and also ensure that the rising velocity through a cell never falls below 3 m/h and remains below 12 m/h. A cell has minimum and maximum flow rate thresholds that are applied to it. As the incoming flow rate changes, the number of on-line cells changes accordingly, such that the minimum and maximum thresholds for each cell are respected. 3 No. backwash pumps, each rated at 356 l/s provide backwash for the cells. Backwash water is drawn from 1 No. clean wash water tanks with a volume of 1152 m³. Dirty backwash water is collected in 1 No. dirty backwash water tank with a volume of 1395 m³. Dirty backwash water is returned to primary treatment by 2 No. dirty backwash return pumps, operate as duty, assist, each rated at 190 l/s. Effluent from the Biofor Plant gravitates to the outfall pumping station. Treated effluent and storm sewage are pumped by 3 No. dry weather flow pumps and 4 No. storm pumps to be discharged via the long outfall to the English Channel.

The site serves as the sludge treatment centre for IOW. Imported liquid sludge is received in 1 No sludge reception tank. Both indigenous and imported sludge are pumped through the Strainpress to 1 No. imported sludge storage tank. Both indigenous and imported sludge are pumped by 2 No. submersible sludge pumps through 2 No. Strain presses. Screened sludge is transferred via 1 No. sludge transfer tank to 2 No. post screen storage tanks from where it is fed to 2 No. belt thickeners. Thickened sludge is stored in 1 No digester feed tank. Thickened sludge is fed to 3 No. anaerobic digesters. Digested sludge is stored in 2 No. post digestion storage tanks (also known as secondary digesters). Digested sludge is dosed with lime and dewatered by 2 No. centrifuges. Cake is stored in "temporary" cake bays. The site has a sludge dryer system which is mothballed. Sludge liquors from the belt thickeners and centrifuges are collected at the works return pumping station and pumped to upstream or downstream of primary treatment.

The main odour control package at the Works comprises a 2-stage chemical scrubbing plant and a polishing carbon filter (not used). The chemical scrubbing plant include a first acid scrubber for the removal of odorous basic compounds such as ammonia and a second stage alkali scrubber for the removal of acidic odorous compounds such as hydrogen sulphide. The Inlet Works Building, Sludge Building and Sludge Recirculation Kiosk contain process plant likely to produce odour and have separate ventilation systems. The air from areas ventilated in this way is extracted and treated in local carbon filters.

The works was built as part of the new strategic wastewater infrastructure for whole of IOW, designed to serve 180,000 pe.

The WTW plant consists of:

- Inlet Balancing Tank
- 3 No. Inlet Screens (Duty/Assist/Standby)
- 2 No. Grit Removal Detritors

	<ul style="list-style-type: none"> ● 2 No. Consolidation Mixing Tanks ● 4 No. Densadeg PSTs with Turbine Poly mixing and PFT ● 2 No. Secondary Screens (Duty/Standby) ● 6 No. Biofor BAFF Cells ● 3 No. Final Effluent Outfall Pumps (Duty/Assist/Standby) – LSO. ● 6 No. Storm Tanks (maximum holding volume 6,500m³) ● 3 No. Storm Outfall Pumps (Duty/Assist/Standby) – SSO. <p>The STC consists of the following:</p> <ul style="list-style-type: none"> ● 1 No. Sludge Reception Tank ● 2 No. Sludge Strain presses ● 1 No. Screened Sludge Transfer Tank ● 2 No. Screened Sludge Storage Tanks ● 2 No. Gravity Belt Thickeners (Duty/Standby) ● 1 No. Digester Feed Tank ● 3 No. Digestion Tanks ● 2 No. Secondary Digesters ● 2 No. Centrifuge (Duty/Standby) ● 1 No. Gas Bag Holder ● 1 No. CHP Engine
<p>Permitted activities</p>	<p>As of 15 Feb 2010, the Fairlee WTW 3DWF flows have been re-routed to the Fairlee Transfer Pumping Station, and onto Sandown WTW for treatment.</p> <p>Water Resources Act (WRA) (UT), Urban Waste Water Treatment Regulations (UWWTR) (LuT) and UWWTR (Upper Tier) regulations are followed for final effluent discharge permit conditions. The site operates under a Water Discharge Activity Environmental Permit.</p> <p>A permit for the closed WTW landfill site (effective 31st December 2000) - EAWML10206 is also recorded on the site.</p>
<p>Non-permitted activities undertaken</p>	<p>Waste activities comprising imports, physio-chemical and anaerobic digestion treatment and waste storage 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, combustion of biogas (CHP), physio-chemical treatment of sludges, storage of indigenous and imported sludges.</p>
<p>Document references for:</p> <ul style="list-style-type: none"> ● plan showing activity layout; and ● environmental risk assessment. 	<ul style="list-style-type: none"> ● Southern Water (2019) Wastewater above ground capacity assessment – Sandown New WTW, AM410 part 2, issue 2. ● Sandown Operational Continuity Plan, OCP-WTW-306, April 2013 ● Mott MacDonald, Sandown STC Permit Application – Main Supporting Document, document reference 790101_MSD_Main_SAN ● Mott MacDonald, Sandown, Southern Water IED Permitting Environmental Risk Assessment, document reference 790101_ERA_SAN ● Site Layout Plan 790101_MSD_SiteLayoutPlan_SAN

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?	If yes, provide a plan showing the changes to the activity boundary.
Have there been any changes to the permitted activities?	If yes, provide a description of the changes to the permitted activities
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	If yes, list of them
Checklist of supporting information	<ul style="list-style-type: none"> • Plan showing any changes to the boundary (where relevant) • Description of the changes to the permitted activities (where relevant) • List of 'dangerous substances' used/produced by the permitted activities that were not identified in the Application Site Condition Report (where relevant)

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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> Records of pollution incidents that may have impacted on land Records of their investigation and remediation
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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	<ul style="list-style-type: none"> Description of soil gas and/or water monitoring undertaken Monitoring results (including graphs)
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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	<ul style="list-style-type: none"> Site closure plan List of potential sources of pollution risk Investigation and remediation reports (where relevant)
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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	<ul style="list-style-type: none"> 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)
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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

Project	100419175 Southern Water IED permits
Site	Sandown WTW/STC, East Yar Road, Sandown, IoW PO36 9AS/9AX
Visit Date	08/10/2020
Attendees	A Manns (Mott MacDonald) S Hall (Southern Water – Area Permitting Coordinator – Hampshire and IoW) A Web (Southern Water – Technical Co-ordinator)
Notes	Weather: windy with light rain, turning warm and sunny

1 Purpose


Due to impending changes in the way the Waste Management industry is regulated by the Environment Agency, Sludge Treatment Centres (STCs) are obliged to apply for Fixed Installation Permits under the Industrial Emissions Directive (IED) and comply with new permit conditions by August 2022. 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).


Mott MacDonald have been awarded the contract to assist Southern Water with technical surveys and compiling information. A site visit was therefore undertaken to Sandown Water Treatment Works (WTW) and STC with the aim of collecting information relevant to the permit, and understanding the operation and condition of the site.

2 Key findings

This section summarises the key findings of the visit, which were collated from visual inspection of the site and infrastructure during the walkover, and from discussion with the site operatives.

General	
Operational contact details for the application forms	Richard Mumford (Southern Water - Field Performance Manager) Richard.mumford@southernwater.co.uk
No of site staff (day and shift operators etc)	13 staff over 24hr period – 8 x day ops, 5 x night ops Plus 1 x IT (Investigation Technician plus up to 14 M&E and contractors)
Hazardous waste treatment capacity (tonnes per day)	None accepted

Non-Hazardous waste treatment capacity (tonnes per day)	275m ³
Total waste storage capacity (tonnes) for each site Annual waste throughput (tonnes each year) for each site	189,944m ³ annual throughput
Types of waste to be requested to be listed on each permit to authorised to be accepted at the site (EWC codes)	790101_MSD_Main_SAN Appendix A
How many years is each permit expected to be required for?	Permanent
Sludge import	
How many tankers per day?	
Sludge imported from other satellite sites? How many?	Yes. Site accepts sludge from 18 satellite sites around the Island, plus domestic cess which is dealt with in another area. All in local area when sludge unable to be taken by another site.
Does the site accept trade waste (commercial tankers)?	No
Exemptions	
What exemptions are used on site? Typically SW have T21, D5 and S1. Do they know what these are for?	T21, S1, D5 – SWS aware some exemptions will not be applicable for use under IED
Cake storage	
	


Where is cake stored?	Cake bays for maturation then collected for sale
How many cake bays are there on site?	6 x cake bays (3 in the north of the site and 3 in the south). Bays in the sought side appear larger Approx 1-1.5m high wall (sides concrete ½ side legioblocks approx. 80l x40h x40d (2 high)) surrounds the area which are just enough for the amount of cake stored. Hardstanding looks in good condition as does the walls.
Water usage	
What sources of water does the site use? What proportion? E.g. 2% potable water for polymer make-up and drinking, 98% primary or secondary wash water for other i.e. cleaning etc?	Site uses approx. 2% potable water for office and polymer make up. Rest of water used on site comes from either primary or secondary washwater.
Does the site get water from other sources? Abstraction from river etc?	No although water is removed from the river during flooding periods as the site is surrounded by a flood plain. This eases the pressure off the flood plain. This is at the request of the EA and this water is stored in storm tanks and released back out slowly.
Generators	
<p>Are there any generators on site? How many? What are they used for e.g. primary/secondary. Site running, exporting power to grid? Do they export to grid or import from grid to run the site? What are their fuel sources?</p>	<p>Yes – 5. 3 primary generators used to run the site and 2 secondary which can be switched on remotely to export to the grid. The generators will not be run during TRIADS, which removes the need to be permitted under MCPD/SG. The biogas is burnt in the existing CHP engine to produce electricity and exported to the grid, using the Site's two five secondary generators. All generators on site are duel fuel.</p>
CHP engines	
	



<p>How many CHPs on site?</p>	<p>1 CHP – although this was switched off as it was having maintenance undertaken by Veolia.</p>
<p>Are the CHP's adequate for the amount of gas produced by the site?</p>	<p>No – Andy Webb said that the site generates too much gas for 1 CHP but not enough for 2</p>
<p>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?</p>	<p>1 flare – currently being used on a daily basis as the CHP is working at full capacity but the site does not generate enough to run 2 so flare off excess</p>

Gas holder




What storage volume of gas can be held at one time	780m ³
Noise	
Please describe any noise mitigation measures on site.	No noise abatement needed majority of operations are fully enclosed.
Other abatement?	No
Have any noise assessments been undertaken on the site?	No
Have there been any noise complaints?	Some historic complaint, but this was thought to be from when one of the centrifuges was being run. This has since been rectified with better maintenance and servicing
Any monitoring undertaken?	No
Odour	
Please describe any odour mitigation measures on site.	Specialist unit treating air. Large grey pipes around the site is the odour control system which goes to a scrubber/filter system
What is there odour control system?	Carbon filters
Is odour monitored?	Yes, monitored for H2S 24/7 and chemicals added to system to combat odours. No other details given. No AQ assessments have been undertaken Odour loggers for cess and sludge import area No thresholds given
Is there an odour management plan?	Southern Water Generic Air Quality Management Plan
Any odour complaints?	No, but occasional smell when moving significant amounts of cake.
Other abatement?	Majority of operations are fully enclosed and there is a perimeter sprayer on parts of the site (which were operational at the time of the visit)
Raw materials and resource efficiency	

<p>What raw materials are used on site and why, their stored tonnage, their main hazards</p>	<p>3x different Polymer – sludge thickening – stored in 1000l IBC Ferric Chloride 1000l IBC Sodium hypochlorite, capacity of container is 30000l - 28tonnes/6months by tanker Sodium hydroxide (caustic soda) liquor, capacity of container is 2701l – 2701l every 2weeks Sulphuric acid – 1278l container capacity – 1000l/month Diesel - maximum storage capacity on site at any one-time 40m³</p>
<p>How are they stored? Bunded, stored undercover etc?</p>	<p>See above</p>
<p>How often are they replaced?</p>	<p>See above</p>
<p>Describe the basic measures for improving energy efficiency of the activities carried out on site</p>	<p>Energy efficiency measures implemented at the Site include (but are not limited to) the following:</p> <ul style="list-style-type: none"> • The combustion temperature is maintained relatively constant for reduced NOx emissions and increased efficiency. • The engines are equipped with turbochargers, further increasing energy efficiency. • Consideration of energy recovery and the deployment of renewable energy systems – opportunities relating to CHP, wind and solar power generation opportunities for the site are currently being reviewed. • The Field Performance Manager can request advice from the Optimisation Team to improve efficiency of plant if required. <p>Biogas is a renewable gas, produced from organic waste. Heat generated from the CHP is used in the AD process. The energy created by burning of biogas in the CHP engine is used to supply the Site to reduce the need to import electricity from the grid.</p>
<p>Describe the use of water across the site, any water saving measures</p>	<p>Recirculation of final effluent back into system.</p>
<p>Describe waste avoidance and waste recovery measures. Describe how waste is disposed, by whom.</p>	<p>Waste generation from the operation of the plant is minimal and limited only to essential maintenance fluids and materials. Waste streams are segregated and recovered for recycling where possible for different Site activities. General waste is sent for recycling, where possible, scrap metal is sent to metal merchants for recycling and WEEE sent to specialist WEEE recycling facilities. Southern Water apply a Duty of Care by ensuring waste is removed by a suitable licenced waster carrier.</p>

Digesters



How many digesters on the site?	3
Digester capacity	1,285m ³ each
Any Whessoe valves? How many	2 per digester
Any monitoring of tanks/gas?	SCADA monitoring of flows around site, and contents of gas holder. Pressure is monitored to some level, but the Whessoe's apparently make an audible high pitched noise, if there is a problem which alerts the operatives. Andy said that they are allowed to release a certain amount from the AD, after which it has to be reported as a pollution incident to the SW team. No further details were given.
What is the ground like surrounding the tanks? E.g. permeable gravel, concrete etc	Permeable gravel surrounding digesters with concrete pathways
Drainage	
Where do the drains go? E.g. Head of the works	Drainage from site roads and reception areas lead to return liquor pumping station which then returns to inlet works.

Is site adjacent to a river or stream?	Yes and the surrounding area (agriculture) is prone to flooding as is a flood plain.
Is the whole site bunded	Reportedly so. Site appears to be in good condition. Although so areas of wear were noted around the site
Are there any cracks in the pavement	Yes – see photos 
Waste generation	
What wastes are generated by the site?	WEEE, metal, general recyclates, black bag waste. Grit and screenings, rags collected in skips.
How is it stored?	WEEE area in garages, metal skip and general recycling bins outside the office. Grit and screenings in skips associated with relevant infrastructure. All removed by external contractor when required.
Other	
Planned AMP7 schemes for the site that may impact the permit application?	None known at present.
What is the general site infrastructure like? Any areas of concern?	Generally very good condition around the site. Site very clean and tidy, some minor points made relating to a metal waste skip on a grassy area instead of the hardstanding
Any positive interventions?	Yes, passed to Jennifer Deane in an email on 9 th Oct at 17.31
Age of site?	Approx 20 yrs old
Are any infrastructure enclosed?	Majority of the site operations
Additional notes and questions	
<p>Vermin and pest – a contractor comes in regularly to ensure pests are not an issue. No scavenging birds seen on site. Andy mentioned that there is an rat seen occasionally, but nothing for them to feed off.</p> <p>Lots of flies in car after leaving the door open to de-kit and final close out discussion.</p> <p>Dust not an issue on the site. Occasional dust from cake bays during dry periods, but this is controlled using a suppression.</p> <p>Road sweeper attached on a tractor used to sweep the site</p> <p>Bays washed down once cake is removed</p>	

B. Landmark Envirocheck Report

Available on request.