Permitting Decisions - Variation

We have decided to grant the variation for Mountfield Landfill Old Tip and Leachate Treatment Plant operated by Saint-Gobain Construction Products UK Limited.

The variation number is EPR/DP3190VV/V004.

We have issued this variation to:

- To add a new leachate treatment plant EPR 2016 Schedule 1 activity undertaken at the site under Section 5.4 Part A (1)(b)(i), the leachate treatment plant is an installation and will now become the main activity.

- consolidate any modification or variation notices into the permit

- incorporate existing agreements in writing, management plans and closure reports

- update the operators permit into modern conditions and format

Application Overview

The Mountfield Landfill Old Tip is situated in Mountfield approximately 4km south of the village of Robertsbridge and is located within the existing British Gypsum complex. Adjacent to the Old Tip, on the southwest edge of the permit boundary is the New Tip Landfill. The area immediately to the north of the Old Tip is industrial premises, while land immediately to the east and south comprises of woodland. There is open ground and woodland to the west. The closest residential dwellings are along Church Road, located approximately 350m to the east.

This variation does not seek to amend any activities related to the Old Tip landfill , this variation is to only add a leachate treatment system (LTS) to treat leachate arising from both the Mountfield Landfill Old Tip and New Tip landfills prior to discharge to the River Line.

The LTS will be constructed above the restored surface of the Old Tip. The site will process approximately 73,000m^3 of leachate per annum. The permit boundary will be increased to the east of the site to ensure all infrastructure related to the LTS is included within the installation boundary.

Leachate, destined for treatment at the LTS, will be collected in the existing 40,000 litre underground tank on site. Leachate will then be pumped to the biochemical reactors (BCRs) through pipework at a controlled rate under gravity. The BCR's will be sequenced in pairs to allow for potential downtime of one BCR without having to

cease operations. The organic media in these BCRs uses sulphate reducing bacteria to consume sulphate in the leachate and produce sulphide. The organic media in the BCR's comprises woodchip, limestone, straw and biochar in varying proportions.

Effluent is then passed through a scrubber to precipitate dissolved sulphides within the leachate into an insoluble metal sulphide. Scrubbing can take two forms, depending on the prevailing chemistry in the BCR's. If the BCRs generate excess Sulphide in the effluent, then scrubbing is carried out by reacting the effluent with a sacrificial metal - this process precipitates the dissolved sulphides within the leachate into an insoluble metal sulphide. If the BCRs generate excess free sulphur, scrubbing is carried out by filtering the BCR effluent through a filter sand – this process traps the free sulphur within the sand.

Once the effluent has been scrubbed, it will flow under gravity to an Aerobic Polishing Wetland (APW) or reed bed, comprising of a geomembrane lined shallow pond filled with soil and locally harvested or cultivated vegetation. The purpose of this process feature is to re-aerate the anoxic effluent from the BCR. After passing through the APW, the effluent will be discharged to the River Line in accordance with the requirements of the environmental permit.

The facility will be managed in accordance with an Environmental Management System (EMS) accredited to ISO14001.

The environmental permit is now a multi-regime permit comprising an installation and a waste operation.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

This decision document provides a record of the decision-making process. It

- highlights key issues in the determination
- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account
- shows how we have considered the consultation responses

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit and the variation notice.

Key issues of the decision

LTS Design Principles

Pilot Plant Testing

A detailed Options Analysis was conducted by the Operator back in December 2016 that identified the use this type of treatment system could be viable but required treatability testing using onsite bench and pilot scale testing.
Whilst this type of system is considered novel for the treatment of landfill leachate the operator provided examples where such treatment systems are currently operating and successfully treating sulphate rich water particularly with regard to mining influenced water.
The operator has also carried out extensive onsite treatability assessment for a period of over 18 months at the site which has involved the construction of bench scale and pilot scale systems in order to provide the data, calculations and the design tests to support ‘proof of principle’ to demonstrate the efficacy of the proposals.
The bench scale system involved the use of a series of containers which were set up to assess the viability of the sulphate reduction within a pumped system.
This included using;

- Using naturally occurring organic material (wood chips, straw, horse manure, biochar) with sulphate reducing bacteria (0.1% manure to inoculate the media) in a Biochemical Reactor (BCR).
- Testing the ‘bugs on booze’ hybrid approach by having smaller volumes of natural organic material but adding liquid hydrocarbon source (alcohol) in Fixed Bed Anaerobic Reactors (FBAR).
- Using scrubbers that comprised iron as zero valent and as an oxide tested to sequester the sulphide.
- Aerobic Polishing Wetland (APW) to polish the treated leachate reducing Biological Oxygen Demand (BOD) and any leached iron.
- Using active aeration to compare with aerobic wetland performance.
- Flows of 6-25 l/d of leachate were treated and the system ran for 20 weeks.

The results from the bench scale showed: that the BCR and FBAR successfully removed sulphate to below the proposed discharge limit and at a rate equivalent to and slightly greater than seen in mine water treatment systems which receive more aggressive mine water. The success of the bench scale testing required confirmation at pilot scale on the site. The pilot scale testing became live in Spring 2020 and the discussion and results surrounding the pilot phase were submitted as part of this variation application.

The objectives of the pilot plant were to interrogate the results of the bench scale test work and to specifically:

- Consider not only how to build the system but also the practicalities of running it. For this reason, the alcohol dosing was not included, but could be added if required.
- Understand how the system might change with much higher flow rates than in the bench scale. These varied between 150-1000 ml/min in the pilot stage.
- Provide more detailed study of the scrubbers as it was suspected that the removal of sulphate was via filtration of free sulphur that had formed and not sulphide. Therefore, consideration was given to the requirements of iron filter material and sand filters were applied as discussed in the pilot study report.

The pilot system became live through a commissioning phase in Spring 2020 and monitoring was undertaken by staff on site since then. A number of sampling points were included in the system including redox zone depth measurements in the anaerobic material, along with the treatment zones at various locations along the system. There have been a few different iterations to optimise the objectives of the system, this included replacing the iron scrubbers with sand filters.

The results from the pilot scale treatment design included results/data and any failures which occurred and improvements which were made throughout the pilot scale and can be summarised below:

- Good sulphate removal with no sulphide detectable in the effluent.
- Elemental sulphur may be the primary product of sulphate reduction in the BCRs.
- Pilot cell confirms the results of the bench scale testing with latest influent sulcate of c.800 mg/L being reduced to c.100 mg/L in the effluent, thus providing design data for the full-scale system.
- Treatment efficiency decreased in the winter months. This is a well-known phenomenon with sulphate reduction rates improving in spring and summer months and has been useful in guiding potential management changes which may need to be included in winter months to maintain the same reduction in sulphate. It is believed that a larger system will be less sensitive to temperature.
  Performance of the BCRs was reduced over winter months mainly due to changes in redox and TOC in the leachate entering the treatment system. Influent TOC (their ‘food’) levels are reinforced with the redox reading in the influent water and the addition of EVO to bolster the TOC in the leachate before entering the BCRs.
- To aid the removal of free sulphur from the system, the use of sand filters was implemented, and the scrubbers were removed. The sand filters worked very effectively and will be used in addition to the sulphide scrubber unit as part of the full-scale design.

The pilot scheme has remained operational to allow for the continued monitoring of performance.

Design Considerations

pH balance

The results of the bench scale and pilot testing has shown that the pH is maintained at circum-neutral pH throughout. The risk of acid being generated by the presence of humic acids is mitigated by the addition of limestone to the substrates of the BCRs this also ensures sulphate reducing media will not turn anaerobic/ methanogenic.

Leachate quality

Changes in leachate quality particularly low pH could have an impact on the sulphate reducing bacteria and therefore will need to be protected should pH levels fall. However, the monitoring of the bench and pilot scale testing was undertaken weekly onsite and in the laboratory and there was no significant decrease in pH values across the two years of monitoring. The limestone in the BCR provides sufficient buffering and in the event that the pH drops, it would need to fall to very acidic levels to compromise the bacteria, as evidenced by treatment studies using acid mine drainage. In the event that pH levels were becoming too acidic in an operational system, dosing with caustic soda, or an anoxic limestone drain would be added to control pH.

BCR Sizing

The BCR sizing was calculated from the sulphate reduction rates measured in the pilot cell. The sizing is calculated using 0.3 moles of sulphate removed per cubic metre of substrate. Detailed design has not been finalised at this stage, but on the basis of the outline designs (prepared for planning), there will be at least four BCR cells. The final design will be modular to ensure that a degree of redundancy can be afforded during periods of low flow and maintenance periods.

Effluent Flow

The leachate will be pumped to the BCR cells via a balance tank from the existing collection chamber using the feed pump(s). The flow in the BCR's is upwards, driven by the feed pump flow rate into the first BCR, then by gravity (still with upward flow in the BCR's) thereafter. The rates of flow through the system are controlled by the pumping rate of the feed pumps(s). Failsafe's will be included in the design to prevent overtopping of the BCR cells. Flow variation was tested during the pilot cell study. This showed that doubling the flow did not result in halving the treatment (page 14). The treatment was not affected, and this suggests that once established, the bacteria are not sensitive to changes in flow velocity in the system. During periods of high flow, beyond the design capacity of the system, excess leachate will be tankered off site for treatment.

Leachate Retention (Residence) Time
The pilot scale study indicated that the sulphate reduction rate of 0.3 moles sulphate per cubic metre of substrate was achieved and this was used to design the system. Therefore, the load of the sulphate is calculated using the flow rate from the leachate pumps (which can be adjusted) and this is changed from mg/l to moles by using molecular weight of sulphur and oxygen. Once this load is calculated, the volume of biochemical reactor material required to satisfy the reduction rate (0.3moles/m3/d) is calculated.

Sulphate Reduction Removal Rates %
The removal rate equates to 0.3 moles sulphate removed per cubic meter of substrate. The removal of sulphate was typically 80% and achieved the ELV consistently.

Design of Bed Media
The up-flow BCRs used in the pilot cells was successful at reducing the sulphate and no issues with integrity were noted. Three types of bed material were tested at bench scale level (different combinations of wood chips, biochar, limestone, straw and manure) and the most successful of these was used as the ‘recipe’ for the BCRs in the pilot trial. The results of the trial confirmed the bench scale results. The integrity of the cargo containers was checked regularly (weekly) and no leaks were identified. The porosity and bulk density were suitable for the treatment requirements and there was no evidence of channelling.

Peroxide Dosing
Peroxide dosing to produce elemental sulphur rather than a sulphide has been considered. An Options Appraisal and Cost Benefit analysis was undertaken which included consideration of various active technologies including dosing, nanofiltration, and reverse osmosis systems. The assessment concluded that active and passive systems might be applicable with the most applicable active system being an Active Bacterial Reductive System. Once CAPEX (capital expenditure) and OPEX (operating expenditure) were considered the passive system was considered more appropriate.

Dissolved Methane
Full consideration was given to dissolved methane as part of the design process. The landfill contains paster board and not domestic refuse and therefore methane is not expected in high volumes. The redox of the system is conducive for sulphate reduction and not methanogenesis. Whilst dissolved methane might be present in low concentrations, the APW system adds oxygen to the leachate and hence removes residual methane.

Detailed Design

Detailed design has not been carried out at this stage, the operator has agreed that the detail design can be provided as an improvement condition and agreed by the Agency prior to any works commencing

However, the BCR's and wetlands will be formed/shaped from compacted clay and will be lined with a geomembrane liner and protected with a protection geotextile. The completed structures will be subject to a leak detection survey. The sand filters will comprise HDPE tanks filled with sand, which will sit in a bunded area.

The construction of all elements of the system will be carried out under CQA Supervision. Section 2.6 of the permit covers the CQA requirements.

Improvement conditions

Table S1.3 Improvement programme requirements AR1			
Ref.	**Requirement**	**Date**	**Comment**
IP1	The Operator shall submit a written report to the Environment Agency on the commissioning of the leachate treatment system (LTS). The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application and operational procedures developed during commissioning.	6 months after completion of commissioning of the LTS	Once the LTS has been commissioned the Operator must provide a report on the performance of the LTS to ensure it works as designed.
IP2	Once the LTS has been commissioned the Operator shall submit a written report to the Environment Agency for approval including: • details of the monitoring undertaken and results obtained for all parameters detailed in Table S3.2 for the treated effluent from the LTS (activity AR1) at emission point W1 following completion of commissioning. A minimum of 12 sets of data to be obtained; • details and an assessment of the results from the upstream and downstream river monitoring as detailed in Table S3.6; • an assessment of the impact (previously referred to as H1) of the discharge of treated effluent on surface water. Note: The Agency will use the results of this impact assessment to carry out modelling if required. The Agency will use the impact assessment and any modelling results to update table S3.2 if required.	13 months after completion of commissioning of the LTS unless otherwise agreed with the Agency	As the proposed discharge quality from the PTS is not currently known, the SW risk assessment has been undertaken in 'reverse' to calculate the Emission Limit Values (ELVs) for hazardous chemicals, elements and sanitary pollutants. This IC is to ensure sufficient surface water data is collected and an updated H1 is provided to ensure the ELV's set remain appropriate.

Table S1.4 Pre-operational measures AR1			
Ref.	**Operation**	**Pre-operational measures**	**Comment**
PO1	(i) Construction of the Leachate Treatment System	No construction of the Leachate Treatment System (LTS) shall commence until the operator has submitted a report providing a review of the final design of the LTS to confirm that the design meets the requirements of BAT.	A BAT report has been provided however, since the final detailed design has not been carried out at this stage, an updated BAT report will be required to ensure that the final design meets the Waste Treatment BREF conclusions August 2018 for agreement with the EA prior to construction of the LTS.
PO2	(ii) Construction of the Leachate Treatment System	Prior to the commencement of construction of the Leachate Treatment System, the Operator shall provide a written commissioning plan (including timescales for completion) to the Environment Agency for approval, and received approval from the Environment Agency to the plan. The commissioning plan shall include details of the testing to be carried out during commissioning to ensure that the operation of the LTS will meet the required treatment standard.	To provide a plan for commissioning of the LTS prior to construction to ensure the plant works as expected. To include testing procedures to ensure the efficacy of the plant.

System Maintenance

Residual Sludges and Wastes from the Process

The pilot plant showed little evidence of collecting sludge. The free sulphur that was produced collects in the APW and whilst it accumulates over time, it is unlikely this will require removal for several years. Typically, the BCR substrates can last up to 20 years before becoming exhausted. Any wastes will be material shipped offsite for recycling or disposal at an appropriately licensed facility.

Scrubber System Cleaning

The pilot cell system did not collect metal sulphides in significant volumes. The free sulphur production was the main sulphate control. Sand filters replaced the iron filters and acted as a physical control by filtering the free sulphur from the water. The filters will be monitored and when the performance declines significantly the filters will be replaced and the material shipped offsite for recycling or disposal at an appropriately licensed facility.

BCR Redundancy
The system has been designed to accommodate redundancy as part of a maintenance programme. There will be four BCRs and hence when one is being serviced, flow can either be reduced from the leachate tank or both flows can be put into the remaining BCRs. The pilot study showed that the BCR can accommodate an increase of such flow. If for any reason the discharge fails the permitted concentrations during this period, the treated leachate will be removed from site using a tanker.

Spent Substrate.
The BCR material comprises a mixture of substances the majority of which will not become ‘soggy’ because the up-flow requires the whole of the cell to be saturated such that bacterial reduction of the sulphur can occur. The media in such systems has been shown to last 10-20 years before it has needed to be replaced in BCRs which receive more aggressive, acidic drainage than that being treated at this site.

Media Replacement
Process parameters are reviewed together with a review of the performance of the system by assessment and review of monitoring results to assess health of the BCR Substrate. Changes in process parameters and performance of system would indicate that the substrate may need to be replaced.
Given that the system is unlikely to require full replacement for a number of (10 or more) years, the media would be removed carefully so as not to damage the liner. Flow will be isolated to the BCR where the media is being replaced, then the media will be extracted using a suitable method that prevents damage to the liner. Following this any residual medial will be carefully excavated from the cells. Prior to replacement of the media, the cell lining will be inspected for any damage and repaired if necessary.

Monitoring

Surface Water and Emission Limits

A surface water pollution risk assessment was submitted as part of the LTP variation application.

As the proposed discharge quality from the PTS is not currently known, the SW risk assessment has been undertaken in ‘reverse’ to calculate the Emission Limit Values (ELVs) for hazardous chemicals, elements and sanitary pollutants monitored by Saint-Gobain in the raw leachate.

Table 5-1 (detailed below) shows a summary of ELVs required to be achieved by the PTS. If the discharge quality from the PTS is below the ELVs when operational then the discharge is not considered to be a risk to the environment or the River Line. The ELVs are considered to be conservative as a number of conservative assumptions were made during the SW risk assessment, including:

- Minimum reporting values (MRV) contained in the raw landfill leachate monitoring data were taken at face value;
- The average and maximum discharge flow rate from the PTS was estimated to be 200m3/day, which is the maximum design flow rate of the PTS. In reality, the average flow rate will be lower than 200m3/day.

The PTS will comprise of biochemical reactor (BCR) sequestering units to convert sulphate to sulphide, a scrubber to remove sulphide and an aerobic polishing wetland to oxidise the water prior to discharge is proposed. Therefore, given the level of treatment proposed, it is likely that the proposed PTS discharge will not exceed the calculated ELVs contained in Table 5-1 for the hazardous chemicals.

The H1 tool has been completed using the ELV the operator has assessed will protect the water environment for emission point W1 in order to ensure no downstream deterioration in water quality. The proposed ELV meet the criteria for passing the 4 screening test which are those in the H1 tool. This means that the discharge is not liable to cause pollution so long as these ELV's are met in the discharge.

Table 5-1: ELVs for hazardous chemicals and elements assessed in the SW Risk Assessme

Hazardous chemical, element or sanitary pollutant	% of samples below MRV	Mean concentration in raw leachate (µg/l)	ELV (i.e. required mean discharge) (µg/l)
Ammonia	14%	175	587
BOD	21%	8,857	1,602
Chloride	0%	59,714	99,000
Manganese	0%	1,272	117
Sulphate	0%	725,214	450,000

However, this is not the usual way to determine permit limits. Usually, the operator would input the raw data into the H1 tool. At this point if any of the substances fail the 4-screening test, these substances would be taken through to the modelling stages. There are 2 modelling stages these are either to determine if these substances pose a risk to EQS (This assesses the impact of the proposed concentration and discharge flow on the receiving water EQS for both the Annual Average and MAC EQS), or whether the discharge causes downstream water quality to deteriorate so that it either exceeds 80% of the EQS and/or the discharge takes up 50% or more of the remaining headroom in the watercourse. However, the operator agreed to the ELV's they proposed, even though these may be more restrictive than those assessed through more detailed modelling.

The bioavailable metals were not considered in the original H1 assessment. However subsequently the Operator proposed dissolved limits for the bioavailable metals. However, some of the metals failed the screening test and needed to be modelled to ensure the limits proposed did not breach the EQS or cause deterioration in the watercourse.

Copper	0.005 mg/l
Iron	1.0 mg/l
Lead	0.005 mg/l
Nickel	0.0056 mg/l
Cadmium	0.004 mg/l
Zinc	0.02 mg/l

Modelling of the discharge to the River Line was carried out by the Environment Agency using the Monte Carlo RQP (River Quality Planning) software. The modelling tests assessed the following:

- Risk to EQS
- Significant deterioration of receiving water quality
- Risk of significant deterioration of effluent quality

For the bioavailable metals the modelling identified the following;

Copper – tighter limit will be required at 0.7µg/l (0.0007mg/l)
Lead – tighter limit will be required at 0.84µg/l (0.00084mg/l)
Nickel – Limits suggested are accepted.
Zinc – Limits suggested are accepted.
Cadmium – tighter limit will be required at 1.98µg/l (0.00198mg/l)
Iron – Limits suggested are accepted.

With no monitoring these can only be indicative limits and therefore interim limits have been imposed for the bioavailable metals. An improvement condition IP2 has been included so that a monitoring regime can take place such that we can accurately model for these limits. In addition background river samples for each substance and DOC(mg/l), downstream pH and calcium(mg/l) and discharge DOC(mg/l) will be required.
The operator has agreed the way forward and has agreed the improvement condition IP2

Once the LTS has been commissioned the Operator shall submit a written report to the Environment Agency for approval including:

- *details of the monitoring undertaken and results obtained for all parameters detailed in Table S3.2 for the treated effluent from the LTS (activity AR1) at emission point W1 following completion of commissioning. A minimum of 12 sets of data to be obtained;*
- *details and an assessment of the results from the upstream and downstream river monitoring as detailed in Table S3.6;*

- *an assessment of the impact (previously referred to as H1) of the discharge of treated effluent on surface water.*

Note: The Agency will use the results of this impact assessment to carry out modelling if required. The Agency will use the impact assessment and any modelling results to update table S3.2 if required.

Table S3.2 below details the monitoring regime is proposed for the discharge at W1 to the River Line.

Table S3.2 Point source emissions to water (other than sewer) – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 NGR 572947 119830 on site plan in schedule 7 emission to River Line	Treated effluent from leachate treatment system (activity AR1 listed in Schedule 1, table S1.1)	Oil and grease	No visible oil or grease	--	Weekly	Visual assessment
		Ammoniacal Nitrogen	0.6 mg/l	Spot sample	Weekly during commissioning, every two weeks for 6 months following commissioning and then monthly thereafter unless otherwise agreed in writing.	As specified in Environment Agency Guidance LFTGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), risk assessments for your environmental permit (www.gov.uk) or such other subsequent guidance, as may be agreed in writing with the Environment Agency
		BOD (5 day ATU)	1.6 mg/l			
		Chloride	100 mg/l			
		Manganese	0.12 mg/l			
		Sulphate	450 mg/l			
		Copper Note 1&2	0.7 µg/l			
		Iron Note 1&2	1 mg/l			
		Lead Note 1&2	0.9 µg/l			
		Nickel Note 1&2	5.6 µg/l			
		Cadmium Note 1&2	2 µg/l			
		Zinc Note 1&2	20 µg/l			
		Total suspended solids	50 mg/l			
		Sulphide	-			
		Electrical conductivity	-			
		DOC	-			
		Calcium Carbonate	-			
		pH	>6 and <9	Instantaneous		
		Flow	200m^3/day	Integrated daily flow rate	Continuous	MCERTS self-monitoring of effluent flow scheme

Note 1: Limits are dissolved metals, in addition total metal results to be provided. Note 2: Interim limits subject to IP2 in Table S1.3 Improvement programme requirements AR1

Leachate quality monitoring data for the site for the past 10 years was provided by the operator. All leachate quality data which is taken to the plant was sourced from the MOD tank. All leachate from the landfill enters the MOD tank before entering the leachate treatment system.

Un-Sequestered Sulphide Potential

The original concept used iron scrubbers to remove the hydrogen sulphide as insoluble metal precipitates. The pilot plant indicated that this was not the main control of the sulphate reduction. Free sulphur was generated at a faster rate than the iron could sequester the sulphide. This had the benefit of oxidising the hydrogen sulphide in the APW with the subsequent precipitation of the sulphur:

$$H_2S + 0.5\ O_2 \rightarrow S^0 + H_2O$$

The oxidation is catalysed by bacteria and the sulphur is hydrophilic which consist of agglomerates of sulphur particles that settle. This reaction consumes the hydrogen sulphide in the APW and hence free, airborne hydrogen sulphide is not released in large volumes. Olfactory evidence to date supports this with only rare 'eggy odour' noted during the months of sampling.

Hydrogen Sulphide

Sulphate reduction occurs under anaerobic conditions, given that there is a potential risk of hydrogen sulphide production particularly in terms of odour management the operator is proposing to monitor for fugitive emissions of hydrogen sulphide in ambient air. However, it is not anticipated that high volumes of hydrogen sulphide will be released.

Permit Table S3.7 Ambient air – other monitoring requirements

Process Monitoring

Process monitoring has been detailed in Permit Table S3.8 'Process monitoring requirements for AR1' and covers the key locations of the process (points down-gradient of the influent point). The locations will be situated such that each part of the system can be assessed, and it is fundamental to the operation of the facility. This will also be supported by samples of the APW to make sure there is no channelling of the surface flow.

The process points are detailed on the MEPP dated April 2022.

The aim of this monitoring is to ensure a consistent level of discharge quality. The system needs to ensure low variability at each stage in the process, rather than wait till the end discharge, so this table covers those parameters monitored with the aim to make process adjustments to avoid any variability from occurring.

Process monitoring is SCADA data recorded and monitored by operational staff. System set up to trigger alarms to warn operator where process parameters fall outside of normal operating range. There are also levels sensors in all critical tanks and vessels, if levels reach a high level and alarms will be raised to operational staff.

Should the level of fluid in any of the critical Tanks/Vessels reach a high level, then the feed pump will be inhibited and alarms raised to operational staff. Leachate will not be pumped to the system until manually reset – this will prevent the tanks from overtopping. Operational staff will investigate reasons for high levels and action will be taken as necessary. Any issues will be reported to the Site Manager. Any defects identified will be repaired.

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has not been made.

The decision was taken in accordance with our guidance on confidentiality.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

We consulted the Rother District Council Environmental Health, UKHSA, Southern Water and the HSE

No responses were received from HSE, Rother DC EH or Southern Water.

The comments and our responses from the UKHSA are summarised in the consultation responses section.

The application was publicised on the GOV.UK website.

The regulated facility

We considered the extent and nature of the facility at the site in accordance with RGN2 ‘Understanding the meaning of regulated facility’, [Appendix 2 of RGN2 ‘Defining the scope of the installation’ and Appendix 1 of RGN 2 ‘Interpretation of Schedule 1’.

The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.

The site

The operator has provided a plan which we consider to be satisfactory.

These show the extent of the site of the facility.

The plan is included in the permit.

Site condition report

The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

Protected Habitats are wet woodland which surrounds the course of the River Line 80m downstream and broadleaved deciduous forest that bounds the site and extends out for some distance.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

We have not consulted Natural England.

The decision was taken in accordance with our guidance.

Operating techniques

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

Odour management

We have reviewed the odour management plan in accordance with our guidance on odour management.

We consider that the odour management plan is satisfactory and we approve this plan. The plan has been updated with an action plan for hydrogen sulphide and this document has also been included in the operating techniques.

We have approved the odour management plan as we consider it to be appropriate measures based on information available to us at the current time. The applicant should not take our approval of this plan to mean that the measures in the plan are considered to cover every circumstance throughout the life of the permit.

The applicant should keep the plans under constant review and revise them annually or if necessary, sooner if there have been complaints arising from operations on site or if circumstances change. This is in accordance with our guidance ‘Control and monitor emissions for your environmental permit’.

The plan has been incorporated into the operating techniques S1.2.

Updating permit conditions during consolidation

We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permit.

Raw materials

We have specified limits and controls on the use of raw materials and fuels.

Pre-operational conditions

Based on the information in the application, we consider that we need to include pre-operational conditions. See key issues section.

Improvement programme

Based on the information on the application, we consider that we need to include an improvement programme. See key issues section.

Emission limits

Emission limits have been added for the surface water discharge from the LTS to the River Line as proposed by the Operator. See key issues section above.

Note: Whilst the monitoring for the landfill as proposed in the closure plan has been added into this permit variation for the ‘Old Tip’ the limits are set in Mountfield Landfill New Tip EPR/DP3099VK WML19603.

Monitoring

We have decided that monitoring should be added for the surface water discharge and for process monitoring as proposed by the Operator. See key issues section above.

Note: Whilst the monitoring for the landfill as proposed in the closure plan has been added into this permit variation for the ‘Old Tip’ the limits are set in Mountfield Landfill New Tip EPR/DP3099VK WML19603.

Based on the information in the application we are satisfied that the operator’s techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.

Reporting

We have added reporting in the permit for the surface water discharge and for the process monitoring.

Management system

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

A full review of the management system is undertaken during compliance checks.

Technical competence

Technical competence is required for activities permitted.

The operator is a member of the CIWM/WAMITAB scheme.

We are satisfied that the operator is technically competent.

Previous performance

We have assessed operator competence. There is no known reason to consider the applicant will not comply with the permit conditions.

No relevant convictions were found. The operator satisfies the criteria in our guidance on operator competence.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation Responses

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public, newspaper advertising and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section

Response received from **UKHSA**.

Brief summary of issues raised:

The main emissions of potential concern were fugitive emissions of dust and odours. However, it was agreed that the Operator’s Environmental Risk Assessment has qualitatively considered the potential for the emission of dusts and odour nuisance; and, details reasonable control and mitigation measures, including a comprehensive odour management plan.

Based on the information contained in the application supplied to us, the UKHSA has no significant concerns regarding the risk to the health of the local population from the installation.

This consultation response assumes that the permit holder shall take all appropriate measures to prevent or control pollution, in accordance with the relevant sector guidance and industry practice.

Summary of actions taken: None required.