

The Scottish Public Services Ombudsman
Bridgeside House
99 McDonald Road
Edinburgh EH7 4NS

21 October 2019

Dear Sirs

**COMPLAINT ON BEHALF OF LEITH LINKS RESIDENTS ASSOCIATION
ABOUT THE SCOTTISH ENVIRONMENT PROTECTION AGENCY (SEPA)**

1. The complainant and the nature of their complaint

My clients are Leith Links Residents' Association. Their complaint relates to three matters:

- A. SEPA's failure to control odour emissions from the storage and treatment of sewage sludge at the sludge treatment centre ("the STC") adjacent to the waste-water treatment works at Seafield, Leith ("the WWTW"), in particular SEPA's policy towards sludge spillages at the STC – as raised in my clients' formal complaint to SEPA sent by emails on 6 and 7 January 2019 (copies of which are attached as **Appendices 1a & 1b** to this letter) – and its failure to properly investigate and follow up on concerns about sludge storage capacity at the STC – as set out in detail below;
- B. SEPA's failure, from August 2000 to April 2019, to review and update the conditions of the waste management licence for the STC, reference number WML/E/114 ("the Licence Conditions") – its primary tool for controlling odour emissions from the site – as raised in my clients' letter to SEPA sent on 12 February 2019 (copy attached as **Appendix 2**), following SEPA's Stage 1 response; and
- C. SEPA's refusal, when dealing with Stage 2 of my clients' formal complaint to them, to investigate Matter B, as raised repeatedly in my clients' emails to SEPA during March 2019 (copy attached as **Appendix 3**).

2. Impacts on the complainant of the matters complained of

Matter A has affected many residents of Leith, as represented by my clients, in two ways:

- i. For 18 years they have suffered adverse impacts on their residential amenity from repeated odour emissions from the site (whether from the WWTW or the STC), causing hardship, in the form of adverse impacts on their wellbeing and private life (such as frequent interruptions to their enjoyment of their private gardens, having to go indoors to escape the odours, having to take drying laundry off the washing-line and bring it indoors, embarrassment in front of guests), adverse impacts on their neighbourhood and on the value of their property, and real concerns about adverse impacts on their health.

- ii. Over the same period, they have suffered a growing sense of injustice, as their complaints to SEPA (and others) about the odour emissions have led, at best, to marginal and temporary improvements and, at worst, to no improvements at all. This in turn has led to widespread disillusionment in the community about SEPA's regulation of the STC, reluctance to waste further time on complaining about odours, and distrust of SEPA and officialdom in general.

Matter B concerns SEPA's administrative failure to update the Licence Conditions, knowing for years that they needed to be updated, and thereby to put itself in a better position to tackle the problem of odour emissions from the STC for the benefit of the local community, including my clients. This failure has therefore helped to prolong both of the above-mentioned impacts on my clients. SEPA did eventually modify and re-issue the Licence Conditions in April 2019. The fact that SEPA has finally, comprehensively reviewed the Licence Conditions is scant consolation to my clients for years of sub-standard regulation based on licence conditions that were not fit for purpose.

Matter C concerns SEPA's creation of artificial, bureaucratic obstacles to the full and proper investigation of my clients' ongoing complaints, and has increased their sense of injustice.

3. Incidents giving rise to the complaint

Matter A is an ongoing, long-standing issue, but for the purposes of this process, this complaint originates with SEPA's regulatory response to sludge spillages that occurred at the STC in the second week of October 2018, culminating in its letter to my clients dated 19 December 2018.

Matter B became a matter of contention for my clients when SEPA issued its Stage 1 response to their formal complaint on 18 January 2019.

Matter C arose shortly after that, in March this year, when my clients rejected SEPA's Stage 1 response, and then discussed with SEPA the terms of reference of the Stage 2 investigation.

4. Description of site and process

The STC is located on the same site as and immediately to the north-west of the WWTW, between Marine Esplanade (or Seafield Road) and the Firth of Forth. The middle of the STC is at national grid reference (NGR) NT 285 762. The middle of the WWTW is at NGR NT 288 758.

To the north, north-east and east, the site is bounded by the sea. To the south are commercial properties, a recreation ground and a golf course. To the immediate west are old railway sidings and industrial land, some of it vacant, and further west is the centre of Leith. To the south-west is Seafield cemetery, residential streets and parkland (Leith Links), with the south-west corner of the site (including the WWTW) being no more than 15 metres from the nearest residential property.

The WWTW treats a combination of sewage, trade effluent and surface water (referred to here as "waste-water") arising from all of the city of Edinburgh and much of East Lothian, serving a population equivalent of 850,000. It is the largest waste-water treatment works in the east of Scotland. The waste-water treatment process produces:

- treated sewage effluent, which is discharged to the Firth of Forth via a 2km long outfall pipe;
- sewage sludge, all of which is pumped to the STC on the same site; and
- odours, some of which are emitted beyond the boundary of the site.

The STC treats sewage sludge not only from the WWTW, but from other waste-water treatment works in the wider area. That sludge is imported to the site in tankers by road. It is also licensed to treat other imported biodegradable waste. The sludge/waste treatment process results in:

- dried sludge (known as ‘sludge cake’), which is exported from the site for use in agriculture or land reclamation or for disposal in landfill;
- biogas, which is combusted on site to produce heat and electricity for the site;
- sludge liquors, which are pumped back to the WWTW for treatment along with the incoming sewage and surface water; and
- odours, some of which are emitted beyond the boundary of the site.

5. Regulation of site and process

The whole site is run by a single operator on behalf of Scottish Water, but for regulatory purposes the site consists of two distinct parts, as described above, which are regulated separately. One of those parts is regulated by two separate regulators with different responsibilities.

The STC

SEPA regulates the waste treatment process at the STC under Part II of the Environmental Protection Act 1990 (concerning waste on land) and the Waste Management Licensing (Scotland) Regulations 2011. Site-specific environmental controls regulating the management of the waste treatment process, including reception of waste onto the site, storage of waste before and after treatment, and the emission of odours from any of these stages, are set out in the Licence Conditions, which can be found in the documents attached at **Appendix 4** – but see section 10 of this letter for more detail.

From 2000 until April this year (after my clients’ complaints), the main licence condition controlling odour emissions from the STC was Condition 6.3, which stated:

“Sludge reception treatment (sic) and storage facilities shall be designed and operated in such a manner that offensive odours from the site, in the opinion of an authorised SEPA officer, do not become detectable at any point outside the site boundary”.

The site boundary is usually shown by SEPA as a red line on a plan attached as Appendix 1 to a waste management licence. Until it was replaced in April this year, the site plan for the Seafeld licence showed two areas delineated in red (which unfortunately shows up as heavy black on p.16 of the copy document at **Appendix 4a**, but which does appear as red on p.19 of the copy document at **Appendix 5**): the main triangle-shaped area of the STC, and an extra, much smaller square area within the WWTW, where imported sludge is stored, occasionally spilled and (as an initial treatment) screened, and which therefore requires to be controlled under the licence. The STC, as licensed and regulated by SEPA, was therefore a combination of these two areas. (The new site plan in the modified licence now shows three such relatively small, extra areas, which appear delineated in red on p.23 of the copy document at **Appendix 4g**.)

It is not immediately obvious from the Licence Conditions that SEPA considers the sewage sludge from the WWTW (known as ‘indigenous’ sludge) to be beyond its regulatory control, at least until it is mixed, at an early stage of the sludge treatment process, with the imported sludge. However, this is apparent from the operator’s working plan for the site, which is required by Licence Condition 1.5 (“the Working Plan”, copy attached as **Appendix 5**): paragraph 1.2 of the Working Plan describes “three possible sources of waste”, but they are all imported: indigenous sludge is not mentioned.

The WWTW

SEPA also regulates the discharge from the WWTW of treated sewage effluent to the sea, under the Water Environment (Controlled Activities) (Scotland) Regulations 2016 (sometimes known as the Controlled Activities Regulations, or simply ‘CAR’). Under this separate regulatory regime, SEPA is concerned primarily with the quality of the discharged effluent, to ensure that it does not pollute the water environment (in this case, the Firth of Forth) beyond an acceptable level. SEPA therefore sets numerical limits on the polluting contents of the treated effluent, which must not be exceeded. These limits, and related environmental controls, are contained in a water use licence issued under the Controlled Activities Regulations, with reference number CAR/L/1003828.

SEPA is not concerned, however, with odour emissions from the WWTW. These are the responsibility of the City of Edinburgh Council, as local authority, under sections 25 and 26 of the Water Services etc. (Scotland) Act 2005, the Sewerage Nuisance (Code of Practice) (Scotland) Order 2006 and Guidance on the Statutory Code of Practice on Sewerage Nuisance dated April 2006. That Code of Practice is intended for use by any local authority for controlling odour nuisance from any sewage treatment works in Scotland: it is not site-specific, in the way that SEPA licences are.

It should be noted that, although the Council is responsible for regulating odour emissions from the WWTW and SEPA for regulating those from the STC, the whole site is covered by a single Odour Management Plan (OMP), to which both regulators refer¹. A copy of the 2017 version of the OMP is attached as **Appendix 6**.

The OMP contains, on page 8, a useful diagram of the Seafield WWTW/STC process flow, showing the sequence of treatments and the different sources of sewage sludge entering the sludge treatment process. It also includes, on page 36, a plan showing the layout of the site.

Although, as stated above, odours are often emitted from the WWTW, and my clients and others frequently complain about them to the Council, this complaint relates only to SEPA and its regulation of sewage sludge handling at the STC.

6. History of the site and odour problems at the site

Edinburgh’s sewage has been treated at the Seafield site since 1978, and for the next 20 years, the resulting sewage sludge was dumped at sea. The 1991 Urban Waste Water Treatment Directive banned that practice and required improved sewage treatment for cities, with effect from 1998. In the same year Scottish Water’s predecessor, East of Scotland Water Authority, awarded a Private Finance Initiative (PFI) contract to Stirling Water Seafield Limited (“Stirling Water”) to provide the

¹ Appendix 7, section 1.3 (top of p.4)

required new standards of waste-water treatment for the Almond Valley, Seafield & Esk valley sewerage catchment – i.e. Edinburgh and much of East Lothian. A new waste-water treatment works, including sludge treatment facility, was constructed at Seafield, and commissioned in 2001. The whole site is operated on behalf of Stirling Water by Veolia Water Outsourcing Limited (“Veolia”), originally called Thames Water Services Limited. (Scottish Water was formed in 2002.)

There have been odour and other problems at the site ever since, as set out in the chronology of events at Annex A to this letter.

The key events are:

- Odour complaints in 2001 and 2002 led to independent odour emissions surveys and odour dispersion modelling during 2003 and 2004 by consultants called WRc². WRc came up with five options for improvements to the WWTW with the aim of reducing odour emissions, numbered A to E, where Option A was the cheapest (at £18.68 million) and least likely to achieve that aim, and Option E the most expensive (at £42.23 million) and most likely to achieve that aim.
- As a consequence of the odour issues at Seafield³, the Scottish Government decided to legislate and introduce, in 2006, the above-mentioned “*Code of Practice on Sewerage Nuisance – Assessment and Control of Odour from Waste Water Treatment Works*”. The statutory Code of Practice requires compliance with specified ‘baseline control measures’ at all waste-water treatment works in Scotland. If those measures are being complied with and an odour nuisance continues to exist at any works, an odour improvement plan must be drawn up “*to ensure that emissions do not create an odour nuisance beyond the boundary of the [works]*”.
- An odour improvement plan was deemed necessary at Seafield immediately, and the resulting plan (“the OIP”) was approved by the Council and published in May 2008. The OIP adopted Option A, the least effective of the options proposed by WRc to mitigate odour emissions. It dealt only with the waste-water treatment process, not the sludge treatment process⁴.
- Implementation of the OIP/‘Option A’ began in 2009 and was completed in 2011⁵.
- Odour complaints continued, but no further serious action was taken until a surge of complaints in April and May 2017 prompted the Scottish Government to intervene and demand action. So Scottish Water commissioned consultants to undertake a strategic review of the site and the sewerage network, including operations and communications⁶ (“the Strategic Odour Review”).
- The Strategic Odour Review began immediately, and its final report was published in March 2018. A copy of the final report (“the Review Report”) is attached as **Appendix 7**.

The following are key extracts, relevant to this complaint, from the main findings of the Review Report, firstly relating to the experience of local residents since 2011 (on pp.5-6):

“For all the householders interviewed in the Leith Links area, Seafield WWTW continues to cause problems.

“Impacts included ‘being woken up at night’, ‘having to close windows at all times’, ‘hosting events for families and friends away from the house’, not being able to ‘hang out washing’.

² *Ibid.*, sections 1.3 (foot of p.8), 3.4

³ *Ibid.*, section 3.4

⁴ *Ibid.*, section 1.3 (middle bullet-point on p.4)

⁵ *Ibid.*

⁶ *Ibid.*, section 1.1

“Overall, a strong and commonly held view was that the community had to endure and report complaints before action, if any, would take place, i.e. a ‘reactive’ system of odour regulation...”

The authors challenge Veolia’s reactive approach to on-site odour incident prevention (p.7):

“Odour incidents caused by new equipment and processes are dealt with ‘reactively’ by identifying the cause, defining and implementing mitigating measures A more pro-active approach to assessing the risks of odour from these sources is recommended. Incidents such as sludge spills and digester gas pressure releases could have been foreseen and prevented.”

The digesters are part of the sludge treatment process, so it is clear that the types of preventable incident mentioned here occur within the boundaries of the STC.

The analysis of odour complaints during April and May 2017 (p.7) finds that:

“[The] primary cause of odour during April and May 2017 [i.e. exceptionally low rainfall leading to low wastewater flow and septicity in the incoming wastewater] was compounded by increasing sludge blanket depths in the [primary settlement tanks], sludge spillages and unplanned digester gas releases. This does not, in our opinion, represent best practice operation of Seafield WWTW during this period.”

In other words, the primary cause of the odour which led to the surge in complaints was the very unusual weather, but there were several unconnected causes which could have been avoided – and these all relate to the storage and management of sewage sludge in the STC.

To understand how increased ‘sludge blanket depths’ in the primary settlement tanks (i.e. part of the WWTW) can be caused by problems in the STC, some readers may find an explanation of the relationship between the waste-water treatment process and the sludge treatment process useful.

Waste-water flows into every waste-water treatment works 24 hours a day, 365 days a year, so the waste-water treatment process has to run constantly. Gross solids are screened out as a preliminary step, and the screened waste-water is pumped to the primary settlement tanks (PSTs), where the finer solids suspended in the waste-water settle out, forming a ‘sludge blanket’ in the tanks. During heavy or prolonged rainfall, volumes of incoming waste-water can exceed the capacity of the PSTs, and excess flows are diverted into ‘storm tanks’ for storage until incoming flows slow down, at which point the contents of the storm tanks can be pumped to the PSTs. Sludge that has settled in the PSTs is uplifted and removed by a rotating mechanism, then pumped away (or at smaller works, tankered away) to be treated. The settled waste-water is then pumped on to the secondary, biological treatment stage, which can produce excess sludge that also needs to be treated.

Larger treatment works have a sludge treatment facility on-site, where sludge from all on-site sources is treated, along with sludge imported from smaller waste-water treatment works where there is no sludge treatment. At these larger works, the PSTs are the source of most of the sludge that is processed there. Sludge is pumped constantly from both primary and secondary stages of the waste-water treatment process, so the sludge treatment process too has to keep running nearly all the time. In the event that incoming volumes of sludge (whether indigenous or imported) exceed the capacity of the treatment process, there may be capacity to store untreated sludge at some sites.

But if the sludge treatment process has no further capacity, and any sludge storage capacity is full, site operators are known to allow levels of sludge in the PSTs to increase, as the Review Report explains (at section 7.2 “Areas of Concern”, on p.104):

“Allowing sludge blanket levels to increase and be sustained in the PSTs (effectively ‘storing’ sludge in the PSTs) cannot be regarded as best practice. This has been established in a number of previous odour nuisance cases in the UK. In the majority of cases where levels of primary sludge have been allowed to increase, thus increasing septicity in the sludge and the overlying settled sewage (the tell-tale signs of which are bubbles bursting on the surface of the PSTs from anaerobic activity within the accumulated sludge), this has been caused by the following:

- ***A restriction in the downstream capacity for sludge storage or processing;***
- *Equipment breakdowns;*
- *A simple lack of physical capacity;*
- *Ineffective sludge stock management; and*
- *Non-availability of a recovery or disposal route.”* (emphasis added)

The excerpt above describes what can happen at any large waste-water treatment works where sludge is treated. In relation to Seafield itself, the Review Report’s summary findings (section 6.4, p.99) state:

“There is a strong link between odour complaints, onshore winds ... and sludge blanket levels in the primary settlement tanks” (amongst other sources of odour).

Later in the same section, on p.101, it says:

“A review of the proportional contribution of the individual unit process (sic) to off-site odour concentrations has identified that the PSTs and storm tanks are high-risk in terms of the potential to trigger off-site odour complaints. For the PSTs, this is because of the large surface area of exposed wastewater ... and the sludge blanket levels in the tanks.”

On page 112 (Table 8.1 “Short Term (0-2 years) Feasibility Study Recommendations”), the Review Report says:

“There is evidence that primary sludge has been held-up in the PSTs as a result of downstream processing bottlenecks from time to time. This is a departure from accepted best practice. In the majority of cases where high PST sludge levels have occurred, this has been as a consequence of issues with downstream processing or storage capacity. Additional storage, even of a temporary nature, with appropriate odour control, is desirable.”

The Review Report therefore recommends:

“Undertake a review of sludge storage capacity on the Seafield site and determine what additional capacity is required”.

To conclude this section, my clients recognise that the recommendations of the Strategic Odour Review are directed at Scottish Water, its PFI contractor (Stirling Water), and its operations sub-contractor (Veolia), but consider that SEPA, as regulator of the STC and one of the key stakeholders

that took part in the Strategic Odour Review, has the powers and, in my clients' view, the responsibility to pursue, encourage and, ultimately, enforce its recommendations on:

- (a) **the need for a more proactive approach to the prevention of odour emissions, particularly those arising from preventable incidents in the form of sludge digester gas releases and associated sludge spillages, and**
- (b) **the need for additional sludge storage capacity, which could help prevent such incidents.**

7. Account of odour incidents of 9-11 October 2018, my clients' responses to them, and SEPA's conclusions about them

Section 3 above refers to sludge spillages during the second week of October 2018, about 7 months after the publication of the Review Report. This is the particular series of odour incidents that, following correspondence with SEPA, led my clients to make their formal complaint to SEPA in January 2019.

On Thursday 11 October 2018 SEPA acknowledged receipt of an odour complaint the previous day from my clients, containing questions, and undertook to answer the questions within a few days. Having received no further response, my clients wrote again on Friday 19 October, repeating the questions and asking one more (**Appendix 8**).

Later the same day, SEPA responded, revealing that there were three separate "*high pressure events and associated spillages on Tuesday, Wednesday and Thursday last week*". This email mentioned action taken "*following the incidents in May 2017*" (that led to the surge of complaints and prompted the Strategic Odour Review) (**Appendix 9**).

My clients replied the same day, referring to the Strategic Odour Review, pointing out that it was particularly in relation to preventable sludge spillages that the Review Report recommended a more proactive approach, and asking how many spillages had been reported during the year (also **Appendix 9**). SEPA replied partially on 24 October (**Appendix 10**).

My clients had already asked further questions on 23 October (**Appendix 11**). SEPA decided to treat these questions, along with one from the previous email, as freedom-of-information (FOI) requests. On request by SEPA, my clients clarified one of their questions on 26 October (**Appendix 12**) and asked further questions on 27 October (**Appendix 13**).

In its formal response of 15 November 2018 (**Appendix 14**) addressing all my clients' questions so far, SEPA explained the causes of the 3 high-pressure events on 9-11 October. Alarms had been triggered by each increase in pressure, but not, apparently, in time to prevent any of the spillages. As regards the question of whether the incidents could have been anticipated, the letter concludes:

"The high pressure events occurred following the recent shutdown of thermal hydrolysis plant and this has not occurred during previous shutdowns therefore the events were not reasonably foreseeable."

Following a further odour complaint on 18 November, which SEPA responded to on 22 November (**Appendix 15**), my clients asked further detailed questions (on 20 November) about the high-pressure events of 9-11 October.

SEPA again treated these questions formally and responded in detail on 19 December (**Appendix 16**). On the question of foreseeability, this letter states:

“Problems within the digesters can be anticipated. However, due to the numerous influences (such as temperatures etc) and the complexity of the plant spillages cannot always be exactly foreseen. This is a biological process.”

It was at this point that my clients concluded that, in relation to the prevention of sludge spillages, SEPA was failing in its duty as a regulator (Matter A in section 1 of this letter), and that a formal complaint was required.

My clients duly complained formally to SEPA about Matter A on 6 and 7 January 2019 (**Appendix 1a & 1b**), then submitted a further FOI request to SEPA on 9 January.

On 18 January SEPA gave its Stage 1 response to the complaint (**Appendix 17**), concluding:

“The spillages that occurred on site in 2018 have been investigated by the Operator. SEPA have reviewed the incident reports and our view is that these incidents could not have been foreseen. In determining whether something could have been foreseen we look at whether the same root cause of a spill occurred repeatedly and no corrective actions were taken. If this happened in future we would take a view that this represented poor management practices and could have been reasonably foreseen.”

My clients rejected this response in an email on 19 January (**Appendix 18**).

SEPA responded to my clients’ latest FOI request on 1 February (**Appendix 19**).

At this stage, my clients raised the issue of the long delay in reviewing the Licence Conditions (Matter B). Their letter to SEPA setting this out and clarifying the other aspects of their complaint for the purposes of SEPA’s Stage 2 investigation, sent on 12 February, is attached as **Appendix 2**.

There followed a long correspondence about the terms of reference for SEPA’s Stage 2 complaint investigation during March 2019 (**Appendix 3**), focussing on SEPA’s refusal to investigate my clients’ particular complaint that the Licence Conditions had not been reviewed for many years.

SEPA consulted your office about this matter, then proceeded with its investigation without having secured my clients’ agreement to the terms of reference. On 10 April, SEPA delivered its Stage 2 response (**Appendix 20**).

My clients reject the finding this response makes about their primary complaint, because it answers a question that my clients did not ask, namely: *“What are the relevant recommendations in the Strategic Review and what is the requirement for SEPA to follow them?”*

SEPA’s conclusion on this point is:

“...there is no evidence to support the view that SEPA’s policy towards sludge spillages ... is inadequate. There are no recommendations in the Strategic Review report that SEPA is required to follow. It follows therefore, that SEPA’s policy cannot be inadequate due to a failure to consider recommendations from the Strategic Review.”

This is a classic ‘straw man’ argument, because, as stated above, my clients are aware that the recommendations in the Review Report are addressed to the site operators.

What my clients suggested SEPA should be doing is set out in their letter of 12 February (**Appendix 2**, top of page 2):

“[SEPA] needs to investigate the possible preventable causes of all spillages on site and to ensure that Veolia Water has pro-active procedures in place to predict and avoid the occurrences of these events.”

But this point is not properly addressed in SEPA’s response.

8. Focus on failure to enforce corrective action after incidents in January and May 2017

The purpose of my clients’ FOI request of 9 January was to follow up the reference in SEPA’s email of 19 October 2018 to action it had taken *“following the incidents in May 2017”*, and in particular, to see what lessons SEPA had learned from previous high-pressure events in the sludge digesters which might have led to sludge spillages, and to what extent these might in fact be preventable.

In response, SEPA provided several documents including a copy of its 4-page Interim Compliance Assessment Report dated 20 June 2017 (referred to here as *“the Compliance Report”*, copy attached as **Appendix 21**).

The Compliance Report details SEPA’s desk-based assessment, starting on 15 May 2017, of Veolia’s compliance with the Licence Conditions during that period. It mentions several non-compliances, but of particular relevance is the section on page 3 about *“a series of significant digester over-pressurisation events on sludge digester 2”* between 30 April 2017 and 8 May 2017, resulting in *“loss of biogas through Pressure Release Valves and the spillage of digester sludge through these valves and the blockage of the gas line”*.

Reference is made to a report provided to SEPA on 17 May 2017 by Veolia (referred to in The Compliance Report as *“VWOL”*) on its subsequent investigation of these incidents, in which

“VWOL detailed that decisions taken to restore flow to digester 2 prior to being aware of the root cause of the over-pressurisation and associated sludge spillages were in part to prevent any backlog of higher than normal septicity sludge in non-WML parts of the sewage treatment works during prolonged onshore wind conditions.”

This means there must have been previous over-pressurisation events and associated sludge spillages, and it suggests that thereafter it was agreed that digester 2 (which is one of six) should not be used until the root cause of those events had been established. The Compliance Report refers, at the top of page 2, to SEPA writing to Veolia *“on 19 January 2017 stating that emissions of untreated*

biogas via Pressure Release Valves (PRVs) on each of the sludge digesters should be prevented other than in an emergency”, so presumably the events occurred during the first half of January 2017.

Going back to page 3 of the Compliance Report, reference is made to what was presumably Veolia’s response at that time:

*“In your letter to SEPA of 06 February 2017 you acknowledge that part of the reason for frequent emissions through emergency Pressure Relief Valves on the sludge digesters is the need to keep accepting sludge within the WML site to prevent built up (sic) of sludge within the primary tanks. You highlight that **there is minimal inter-stage sludge storage available at the site**, and acknowledge that the greatest risk of offsite odour from the sewage works as a whole is accumulation of sludge in the primary tanks (through inability to receive sufficient sludge within the WML site). SEPA would normally expect the sludge storage arrangements at a WWTW to be sufficient to accommodate the intake of 2 days operations.” (emphasis added)*

This demonstrates clearly that in February 2017, five months before the Strategic Odour Review was commissioned, and 13 months before it issued its final report discouraging the practice of using the PSTs for sludge storage and recommending the provision of additional sludge storage capacity, both SEPA and Veolia were aware that there was insufficient sludge storage capacity at the STC, and that this lack of storage capacity was leading, at least whenever the capacity of the sludge treatment process was also limited for any reason, either to sludge being stored in the PSTs and causing off-site odour problems, or to potential over-pressurisation of the sludge digesters, releases of odorous biogas through the PRVs, and sludge spillages, themselves leading to further odour emissions.

Yet SEPA appears to have required no corrective action from the operator until the same digester became significantly over-pressurised again in May 2017, at which point SEPA started asking questions about how much sludge storage capacity there actually is at the site.

Given that *“the greatest risk of offsite odour from the sewage works as a whole is accumulation of sludge in the primary tanks”*, the reference to *“2 days operations”* must mean 2 days of sludge output from the WWTW, at the very least, whether from the PSTs or from the activated sludge plant. And given that SEPA is fully aware that the STC receives and is supposed to treat sludge imported by tanker from several smaller waste-water treatment works, my clients submit that it surely means 2 days of all sludge receipts, wherever they originate.

The final action point for Veolia in the Compliance Report (near the top of page 4) is:

“Provide details of the current capacity of sludge storage tanks in the sludge reception areas within the WML, and details of how this compares to the volume of sludge accepted during 2 days normal operations. Should the sludge storage capacities at Seafield be less than 2 days normal operations please provide either:

- *Proposals and timescales for providing adequate sludge storage at Seafield*
- *Or, a structured argument of why the site can be effectively managed with its current sludge storage capacity.”*

At this stage, SEPA appears to be responding appropriately, albeit 4 months too late, to the apparent shortage of sludge storage capacity and the odour emissions it causes, whether from excessive sludge levels in the PSTs or digester over-pressurisation events and associated sludge spillages.

An email exchange between SEPA and Veolia (**Appendix 22**) shows that, on 25 October 2017 SEPA, having not yet received the requested data on sludge storage capacity, repeats its request (at the top of page 2) and that, on 6 November 2017, Veolia responds, saying:

“In total Seafield has 1,162 cu.m of storage available for sludge imported to site. On average ~300 cu.m of (sic) day is accepted ensuring the storage provided exceeds 2 days.”

This response appears to relate solely to “sludge imported to site”, completely missing the point that SEPA almost certainly wanted a figure for “*the volume of sludge accepted during 2 days normal operations*” from all sources, given that the STC is supposed to treat all sludges received.

But SEPA makes no mention of sludge storage capacity in its reply of 8 November 2017 (**Appendix 23**), and SEPA has recently confirmed that it “*does not hold information that contains a specific response to the submission of information regarding sludge storage capacity following receipt of the email dated 6 November 2017.*”

My clients note that a draft of the final report of the Strategic Odour Review was issued to all stakeholders, including SEPA, in late October or early November 2017. It contained exactly the same recommendation on sludge storage capacity that appeared in the final report, so it is surprising that, rather than re-doubling its efforts to pursue the matter with Veolia, SEPA has instead accepted Veolia’s two-line response at face value, itself missing the point of its own request, originally made six months earlier.

SEPA had already missed one opportunity, after the events of January 2017, to start investigating the shortage of sludge storage capacity, but having corrected that omission in June 2017, it then failed to follow it up in November 2017. It is possible that the SEPA officer responsible for the Seafield site changed between June and November 2017, but even so, SEPA should have systems in place to deal with staffing changes, and this would be no excuse for the failure to follow up on a significant line of inquiry. **My clients therefore consider that this failure during 2017 represents maladministration on the part of SEPA.** Thankfully the Strategic Odour Review took up that line of inquiry.

It appears, however, that SEPA may have even compounded the problem since then. On 5 April 2018, Stirling Water, the PFI company that is the holder of the waste management licence for the site, applied for a variation to Licence Condition 1.2, which limits the amount of waste that can be imported to the site on any day, and in any year. A copy of the application for variation is attached as **Appendix 24**. The application claimed that the maximum tonnages allowed were lower than they should be because Veolia had been measuring waste imports and reporting them to SEPA in tonnes of dry solids rather than ‘wet tonnes’, by mistake. If they had reported them in wet tonnes, they would have exceeded the annual weight limit given in the Licence Condition. The application was “*therefore in essence to regularise the existing situation*”. It sought to increase the daily limit from 500 tonnes to 600, and the annual limit from 75,300 tonnes to 130,000.

Citing its own error as justification not only for exceeding the licensed weight limit, but also for raising that limit in order to avoid having to restrict its existing levels of imports, seems to my clients

a very bold approach for an operator to take. But SEPA, rather than taking the opportunity to justify the existing limit on the grounds that overall sludge storage capacity at the site is inadequate, and asking Veolia to consider other options to dispose of its excess tonnages, appears to have accepted the argument. On 7 August 2018 SEPA issued a notice deleting Licence Condition 2.1 and replacing it with a condition allowing up to 650 tonnes per day and up to 145,000 tonnes per annum of waste to be accepted at the site, thus permitting even more waste to be imported than was applied for. A copy of this modification notice is attached as **Appendix 4e**.

According to Scottish Water newsletters updating the community on implementation of the recommendations of the Strategic Odour Review, Veolia has during the last year undertaken, via consultants, the recommended review of sludge storage capacity at the STC, but there is no indication that any decision has been made to increase the capacity, let alone that any actual works have commenced. My clients can only hope that actual tonnages of sludge imported to the site will not increase as a consequence of SEPA's decision to grant this application, because, unless sludge storage capacity is increased, any increase in sludge imports is likely to make matters worse.

9. Discussion of incidents in October 2018 and SEPA's response leading to formal complaint – Matter A

As regards the digester gas releases and associated sludge spillages in October 2018 and SEPA's response to them during the following two months, which prompted my clients to complain formally to SEPA in January 2019, my clients have referred back at each stage to the findings of the Strategic Odour Review, namely that such incidents are preventable if a proactive approach is adopted.

Their complaint is that SEPA continues to pursue a reactive policy towards sludge spillages, accepting them as inevitable.

SEPA's explanation of the root cause of the October incidents, contained in their letter of 15 November 2018 (**Appendix 14**), is that a scheduled shutdown of one of the two streams of the thermal hydrolysis plant (a relatively new part of the sludge treatment process) had necessitated a 50% reduction in throughput of sludge, meaning that sludge had to be retained for longer than usual in the activated sludge plant (i.e. the secondary treatment process in the WWTW). This caused biological changes in the sludge, which affected the downstream treatment process in such a way that the pressure in the digesters rose sharply, and sludge spilled from the pressure release valves.

My clients noted that this explanation, revealing the upstream consequences in the secondary treatment process in the WWTW of a 50% restriction in the capacity of the sludge treatment process, was similar to the finding in the Review Report in relation to the primary waste-water treatment process, namely that *"primary sludge has been held-up in the PSTs as a result of downstream processing bottlenecks"*.

The Review Report considers that increases in sludge blanket levels in the PSTs could be prevented by the provision of additional sludge storage capacity, and that this is therefore desirable. It seems logical to my clients that problems caused in the secondary waste-water treatment process by downstream restrictions on sludge throughput in the STC might likewise be prevented by the provision of additional sludge storage capacity.

It now appears to my clients, in the light of the documents relating to the digester over-pressurisation events in January and May 2017, that SEPA has been aware since at least February 2017 of the site's lack of sludge storage capacity, and has not only failed to make any connection between the October incidents and those earlier incidents; it has, more importantly, missed opportunities to take steps that might have resulted in the early provision of additional sludge storage capacity during 2018, and might even have prevented the October 2018 spillages.

10. SEPA's powers and duties to modify conditions, how it has modified the Seafield licence, and how it failed to do so comprehensively between 2000 and 2019 - Matter B

To appreciate SEPA's failure to update the Licence Conditions properly for almost 19 years, it may help to consider first SEPA's powers to do so, as well as the circumstances in which it is obliged to do so.

Section 37(1) of the Environmental Protection Act 1990 gives SEPA (now Scotland's single waste regulation authority under the Act) powers to modify the conditions of a waste management licence in two sets of circumstances, as follows:

"While a licence issued by a waste regulation authority is in force, the authority may ... ,—

- (a) on its own initiative, modify the conditions of the licence to any extent which, in the opinion of the authority, is desirable and is unlikely to require unreasonable expense on the part of the holder; and*
- (b) on the application of the licence holder ... , modify the conditions of his licence to the extent requested in the application."*

Section 37(2) of the Act requires SEPA to modify licence conditions in two different sets of circumstances, as follows:

"While a licence issued by a waste regulation authority is in force, the authority shall, except where it revokes the licence entirely under section 38 below, modify the conditions of the licence—

- (a) to the extent which in the opinion of the authority is required for the purpose of ensuring that the activities authorised by the licence do not cause pollution of the environment or harm to human health or become seriously detrimental to the amenities of the locality affected by the activities; and*
- (b) to the extent required by any regulations in force under section 35(6) above."*

When SEPA employs section 37(2)(a), it implies that:

- (a) something has changed since a waste management licence was issued,
- (b) SEPA considers either that the licensed activities are likely to *"cause pollution of the environment or harm to human health or become seriously detrimental to the amenities of the locality affected by the activities"* – or that they are already doing so;
- (c) SEPA must either – if the problem cannot be solved by modifying the licence conditions – revoke the licence, or if it can be solved by doing so, modify the licence conditions; and
- (d) such modifications can – in contrast to those effected by modification under section 37(1)(a) – require any expense on the part of the licence-holder that is necessary to achieve that end.

The original licence WML/E/113 for Seafield, issued in 1993, contained all the original licence conditions, but the Licence Conditions are no longer contained in a single document that can be attached to this letter. There is no point in attaching a copy of the original licence, because all the conditions it contained, as well as the site plan, were deleted and replaced by modification notice no.1 dated 23 August 2000 containing an entire set of 37 new licence conditions. A copy of that modification notice is attached as **Appendix 4a**. In effect, SEPA issued a new licence following a comprehensive review of the licence conditions.

Copies of modification notices no.2 dated 7 April 2004, no.3 also dated 7 April 2004, and no.4 dated 16 February 2009 are attached as, respectively, **Appendices 4b, 4c and 4d**. None of these notices modified more than 6 conditions. Read together, these 4 modification notices contain the Licence Conditions as they were at the time of the Strategic Odour Review.

My clients note that, in its Stage 2 response to their complaint, SEPA refers on page 8 to its own waste management licensing manual and quotes from it, as follows:

“The WML Manual clearly sets out the circumstances under which a WML will be reviewed. ... An extract from the WML manual is below:

“Licence conditions should be reviewed periodically to ensure they satisfy the criteria of necessity, are in line with current environmental policy and comply with current legislation.

...

“For the purposes of business planning, SEPA plans reviews of certain licences to ensure that workload is profiled. The timescale for WML reviews is not dictated by statute and is based on internal guidance and local team priorities. However, SEPA also undertakes unplanned reviews. **Where SEPA wishes or is required to modify or vary a licence condition, (statutory timescales permitting) this should be used as an opportunity to ensure other conditions in the licence are appropriate.** This would constitute a review of the licence. ...

“Other drivers to review the WML include changes in Legislation (e.g. designation of SAC/SPA), Environmental Impact, SEPA Policy/Procedure, Process (e.g. site operations change), and Technology.” (emphasis added)

SEPA appears to have issued three modification notices, two in 2004 (4 years after the previous review) and one in 2009 (9 years after it) without taking the opportunity to ensure that the other Licence Conditions were still appropriate, but SEPA’s Stage 2 response is silent on that.

Since the Review Report was published, SEPA has issued 3 further modification notices.

As stated above, SEPA issued modification notice no.5 on 7 August 2018. A copy is attached to this letter as **Appendix 4e**. It indicates that Stirling Water applied for, and SEPA granted, an increase in permitted daily and annual tonnages of imported waste, potentially exacerbating a recognised shortage in sludge storage capacity.

On 10 April 2019, it issued two further modification notices, no.6 and no.7, which between them deleted and replaced the site plan from 2000 and all but one condition – the one that had recently been inserted by modification notice no.5. In other words, SEPA finally completed the long-awaited review of the Seafield licence, issuing two notices on the same day in order to bring all the new

conditions into force at the same time. SEPA had to issue two separate notices, because it was fulfilling two different functions, as follows.

SEPA issued modification notice no.6 (copy attached as **Appendix 4f**) under section 37(1)(a) of the 1990 Act, i.e. on its own initiative, to the extent which, in its opinion, was desirable and was unlikely to require unreasonable expense on the part of the holder. Thus, by means of this notice, SEPA re-numbered several sections of the licence – as an administrative tidying-up exercise – and only changed two actual conditions, both in very minor ways.

SEPA issued modification notice no.7 (copy attached as **Appendix 4g**), on the other hand, under section 37(2)(a) of the 1990 Act, i.e. because it was obliged to do so, to the extent which in its opinion was *“required for the purpose of ensuring that the activities authorised by the licence do not cause pollution of the environment or harm to human health or become seriously detrimental to the amenities of the locality affected by the activities”*.

In compliance with this statutory duty, therefore, SEPA made wholesale changes to the remaining conditions of the licence, including the following:

1. The site boundary now encloses 2 extra areas within the WWTW which contain Odour Control Units (OCUs): OCU1 deals with odours from the sludge import and screening area which is already covered by the WML but appears to have doubled in size; the Digester OCU is self-explanatory. These OCUs have been treating these odours for many years, so should have been part of the WML long before 2019.
2. Licence Condition 6.3 (headed ‘Odour’), comprising two paragraphs, has been replaced by Section 6.3 (headed ‘Odour and Odour Abatement Systems’), consisting of a re-worded odour boundary condition and 15 conditions with more detailed requirements, including 3 to be satisfied by the end of May, June and July 2019.
3. Six other new conditions require improvements by specified dates in 2019 or 2020.
4. About half of the new licence conditions are re-worded or re-numbered versions of pre-existing conditions; the other half are brand new. These relate to the following matters:
 - a. Incident Procedures (7 conditions);
 - b. Maximum Duration of Storage (1 condition and 1 table);
 - c. Traffic Control (2 conditions);
 - d. Unloading and Storage of Imported Wastes (2 of 3 conditions are brand new);
 - e. Labelling of wastes (1 condition);
 - f. Environmentally Critical Items (16 conditions and 1 table).
5. Replacing a single old Licence Condition about the Digestion Plant/Gas Control System is a suite of 14 brand new conditions under the heading “Thermal Hydrolysis/Digestion Plant/Gas Control System”.

It is hard to believe that, if SEPA now considers that all these new conditions are *“required for the purpose of ensuring that the activities authorised by the licence do not cause pollution of the environment or harm to human health or become seriously detrimental to the amenities of the locality affected by the activities”*, that it did not form that opinion, about some of them at least, at some stage over the past 19 years. Five years would be a reasonable period for a review of the conditions of any environmental permit. SEPA is in effect asking the public to believe that none of the risks which these conditions are intended to address existed until the last 5 years, or that it became aware of them all at once.

The thermal hydrolysis plant, in particular, was a major piece of new plant that was installed and commissioned about five years ago, and it is barely credible that SEPA considered it appropriate to allow it to operate without a single specific condition for that long. It would obviously have been appropriate to conduct a full review of the Licence Conditions at that point (in accordance with the guidance in SEPA's own WML Manual), and include all these new conditions then, rather than wait for another five years.

SEPA will now be in a much stronger position to regulate the STC effectively, so local residents should notice improvements. But the unmissable inference to be drawn from SEPA's failure to do this many years ago is that SEPA considered it acceptable to expose the environment and the local community to those risks for all those years.

11. SEPA's exclusion of Matter B from the terms of reference of their investigation – Matter C

The legislation gives SEPA considerable discretion to regulate in the way it sees fit, but the public and the operators that SEPA regulates have a right to consistency of regulation, over time and across the country. The review of an environmental permit is essentially a desk-based, administrative exercise. It is also a public service, so there is no legitimate reason why it should not be a matter that the public can complain about.

It may be that SEPA's resources have been limited over the years, and that this have caused the long delay in the licence review – if so, SEPA should welcome an investigation that exposes how the more mundane, but still essential, aspects of regulation can be neglected and under-resourced in the face of more urgent priorities.

My clients are grateful for your consideration of their complaint, as set out above, and look forward to the outcome of your investigation.

Yours faithfully

Ian Cowan

Enc. – please see next page for list of appendices

LIST OF APPENDICES

LLRA = Leith Links Residents Association

SEPA = Scottish Environment Protection Agency

WML = waste management licence WML/E/114

Appendix 1a	Email from LLRA to SEPA of 06/01/19	formal complaint
Appendix 1b	Email from LLRA to SEPA of 07/01/19 and reply from SEPA to LLRA of 07/01/19	correction and acknowledgement of Stage 1 complaint
Appendix 2	Letter from LLRA to SEPA, sent by email on 12/01/19	Stage 2 complaint
Appendix 3	Emails between LLRA and SEPA, 07/03/19 – 26/03/19	re Stage 2 terms of reference
Appendix 4a	SEPA WML notice of modification no.1 dated 28/08/00	"the Licence Conditions"
Appendix 4b	SEPA WML notice of modification no.2 dated 07/04/04	
Appendix 4c	SEPA WML notice of modification no.3 dated 07/04/04	
Appendix 4d	SEPA WML notice of modification no.4 dated 16/02/09	
Appendix 4e	SEPA WML notice of modification no.5 dated 07/08/18	
Appendix 4f	SEPA WML notice of modification no.6 dated 10/04/19	
Appendix 4g	SEPA WML notice of modification no.7 dated 10/04/19	
Appendix 5	Seafield STW WML Working Plan version 8.2, Nov.'16	"the Working Plan"
Appendix 6	Seafield WWTW Odour Management Plan, issue 2 v.9	"the OMP"
Appendix 7	Seafield WWTW Strategic Odour Review, Final Report	"the Review Report"
Appendix 8	Email from SEPA to LLRA of 11/10/18 and reply from LLRA to SEPA of 19/10/18 (at 0927)	re odour complaint of 10/10/18
Appendix 9	Email from SEPA to LLRA of 19/10/18 and reply from LLRA to SEPA of 19/10/18 (at 1822)	correspondence re sludge spillages of 9, 10 & 11/10/18 and other spillages in 2018
Appendix 10	Email from SEPA to LLRA of 24/10/18	
Appendix 11	Email from LLRA to SEPA of 23/10/18	
Appendix 12	Email from SEPA to LLRA of 26/10/18 and reply from LLRA to SEPA of 26/10/18	
Appendix 13	Email from LLRA to SEPA of 27/10/18	
Appendix 14	Letter from SEPA to LLRA of 15/11/18	
Appendix 15	Email from SEPA to LLRA of 22/11/18 and reply from LLRA to SEPA of 22/11/18	re odour complaint of 18/11/18
Appendix 16	Letter from SEPA to LLRA of 19/12/18	FOI response to LLRA questions of 20/11/18
Appendix 17	Letter from SEPA to LLRA of 18/01/19	Stage 1 response
Appendix 18	Email from SEPA to LLRA of 18/01/19 and reply from LLRA to SEPA of 19/01/19	LLRA response to Stage 1 response
Appendix 19	Letter from SEPA to LLRA of 01/02/19	FOI response to LLRA questions of 09/01/09
Appendix 20	Letter from SEPA to LLRA of 10/04/19	Stage 2 response
Appendix 21	SEPA Compliance Assessment Report dated 20/06/17	"the Compliance Report"
Appendix 22	Email from SEPA to Veolia of 25/10/17 and reply from Veolia to SEPA of 06/11/17	
Appendix 23	Email from SEPA to Veolia of 08/11/17	
Appendix 24	Application for variation of WML dated 05/04/18	

ANNEX A – HISTORY OF SEAFIELD SITE until summer 2018

year	event
1998	30-year PFI contract awarded to Stirling Water Seafield Limited, operations sub-contracted to Thames Water Services Limited (“Thames Water”)
1999	SEPA transfers waste management licence WML/E/114 to Stirling Water Seafield Limited Construction of new WWTW and STC starts
2000	SEPA fully reviews and re-issues WML/E/114 – effectively a new licence
2001	New WWTW and STC commissioned; odour problems start
2003	First independent odour emissions survey (by WRc): baseline established
2006	Statutory Code of Practice on odour nuisance from WWTWs issued
2007	Catastrophic sewage spill to Firth of Forth lasting 3 days Thames Water changes its name to Veolia Water Outsourcing Limited (“Veolia” or “VWOL”)
2008	Ongoing odour problems lead to first statutory Odour Improvement Plan in Scotland
2009	SEPA issues 4 th notice of modification of WML/E/114
2011	Implementation of “multi-million pound” Odour Improvement Plan completed
2013	Continuing odour problems lead to further odour emissions survey (by Mott MacDonald)
2014	Thermal hydrolysis plant installed and commissioned at STC
2017	April-May – surge of odour complaints June – Scottish Ministers order independent Strategic Odour Review for the site July – further surge of odour complaints October – draft report of Strategic Odour Review published
2018	March – final report of Strategic Odour Review published August – SEPA issues 5 th notice of modification of WML/E/114