Transport and Environment Committee

10.00am, Tuesday 1 November 2016

Seafield Waste Water Treatment Works – Monitoring of Scottish Water Odour Improvement Plan

Item number	7.2
Report number	
Executive/routine	Executive
Wards	All Wards

Executive summary

At a meeting on 2 June 2015, the Committee instructed officers to continue, for one year, the Council's Seafield Waste Water Treatment Works (WWTW) Odour Monitoring and assessment programme. The report details the number of sewage nuisance complaints received.

The Committee also requested that an evaluation report should be provided in one year. This report discharges that instruction. It also provides two additional comparison periods - 1 March to 31 October 2015 and 2016 – which allow trends to be considered over the period 2012-2016.

Links

Coalition pledges	P51
Council priorities	CP8
Single Outcome Agreement	SO2, SO4

EDINBVRGH
THE CITY OF EDINBURGH COUNCIL

Report

Seafield Waste Water Treatment Works – Monitoring of Scottish Water Odour Improvement Plan

Recommendations

It is recommended that the Committee:

1.1 Notes the findings of the Council's monitoring and assessment programme over the periods 1 March 2015 to 31 October 2015 and 1 March 2016 to 31 October 2016;

1.2 Notes the outcome and actions arising from a Council investigation into a major odour incident resulting from a temporary shutdown of the Thermal Hydrolysis plant which caused an increase in complaints of odour from local residents throughout the month of October 2015,

1.3 Notes the outcome and actions arising from a Council and Scottish Environmental Protection Agency investigation into complaints received from local residents relating to a burning odour that peaked during the period mid-April to mid June 2016; and

1.4 Notes that following the Councils request to Scottish Government to review the 2005 Code of Practice that such a review is now underway as detailed in paragraphs 3.20 to 3.22 below and urges the Scottish Government to ensure that local residents are invited to fully participate in the review.

1.5 Instructs officers to continue, for one further year, the odour monitoring and assessment programme. This includes responding to complaints of sewerage nuisance and carrying out monitoring when activities which pose an odour release risk are due to be implemented within the Waste Water Treatment Works.

1.6 Agree that should a major incident occur officers are instructed to consult with the Convenor, Vice Convenor and Group spokespeople on how committee should be updated.

Background

2.1 The Sewerage Nuisance (Code of Practice) (Scotland) Order 2006 (CoP) placed a duty on Scottish Water to develop an Odour Improvement Plan (OIP) to minimise sewerage odour emissions detectable outwith the boundary of Seafield Waste Water Treatment Works (WWTW). The CoP

also places a duty on the Council to monitor and assess the effectiveness of Scottish Water's Seafield OIP.

2.2 The Water Services etc. (Scotland) Act 2005 places a duty on the Council to monitor compliance with the CoP and to investigate complaints of sewerage nuisance.

2.3 The Council's monitoring programme to assess the OIP commenced on 1 June 2011 following implementation of the OIP in May 2011. Progress reports on the programme were made to Committee on 29 November 2011, 18 June 2012, 13 September 2012, 23 November 2012, 26 August 2014 and 2 June 2015.

2.4 This report provides an update on the findings of the Council's continuing odour monitoring and assessment programme over two periods: 1 March 2015 to 31 October 2015 and 1 March 2016 to 14 October 2016 It also includes information on the outcome of investigations by the Council into a major odour incident that resulted in an increase of odour complaints from local residents throughout the month of October 2015 and the outcome of Council and Scottish Environmental Protection Agency (SEPA) investigations into complaints received from local residents regarding a burning odour affecting the Leith Links area that peaked between the period mid- April to mid- June 2016.

Main report

Council Odour Monitoring and Assessment Programme 2012 to 2016

3.1 Table 1 below details the complaints received by the Council is respect of Seafield WWTW. The data covers the period 1 March 2012 to 31 Oct 2016.

Table 1: Complaints to the Council.

Monitoring Period	1 March 2012 to 31 Oct 2012	1 March 2013 to 31 Oct 2013	1 March 2014 to 31 Oct 2014	1 March 2015 to 31 Oct 2015	1 March 2016 to 25 Oct 2016
Complaints received	182	82	81	111	89
No. days where complaints were received	63	49	46	59	50
Complaint visits where staff detected moderate or strong odour	11	10	7	5	5

Days where 3+ complaints were received	16	6	8	12	12
No. individual household complaining	60	33	35	48	36
Major odour Incidents	4	0	1	1	1
Surveillance visits by staff to assess odours	452	124	93	73	83
Surveillance visits when staff detected moderate or strong odour	14	4	6	4	3

3.2 SEPA and Scottish Water share with the Council statistics of complaints which are made directly to those bodies. That data for the period 1 March to 15 September 2016 is shown in Appendix 4. There are a total of 26 complaints to either SEPA or Scottish Water during that period. Members are asked to note that a number of these may be duplicated where the customer have reported a smell occurrence to more than one body.

Assessment Programme Results

3.3 The Council's monitoring and assessment programme to assess Scottish Water's Seafield WWTW OIP commenced on 1 June 2011.

3.4 The table above provides the findings of the programme set out as five comparison periods which can be used to assess the effectiveness of the OIP. They represent the warmer months of the year when residents are most likely to experience odour release.

3.5 The table shows a significant reduction in complaints between 2012 and 2013 this is a result of changes in management practices at the WWTW following approaches by the Council to the WWTW to require Scottish Water to demonstrate how they would avoid significant odour emissions in the future. In 2015 there was an increase in complaints received by the Council, compared with the same periods in 2013 and 2014 but still significantly fewer than in 2012. This increase can be attributed to a major odour incident that resulted in the Council recording 27 complaints in October 2015 alone. If this incident had not occurred then the average number of complaints remains stable across the three years. To date there have been 74 complaints since March 2016, 37 of these relate to complaints regarding a "burning smell" which, after investigation was

attributed to the WWTW. The last two years therefore demonstrate a different pattern in types of complaint with a single significant incident or occurrence each year giving rise to 24 % and 42% of complaints in 2015 and 2016 respectively. While still causing problems in the locality these events present different challenges with regard to possible enforcement action.

Thermal Hydrolysis Plant Shutdown 2015

3.6 The single major odour release recorded in October 2015 related to a shutdown of one of the two Thermal Hydrolysis (TH) plant streams within the WWTW, an essential process to allow for checks to be carried out for insurance purposes. The TH plant has recently been commissioned by Veolia Water and this was the first time that a shutdown had been undertaken. Unforeseen consequences resulted in process bottlenecks upstream which restricted throughput of sludge, giving rise to odorous conditions within the primary settlement tanks.

3.7 As a result of the increased customer complaints, an urgent meeting was convened between Scottish Water, Veolia Water and Council Officials to establish why the effects on the local community had been unforeseen, and to obtain assurances that robust risk assessments and an action plan designed to prevent a recurrence, would be presented to the Council prior to the next shutdown - due to commence in November 2015. As a result of that meeting and at the request of Council officials, Veolia Water furnished the Council with a detailed report (Appendix 1) relating to the TH plant shutdown incident, including lessons learned and a summary of improvements to be implemented to avoid a repeat of the problems at the next planned shutdown in November 2015.

3.8 On 12 November 2015, Council officials were provided with a presentation by the WWTW general manager on risk assessments that had been carried out following the initial incident, designed to ensure that there was no repeat of the initial issues that arose from the first TH plant shutdown.

3.9 A second TH plant shutdown commenced on 16 November 2015 and followed procedures agreed at the meeting of 12 November. The Council recorded no complaints during the shutdown period.

3.10 As a consequence of the damaging impact to local residents throughout the month of October 2015, the Council formalised its position by writing to Veolia Water's Director of PFIs to express disappointment and concerns relating to the increased odour complaints recorded throughout October 2015 (Appendix 2).

Burning Smell 2016

3.11 In mid-April 2016, there was an increase in complaints to the Council from local residents relating to a new odour affecting the Leith Links area, variously described as a burning smell, similar to burning tyres or electric cable.

3.12 A number of local residents informed the Council that they were of the opinion that the odour was emanating from the area where the TH Plant is sited within the WWTW. This was investigated however, as the odour was not typical of that released by WWTWs, Seafield WWTW was not considered to be the only possible source of such smells. Other possible sources in the Leith area were investigated by Council staff, including reports of waste carpet burning at a camp at the very west end of Portobello beach, and the burning of electric cables and a burnt out car immediately outside the western boundary of the WWTW.

3.13 Despite extensive visits and investigations it proved very difficult to isolate the source of the odour. This was subsequently explained as being due to the nature of the compounds present in the smells. It has been reported by Odournet, (environmental odour management consultants contracted by the WWTW operators to help investigate the burning smell) that the nature of the compounds is such that they only give rise to the burning smell at very low concentrations and are not detectable at higher concentrations as would have been the case at the WWTW. SEPA were made aware of the matter on the 18 May 2016 as a precautionary measure in case the odour was arising on premises, or due to a process, regulated by them.

3.14 Complaints continued to be received and Council staff carried out repeated monitoring visits in response. On 4 June 2016 the source of the smell was finally traced by a Council monitoring officer to an area of the WWTW regulated by SEPA. SEPA notified the Council that one of its officers had attended the Leith Links area on 6 June 2016 and had traced the odour to the waste sludge part of the works, and confirmed that it is a process area subject to a SEPA controlled Waste Management Licence (WML).

3.15 The Sewerage Nuisance (Code of Practice) (Scotland) Order 2006 recommends that, if the source of any WWTW odours clearly arise from operations regulated under a WML, SEPA should assume the lead regulatory role and take appropriate action whilst discussing matters with the relevant Local Authority.

3.16 Whilst the Council regulates the general operation of the WWTW, the Thermal Hydrolysis Plant is regulated separately under license by SEPA. Consequently, once the odour was traced to the TH plant SEPA became the lead authority. On 7 June 2016, SEPA officials met with Veolia management and requested that they investigate all possible assets and processes within the WWTW that could be responsible for discharges that could give rise to the odour described. Although

SEPA are the lead agency in this matter in accordance with the Code of Practice the Council continues to liaise with SEPA and the WWTW to agree an action plan.

3.17 At a Seafield Liaison Group meeting on 16 June 2016 attended by officials from Scottish Water, Veolia Water, SEPA and the Council, the details of the investigations were duly discussed and an action plan, with associated risk assessments drawn up by Veolia management and designed to identify the specific source within the WWTW site, was presented (Appendix 3).

3.18 Actions specified in the plan included heat mapping, olfactometry analysis, infra red scanning, thermal imaging and analysis and detailed support to be provided by external consultants (Odournet), with relevant timescales for investigations, procurement of samples and associated analysis.

3.19 The Council in its regulatory capacity has been advised of the contents and conclusions of the draft report, from Odournet to the WWTW. This report will be made public once it has been finalised on behalf of Scottish Water. In this report Odournet indicate that they have identified the likely compound responsible for the smell and it is associated with the regeneration of the siloxane filter; a process used to remove siloxanes from the biogas produced as a by-product of the waste water treatment process. Siloxanes are compounds found in most toiletries and cosmetics. They need to be removed form the biogas as they would damage the equipment in which the biogas is used. Recent discussions with SEPA indicate that they now believe, with a reasonable level of confidence, that the source is the regeneration cycle on the siloxane filters. SEPA have advised the Council that the reason why regeneration of the filters is causing the burning smell is still being investigated.

3.20 The fact that the regeneration cycle is now being carried out at times which are likely to reduce the impact on the local community and the significant reduction of complaints since mid-June provides strong circumstantial evidence that the source has been identified and work is ongoing to resolve the problem.

3.21 At a Stakeholders' meeting on 30 September Veolia advised that they believed that the filter media that removes the siloxanes from the biogas did not have the lifespan that they were first advised and that they were in the process of changing the filter media. Following this, they would require Odournet to return to the site to resample and establish that the new filter media has fixed the problem. They also intend to have a shorter period of use for the replacement filter media, and an increased monitoring regime. The Council has been liaising with Health Protection Scotland (HPS), the Public Analyst and NHS Lothian regarding a draft Health Impact Risk Assessment report compiled by Odournet and we are currently awaiting formal responses. SEPA are currently reviewing the same report and are consulting with their own internal modelling experts and HPS.

Code of Practice Review

3.22 Following discussions with local elected members, Leith Links Residents Association representatives, Professor Robert Jackson and Council officials. the Council agreed to make representations to the Scottish Government seeking a review of the Sewerage Nuisance (Code of Practice) (Scotland) Order 2006 and the section of the Water Services etc. (Scotland) Act 2005 that provides enforcement powers to Local Authorities and accordingly, a letter was sent to the relevant minister requesting a meeting. This meeting took place with representatives of the Scottish Government on 31 August 2015, and this resulted in an odour control workshop being organised to discuss the Code of Practice.

3.23 On 4 August 2016, Council officials were invited to a meeting with Dr Mark Broomfield, a consultant with Ricardo Energy and Environment, who has been commissioned by the Scottish Government to carry out a project aimed at developing focused, practical guidance on control of odours at WWTWs. It is understood that they are currently looking at five WWTWs as case studies, of which one is Seafield. Discussions have commenced on the Council's experience with the current Code of Practice, including pitfalls and problems faced by both operators and regulators.

3.24 The odour control workshop was held on 25 August 2016 at the University of West of Scotland, Paisley which was attended by officials from both SEPA and the Council, at which the content of the Code of Practice was explored. A Council officer outlined all of the concerns that have been expressed by the community about the Code of Practice and the organisers agreed to relate those concerns to the Scottish Government. It was agreed at the Stakeholder's meeting held on the 30 September 2016 the Council would write to the Scottish Government seeking clarification on how the review will involve local communities and a timescale for its completion.

Measures of success

4.1 A decrease in the number of major odour emission events from Seafield and a reduction in complaints from the local community.

4.2 That implementation of the Scottish Water Odour Improvement Plan, allied to improvements in operational management, results in minimisation of odour as required by the Sewerage Nuisance (Code of Practice) (Scotland) Order 2006.

Financial impact

5.1 The cost of continuing to operate the current odour assessment and monitoring programme can be met from existing budgets.

Risk, policy, compliance and governance impact

6.1 Compliance with the Water Services etc. (Scotland) Act 2006 and the associated Sewerage Nuisance (Code of Practice) (Scotland) Order 2006, and demonstration of compliance with the Odour Improvement Plan.

Equalities impact

7.1 This report proposes no changes to current policies or procedures, and as such a full impact assessment is not required. The contents have no relevance to the public sector Equality Duty of the Equality Act 2010.

Sustainability impact

8.1 Scottish Water's Odour Improvement Plan is intended to reduce odour output from Seafield WWTW to a level which will not constitute a sewerage nuisance, in accordance with the Sewerage Nuisance (Code of Practice) (Scotland) Order 2006.

Consultation and engagement

9.1 Community representatives, local MSPs and the Council are members of the Seafield Stakeholder Liaison Group, which meets periodically with Scottish Water and Veolia Water to discuss the Council's role as regulator, actions proposed by Scottish Water and Veolia Water to minimise odour emissions and any other issues relating to the impact of the works on the local community.

Background reading/external references

Seafield Waste Water Treatment Works- Monitoring of Scottish Water Odour Improvement Plan- June 2015

Seafield Waste Water Treatment Works-Monitoring of Scottish Water Odour Improvement Plan- August 2014

Seafield Waste Water Treatment Works - Monitoring of Scottish Water Odour Improvement Plan - November 2012

Seafield Waste Water Treatment Works - Monitoring of Scottish Water Odour Improvement Plan - September 2012

Seafield Waste Water Treatment Works - Odour Improvement Plan Update - June 2012

Seafield Waste Water Treatment Works - Odour Improvement Plan Update - November 2011

Seafield Waste Water Treatment Works - Odour Improvement Plan Update November 2010

Seafield Waste Water Treatment Works - Odour Improvement Plan Update - November 2009

Seafield Waste Water Treatment Works - Odour Improvement Plan Update May 2008

Paul Lawrence

Executive Director of Place

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Links

Coalition pledges	P51 – Investigate the possible introduction of low emissions zones
Council priorities	CP8 – Maintain and enhance the quality of life in Edinburgh
Single Outcome Agreement	SO2 Edinburgh's citizens experience improved health and wellbeing, with reduced inequalities in health. SO4 Edinburgh's communities are safer and have improved physical and social fabric
Appendices	Appendix 1 –Veolia Water Seafield Incident Report 3 November 2015 Appendix 2 – Letter to Iain Washer, Veolia Water Director of PFIs Appendix 3 - Action plan with associated risk assessments by Veolia management – June 2016 Appendix 4 - Complaint data from SEPA and Scottish Water

Appendix 1

AVSE PFI Contract

Seafield Odour Incident Report (3rd November 2015)

1. Background

Over the month of October 2015 Seafield experienced an increase in the level of customer complaints and contractual odour events than would be anticipated at this time of year. These coincided with the period during and after the planned inspection of the thermal hydrolysis (TH) plant which required a temporary shutdown of 50% of the plant (stream 1). The inspection is required to maintain and validate the insurance cover as well to facilitate essential maintenance consistent with good operational practice, and the requirements of the Odour Management Plan (OMP).

This report reviews the period in question presenting the timeline of events, the key questions that have arisen, the lessons learnt and the necessary improvements in order to provide stakeholders with the required confidence future TH inspections can be completed without a repeat of the problems encountered. The key conclusions of the report are as follows:

1. Future TH inspections can be undertaken in full compliance with the OMP
2. Although the OMP provides the framework for undertaking the TH inspections a more robust process for undertaking this works is required.
3. A revised process which accompanies this report has been developed and will be presented to the City of Edinburgh Council (CEC) on the 12th of November at the Odour Liaison Meeting.
4. The revised process includes a detailed process risk assessment which considers both specific risks and the combined effects of a number of risks when determining if conditions which allow for the inspection process to proceed, are in place.
5. The process includes details of the contingency plan and the trigger levels for each contingency.
6. The process also includes a programme and defined roles and responsibilities.
7. Communication to key stakeholders during inspections through better use of the Odour Review reports is required.
8. The management of the TH solids returns is a significant variable in controlling sludge levels within the primary settlement tanks (PSTs).

2. Timeline

As part of the routine maintenance of the TH process periodic inspections of the individual streams are undertaken to identify and undertake essential works. Each inspection requires one of the two TH streams to be taken out of service leading to a temporary reduction in the capacity of the process from 100 TDS/d to 50 TDS/d. The first of two inspections was planned for the beginning of October with a second planned one week after this initial inspection.

1. In preparation for the initial shutdown primary sludge levels within the PST were reduced to below 1.0 m on the 30th of September. It was recognised that with the short-term reduction in capacity there was a potential for an increase in sludge levels but this could be managed in accordance with the OMP.
2. The stream to be inspected was isolated on the 2nd of October at which point the PST sludge levels had increased to 1.1 m.
3. The site experienced a first flush storm event which followed a period of dry weather, filling all four of the site storm tanks.
4. The inspection was completed on the 9th of October and the stream was re-commissioned. At this point sludge levels had increased to 2.0 m.
5. Following restoration of full capacity in increasing the throughput to reduce sludge levels the performance of the TH silo feed pumps and the pulper feed pumps were identified as bottlenecks which were restricting throughput. This impacted on plant throughput until the 18th of October.
6. A further temporary shutdown was undertaken on the 19th of October to facilitate the replacement of steam lances. This was identified as essential work during the shutdown which could not be completed at the time.
7. Sludge levels reached 2.4 m on the 20th of October.
8. A valve failure on the 29th of October resulted in a further 24 hour shutdown of stream 1 of the TH process.
9. By the 6th of November the PST sludge levels were 1.2 m across the 4 no. operational PSTs with a further reduction to below 1.0 m observed by the 9th.

3. Analysis

In undertaking detailed analysis of the period the following questions have been considered:

1. What increase was anticipated within the PSTs during the shutdown?
2. How does this compare with the actual increase?
3. What explains the difference?
4. Why were sludge levels not reduced quicker than would be anticipated with full capacity available?
5. What is considered to be the maximum sludge levels within the PSTs?
6. What capacity exists to process sludge? Is the theoretical 100 TDS/d TH capacity available?

The following summarises the answers to each question:

1. *What increase was anticipated within the PSTs during the shutdown?* The capacity of 1 no. stream of the TH process is 50 TDS/d which if compared to a target throughput during normal operation of 60 TDS/d results in a sludge accumulation within the process of 10 TDS/d, which across a 7 day period is the equivalent to 70 TDS. At 1.5% this represents 4,667 m^3 of sludge. If retained within the PSTs represents an increase of 0.5 m across the 4 no. operational tanks if all excess sludge is retained within the PSTs. On the basis that excess sludge is a combination of primary and secondary the anticipated increase would be within the range 0.4 – 0.5 m which from a starting point of 1.0 m can be accommodated within the OMP constraints.
2. *How does this compare with the actual increase?* From the 2nd of October until the 9th of October the increase in sludge levels was 0.9 m.
3. *What explains the difference?* The difference can be attributed to the impact of solids returned from the sludge treatment process; specifically the pre-TH centrifuges. This can vary and during periods where they increase the PST sludge levels have also increased and equally, when they have returned to normal operating levels (~10 TDS/d) the levels have reduced. The relationship between sludge returns and the influence of the bottlenecks within the TH process requires further explanation. The bottlenecks can inhibit downstream processes such as the centrifuges exposing them to more frequent start-up / shutdown operations which in turn result in the amount of solids returns to the PSTs increasing. Although these were addressed following the inspection they were also apparent during the shutdown when the TH was operating at reduced capacity.

4. *Why were sludge levels not reduced quicker than would be anticipated with full capacity available?* This also relates to the aforementioned bottlenecks and the impact on the centrifuges which continued the week following the shutdown. The extent of the returns combined with the reduced throughput up to the 18th of October was the reason sludge levels continued to increase. This combined with the allocation of additional resources to the TH centrifuge operation has facilitated greater control over TH returns leading to a reduction in PST sludge levels.
5. *What is considered to be the maximum sludge levels within the PSTs?* The odour management identifies an operating limit of 1.6 m across the PSTs. It is important to note that risk in relation to odour is not only linked to PST sludge levels and that with sludge levels constant the risk level varies and the actions of the operator reflect this. At levels in excess of 1.6 m however, it would the case that the TH would be operated at increased throughput to reduce sludge levels.
6. *What capacity exists to process sludge*? Is the theoretical TH capacity of 100 TDS/d available? The capacity of the TH plant was confirmed as part of the testing prior to takeover. To achieve this requires sludge at a specific DS content as the throughput is ultimately a function of volume in that if the sludge has a lower DS content, the TDS per day value will reduce. The performance of the pre-TH centrifuges are therefore a key factor in determining the throughput which is turn influenced by the characteristics of the feed sludge. Across the period in question the impact of the aforementioned returns, variations in the primary sludge and surplus activated sludge (SAS) levels within the feed and the effects of older sludge has impacted on the quality of the sludge supplied to the centrifuges. The effects of these influences on the centrifuges can be a lower DS content of the de-watered sludge and / or increased downtime due to a greater no. of shutdown / start-up operations, ultimately reducing the throughput of the TH. It should also be noted that whilst the TH plant has the capacity to treat 100 TDS/d this is reliant on the ability to deliver the 100 TDS/d from downstream assets; specifically the picket fence thickeners (PFTs) and belt thickeners. A balance must be struck between reliable long-term performance of these assets and maximising the TH throughput.

4. Lessons Learnt

The following lessons learnt have been identified:

1. The review of the OMP has confirmed the TH inspections can be undertaken within the plan constraints but that a more robust process for undertaking this works is required.

2. Clearer definition of roles and responsibilities in relation to the inspection process are required.
3. Communication with key stakeholder in the lead up to and during the inspection was inadequate. This to some extent relates to the previous point.
4. The inspection planning relied too heavily on the initial assessment of PST sludge levels and did not adequately assess the potential for generate conditions which could lead to odour emissions.
5. The inspection planning did not test a number of key assumptions relied on during and after the inspection. Specifically in relation to the performance of key intermediate pumping stages of the TH process which impact on throughput. Prior to any subsequent inspections all key assumptions must be confirmed.
6. The inspection has identified the requirement for additional contingency measures to ensure PST sludge levels can be managed in accordance with the OMP.
7. The relationship between the solids returns from the TH process and the PST sludge levels has been demonstrated. Controlling these is key to preventing the increases in sludge levels observed during and for some periods, after the shutdown and also in the ability to reduce levels over short periods of time.
8. The planning process did not adequately assess the risk of the inspection process being extended and prepare for this eventuality. Neither did it consider the potential for losing both streams which although this did not occur on this occasion must be considered as a possible risk for the next inspection and any subsequent ones. Future inspection plans must consider the worst-case scenarios and plan accordingly.

5. Improvements

The following improvements have been or are in the process of being implemented ahead of the next planned inspection:

1. The preparation for the inspection must consider both the impact of specific high risks and the combination of a number of lower elevated risks. Whilst it is generally apparent to all parties where high risks are identified; for example high sludge levels within the PSTs, the effects of a combination of elevated risks can be less obvious.

2. It is recognised that the planning of the inspection process can and must be improved before any further inspections. To this end a revised plan to be presented to the CEC at the odour liaison meeting on the 12th of November is included with this paper. The emphasis of the plan is as follows:
    - Clearly identified roles and responsibilities.
    - Identifiable conditions required to allow the shutdown to progress. This relates to key performance parameters such as PST sludge levels, equipment availability and performance and the required spares and supplies required for the duration of the inspection. A key requirement is to confirm the capability exists within a single stream to process 50 TDS/d.
    - A detailed process risk assessment to determine if inspection can proceed with both the impact of critical risks and the combined effects of a no. of elevated risks being potential reasons for delaying.
    - Contingency plans with trigger levels to initiate measures. Contingencies include additional routes to maintain sludge throughput to ensure that process is managed in full accordance with the OMP.
    - A detailed programme covering the inspection planning, the duration of the inspection and the period preceding it.

    The plan will form an appendix to the OMP with no modifications to the plan itself required.
3. The relationship between the quality of the returns from the TH process and PST sludge levels is better understood and the action to allocate additional resources to the pre-TH centrifuge has been implemented. The effect of this have been observed over the period the 30th of October to the 9th of November where sludge levels within the PSTs were reduced by more than 1.0 m.
4. Communication with key stakeholders in the lead up to and during inspections is to be improved. The operator will confirm that the conditions required for the inspection to proceed have been met and that approval to commence from the divisional director is in place, prior to commencing. During the inspection the daily odour review will be utilised to inform stakeholders of any contingencies that have been implemented to manage risk.

Appendix 2

Iain Washer
Director of PFI's (Scotland and Northern Ireland)
iain.washer@veolia.com

Date: Friday 20 November 2015

I write to express concerns and disappointment on behalf of the City of Edinburgh Council, over the significant increase of odour complaints received by the Council in connection with Seafield Waste Water Treatment Works over the month of October 2015.

As a consequence, I requested that officers from my team meet on both 29 October and 12 November 2015 with Veolia Water and Scottish Water representatives, and I understand that the source and cause of these increased complaints has been identified. Through these discussions the Council has been presented with a report which on review highlights what I consider to represent a significant odour incident.

Although the report outlines the lessons learnt from the incident and details improvements that have been, or will be implemented ahead of the next planned Thermal Hydrolysis plant inspection, I feel that it important to convey to you the damaging impact that this incident has created for both the local residents and to the Council in its role as regulator.

As you are aware, the Council has in place a monitoring and assessment programme designed to respond to customer odour complaints, and to carry out routine assessment visits in the Leith Links area.

It is clear that, in discussions with visiting monitoring officers, local residents are extremely concerned that the management and operation of the works have regressed, and that recently expressed opinions that "things were improving" have been diminished.

The local residents look to the Council to ensure that Scottish Water and their PFI partners continue to minimise odour release from the works, and one of the consequences of a major increase in complaints is the community are understandably concerned whether minimisation is in fact being achieved. As a result the expectation on the Council to take enforcement action becomes ever stronger.

Natalie McKail I Environmental Health/Scientific Services, Registration, Bereavement and Local Community Planning Manager I c/o City Chambers, Room 9.53, 253 High Street, EDINBURGH EH1 1YJ I 0131 529 7300 I natalie.mckail@edinburgh.gov.uk

As Council officers are in the community, responding to complaints and supporting the community to understand why odour is evident in their neighbourhood, it is essential that communication between the Council and the water companies is of the highest standard both in terms of transparency and timeliness. I note that the Veolia report into the recent odour incident specifically acknowledges that there were inadequacies in communications and that a number of steps are to be taken to address this issue.

If our monitoring officers are not appraised of any odour risks from operations within the works, then it is not possible for them to offer explanations to residents and others in the community should there be an increase in complaint levels, with a consequential impact on our reputation as a regulator.

I note that a stakeholder notification on further planned thermal hydrolysis works has gone out to the community indicating that the second phase of the planned annual inspection is scheduled to be commenced on Saturday 21 November 2015 taking approximately a week to complete.

In conclusion, please note that whilst we very much hope that the various improvements introduced for the planned shutdown, the process itself and contingency arrangements will prove successful, the City of Edinburgh Council will not hesitate to take enforcement action should evidence demonstrate that a material breach of the relevant Code of Practice is deemed to have occurred.

Yours sincerely

Natalie McKail

Natalie McKail
Environmental Health/Scientific Services, Registration, Bereavement
and Local Community Planning Manager

cc. Mark Keast, Veolia
Craig Carr, Scottish Water

Appendix 3

VEOLIA

Odour Risk Assessment

Odour Risk Assessment for Carrying out an Odour Sensitive Activity

Site:	Date of Assessment:	Date and Duration of Activity:	Assessment Conducted by:
Seafield	17/06/2016	Ongoing	Tracy Byford

Activity:
Siloxane removal media regeneration

Current Site Conditions:
N/A as risk assessment for ongoing work

Current and Expected Weather Conditions:
N/A as risk assessment for ongoing work

Description of Carrying out the Task:
Minimisation of Odour and nuisance to the community during siloxane removal unit, media regeneration.

Alternative Options Considered for Carrying out the Task (if any):
Currently exploring what other options are available for surrounding odour removal during siloxane media regeneration

VEOLIA

Odour Risk Assessment

Scoring System	Likelihood of Causing Odour	Severity of Causing Odour – (Odour Strengths at receptor point)				
		Insignificant "No odour beyond site boundary" No complaints	Minor "Faint Odour" Very few complaints	Moderate "Clearly noticeable odour" Few complaints	Major "Strong Odour" Large no. of complaints,	Repeat of Major "Very Strong Odour" Large no. of complaints, Stakeholders intervention
Risk Rating = Severity x Likelihood:						
Low Risk - 1 – 3	Improbable	1	2	3	4	5
Medium Risk - 4 – 12	Remote	2	4	6	8	10
High Risk - 15 – 25	Occasional	3	6	9	12	15
	Probable	4	8	12	16	20
	Frequent	5	10	15	20	25

Description of Hazard	Initial Risk (risk = severity x likelihood)			Control Measures to be Implemented	Residual Risk (risk = severity x likelihood)		
	Severity	Likelihood	Risk		Severity	Likelihood	Risk
Odour produced from Siloxane removal unit, media regeneration	4	4	16	Monitor on site conditions, weather, wind direction and time of day, and modify operational activities in order to minimise impact to the community	2	4	8
Odour produced from Siloxane removal unit,	4	4	16	Adjust regeneration times during low risk periods to improve the performance of the filter	2	4	8

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Description of Hazard	Initial Risk (risk = severity x likelihood)			Control Measures to be Implemented	Residual Risk (risk = severity x likelihood)		
	Severity	Likelihood	Risk		Severity	Likelihood	Risk
media regeneration							

Conclusion:
The risk of odour impact in the community can be significantly reduced by changing operational practices.

Guidelines:

Potential element to look at when carrying out an odour sensitive task

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Odour management plan procedure when carrying out an odour sensitive task

As part of the odour management plan, follow the following procedure when odour sensitive task is planned to be carried out.	Tick
- Relevant Stakeholders shall be informed.	
- A plan shall be developed to ensure work scheduled releases no or minimum odour.	
- Instructions to all personnel (internal and contractors) shall be delivered during site induction and planning process.	
- All risk assessments, method statements, spares and equipment required shall be made available.	
- Any required equipment to remove residual waste or odorous material shall be made available.	
- A long range weather forecast shall be obtained prior to maintenance.	
- A complete site inspection shall be carried out to check if any other work has interface with the planned work that can cause odour nuisance.	
- If required, a minimum number of odour covers shall be lifted.	
- Operation of odour control unit shall be checked, if relevant.	
- Wind speed and wind direction shall be checked on regularly basis during the maintenance work.	
- Season and time of day shall be considered when scheduling an odour sensitive activity.	
- Site boundary shall be checked for odour or sulphide levels on regularly basis.	
- Assessment shall be carried out to implement further mitigation measures if boundary monitors register high readings or if more than 3 associated odour complaints are received.	
- Appropriate parties shall be informed when work is completed or if plans are changed.	

Appendix 4

Complaints received by SEPA

Monitoring Period	1 March 2016 to 15 September 2016
Complaints received	16
No. days where complaints were received	14
Days where 3+ complaints were received	0

Complaints received by the WWTW

Monitoring Period	1 March 2016 to 15 Septmber2016
Complaints received	10
No. days where complaints were received	10
Days where 3+ complaints were received	0