London Borough of Hounslow

Mogden Sewage Treatment Works

TW Site Inspection

Date of inspection: 23rd February 2017	
Attendees: Mr Steven Maunders (London Borough of Hounslow) and Mr Dimitrios Kalamantis (Thames Water)	
LB Hounslow Observation	**Thames Water Action / Response**
<u>Storm Water Storage Tanks (SWST)</u> **Tank 1A** – Tank empty and flushed clean - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 1B** – Tank empty and flushed clean - approximately 20% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 2A** – Tank empty and flushed clean - approximately 10% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 2B** – Tank empty and flushed clean - approximately 20% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 3A** – Tank empty and flushed clean - Hoppers 1, 2 & 3 drained down to bottom level.	

Tank 3B – Tank empty and flushed clean - Hoppers 1, 2 & 3 drained down to bottom level. **Tanks 4A, 4B, 5A & 5B** which are covered and odour controlled were all empty - unable to gauge condition as lighting system still not working. **Tank 6A** – Tank empty and flushed clean - Hoppers 1, 2 & 3 full of effluent water – requires over-pumping. **Tank 6B** – Tank empty and flushed clean – approximately 20% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 7A** – Tank has recently been returned – whole tank requires further flushing as completely covered with grit/sludge – Hoppers 1 and 2 full, Hopper 3 drained down to bottom level. **Tank 7B** – Tank empty and flushed clean – approximately 15% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 8A** – Tank empty and flushed clean – Hoppers 1 & 3 drained down to bottom level. Hopper 2 full of effluent water – requires over-pumping. **Tank 8B** – Tank empty and flushed clean – approximately 10% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level. **Feed Channel** - The level of effluent in both feed channels was approximately 25% – clean with no local odour.	

Odour Monitors

The odour readouts (H_2S) for all of the monitors, which were providing data at time of inspection:

Monitor 1	0.006	ppm	13:46
Monitor 2	0.004	ppm	10:53
Monitor 3	0.000	ppm	13:46
Monitor 4	0.006	ppm	13:46
Monitor 5	0.004	ppm	13:46
Monitor 6	0.000	ppm	13:46
Monitor 7	0.004	ppm	13:46
Monitor 8	0.009	ppm	13:46
Monitor 9	0.005	ppm	13:46
Monitor 10	0.009	ppm	13:46
Monitor 11	0.005	ppm	13:46
Monitor 12	0.006	ppm	13:46
Monitor 13	0.009	ppm	13:46
Wind Speed	40	mph	
Wind Direction	260°		

Complaints

The Council directly received one complaint by telephone in the preceding week.

On 20th February 2017 a resident of Talbot Road located to the East of the Works phoned to advise of ongoing odour arising from Mogden STWs for the preceding two days. The duty Officer contacted the resident and left a message on voicemail confirming that the issue would be taken up on the weekly inspection and no visit was made on this occasion. The historic odour monitoring trends for OMU 1 located nearest to the complainant showed no significant activity – with levels fluctuating between 0.004 - 0.006ppm at the time of the complaint and for the preceding two days.

The odour log for AM shift on 18th detailed noticeable odour on the road nearest PAS streams resulting in spiking on odour trends – particularly for OMU8 – this trend continued for next few days with frequent spikes above 0.015ppm threshold recorded in odour log. The odour log for the AM shift on 19th February showed that it was cool with sun and partial cloud and all Odour monitors were in use and some spikes were noted "OM8 – 0.015ppm – 1.39-1.52pm. 0.020ppm – 3.42-3.34pm. 0.017ppm – 4.24-4.37pm" and on the PM shift for the same day there were no odour spikes and no odour problems. On 20th February on the AM shift all of the odour monitors were in use and some spikes were again noted and it was initially cool and them warm with sun and partial cloud and all odour monitors were in use "OM8 – 0.022ppm – 07.40 to 08.35. OM8 – 0.020ppm – 07.40 to 1.40 to 1.53pm. OM8 - 0.021ppm – 3.25 to 3.38pm". On the PM shift an monitors were in use and there were no odour spikes on trends detected. The storm tank log recorded at 11.00 on 18th February showed that none of the uncovered tanks were in use, none of the tanks required flushing and only the hoppers of tanks 2a, 8a and 8b required over pumping. The log recorded at 17.30 showed that none of the uncovered tanks were in use, none of the tanks required flushing and none of the hoppers required over pumping. On 19th February the log recorded at 11.00 showed that none of the uncovered tanks were in use, none of the tanks required flushing and none of the hoppers required over pumping. The log recorded at 23.00 showed that none of the tanks required flushing and that the hoppers of tanks 2b, 6a, 6b, 7a, 7b, 8a and 8b required over pumping. The storm tank log recorded at 11.00 on 20th February showed that none of the uncovered tanks were in use, none of the tanks required flushing and that the hoppers of tanks 1a, 2b, 6a, 6b, 7a, 7b, 8a and 8b required over pumping. While some of the hoppers required over pumping it is not possible to identify the source of odour complained of by the resident on this occasion. **The Council directly received one complaint by email in the preceding week.** On 19th February at 08.28 a resident of Gumley Gardens located to the North East of the Works e-mailed the Council to advise " *the smell from Mogden this morning, Sunday 19th February 2017 at 8am is awful"*. The	

area of the works closest to the resident is the storm water tanks and on 19th February the log recorded at 11.00 showed that none of the uncovered tanks were in use, none of the tanks required flushing and none of the hoppers required over pumping and it has not been possible to identify the source of odour complained of on this occasion.

The Council received two complaints by email from MRAG.

On 21st February 2017 a resident of Worple Road located to the east of the works emailed via MRAG to advise of ongoing odour arising from *Mogden STW*s from 18th until the evening of 20th.

The odour log for AM shift on 18th detailed noticeable odour on the road nearest PAS streams resulting in spiking on odour trends – particularly for OMU8 – this trend continued for next few days with frequent spikes above 0.015ppm threshold recorded in odour log. The odour log for the AM shift on 9th February showed that it was cool with sun and partial cloud and all Odour monitors were in use and some spikes were noted "OM8 – 0.015ppm – 1.39-1.52pm. 0.020ppm – 3.42-3.34pm. 0.017ppm – 4.24-4.37pm" and on the PM shift for the same day there were no odour spikes and no odour problems. On 20th February on the AM shift all of the odour monitors were in use and some spikes were again noted and it was initially cool and them warm with sun and partial cloud and all odour monitors were in use "OM8 – 0.022ppm – 07.40 to 08.35. OM8 – 0.020ppm – 07.40 to 1.40 to 1.53pm. OM8 - 0.021ppm – 3.25 to 3.38pm". On the PM shift an monitors were in use and there were no odour spikes on trends detected.

The storm tank log recorded at 11.00 on 18th February showed that none of the uncovered tanks were in use, none of the tanks required flushing and only the hoppers of tanks 2a, 8a and 8b required over pumping. The log recorded at 17.30 showed that none of the uncovered tanks were in use, none of the tanks required flushing and none of the hoppers required over pumping. On 19th February the log recorded at 11.00 showed that none of the uncovered tanks were in use, none of the tanks required flushing and none of the hoppers required over pumping. The log recorded at 23.00 showed that none of the tanks required flushing and that the hoppers of tanks 2b, 6a, 6b, 7a, 7b, 8a and 8b required over pumping. The storm tank log recorded at

11.00 on 20th February showed that none of the uncovered tanks were in use, none of the tanks required flushing and that the hoppers of tanks 1a, 2b, 6a, 6b, 7a, 7b, 8a and 8b required over pumping. While some of the hoppers required over pumping it is not possible to identify the source of odour complained of by the resident on this occasion **On 20th February 2017at 17.13** a resident of Arnold Crescent located to the South West of the site emailed via MRAG to advise of ongoing odour arising from *Mogden STW* for preceding two weeks and which was forwarded on by MRAG on 21st February. The odour log for AM shift on 18th detailed noticeable odour on the road nearest PAS streams resulting in spiking on odour trends – particularly for OMU8 – this trend continued for next few days with frequent spikes above 0.015ppm threshold recorded in odour log. The odour log for the AM shift on 9th February showed that it was cool with sun and partial cloud and all Odour monitors were in use and some spikes were noted "OM8 – 0.015ppm – 1.39-1.52pm. 0.020ppm – 3.42-3.34pm. 0.017ppm – 4.24-4.37pm" and on the PM shift for the same day there were no odour spikes and no odour problems. On 20th February on the AM shift all of the odour monitors were in use and some spikes were again noted and it was initially cool and them warm with sun and partial cloud and all odour monitors were in use "OM8 – 0.022ppm – 07.40 to 08.35. OM8 – 0.020ppm – 07.40 to 1.40 to 1.53pm. OM8 - 0.021ppm – 3.25 to 3.38pm". On the PM shift an monitors were in use and there were no odour spikes on trends detected. As Arnold Crescent is close to the digesters, the digester log for 20th February taken at 16.30 showed that there was no foam in the sludge seals, there was no spillage of sludge around the annular seals of the digesters and the pressure relief valves on the top of the digesters were not releasing gas. The logs taken on 19th February at 08.30 showed that sludge was spilling over the coping stones of digesters 11,14 and 18and on the log recorded at 18.30 showed that there was no foam in the sludge seals, there was no spillage of sludge around the annular seals of the digesters and the pressure relief valves on the top of the digesters were not releasing gas. On 18th February log recorded at 09.00 showed that showed that there was no foam in the sludge seals, there was no spillage of sludge around the annular seals of the digesters and the pressure relief valves on the top of the	

digesters were not releasing gas. The log recorded at 19.00 showed that there were no problems with the digesters. Apart from the issue with the digesters on the morning of 19th February it has not been possible to identify the source of odour complained of and the resident has not provided dates and times over the previous two weeks when odour was problem it has not been possible to investigate this complaint further.

Thames Water controller advised that they had received two direct complaints in the previous week.

Odour Log (Thames) - Photocopies of log entries taken:

Thursday 16th February 2017:

AM – Cool with cloud and partial sun.

All OMU's in use.

Observations: "Odour Monitor No.6 spiked at 12:26 but < 15 mins duration (max 0.021ppm)".

Actions: None noted.

PM – Cool.

All OMU's in use.

Observations: "Monitor 5 – one spike 0.022ppm duration of spike was less than 15 minutes. No odour problems".

Actions: None noted**.**

Friday 17th February 2017:

AM – Cool with cloud and partial sun.

All OMU's in use.

Observations: "Two spikes from Monitor No.8 – 1010 max 0.031ppm but < 15 mins duration then 1110 – 1135 max 0.020ppm." **Actions:** "Area checked in vicinity of OM No.8 but nothing detected/found." **PM** – None noted. All OMU's in use. **Observations:** "No odour spikes. No odour problems". **Actions:** None noted. **<u>Saturday 18h February 2017:</u>** **AM** – Cool with sun and light cloud. All OMU's in use. **Observations:** "Road by PAS streams very smelly. OM – 1 to 5 – no spikes. 6-13 - no spikes". **Actions:** None noted. **PM** – None noted. All OMU's in use. **Observations:** "Monitor 8 spiked once. No odour problems". **Actions:** None noted. **<u>Sunday 19th February 2017:</u>** **AM** – Cool with sun and partial cloud.	

All OMU's in use. **Observations:** "OM8 – 0.015ppm – 1.39-1.52pm. 0.020ppm – 3.42-3.34pm. 0.017ppm – 4.24-4.37pm". **Actions:** None noted. **PM** – None noted. All OMU's in use. **Observations:** "No odour spikes. No odour problems". **Actions:** None noted. **<u>Monday 20th February 2017:</u>** **AM** – Cool/Warm with sun and partial cloud. OMU - All OMU's in use. **Observations:** ""OM8 – 0.022ppm – 07.40 to 08.35. OM8 – 0.020ppm – 07.40 to 1.40 to 1.53pm. OM8 - 0.021ppm – 3.25 to 3.38pm". **Actions:** "Reported." **PM** – Cool. All OMU's in use. **Observations:** "No odour spikes on trends." **Actions:** None noted. **<u>Tuesday 21st February 2017:</u>** **AM** – None noted.	

All OMU's in use. **Observations:** "No spikes/no odour." **Actions:** None noted. **PM** – Cool with heavy cloud and partial sun. All OMU's in use. **Observations:** "Odour monitor No.8 spiked at 0109 but < 15 mins duration & max 0.015ppm." **Actions:** None noted. **<u>Wednesday 22nd February 2017:</u>** **AM** – None noted. All OMU's in use. **Observations:** "OM – 1 to 5 – 0 spikes. 6-13 - OM8 – 0.021ppm – 02.39 to 02.51pm. OM8 – 0.016ppm – 12.54 to 1.06pm." **Actions:** None noted. **PM** – Cool with sun, heavy cloud and rain. All OMU's in use. **Observations:** "No odour issues discovered or reported, no spikes on trends." **Actions:** None noted.	

Sludge Dip Records

Date	West PSTs 1	West PSTs 2	West PSTs 3	West Total	East PSTs	Grand Total
	All units in m^3					
OMP limit	**500**					
17/02/17	0	1842	0	1842	11661	13503
20/02/17	0	3486	0	3486	16002	19488
22/02/17	0	3113	0	3113	15829	18942

The sludge stock levels for the West side circular primary settlement tank 1 were **compliant** with the OMP trigger level (500m^3) for all dates on which data has been provided. There are no limits for the East side primary settlement tanks as these are covered and odour controlled.

Thames is required by the terms of the abatement notice agreed in 2005 to notify LBH on the next working day of any such exceedance and notify LBH within three working days of any appropriate remedial measure taken within three days.

Sludge Screening House

Shutter doors closed at time of inspection – no local odours – additionally one mobile screeners in use (located on road between Digesters and Sludge Screening House) transferring existing stocks between tanks – two odour suppression units in use alongside screener – no noticeable localised odour.

Imported Sludge

None for preceding seven days.

Digesters **Digesters 1-4** – Out of use (permanent) – noticeable quantity of water accumulated to the brim of these tanks which is thick with algae – requires draining. **Digester 5** - in use – seal level approx. 3ft below coping stones – seal weak and bubbling. **Digester 6** - in use – seal level approx. 3ft below coping stones – seal weak and bubbling – evidence of dried spill around tank requires cleaning. **Digester 7** - in use – seal level approx. 3ft below coping stones – seal weak and bubbling – evidence of dried spill around tank requires cleaning. Bell height high – requires draw down of biogas. **Digester 8** - in use – seal level approx. 2ft below coping stones – seal weak and bubbling – evidence of dried spill around tank requires cleaning. Bell height high – requires draw down of biogas. **Digester 9** - in use – seal level approx. 3ft below coping stones – good seal. **Digester 10** - in use – seal level approx. 1ft below coping stones – seal weak & bubbling – evidence of dried spill around tank requires cleaning. **Digester 11** - in use – seal level approx. 4ft below coping stones – seal weak and bubbling. **Digester 12** - in use – seal level approx. 3ft below coping stones – seal weak and bubbling. **Digester 13** - out of use – empty and clean – contractor on site undertaking maintenance. **Digester 14** - in use – seal level approx. 2ft below coping stones – seal	

weak and bubbling. Bell height high – requires draw down of biogas. **Digester 15** - in use – seal level approx. 3ft below coping stones – seal weak and bubbling – Bell height high – requires draw down of biogas – ongoing spitting/spill around tank requires cleaning. **Digester 16** - out of use – empty and clean – contractor on site undertaking maintenance. **Digester 17** - in use – seal level approx. 4ft below coping stones – good seal. **Digester 18** - in use – seal level approx. 5ft below coping stones – seal weak and bubbling. **Digester 19** - out of use – empty and clean – contractor on site undertaking maintenance. **Digester 20** - in use – seal level approx. 3ft below coping stones – good seal – Bell height high – requires draw down of biogas There was evidence of anti-foaming agent in use and TW advised that this is applied daily to all of the digesters that are operational. 3x full, 5x partially filled & 5 empty tanks of anti-foaming agent seen positioned throughout area. Installation of "auto-dosing" for anti-foam agent to all digesters operational – currently using 2-3 tanks weekly.	
GENERAL **Final Settlement Tanks East Side of Works** The 8 circular tanks previously used as PSTs are now being used as final tanks (71-78) all are back in service following maintenance works to scrapers. **East Side Screen House** All doors closed.	

1x large open skip by FST's 71-78 – containing general waste with yellow tarpaulin with quantity of ponded water accumulated on top. **Other Skips** 2x full small grit skip on North/East of site by grit house – covered with "heavy duty" yellow tarpaulin – ongoing spill from plant above – with ponded sludge/grit and rag hanging from plant (originally observed on 22/12/16 and unmoved since this time). On the West side there was one large enclosed skip awaiting change over and there were two empty uncovered 8 yard skips. **Pasteurisation Plant** The pasteurisation plant is in service and fully operational. **Section 106 agreement** There have been no breaches of the s106 agreement in the last week. **West side primary settlement tanks (PST)** Rectangular PSTs – no issues Circular PST's 9, 10, 11 & 12 all in use. **West Side Aeration Lanes (Old)** Battery C aeration feed channel approximately 75% obstructed – requires jetting. **New Works (West Side)** Feed Channel for Aeration Lanes 20 - 25 approximately 95% obstructed – requires jetting. Whole of tanks have "thick crust coverage across 100% of tanks and	

spilling onto top of retaining walls (increased and thickened since last inspection and increasingly significant) – Sprinklers in use are not breaking surface. Large quantity of physical detritus in tank that has bypassed screener.

Odour Control Unit (OCU) performance monitoring – (21/02/17)

Plant	Reading (ppm)	Action Level (ppm)	Compliant
Main pumping station outlet	0.005(av)	0.2	Yes
East OCU	0.003(av)	0.05	Yes
West inlet OCU	0.000(av)	0.05	Yes
Sludge reception outlet	0,000(av)	0.8	Yes
Thickening plant outlet	0.000(av)	0.6	Yes
Transfer PS outlet	0.000(av)	0.6	Yes
New West inlet (OCU 11)	0.000 (av)	0.5	Yes
OCU 12 (Pasteurisation Plant)	0.002(av)	0.5	Yes