London Borough of Hounslow

Mogden Sewage Treatment Works

TW Site Inspection

Date of inspection: 6th April 2017	
Attendees: Mr Steven Maunders (London Borough of Hounslow) and Mr Dimitrios Kalmantis (Thames Water)	
LB Hounslow Observation	**Thames Water Action / Response**
<u>Storm Water Storage Tanks (SWST)</u> **Tank 1A** – Tank empty and flushed clean -- approximately 5% of tank covered by grit and requires further flushing. Hoppers 1, 2 and 3 drained down to bottom level. **Tank 1B** – Tank empty and flushed clean - approximately 20% of tank covered by grit and requires further flushing. Hoppers 1, 2 and 3 drained down to bottom level. **Tank 2A** – Tank empty and flushed clean - approximately 10% of tank covered by grit and requires further flushing. Hoppers 1, 2 and 3 drained down to bottom level. **Tank 2B** – Tank empty and flushed clean - approximately 25% of tank covered by grit and requires further flushing. Hoppers 1, 2 and 3 drained down to 25% from bottom level with effluent. **Tank 3A** – Tank empty and flushed clean. Hopper 1 approximately 75% full of effluent. Hoppers 2 and 3 drained down to bottom level.	

Tank 3B – Tank empty and flushed clean - approximately 30% of tank covered by grit and requires further flushing. Hopper 1 approximately 85% full of effluent. Hoppers 2 & 3 drained down to bottom level. **Tanks 4A, 4B, 5A & 5B** which are covered and odour controlled were all empty and unable to gauge condition as lighting system still not working. **Tank 6A** – Tank empty and flushed clean. Hoppers 1, 2 and 3 drained down to bottom level. **Tank 6B** – Tank empty and flushed clean – Hoppers 1, 2 and 3 drained down to 50% from bottom level with effluent. **Tank 7A** – Tank empty and flushed clean. Hoppers 1, 2 and 3 drained down to 25% from bottom level with effluent. **Tank 7B** – Tank empty and flushed clean and approximately 15% of tank covered by grit and requires further flushing. Hopper 1 drained down to bottom level. Hoppers 2 and 3 approximately 75% full of effluent. **Tank 8A** – Tank empty and flushed clean. Hoppers 1, 2 and 3 approximately 85% full of final effluent requires over-pumping and there is an issue with faulty subterranean non-return valve allowing back-filling of hoppers which requires repair/replacement. **Tank 8B** – Tank empty and flushed clean with approximately 10% of tank covered by grit and requires further flushing. Hoppers 1, 2 and 3 100% full of final effluent and require over-pumping. There is an issue with faulty subterranean non-return valve allowing back-filling of hoppers which requires repair/replacement. **Feed Channel** - The level of effluent in both feed channels was low – - approximately 5% - almost bottomed out in places – some grit and sludge - 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	0.005	ppm	13:50
Monitor 2	0.005	ppm	12:07
Monitor 3	0.000	ppm	13:51
Monitor 4	0.005	ppm	13:51
Monitor 5	0.004	ppm	13:50
Monitor 6	0.006	ppm	13:50
Monitor 7	0.004	ppm	13:49
Monitor 8	0.006	ppm	13:51
Monitor 9	0.006	ppm	13:51
Monitor 10	0.004	ppm	13:48
Monitor 11	0.003	ppm	13:51
Monitor 12	0.006	ppm	13:51
Monitor 13	0.007	ppm	13:51
Wind Speed	5	mph	
Wind Direction	281°		

<u>Complaints</u> **The Council directly received no complaints by telephone in the preceding week.** **The Council directly received two complaints by email in the preceding week.** On 2nd April 2017 a resident of Twickenham emailed at 20:34 to advise: "*Hi there (sic), Just to report again the stench of sewage in Twickenham, TW1. Have just arrived home after being out of area for the day. It stinks outside of sewage and after having left the windows open, my home absolutely stinks of sewage as well. This is disgusting in every way*." The odour log for PM shift on 2nd showed that OM 5 spiked @23:20 to 0.018ppm for 1 hr – area checked no suspicious smells found." The historic odour monitoring trends for OMU 9 located nearest to the complainant showed a spike of 0.023ppm @ 17:30 decreasing to < 0.015ppm @ 20:45. The PM storm log for that evening showed that none of the uncovered storm tanks were in use on that evening, none of the tanks required flushing and only the hoppers of tanks 3b and 6b required over pumping. The digester log for the same evening taken at 19.30 showed that none of the digesters showed any evidence of foam in the sludge seal, no spillage of digested sludge via the annular seals had occurred in any of the digesters and none of the pressure relief valves were releasing gas. It has not been possible on this occasion to identify the source of odour complained of by the resident. On 3rd *April 2017* a resident of Ellerdine Road located to the west of the works emailed at 08:53 to advise*: "There is smell coning (sic) from the Mogden STP. It is quite strong and pungent. Could you please take stock of the situation and act accordingly?"* The odour log for AM shift on 3rd detailed: "OM 1-5 no spikes, OM 6-13 Good except OM8 – 1 spike to 0.019 @ 07:51-08:03." The historic odour monitoring trends for OMU 11, 12 and 13 located nearest to the complainant showed no significant activity with levels of 0.004, 0.007 and 0.006ppm at the time of the complaint. The digester log for the same day taken at 10.10 showed that none of the digesters showed any evidence of foam in the sludge	

seal, no spillage of digested sludge via the annular seals had occurred in any of the digesters and none of the pressure relief valves were releasing gas. It has not been possible on this occasion to identify the source of odour complained of by the resident. **The Council received no complaints by email from MRAG.** ***Thames Water controller advised that they had received no direct complaints in the preceding week.*** On 1st April 2017 at 00:28 an email was received advising of a noise nuisance issue arising from the site. Further investigations determined that this was arising from an array of newly installed blowers that service the aeration lanes where acoustic blanketing and screening was applied as a temporary mitigation measure. Ongoing diagnostics have determined a design fault that is resulting in an issue of resonance occurring in the ducting and pipework associated with the blowers and additional lagging is due to be applied to these to resolve. If this does not prove successful then there is an option to take these off line and reinstate the old blowers until a satisfactory solution can be achieved (although this is an action of last resort).	

Odour Log (Thames) - Photocopies of log entries taken: **Thursday 30th March 2017:** **AM** – Warm with Sun and partial cloud. All OMU's in use. **Observations:** "Monitor No.2 spiked around 11am but <15 mins duration (max 0.022ppm) Cess tanker discharging." **Actions:** None noted. **PM** – Warm. All OMU's in use. **Observations:** "No odour issues on site. No spikes on Trends." **Actions:** None noted**.** **Friday 31st March 2017:** **AM** – Warm with Sun and partial cloud. OMU 3 out - All other OMU's in use. **Observations:** "No.3 odour monitor flat-lining." **Actions**: None noted. **PM** – None noted. All OMU's in use. **Observations:** "No odour spikes on Trends. No odour problems". **Actions:** None noted.	

Saturday 1st April 2017: **AM** – Warm with Sun and partial cloud. OMU 3 out - All other OMU's in use. **Observations:** "Odour Monitor No.3 intermittently flat-lining?" **Actions:** None noted. **PM** – None noted. All OMU's in use. **Observations:** "Odour Monitor No.5 showing odour from 19:46 to 20:44 (0.018). Area inspected, small amount of odour coming from 'B' Aeration. Monitor 8 spiked 05:19-05:31 (0.025). Area checked no odours found." **Actions:** None noted. **Sunday 2nd April 2017:** **AM** – Warm with Sun and partial cloud. OMU 3 out - All other OMU's in use. **Observations:** "Monitor No.3 flat-lining." **Actions:** None noted. **PM** – Cool with Sun and partial cloud. All OMU's in use. **Observations:** "O/M 5 spiked @11:20 to 0.018ppm for 1 hr." **Actions:** "Area checked. No suspicious smells found."	

Monday 3rd April 2017: **AM** – Cool/Warm with sun and partial cloud - Windy. OMU - All OMU's in use. **Observations:** ""OM 1-5 no spikes, OM 6-13 Good except OM8 – 1 spike to 0.019@ 07:51-08:03." **Actions:** None noted. **PM** – Cool with cloud and partial Sun. All OMU's in use. **Observations:** "No odour issues. Nothing to report from Trends." **Actions:** None noted. **Tuesday 4th April 2017:** **AM** – Cool with cloud and rain. All OMU's in use. **Observations:** "OM 1-5 no spikes. 6-13 no spikes." **Actions:** "Odour Monitors being calibrated today." **PM** – Cool with heavy cloud and partial sun. All OMU's in use. **Observations:** "No odour issues discovered or reported, No spikes on Trends." **Actions:** None noted.	

Wednesday 5th April 2017: **AM** – Cool with cloud and partial Sun. All OMU's in use. **Observations:** "No odour issues." **Actions:** None noted. **PM** – Cool with cloud and partial Sun. All OMU's in use. **Observations:** "No odour issues." **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**					
29/03/17	0	2592	0	2592	9946	12538
31/03/17	0	2362	206	2568	10952	13520
03/04/17	0	1884	206	2090	9940	12030

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.

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. 5ft below coping stones – good seal – stones in use. **Digester 7** - in use – seal level approx. 6ft below coping stones – seal weak and bubbling – Bell height high – requires draw down of biogas. **Digester 8** - in use – seal level approx. 5ft below coping stones – seal weak and bubbling. **Digester 9** - in use – seal level approx. 3ft below coping stones – seal weal and bubbling. **Digester 10** - in use – seal level approx. 4ft below coping stones – good seal – stones in use. **Digester 11** - in use – seal level approx. 4ft below coping stones – good seal – stones in use. **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. 3ft below coping stones – good seal – stones in use. **Digester 15** - in use – seal level approx. 3ft below coping stones – good seal. **Digester 16** - out of use – empty and clean – contractor on site undertaking maintenance. **Digester 17** - in use – seal level approx. 3ft below coping stones – good seal – stones in use.	

Digester 18 - in use – seal level approx. 4ft below coping stones – good seal. **Digester 19** - out of use – empty and clean – contractor on site undertaking maintenance. **Digester 20** - in use – seal level approx. 4ft below coping stones – good seal. 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 & 2 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. **Other Skips** 2x full small grit skips on North/East of site by grit house covered with "heavy duty" yellow tarpaulin with an ongoing spill from plant above with ponded sludge/grit and rag hanging from plant. Ongoing maintenance to this plant requiring over-pumping of grit to manual screener located by FST's 71-78 and there were 3 large open skips containing grit located in this area with screening works ongoing during inspection. Tarpaulins were observed by the skips and will be covered	

or removed once screening completed. On the West side there was one large enclosed skip awaiting change over and there was one 8 yard skip containing rag - covered with yellow tarpaulin. Observed large spill of sludge on ground alongside enclosed skip accumulated within depressions in tarmac – requires removal and flushing clean. **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 – large fat deposit on surface of 9 and 11. **West Side Aeration Lanes (Old)** Battery C aeration feed channel approximately 50% obstructed – requires jetting. **New Works (West Side)** Feed Channel for Aeration Lanes 20 - 25 approximately 95% obstructed – requires jetting. Whole of tanks have "fluffy" coverage across 100% of tanks – improved and reduced since last inspection – dried crust on caps of all retaining walls – Sprinklers in use. Large quantity of physical detritus in tank that has bypassed screener.	

Odour Control Unit (OCU) performance monitoring – (06/04/17)

Plant	Reading (ppm)	Action Level (ppm)	Compliant
Main pumping station outlet	0.014(av)	0.2	Yes
East OCU	0.009(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	0.004(av)	0.6	Yes
Transfer PS outlet	0.004(av)	0.6	Yes
New West inlet (OCU 11)	0.04(av)	0.5	Yes
OCU 12 (Pasteurisation Plant)	0.0003(av)	0.5	Yes