



# London Borough of Hounslow

## Mogden Sewage Treatment Works

### TW Site Inspection

**Date of inspection:** 3<sup>rd</sup> October 2018

**Attendees:** Mr I Inman (London Borough of Hounslow) and Mr M Hussain (Thames Water)

<b>LB Hounslow Observation</b>	<b>Thames Water Action / Response</b>
<p><b><u>Storm Water Storage Tanks (SWST)</u></b></p> <p><b>Tank 1A</b> was empty and clean. Hoppers 1 2 &amp; 3 were all approximately &lt;math&gt;\frac{1}{4}&lt;/math&gt; full and required further draining down.</p> <p><b>Tank 1B</b> was empty and clean. Hoppers 1, 2 &amp; 3 were all approximately &lt;math&gt;\frac{1}{4}&lt;/math&gt; full and required further draining down.</p> <p><b>Tank 2A</b> was empty and clean. Hoppers 1, 2 &amp; 3 were all drained down to virtually their bottom levels.</p> <p><b>Tank 2B</b> was empty and clean. Hoppers 1 &amp; 2 were approximately <math>\frac{1}{3}</math> full, hopper 3 was approximately &lt;math&gt;\frac{1}{4}&lt;/math&gt; full. All hoppers required draining down.</p> <p><b>Tank 3A</b> was empty and clean. Hopper 1 was approximately <math>\frac{1}{4}</math> full, hoppers 2 &amp; 3 were approximately &lt;math&gt;\frac{1}{4}&lt;/math&gt; full. All hoppers required draining down.</p> <p><b>Tank 3B</b> was empty and clean. Hopper 1 was <math>\frac{1}{3}</math> full, hopper 2 was approximately &lt;math&gt;\frac{1}{4}&lt;/math&gt; full, both required draining down. Hopper 3 was drained down to virtually the bottom level.</p>	

**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** was empty and clean. Hoppers 1 & 2 were drained down to virtually their bottom levels. Hopper 3 was approximately  $< \frac{1}{4}$  full.

**Tank 6B** was empty and clean. Hoppers 1, 2 & 3 were all at least  $\frac{1}{3}$  full and required draining down.

**Tank 7A** was empty and relatively clean, but had dry grit on the surface of the tank at the hopper end. Hoppers 1, 2 & 3 (shallow hoppers) all contained large quantities of grit and required cleaning up.

**Tank 7B** was empty and relatively clean, but had dry grit on the surface of the tank at the hopper end. Hoppers 1, 2 & 3 (shallow hoppers) all contained large quantities of grit and required cleaning up.

**Tank 8A** was clean and empty. Hopper 1 was  $\frac{1}{2}$  full, hoppers 2 & 3 were both  $\frac{1}{3}$  full. All hoppers required draining down.

**Tank 8B** was clean and empty. Hoppers 1 & 3 were full, hopper 2 was  $\frac{1}{3}$  full. All required draining down.

**Feed Channel** - The level of effluent in both feed channels was very low along its entire length and bottomed out in places where grit was present.

### **Complaints**

The Council received no complaints by telephone in the preceding week.

The Council received no complaints by email in the preceding week.

The Council received no complaints by email from MRAG.

### Odour Monitors

The odour readouts (H<sub>2</sub>S) for all of the monitors, which were providing data at time of inspection: Thursday 3<sup>rd</sup> October 2018 at 13:05.

Monitor 1	0.005	ppm	13.05
Monitor 2	0.000	ppm	13.05
Monitor 3	0.000	ppm	13.05
Monitor 4	0.004	ppm	13.05
Monitor 5	0.007	ppm	13.05
Monitor 6	0.005	ppm	13.05
Monitor 7	0.004	ppm	13.05
Monitor 8	0.005	ppm	13.05
Monitor 9	0.003	ppm	13.05
Monitor 10	0.003	ppm	13.05
Monitor 11	0.000	ppm	13.05
Monitor 12	0.000	ppm	13.05
Monitor 13	0.000	ppm	13.05
Wind Speed	6.000	mph	13.05
Wind Direction	262.000	°	13.05

### Odour Log (Thames)

#### Thursday 27<sup>th</sup> September 2018

##### **AM**

**Temp.** Warm.

**Weather.** Sunny with patchy clouds.

**Odour Readings.** All OMU's in operation.

**Time:** 17:30.

**Observations / Customer Complaint.** No odour issues found or reported, no spikes on trends.

**Operational issues / causes observed.** Blank.

**Actions Taken.** Blank.

##### **PM**

**Temp.** Cool.

**Weather.** Clear night.

**Odour Readings.** All OMU's in operation.

**Time:** 05:30.

**Observations / Customer Complaint.** OM5 (18.17-18.33 0.016ppm)  
(21.03-22.03 0.015ppm) (22.18-22.33 0.019ppm).

**Operational issues / causes observed.** Multiple spikes around monitor 5. Unable to identify any odour or potential source of odour.

**Actions Taken.** Check calibration of monitor.

**Observations / Customer Complaint.** OM3 (03.37-04.37 0.024ppm)  
(5.07-5.22 0.022ppm).

**Operational issues / causes observed.** OCU11 chemical dosing out of range on scrubbers 1 & 2. PST's 22 & 23 being pumped out.

**Actions Taken.** Blank.

### **Friday 28<sup>th</sup> September 2018**

**AM**

**Temp.** Cool.

**Weather.** Cloudy with sunny spells.

**Odour Readings.** All OMU's in operation.

**Time:** 17:30.

**Observations / Customer Complaint.** No odour issues.

**Operational issues / causes observed.** OCU11 chemical dosing still out of range on scrubbers 1 & 2.

**Actions Taken.** Blank.

**PM** Rain.

**Temp.** Cool.

**Weather.** Clear night.

**Odour Readings.** All OMU's in use.

**Time:** 05:30.

**Observations / Customer Complaint.** No odour issues.

**Operational issues / causes observed.** Blank.

**Actions Taken.** Blank.

### **Saturday 29<sup>th</sup> September 2018**

**AM**

**Temp.** Warm.

**Weather.** Sunny with patchy cloud.

**Odour Readings.** All OMU's in operation.

**Time:** 17:30.

**Observations / Customer Complaint.** OM4 spiked 09.13-09.25 max 0.031ppm but <15 mins duration.

**Operational issues / causes observed.** Blank.

**Actions Taken.** Blank.

**Observations / Customer Complaint.** OM5 spiked at 14.40-14.53 max 0.018ppm but <15 mins duration.

**Operational issues / causes observed.** Blank.

**Actions Taken.** Blank.

**PM**

**Temp.** Cool.

**Weather.** Clear night.

**Odour Readings.** All OMU's in operation.

**Time:** 05:30.

**Observations / Customer Complaint.** OM3 0.021ppm 00.50-1.15.

**Operational issues / causes observed.** OCU11 chemical dosing still out of range of scrubbers 1 & 2.

**Actions taken.** Blank.

### **Sunday 30<sup>th</sup> September 2018**

**AM**

**Temp.** Cool.

**Weather.** Cloudy w/sunny spells.

**Odour Readings.** All OMU's in operation.

**Time:** 17:30.

**Observations / Customer Complaint.** No odour issues.

**Operational issues / causes observed.** Blank.

**Actions Taken.** Blank.

**PM**

**Temp.** Cool.

**Weather.** Clear night.

**Odour Readings.** All OMU's in operation.

**Time:** 05:30.

**Observations / Customer Complaint.** No odour issues.

**Operational issues / causes observed.** Blank.

**Actions Taken.** Blank.

### **Monday 1<sup>st</sup> October 2018**

**AM****Temp.** Cool.**Weather.** Sunny with patchy clouds.**Odour Readings.** All OMU's in operation.**Time:** 17:30.**Observations / Customer Complaint.** No odour issues.**Operational issues / causes observed.** Blank.**Actions Taken.** Blank.**PM****Temp.** Cool.**Weather.** Clear night.**Odour Readings.** All OMU's in operation.**Time:** 05:30.**Observations / Customer Complaint.** OM3 spiked at 22.38-23.06  
max 0.020ppm.**Operational issues / causes observed.** Roof apex missing from roof,  
small odour coming from PST's.**Actions Taken.** Blank.**Observations / Customer Complaint.** OM3 spiked at 04.08-04.53  
max 0.023ppm.**Operational issues / causes observed.** Roof apex missing from roof,  
small odour coming from PST's.**Actions Taken.** Blank.**Tuesday 2<sup>nd</sup> October 2018****AM****Temp.** Cool.**Weather.** Sunny with patchy cloud.**Odour Readings.** All OMU's in operation.**Time:** 17:30.**Observations / Customer Complaint.** OM5 0.022ppm 13.47-13.59.**Operational issues / causes observed.** No source found.**Observations / Customer Complaint.** OM3 0.022ppm 11.52-12.04.**Operational issues / causes observed.** OCU11 chemical scrubbers  
still not working properly.**Actions Taken:** Blank.**PM****Temp.** Cool.**Weather.** Overcast night.

**Odour Readings.** All OMU's in operation.

**Time:** 05:30.

**Observations / Customer Complaint.** OM3 multiple spikes:

20.05-20.18 max 0.019ppm but <15 mins duration.

21.35-21.48 max 0.024ppm but <15 mins duration.

23.05-23.18 max 0.021ppm but <15 mins duration.

01.35-02.03 max 0.026ppm, 04.05-04.48 max 0.023ppm.

**Operational issues / causes observed.** OCU11 chemical scrubbers still not working properly.

**Actions Taken:** Reported.

### Wednesday 3<sup>rd</sup> October 2018

#### **AM**

**Temp.** Cool.

**Weather.** Sunny with patchy clouds.

**Odour Readings.** All OMU's in operation.

**Time:** 17:30.

**Observations / Customer Complaint.** OM3 many spikes

0.027ppm 09.50-10.03.

0.018ppm 15.35-15.48.

0.023ppm 17.05-17.18.

**Operational issues / causes observed.** OCU11 chemical scrubbers still not working properly.

**Observations / Customer Complaint.** OM8 0.023ppm 12.35-12.48.

OM9 0.019ppm 17.38-17.42+.

**Operational issues / causes observed.** No source found odour from PAS area.

**Actions taken:** Blank.

#### **PM**

**Temp.** Cool.

**Weather.** Overcast night.

**Odour Readings.** All OMU's in operation.

**Time:** 05:30.

**Observations / Customer Complaint.** OM2 Multiple spikes. 19.48-20.00 max 0.043ppm. 20.15-20.33 max >0.045ppm, both <15 mins duration. 21.33-22.15 max 0.017ppm. 23.03-23.15 max 0.016ppm <15 mins duration.

OM3 04.21-04.33 0.038ppm <15mins duration.

**Operational issues / causes observed.** No odours found or reported,

tankers off-loading throughout the night though.

**Actions Taken:** Blank.



### Sludge Dip Records

Date	West PSTs 1	West PSTs 2	West PSTs 3	West Total	East PSTs	Grand Total
	All units in m <sup>3</sup>					
OMP limit	500					
27/09/18	0	183	0	183	1601	1784
28/09/18	0	180	0	183	1088	1271
01/10/18	0	1050	0	1050	2570	3620

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.

### Imported Sludge

There have been 3 imports of sludge over the last week.

### Sludge Screening House

The large roller shutter door of the Raw Sludge Screening building was closed at the time of the inspection.

### 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** was in use but had a very wet seal that was bubbling off small amounts of gas.

**Digester 6** was in use but had a very wet seal that was bubbling off

small amounts of gas. There was also evidence of a historic spill which needs cleaning.

**Digester 7** was in use but had a very wet seal that was bubbling off small amounts of gas. There was also evidence of a historic spill which needs cleaning.

**Digester 8** was in use but had a very wet seal that was bubbling off small amounts of gas.

**Digester 9** was in use but had a very wet seal that was bubbling off small amounts of gas. There was also evidence of a historic spill which needs cleaning.

**Digester 10** was in use but had a very wet seal that was bubbling off small amounts of gas. There was also evidence of a historic spill which needs cleaning.

**Digester 11** was in use but had a very wet seal that was bubbling off small amounts of gas. The sludge level of digester 11 was very high, approx 2" from the top of the coping stones and the bell was almost at its maximum height.

**Digester 12** was in use but had a very wet seal that was bubbling off small amounts of gas. There was also evidence of a historic spill which needs cleaning.

**Digesters 13 & 14** were both out of service.

**Digester 15** was in use and had a good dry crusty seal.

**Digester 16** was out of service

**Digester 17** was in use and had a good dry crusty seal.

**Digester 18** was in use but had a very wet seal that was bubbling off small amounts of gas.

**Digester 19** was in use but had a very wet seal that was bubbling off small amounts of gas.

**Digester 20** was in use and had a good dry crusty 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.

## **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 tanks were operational at the time of the inspection.

### **Skips**

On the East side there was one 20yds open bulk carrier that was empty.

One 8yds & two 14yds skips that were also empty. And one 8yds skip that was covered which contained rag.

In the area next to STW 1A there was one 8yds & one 12yds skip that both contained general non-inert rubbish. There was also a large open skip, estimated to be approx 20yds, which again contained general inert rubbish.

On the access road leading to the digesters there was one 12yds skip that contained a small amount of rag and was partly covered with a tarpaulin, it was noted that the waste was not-odorous.

On the West side there was two 40yds closed bulk carrier that were both empty.

### **East Side Screen House**

All doors were closed at the time of the inspection. TW advised all screen are in operation but two are currently off line due to reduced

flow into the works.

### **Return Activated Sludge Channel**

The nearside RAS channel (which runs in the ground between FST's 61-64 & 65-67) was relatively free flowing along its length.

### **West side primary settlement tanks (PST)**

Rectangular PSTs are now covered and odour controlled. TW advised no issues.

Circular PSTs 9, 10, 11 & 12 were all in operation at the time of the inspection.

PST's 9, 10 & 11 had fat free surfaces but PST 12 had fatty scum across approx 30% of the tanks surface.

### **Pasteurisation Plant**

The pasteurisation plant is in service. TW advised 7 streams were in operation.

### **Section 106 agreement**

There have been no breaches of the s106 agreement in the last week.

### **West Side Aeration Lanes (New)**

All of the aeration tanks appeared to be free flowing and the surface appeared much improved. However, it was noted that a number of the sprinklers that were in operation were clogged with weed and other matter, thereby impacting on their effectiveness.

Again a quantity of physical detritus in tank is still by-passing the screener.

The mixed liquor feed channel serving aeration lanes 24-25 (E Battery) was clogged on the surface along its entire length with and thick sludge that appeared crusty in places.  
The channel serving aeration lanes 21, 22 & 23 were free flowing.

Odour was noticeable in places along the mixed liquor feed channel and TW advised a tanker crew are regularly on site undertaking clearance of the clogged areas.

**New Inlet Works (West Side)**

No issues appeared evident at the new inlet works.

**Odour Control Unit (OCU) performance monitoring: 03/10/2018**

Plant	Reading (ppm)	Action Level (ppm)	Compliant
Main pumping station inlet	- - -	Unknown	Unknown
Main pumping station outlet	0.00 0.00 0.00	0.2	Yes
East OCU	0.00 0.00 0.00	0.05	Yes
West inlet OCU	0.00 0.00 0.00	0.05	Yes
Sludge reception inlet	-	Unknown	Unknown
Sludge reception outlet	0.00 0.00 0.00	0.8	Yes
Thickening plant inlet	-	Unknown	Unknown
Thickening plant outlet	0.176 0.115 0.023	0.6	Yes

Transfer PS inlet	-	Unknown	Unknown
Transfer PS outlet	0.014 0.013 0.023	0.6	Yes
New West inlet (OCU 11)	0.165 0.147 0.154	0.5	Yes
OCU 12 (Pasteurisation Plant)	0.0003 0.0003 0.0003	0.5	Yes