



Mogden Sewage Treatment Works

TW Site Inspection

Date of inspection: 28th February 2019

Attendees: Mr I Inman (London Borough of Hounslow) and Mr C Varsani (Thames Water)

LB Hounslow Observation

Thames Water Action / Response

Storm Water Storage Tanks (SWST)

Tank 1A was empty but had recently been returned with evidence of sludge across the tanks surface. Hoppers 1, 2 & 3 were all <25% full and required draining down.

Tank 1B was empty and clean. Hoppers 1, 2 & 3 were all full, partly overflowing, and required draining down.

Tank 2A was empty and clean. Hoppers 1, 2 & 3 were all approx 25% full and required drained down.

Tank 2B was empty and clean. Hoppers 1, 2 & 3 were all over approx 40% full and required draining down.

Tank 3A was empty and clean. Hoppers 1, 2 & 3 were all approx 25% full and required draining down.

Tank 3B was empty but had grit across large areas of the tanks surface. Hoppers 1, 2 & 3 were all <25% full and required draining down.

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 returning and was less than <25% full. All three Amajets were in operation.

Tank 6B was empty and clean. Hoppers 1, 2 & 3 were all <25% full and required draining down.

Tank 7A had grit and sludge across large areas of the tanks surface. Hoppers 1, 2 & 3 (shallow hoppers) all contained large quantities of grit & sludge and required cleaning.

Tank 7B had grit and sludge across large areas of the tanks surface. Hoppers 1, 2 & 3 (shallow hoppers) all contained large quantities of grit & sludge and required cleaning.

Tank 8A was returning and was less than <15% full. Only Amajet 1 was in operation.

Tank 8B had just been returned and had sludge and grit across the tanks surface. Hoppers 1, 2 & 3 were all full and required draining down.

Feed Channel - The level of effluent in both feed channels was low along its entire length. However, there was thick scum and sludge on the surface along large parts of the channel that was noticeably odourous.

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 (H₂S) for all of the monitors, which were providing data at time of inspection: Thursday 24th January 2019 at 12:47.

Monitor 1	0.006	ppm	13:45
Monitor 2	0.000	ppm	13:45
Monitor 3	0.000	ppm	13:45
Monitor 4	0.005	ppm	13:45
Monitor 5	0.005	ppm	13:45
Monitor 6	0.000	ppm	13:45
Monitor 7	0.007	ppm	13:45
Monitor 8	0.009	ppm	13:45
Monitor 9	0.003	ppm	13:45
Monitor 10	0.000	ppm	13:45
Monitor 11	0.000	ppm	13:45
Monitor 12	0.000	ppm	13:45
Monitor 13	0.000	ppm	13:45
Wind Speed	13.495	mph	13:45
Wind Direction	244.097	°	13:45

Odour Log (Thames) - Photocopies of log entries taken

Thursday 21st February 2019

DAY SHIFT

Temp. Cool.

Weather. Sunny with patchy clouds.

Odour Readings. All OMU's in operation.

Time: 17:30.

Observations / Customer Complaint. Blank.

Operational issues / causes observed. OM5 04:56-06:05 0.040 max
& 17:06-17:35 0.022 max.

OM3 04:08-08:22 0.034 max.

Actions Taken. No source found.

NIGHT SHIFT**Temp.** Cool.**Weather.** Overcast night.**Odour Readings.** All OMU's in operation.**Time:** 05:30.**Observations / Customer Complaint.** OM3 spiked through the night, area checked no odours found.**Operational issues / causes observed.** Blank.**Actions Taken.** Blank.**Friday 22nd February 2019****DAY SHIFT****Temp.** Cool.**Weather.** Sunny with patchy clouds.**Odour Readings.** All OMU's in operation.**Time:** 17:30.**Observations / Customer Complaint.** OM3 04:11-07:23 slowly tapering down overtime.**Operational issues / causes observed.** No source found.**Actions Taken.** Blank.**NIGHT SHIFT****Temp.** Cold.**Weather.** Overcast night.**Odour Readings.** All OMU's in use.**Time:** 05:30.**Observations / Customer Complaint.** OM3 spiking throughout whole shift. Peaked at 0.038ppm.**Operational issues / causes observed.** Area investigated. No odour detected in the area. Monitor 3 may require calibration. OCU11 running and not discharging odour.**Actions Taken.** Blank.**Saturday 23rd February 2019****DAY SHIFT****Temp.** Warm.**Weather.** Sunny.**Odour Readings.** All OMU's in operation.**Time:** 17:30.

Observations / Customer Complaint. OM3 04:11-10:24 0.037 and tapering down slowly.

Operational issues / causes observed. No source found.

Actions Taken. Blank.

NIGHT SHIFT

Temp. Cold.

Weather. Clear Night.

Odour Readings. All OMU's in operation.

Time: 05:30.

Observations / Customer Complaint. OM5 0.028ppm 18:52-19:37, 0.018ppm 22:07-23:06.

OM9 0.019ppm 23:25-23:40, 0.016ppm 00:09-00:25.

OM4 0.024ppm 00:31-00:48.

OM2 0.025ppm 19:09-19:56.

Operational issues / causes observed. Various odour spikes from across site. Strong smell from PAS on occasions. No spills found and no heat exchange or reactors spilling.

OCU's operational across site.

No odour detected around east inlet.

Actions taken. Blank.

Sunday 24th February 2019

DAY SHIFT

Temp. Cool.

Weather. Sunny w/patchy clouds.

Odour Readings. All OMU's in operation.

Time: 17:30.

Observations / Customer Complaint. OM4 0.019 06:18-06:32.

OM3 03:00-11:40 0.042 and dropping.

Operational issues / causes observed. All OCU's working, no odour source found.

Actions Taken. Blank.

NIGHT SHIFT

Temp. Cold.

Weather. Clear night.

Odour Readings. All OMU's in operation.

Time: 05:30.

Observations / Customer Complaint. OM5 0.017ppm 19:52-20:51.

OM3 multiple spikes throughout shift.

OM10 0.020ppm 03:16-03:33.

Operational issues / causes observed. No odour identified.

Monitor 3 might need calibrating.

Digester bells high at time of spike. Waste gas burner on.

Actions Taken. Blank.

Monday 25th February 2019

DAY SHIFT

Temp. Warm.

Weather. Sunny with patchy clouds.

Odour Readings. All OMU's in operation.

Time: 17:30.

Observations / Customer Complaint. OM3 spiking at start of shift until midday, max 0.045ppm.

Operational issues / causes observed. Odour in the air but unable to pin point location.

Actions Taken. Logged.

NIGHT SHIFT

Temp. Cold.

Weather. Clear night.

Odour Readings. All OMU's in operation.

Time: 05:30.

Observations / Customer Complaint. OM7 0.024ppm 19:18-20:18, 0.022ppm 02:49-03:04.

OM10 0.053ppm 23:32-00:01.

OM9 0.029ppm 00:25-01:55.

OM5 0.028ppm 02:36-03:36.

OM4 0.027ppm 02:47-03:17.

Operational issues / causes observed. Area investigated. Strong smell of odour from PAS. PAS stream 1 sludge spill from heat exchanger overflow. Overflow pipework venting odour. Area being hosed/washed down.

Actions Taken. Blank.

Tuesday 26th February 2019

DAY SHIFT

Temp. Warm.

Weather. Sunny with patchy clouds.

Odour Readings. All OMU's in operation.

Time: 17:30.

Observations / Customer Complaint. OM3 spiking at start of shift until midday, max 0.036ppm.

Operational issues / causes observed. No odours found.

Actions Taken: Blank.

NIGHT SHIFT

Temp. Cool.

Weather. Overcast night.

Odour Readings. All OMU's in operation.

Time: 05:30.

Observations / Customer Complaint. OM3 spiking entire shift.

OM5 0.024 04:51-05:07.

OM13 0.024 18:42-18:57.

OM10 0.022 02:02-03:02.

Operational issues / causes observed. Unable to locate any source. Digester bells high at time of spike. Waste gas burner on.

Actions Taken: Blank.

Wednesday 27th February 2019

DAY SHIFT

Temp. Blank.

Weather. Blank.

Odour Readings. All OMU's in operation.

Time: Blank.

Observations / Customer Complaint. Blank.

Operational issues / causes observed. Blank.

NIGHT SHIFT

Temp. Cool.

Weather. Clear night.

Odour Readings. All OMU's in operation.

Time: 05:30.

Observations / Customer Complaint. OM5 multiple spikes over course of shift.

OM3 0.022 04:03 - 04:32.

OM2 0.027 19:47- spiked.

OM7 0.020 18:35-18:49.

OM8 0.034 18:17-18:33.

Operational issues / causes observed. No sources found.

Actions Taken: Blank.	
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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					
23/02/2019	176	2818	122	3116	3563	6679
25/02/2019	205	2339	0	2544	4084	6628
26/02/2019	0	2296	122	2418	3419	5837

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 9 imports of sludge over the last week.
3 on Thursday 21st, 3 on Tuesday 26th & 3 on Wednesday 27th February.

Raw Sludge Screening House

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

Digesters 1-4 – Out of use (permanent) – a noticeable quantity of water has accumulated to the brim of these tanks which is thick with algae – requires draining.

Thames advised of a long term project currently initiated to bring these units back into service that will require significant investment.

Digesters 5 & 6 were both in use and had wet sloppy seals. There was

evidence that both digesters had been spitting and historic sludge spills that had not been cleaning up.

Digester 7 was in use but had a wet sloppy seal. Although little gas appeared to be bubbling off it was noted that the bell height was very high. There was evidence of an historic sludge spill between digesters 5 & 7 that had not been cleaned up.

Digesters 8, 9, 10 & 11 were all in use but had a very wet seals, although little gas appeared to be bubbling off. It was noted that there was evidence that all four digesters had been spitting as well as historic sludge spills around all four that had not been cleaned up.

Digester 12 was in use and had very wet seals, however little gas appeared to be bubbling off.

Digester 13 was out of service but was due to be bought back on-line within the next 7 days.

Digesters 14, 15 & 16 were all out of service, although digester 15 was filled with sludge.

Digesters 17, 18 & 19 were all in use but had very wet seals, although little gas appeared to be bubbling off.

Digester 20 was in use and had a fairly dry 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.

TW also confirmed that the recent problem with one of the anti-foam pumps was likely to have been the cause of a number of spilt sludge incidents, however this has now been rectified.

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 contained a small amount of non-inert general rubbish.

Also present was one closed 14yd skip and two 8yd skips that both contained general non-inert rubbish.

In the area next to STW 1A there was one 8yd & one 14yd skip that were both full of general non-inert rubbish. There was also a large closed skip, estimated to be approx 20yd, which again contained general non-inert rubbish.

On the access road leading to the digesters there was one 12yds skip that contained a large amount of rag and was partly covered with a tarpaulin, it was noted that the skip was odorous.

On the West side there was two 40yd closed bulk carriers that were both empty.

East Side Screen House

All doors of the building were closed at the time of the inspection. TW advised all screens were in operation.

Return Activated Sludge Channel

The nearside RAS channel (which runs in the ground between FST's 61-64 & 65-67) was 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, all had fat free surfaces.

The new odour suppression system around the perimeter of PST-10 is currently out of operation.

Pasteurisation Plant

The pasteurisation plant is in service. TW advised 4 streams were currently out of 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 had thick scum across their surfaces that appeared to be bubbling and spitting and was thick enough to almost obscure all of the internal dividing walls.

Nearly all of the sprinklers appeared to be in operation.

The entire length of the mixed liquor feed channel serving E-Battery was free flowing and much improved.

No odour was noticeable.

TW advised a tanker crew are regularly on site undertaking clearance of any clogged areas.

New Inlet Works (West Side)

No issues appeared evident at the new inlet works.

Plant	Reading (ppm)	Action Level (ppm)	Compliant
Main pumping station inlet	0.01 0.01 0.01	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	Blank	Unknown	Unknown
Sludge reception outlet	Blank	0.8	Yes
Thickening plant inlet	Blank	Unknown	Unknown
Thickening plant outlet	0.00 0.00 0.00	0.6	Yes
Transfer PS inlet	Blank	Unknown	Unknown
Transfer PS outlet	0.03 0.02 0.03	0.6	Yes
New West inlet (OCU 11)	0.0 0.0 0.0	0.5	Yes
OCU 12 (Pasteurisation Plant)	0.0 0.0 0.0	0.5	Yes