

# 1 Executive Summary

- 1.1.1 Monitoring was undertaken across C1 throughout July 2022 in response to site construction activities. Graphs showing the monitoring data for the month are attached in Appendix A.
- 1.1.2 Monitoring at the Chalfont St Peter (CSP), Chalfont St Giles (CSG), Amersham (AMS), and Little Missenden (LMI) vent shaft sites continued monthly in line with the SSMP's. Chesham Road (CHR) and North Portal (NPTL) both continue to be monitored weekly in response to construction works.
- 1.1.3 Daily monitoring continued at Colne Valley Viaduct (CVV) module 2 with piling works moving into the area between piers 20-24. Monitoring at Modules 4, 3, and 1 of the CVV remained at monthly monitoring frequency. Weekly monitoring began at Module 1 in response to Rotary Bored Piling at piers 10 and 14 from late July.
- 1.1.4 Monitoring across the South Portal and Western Valley Slopes areas continued at a monthly monitoring frequency, with continued surface water monitoring of the drainage systems. Pynesfield monitoring remains at a fortnightly monitoring schedule.
- 1.1.5 The priority monitoring round was completed, with all locations visited. ML044-RC007 was reported as blocked and ML044-RC518 was monitored in its stead while investigations were undertaken.
- 1.1.6 There were no trigger level exceedances during July; this excludes the on-going contamination identified in ML032-RC009, discussed in doc no.: 1MC05-ALJ-EV-NOT-C001-000006.
- 1.1.7 Very low rainfall was recorded throughout the month of July, with only 3 rainfall events recorded by site rain gauges. Reducing water consumption across the site has become a priority, with focus on reducing usage wherever practically possible being messaged to site teams and office staff on a frequent basis. Areas targeted for immediate reduction include reducing dust suppression spraying wherever possible, making use of recycled water for uses such as washing down, wheel washers, dust suppression and fire water tanks, and reducing site office consumption wherever possible.

## Colne Valley Viaduct (CVV)

- 2.1.41 Rotary piling activities continued with the following locations worked on during the month:
- P20
  - P21
  - P22
  - P23
  - P24
- 2.1.42 No support fluid loss was reported during July.
- 2.1.43 At South Embankment, the continuous flight auger (CFA) pile works continued. To date Phase 1 has been completed with 166 piles. In phase 2, 775 CFA piles have been completed and a remaining 246 CFA piles are planned.
- 2.1.44 Cofferdam activities focused on P22, P24, P29, and P40, before the focus shifted towards the HOAC compound at Harefield Lake No. 2.
- 2.1.45 During June, voids were identified within some of the piles already poured along the CVV route. To correct this, remedial work was undertaken at P32 as a test to understand the effectiveness of the methodology. Daily monitoring was undertaken at nearby borehole ML027-RO401 during this test. Nothing noteworthy was identified during the test work to indicate any impact from the works. Similar remedial work will be undertaken next at P36, P37 and P38.
- 2.1.46 In addition, the sewer diversion works at P11 were halted indefinitely, following a slight collapse of the sewer during excavation. Pier 11 will instead be redesigned to avoid diverting the sewer in this location.

## CVV Module 4 (North Embankment to Pier 43)

### Groundwater

- 2.1.47 There were no trigger limit breaches during the month in Module 4.
- 2.1.48 Table 10 compares typical priority borehole ranges for the area with trigger levels and any trigger level exceedances.

Table 10 CVV Module 4 borehole in-field parameter data

	pH	SPC (µS/cm)	Turb (NTU)	REDOX (mV)	DO (mg/L)
<b>Typical Range</b>	6.5 – 8	700 - 875	1 – 25	50 - 300	7 – 11
<b>Trigger limit</b>	5 – 9	1000	100 <sup>5</sup> /250 <sup>6</sup> /500 <sup>7</sup>	-	-
<b>Trigger Level Exceedances</b>	-		-	-	-
<b>Exceeding borehole</b>	-		-	-	-

- 2.1.49 Groundwater levels declined gently in line with seasonal change between 0.1-0.03m.

### Surface water

- 2.1.50 Surface water monitoring at various locations was completed during the month with chemical sampling and gauge board readings collected where possible. Monitoring continued both weekly and monthly. Surface water bodies within Module 4 include Denham Waterski Lake and the River Colne.
- 2.1.51 Table 11 compares typical surface water ranges for the area with trigger levels and any trigger level exceedances.

<sup>5</sup> ML029-CR010, ML029-RO431

<sup>6</sup> ML028-CR018, ML028-CR009

<sup>7</sup> ML028-CR006

2.1.52

Table 11 CVV Module 4 surface water in-field parameter data

	pH	SPC (µS/cm)	Turb (NTU)	REDOX (mV)	DO (mg/L)
<b>Typical Range</b>	7.5 – 8.7	400 - 600	1 – 25	0 - 300	4 – 14
<b>Exceedances</b>	-	-	-	-	-
<b>Exceeding location</b>	-	-	-	-	-

## CVV Module 3 (Pier 42 – P29)

### Groundwater

2.1.53 Table 12 compares typical priority borehole ranges for the area with trigger levels and any trigger level exceedances.

2.1.54 No trigger limit breaches were observed during the month in Module 3.

Table 12 CVV Module 3 borehole in-field parameter data

	pH	SPC (µS/cm)	Turb (NTU)	REDOX (mV)	DO (mg/L)
<b>Typical Range</b>	6.5 – 8	700 - 875	1 – 25	50 - 300	7 – 11
<b>Trigger limit</b>	5 – 9	1000	250	-	-
<b>Trigger Level Exceedances</b>	-	-	-	-	-
<b>Exceeding borehole</b>	-	-	-	-	-

2.1.55 Groundwater levels displayed a gentle decrease in line with seasonal trends. Decreases were approximately 0.15m.

### Surface water

2.1.56 Surface water bodies within Module 3 include the River Colne, Long Pond and Korda Lake.

2.1.57 Table 13 compares typical surface water ranges for the area with trigger levels and any trigger level exceedances.

Table 13 CVV Module 3 surface water in-field parameter data

	pH	SPC ( $\mu\text{S}/\text{cm}$ )	Turb (NTU)	REDOX (mV)	DO (mg/L)
<b>Typical Range</b>	7 – 8.5	500 - 1000	1 – 25	0 - 250	5- 14
<b>Exceedances</b>	-	-	-	-	-
<b>Exceeding location</b>	-	-	-	-	-

## CVV Module 2 (Pier 28 - Pier 13)

### Groundwater

2.1.58 Table 14 compares typical priority borehole ranges for the area with trigger levels and any trigger level exceedances.

2.1.59 There were no trigger limit breaches in Module 2 during the month.

Table 14 CVV Module 2 borehole in-field parameter data

	pH	SPC ( $\mu\text{S}/\text{cm}$ )	Turb (NTU)	REDOX (mV)	DO (mg/L)
<b>Typical Range</b>	6.5 – 8	700 - 875	1 – 25	50 - 300	7 – 11
<b>Trigger limit</b>	5 – 9	1000	250	-	-
<b>Trigger Level Exceedances</b>	-	-	-	-	-
<b>Exceeding borehole</b>	-	-	-	-	-

2.1.60 Groundwater levels have displayed gentle declines in line with seasonal trends by approximately 0.1m.

## Surface water

- 2.1.61 Surface water bodies within Module 2 include Savay Lake and Small Pond, as well as the Grand Union Canal.
- 2.1.62 Table 15 compares typical surface water ranges for the area with trigger levels and any trigger level exceedances.

Table 15 CVW Module 2 surface water in-field parameter data

	pH	SPC (µS/cm)	Turb (NTU)	REDOX (mV)	DO (mg/L)
Typical Range	7 – 9	560-900	1 – 25	0 - 270	5 – 13
Exceedances	-	-	-	-	-
Exceeding location	-	-	-	-	-

## CVV Module 1 (Pier 13 to South Embankment)

### Groundwater

- 2.1.63 Table 16 compares typical borehole ranges for the area with trigger levels and any trigger level exceedances.
- 2.1.64 There were no trigger limit breaches in Module 1 during the month.

Table 16 CVV Module 1 borehole in-field parameter data

	pH	SPC (µS/cm)	Turb (NTU)	REDOX (mV)	DO (mg/L)
Typical Range	6.5 – 8	550 - 1400	1 – 25	-100 - 300	1 – 12
Trigger limit	5 – 9	1500 <sup>8</sup>	500	-	-
Trigger Level Exceedances	-	-	-	-	-
Exceeding borehole	-	-	-	-	-

<sup>8</sup> Due to pre-existing contamination in the module 1 area, EC values are generally higher than anywhere else in Section C1.

2.1.65 Groundwater levels remained relatively stable.

**Surface water**

2.1.66 Surface water bodies within Module 1 include the Gran Union Canal as well as Harefield lake No. 2 and Newyears Green Bourne.

2.1.67 Table 17 compares typical surface water ranges for the area with trigger levels and any trigger level exceedances.

Table 17 CW Module 1 surface water in-field parameter data

	pH	SPC (µS/cm)	Turb (NTU)	REDOX (mV)	DO (mg/L)
<b>Typical Range</b>	7 - 9	650 - 1000	1 - 20	0 - 300	5 - 15
<b>Exceedances</b>	-	-	-	-	-
<b>Exceeding location</b>	-	-	-	-	-