


CP02A - 4.50 to 5.00m Landfill Material




CP02A - 6.00 to 6.50m Landfill Material




CP02A - 7.50 to 8.00m Landfill Material




CP02A - 9.50 to 10.00m Alluvium

# Appendix D – Exploratory Hole Logs

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470104.28 | Northing: | 105703.67 |
| Level: | 10.54mAOD | Depth: | 35.00m |
| Logger: | SN | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP01**

Sheet 1 of 4

| Method, Plant and Crew | | | | | Diameter | | Casing | |
|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 6.00 | 250 | 6.00 | 250 |
| 1.20 | 35.00 | Cable Percussion | Dando 9000 | RD Drilling | 15.00 | 200 | 15.00 | 200 |
| | | | | | 35.00 | 150 | 35.00 | 150 |

| Drilling Progress by Time | | | | |
|---|---|---|---|---|
| Date | Time | Depth (m) | Casing (m) | Water (m) |

Scale: 1:50
Checked By:
Approved By:
Start Date: 02/05/2017
Finish Date: 04/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL Soft light grey / light brown / white slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular flint. | | | | | | 0.00 - 0.40 | B2 | |
| | | | | | | 0.20 | D1 | |
| [MADE GROUND] Soft orange / white slightly sandy CLAY. Sand is fine to coarse. With occasional angular to sub-angular fine to coarse brick and flint gravel. (CAPPING LAYER) | | 0.30 | 10.24 | | | 0.45 | D3 | |
| | | | | | | 0.95 | ES1 | PID 0.95m, 0.0ppm |
| | | | | | | 1.20 - 1.65 | D4 | SPT(S) 1.20m, N=21 (3,4/4,5,6,6) |
| | | | | | | 1.20 - 1.70 | B5 | |
| [MADE GROUND] Soft orange / black / brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse brick and flint. (CAPPING LAYER) | | 1.40 | 9.14 | | | | | |
| | | | | | | 2.50 - 2.95 | D6 | SPT(S) 2.50m, 50 (7,11/50 for 150mm) |
| | | | | | | 2.50 - 3.00 | B7 | |
| | | | | | | 2.70 | ES2 | PID 2.70m, 0.0ppm |
| [MADE GROUND] Soft dark grey slightly gravelly CLAY. Gravel is angular to sub-rounded, fine to coarse flint. Landfill waste noted includes: paper, wood, string, material, plastic, carpet etc. Slight rotten type odour noted. (LANDFILL) | | 3.00 | 7.54 | | | | | |
| | | | | | | 3.50 - 3.95 | D8 | SPT(S) 3.50m, 50 (25,20/50 for 17mm) |
| | | | | | | 3.50 - 4.00 | B9 | |
| | | | | | | 4.20 | D10 | |
| | | | | | | 4.50 | ES3 | SPT(S) 4.50m, 50 (25,35/50 for 36mm) |
| | | | | | | 4.50 - 4.95 | D11 | PID 4.50m, 29.0ppm |
| | | | | | | 4.50 - 5.00 | B12 | |
| | | | | | | 5.50 | D13 | |
| *. . .From 6.00m bgl: Becoming gravelly. gravel is angular to sub-angular, fine to coarse brick and shale. Landfill waste predominantly plastic.* | | | | | | 6.00 - 6.00 | B16 | SPT(C) 6.00m, 0 (75 for 0mm/0 for 0mm) |
| | | | | | | 7.00 | ES4 | PID 7.00m, 5.3ppm |
| | | | | | | | | SPT(C) 7.50m, 0 (50 for 0mm/0 for 0mm) |
| | | | | | | 8.50 | D17 | |
| | | | | | | 9.00 - 9.50 | B19 | SPT(C) 9.00m, N=54 (7,7/12,12,15,15) |
| | | | | | | 10.00 | D20 | |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
Whilst drilling beneath landfill material in chalk, UXO engineer on site.
On completion BH backfilled / installed as per graphical log.

| Chiselling | | |
|---|---|---|
| From (m) | To (m) | Time (mins) |
| 6.00 | 6.00 | 90 |

| Water Added | |
|---|---|
| From (m) | To (m) |
| | |

| Hammer Information | |
|---|---|
| Serial No. | Energy Ratio % |
| RD5 | 68 |

| Groundwater | | | | | |
|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks |
| | | | | | |

Project Number: **A102760**

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470104.28 | Northing: | 105703.67 |
| Level: | 10.54mAOD | Depth: | 35.00m |
| Logger: | SN | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP01**

Sheet 2 of 4

| Method, Plant and Crew | | | | | Diameter | | Casing | |
|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 6.00 | 250 | 6.00 | 250 |
| 1.20 | 35.00 | Cable Percussion | Dando 4000 | RD Drilling | 15.00 | 200 | 15.00 | 200 |
| | | | | | 35.00 | 150 | 35.00 | 150 |

| Drilling Progress by Time | | | | | Scale: 1:50 |
|---|---|---|---|---|---|
| Date | Time | Depth (m) | Casing (m) | Water (m) | Checked By: |
| | | | | | Approved By: |
| | | | | | Start Date: 02/05/2017 |
| | | | | | Finish Date: 04/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Soft dark grey slightly gravelly CLAY. Gravel is angular to sub-rounded, fine to coarse flint. Landfill waste noted includes: paper, wood, string, material, plastic, carpet etc. Slight rotten type odour noted. (LANDFILL) | | 10.30 | 0.24 | | | | | |
| [MADE GROUND] Soft light brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine and medium brick. (CAPPING LAYER) | | | | | | 10.50<br>10.50 - 11.00 | ES5<br>B22 | SPT(C) 10.50m, N=33 (7,7/8,8,8,9)<br>PID 10.50m, 0.4ppm |
| Light brown to black SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint. (RIVER TERRACE DEPOSIT) | | 11.50 | -0.96 | | | 11.50 | D23 | |
| *. . .Between 12.00 and 12.50m bgl: Slightly clayey sandy GRAVEL.* | | | | | | 12.00 - 12.45<br>12.00 - 12.50 | D24<br>B25 | SPT(S) 12.00m, N=24 (2,2/5,5,7,7) |
| Recovered as light brown / white clayey / silty sand and gravel of CHALK. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint and chalk. (UPPER CHALK FORMATION) | | 13.00 | -2.46 | | | 13.00 | D26 | |
| | | | | | | 13.50 - 13.95<br>13.50 - 14.00 | D27<br>B28 | SPT(S) 13.50m, N=16 (2,2/3,5,6,4) |
| *. . .From 14.00m bgl: Fewer flint gravels.* | | | | | | 14.50 | D29 | |
| | | | | | | 15.00<br>15.00 - 15.45<br>15.00 - 15.50 | ES6<br>D30<br>B31 | SPT(S) 15.00m, N=27 (4,5/5,7,7,8) |
| | | | | | | 16.00 | D32 | |
| | | | | | | 16.50 - 16.95<br>16.50 - 17.00 | D33<br>B34 | SPT(S) 16.50m, N=34 (4,5/7,7,9,11) |
| | | | | | | 17.50 | D35 | |
| | | | | | | 18.00 - 18.45<br>18.00 - 19.00 | U-NR36<br>B38 | Ublows=145 Recovery=0% |
| | | | | | | 18.50 | U-NR37 | Ublows=150 Recovery=0% |
| | | | | | | 19.50 - 19.95<br>19.50 - 20.00 | D39<br>B40 | SPT(S) 19.50m, N=46 (7,7/9,11,13,13) |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
Whilst drilling beneath landfill material in chalk, UXO engineer on site.
On completion BH backfilled / installed as per graphical log.

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| | | | | | RDS | 68 |

| Groundwater | | | | | | Project Number |
|---|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks | A102760 |
| 11.50 | 11 | - | 20 | 9.70 | | |

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| | | | |
|---|---|---|---|
| Project: **Brockhampton West** | Location Details | Status | Borehole Number |
| Location: **Harts Farm Way** | Easting: 470104.28 Northing: 105703.67 | DRAFT | **CP01** |
| Client: **Havant Borough Council** | Level: 10.54mAOD Depth: 35.00m | | Sheet 3 of 4 |
| | Logger: SN Type: CP | | |
| | Inclination: 90° | | |

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | | Scale: 1:50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) | Checked By: |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 6.00 | 250 | 6.00 | 250 | | | | | | Approved By: |
| 1.20 | 35.00 | Cable Percussion | Dando 9000 | RD Drilling | 15.00 | 200 | 15.00 | 200 | | | | | | Start Date: 02/05/2017 |
| | | | | | 35.00 | 150 | 35.00 | 150 | | | | | | Finish Date: 04/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| Recovered as light brown / white clayey / silty sand and gravel of CHALK. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint and chalk. (UPPER CHALK FORMATION) | | | | | | 20.50 | D41 | |
| | | | | | | 21.00 | D42 | SPT(S) 21.00m, N=50 (7,7/12,12,13,13) |
| | | | | | | 21.00 - 21.50 | D43 | |
| | | | | | | 22.00 | D44 | |
| | | | | | | 22.50 - 23.00 | B45 | SPT(S) 22.50m, N=54 (7,9/12,12,14,16) |
| | | | | | | 23.50 | D46 | |
| | | | | | | 24.00 - 24.50 | B48 | SPT(S) 24.00m, 50 (25,25/50 for 19mm) |
| | | | | | | 25.00 | D49 | |
| | | | | | | 25.50 - 25.95 | D50 | SPT(S) 25.50m, 50 (9,14/50 for 225mm) |
| | | | | | | 25.50 - 26.00 | B51 | |
| | | | | | | 25.80 - 29.00 | B57 | |
| | | | | | | 26.50 | D52 | |
| | | | | | | 27.00 - 27.50 | B54 | SPT(S) 27.00m, 50 (9,12/50 for 120mm) |
| | | | | | | 28.00 | D55 | |
| | | | | | | 28.50 - 28.95 | D56 | SPT(S) 28.50m, 50 (7,9/50 for 60mm) |
| | | | | | | 29.50 | D58 | |
| | | | | | | 30.00 - 30.45 | D59 | SPT(S) 30.00m, 50 (10,15/50 for 60mm) |
| | | | | | | 30.00 - 30.50 | B60 | |

21 22 23 24 25 26 27 28 29 30

| Observations / Remarks | Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|---|
| Prior to excavation, BH location cleared of services by GPR / EM techniques.<br>Hand excavated inspection pit from GL to 1.20m bgl.<br>Whilst drilling beneath landfill material in chalk, UXO engineer on site.<br>On completion BH backfilled / installed as per graphical log. | From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| | | | | | | RDS | 68 |

| Groundwater | | | | | | Project Number |
|---|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks | **A102760** |
| | | | | | | |

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470104.28 | Northing: | 105703.67 |
| Level: | 10.54mAOD | Depth: | 35.00m |
| Logger: | SN | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP01**

Sheet 4 of 4

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 6.00 | 250 | 6.00 | 250 | | | | | |
| 1.20 | 35.00 | Cable Percussion | Dando 9000 | RD Drilling | 15.00 | 200 | 15.00 | 200 | | | | | |
| | | | | | 35.00 | 150 | 35.00 | 150 | | | | | |

Scale: 1:50
Checked By:
Approved By:
Start Date: 02/05/2017
Finish Date: 04/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| Recovered as light brown / white clayey / silty sand and gravel of CHALK. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint and chalk. (UPPER CHALK FORMATION) | | | | | | 31.00 | D61 | |
| | | | | | | 31.50 - 31.95 | D62 | SPT(S) 31.50m, 50 (25,20/50 for 45mm) |
| | | | | | | 31.50 - 32.00 | B63 | |
| | | | | | | 32.50 | D64 | |
| | | | | | | 33.00 - 33.50 | B67 | SPT(C) 33.00m, 50 (25,20/50 for 23mm) |
| | | | | | | 34.50 - 35.00 | B69 | SPT(S) 34.50m, 50 (25,35/50 for 42mm) |
| EOH at 35.00m - Target Depth Achieved. | | 35.00 | -24.46 | | | | | |

31 32 33 34 35 36 37 38 39 40

| Observations / Remarks |
|---|
| Prior to excavation, BH location cleared of services by GPR / EM techniques.<br>Hand excavated inspection pit from GL to 1.20m bgl.<br>Whilst drilling beneath landfill material in chalk, UXO engineer on site.<br>On completion BH backfilled / installed as per graphical log. |

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| 34.00 | 35.00 | 120 | | | RDS | 68 |

| Groundwater | | | | | |
|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks |
| | | | | | |

Project Number: **A102760**

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West** | Location Details | Status | Borehole Number |
| Location: **Harts Farm Way** | Easting: Northing: | DRAFT | **CP02** |
| Client: **Havant Borough Council** | Level: Depth: 3.00m | | Sheet 1 of 1 |
| | Logger: SN Type: CP | | |
| | Inclination: 90° | | |

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | | Scale: 1:50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) | Checked By: |
| 0.00<br>1.20 | 1.20<br>3.00 | Inspection Pit<br>Cable Percussion | Insulated Tools<br>Dando 4000 | RD Drilling<br>RD Drilling | 2.00 | 250 | 3.00 | 250 | 04/05 | 00:00 | 2.00 | 0.00 | | Approved By: |
| | | | | | | | | | | | | | | Start Date: 04/05/2017 |
| | | | | | | | | | | | | | | Finish Date: 04/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. | | 0.05 | | | | | | |
| [MADE GROUND] ASPHALT | | 0.20 | | | | | | |
| [MADE GROUND] Metal, Asphalt, Rubble | | | | | | | | |
| EOH at 3.00m - Obstruction at 2.00m bgl. Unable to progress BH beyond 3.00m | | 3.00 | | | | | | |

| Observations / Remarks |
|---|
| Prior to excavation, BH location cleared of services by GPR / EM techniques.<br>Hand excavated inspection pit from GL to 1.20m bgl.<br>On completion, BH backfilled with arisings. |

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| 2.00 | 2.30 | 75 | | | | |

| Groundwater | | | | | | Project Number |
|---|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks | **A102760** |
| | | | | | | |

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 469988.77 | Northing: | 105575.68 |
| Level: | 10.79mAOD | Depth: | 35.00m |
| Logger: | SN | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP02A**

Sheet 1 of 4

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | | Scale: 1:50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) | Checked By: |
| 0.00 | 35.00 | Cable Percussion | Dando 4000 | RD Drilling | 7.50 | 250 | 7.50 | 250 | | | | | | Approved By: |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 13.00 | 200 | 13.00 | 200 | | | | | | Start Date: 04/05/2017 |
| | | | | | 35.00 | 150 | 35.00 | 150 | | | | | | Finish Date: 08/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL | | 0.10 | 10.69 | | | | | |
| [MADE GROUND] Soft brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to well rounded, fine to coarse asphalt, brick, concrete and flint. With occasional angular to sub-angular concrete cobbles. (CAPPING LAYER)<br>*. . .At 0.20m bgl: Fragment of flat metal.* | | | | | | 0.20 | D1 | |
| | | | | | | 0.50 - 1.00 | B2 | |
| | | | | | | 0.75 | ES1 | PID 0.75m, 1.9ppm |
| | | | | | | 1.00 - 3.00 | B3 | |
| [MADE GROUND] Soft black / dark brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse concrete, glass, wood, plastic bags, rigid plastic, material & polystyrene. (LANDFILL) | | 2.00 | 8.79 | | | 2.10 | ES2 | PID 2.10m, 5.1ppm |
| | | | | | | 3.50 - 4.00 | B5 | SPT(C) 3.50m, N=24 (4,5/5,5,7,7) |
| | | | | | | 4.50 | ES3 | SPT(C) 4.50m, N=29 (4,4/6,7,8,8) |
| | | | | | | 4.50 - 5.00 | B7 | PID 4.50m, 5.1ppm |
| | | | | | | 5.50 | B8 | |
| | | | | | | 6.00 - 6.50 | B10 | SPT(C) 6.00m, N=16 (5,7/7,5,2,2) |
| | | | | | | 7.00 | D11 | PID 7.00m, 8.4ppm |
| | | | | | | 7.00 | ES4 | |
| | | | | | | 7.50 - 8.00 | B13 | SPT(C) 7.50m, 47 (7,9/47 for 225mm) |
| | | | | | | 8.50 | D14 | |
| | | | | | | | | SPT(C) 9.00m, 0 (50 for 0mm/0 for 0mm) |
| Soft orange brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint. (ALLUVIUM) | | 9.50 | 1.29 | | | 9.50 - 10.00 | B19 | |
| | | | | | | 10.00 | D21 | PID 10.00m, 5.8ppm |
| | | | | | | 10.00 | ES5 | |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
Whilst drilling beneath landfill material in chalk, UXO engineer on site.
On completion BH backfilled / installed as per graphical log.
No groundwater encountered during investigation.

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| 5.80 | 6.20 | 72 | | | RD5 | 68 |

| Groundwater | | | | | | Project Number |
|---|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks | A102760 |
| 9.60 | - | - | 20 | 8.40 | | |

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West** | Location Details | Status | Borehole Number |
| Location: **Harts Farm Way** | Easting: 469988.77 Northing: 105575.68 | DRAFT | **CP02A** |
| Client: **Havant Borough Council** | Level: 10.79mAOD Depth: 35.00m | | Sheet 2 of 4 |
| | Logger: SN Type: CP | | |
| | Inclination: 90° | | |

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) | |
| 0.00 | 35.00 | Cable Percussion | Dando 4000 | RD Drilling | 7.50 | 250 | 7.50 | 250 | | | | | | |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 13.00 | 200 | 13.00 | 200 | | | | | | |
| | | | | | 35.00 | 150 | 35.00 | 150 | | | | | | |

Scale: 1:50
Checked By:
Approved By:
Start Date: 04/05/2017
Finish Date: 08/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| *. . .From 10.00m bgl: becoming less gravelly and lighter in colour.* | | | | | | 10.50 - 10.95<br>10.50 - 11.00 | D20<br>B22 | SPT(S) 10.50m, N=20 (4,4/5,5,5,5) |
| | | | | | | 12.00 - 12.50 | B24 | SPT(C) 12.00m, N=26 (4,5/6,6,7,7) |
| Recovered as cream / white slightly clayey sand & gravel of CHALK. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse chalk and flint. (UPPER CHALK FORMATION) | | 13.00 | -2.21 | | | 13.00 | D25 | PID 13.00m, 0.0ppm |
| | | | | | | 13.50<br>13.50 - 14.00<br>13.50 - 17.00 | D26<br>B27<br>B33 | SPT(S) 13.50m, N=17 (4,4/4,4,4,5) |
| | | | | | | 14.00 | D29 | |
| | | | | | | | | PID 14.50m, 0.0ppm |
| | | | | | | 15.00<br>15.00 - 15.50 | D29<br>B30 | SPT(S) 15.00m, N=22 (4,5/5,5,6,6) |
| | | | | | | 16.00<br>16.00 | D28<br>D31 | PID 16.00m, 0.0ppm |
| | | | | | | 16.50 - 16.95 | D32 | SPT(S) 16.50m, N=27 (1,1/5,7,7,8)<br>PID 16.50m, 0.0ppm |
| | | | | | | | | PID 17.00m, 0.0ppm |
| | | | | | | 17.50 | D34 | |
| | | | | | | 18.00<br>18.00 - 19.50 | U-NR35<br>B37 | Ublows=150 Recovery=0% |
| | | | | | | 19.00 | U-NR36 | Ublows=120 Recovery=0% |
| | | | | | | 19.50 - 19.95<br>19.50 - 20.00 | D38<br>B39 | SPT(S) 19.50m, N=40 (4,7/9,9,9,13)<br>PID 19.50m, 0.0ppm |
| | | | | | | 20.00 | E56 | PID 20.00m, 0.0ppm |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
Whilst drilling beneath landfill material in chalk, UXO engineer on site.
On completion BH backfilled / installed as per graphical log.
No groundwater encountered during investigation.

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| | | | | | RDS | 68 |

| Groundwater | | | | | |
|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks |
| | | | | | |

Project Number
**A102760**

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West** | Location Details | Status | Borehole Number |
| Location: **Harts Farm Way** | Easting: 469988.77 Northing: 105575.68 | DRAFT | **CP02A** |
| Client: **Havant Borough Council** | Level: 10.79mAOD Depth: 35.00m | | Sheet 3 of 4 |
| | Logger: SN Type: CP | | |
| | Inclination: 90° | | |

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | | Scale: 1:50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) | Checked By: |
| 0.00 | 35.00 | Cable Percussion | Dando 4000 | RD Drilling | 7.50 | 250 | 7.50 | 250 | | | | | | Approved By: |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 13.00 | 200 | 13.00 | 200 | | | | | | Start Date: 04/05/2017 |
| | | | | | 35.00 | 150 | 35.00 | 150 | | | | | | Finish Date: 08/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results | |
|---|---|---|---|---|---|---|---|---|---|
| Recovered as cream / white slightly clayey sand & gravel of CHALK. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse chalk and flint. (UPPER CHALK FORMATION) | | | | | | 21.00 - 21.45<br>21.00 - 21.50 | D40<br>B41 | SPT(S) 21.00m, N=24 (3,4/6,6,6,6)<br>PID 21.00m, 0.0ppm | 21 |
| | | | | | | 22.00 | D42 | PID 22.00m, 0.0ppm | 22 |
| | | | | | | 22.50 - 22.95 | U43 | Ublows=150 Recovery=66% | |
| | | | | | | 23.00 | D44 | | 23 |
| | | | | | | 23.50 | D45 | | |
| | | | | | | 24.00<br>24.00 - 25.00 | U-NR46<br>B47 | Ublows=150 Recovery=0% | 24 |
| | | | | | | 25.00 - 25.50 | B49 | SPT(C) 25.00m, 50 (10,10/50 for 30mm) | 25 |
| | | | | | | | | | 26 |
| | | | | | | 26.50 - 26.95 | D50 | SPT(S) 26.50m, 50 (9,12/50 for 150mm) | |
| | | | | | | | | | 27 |
| | | | | | | 27.50 | D58 | | |
| | | | | | | 28.00 - 28.10<br>28.00 - 28.50 | D59<br>B60 | SPT(S) 28.00m, 50 (9,12/50 for 150mm) | 28 |
| | | | | | | 29.00 | D61 | | 29 |
| | | | | | | 29.50 - 30.00 | B63 | SPT(C) 29.50m, 48 (9,15/48 for 156mm) | |
| | | | | | | | | | 30 |

| Observations / Remarks | Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|---|
| Prior to excavation, BH location cleared of services by GPR / EM techniques.<br>Hand excavated inspection pit from GL to 1.20m bgl.<br>Whilst drilling beneath landfill material in chalk, UXO engineer on site.<br>On completion BH backfilled / installed as per graphical log.<br>No groundwater encountered during investigation. | From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| | | | | | | RDS | 68 |

| Groundwater | | | | | | Project Number |
|---|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks | **A102760** |
| | | | | | | |

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 469988.77 | Northing: | 105575.68 |
| Level: | 10.79mAOD | Depth: | 35.00m |
| Logger: | SN | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP02A**

Sheet 4 of 4

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) |
| 0.00 | 35.00 | Cable Percussion | Dando 4000 | RD Drilling | 7.50 | 250 | 7.50 | 250 | | | | | |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 13.00 | 200 | 13.00 | 200 | | | | | |
| | | | | | 35.00 | 150 | 35.00 | 150 | | | | | |

Scale: 1:50
Checked By:
Approved By:
Start Date: 04/05/2017
Finish Date: 08/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| Recovered as cream / white slightly clayey sand & gravel of CHALK. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse chalk and flint. (UPPER CHALK FORMATION) | | | | | | 30.50 | D64 | |
| | | | | | | 31.00 - 31.50 | B66 | SPT(C) 31.00m, 50 (10,14/50 for 120mm) |
| | | | | | | 32.00 | D67 | |
| | | | | | | 32.50 - 33.00 | B69 | SPT(C) 32.50m, 50 (25,20/50 for 14mm) |
| | | | | | | 33.50 | D70 | |
| | | | | | | 34.50 | D72 | |
| EOH at 35.00m - Target Depth Achieved. | | 35.00 | -24.21 | | | 35.00 | D73 | |

31 32 33 34 35 36 37 38 39 40

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
Whilst drilling beneath landfill material in chalk, UXO engineer on site.
On completion BH backfilled / installed as per graphical log.
No groundwater encountered during investigation.

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| | | | | | RDS | 68 |

| Groundwater | | | | | |
|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks |
| | | | | | |

Project Number: **A102760**

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470303.30 | Northing: | 105661.53 |
| Level: | 8.67mAOD | Depth: | 35.00m |
| Logger: | AH | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP03**

Sheet 1 of 4

| Method, Plant and Crew | | | | | Diameter | | Casing | |
|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 10.00 | 250 | 10.00 | 250 |
| 1.20 | 35.00 | Cable Percussion | Dando 4000 | RD Drilling | 14.00 | 200 | 14.00 | 200 |
| | | | | | 35.00 | 150 | 35.00 | 150 |

| Drilling Progress by Time | | | | |
|---|---|---|---|---|
| Date | Time | Depth (m) | Casing (m) | Water (m) |

Scale: 1:50
Checked By:
Approved By:
Start Date: 09/05/2017
Finish Date: 10/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over brown slightly clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint and brick. With frequent roots and rootlets. (TOPSOIL) | | | | | | 0.20<br>0.20 - 0.60 | D1<br>B2 | |
| [MADE GROUND] Orange brown and grey slightly sandy CLAY / SILT. Sad is fine and medium. With rare to occasional angular to sub-rounded fine and medium chalk and flint gravel (CAPPING LAYER) | | 0.60 | 8.07 | | | 0.60 - 1.10 | B3 | |
| [MADE GROUND] Black clayey gravelly SAND. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, brick, concrete and glass. With frequent fragments of metal, plastic and material. (LANDFILL) | | 1.10 | 7.57 | | | 1.00<br>1.20<br>1.20 - 1.70<br>1.40 | ES1<br>D4<br>B6<br>ES2 | PID 1.00m, 0.3ppm<br>SPT(C) 1.20m, N=38 (7,7/8,8,11,11)<br>PID 1.40m, 0.7ppm |
| | | | | | | 2.50 - 3.00 | B8 | SPT(C) 2.50m, 50 (7,9/50 for 225mm) |
| [MADE GROUND] Firm to stiff grey / brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, brick, concrete and chalk. (CAPPING LAYER) | | 3.20 | 5.47 | | | 3.20<br>3.50 - 4.00<br>3.70 | D9<br>B11<br>ES3 | SPT(C) 3.50m, N=54 (7,9/10,11,16,17)<br>PID 3.70m, 0.5ppm |
| [MADE GROUND] Black / grey slightly clayey gravelly SAND. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, brick, concrete and chalk. (CAPPING LAYER) | | 4.50 | 4.17 | | | 4.50 - 5.00<br>4.80 | B13<br>ES4 | SPT(C) 4.50m, N=46 (5,9/10,11,11,14)<br>PID 4.80m, 1.0ppm |
| [MADE GROUND] Firm grey / brown slightly sandy to sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, brick, concrete and chalk. With frequent fragments of metal, glass , plastic and fabric. (LANDFILL)<br><br>*. . .From 7.80m bgl: With rare metal, glass, plastic and fabric.* | | 5.50 | 3.17 | | | 5.50<br>6.00 - 6.50<br>7.00<br>7.50 - 8.00 | D14<br>B16<br>D17<br>B19 | SPT(C) 6.00m, 0 (50 for 0mm/0 for 0mm)<br>SPT(C) 7.50m, N=40 (7,3/7,9,10,14) |
| Grey/ brown slightly clayey slightly sandy GRAVEL. Sand is fine to coarse. Gravel is sub-angular to well rounded, fine to coarse flint. (RIVER TERRACE DEPOSIT) | | 8.20 | 0.47 | ▼ | | 8.20 - 8.50<br>9.00 - 9.50<br>10.00 | B20<br>B22<br>D23 | SPT(C) 9.00m, N=34 (5,7/8,8,9,9) |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
Whilst drilling beneath landfill material in chalk, UXO engineer on site.
On completion BH backfilled / installed as per graphical log.

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| 5.80 | 6.30 | 120 | | | RD5<br>RD | 68 |

| Groundwater | | | | | |
|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks |
| | | | | | |

Project Number: **A102760**

DRAFT

| Project: | **Brockhampton West** |
|---|---|
| Location: | **Harts Farm Way** |
| Client: | **Havant Borough Council** |

| Location Details | | | |
|---|---|---|---|
| Easting: | 470303.30 | Northing: | 105661.53 |
| Level: | 8.67mAOD | Depth: | 35.00m |
| Logger: | AH | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP03**

Sheet 2 of 4

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | | Scale: 1:50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) | Checked By: |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 10.00 | 250 | 10.00 | 250 | | | | | | Approved By: |
| 1.20 | 35.00 | Cable Percussion | Dando 4000 | RD Drilling | 14.00 | 200 | 14.00 | 200 | | | | | | Start Date: 09/05/2017 |
| | | | | | 35.00 | 150 | 35.00 | 150 | | | | | | Finish Date: 10/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| *. . .From 10.50m bgl: With comminuted putty chalk.* | | | | | | 10.50 - 11.00 | B25 | SPT(C) 10.50m, N=33 (4,5/7,7,8,11) |
| | | | | | | 11.50 | D26 | |
| | | | | | | 12.00 - 12.50 | B28 | SPT(C) 12.00m, N=38 (4,8/9,9,10,10) |
| | | | | | | 13.00 | D29 | |
| | | | | | | 13.50 - 14.00 | B31 | SPT(C) 13.50m, N=34 (7,7/8,8,9,9) |
| Recovered as gravelly SILT of CHALK. Gravel is sub-angular, fine to coarse flint and extremely weak to weak cream white chalk. (UPPER CHALK FORMATION) | | 14.00 | -5.33 | | | 14.50 | D32 | |
| | | | | | | 15.00 - 15.45 | D33 | SPT(S) 15.00m, N=20 (4,4/5,5,5,5) |
| | | | | | | 15.00 - 15.50 | B34 | |
| | | | | | | 16.00 | D35 | |
| | | | | | | 16.50 - 16.95 | D36 | SPT(S) 16.50m, N=27 (4,4/6,7,7,7) |
| | | | | | | 16.50 - 17.00 | B37 | |
| | | | | | | 17.00 | D38 | |
| | | | | | | 18.00 - 18.45 | D39 | SPT(S) 18.00m, N=50 (4,4/10,10,15,15) |
| | | | | | | 18.00 - 18.50 | B40 | |
| | | | | | | 19.00 | D41 | |
| | | | | | | 19.50 - 19.95 | D42 | SPT(S) 19.50m, N=42 (4,7/8,11,11,12) |
| | | | | | | 19.50 - 20.00 | B43 | |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
Whilst drilling beneath landfill material in chalk, UXO engineer on site.
On completion BH backfilled / installed as per graphical log.

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| | | | | | RDS<br>RD | 68 |

| Groundwater | | | | | | Project Number |
|---|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks | **A102760** |
| 10.50 | - | - | 20 | 8.50 | | |

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470303.30 | Northing: | 105661.53 |
| Level: | 8.67mAOD | Depth: | 35.00m |
| Logger: | AH | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP03**



| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 10.00 | 250 | 10.00 | 250 | | | | | |
| 1.20 | 35.00 | Cable Percussion | Dando 4000 | RD Drilling | 14.00 | 200 | 14.00 | 200 | | | | | |
| | | | | | 35.00 | 150 | 35.00 | 150 | | | | | |

Scale: 1:50
Checked By:
Approved By:
Start Date: 09/05/2017
Finish Date: 10/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| Recovered as gravelly SILT of CHALK. Gravel is sub-angular, fine to coarse flint and extremely weak to weak cream white chalk. (UPPER CHALK FORMATION) | | | | | | 20.50 | D44 | |
| | | | | | | 21.00 - 21.50 | B46 | SPT(C) 21.00m, N=50 (7,9/12,12,13,13) |
| | | | | | | 22.00 | D47 | |
| | | | | | | 22.50 - 23.00 | B49 | SPT(C) 22.50m, N=28 (4,5/6,7,7,8) |
| | | | | | | 23.50 | D50 | |
| | | | | | | 24.00 | ES5 | SPT(C) 24.00m, N=43 (4,5/9,9,10,15) |
| | | | | | | 24.00 - 24.50 | B52 | PID 24.00m, 0.0ppm |
| | | | | | | 25.00 | D53 | |
| | | | | | | 25.50 - 26.00 | B55 | SPT(C) 25.50m, N=54 (9,9/10,12,15,17) |
| | | | | | | 26.50 | D56 | |
| | | | | | | 27.00 - 27.50 | B58 | SPT(C) 27.00m, 50 (9,10/50 for 225mm) |
| | | | | | | 28.00 | D59 | |
| | | | | | | 28.50 - 29.00 | B61 | SPT(C) 28.50m, 50 (9,12/50 for 105mm) |
| | | | | | | 29.50 | D62 | |
| | | | | | | 30.00 - 32.00 | B65 | SPT(C) 30.00m, 50 (25,50/50 for 75mm) |

DRAFT

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
Whilst drilling beneath landfill material in chalk, UXO engineer on site.
On completion BH backfilled / installed as per graphical log.

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| | | | | | RDS RD | 68 |

| Groundwater | | | | | |
|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks |
| | | | | | |

Project Number: **A102760**

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470303.30 | Northing: | 105661.53 |
| Level: | 8.67mAOD | Depth: | 35.00m |
| Logger: | AH | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP03**

Sheet 4 of 4

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | | Scale: 1:50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) | Checked By: |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 33.00 | 250 | 10.00 | 250 | | | | | | Approved By: |
| 1.20 | 35.00 | Cable Percussion | Dando 9000 | RD Drilling | 34.00 | 200 | 14.00 | 200 | | | | | | Start Date: 09/05/2017 |
| | | | | | 35.00 | 150 | 35.00 | 150 | | | | | | Finish Date: 10/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| Recovered as gravelly SILT of CHALK. Gravel is sub-angular, fine to coarse flint and extremely weak to weak cream white chalk. (UPPER CHALK FORMATION) | | | | | | | | |
| | | | | | | | | SPT(C) 31.50m, 0 (50 for 16mm/0 for 0mm) |
| | | | | | | 33.00 - 33.50 | B67 | SPT(C) 33.00m, 50 (25,20/50 for 27mm) |
| | | | | | | 34.00 | D68 | |
| | | | | | | 34.50 - 35.00 | B70 | SPT(C) 34.50m, 50 (25,32/50 for 40mm) |
| EOH at 35.00m - Target Depth Achieved. | | 35.00 | -26.33 | | | | | |

31 32 33 34 35 36 37 38 39 40

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
Whilst drilling beneath landfill material in chalk, UXO engineer on site.
On completion BH backfilled / installed as per graphical log.

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| 34.00 | 35.00 | 75 | | | RDS RD | 68 |

| Groundwater | | | | | | Project Number |
|---|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks | A102760 |
| | | | | | | |

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470021.09 | Northing: | 105669.84 |
| Level: | 11.52mAOD | Depth: | 9.70m |
| Logger: | SN | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP04**

Sheet 1 of 1

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) |
| 0.00<br>1.20 | 1.20<br>9.70 | Inspection Pit<br>Cable Percussion | Insulated Tools<br>Dando 4000 | RD Drilling<br>RD Drilling | 9.70 | 150 | 9.70 | 150 | | | | | |

Scale: 1:50
Checked By:
Approved By:
Start Date: 11/05/2017
Finish Date: 11/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over soft light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to well rounded, fine to coarse flint. (CAPPING LAYER) | | | | | | 0.20<br>0.20 - 1.00 | D1<br>B2 | |
| | | | | | | 0.50 | ES1 | PID 0.50m, 0.7ppm |
| | | | | | | 1.30<br>1.30 - 2.00 | D3<br>B5 | SPT(C) 1.30m, N=28 (7,7/8,8,8,4) |
| [MADE GROUND] Soft black / white / grey mottled sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular brick and flint. (CAPPING LAYER) | | 2.50 | 9.02 | | | 2.50<br>2.50 - 3.00 | ES2<br>B7 | SPT(C) 2.50m, 0 (50 for 0mm/0 for 0mm)<br>PID 2.50m, 2.5ppm |
| [MADE GROUND] Black slightly clayey SAND & GRAVEL. Sand is fine to coarse. Gravel to sub-rounded, fine to coarse metal, glass, wood and occasional flint. With paper and material. (LANDFILL) | | 3.50 | 8.02 | | | 3.50 - 4.00 | B9 | SPT(C) 3.50m, 50 (9,14/50 for 125mm) |
| | | | | | | 4.50<br>4.50 - 5.00 | ES2<br>B11 | SPT(C) 4.50m, 50 (7,9/50 for 225mm)<br>PID 4.50m, 36.1ppm |
| | | | | | | 5.50 - 6.00 | B13 | SPT(C) 5.50m, N=41 (7,9/9,10,11,11) |
| | | | | | | 6.50 | D14 | |
| | | | | | | 7.00<br>7.00 - 7.50 | ES4<br>B16 | SPT(C) 7.00m, N=31 (4,5/7,7,8,9)<br>PID 7.00m, 57.3ppm |
| | | | | | | 8.00 | D17 | |
| Soft to firm brown silty CLAY. (ALLUVIUM) | | 8.20 | 3.32 | | | 8.20 - 8.65 | U18 | |
| | | | | | | 9.20 | D19 | SPT(S) 9.20m, N=18 (3,3/4,4,5,5) |
| EOH at 9.70m - Target Depth Achieved. | | 9.70 | 1.82 | | | | | |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.

Chiselling

| From (m) | To (m) | Time (mins) |
|---|---|---|
| 2.50 | 2.80 | 60 |

Water Added

| From (m) | To (m) |
|---|---|
| | |

Hammer Information

| Serial No. | Energy Ratio % |
|---|---|
| RD5 | 68 |

Groundwater

| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks |
|---|---|---|---|---|---|
| 6.50 | - | - | 20 | 6.15 | |

Project Number: **A102760**

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470122.58 | Northing: | 105594.66 |
| Level: | 9.56mAOD | Depth: | 11.95m |
| Logger: | AH | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP05**

Sheet 1 of 2

| Method, Plant and Crew | | | | | Diameter | | Casing | | Drilling Progress by Time | | | | | Scale: 1:50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) | Checked By: |
| 0.00<br>1.20 | 1.20<br>11.95 | Inspection Pit<br>Cable Percussion | Insulated Tools<br>Dando 2000 | RD Drilling<br>RD Drilling | 11.95 | 150 | 11.95 | 150 | | | | | | Approved By:<br>Start Date: 08/05/2017<br>Finish Date: 08/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. | | 0.10 | 9.46 | | | | | |
| [MADE GROUND] Soft to firm dark brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse chalk, flint and brick. (CAPPING LAYER) | | | | | | 0.20<br>0.30<br>0.50 - 1.00 | ES1<br>D1<br>B2 | PID 0.20m, 0.0ppm |
| [MADE GROUND] Soft to firm greenish grey slightly sandy to sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine and medium flint and brick. (CAPPING LAYER) | | 1.00 | 8.56 | | | 1.00<br>1.20 - 1.65 | D3<br>U4 | Ublows=40 Recovery=100% |
| | | | | | | 2.00<br>2.00 - 2.45<br>2.00 - 2.50 | ES2<br>D5<br>B6 | SPT(S) 2.00m, N=16 (2,2/3,3,5,7)<br>PID 2.00m, 0.0ppm |
| | | | | | | 3.00<br>3.00 - 3.45 | D7<br>U8 | Ublows=65 Recovery=78% |
| [MADE GROND] Black slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint, polystyrene and metal. With frequent paper and wood fragments. (LANDFILL)<br>*. . .At 5.00m bgl: 10-12mm thick rubber sheet.*<br>*. . .Between 5.00m and 6.50m bgl: Frequent / abundant wood fragments. With rare metal and plastic.* | | 4.00 | 5.56 | | | 4.00 - 4.45<br>4.00 - 4.50<br>4.20 | D9<br>B10<br>ES3 | SPT(S) 4.00m, N=27 (12,10/10,9,7,1)<br>PID 4.20m, 2.0ppm |
| | | | | | | 5.00<br>5.00 - 6.50 | D11<br>B13 | SPT(C) 5.00m, N=36 (6,8/8,10,9,9) |
| | | | | | | 6.00 | ES4 | PID 6.00m, 1.1ppm |
| | | | | | | | | SPT(C) 6.50m, N=9 (2,2/3,3,2,1) |
| | | | | | | 7.00 | D15 | |
| | | | | | | | | SPT(C) 8.00m, N=17 (5,5/4,3,6,4) |
| [MADE GROUND] Black / dark grey clayey sandy GRAVEL. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint. With fragments of wood, metal and plastic. (LANDFILL) | | 9.50 | 0.06 | | | 9.50<br>9.50 - 10.00 | ES5<br>B18 | SPT(C) 9.50m, N=14 (6,5/4,4,2,4)<br>PID 9.50m, 0.3ppm |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| 3.90<br>9.40 | 4.10<br>9.50 | 30<br>45 | | | AR323 | 69 |

| Groundwater | | | | | | Project Number |
|---|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks | A102760 |
| 5.00 | - | - | 15 | 5.50 | | |

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470122.58 | Northing: | 105594.66 |
| Level: | 9.56mAOD | Depth: | 11.95m |
| Logger: | AH | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP05**

Sheet 2 of 2

| Method, Plant and Crew | | | | | Diameter | | Casing | |
|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) |
| 0.00<br>1.20 | 1.20<br>11.95 | Inspection Pit<br>Cable Percussion | Insulated Tools<br>Dando 2000 | RD Drilling<br>RD Drilling | 11.95 | 150 | 11.95 | 150 |

| Drilling Progress by Time | | | | |
|---|---|---|---|---|
| Date | Time | Depth (m) | Casing (m) | Water (m) |
| | | | | |

Scale: 1:50
Checked By:
Approved By:
Start Date: 08/05/2017
Finish Date: 08/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| *. . . At 9.50m bgl: Large piece of metal.* | | | | | | 10.50 | D19 | |
| Recovered as cream / grey white gravelly SILT of CHALK. Gravel is sub-angular to sub-rounded, fine and medium extremely weak chalk. (UPPER CHALK FORMATION) | | 11.50 | -1.94 | | | 11.50 - 11.95 | D20 | SPT(S) 11.50m, N=30 (4,6/7,7,7,9) |
| EOH at 11.95m - Target Depth Achieved. | | 11.95 | -2.39 | | | | | |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.

| Chiselling | | |
|---|---|---|
| From (m) | To (m) | Time (mins) |
| | | |

| Water Added | |
|---|---|
| From (m) | To (m) |
| | |

| Hammer Information | |
|---|---|
| Serial No. | Energy Ratio % |
| AR323 | 69 |

| Groundwater | | | | | |
|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks |
| | | | | | |

Project Number: **A102760**

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470206.36 | Northing: | 105775.84 |
| Level: | 12.40mAOD | Depth: | 11.00m |
| Logger: | SN / AH+SN/ AH | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP06**

Sheet 1 of 2

| Method, Plant and Crew | | | | | Diameter | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 11.00 | 150 |
| 1.20 | 11.00 | Cable Percussion | Dando 4000 | RD Drilling | | |

| Casing | | Drilling Progress by Time | | | | |
|---|---|---|---|---|---|---|
| Depth(m) | Diam (mm) | Date | Time | Depth (m) | Casing (m) | Water (m) |
| 11.00 | 150 | | | | | |

Scale: 1:50
Checked By:
Approved By:
Start Date: 11/05/2017
Finish Date: 11/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over soft light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint and brick. (CAPPING LAYER) | | | | | | 0.20 | D1 | |
| | | | | | | 0.20 - 1.00 | B2 | |
| | | | | | | 0.50 | ES1 | PID 0.50m, 0.1ppm |
| | | | | | | 1.20 | D3 | |
| | | | | | | 1.20 - 1.65 | U4 | |
| | | | | | | 1.70 | D5 | |
| [MADE GROUND] Black / multi-coloured slightly clayey SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse brick, plastic and wood. With pieces of carpet. Foul / rotten type odour noted. (LANDFILL) | | 2.50 | 9.90 | | | 2.50 | ES2 | SPT(C) 2.50m, 50 (7,19/50 for 90mm) |
| | | | | | | 2.50 - 3.00 | B7 | PID 2.50m, 26.3ppm |
| | | | | | | 3.50 - 4.00 | B9 | SPT(C) 3.50m, 0 (50 for 0mm/0 for 0mm) |
| | | | | | | 4.50 - 6.00 | D13 | SPT(C) 4.50m, 0 (50 for 5mm/0 for 0mm) |
| | | | | | | 5.00 | ES3 | PID 5.00m, 7.3ppm |
| | | | | | | | | SPT(C) 5.50m, 0 (50 for 25mm/0 for 0mm) |
| | | | | | | 7.00 | ES4 | SPT(C) 7.00m, 50 (25 for 50mm/50 for 30mm) |
| | | | | | | 7.00 - 7.50 | B14 | PID 7.00m, 4.9ppm |
| | | | | | | 8.50 - 9.00 | B16 | SPT(C) 8.50m, 50 (25,20/50 for 47mm) |
| Recovered as cream white / brown sandy GRAVEL. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint and occasional weak white chalk. (RIVER TERRACE DEPOSIT) | | 9.30 | 3.10 | | | | | SPT(C) 9.50m, 50 (9,12/50 for 30mm) |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.

| Chiselling | | | Water Added | | Hammer Information | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Time (mins) | From (m) | To (m) | Serial No. | Energy Ratio % |
| 4.50 | 6.00 | 60 | | | RD5 | 68 |

| Groundwater | | | | | |
|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks |
| 4.30 | - | - | 20 | 4.05 | |

Project Number: **A102760**

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470206.36 | Northing: | 105775.84 |
| Level: | 12.40mAOD | Depth: | 11.00m |
| Logger: | SN / AH+SN/ AH | Type: | CP |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **CP06**

Sheet 2 of 2

| Method, Plant and Crew | | | | | Diameter | | Casing | |
|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) |
| 0.00<br>1.20 | 1.20<br>11.00 | Inspection Pit<br>Cable Percussion | Insulated Tools<br>Dando 4000 | RD Drilling<br>RD Drilling | 11.00 | 150 | 11.00 | 150 |

| Drilling Progress by Time | | | | |
|---|---|---|---|---|
| Date | Time | Depth (m) | Casing (m) | Water (m) |
| | | | | |

Scale: 1:50
Checked By:
Approved By:
Start Date: 11/05/2017
Finish Date: 11/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| Recovered as cream white / brown sandy GRAVEL. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint and occasional weak white chalk. (RIVER TERRACE DEPOSIT) | | | | | | | | SPT(C) 10.70m, 0 (50 for 0mm/0 for 0mm) |
| EOH at 11.00m - Target Depth Achieved. | | 11.00 | 1.40 | | | | | |

11
12
13
14
15
16
17
18
19
20

DRAFT

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.

| Chiselling | | |
|---|---|---|
| From (m) | To (m) | Time (mins) |
| | | |

| Water Added | |
|---|---|
| From (m) | To (m) |
| | |

| Hammer Information | |
|---|---|
| Serial No. | Energy Ratio % |
| RDS | 68 |

| Groundwater | | | | | |
|---|---|---|---|---|---|
| Strike (m) | Casing (m) | Sealed (m) | Time (min) | Rose To (m) | Remarks |
| | | | | | |

Project Number: **A102760**

| | | | |
|---|---|---|---|
| Project: **Brockhampton West** | Location Details | Status | Pit Number |
| Location: **Harts Farm Way** | Easting: 469964.63 Northing: 105680.10 | DRAFT | **TP01** |
| Client: **Havant Borough Council** | Level: 11.07mAOD Depth: 3.40m | | Sheet 1 of 1 |
| | Logger: SN Type: TP | | |

| Hole Information | | Groundwater | | | | |
|---|---|---|---|---|---|---|
| Pit Dimensions | Orientation: ° | Strike (m) | Rose To (m) | After (mins) | Remarks | Scale: 1:25 |
| 0.60m / 3.00m | Shoring: None | | | | | Checked By: |
| | Stability: Stable | | | | | Approved By: |
| | Plant: 8T Tracked | | | | | Start Date: 09/05/2017 |
| | | | | | | Finish Date: 09/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over firm orange / light brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to well rounded, fine to coarse flint, chalk and sandstone. (TOPSOIL) | | | | | | | | |
| [MADE GROUND] Soft dark brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular to sub-angular flint and brick. (CAPPING LAYER) | | 0.30 | 10.77 | | | 0.30<br>0.30<br>0.30 | B1<br>D1<br>ES1 | PID 0.30m, 0.2ppm |
| | | | | | | 0.70<br>0.70<br>0.70 | B2<br>D2<br>ES2 | PID 0.70m, 0.2ppm |
| [MADE GROUND] Stiff white slightly gravelly CLAY. Gravel is angular to sub-angular, fine to coarse flint and brick. (CAPPING LAYER) | | 0.90 | 10.17 | | | | | |
| | | | | | | 1.10<br>1.10<br>1.10 | B3<br>D3<br>ES3 | PID 1.10m, 0.2ppm |
| [MADE GROUND] Landfill waste. SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse glass, metal, wood. With frequent plastic sheeting, food tins, house hold cleaning products, material, plastic and wires. Slight rotten type odour noted. (LANDFILL)<br>*. . .Between 1.30m and 3.40m bgl: Papers dated 1976.* | | 1.30 | 9.77 | | | | | |
| | | | | | | 1.90<br>1.90<br>1.90 | B4<br>D4<br>ES4 | PID 1.90m, 31.0ppm |
| EOH at 3.40m - Target Depth Achieved. | | 3.40 | 7.67 | | | 3.40<br>3.40<br>3.40 | B5<br>D5<br>ES5 | PID 3.40m, 77.7ppm |

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.
No groundwater encountered during investigation.

Project Number

**A102760**

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West**<br>Location: **Harts Farm Way**<br>Client: **Havant Borough Council** | Location Details<br>Easting: 470136.24 Northing: 105724.30<br>Level: 9.51mAOD Depth: 3.60m<br>Logger: SN Type: TP | Status<br>DRAFT | Pit Number<br>**TP02**<br>Sheet 1 of 1 |

| Hole Information | | Groundwater | | | | | |
|---|---|---|---|---|---|---|---|
| Pit Dimensions | Orientation: ° | Strike (m) | Rose To (m) | After (mins) | Remarks | Scale: | 1:25 |
| 0.60m / 4.00m | Shoring: None | | | | | Checked By: | |
| | Stability: Stable | | | | | Approved By: | |
| | Plant: 8T Tracked | | | | | Start Date: | 10/05/2017 |
| | | | | | | Finish Date: | 10/07/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Soft brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flit and chalk. With occasional iron pipe and concrete kerbstone. (CAPPING LAYER)<br>*. . .Between 0.30m and 0.50m bgl: Light brown in colour.* | | | | | | | | |
| [MADE GROUND] Light grey slightly clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is sub-rounded to rounded flint. Clay is observed as pockets / lenses. (CAPPING LAYER) | | 0.90 | 8.61 | | | 1.00<br>1.00<br>1.00 | B1<br>D1<br>ES1 | PID 1.00m, 0.5ppm |
| [MADE GROUND] Soft light grey / black / white mottled sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse chalk, flint and occasional brick. (CAPPING LAYER) | | 1.70 | 7.81 | | | 2.30<br>2.30<br>2.30 | B3<br>D2<br>ES2 | PID 2.30m, 0.9ppm |
| [MADE GROUND] Black / grey / multi-coloured slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse glass, wood and plastic. With frequent plastic bags, glass bottles and cloth / material. (LANDFILL) | | 2.40 | 7.11 | | | | | PID 3.50m, 13.9ppm |
| EOH at 3.60m - Target Depth Achieved. | | 3.60 | 5.91 | | | | | |

1 2 3 4 5

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.
No groundwater encountered during investigation.

Project Number
**A102760**

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West**<br>Location: **Harts Farm Way**<br>Client: **Havant Borough Council** | Location Details<br>Easting: 470085.83 Northing: 105670.83<br>Level: 10.24mAOD Depth: 3.40m<br>Logger: SN Type: TP | Status<br>DRAFT | Pit Number<br>**TP03**<br>Sheet 1 of 1 |

| Hole Information | | Groundwater | | | | Scale: 1:25 |
|---|---|---|---|---|---|---|
| Pit Dimensions<br>0.60m<br>4.00m | Orientation: °<br>Shoring: None<br>Stability: Stable<br>Plant: 8T Tracked | Strike (m) | Rose To (m) | After (mins) | Remarks | Checked By:<br>Approved By:<br>Start Date: 09/05/2017<br>Finish Date: 09/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass and topsoil over soft light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse brick, concrete, sandstone, chalk and flint. Occasional fragments of 25mm pipe. (CAPPING LAYER) | | | | | | 0.40<br>0.40<br>0.40 | B1<br>D1<br>ES1 | PID 0.40m, 0.0ppm |
| [MADE GROUND] Soft pink / light red mottled grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded flint. (CAPPING LAYER) | | 0.70 | 9.54 | | | 1.20<br>1.20<br>1.20 | B2<br>D2<br>ES2 | PID 1.20m, 0.1ppm |
| [MADE GROUND] White firm crumbly slightly gravelly CLAY. Gravel is sub-angular to sub-rounded, fine and medium flint and chalk. (CAPPING LAYER) | | 1.40 | 8.84 | | | | | |
| [MADE GROUND] Soft orange mottled grey sandy CLAY. Sand is fine to coarse. (CAPPING LAYER) | | 1.60 | 8.64 | | | 1.80<br>1.80<br>1.80 | B3<br>D3<br>ES3 | PID 1.80m, 0.0ppm |
| [MADE GROUND] Black clayey SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular , fine to coarse glass, plastic, metal and wood. With frequent plastic, microwave parts, plastic bags, lino, foam, whole tyres, food mixer parts (Kenwood). With moderate rotten type odour. (LANDILL) | | 2.10 | 8.14 | | | 3.00<br>3.00<br>3.00 | B4<br>D4<br>ES4 | PID 3.00m, 17.2ppm |
| EOH at 3.40m - Target Depth Achieved. | | 3.40 | 6.84 | | | | | |

1 2 3 4 5

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.
No groundwater encountered during investigation.

Project Number
**A102760**

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West**<br>Location: **Harts Farm Way**<br>Client: **Havant Borough Council** | Location Details<br>Easting: 470107.40 Northing: 105638.54<br>Level: 9.92mAOD Depth: 3.30m<br>Logger: SN Type: TP | Status<br>DRAFT | Pit Number<br>**TP04**<br>Sheet 1 of 1 |

| Hole Information | | Groundwater | | | | |
|---|---|---|---|---|---|---|
| Pit Dimensions<br>0.60m<br>4.00m | Orientation: °<br>Shoring: None<br>Stability: Stable<br>Plant: 8T Tracked | Strike (m) | Rose To (m) | After (mins) | Remarks | Scale: 1:25<br>Checked By:<br>Approved By:<br>Start Date: 09/05/2017<br>Finish Date: 09/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over light brown TOPSOIL. | | | | | | | | |
| [MADE GROUND] Soft light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse flint, brick and chalk, with occasional glass and breeze block. (CAPPING LAYER) | | 0.20 | 9.72 | | | | | |
| [MADE GROUND] Soft to firm mottled grey / pink slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine and medium flint and chalk, with occasional brick. (CAPPING LAYER) | | 0.50 | 9.42 | | | 0.60<br>0.60<br>0.60 | B1<br>D1<br>ES1 | PID 0.60m, 0.8ppm |
| [MADE GROUND] Very soft grey / white sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint and brick. With occasional full bricks. (CAPPING LAYER) | | 1.20 | 8.72 | | | 1.30<br>1.30<br>1.30 | B2<br>D2<br>ES2 | PID 1.30m, 0.1ppm |
| [MADE GROUND] Black / grey / brown slightly clayey SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse slate, metal & brick. With plastic sheet and material. Rotten type odour noted. (LANDFILL) | | 3.00 | 6.92 | | | | | |
| EOH at 3.30m - Target Depth Achieved. | | 3.30 | 6.62 | | | 3.30<br>3.30<br>3.30 | B3<br>D3<br>ES3 | PID 3.30m, 57.8ppm |

1 2 3 4 5

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.
No groundwater encountered during investigation.

Project Number
**A102760**

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West**<br>Location: **Harts Farm Way**<br>Client: **Havant Borough Council** | Location Details<br>Easting: 470213.62 Northing: 105689.69<br>Level: 12.62mAOD Depth: 3.10m<br>Logger: SN Type: TP | Status<br>DRAFT | Pit Number<br>**TP05**<br>Sheet 1 of 1 |

| Hole Information | | Groundwater | | | | |
|---|---|---|---|---|---|---|
| Pit Dimensions<br>0.60m<br>4.20m | Orientation: °<br>Shoring: None<br>Stability: Stable<br>Plant: 8T tracked | Strike (m) | Rose To (m) | After (mins) | Remarks | Scale: 1:25<br>Checked By:<br>Approved By:<br>Start Date: 10/05/2017<br>Finish Date: 10/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse flint, chalk and brick. With occasional cobbles of concrete paving slab and whole tyre. (LANDFILL) | | | | | | 1.00<br>1.00<br>1.00 | B1<br>D1<br>ES1 | PID 1.00m, 0.2ppm |
| [MADE GROUND] Black SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse wood, glass and metal. With frequent plastic bags, carpet, material / cloth, paper, tyres, plastic bottles and rain macks. With incinerator ash / clinker. Ashy / burnt type odour noted. (LANDFILL) | | 1.40 | 11.22 | | | 2.40<br>2.40<br>2.40 | B2<br>D2<br>ES2 | PID 2.40m, 5.6ppm |
| EOH at 3.10m - Target Depth Achieved. | | 3.10 | 9.52 | | | 3.10<br>3.10<br>3.10 | B3<br>D3<br>ES3 | PID 3.10m, 4.9ppm |

1 2 3 4 5

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.
No groundwater encountered during investigation.

Project Number
**A102760**

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West**<br>Location: **Harts Farm Way**<br>Client: **Havant Borough Council** | Location Details<br>Easting: 470237.94 Northing: 105732.12<br>Level: 12.99mAOD Depth: 3.10m<br>Logger: SN Type: TP | Status<br>DRAFT | Pit Number<br>**TP06**<br>Sheet 1 of 1 |

| Hole Information | | Groundwater | | | | Scale: 1:25 |
|---|---|---|---|---|---|---|
| Pit Dimensions<br>0.60m<br>4.00m | Orientation: °<br>Shoring: None<br>Stability: Stable<br>Plant: 8T Tracked | Strike (m) | Rose To (m) | After (mins) | Remarks | Checked By:<br>Approved By:<br>Start Date: 10/05/2017<br>Finish Date: 24/07/2000 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over soft light brown slightly sandy CLAY. Sand is fine to coarse. (TOPSOIL) | | | | | | | | |
| [MADE GROUND] Orange slightly gravelly SAND with pockets of clay. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint. (CAPPING LAYER) | | 0.20 | 12.79 | | | 0.50<br>0.50<br>0.50 | B1<br>D1<br>ES1 | PID 0.50m, 0.0ppm |
| [MADE GROUND] Soft slightly sandy gravelly CLAY. Sand is fine to coarse. gravel is angular to sub-angular, fine to coarse flint, brick and chalk. (CAPPING LAYER) | | 0.80 | 12.19 | | | | | |
| [MADE GROUND] Black / multi-coloured SAND & GRAVEL. Sand is fine to coarse. Gravel is fine to coarse of landfill waste, including; plastic bottles, carrier bags, books, wood, carpet, material, food wrappers and magazines. With foul / rotten type odour. (LANDFILL) | | 0.90 | 12.09 | | | 2.00<br>2.00<br>2.00 | B2<br>D2<br>ES2 | PID 2.00m, 2.3ppm |
| EOH at 3.10m - Target Depth Achieved. | | 3.10 | 9.89 | | | 3.10<br>3.10<br>3.10 | B3<br>D3<br>ES3 | PID 3.10m, 5.0ppm |

1 2 3 4 5

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.
No groundwater encountered during investigation.

Project Number
**A102760**

| | | | |
|---|---|---|---|
| Project: **Brockhampton West**<br>Location: **Harts Farm Way**<br>Client: **Havant Borough Council** | Location Details<br>Easting: 470129.00 Northing: 105625.04<br>Level: 9.73mAOD Depth: 3.30m<br>Logger: SN Type: TP | Status<br>DRAFT | Pit Number<br>**TP07**<br>Sheet 1 of 1 |

| Hole Information | | Groundwater | | | | |
|---|---|---|---|---|---|---|
| Pit Dimensions<br>0.60m<br>3.00m | Orientation: °<br>Shoring: None<br>Stability: Stable<br>Plant: 8T Tracked | Strike (m) | Rose To (m) | After (mins) | Remarks | Scale: 1:25<br>Checked By:<br>Approved By:<br>Start Date: 09/05/2017<br>Finish Date: 10/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass and topsoil over light brown slightly clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse chalk, flint and brick. (CAPPING LAYER) | | | | | | | | |
| [MADE GROUND] Orange / light brown slightly gravelly SAND. Sand is fine to coarse. Gravel is sub-rounded, fine and medium flint. (CAPPING LAYER) | | 1.00 | 8.73 | | | 1.20<br>1.20<br>1.20 | B1<br>D1<br>ES1 | PID 1.20m, 0.0ppm |
| *. . .From 1.20m bgl: Becoming grey in colour.* | | | | | | | | |
| *. . .From 2.00m bgl: Becoming clayey, darker in colour and with brick gravels.* | | | | | | 2.50<br>2.50<br>2.50 | B2<br>D2<br>ES2 | PID 2.50m, 0.2ppm |
| [MADE GROUND] Black / dark grey slightly clayey SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse wood, plastic and metal. With building materials, paint tins, wooden boards, insulation, crushed petrol can, shoes, cardboard and phone books. Rotten type odour noted. (LANDFILL) | | 2.70 | 7.03 | | | | | |
| EOH at 3.30m - Target Depth Achieved. | | 3.30 | 6.43 | | | 3.30<br>3.30<br>3.30 | B3<br>D3<br>ES3 | PID 3.30m, 5.5ppm |

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.
No groundwater encountered during investigation.

Project Number
**A102760**

| | | | |
|---|---|---|---|
| Project: **Brockhampton West**<br>Location: **Harts Farm Way**<br>Client: **Havant Borough Council** | Location Details<br>Easting: 470242.97 Northing: 105676.06<br>Level: 11.31mAOD Depth: 3.20m<br>Logger: SN Type: TP | Status<br>DRAFT | Pit Number<br>**TP08**<br>Sheet 1 of 1 |

| Hole Information | | Groundwater | | | | Scale: 1:25 |
|---|---|---|---|---|---|---|
| Pit Dimensions | Orientation: ° | Strike (m) | Rose To (m) | After (mins) | Remarks | Checked By: |
| 0.60m / 4.00m | Shoring: None | | | | | Approved By: |
| | Stability: Stable | | | | | Start Date: 10/05/2017 |
| | Plant: 8T Tracked | | | | | Finish Date: 10/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over soft light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint, brick and chalk. With large boulder of concrete (1.00m x 0.75m). (CAPPING LAYER) | | | | | | 0.50<br>0.50<br>0.50 | B1<br>D1<br>ES1 | PID 0.50m, 0.5ppm |
| [MADE GROUND] Black slightly clayey SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse concrete, wood, metal, brick, glass and plastic. With plastic bags, cloth, foam, a bike and incinerator type ash. Slight rotten type odour noted. (LANDFILL)<br>*. . .Between 1.00m and 3.20m bgl: More "modern" packaging on this side of the site. Letter dated 1982.* | | 1.00 | 10.31 | | | 2.30<br>2.30<br>2.30 | B2<br>D2<br>ES2 | PID 2.30m, 72.7ppm |
| EOH at 3.20m - Target Depth Achieved. | | 3.20 | 8.11 | | | 3.20<br>3.20<br>3.20 | B3<br>D3<br>ES3 | PID 3.20m, 11.5ppm |

1 2 3 4 5

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.
No groundwater encountered during investigation.

Project Number
**A102760**

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West**<br>Location: **Harts Farm Way**<br>Client: **Havant Borough Council** | Location Details<br>Easting: 470205.12 Northing: 105637.00<br>Level: 8.17mAOD Depth: 4.00m<br>Logger: SN Type: TP | Status<br>DRAFT | Pit Number<br>**TP09**<br>Sheet 1 of 1 |

| Hole Information | | Groundwater | | | | |
|---|---|---|---|---|---|---|
| Pit Dimensions<br>0.60m × 4.00m | Orientation: °<br>Shoring: None<br>Stability: Stable<br>Plant: 8T Tracked | Strike (m) | Rose To (m) | After (mins) | Remarks | Scale: 1:25<br>Checked By:<br>Approved By:<br>Start Date: 10/05/2017<br>Finish Date: 10/05/2017 |
| | | 3.90 | 3.70 | 10 | | |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] ASPHALT. | | 0.05 | 8.12 | | | | | |
| [MADE GROUND] Orange / brown SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular of sandstone (TYPE I ROADSTONE SUB-BASE). | | 0.30 | 7.87 | | | | | |
| [MADE GROUND] Very dark brown / black SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded, fine and medium flint, brick and occasional chalk. (CAPPING LAYER) | | 0.50 | 7.67 | | | 0.40<br>0.40<br>0.40 | B1<br>D1<br>ES1 | PID 0.40m, 0.1ppm |
| [MADE GROUND] Soft to firm light brown slightly gravelly CLAY. Gravel is angular to sub-rounded, fine to coarse flint and chalk. (CAPPING LAYER)<br>*. . .From 0.90m bgl: Becoming sandy.*<br>*. . .At 1.00m bgl: Paving stone.* | | | | | | 0.60<br>0.60<br>0.60 | B2<br>D2<br>ES2 | PID 0.60m, 0.4ppm |
| [MADE GROUND] Soft mottled grey brown gravelly CLAY. Gravel is angular to sub-angular, fine to coarse brick, chalk and flint. With occasional pockets of fine to coarse sand.. With black rootlets and staining. (CAPPING LAYER) | | 2.50 | 5.67 | | | 2.00<br>2.00<br>2.00 | B3<br>D3<br>ES3 | PID 2.00m, 0.5ppm |
| [MADE GROUND] Black slightly clayey SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse wood, glass, plastic, metal, brick, flint and breeze block. With material. (LANDFILL) | | 3.50 | 4.67 | | | 3.80<br>3.80<br>3.80 | B4<br>D4<br>ES4 | PID 3.80m, 16.9ppm |
| EOH at 4.00m - Target Depth Achieved. | | 4.00 | 4.17 | | | | | |

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.

Project Number
**A102760**

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West**<br>Location: **Harts Farm Way**<br>Client: **Havant Borough Council** | Location Details<br>Easting: 470155.97 Northing: 105668.17<br>Level: 9.94mAOD Depth: 3.40m<br>Logger: SN Type: TP | Status<br>DRAFT | Pit Number<br>**TP10**<br>Sheet 1 of 1 |

| Hole Information | | Groundwater | | | | Scale: 1:25 |
|---|---|---|---|---|---|---|
| Pit Dimensions<br>0.60m<br>3.70m | Orientation: °<br>Shoring: None<br>Stability: Stable<br>Plant: 8T Tracker | Strike (m) | Rose To (m) | After (mins) | Remarks | Checked By:<br>Approved By:<br>Start Date: 09/05/2017<br>Finish Date: 09/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Soft light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse brick, flint, concrete and occasional asphalt. (CAPPING LAYER) | | | | | | | | |
| [MADE GROUND] Orange SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse brick. Occasional fragments of metal and pottery. (CAPPING LAYER) | | 0.70 | 9.24 | | | 0.80<br>0.80<br>0.80 | B1<br>D1<br>ES1 | PID 0.80m, 0.1ppm |
| [MADE GROUND] Brown slightly clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint, brick and chalk. (CAPPING LAYER) | | 1.00 | 8.94 | | | | | |
| *. . .From 2.50m bgl: Becoming grey in colour.* | | | | | | 2.50<br>2.50<br>2.50 | B2<br>D2<br>ES2 | PID 2.50m, 0.3ppm |
| [MADE GROUND] Dark brown / grey slightly clayey SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse glass and plastic. With plastic bags, material, cans, rope & sunglasses. (LANDFILL) | | 3.20 | 6.74 | | | 3.30<br>3.30<br>3.30 | B2<br>D3<br>ES3 | PID 3.30m, 17.6ppm |
| EOH at 3.40m - Target Depth Achieved. | | 3.40 | 6.54 | | | | | |

1 2 3 4 5

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.
No groundwater encountered during investigation.

Project Number
**A102760**

DRAFT

| | | | |
|---|---|---|---|
| Project: **Brockhampton West**<br>Location: **Harts Farm Way**<br>Client: **Havant Borough Council** | Location Details<br>Easting: 470002.28 Northing: 105647.45<br>Level: 10.57mAOD Depth: 3.70m<br>Logger: SN Type: TP | Status<br>DRAFT | Pit Number<br>**TP11**<br>Sheet 1 of 1 |

| Hole Information | | Groundwater | | | | |
|---|---|---|---|---|---|---|
| Pit Dimensions<br>0.60m<br>4.00m | Orientation: °<br>Shoring: None<br>Stability: Stable<br>Plant: 8T Tracked | Strike (m) | Rose To (m) | After (mins) | Remarks | Scale: 1:25<br>Checked By:<br>Approved By:<br>Start Date: 09/05/2017<br>Finish Date: 09/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. Light brown slightly sandy clay. | | | | | | | | |
| [MADE GROUND] Soft to firm light brown / orange slightly sandy CLAY. Sand is fine. With occasional ceramic pipe. (CAPPING LAYER) | | 0.20 | 10.37 | | | 0.50<br>0.50<br>0.50 | B1<br>D1<br>ES1 | PID 0.50m, 0.2ppm |
| [MADE GROUND] Firm white / black / grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine and medium flint and brick. (CAPPING LAYER) | | 0.70 | 9.87 | | | | | |
| [MADE GROUND] Black / grey / white clayey SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse wood, brick, metal and ceramic. WIth plastic sheet, material, paper and wire. Occasional boulders of concrete. Moderate rotten type odour noted. (LANDFILL) | | 1.50 | 9.07 | | | 1.40<br>1.40<br>1.40 | B2<br>D2<br>ES2 | PID 1.40m, 0.7ppm |
| *. . .At 2.70m bgl: Whole lorry tyre & large metal sheet (1.50m long).* | | | | | | 2.50<br>2.50<br>2.50 | B3<br>D3<br>ES3 | PID 2.50m, 21.0ppm |
| [MADE GROUND] Black / grey / white predominantly household waste. Including tin cans, bottles, yoghurt pots, food containers, books, washing up liquid and glass. Foul odour noted. (LANDFILL) | | 3.00 | 7.57 | | | 3.10<br>3.10<br>3.10 | B4<br>D4<br>ES4 | PID 3.10m, 17.0ppm |
| EOH at 3.70m - Target Depth Achieved. | | 3.70 | 6.87 | | | | | |

1 2 3 4 5

Observations / Remarks

Prior to excavation, trial pit location cleared of services by GPR / EM techniques.
On completion trial pit backfilled with arisings.
No groundwater encountered during investigation.

Project Number
**A102760**

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470042.39 | Northing: | 105723.25 |
| Level: | 10.28mAOD | Depth: | 2.70m |
| Logger: | AH | Type: | WLS |
| | | Inclination: | 90° |

Status: DRAFT

Borehole Number: **WS01**

Sheet 1 of 1

Scale: 1:25
Checked By:
Approved By:
Start Date: 09/05/2017
Finish Date: 09/05/2017

| Method, Plant and Crew | | | | | Diameter | | Casing | | Groundwater | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Strike (m) | Casing (m) | Sealed (m) | Rose To (m) | Time (mins) | Remarks |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 1.20 | 101 | | | | | | | | |
| 1.20 | 2.70 | Dynamic Windowless Sampling | Competitor Dart | RD Drilling | 2.00 | 87 | | | | | | | | |
| | | | | | 2.70 | 77 | | | | | | | | |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. | | | | | | | | |
| [MADE GROUND] Firm grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse chalk and flint. (CAPPING LAYER) | | 0.20 | 10.09 | | | 1.20 - 1.55 | B1 | SPT(C) 1.20m, N=9 (2,2/2,2,3,2) |
| [MADE GROUND] Firm brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, brick, concrete and rare chalk. (LANDFILL) | | 1.55 | 8.74 | | | 1.55 - 3.00 | B2 | SPT(C) 2.00m, N=12 (3,2/3,4,2,3) |
| *. . .At 2.40m bgl: Plastic bags.*<br>*. . .Between 2.45m and 2.50m bgl: Red brick cobble.*<br>*. . .Between 2.50m and 2.55m bgl: 50mm thick wood.* | | | | | | | | |
| EOH at 2.70m - Refusal at 2.70m bgl. | | 2.70 | 7.58 | | | | | SPT(C) 2.70m, 60 (12,11/60 for 202mm) |

1 2 3 4 5

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.
No groundwater encountered during investigation.

Sampling Runs

| From (m) | To (m) | Diam (mm) | Recovery % | Remarks |
|---|---|---|---|---|
| 1.20 | 2.00 | 87 | 100 | |
| 2.00 | 3.00 | 77 | 55 | |

Hammer Information

| Serial No. | Energy Ratio % |
|---|---|
| DART343 | 63 |

Project Number: **A102760**

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 469928.28 | Northing: | 105664.08 |
| Level: | 10.57mAOD | Depth: | 5.00m |
| Logger: | AH | Type: | WLS |
| | | Inclination: | 90° |

Status: DRAFT

Borehole Number: **WS02**

Sheet 1 of 1

| Method, Plant and Crew | | | | | Diameter | | Casing | | Groundwater | | | | | | Scale: 1:25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Strike (m) | Casing (m) | Sealed (m) | Rose To (m) | Time (mins) | Remarks | Checked By: |
| 0.00 | 1.20 | Inspection Pit | Installed Tools | RD Drilling | 1.20 | 101 | | | | | | | | | Approved By: |
| 1.20 | 5.00 | Dynamic Windowless Sampling | Competitor Dart | RD Drilling | 2.00 | 87 | | | | | | | | | Start Date: 09/05/2017 |
| | | | | | 3.00 | 77 | | | | | | | | | Finish Date: 09/05/2017 |
| | | | | | 4.00 | 67 | | | | | | | | | |
| | | | | | 5.00 | 57 | | | | | | | | | |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. | | | | | | | | |
| [MADE GROUND] Stiff brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse flint, brick and concrete. (CAPPING LAYER) | | 0.20 | 10.37 | | | 1.20 - 1.40 | D1 | SPT(S) 1.20m, N=12 (2,2/2,3,4,3) |
| [MADE GROUND] Dark grey / black GRAVEL. Gravel is angular to sub-rounded, fine to coarse flint, brick and concrete. With frequent wood fragments. (CAPPING LAYER) | | 1.40 | 9.17 | | | 1.40 - 1.80 | B1 | |
| [MADE GROUND] Firm grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, concrete and brick. (LANDFILL) | | 1.80 | 8.77 | | | 1.80 - 3.00 | B2 | SPT(C) 2.00m, N=14 (3,4/3,4,4,3) |
| *. . .At 2.35m bgl: With occasional polystyrene fragments.* | | | | | | | | |
| *. . .Between 2.35m and 2.60m bgl: With frequent very angular fragments of red brick.* | | | | | | | | |
| NO RECOVERY | | 3.00 | 7.57 | | | | | SPT(C) 3.00m, N=36 (4,5/7,8,11,10) |
| MADE GROUND] Firm grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, concrete and brick. (LANDFILL) | | 4.00 | 6.57 | | | 4.00 - 5.00 | B3 | SPT(C) 4.00m, N=24 (3,3/4,7,6,7) |
| *. . .Between 4.20m and 7.30m bgl: Recovered as sub-angular coarse concrete gravel.* | | | | | | | | |
| *. . .At 4.60m bgl: Plastic bags.* | | | | | | | | |
| EOH at 5.00m - Target Depth Achieved. | | 5.00 | 5.57 | | | | | SPT(C) 5.00m, N=14 (4,3/3,3,3,5) |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.
No groundwater encountered during investigation.

Sampling Runs

| From (m) | To (m) | Diam (mm) | Recovery % | Remarks |
|---|---|---|---|---|
| 1.20 | 2.00 | 87 | 100 | |
| 2.00 | 3.00 | 77 | 80 | |
| 3.00 | 4.00 | 67 | 0 | |
| 4.00 | 5.00 | 57 | 50 | |

Hammer Information

| Serial No. | Energy Ratio % |
|---|---|
| DART343 | 63 |

Project Number: **A102760**

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 469945.66 | Northing: | 105602.33 |
| Level: | 11.07mAOD | Depth: | 3.00m |
| Logger: | AH | Type: | WLS |
| | | Inclination: | 90° |

Status: DRAFT

Borehole Number: **WS03**

Sheet 1 of 1

| Method, Plant and Crew | | | | | Diameter | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) |
| 0.00 | 1.20 | Inspection Pit | Installed Tools | RD Drilling | 1.20 | 101 |
| 1.20 | 3.00 | Dynamic Windowless Sampling | Competitor Dart | RD Drilling | 2.00 | 87 |
| | | | | | 3.00 | 77 |

| Casing | | Groundwater | | | | | |
|---|---|---|---|---|---|---|---|
| Depth(m) | Diam (mm) | Strike (m) | Casing (m) | Sealed (m) | Rose To (m) | Time (mins) | Remarks |
| | | | | | | | |

Scale: 1:25

Checked By:

Approved By:

Start Date: 09/05/2017

Finish Date: 09/05/2017

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. | | | | | | | | |
| [MADE GROUND] Firm orange brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, concrete and brick. (CAPPING LAYER) | | 0.20 | 10.87 | | | | | |
| | | | | | | 1.20 - 1.55 | B1 | SPT(C) 1.20m, N=8 (2,2/2,2,2,2) |
| [MADE GROUND] Firm dark brown slightly sandy gravelly CLAY / SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse flint, chalk and brick. With rare fragments of burnt wood / charcoal. (CAPPING LAYER) | | 1.55 | 9.52 | | | 1.55 - 2.00 | B2 | |
| [MADE GROUND] Soft to firm dark grey / brown gravelly CLAY. Gravel is very angular to sub-rounded, fine to coarse flint, with rare chalk and brick. With occasional wood fragments. (CAPPING LAYER) | | 2.00 | 9.07 | | | 2.00 - 3.00 | B3 | SPT(C) 2.00m, N=8 (2,3/2,2,2,2) |
| *. . .Between 2.65m and 2.68m bgl: Coarse gravel size pocket of fine to coarse brown sand.* | | | | | | | | |
| *. . .Between 2.85m and 2.90m bgl: Fragment of concrete.* | | | | | | | | |
| EOH at 3.00m - Refusal at 3.00m bgl. | | 3.00 | 8.07 | | | | | SPT(C) 3.00m, 50 (7,9/50 for 199mm) |

1 2 3 4 5

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.
No groundwater encountered during investigation.

Sampling Runs

| From (m) | To (m) | Diam (mm) | Recovery % | Remarks |
|---|---|---|---|---|
| 1.20 | 2.00 | 87 | 100 | |
| 2.00 | 3.00 | 77 | 100 | |

Hammer Information

| Serial No. | Energy Ratio % |
|---|---|
| DART343 | 63 |

Project Number: **A102760**

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470062.26 | Northing: | 105692.65 |
| Level: | 11.01mAOD | Depth: | 4.00m |
| Logger: | AH | Type: | WLS |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **WS04**

Sheet 1 of 1

Scale: 1:25
Checked By:
Approved By:
Start Date: 09/05/2017
Finish Date: 09/05/2017

| Method, Plant and Crew | | | | | Diameter | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) |
| 0.00 | 1.20 | Dynamic Windowless Sampling | Installed Tools | RD Drilling | 1.20 | 101 |
| 1.20 | 4.00 | Dynamic Windowless Sampling | Competitor Dart | RD Drilling | 2.00 | 87 |
| | | | | | 3.00 | 77 |
| | | | | | 4.00 | 67 |

| Casing | | Groundwater | | | | | |
|---|---|---|---|---|---|---|---|
| Depth(m) | Diam (mm) | Strike (m) | Casing (m) | Sealed (m) | Rose To (m) | Time (mins) | Remarks |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill |
|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. | | | | | |
| [MADE GROUND] Soft to firm orange brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse flint and brick. (CAPPING LAYER) | | 0.30 | 10.71 | | |
| [MADE GROUND] Orange brown mottled orange fine and medium SAND. (CAPPING LAYER) | | 0.80 | 10.21 | | |
| [MADE GROUND] Soft to firm grey mottled brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, chalk and burnt ash type material. (LANDFILL) | | 1.30 | 9.71 | | |
| NO RECOVERY | | 2.00 | 9.01 | | |
| EOH at 4.00m - Target Depth Achieved. | | 4.00 | 7.01 | | |

| Samples and Testing | | |
|---|---|---|
| Depth (m) | Ref | Tests / Results |
| 1.20 - 1.30 | D1 | SPT(C) 1.20m, N=21 (3,4/6,5,6,6) |
| 1.30 - 2.00 | B2 | |
| | | SPT(C) 2.00m, N=15 (3,4/3,4,5,3) |
| | | SPT(C) 3.00m, N=7 (1,/1,2,2,2) |
| | | SPT(C) 4.00m, 50 (4,7/50 for 294mm) |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.
No groundwater encountered during investigation.

Sampling Runs

| From (m) | To (m) | Diam (mm) | Recovery % | Remarks |
|---|---|---|---|---|
| 1.20 | 2.00 | 87 | 100 | |
| 2.00 | 3.00 | 77 | 0 | |
| 3.00 | 4.00 | 67 | 0 | |

Hammer Information

| Serial No. | Energy Ratio % |
|---|---|
| DART343 | 63 |

Project Number: **A102760**

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470020.69 | Northing: | 105572.03 |
| Level: | 10.72mAOD | Depth: | 3.00m |
| Logger: | AH | Type: | WLS |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **WS05**

Sheet 1 of 1

| Method, Plant and Crew | | | | | Diameter | | Casing | | Groundwater | | | | | | Scale: 1:25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Strike (m) | Casing (m) | Sealed (m) | Rose To (m) | Time (mins) | Remarks | Checked By: |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 1.20 | 101 | | | | | | | | | Approved By: |
| 1.20 | 3.00 | Dynamic Windowless Sampling | Cometdor Dart | RD Drilling | 2.00 | 87 | | | | | | | | | Start Date: 09/05/2017 |
| | | | | | 3.00 | 77 | | | | | | | | | Finish Date: 09/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. | | | | | | | | |
| [MADE GROUND] Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine and medium flint, chalk and brick. (CAPPING LAYER) | | 0.20 | 10.52 | | | 1.20 - 1.30 | D1 | SPT(C) 1.20m, N=8 (2,2/2,2,2,2) |
| [MADE GROUND] Soft to firm orange brown slightly sandy slightly gravelly CLAY / SILT. Sand is fine and medium. Gravel is sub-angular to sub-rounded, fine and medium flint and brick. (CAPPING LAYER) | | 1.30 | 9.42 | | | 1.30 - 1.60 | B1 | |
| [MADE GROUND] White gravelly SILT of chalk. Gravel is sub-angular to rounded, fine to coarse, flint and extremely weak white chalk. (CAPPING LAYER)<br>*. . .Between 1.75m and 1.80m bgl: POcket of brown fine to coarse sand.* | | 1.60 | 9.12 | | | 1.60 - 1.90 | B2 | |
| [MADE GROUND] Firm to stiff dark grey slightly gravelly CLAY. Gravel is angular to sub-rounded, fine and medium flint and chalk. (CAPPING LAYER) | | 1.90 | 8.82 | | | 1.90 - 2.25 | B3 | SPT(C) 2.00m, N=10 (3,2/3,2,3,2) |
| [MADE GROUND] Fragments of 30mm thick plyboard. (LANDFILL)<br>*. . . At 2.30m bgl: Refusal due to plyboard, although WS reached 3.00m* | | 2.25 | 8.47 | | | 2.25 - 2.30 | D2 | |
| EOH at 3.00m - Refusal at 3.00m bgl. | | 3.00 | 7.72 | | | | | SPT(C) 3.00m, 50 (25 for 21mm/50 for 17mm) |

| Observations / Remarks |
|---|
| Prior to excavation, BH location cleared of services by GPR / EM techniques.<br>Hand excavated inspection pit from GL to 1.20m bgl.<br>On completion BH backfilled / installed as per graphical log.<br>No groundwater encountered during investigation. |

Sampling Runs

| From (m) | To (m) | Diam (mm) | Recovery % | Remarks |
|---|---|---|---|---|
| 1.20 | 2.00 | 87 | 100 | |
| 2.00 | 3.00 | 77 | 30 | |

Hammer Information

| Serial No. | Energy Ratio % |
|---|---|
| DART343 | 63 |

Project Number: **A102760**

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470051.70 | Northing: | 105635.00 |
| Level: | 10.98mAOD | Depth: | 5.00m |
| Logger: | AH | Type: | WLS |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **WS06**

Sheet 1 of 1

| Method, Plant and Crew | | | | | Diameter | | Casing | | Groundwater | | | | | | Scale: 1:25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Strike (m) | Casing (m) | Sealed (m) | Rose To (m) | Time (mins) | Remarks | Checked By: |
| 0.00 | 1.20 | Inspection Pit | Insulated Tools | RD Drilling | 1.20 | 101 | | | | | | | | | Approved By: |
| 1.20 | 5.00 | Dynamic Windowless Sampling | Competitor Dart | RD Drilling | 2.00 | 87 | | | | | | | | | Start Date: 09/05/2017 |
| | | | | | 3.00 | 77 | | | | | | | | | Finish Date: 09/05/2017 |
| | | | | | 4.00 | 67 | | | | | | | | | |
| | | | | | 5.00 | 57 | | | | | | | | | |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. | | | | | | | | |
| [MADE GROUND] Orange brown slightly gravelly fine to coarse SAND. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint. (CAPPING LAYER) | | 0.15 | 10.83 | | | 1.20 - 1.65 | B1 | SPT(C) 1.20m, N=15 (3,3/4,3,4,4) |
| [MADE GROUND] White and brown slightly clayey slightly gravelly SILT. Gravel is angular to sub-rounded, fine to coarse flint and brick. Silt is comminuted putty chalk. (CAPPING LAYER) | | 1.65 | 9.33 | | | 1.65 - 2.30 | B2 | |
| | | | | | | | | SPT(C) 2.00m, N=11 (2,3/3,3,2,3) |
| [MADE GROUND] Brown slightly sandy clayey GRAVEL. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, concrete and brick. (CAPPING LAYER) | | 2.30 | 8.68 | | | 2.30 - 3.00 | B3 | |
| *. . .Between 2.60m and 2.70m bgl: Full red brick.* | | | | | | | | |
| [MADE GROUND] Black clayey GRAVEL. Gravel is angular to sub-rounded, fine to coarse flint, brick and concrete. With frequent wood and plastic. (LANDFILL) | | 3.00 | 7.98 | | | 3.00 - 5.00 | B4 | SPT(C) 3.00m, N=9 (3,3/2,2,3,2) |
| | | | | | | | | SPT(C) 4.00m, N=13 (2,3/3,4,3,3) |
| EOH at 5.00m - Target Depth Achieved. | | 5.00 | 5.98 | | | | | SPT(C) 5.00m, N=13 (2,3/3,3,4,3) |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.
No groundwater encountered during investigation.

Sampling Runs

| From (m) | To (m) | Diam (mm) | Recovery % | Remarks |
|---|---|---|---|---|
| 1.20 | 2.00 | 87 | 100 | |
| 2.00 | 3.00 | 77 | 80 | |
| 3.00 | 4.00 | 67 | 40 | |
| 4.00 | 5.00 | 57 | 40 | |

Hammer Information

| Serial No. | Energy Ratio % |
|---|---|
| D4RT343 | 63 |

Project Number: **A102760**

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470086.62 | Northing: | 105618.92 |
| Level: | 10.12mAOD | Depth: | 3.00m |
| Logger: | AH | Type: | WLS |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **WS07**

Sheet 1 of 1

| Method, Plant and Crew | | | | | Diameter | | Casing | | Groundwater | | | | | | Scale: 1:25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Strike (m) | Casing (m) | Sealed (m) | Rose To (m) | Time (mins) | Remarks | Checked By: |
| 0.00 | 1.20 | Inspection Pit | Installed Tools | RD Drilling | 1.20 | 101 | | | | | | | | | Approved By: |
| 1.20 | 3.00 | Dynamic Windowless Sampling | Competitor Dart | RD Drilling | 2.00 | 87 | | | | | | | | | Start Date: 10/05/2017 |
| | | | | | 3.00 | 77 | | | | | | | | | Finish Date: 10/05/2017 |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. | | 0.10 | 10.02 | | | | | |
| [MADE GROUND] Soft to firm brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, brick, concrete and ash. (CAPPING LAYER) | | | | | | 1.20 - 1.70 | B1 | SPT(S) 1.20m, N=11 (2,3/2,3,3,3) |
| [MADE GROUND] Firm to stiff greenish brown / grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse flint. (CAPPING LAYER) | | 1.70 | 8.42 | | | 1.70 - 2.15 | B2 | SPT(C) 2.00m, N=14 (3,2/4,3,3,4) |
| [MADE GROUND] Stiff grey slightly gravelly CLAY / SILT. Gravel is sub-rounded, fine to coarse chalk. (CAPPING LAYER) | | 2.15 | 7.97 | | | 2.15 - 2.45 | D1 | |
| [MADE GROUND] Dark brown / black slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, brick and concrete. With wood fragments. (LANDFILL) | | 2.45 | 7.67 | | | 2.45 - 2.65 | D2 | |
| EOH at 3.00m - Refusal at 3.00m bgl. | | 3.00 | 7.12 | | | | | SPT(C) 3.00m, 50 (6,9/50 for 298mm) |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.
No groundwater encountered during investigation.

Sampling Runs

| From (m) | To (m) | Diam (mm) | Recovery % | Remarks |
|---|---|---|---|---|
| 1.20 | 2.00 | 87 | 100 | |
| 2.00 | 3.00 | 77 | 95 | |

Hammer Information

| Serial No. | Energy Ratio % |
|---|---|
| DART343 | 63 |

Project Number: **A102760**

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470172.28 | Northing: | 105741.86 |
| Level: | 14.21mAOD | Depth: | 4.00m |
| Logger: | AH | Type: | WLS |
| | | Inclination: | 90° |

Status: DRAFT

Borehole Number: **WS08**

Sheet 1 of 1

| Method, Plant and Crew | | | | | Diameter | | Casing | | Groundwater | | | | | | Scale: 1:25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Strike (m) | Casing (m) | Sealed (m) | Rose To (m) | Time (mins) | Remarks | Checked By: |
| 0.00 | 1.20 | Inspection Pit | Installed Tools | RD Drilling | 1.20 | 101 | | | | | | | | | Approved By: |
| 1.20 | 3.00 | Dynamic Windowless Sampling | Competitor Dart | RD Drilling | 2.00 | 87 | | | | | | | | | Start Date: 10/05/2017 |
| | | | | | 3.00 | 77 | | | | | | | | | Finish Date: 10/05/2017 |
| | | | | | 4.00 | 67 | | | | | | | | | |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] Grass over TOPSOIL. | | | | | | | | |
| [MADE GROUND] Orange brown slightly gravelly to gravelly SILT. Gravel is angular to sub-rounded, fine to coarse flint, brick and slate. With occasional rootlets. (CAPPING LAYER) | | 0.10 | 14.11 | | | | | |
| | | | | | | 1.20 - 1.55 | B1 | SPT(C) 1.20m, N=12 (3,4/5,3,3,3) |
| [MADE GROUND] Brown slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, chalk, brick and concrete. (CAPPING LAYER) | | 1.55 | 12.66 | | | 1.55 - 2.30 | B2 | |
| | | | | | | | | SPT(C) 2.00m, N=13 (3,5/4,4,3,2) |
| *. . .Between 2.18m and 2.30m bgl: Full red brick.* | | | | | | | | |
| [MADE GROUND] Firm to stiff brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse flint. (CAPPING LAYER) | | 2.30 | 11.91 | | | 2.30 - 2.50 | B3 | |
| | | | | | | 2.50 - 4.00 | B4 | |
| | | | | | | | | SPT(C) 3.00m, N=50 (5,7/13,13,12,12) |
| *. . .At 3.75m bgl: Piece of plyboard.* | | | | | | | | |
| EOH at 4.00m - Refusal at 3.00m bgl. | | 4.00 | 10.21 | | | | | |

| Observations / Remarks |
|---|
| Prior to excavation, BH location cleared of services by GPR / EM techniques. |
| Hand excavated inspection pit from GL to 1.20m bgl. |
| On completion BH backfilled / installed as per graphical log. |
| No groundwater encountered during investigation. |

| Sampling Runs | | | | |
|---|---|---|---|---|
| From (m) | To (m) | Diam (mm) | Recovery % | Remarks |
| 1.20 | 2.00 | 87 | 100 | |
| 2.00 | 3.00 | 77 | 90 | |
| 3.00 | 4.00 | 67 | 25 | |

| Hammer Information | |
|---|---|
| Serial No. | Energy Ratio % |
| DART343 | 63 |

Project Number: **A102760**

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470177.47 | Northing: | 105681.74 |
| Level: | 9.46mAOD | Depth: | 5.00m |
| Logger: | AH | Type: | WLS |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **WS09**

Sheet 1 of 1

Scale: 1:25
Checked By:
Approved By:
Start Date: 10/05/2017
Finish Date: 10/05/2017

| Method, Plant and Crew | | | | | Diameter | |
|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) |
| 0.00 | 1.20 | Inspection Pit | Installed Tools | RD Drilling | 1.20 | 101 |
| 1.20 | 5.00 | Dynamic Windowless Sampling | Competitor Dart | RD Drilling | 2.00 | 87 |
| | | | | | 3.00 | 77 |
| | | | | | 4.00 | 67 |
| | | | | | 5.00 | 57 |

| Casing | | Groundwater | | | | | |
|---|---|---|---|---|---|---|---|
| Depth(m) | Diam (mm) | Strike (m) | Casing (m) | Sealed (m) | Rose To (m) | Time (mins) | Remarks |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| [MADE GROUND] ASPHALT | | 0.05 | 9.40 | | | | | |
| [MADE GROUND] Orange brown SAND & GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of various lithologies. (TYPE I ROADSTONE - SUB-BASE) | | 0.30 | 9.15 | | | | | |
| [MADE GROUND] Soft orange brown mottled bluish grey slightly clayey to clayey SILT. (CAPPING LAYER) | | | | | | 1.20 - 3.00 | B1 | SPT(S) 1.20m, N=11 (2,2/3,3,2,3) |
| | | | | | | | | SPT(C) 2.00m, 4 (1,/2,1,,1) |
| [MADE GROUND] Grey / white slightly clayey slightly gravelly SILT. Gravel is sub-angular, fine to coarse extremely weak white chalk. (CAPPING LAYER) | | 3.00 | 6.46 | | | 3.00 - 3.75 | B2 | SPT(C) 3.00m, N=9 (2,2/3,2,2,2) |
| [MADE GROUND] Orange brown mottled grey slightly clayey to clayey SAND. Sand is fine to coarse. (CAPPING LAYER) | | 3.75 | 5.70 | | | 3.75 - 4.00 | D1 | |
| [MADE GROUND] Brown / white gravelly SILT / CLAY. Gravel is angular to sub-rounded, fine to coarse brick, flint, plastic, ceramic and glass. (LANDFILL) | | 4.00 | 5.46 | | | 4.00 - 4.40 | D2 | SPT(C) 4.00m, N=12 (2,3/2,3,3,4) |
| EOH at 5.00m - Target Depth Achieved. | | 5.00 | 4.46 | | | | | SPT(C) 5.00m, N=14 (3,3/4,3,3,4) |

Observations / Remarks

Prior to excavation, BH location cleared of services by GPR / EM techniques.
Hand excavated inspection pit from GL to 1.20m bgl.
On completion BH backfilled / installed as per graphical log.
No groundwater encountered during investigation.

Sampling Runs

| From (m) | To (m) | Diam (mm) | Recovery % | Remarks |
|---|---|---|---|---|
| 1.20 | 2.00 | 87 | 100 | |
| 2.00 | 3.00 | 77 | 85 | |
| 3.00 | 4.00 | 67 | 70 | |
| 4.00 | 5.00 | 57 | 40 | |

Hammer Information

| Serial No. | Energy Ratio % |
|---|---|
| DART343 | 63 |

Project Number: **A102760**

DRAFT

Project: **Brockhampton West**

Location: **Harts Farm Way**

Client: **Havant Borough Council**

| Location Details | | | |
|---|---|---|---|
| Easting: | 470249.37 | Northing: | 105705.34 |
| Level: | 13.45mAOD | Depth: | 4.00m |
| Logger: | AH | Type: | WLS |
| | | Inclination: | 90° |

Status: **DRAFT**

Borehole Number: **WS10**

Sheet 1 of 1

| Method, Plant and Crew | | | | | Diameter | | Casing | | Groundwater | | | | | | Scale: 1:25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Type | Plant Used | Crew | Depth (m) | Diam (mm) | Depth(m) | Diam (mm) | Strike (m) | Casing (m) | Sealed (m) | Rose To (m) | Time (mins) | Remarks | Checked By: |
| 0.00 | 1.20 | Inspection Pit | Installed Tools | RD Drilling | 1.20 | 101 | | | | | | | | | Approved By: |
| 1.20 | 5.00 | Dynamic Windowless Sampling | Competitor Dart | RD Drilling | 2.00 | 87 | | | | | | | | | Start Date: 10/05/2017 |
| | | | | | 3.00 | 77 | | | | | | | | | Finish Date: 10/05/2017 |
| | | | | | 4.00 | 67 | | | | | | | | | |

| Strata Description | Legend | Depth (m) | Reduced Level (mAOD) | Water Level (m) | Inst / Backfill | Samples and Testing: Depth (m) | Ref | Tests / Results |
|---|---|---|---|---|---|---|---|---|
| (□(MADE GROUND] Grass over TOPSOIL. | | | | | | | | |
| [MADE GROUND] Dark brown mottled black slightly clayey to clayey slightly sandy to sandy GRAVEL. Sand is fine to coarse. Gravel is very angular to sub-rounded, fine to coarse flint, brick and concrete. (CAPPING LAYER) | | 0.10 | 13.35 | | | | | |
| *. . .Between 1.45m and 1.75m bgl: Recovered as very angular fine to coarse concrete gravel.* | | | | | | 1.20 - 2.00 | B1 | SPT(C) 1.20m, N=11 (2,3/2,3,3,3) |
| [MADE GROUND] Dark grey / black very clayey GRAVEL .Gravel is very angular to sub-rounded, fine to coarse flint, chalk and concrete. WIth frequent fragments of plastic, metal and material. (LANDFILL) | | 2.00 | 11.45 | | | 2.00 - 3.60 | B2 | SPT(C) 2.00m, N=12 (2,3/3,3,3,3) |
| *. . .At 2.40m bgl: Carpet.* | | | | | | | | |
| *. . .At 3.00m bgl: Frequent plastic bags and polystyrene.* | | | | | | | | SPT(C) 3.00m, N=12 (2,3/2,3,4,3) |
| EOH at 4.00m - Target Depth Achieved. | | 4.00 | 9.45 | | | | | |

| Observations / Remarks |
|---|
| Prior to excavation, BH location cleared of services by GPR / EM techniques. |
| Hand excavated inspection pit from GL to 1.20m bgl. |
| On completion BH backfilled / installed as per graphical log. |
| No groundwater encountered during investigation. |

Sampling Runs

| From (m) | To (m) | Diam (mm) | Recovery % | Remarks |
|---|---|---|---|---|
| 1.20 | 2.00 | 87 | 100 | |
| 2.00 | 3.00 | 77 | 80 | |
| 3.00 | 4.00 | 67 | 60 | |

Hammer Information

| Serial No. | Energy Ratio % |
|---|---|
| DART343 | 63 |

Project Number: **A102760**

DRAFT

# Appendix E – Groundwater & Ground Gas Monitoring Results

DRAFT

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## GROUNDWATER / GAS MONITORING RECORD SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Havant Borough Council | **Job No:** | A102760 | **Instruments Used:** | GA5000<br>Dip Meter |
| **Project Name:** | Brockhampton West | **Date:** | 18/05/2017 | **Monitored By:** | SB / AH |
| **Weather:** | Overcast, occasional showers | | | **GA Serial Number:** | G502043 |

| Exploratory Hole No. | Elevation of cover | Peak [1] | | Steady [2] | | | | | | Flow Rate | Atmospheric Pressure | Water Depth | Base Depth | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $CH_4$ | $CO_2$ | $CH_4$ | $CO_2$ | $O_2$ | CO | $H_2S$ | - | | | | | |
| | (mAGL) | (% vol) | (% vol) | (% vol) | (% vol) | (% vol) | ppm | ppm | - | (l/hr) | (mbar) | (m bcl) | (m bcl) | |
| CP01 (Shallow) | 0.27 | 69.3 | 29.5 | 69.1 | 29.4 | 0.2 | 4.0 | 0.0 | - | -0.4 | 1015 | 7.935 | 11.02 | |
| CP01 (Deep) | 0.27 | 67.5 | 27.7 | 67.5 | 27.7 | 0.2 | 4.0 | 0.0 | - | -0.3 | 1016 | 9.183 | 33.42 | |
| CP02 (Shallow) | 0.29 | 35.9 | 24.4 | 35.9 | 24.5 | 0.3 | 0.0 | 0.0 | - | -0.2 | 1014 | 8.900 | 10.65 | Weak ammonia type odour |
| CP02 (Deep) | 0.29 | 22.5 | 15.3 | 22.5 | 15.3 | 7.7 | 0.0 | 0.0 | - | -0.2 | 1014 | 9.740 | 27.35 | |
| CP03 (Shallow) | 0.25 | 19.8 | 20.8 | 19.8 | 20.8 | 0.2 | 1.0 | 0.0 | - | -0.4 | 1015 | 7.426 | 9.17 | |
| CP03 (Deep) | 0.25 | 0.1 | 0.2 | 0.1 | 0.2 | 20.9 | 2.0 | 0.0 | - | -1.8 | 1016 | 7.630 | 32.76 | |
| CP04 | 0.64 | 62.9 | 30.9 | 62.9 | 30.9 | 0.1 | 1.0 | 1.0 | - | -0.4 | 1014 | 8.450 | 9.21 | |
| CP05 | 0.30 | 48.7 | 28.0 | 49.6 | 28.0 | 0.3 | 0.0 | 0.0 | - | 0.0 | 1014 | 7.270 | 11.10 | |
| CP06 | 0.43 | 57.4 | 22.9 | 57.4 | 22.9 | 0.1 | 2.0 | 0.0 | - | -0.4 | 1013 | 7.262 | 9.18 | |
| WS01 | 0.29 | 62.6 | 29.6 | 62.0 | 29.4 | 0.2 | 3.0 | 0.0 | - | -0.4 | 1015 | Dry | 2.97 | |
| WS02 | 0.25 | 64.6 | 27.9 | 64.5 | 27.8 | 0.1 | 1.0 | 3.0 | - | -0.4 | 1014 | Dry | 4.90 | Rotting / manure type odour |
| WS03 | 0.25 | 40.8 | 25.4 | 40.8 | 25.5 | 0.1 | 1.0 | 5.0 | - | -0.4 | 1014 | Dry | 3.20 | |
| WS04 | 0.40 | 66.0 | 30.3 | 64.5 | 29.9 | 0.2 | 0.0 | 1.0 | - | -0.4 | 1015 | Dry | 4.36 | |
| WS05 | 0.41 | 34.7 | 23.3 | 30.1 | 22.1 | 2.1 | 0.0 | 0.0 | - | -0.1 | 1014 | Dry | 3.27 | |
| WS06 | 0.40 | 69.8 | 28.5 | 69.6 | 28.6 | 0.0 | 1.0 | 10.0 | - | -0.4 | 1015 | 5.270 | 5.35 | |
| WS07 | 0.00 | 68.2 | 28.9 | 98.2 | 29.0 | 0.1 | 0.0 | 0.0 | - | -0.1 | 1014 | Dry | 2.94 | |
| WS08 | 0.33 | 60.0 | 21.5 | 60.0 | 21.5 | 0.1 | 0.0 | 0.0 | - | -0.4 | 1013 | Dry | 3.17 | |
| WS09 | 0.00 | 50.3 | 21.0 | 49.2 | 21.0 | 1.0 | 8.0 | 0.0 | - | 0.1 | 1014 | Dry | 4.94 | |
| WS10 | 0.27 | 46.5 | 17.1 | 46.2 | 17.1 | 0.2 | 0.0 | 3.0 | - | -0.4 | 1015 | Dry | 4.25 | |

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## GROUNDWATER / GAS MONITORING RECORD SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Havant Borough Council | **Job No:** | A102760 | **Instruments Used:** | GA5000<br>Dip Meter |
| **Project Name:** | Brockhampton West | **Date:** | 25/05/2017 | **Monitored By:** | SB / AH |
| **Weather:** | Overcast, occasional showers | | | **GA Serial Number:** | G502043 |

| Exploratory Hole No. | Elevation of cover (mAGL) | Peak [1] | | Steady [2] | | | | | | Flow Rate (l/hr) | Atmospheric Pressure (mbar) | Water Depth (m bcl) | Base Depth (m bcl) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $CH_4$ (% vol) | $CO_2$ (% vol) | $CH_4$ (% vol) | $CO_2$ (% vol) | $O_2$ (% vol) | CO ppm | $H_2S$ ppm | - | | | | | |
| CP01 (Shallow) | 0.27 | 68.8 | 28,2 | 68.8 | 28.2 | 0.1 | 4.0 | 0.0 | - | -0.50 | 1027 | 7.95 | 11.02 | |
| CP01 (Deep) | 0.27 | 67.6 | 26.7 | 67.7 | 26.7 | 0.4 | 4.0 | 0.0 | - | -0.40 | 1026 | 8.56 | 33.42 | |
| CP02 (Shallow) | 0.29 | 29.5 | 24.5 | 29.5 | 24.5 | 0.4 | 0.0 | 2.0 | - | -0.16 | 1024 | 7.95 | 10.65 | |
| CP02 (Deep) | 0.29 | 5.8 | 4.5 | 5.0 | 4.5 | 16.9 | 0.0 | 1.0 | | 6.10 | 1024 | 10.80 | 27.35 | |
| CP03 (Shallow) | 0.25 | 20.2 | 18.8 | 20.2 | 18.8 | 0.6 | 2.0 | 0.0 | - | -0.60 | 1026 | 6.95 | 9.17 | |
| CP03 (Deep) | 0.25 | 0.1 | 0.2 | 0.0 | 0.2 | 19.9 | 0.0 | 0.0 | - | 31.11 | 1026 | 8.69 | 32.76 | |
| CP04 | 0.64 | 62.6 | 30.1 | 62.7 | 30.1 | 0.1 | 1.0 | 1.0 | - | -0.30 | 1026 | 8.52 | 9.32 | |
| CP05 | 0.30 | 44.0 | 26.2 | 44.0 | 26.2 | 0.1 | 1.0 | 0.0 | - | -0.50 | 1026 | 7.09 | 11.10 | Ammonia type odour |
| CP06 | 0.43 | 56.3 | 21.5 | 56.3 | 21.5 | 0.1 | 3.0 | 0.0 | - | -0.50 | 1026 | 7.19 | 9.19 | |
| WS01 | 0.29 | 64.0 | 30.1 | 64.0 | 30.1 | 0.1 | 1.0 | 4.0 | - | 0.14 | 1026 | Dry | 3.02 | |
| WS02 | 0.25 | 64.1 | 27.9 | 64.0 | 27.9 | 0.2 | 0.0 | 3.0 | - | -0.20 | 1024 | Dry | 5.00 | Very strong rotting odour |
| WS03 | 0.25 | 39.3 | 25.7 | 39.3 | 25.6 | 0.2 | 0.0 | 9.0 | - | -0.10 | 1024 | Dry | 3.25 | |
| WS04 | 0.40 | 66.6 | 30.3 | 66.6 | 30.3 | 0.1 | 1.0 | 0.0 | - | -0.40 | 1026 | Dry | 4.43 | |
| WS05 | 0.41 | 30.7 | 21.9 | 30.4 | 21.7 | 0.1 | 1.0 | 0.0 | - | -0.50 | 1026 | Dry | 3.34 | |
| WS06 | 0.40 | 67.6 | 28.8 | 67.4 | 28.6 | 0.1 | 2.0 | 8.0 | - | -0.50 | 1026 | Dry | 5.25 | |
| WS07 | 0.00 | 64.8 | 28.0 | 64.8 | 28.0 | 0.1 | 1.0 | 0.0 | - | -0.50 | 1023 | Dry | 2.97 | |
| WS08 | 0.33 | 57.6 | 20.7 | 56.3 | 20.7 | 0.1 | 1.0 | 12.0 | - | -0.60 | 1026 | Dry | 3.22 | |
| WS09 | 0.00 | 56.9 | 21.2 | 51.5 | 20.4 | 0.2 | 1.0 | 0.0 | - | -0.40 | 1023 | 4.570 | 4.94 | |
| WS10 | 0.27 | 44.1 | 16.5 | 44.1 | 16.5 | 0.2 | 1.0 | 5.0 | - | -0.60 | 1026 | 4.320 | 4.38 | |

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## GROUNDWATER / GAS MONITORING RECORD SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Havant Borough Council | **Job No:** | A102760 | **Instruments Used:** | GA5000<br>Dip Meter |
| **Project Name:** | Brockhampton West | **Date:** | 02/06/2017 | **Monitored By:** | AH |
| **Weather:** | Sunny, warm, becoming overcast | | | **GA Serial Number:** | G502043 |

| Exploratory Hole No. | Elevation of cover | Peak [1] | | Steady [2] | | | | | | Flow Rate | Atmospheric Pressure | Water Depth | Base Depth | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $CH_4$ | $CO_2$ | $CH_4$ | $CO_2$ | $O_2$ | CO | $H_2S$ | BAL | | | | | |
| | (mAGL) | (% vol) | (% vol) | (% vol) | (% vol) | (% vol) | ppm | ppm | (% vol) | (l/hr) | (mbar) | (m bcl) | (m bcl) | |
| CP01 (Shallow) | 0.27 | 68.3 | 29.1 | 68.1 | 29.1 | 0.0 | 3.0 | 0.0 | - | -0.60 | 1017 | 7.94 | 11.02 | |
| CP01 (Deep) | 0.27 | 56.7 | 28.3 | 56.7 | 28.3 | 2.5 | 3.0 | 0.0 | 12.9 | -0.50 | 1017 | 8.97 | 33.42 | |
| CP02 (Shallow) | 0.29 | 33.6 | 24.6 | 30.2 | 24.6 | 0.2 | 0.0 | 4.0 | - | -0.20 | 1017 | 8.61 | 10.65 | Dual Phase - Solid beep when put near install |
| CP02 (Deep) | 0.29 | 5.6 | 4.7 | 5.2 | 4.7 | 106.0 | 0.0 | 0.0 | 75.4 | -0.70 | 1017 | 9.27 | 28.35 | |
| CP03 (Shallow) | 0.25 | 39.6 | 19.5 | 23.8 | 19.5 | 0.5 | 1.0 | 0.0 | 56.1 | -0.60 | 1016 | 7.54 | 9.17 | |
| CP03 (Deep) | 0.25 | 10.0 | 6.0 | 10.0 | 6.0 | 12.5 | 4.0 | 0.0 | 71.5 | -5.90 | 1016 | 7.76 | 32.76 | |
| CP04 | 0.64 | 62.1 | 30.4 | 61.5 | 30.4 | 0.0 | 1.0 | 0.0 | - | -0.50 | 1017 | 8.48 | 9.32 | |
| CP05 | 0.30 | 42.1 | 27.0 | 42.0 | 26.9 | 0.3 | 0.0 | 0.0 | 30.8 | 0.20 | 1016 | 7.07 | 11.10 | |
| CP06 | 0.43 | 60.1 | 22.3 | 60.1 | 22.3 | 0.1 | 2.0 | 0.0 | 18.1 | -0.50 | 1015 | 7.38 | 9.19 | |
| WS01 | 0.29 | 65.1 | 30.7 | 64.9 | 30.2 | 0.0 | 2.0 | 0.0 | - | -0.40 | 1017 | - | 3.02 | Damp at base |
| WS02 | 0.25 | 63.6 | 28.3 | 63.6 | 28.2 | 0.0 | 0.0 | 1.0 | 8.7 | -0.30 | 1017 | Dry | 5.00 | |
| WS03 | 0.25 | 38.1 | 25.7 | 38.0 | 25.7 | 0.7 | 0.0 | 1.0 | 36.0 | -0.40 | 1017 | Dry | 3.25 | |
| WS04 | 0.40 | 66.2 | 30.8 | 66.1 | 30.8 | 0.0 | 1.0 | 0.0 | 4.3 | -0.50 | 1017 | Dry | 4.43 | |
| WS05 | 0.41 | 34.9 | 23.6 | 33.0 | 23.6 | 0.0 | 0.0 | 0.0 | 43.4 | -0.20 | 1017 | Dry | 3.34 | Dual Phase - Solid beep when put near install |
| WS06 | 0.40 | 66.8 | 29.0 | 66.6 | 29.0 | 0.0 | 0.0 | 3.0 | 6.6 | -0.50 | 1017 | Dry | 5.40 | |
| WS07 | 0.00 | 65.1 | 28.9 | 64.9 | 28.9 | 0.1 | 0.0 | 0.0 | 5.2 | 0.00 | 1016 | Dry | 3.00 | Dual Phase - Solid beep when put near install |
| WS08 | 0.33 | 56.3 | 21.5 | 56.2 | 21.5 | 0.4 | 1.0 | 10.0 | 21.6 | -0.50 | 1015 | Dry | 3.22 | |
| WS09 | 0.00 | COVERED WITH SPOIL - NO ACCESS | | | | | | | | | | | | |
| WS10 | 0.27 | 44.0 | 17.0 | 44.0 | 17.0 | 0.2 | 0.0 | 4.0 | 38.9 | -0.50 | 1015 | - | 4.30 | Damp at base. |

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## GROUNDWATER / GAS MONITORING RECORD SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Havant Borough Council | **Job No:** | A102760 | **Instruments Used:** | GA5000<br>Dip Meter |
| **Project Name:** | Brockhampton West | **Date:** | 08/06/2017 | **Monitored By:** | SB / DG |
| **Weather:** | Overcast, showers | | | **GA Serial Number:** | G502043 |

| Exploratory Hole No. | Elevation of cover (mAGL) | Peak [1] | | Steady [2] | | | | | | Flow Rate (l/hr) | Atmospheric Pressure (mbar) | Water Depth (m bcl) | Base Depth (m bcl) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $CH_4$ (% vol) | $CO_2$ (% vol) | $CH_4$ (% vol) | $CO_2$ (% vol) | $O_2$ (% vol) | CO ppm | $H_2S$ ppm | BAL (% vol) | | | | | |
| CP01 (Shallow) | 0.27 | 70.8 | 28.5 | 70.6 | 28.3 | 0.2 | 0.0 | 0.0 | 0.3 | 0.30 | 1011 | 7.67 | 10.71 | |
| CP01 (Deep) | 0.27 | 66.0 | 26.7 | 66.0 | 26.7 | 1.3 | 0.0 | 0.0 | 6.0 | 0.30 | 1011 | 8.90 | 33.00 | Sample collected |
| CP02 (Shallow) | 0.29 | 24.7 | 24.3 | 24.4 | 24.3 | 0.2 | 0.0 | 3.0 | 50.5 | -0.10 | 1012 | 8.62 | 9.45 | Sample collected |
| CP02 (Deep) | 0.29 | 3.2 | 2.9 | 2.5 | 2.9 | 18.7 | 0.0 | 0.0 | 76.3 | -0.40 | 1012 | 8.98 | 27.46 | Sample collected |
| CP03 (Shallow) | 0.25 | 22.4 | 22.3 | 22.7 | 22.3 | 0.4 | 1.0 | 0.0 | 55.1 | 0.00 | 1012 | 6.71 | 8.97 | Sample collected |
| CP03 (Deep) | 0.25 | 20.0 | 17.4 | 15.9 | 10.7 | 8.5 | 3.0 | 0.0 | 65.2 | -5.60 | 1012 | 6.60 | 28.55 | Sample collected |
| CP04 | 0.64 | 63.6 | 31.2 | 63.6 | 31.2 | 0.1 | 0.0 | 0.0 | 4.8 | 0.30 | 1012 | 7.01 | 8.90 | |
| CP05 | 0.30 | 43.3 | 27.4 | 43.4 | 27.3 | 0.0 | 1.0 | 0.0 | 29.3 | -0.10 | 1012 | 6.84 | 10.86 | |
| CP06 | 0.43 | 58.5 | 20.4 | 56.1 | 2.3 | 2.1 | 2.0 | 1.0 | 26.3 | 0.00 | 1011 | 7.13 | 8.77 | |
| WS01 | 0.29 | 0.7 | 0.8 | 0.7 | 0.8 | 20.5 | 0.0 | 0.0 | 78.2 | -0.20 | 1012 | 2.66 | 2.70 | |
| WS02 | 0.25 | 63.1 | 28.3 | 62.9 | 18.1 | 0.2 | 0.0 | 3.0 | 8.4 | 0.00 | 1012 | Dry | 4.75 | |
| WS03 | 0.25 | 29.7 | 20.8 | 29.4 | 20.1 | 4.0 | 0.0 | 0.0 | 38.4 | 0.00 | 1012 | Dry | 7.96 | |
| WS04 | 0.40 | 53.1 | 24.8 | 43.0 | 23.3 | 5.9 | 8.0 | 0.0 | 38.6 | 0.20 | 1012 | Dry | 2.75 | |
| WS05 | 0.41 | 56.1 | 28.2 | 19.9 | 20.9 | 0.5 | 1.0 | 0.0 | 58.9 | -0.10 | 1012 | Dry | 2.93 | |
| WS06 | 0.40 | 78.2 | 46.4 | 68.7 | 30.2 | 0.8 | 1.0 | 2.0 | 4.4 | -0.10 | 1012 | 5.68 | 5.70 | |
| WS07 | 0.00 | 60.7 | 28.7 | 60.7 | 28.7 | 0.4 | 1.0 | 0.0 | 10.1 | -0.10 | 1012 | Dry | 2.93 | |
| WS08 | 0.33 | 59.8 | 22.5 | 56.9 | 22.5 | 0.3 | 1.0 | 10.0 | 20.5 | -0.10 | 1011 | Dry | 2.76 | |
| WS09 | 0.00 | COVERED WITH SPOIL - NO ACCESS | | | | | | | | | | | | |
| WS10 | 0.27 | 31.8 | 17.7 | 39.6 | 17.4 | 0.7 | 2.0 | 0.0 | 41.5 | -0.10 | 1012 | 3.97 | 3.98 | |

**WYG ENVIRONMENT**
100 St John Street, London, EC1M 4EH
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www.wyg.com

## GROUNDWATER / GAS MONITORING RECORD SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Havant Borough Council | **Job No:** | A102760 | **Instruments Used:** | GA5000<br>Dip Meter |
| **Project Name:** | Brockhampton West | **Date:** | 15/06/2017 | **Monitored By:** | AH |
| **Weather:** | Sunny but breezy | | | **GA Serial Number:** | G502043 |

| Exploratory Hole No. | Elevation of cover (mAGL) | Peak [1] | | Steady [2] | | | | | | Flow Rate (l/hr) | Atmospheric Pressure (mbar) | Water Depth (m bcl) | Base Depth (m bcl) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $CH_4$ (% vol) | $CO_2$ (% vol) | $CH_4$ (% vol) | $CO_2$ (% vol) | $O_2$ (% vol) | CO ppm | $H_2S$ ppm | BAL (% vol) | | | | | |
| CP01 (Shallow) | 0.27 | 67.5 | 39.7 | 67.5 | 29.7 | 0.1 | 2.0 | 0.0 | 2.5 | -0.40 | 1014 | 8.02 | 11.13 | Sample collected 15th June |
| CP01 (Deep) | 0.27 | 66.8 | 26.6 | 62.0 | 26.5 | 1.7 | 2.0 | 0.0 | 10.5 | -0.50 | 1014 | 9.29 | 33.00 | Sample collected 8th June |
| CP02 (Shallow) | 0.29 | 0.2 | 0.2 | 0.8 | 0.2 | 19.9 | 0.0 | 0.0 | 79.8 | -0.30 | 1014 | 9.07 | 9.78 | Sample collected 8th June |
| CP02 (Deep) | 0.29 | 0.5 | 1.2 | 0.1 | 0.2 | 20.0 | 2.0 | 2.0 | 79.9 | -0.30 | 1014 | 10.04 | 27.46 | Sample collected 8th June |
| CP03 (Shallow) | 0.25 | 24.8 | 20.8 | 24.2 | 20.5 | 0.5 | 1.0 | 0.0 | 55.0 | -0.30 | 1016 | 7.72 | 9.28 | Sample collected 8th June |
| CP03 (Deep) | 0.25 | 11.4 | 9.0 | 11.4 | 9.0 | 9.5 | 2.0 | 0.0 | 70.2 | -5.80 | 1016 | 7.52 | 28.55 | Sample collected 8th June |
| CP04 | 0.64 | 61.0 | 30.4 | 61.0 | 30.4 | 0.2 | 1.0 | 0.0 | 6.4 | -0.50 | 1014 | 8.52 | 10.36 | Sample collected 15th June |
| CP05 | 0.30 | 42.3 | 27.1 | 42.3 | 27.1 | 0.3 | 0.0 | 4.0 | 30.3 | 0.00 | 1014 | 7.00 | 11.10 | Sample collected 15th June |
| CP06 | 0.43 | 55.0 | 22.3 | 55.0 | 22.3 | 0.3 | 1.0 | 0.0 | 22.2 | -0.30 | 1014 | 7.63 | 9.14 | Sample collected 15th June |
| WS01 | 0.29 | 61.5 | 30.5 | 61.5 | 30.5 | 0.2 | 3.0 | 0.0 | 6.8 | -0.40 | 1014 | - | 3.03 | Damp at Base |
| WS02 | 0.25 | 63.2 | 28.5 | 63.0 | 28.5 | 0.1 | 0.0 | 4.0 | 8.1 | -0.40 | 1014 | - | 5.06 | Damp at Base, Strong foul odour |
| WS03 | 0.25 | 37.6 | 25.9 | 27.6 | 25.9 | 0.2 | 1.0 | 2.0 | 35.8 | -0.40 | 1014 | Dry | 3.27 | |
| WS04 | 0.40 | 65.4 | 30.5 | 65.4 | 30.5 | 0.0 | 0.0 | 0.0 | 2.0 | -0.30 | 1014 | Dry | 4.44 | |
| WS05 | 0.41 | 0.1 | 3.0 | 0.1 | 2.9 | 18.1 | 0.0 | 0.0 | 79.2 | -0.30 | 1014 | Dry | 3.44 | |
| WS06 | 0.40 | 66.0 | 28.8 | 66.0 | 28.8 | 0.1 | 0.0 | 4.0 | 4.5 | -0.50 | 1014 | - | 5.40 | Damp at Base |
| WS07 | 0.00 | 63.0 | 29.3 | 62.8 | 29.3 | 0.2 | 0.0 | 1.0 | 7.6 | -0.20 | 1014 | Dry | 3.07 | |
| WS08 | 0.33 | 53.5 | 23.3 | 53.2 | 23.3 | 0.1 | 1.0 | 13.0 | 23.0 | -0.30 | 1016 | Dry | 3.23 | |
| WS09 | 0.00 | COVERED WITH SPOIL - NO ACCESS | | | | | | | | | | | | |
| WS10 | 0.27 | 40.2 | 17.7 | 40.2 | 17.7 | 0.0 | 1.0 | 0.0 | 41.9 | -0.50 | 1016 | - | 4.31 | Damp at Base |

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100 St John Street, London, EC1M 4EH
Tel: 0207 250 7500 Fax: 0207 250 7501
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## GROUNDWATER / GAS MONITORING RECORD SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Havant Borough Council | **Job No:** | A102760 | **Instruments Used:** | GA5000<br>Dip Meter (VW) |
| **Project Name:** | Brockhampton West | **Date:** | 27/06/2017 | **Monitored By:** | AH |
| **Weather:** | Sunny becoming overcast | | | **GA Serial Number:** | G502043 |

| Exploratory Hole No. | Elevation of cover (mAGL) | Peak [1] | | Steady [2] | | | | | | Flow Rate (l/hr) | Atmospheric Pressure (mbar) | Water Depth (m bcl) | Base Depth (m bcl) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $CH_4$ (% vol) | $CO_2$ (% vol) | $CH_4$ (% vol) | $CO_2$ (% vol) | $O_2$ (% vol) | CO ppm | $H_2S$ ppm | BAL (% vol) | | | | | |
| CP01 (Shallow) | 0.27 | 67.7 | 30.1 | 67.7 | 30.1 | 0.2 | 2.0 | 0.0 | 0.9 | -0.50 | 1007 | 7.91 | 10.97 | |
| CP01 (Deep) | 0.27 | 68.2 | 30.6 | 68.2 | 30.6 | 0.2 | 1.0 | 0.0 | 0.4 | -0.50 | 1007 | 9.27 | 33.10 | |
| CP02 (Shallow) | 0.29 | 0.8 | 0.2 | 0.0 | 0.2 | 19.8 | 0.0 | 0.0 | 79.9 | -0.40 | 1007 | 8.975 | 9.70 | |
| CP02 (Deep) | 0.29 | 0.3 | 1.3 | 0.2 | 1.2 | 18.4 | 0.0 | 0.0 | 79.9 | -0.90 | 1007 | 8.875 | 27.46 | |
| CP03 (Shallow) | 0.25 | 19.3 | 14.9 | 17.1 | 14.9 | 3.7 | 3.0 | 0.0 | 64.4 | -6.30 | 1007 | 7.48 | 9.20 | |
| CP03 (Deep) | 0.25 | 24.9 | 21.8 | 24.9 | 21.8 | 0.0 | 1.0 | 0.0 | 52.8 | -0.60 | 1007 | 7.665 | 28.55 | |
| CP04 | 0.64 | 63.9 | 30.9 | 63.9 | 30.9 | 0.1 | 1.0 | 0.0 | 4.7 | -0.50 | 1007 | 8.495 | 10.46 | Strong methane type odour |
| CP05 | 0.30 | 40.8 | 26.3 | 40.8 | 26.3 | 0.4 | 0.0 | 0.0 | 32.3 | -0.20 | 1007 | 7.08 | 11.22 | |
| CP06 | 0.43 | 58.0 | 23.2 | 58.0 | 23.2 | 0.0 | 1.0 | 0.0 | 19.2 | -0.60 | 1007 | 7.67 | 9.24 | |
| WS01 | 0.29 | 66.1 | 31.8 | 64.8 | 31.8 | 0.1 | 2.0 | 0.0 | 3.1 | -0.40 | 1007 | Dry | 3.02 | |
| WS02 | 0.25 | 62.4 | 28.7 | 62.8 | 28.7 | 0.3 | 0.0 | 7.0 | 8.7 | -0.50 | 1007 | Dry | 4.89 | Strong foul odour |
| WS03 | 0.25 | 36.9 | 26.2 | 36.9 | 26.2 | 0.3 | 0.0 | 0.0 | 36.6 | -0.40 | 1007 | Dry | 3.27 | |
| WS04 | 0.40 | 66.5 | 31.8 | 66.5 | 31.8 | 0.0 | 0.0 | 1.0 | 1.2 | -0.50 | 1007 | Dry | 4.41 | |
| WS05 | 0.41 | 8.0 | 12.8 | 7.6 | 12.8 | 7.3 | 0.0 | 0.0 | 72.6 | -0.40 | 1007 | Dry | 3.34 | |
| WS06 | 0.40 | 65.1 | 30.7 | 65.1 | 30.7 | 0.1 | 0.0 | 3.0 | 4.0 | -0.40 | 1007 | Dry | 5.42 | |
| WS07 | 0.00 | 63.6 | 29.7 | 63.6 | 29.7 | 0.1 | 0.0 | 0.0 | 7.2 | -0.30 | 1007 | Dry | 3.05 | |
| WS08 | 0.33 | 63.4 | 29.2 | 51.0 | 25.1 | 0.0 | 0.0 | 12.0 | 24.3 | -0.50 | 1007 | Dry | 3.24 | |
| WS09 | 0.00 | COVERED WITH SPOIL - NO ACCESS | | | | | | | | | | | | |
| WS10 | 0.27 | 54.6 | 22.7 | 40.3 | 18.0 | 0.0 | 1.0 | 0.0 | 41.8 | -0.50 | 1007 | Dry | 4.32 | |

# WYG Environment

## LOW FLOW GROUNDWATER MONITORING RECORDS

100 St John Street, London, EC1M 4EH

**Site Name:** Brockhampton West
**Job No:** A102760
**Client:** Havant Borough Council

**Date Monitored:** 08/06/2017
**Monitoring Engineer:** SB / DG
**Weather:** Overcast / showers

| EQUIPMENT USED | | | |
|---|---|---|---|
| Type | Make | Source | Comments |
| **Water Quality Meter** | **YSI** | **Van Walt** | |
| **Bladder Pump** | **Geo Control Pump** | **Van Walt** | |

| **Location No** | CP01 (Deep) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS** | | | | | | | | | | |
| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators | | | | | Remarks (purge vol., appearance, etc) |
| | | | | | Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | |
| 08:54 | 8.895 | 33.00 | nd | nd | 12.00 | 1839 | 65.10 | 6.89 | 79.5 | |
| | 8.895 | 33.00 | nd | nd | 11.90 | 1423 | 73.10 | 6.91 | 58.4 | |
| | 8.895 | 33.00 | nd | nd | 11.80 | 940 | 7.47 | 6.95 | 39.6 | |
| | 8.895 | 33.00 | nd | nd | 11.70 | 678 | 7.85 | 6.99 | 26.3 | |
| | 8.895 | 33.00 | nd | nd | 11.70 | 605 | 8.04 | 7.00 | 23.6 | |
| | 8.895 | 33.00 | nd | nd | 11.70 | 457 | 8.11 | 7.02 | 22.1 | |
| | 8.895 | 33.00 | nd | nd | 11.70 | 537 | 8.15 | 7.02 | 21.5 | |
| | 8.895 | 33.00 | nd | nd | 11.70 | 531 | 8.18 | 7.02 | 22.5 | 7 litres |
| 09:22 | | | | | | | | | | Started sampling |

| Visual / Olfactory Characteristics of Sampled Water | | | |
|---|---|---|---|
| Colour | Silty? | Sheen? | Odour? |
| Clear | None | None | None |

| **Location No** | CP02 (Deep) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS** | | | | | | | | | | |
| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators | | | | | Remarks (purge vol., appearance, etc) |
| | | | | | Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | |
| | 7.44 | 27.35 | nd | nd | | | | | | |
| | 7.44 | 27.35 | nd | nd | 12.30 | 3968 | 3.90 | 6.74 | -48.5 | |
| | 7.44 | 27.35 | nd | nd | 12.30 | 3775 | 2.23 | 6.72 | -62.8 | |
| | 7.44 | 27.35 | nd | nd | 12.30 | 3579 | 1.50 | 6.71 | -70.3 | |
| | 7.44 | 27.35 | nd | nd | 12.20 | 3289 | 0.62 | 6.69 | -88.8 | |
| | 7.44 | 27.35 | nd | nd | 12.20 | 3276 | 0.63 | 6.69 | -90.4 | |
| | 7.44 | 27.35 | nd | nd | 12.20 | 3251 | 0.59 | 6.69 | -93.1 | 7 litres |
| 10:22 | | | | | | | | | | Started sampling |
| | | | | | | | | | | |

| Visual / Olfactory Characteristics of Sampled Water | | | |
|---|---|---|---|
| Colour | Silty? | Sheen? | Odour? |
| Cream | Yes, becoming less so after 5 ltrs | None | None |

| **Location No** | CP02 (Shallow) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS** | | | | | | | | | | |
| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators | | | | | Remarks (purge vol., appearance, etc) |
| | | | | | Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | |
| | 6.12 | 10.65 | nd | nd | | | | | | |
| | 6.12 | 10.65 | nd | nd | 14.40 | 3117 | 4.90 | 6.64 | -79.1 | |
| | 6.12 | 10.65 | nd | nd | 14.30 | 3124 | 1.16 | 6.62 | -85.4 | |
| | 6.12 | 10.65 | nd | nd | 14.70 | 3154 | 1.00 | 6.66 | -87.5 | |
| | 6.12 | 10.65 | nd | nd | 15.10 | 3195 | 0.92 | 6.66 | -89.9 | |
| | 6.12 | 10.65 | nd | nd | 15.10 | 3175 | 0.94 | 6.65 | -88.2 | |
| | 6.12 | 10.65 | nd | nd | 15.10 | 3172 | 0.94 | 6.65 | -88.3 | 3 litres |
| 12:53 | | | | | | | | | | Started sampling |

| Visual / Olfactory Characteristics of Sampled Water | | | |
|---|---|---|---|
| Colour | Silty? | Sheen? | Odour? |
| Grey | Low | Slight | Landfill type |

**Notes**

Flow rate of 1.0 L/min or less
Stabilisation (three consecutive readings): pH ±0.2 units; EC ±3%; DO the greater of ±10% or 0.2mg/l; ORP ±20mV
Drawdown not exceeding 0.1m or 25% of distance from top of well screen to pump intake
nt = not tested
nd = not detected

Data Compiled by: AH
Data Checked by:

# WYG Environment

## LOW FLOW GROUNDWATER MONITORING RECORDS

100 St John Street, London, EC1M 4EH

**Site Name:** Brockhampton West
**Job No:** A102760
**Client:** Havant Borough Council

**Date Monitored:** 08/06/2017
**Monitoring Engineer:** SB / DG
**Weather:** Overcast / showers

| EQUIPMENT USED | | | |
|---|---|---|---|
| Type | Make | Source | Comments |
| **Water Quality Meter** | **YSI** | **Van Walt** | |
| **Bladder Pump** | **Geo Control Pump** | **Van Walt** | |

**Location No** CP03 (Deep)

**GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS**

| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators: Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | Remarks (purge vol., appearance, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 6.70 | 28.55 | nd | nd | 12.50 | 533 | 4.99 | 6.92 | 50.1 | |
| | 6.70 | 28.55 | nd | nd | 12.40 | 535 | 2.61 | 6.90 | 19.0 | |
| | 6.70 | 28.55 | nd | nd | 12.40 | 530 | 2.34 | 6.90 | 10.6 | |
| | 6.70 | 28.55 | nd | nd | 12.40 | 527 | 2.33 | 6.90 | 8.9 | |
| | 6.70 | 28.55 | nd | nd | 12.40 | 523 | 2.50 | 6.90 | 6.7 | |
| | 6.70 | 28.55 | nd | nd | 12.30 | 523 | 2.55 | 6.90 | 5.8 | 6 litres |
| 14:30 | | | | | | | | | | Started sampling |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Visual / Olfactory Characteristics of Sampled Water**

| Colour | Silty? | Sheen? | Odour? |
|---|---|---|---|
| Cream | Very becoming low | None | None |

**Location No** CP03 (Shallow)

**GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS**

| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators: Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | Remarks (purge vol., appearance, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 6.87 | 8.92 | nd | nd | 12.90 | 1227 | 0.10 | 6.61 | -62.7 | |
| | 6.87 | 8.92 | nd | nd | 13.00 | 1251 | 0.25 | 6.61 | -71.2 | |
| | 6.87 | 8.92 | nd | nd | 12.80 | 1255 | 0.20 | 6.61 | -77.8 | |
| | 6.87 | 8.92 | nd | nd | 12.90 | 1258 | 0.23 | 6.62 | -81.4 | |
| 15.17 | 6.87 | 8.92 | nd | nd | 12.80 | 1259 | 0.26 | 6.62 | -84.2 | 5 litres |
| 15:07 | | | | | | | | | | Started sampling |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Visual / Olfactory Characteristics of Sampled Water**

| Colour | Silty? | Sheen? | Odour? |
|---|---|---|---|
| Cream | Mediu m | None | None |

**Location No**

**GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS**

| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators: Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | Remarks (purge vol., appearance, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Visual / Olfactory Characteristics of Sampled Water**

| Colour | Silty? | Sheen? | Odour? |
|---|---|---|---|
| | | | |

**Notes**

Flow rate of 1.0 L/min or less
Stabilisation (three consecutive readings): pH ±0.2 units; EC ±3%; DO the greater of ±10% or 0.2mg/l; ORP ±20mV
Drawdown not exceeding 0.1m or 25% of distance from top of well screen to pump intake
nt = not tested
nd = not detected

Data Compiled by: AH
Data Checked by:

# WYG Environment

## LOW FLOW GROUNDWATER MONITORING RECORDS

100 St John Street, London, EC1M 4EH

**Site Name:** Brockhampton West
**Job No:** A102760
**Client:** Havant Borough Council

**Date Monitored:** 15/06/2017
**Monitoring Engineer:** SB / AH
**Weather:** Sunny

| EQUIPMENT USED | | | |
|---|---|---|---|
| Type | Make | Source | Comments |
| **Water Quality Meter** | **YSI** | **Van Walt** | |
| **Peristaltic Pump** | **Geo Control Pump** | **Van Walt** | |

**Location No** CP05

**GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS**

| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators: Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | Remarks (purge vol., appearance, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 09:41 | 7.078 | 9.14 | nd | nd | 12.90 | 2671 | 4.24 | 6.74 | | |
| 10:00 | 7.078 | 9.14 | nd | nd | 12.90 | 2676 | 3.21 | 6.75 | -75.3 | |
| 10:03 | 7.078 | 9.14 | nd | nd | 12.90 | 2666 | 2.09 | 6.76 | -84.9 | |
| 10:06 | 7.078 | 9.14 | nd | nd | 12.80 | 2662 | 1.68 | 6.76 | -86.9 | |
| 10:08 | 7.078 | 9.14 | nd | nd | 12.90 | 2662 | 1.35 | 6.76 | -88.0 | |
| 10:11 | 7.078 | 9.14 | nd | nd | 12.80 | 2656 | 1.32 | 6.77 | -89.7 | |
| 10:13 | 7.078 | 9.14 | nd | nd | 12.90 | 2656 | 1.29 | 6.77 | -90.8 | 7 litres |
| 10:14 | | | | | | | | | | Started sampling |
| | | | | | | | | | | |

**Visual / Olfactory Characteristics of Sampled Water**

| Colour | Silty? | Sheen? | Odour? |
|---|---|---|---|
| Grey / clear | Low | None | None |

**Location No** CP04

**GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS**

| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators: Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | Remarks (purge vol., appearance, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:13 | 8.52 | 10.36 | nd | nd | 13.20 | 4902 | 0.30 | 6.71 | -148.1 | |
| | 8.52 | 10.36 | nd | nd | 13.00 | 4879 | 0.27 | 6.71 | -151.7 | |
| | 8.52 | 10.36 | nd | nd | 12.80 | 4912 | 0.27 | 6.73 | -155.9 | |
| 11:30 | 8.52 | 10.36 | nd | nd | 12.90 | 4830 | 0.20 | 6.74 | -156.9 | |
| 11:22 | 8.52 | 10.36 | nd | nd | 12.90 | 4792 | 0.22 | 6.75 | -155.5 | |
| 11:23 | 8.52 | 10.36 | nd | nd | 12.90 | 4812 | 0.22 | 6.75 | -155.0 | 6 litres |
| 11:24 | | | | | | | | | | Started sampling |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Visual / Olfactory Characteristics of Sampled Water**

| Colour | Silty? | Sheen? | Odour? |
|---|---|---|---|
| Yellow / grey | Low | Slight | Ammonia type |

**Location No** CP01 (Shallow)

**GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS**

| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators: Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | Remarks (purge vol., appearance, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:48 | 7.983 | 11.13 | nd | nd | 12.10 | 6009 | 0.38 | 6.86 | -97.4 | |
| 11:50 | 8.021 | 11.13 | nd | nd | 13.00 | 6017 | 0.31 | 6.86 | -105.7 | |
| 11:52 | 8.021 | 11.13 | nd | nd | 13.10 | 6041 | 0.30 | 6.86 | -110.6 | |
| 11:54 | 8.021 | 11.13 | nd | nd | 13.20 | 6060 | 0.26 | 6.86 | -113.6 | |
| 11:57 | 8.021 | 11.13 | nd | nd | 13.10 | 6070 | 0.27 | 6.86 | -116.1 | |
| 11:59 | 8.021 | 11.13 | nd | nd | 13.10 | 6079 | 0.25 | 6.86 | -117.6 | 6 litres |
| 12:00 | 8.021 | 11.13 | nd | nd | | | | | | Started Sampling |
| | | | | | | | | | | |

**Visual / Olfactory Characteristics of Sampled Water**

| Colour | Silty? | Sheen? | Odour? |
|---|---|---|---|
| Clear | None | None | None |

**Notes**

Flow rate of 1.0 L/min or less
Stabilisation (three consecutive readings): pH ±0.2 units; EC ±3%; DO the greater of ±10% or 0.2mg/l; ORP ±20mV
Drawdown not exceeding 0.1m or 25% of distance from top of well screen to pump intake
nt = not tested
nd = not detected

Data Compiled by: AH
Data Checked by:

# WYG Environment

## LOW FLOW GROUNDWATER MONITORING RECORDS

100 St John Street, London, EC1M 4EH

**Site Name:** Brockhampton West
**Job No:** A102760
**Client:** Havant Borough Council

**Date Monitored:** 15/06/2017
**Monitoring Engineer:** SB / AH
**Weather:** Sunny

| EQUIPMENT USED | | | |
|---|---|---|---|
| Type | Make | Source | Comments |
| **Water Quality Meter** | **YSI** | **Van Walt** | |
| **Peristaltic Pump** | **Geo Control Pump** | **Van Walt** | |

**Location No** CP06

**GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS**

| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators | | | | | Remarks (purge vol., appearance, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | |
| 12:29 | 7.630 | 9.14 | nd | nd | 12.70 | 2301 | 0.30 | 6.77 | -96.1 | |
| 12:31 | 7.630 | 9.14 | nd | nd | 12.60 | 2282 | 0.26 | 6.76 | -101.1 | |
| 12:33 | 7.630 | 9.14 | nd | nd | 12.70 | 2283 | 0.27 | 6.77 | -102.9 | |
| 12:34 | 7.630 | 9.14 | nd | nd | 12.70 | 2284 | 0.27 | 6.77 | -103.1 | |
| 12:36 | 7.630 | 9.14 | nd | nd | 12.70 | 2281 | 0.31 | 6.77 | -102.5 | 5 litres |
| 12:37 | | | | | | | | | | Started sampling |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Visual / Olfactory Characteristics of Sampled Water**

| Colour | Silty? | Sheen? | Odour? |
|---|---|---|---|
| Yellowish green | Low | Slight | None |

**Location No**

**GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS**

| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators | | | | | Remarks (purge vol., appearance, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Visual / Olfactory Characteristics of Sampled Water**

| Colour | Silty? | Sheen? | Odour? |
|---|---|---|---|
| | | | |

**Location No**

**GROUNDWATER / NAPL - PHYSIO-CHEMICAL PARAMETERS**

| Time | Water Surface (mbgl) | Base Depth (mbgl) | LNAPL Surface (mbgl) | DNAPL Surface (mbgl) | Water Quality Indicators | | | | | Remarks (purge vol., appearance, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temp (°C) | EC (µs) | DO (mg/l) | pH (value) | ORP (mV) | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Visual / Olfactory Characteristics of Sampled Water**

| Colour | Silty? | Sheen? | Odour? |
|---|---|---|---|
| | | | |

**Notes**

Flow rate of 1.0 L/min or less
Stabilisation (three consecutive readings): pH ±0.2 units; EC ±3%; DO the greater of ±10% or 0.2mg/l; ORP ±20mV
Drawdown not exceeding 0.1m or 25% of distance from top of well screen to pump intake
nt = not tested
nd = not detected

Data Compiled by: AH
Data Checked by:

## GROUNDWATER PURGING AND SAMPLING

PROJECT: Brcokhampton West

ENGINEER: AH

PROJECT No.: A102760

DATE: 18/05/17

WEATHER: Overcast, showers

| BH Identity | | CP01 (Shallow) | CP02 (Shallow) | CP03 (Shallow) | CP04 | CP05 | CP06 |
|---|---|---|---|---|---|---|---|
| Water depth (m) | Dw | 7.935 | 8.69 | 7.426 | 8.458 | 7.27 | 7.62 |
| Base of standpipe (m) | Db | 11.02 | 10.65 | 9.17 | 9.21 | 11.1 | 9.18 |
| Cover (m aGL) | - | | 0.29 | | 0.64 | 0.30 | |
| Column of water (m) Wc = (Dw - Db) | Wc | 3.085 | 1.96 | 1.744 | 0.752 | 3.83 | 1.56 |
| Diameter of standpipe (mm) | D | 50 | 50 | 50 | 50 | 50 | 50 |
| **Volume of water to purge (l)** Wp = (see table below) x 6 | Wp | 37.02 | 23.52 | 20.93 | 9.02 | 45.96 | 18.72 |
| Volume removed (L) | | 37.00 | 50.00 | 24.00 | 10.00 | 50.00 | 25.00 |
| Comments | | Grey / Brown<br>Moderate Sediment<br>Ammonia / Rotting<br>Vegetable Odour<br>Gas Haze | Light Brown<br>Slightly Foamy<br>Gas Haze | Grey<br>Mod - High Sediment<br>No Odour<br>Slight Sheen | Dark Grey<br>Purged Dry<br>Gas Haze | Dark Grey / Black<br>Gas Haze | Grey / Brown<br>Ammonia / Rotting<br>Vegetable Odour<br>Gas Haze |

Notes:
In accordance with BGPD Guidance Document v2.4 (May 1999).
It is stated "best practice" to remove at least three standpipe volumes of water prior to groundwater sampling. (Strata of low permeability I.e. clays will require removal of water then recharge and then subsequent purging prior to sampling. For large standpipe volumes I.e. >100L an alternative procedure is to take regular I.e. 1/20L field measurements of pH, Temperature, Conductivity and Dissolved Oxygen until successive consistent field readings are recorded prior to sampling.
Sampling: Test for pH, Temperature, Conductivity and Dissloved Oxygen on actual sample.

**Volume within casing**

| | | |
|---|---|---|
| Casing int. diameter (mm) | 50 | 100 |
| Vol (L/m of casing) | 2 | 7.9 |

DRAFT

# GROUNDWATER PURGING AND SAMPLING

PROJECT: Brockhampton West

ENGINEER: AH

PROJECT No.: A102760

DATE: 25/05/17

WEATHER: Sunny

| BH Identity | | CP01 (Deep) | CP02 (Deep) | CP03 (Deep) |
|---|---|---|---|---|
| Water depth (m) | Dw | 8.56 | 10.80 | 8.69 |
| Base of standpipe (m) | Db | 33.42 | 27.35 | 32.76 |
| Column of water (m) | | | | |
| Wc = (Dw - Db) | Wc | 24.86 | 16.55 | 24.07 |
| Diameter of standpipe (mm) | D | 50.00 | 50.00 | 50.00 |
| **Volume of water to purge (l)** | | | | |
| Wp = (see table below) x 6 | Wp | 298.32 | 198.60 | 288.84 |
| Volume removed (L) | | 315.00 | 300.00 | 320.00 |
| Comments | | White<br>Moderate Sediment<br>No Odour | White<br>Moderate Sediment<br>No Odour | Cream White<br>Mod - High Sediment<br>No Odour |

Notes:

In accordance with BGPD Guidance Document v2.4 (May 1999).

It is stated "best practice" to remove at least three standpipe volumes of water prior to groundwater sampling. (Strata of low permeability I.e. clays will require removal of water then recharge and then subsequent purging prior to sampling. For large standpipe volumes I.e. >100L an alternative procedure is to take regular I.e. 1/20L field measurements of pH, Temperature, Conductivity and Dissolved Oxygen until successive consistent field readings are recorded prior to sampling.

Sampling: Test for pH, Temperature, Conductivity and Dissloved Oxygen on actual sample.

**Volume within casing**

| | | |
|---|---|---|
| Casing int. diameter (mm) | 50 | 100 |
| Vol (L/m of casing) | 2 | 7.9 |

DRAFT

# Groundwater Summary Table

| Well ID | Easting | Northing | Elevation (mAOD) | Screened unit | Top of screen (m bgl) | Bottom of screen (m bgl) | Date | SWL (m bcl) | Depth (m bcl) | SWL (mAOD) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CP01(D) | 470104.275 | 105703.67 | 10.54 | Chalk | 14 | 35 | 18/05/2017 | 9.183 | 33.42 | 1.357 | |
| CP01(D) | 470104.275 | 105703.67 | 10.54 | Chalk | 14 | 35 | 25/05/2017 | 8.56 | 33.42 | 1.98 | |
| CP01(D) | 470104.275 | 105703.67 | 10.54 | Chalk | 14 | 35 | 02/06/2017 | 8.97 | 33.42 | 1.57 | |
| CP01(D) | 470104.275 | 105703.67 | 10.54 | Chalk | 14 | 35 | 08/06/2017 | 8.9 | 33 | 1.64 | |
| CP01(D) | 470104.275 | 105703.67 | 10.54 | Chalk | 14 | 35 | 15/06/2017 | 9.29 | 33 | 1.25 | |
| CP01(D) | 470104.275 | 105703.67 | 10.54 | Chalk | 14 | 35 | 27/06/2017 | 9.27 | 33.1 | 1.27 | |
| CP01(S) | 470104.275 | 105703.67 | 10.54 | Landfill | 0.95 | 11 | 18/05/2017 | 7.935 | 11.02 | 2.605 | |
| CP01(S) | 470104.275 | 105703.67 | 10.54 | Landfill | 0.95 | 11 | 25/05/2017 | 7.95 | 11.02 | 2.59 | |
| CP01(S) | 470104.275 | 105703.67 | 10.54 | Landfill | 0.95 | 11 | 02/06/2017 | 7.94 | 11.02 | 2.6 | |
| CP01(S) | 470104.275 | 105703.67 | 10.54 | Landfill | 0.95 | 11 | 08/06/2017 | 7.67 | 10.71 | 2.87 | |
| CP01(S) | 470104.275 | 105703.67 | 10.54 | Landfill | 0.95 | 11 | 15/06/2017 | 8.02 | 11.13 | 2.52 | |
| CP01(S) | 470104.275 | 105703.67 | 10.54 | Landfill | 0.95 | 11 | 27/06/2017 | 7.91 | 10.97 | 2.63 | |
| CP02A(D) | 469988.768 | 105575.679 | 10.79 | Chalk | 13 | 35 | 18/05/2017 | 9.74 | 27.35 | 1.05 | Weak ammonia type odour |
| CP02A(D) | 469988.768 | 105575.679 | 10.79 | Chalk | 13 | 35 | 25/05/2017 | 10.8 | 27.35 | -0.01 | |
| CP02A(D) | 469988.768 | 105575.679 | 10.79 | Chalk | 13 | 35 | 02/06/2017 | 9.27 | 28.35 | 1.52 | |
| CP02A(D) | 469988.768 | 105575.679 | 10.79 | Chalk | 13 | 35 | 08/06/2017 | 8.98 | 27.46 | 1.81 | |
| CP02A(D) | 469988.768 | 105575.679 | 10.79 | Chalk | 13 | 35 | 15/06/2017 | 10.04 | 27.46 | 0.75 | |
| CP02A(D) | 469988.768 | 105575.679 | 10.79 | Chalk | 13 | 35 | 27/06/2017 | 8.875 | 27.46 | 1.915 | |
| CP02A(S) | 469988.768 | 105575.679 | 10.79 | Landfill | 1 | 9 | 18/05/2017 | 8.9 | 10.65 | 1.89 | |
| CP02A(S) | 469988.768 | 105575.679 | 10.79 | Landfill | 1 | 9 | 25/05/2017 | 7.95 | 10.65 | 2.84 | |
| CP02A(S) | 469988.768 | 105575.679 | 10.79 | Landfill | 1 | 9 | 02/06/2017 | 8.61 | 10.65 | 2.18 | |
| CP02A(S) | 469988.768 | 105575.679 | 10.79 | Landfill | 1 | 9 | 08/06/2017 | 8.62 | 9.45 | 2.17 | |
| CP02A(S) | 469988.768 | 105575.679 | 10.79 | Landfill | 1 | 9 | 15/06/2017 | 9.07 | 9.78 | 1.72 | |
| CP02A(S) | 469988.768 | 105575.679 | 10.79 | Landfill | 1 | 9 | 27/06/2017 | 8.975 | 9.7 | 1.815 | |
| CP03(D) | 470303.298 | 105661.526 | 8.67 | Chalk | 14 | 35 | 18/05/2017 | 7.63 | 32.76 | 1.04 | |
| CP03(D) | 470303.298 | 105661.526 | 8.67 | Chalk | 14 | 35 | 25/05/2017 | 8.69 | 32.76 | -0.02 | |
| CP03(D) | 470303.298 | 105661.526 | 8.67 | Chalk | 14 | 35 | 02/06/2017 | 7.76 | 32.76 | 0.91 | |
| CP03(D) | 470303.298 | 105661.526 | 8.67 | Chalk | 14 | 35 | 08/06/2017 | 6.6 | 28.55 | 2.07 | |
| CP03(D) | 470303.298 | 105661.526 | 8.67 | Chalk | 14 | 35 | 15/06/2017 | 7.52 | 28.55 | 1.15 | |
| CP03(D) | 470303.298 | 105661.526 | 8.67 | Chalk | 14 | 35 | 27/06/2017 | 7.665 | 28.55 | 1.005 | |
| CP03(S) | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 10 | 18/05/2017 | 7.426 | 9.17 | 4.974 | |
| CP03(S) | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 10 | 25/05/2017 | 6.95 | 9.17 | 5.45 | |
| CP03(S) | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 10 | 02/06/2017 | 7.54 | 9.17 | 4.86 | |
| CP03(S) | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 10 | 08/06/2017 | 6.71 | 8.97 | 5.69 | |
| CP03(S) | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 10 | 15/06/2017 | 7.72 | 9.28 | 4.68 | |
| CP03(S) | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 10 | 27/06/2017 | 7.48 | 9.2 | 4.92 | |
| CP04 | 470021.091 | 105669.836 | 11.52 | Landfill | 1 | 9 | 18/05/2017 | 8.45 | 9.21 | 3.07 | |
| CP04 | 470021.091 | 105669.836 | 11.52 | Landfill | 1 | 9 | 25/05/2017 | 8.52 | 9.32 | 3 | |
| CP04 | 470021.091 | 105669.836 | 11.52 | Landfill | 1 | 9 | 02/06/2017 | 8.48 | 9.32 | 3.04 | |
| CP04 | 470021.091 | 105669.836 | 11.52 | Landfill | 1 | 9 | 08/06/2017 | 7.01 | 8.9 | 4.51 | |
| CP04 | 470021.091 | 105669.836 | 11.52 | Landfill | 1 | 9 | 15/06/2017 | 8.52 | 10.36 | 3 | |
| CP04 | 470021.091 | 105669.836 | 11.52 | Landfill | 1 | 9 | 27/06/2017 | 8.495 | 10.46 | 3.025 | Strong methane type odour |

## Groundwater Summary Table

| Well ID | Easting | Northing | Elevation (mAOD) | Screened unit | Top of screen (m bgl) | Bottom of screen (m bgl) | Date | SWL (m bcl) | Depth (m bcl) | SWL (mAOD) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP05** | 470122.581 | 105594.66 | 9.56 | Landfill | 1 | 11 | 18/05/2017 | 7.27 | 11.1 | 2.29 | |
| **CP05** | 470122.581 | 105594.66 | 9.56 | Landfill | 1 | 11 | 25/05/2017 | 7.09 | 11.1 | 2.47 | |
| **CP05** | 470122.581 | 105594.66 | 9.56 | Landfill | 1 | 11 | 02/06/2017 | 7.07 | 11.1 | 2.49 | |
| **CP05** | 470122.581 | 105594.66 | 9.56 | Landfill | 1 | 11 | 08/06/2017 | 6.84 | 10.86 | 2.72 | |
| **CP05** | 470122.581 | 105594.66 | 9.56 | Landfill | 1 | 11 | 15/06/2017 | 7 | 11.1 | 2.56 | |
| **CP05** | 470122.581 | 105594.66 | 9.56 | Landfill | 1 | 11 | 27/06/2017 | 7.08 | 11.22 | 2.48 | |
| **CP06** | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 9 | 18/05/2017 | 7.262 | 9.18 | 5.138 | |
| **CP06** | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 9 | 25/05/2017 | 7.19 | 9.19 | 5.21 | |
| **CP06** | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 9 | 02/06/2017 | 7.38 | 9.19 | 5.02 | |
| **CP06** | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 9 | 08/06/2017 | 7.13 | 8.77 | 5.27 | |
| **CP06** | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 9 | 15/06/2017 | 7.63 | 9.14 | 4.77 | |
| **CP06** | 470206.365 | 105775.844 | 12.4 | Landfill | 1 | 9 | 27/06/2017 | 7.67 | 9.24 | 4.73 | |
| **WS01** | 470042.394 | 105723.247 | 10.29 | Capping layer | 1 | 2.7 | 18/05/2017 | Dry | 2.97 | | |
| **WS01** | 470042.394 | 105723.247 | 10.29 | Capping layer | 1 | 2.7 | 25/05/2017 | Dry | 3.02 | | |
| **WS01** | 470042.394 | 105723.247 | 10.29 | Capping layer | 1 | 2.7 | 02/06/2017 | Dry | 3.02 | | Damp at base |
| **WS01** | 470042.394 | 105723.247 | 10.29 | Capping layer | 1 | 2.7 | 08/06/2017 | 2.66 | 2.7 | 7.63 | |
| **WS01** | 470042.394 | 105723.247 | 10.29 | Capping layer | 1 | 2.7 | 15/06/2017 | - | 3.03 | | Damp at Base |
| **WS01** | 470042.394 | 105723.247 | 10.29 | Capping layer | 1 | 2.7 | 27/06/2017 | Dry | 3.02 | | |
| **WS02** | 469928.281 | 105664.077 | 10.57 | Capping layer | 1 | 5 | 18/05/2017 | Dry | 4.9 | | |
| **WS02** | 469928.281 | 105664.077 | 10.57 | Capping layer | 1 | 5 | 25/05/2017 | Dry | 5 | | |
| **WS02** | 469928.281 | 105664.077 | 10.57 | Capping layer | 1 | 5 | 02/06/2017 | Dry | 5 | | |
| **WS02** | 469928.281 | 105664.077 | 10.57 | Capping layer | 1 | 5 | 08/06/2017 | Dry | 4.75 | | |
| **WS02** | 469928.281 | 105664.077 | 10.57 | Capping layer | 1 | 5 | 15/06/2017 | - | 5.06 | | Damp at Base, Strong foul odour |
| **WS02** | 469928.281 | 105664.077 | 10.57 | Capping layer | 1 | 5 | 27/06/2017 | Dry | 4.89 | | Strong foul odour |
| **WS03** | 469945.657 | 105602.326 | 11.07 | Capping layer | 1 | 3 | 18/05/2017 | Dry | 3.2 | Dry | Rotting / manure type odour |
| **WS03** | 469945.657 | 105602.326 | 11.07 | Capping layer | 1 | 3 | 25/05/2017 | Dry | 3.25 | Dry | |
| **WS03** | 469945.657 | 105602.326 | 11.07 | Capping layer | 1 | 3 | 02/06/2017 | Dry | 3.25 | Dry | |
| **WS03** | 469945.657 | 105602.326 | 11.07 | Capping layer | 1 | 3 | 08/06/2017 | Dry | 7.96 | Dry | |
| **WS03** | 469945.657 | 105602.326 | 11.07 | Capping layer | 1 | 3 | 15/06/2017 | Dry | 3.27 | Dry | |
| **WS03** | 469945.657 | 105602.326 | 11.07 | Capping layer | 1 | 3 | 27/06/2017 | Dry | 3.27 | Dry | |
| **WS04** | 470062.255 | 105692.647 | 11.01 | Capping layer | 1 | 4 | 18/05/2017 | Dry | 4.36 | Dry | |
| **WS04** | 470062.255 | 105692.647 | 11.01 | Capping layer | 1 | 4 | 25/05/2017 | Dry | 4.43 | Dry | |
| **WS04** | 470062.255 | 105692.647 | 11.01 | Capping layer | 1 | 4 | 02/06/2017 | Dry | 4.43 | Dry | |
| **WS04** | 470062.255 | 105692.647 | 11.01 | Capping layer | 1 | 4 | 08/06/2017 | Dry | 2.75 | Dry | |
| **WS04** | 470062.255 | 105692.647 | 11.01 | Capping layer | 1 | 4 | 15/06/2017 | Dry | 4.44 | Dry | |
| **WS04** | 470062.255 | 105692.647 | 11.01 | Capping layer | 1 | 4 | 27/06/2017 | Dry | 4.41 | Dry | |

## Groundwater Summary Table

| Well ID | Easting | Northing | Elevation (mAOD) | Screened unit | Top of screen (m bgl) | Bottom of screen (m bgl) | Date | SWL (m bcl) | Depth (m bcl) | SWL (mAOD) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **WS05** | 470020.691 | 105572.027 | 10.72 | Landfill | 1 | 3 | 18/05/2017 | Dry | 3.27 | Dry | |
| **WS05** | 470020.691 | 105572.027 | 10.72 | Landfill | 1 | 3 | 25/05/2017 | Dry | 3.34 | Dry | |
| **WS05** | 470020.691 | 105572.027 | 10.72 | Landfill | 1 | 3 | 02/06/2017 | Dry | 3.34 | Dry | |
| **WS05** | 470020.691 | 105572.027 | 10.72 | Landfill | 1 | 3 | 08/06/2017 | Dry | 2.93 | Dry | |
| **WS05** | 470020.691 | 105572.027 | 10.72 | Landfill | 1 | 3 | 15/06/2017 | Dry | 3.44 | Dry | |
| **WS05** | 470020.691 | 105572.027 | 10.72 | Landfill | 1 | 3 | 27/06/2017 | Dry | 3.34 | Dry | |
| **WS06** | 470051.703 | 105635.004 | 10.98 | Capping layer | 1 | 5 | 18/05/2017 | 5.27 | 5.35 | 5.71 | |
| **WS06** | 470051.703 | 105635.004 | 10.98 | Capping layer | 1 | 5 | 25/05/2017 | Dry | 5.25 | Dry | |
| **WS06** | 470051.703 | 105635.004 | 10.98 | Capping layer | 1 | 5 | 02/06/2017 | Dry | 5.4 | Dry | |
| **WS06** | 470051.703 | 105635.004 | 10.98 | Capping layer | 1 | 5 | 08/06/2017 | 5.68 | 5.7 | 5.3 | |
| **WS06** | 470051.703 | 105635.004 | 10.98 | Capping layer | 1 | 5 | 15/06/2017 | - | 5.4 | - | Damp at Base |
| **WS06** | 470051.703 | 105635.004 | 10.98 | Capping layer | 1 | 5 | 27/06/2017 | Dry | 5.42 | Dry | |
| **WS07** | 470086.625 | 105618.924 | 10.12 | Capping layer | 1 | 3 | 18/05/2017 | Dry | 2.94 | Dry | |
| **WS07** | 470086.625 | 105618.924 | 10.12 | Capping layer | 1 | 3 | 25/05/2017 | Dry | 2.97 | Dry | |
| **WS07** | 470086.625 | 105618.924 | 10.12 | Capping layer | 1 | 3 | 02/06/2017 | Dry | 3 | Dry | |
| **WS07** | 470086.625 | 105618.924 | 10.12 | Capping layer | 1 | 3 | 08/06/2017 | Dry | 2.93 | Dry | |
| **WS07** | 470086.625 | 105618.924 | 10.12 | Capping layer | 1 | 3 | 15/06/2017 | Dry | 3.07 | Dry | |
| **WS07** | 470086.625 | 105618.924 | 10.12 | Capping layer | 1 | 3 | 27/06/2017 | Dry | 3.05 | Dry | |
| **WS08** | 470172.28 | 105741.859 | 14.21 | Capping layer | 1 | 3.5 | 18/05/2017 | Dry | 3.17 | Dry | |
| **WS08** | 470172.28 | 105741.859 | 14.21 | Capping layer | 1 | 3.5 | 25/05/2017 | Dry | 3.22 | Dry | |
| **WS08** | 470172.28 | 105741.859 | 14.21 | Capping layer | 1 | 3.5 | 02/06/2017 | Dry | 3.22 | Dry | |
| **WS08** | 470172.28 | 105741.859 | 14.21 | Capping layer | 1 | 3.5 | 08/06/2017 | Dry | 2.76 | Dry | |
| **WS08** | 470172.28 | 105741.859 | 14.21 | Capping layer | 1 | 3.5 | 15/06/2017 | Dry | 3.23 | Dry | |
| **WS08** | 470172.28 | 105741.859 | 14.21 | Capping layer | 1 | 3.5 | 27/06/2017 | Dry | 3.24 | Dry | |
| **WS09** | 470177.466 | 105681.742 | 9.46 | Landfill | 1 | 5 | 18/05/2017 | Dry | 4.94 | Dry | |
| **WS09** | 470177.466 | 105681.742 | 9.46 | Landfill | 1 | 5 | 25/05/2017 | 4.57 | 4.94 | 4.89 | |
| **WS09** | 470177.466 | 105681.742 | 9.46 | Landfill | 1 | 5 | 02/06/2017 | - | - | - | Inaccesible |
| **WS09** | 470177.466 | 105681.742 | 9.46 | Landfill | 1 | 5 | 08/06/2017 | - | - | - | |
| **WS09** | 470177.466 | 105681.742 | 9.46 | Landfill | 1 | 5 | 15/06/2017 | - | - | - | |
| **WS09** | 470177.466 | 105681.742 | 9.46 | Landfill | 1 | 5 | 27/06/2017 | - | - | - | Inaccesible |
| **WS10** | 470249.371 | 105705.341 | 13.45 | Landfill | 1 | 4 | 18/05/2017 | Dry | 4.25 | Dry | |
| **WS10** | 470249.371 | 105705.341 | 13.45 | Landfill | 1 | 4 | 25/05/2017 | 4.32 | 4.38 | 9.13 | |
| **WS10** | 470249.371 | 105705.341 | 13.45 | Landfill | 1 | 4 | 02/06/2017 | Dry | 4.3 | Dry | Damp at base |
| **WS10** | 470249.371 | 105705.341 | 13.45 | Landfill | 1 | 4 | 08/06/2017 | 3.97 | 3.98 | 9.48 | |
| **WS10** | 470249.371 | 105705.341 | 13.45 | Landfill | 1 | 4 | 15/06/2017 | Dry | 4.31 | Dry | Damp at Base |
| **WS10** | 470249.371 | 105705.341 | 13.45 | Landfill | 1 | 4 | 27/06/2017 | Dry | 4.32 | Dry | |

# Ground Gas Monitoring Summary Table

| I.D | Easting | Northing | Date | Peak CH4 | Peak CO2 | Steady CH4 | Steady CO2 | Steady O2 | Steady CO | Steady H2S | Flow | Max flow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CP01 (Deep) | 470104.275 | 105703.67 | 18/05/2017 | 67.5 | 27.7 | 67.5 | 27.7 | 0.2 | 4 | 0 | -0.4 | |
| CP01 (Deep) | 470104.275 | 105703.67 | 25/05/2017 | 67.6 | 26.7 | 67.7 | 26.7 | 0.4 | 4 | 0 | -0.5 | |
| CP01 (Deep) | 470104.275 | 105703.67 | 02/06/2017 | 56.7 | 28.3 | 56.7 | 28.3 | 2.5 | 3 | 0 | -0.6 | 0.3 |
| CP01 (Deep) | 470104.275 | 105703.67 | 08/06/2017 | 66 | 26.7 | 66 | 26.7 | 1.3 | 0 | 0 | 0.3 | |
| CP01 (Deep) | 470104.275 | 105703.67 | 15/06/2017 | 66.8 | 26.6 | 62 | 26.5 | 1.7 | 2 | 0 | -0.4 | |
| CP01 (Deep) | 470104.275 | 105703.67 | 27/06/2017 | 67.7 | 30.1 | 67.7 | 30.1 | 0.2 | 2 | 0 | -0.5 | |
| CP01 (Shallow) | 470104.275 | 105703.67 | 18/05/2017 | 69.3 | 29.5 | 69.1 | 29.4 | 0.2 | 4 | 0 | -0.3 | |
| CP01 (Shallow) | 470104.275 | 105703.67 | 25/05/2017 | 68.8 | 28.2 | 68.8 | 28.2 | 0.1 | 4 | 0 | -0.4 | |
| CP01 (Shallow) | 470104.275 | 105703.67 | 02/06/2017 | 68.3 | 29.1 | 68.1 | 29.1 | 0 | 3 | 0 | -0.5 | 0.3 |
| CP01 (Shallow) | 470104.275 | 105703.67 | 08/06/2017 | 70.8 | 28.5 | 70.6 | 28.3 | 0.2 | 0 | 0 | 0.3 | |
| CP01 (Shallow) | 470104.275 | 105703.67 | 15/06/2017 | 67.5 | 39.7 | 67.5 | 29.7 | 0.1 | 2 | 0 | -0.5 | |
| CP01 (Shallow) | 470104.275 | 105703.67 | 27/06/2017 | 68.2 | 30.6 | 68.2 | 30.6 | 0.2 | 1 | 0 | -0.5 | |
| CP02 (Deep) | 469988.768 | 105575.679 | 18/05/2017 | 22.5 | 15.3 | 22.5 | 15.3 | 7.7 | 0 | 0 | -0.2 | |
| CP02 (Deep) | 469988.768 | 105575.679 | 25/05/2017 | 5.8 | 4.5 | 5 | 4.5 | 16.9 | 0 | 1 | -0.16 | |
| CP02 (Deep) | 469988.768 | 105575.679 | 02/06/2017 | 5.6 | 4.7 | 5.2 | 4.7 | 16 | 0 | 0 | -0.2 | -0.1 |
| CP02 (Deep) | 469988.768 | 105575.679 | 08/06/2017 | 3.2 | 2.9 | 2.5 | 2.9 | 18.7 | 0 | 0 | -0.1 | |
| CP02 (Deep) | 469988.768 | 105575.679 | 15/06/2017 | 0.5 | 1.2 | 0.1 | 0.2 | 20 | 2 | 2 | -0.3 | |
| CP02 (Deep) | 469988.768 | 105575.679 | 27/06/2017 | 0.8 | 0.2 | 0 | 0.2 | 19.8 | 0 | 0 | -0.4 | |
| CP02 (Shallow) | 469988.768 | 105575.679 | 18/05/2017 | 35.9 | 24.4 | 35.9 | 24.5 | 0.3 | 0 | 0 | -0.2 | |
| CP02 (Shallow) | 469988.768 | 105575.679 | 25/05/2017 | 29.5 | 24.5 | 29.5 | 24.5 | 0.4 | 0 | 2 | 6.1 | |
| CP02 (Shallow) | 469988.768 | 105575.679 | 02/06/2017 | 33.6 | 24.6 | 30.2 | 24.6 | 0.2 | 0 | 4 | -0.7 | 6.1 |
| CP02 (Shallow) | 469988.768 | 105575.679 | 08/06/2017 | 24.7 | 24.3 | 24.4 | 24.3 | 0.2 | 0 | 3 | -0.4 | |
| CP02 (Shallow) | 469988.768 | 105575.679 | 15/06/2017 | 0.2 | 0.2 | 0.8 | 0.2 | 19.9 | 0 | 0 | -0.3 | |
| CP02 (Shallow) | 469988.768 | 105575.679 | 27/06/2017 | 0.3 | 1.3 | 0.2 | 1.2 | 18.4 | 0 | 0 | -0.9 | |
| CP03 (Deep) | 470206.365 | 105775.844 | 18/05/2017 | 0.1 | 0.2 | 0.1 | 0.2 | 20.9 | 2 | 0 | -0.4 | |
| CP03 (Deep) | 470206.365 | 105775.844 | 25/05/2017 | 0.1 | 0.2 | 0 | 0.2 | 19.9 | 0 | 0 | -0.6 | |
| CP03 (Deep) | 470206.365 | 105775.844 | 02/06/2017 | 10 | 6 | 10 | 6 | 12.5 | 4 | 0 | -0.6 | 0 |
| CP03 (Deep) | 470206.365 | 105775.844 | 08/06/2017 | 20 | 17.4 | 15.9 | 10.7 | 8.5 | 3 | 0 | 0 | |
| CP03 (Deep) | 470206.365 | 105775.844 | 15/06/2017 | 11.4 | 9 | 11.4 | 9 | 9.5 | 2 | 0 | -0.3 | |
| CP03 (Deep) | 470206.365 | 105775.844 | 27/06/2017 | 19.3 | 14.9 | 17.1 | 14.9 | 3.7 | 3 | 0 | -6.3 | |
| CP03 (Shallow) | 470206.365 | 105775.844 | 18/05/2017 | 19.8 | 20.8 | 19.8 | 20.8 | 0.2 | 1 | 0 | -1.8 | |
| CP03 (Shallow) | 470206.365 | 105775.844 | 25/05/2017 | 20.2 | 18.8 | 20.2 | 18.8 | 0.6 | 2 | 0 | 31.11 | |
| CP03 (Shallow) | 470206.365 | 105775.844 | 02/06/2017 | 39.6 | 19.5 | 23.8 | 19.5 | 0.5 | 1 | 0 | -5.9 | 31.11 |
| CP03 (Shallow) | 470206.365 | 105775.844 | 08/06/2017 | 22.4 | 22.3 | 22.7 | 22.3 | 0.4 | 1 | 0 | -5.6 | |
| CP03 (Shallow) | 470206.365 | 105775.844 | 15/06/2017 | 24.8 | 20.8 | 24.2 | 20.5 | 0.5 | 1 | 0 | -5.8 | |
| CP03 (Shallow) | 470206.365 | 105775.844 | 27/06/2017 | 24.9 | 21.8 | 24.9 | 21.8 | 0 | 1 | 0 | -0.6 | |
| CP04 | 470021.091 | 105669.836 | 18/05/2017 | 62.9 | 30.9 | 62.9 | 30.9 | 0.1 | 1 | 1 | -0.4 | |
| CP04 | 470021.091 | 105669.836 | 25/05/2017 | 62.6 | 30.1 | 62.7 | 30.1 | 0.1 | 1 | 1 | -0.3 | |
| CP04 | 470021.091 | 105669.836 | 02/06/2017 | 62.1 | 30.4 | 61.5 | 30.4 | 0 | 1 | 0 | -0.5 | 0.3 |
| CP04 | 470021.091 | 105669.836 | 08/06/2017 | 63.6 | 31.2 | 63.6 | 31.2 | 0.1 | 0 | 0 | 0.3 | |
| CP04 | 470021.091 | 105669.836 | 15/06/2017 | 61 | 30.4 | 61 | 30.4 | 0.2 | 1 | 0 | -0.5 | |
| CP04 | 470021.091 | 105669.836 | 27/06/2017 | 63.9 | 30.9 | 63.9 | 30.9 | 0.1 | 1 | 0 | -0.5 | |

## Ground Gas Monitoring Summary Table

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CP05 | 470122.581 | 105594.66 | 18/05/2017 | 48.7 | 28 | 49.6 | 28 | 0.3 | 0 | 0 | 0 | 0.2 |
| CP05 | 470122.581 | 105594.66 | 25/05/2017 | 44 | 26.2 | 44 | 26.2 | 0.1 | 1 | 0 | -0.5 | |
| CP05 | 470122.581 | 105594.66 | 02/06/2017 | 42.1 | 27 | 42 | 26.9 | 0.3 | 0 | 0 | 0.2 | |
| CP05 | 470122.581 | 105594.66 | 08/06/2017 | 43.3 | 27.4 | 43.4 | 27.3 | 0 | 1 | 0 | -0.1 | |
| CP05 | 470122.581 | 105594.66 | 15/06/2017 | 42.3 | 27.1 | 42.3 | 27.1 | 0.3 | 0 | 4 | 0 | |
| CP05 | 470122.581 | 105594.66 | 27/06/2017 | 40.8 | 26.3 | 40.8 | 26.3 | 0.4 | 0 | 0 | -0.2 | |
| CP06 | 470303.298 | 105661.52E | 18/05/2017 | 57.4 | 22.9 | 57.4 | 22.9 | 0.1 | 2 | 0 | -0.4 | 0 |
| CP06 | 470303.298 | 105661.52E | 25/05/2017 | 56.3 | 21.5 | 56.3 | 21.5 | 0.1 | 3 | 0 | -0.5 | |
| CP06 | 470303.298 | 105661.52E | 02/06/2017 | 60.1 | 22.3 | 60.1 | 22.3 | 0.1 | 2 | 0 | -0.5 | |
| CP06 | 470303.298 | 105661.52E | 08/06/2017 | 58.5 | 20.4 | 56.1 | 2.3 | 2.1 | 2 | 1 | 0 | |
| CP06 | 470303.298 | 105661.52E | 15/06/2017 | 55 | 22.3 | 55 | 22.3 | 0.3 | 1 | 0 | -0.3 | |
| CP06 | 470303.298 | 105661.52E | 27/06/2017 | 58 | 23.2 | 58 | 23.2 | 0 | 1 | 0 | -0.6 | |
| WS01 | 470042.394 | 105723.247 | 18/05/2017 | 62.6 | 29.6 | 62 | 29.4 | 0.2 | 3 | 0 | -0.4 | 0.14 |
| WS01 | 470042.394 | 105723.247 | 25/05/2017 | 64 | 30.1 | 64 | 30.1 | 0.1 | 1 | 4 | 0.14 | |
| WS01 | 470042.394 | 105723.247 | 02/06/2017 | 65.1 | 30.7 | 64.9 | 30.2 | 0 | 2 | 0 | -0.4 | |
| WS01 | 470042.394 | 105723.247 | 08/06/2017 | 0.7 | 0.8 | 0.7 | 0.8 | 20.5 | 0 | 0 | -0.2 | |
| WS01 | 470042.394 | 105723.247 | 15/06/2017 | 61.5 | 30.5 | 61.5 | 30.5 | 0.2 | 3 | 0 | -0.4 | |
| WS01 | 470042.394 | 105723.247 | 27/06/2017 | 66.1 | 31.8 | 64.8 | 31.8 | 0.1 | 2 | 0 | -0.4 | |
| WS02 | 469928.281 | 105664.077 | 18/05/2017 | 64.6 | 27.9 | 64.5 | 27.8 | 0.1 | 1 | 3 | -0.4 | 0 |
| WS02 | 469928.281 | 105664.077 | 25/05/2017 | 64.1 | 27.9 | 64 | 27.9 | 0.2 | 0 | 3 | -0.2 | |
| WS02 | 469928.281 | 105664.077 | 02/06/2017 | 63.6 | 28.3 | 63.6 | 28.2 | 0 | 0 | 1 | -0.3 | |
| WS02 | 469928.281 | 105664.077 | 08/06/2017 | 63.1 | 28.3 | 62.9 | 18.1 | 0.2 | 0 | 3 | 0 | |
| WS02 | 469928.281 | 105664.077 | 15/06/2017 | 63.2 | 28.5 | 63 | 28.5 | 0.1 | 0 | 4 | -0.4 | |
| WS02 | 469928.281 | 105664.077 | 27/06/2017 | 62.4 | 28.7 | 62.8 | 28.7 | 0.3 | 0 | 7 | -0.5 | |
| WS03 | 469945.657 | 105602.32E | 18/05/2017 | 40.8 | 25.4 | 40.8 | 25.5 | 0.1 | 1 | 5 | -0.4 | 0 |
| WS03 | 469945.657 | 105602.32E | 25/05/2017 | 39.3 | 25.7 | 39.3 | 25.6 | 0.2 | 0 | 9 | -0.1 | |
| WS03 | 469945.657 | 105602.32E | 02/06/2017 | 38.1 | 25.7 | 38 | 25.7 | 0.7 | 0 | 1 | -0.4 | |
| WS03 | 469945.657 | 105602.32E | 08/06/2017 | 29.7 | 20.8 | 29.4 | 20.1 | 4 | 0 | 0 | 0 | |
| WS03 | 469945.657 | 105602.32E | 15/06/2017 | 37.6 | 25.9 | 27.6 | 25.9 | 0.2 | 1 | 2 | -0.4 | |
| WS03 | 469945.657 | 105602.32E | 27/06/2017 | 36.9 | 26.2 | 36.9 | 26.2 | 0.3 | 0 | 0 | -0.4 | |
| WS04 | 470062.255 | 105692.647 | 18/05/2017 | 66 | 30.3 | 64.5 | 29.9 | 0.2 | 0 | 1 | -0.4 | 0.2 |
| WS04 | 470062.255 | 105692.647 | 25/05/2017 | 66.6 | 30.3 | 66.6 | 30.3 | 0.1 | 1 | 0 | -0.4 | |
| WS04 | 470062.255 | 105692.647 | 02/06/2017 | 66.2 | 30.8 | 66.1 | 30.8 | 0 | 1 | 0 | -0.5 | |
| WS04 | 470062.255 | 105692.647 | 08/06/2017 | 53.1 | 24.8 | 43 | 23.3 | 5.9 | 8 | 0 | 0.2 | |
| WS04 | 470062.255 | 105692.647 | 15/06/2017 | 65.4 | 30.5 | 65.4 | 30.5 | 0 | 0 | 0 | -0.3 | |
| WS04 | 470062.255 | 105692.647 | 27/06/2017 | 66.5 | 31.8 | 66.5 | 31.8 | 0 | 0 | 1 | -0.5 | |

**Ground Gas Monitoring Summary Table**

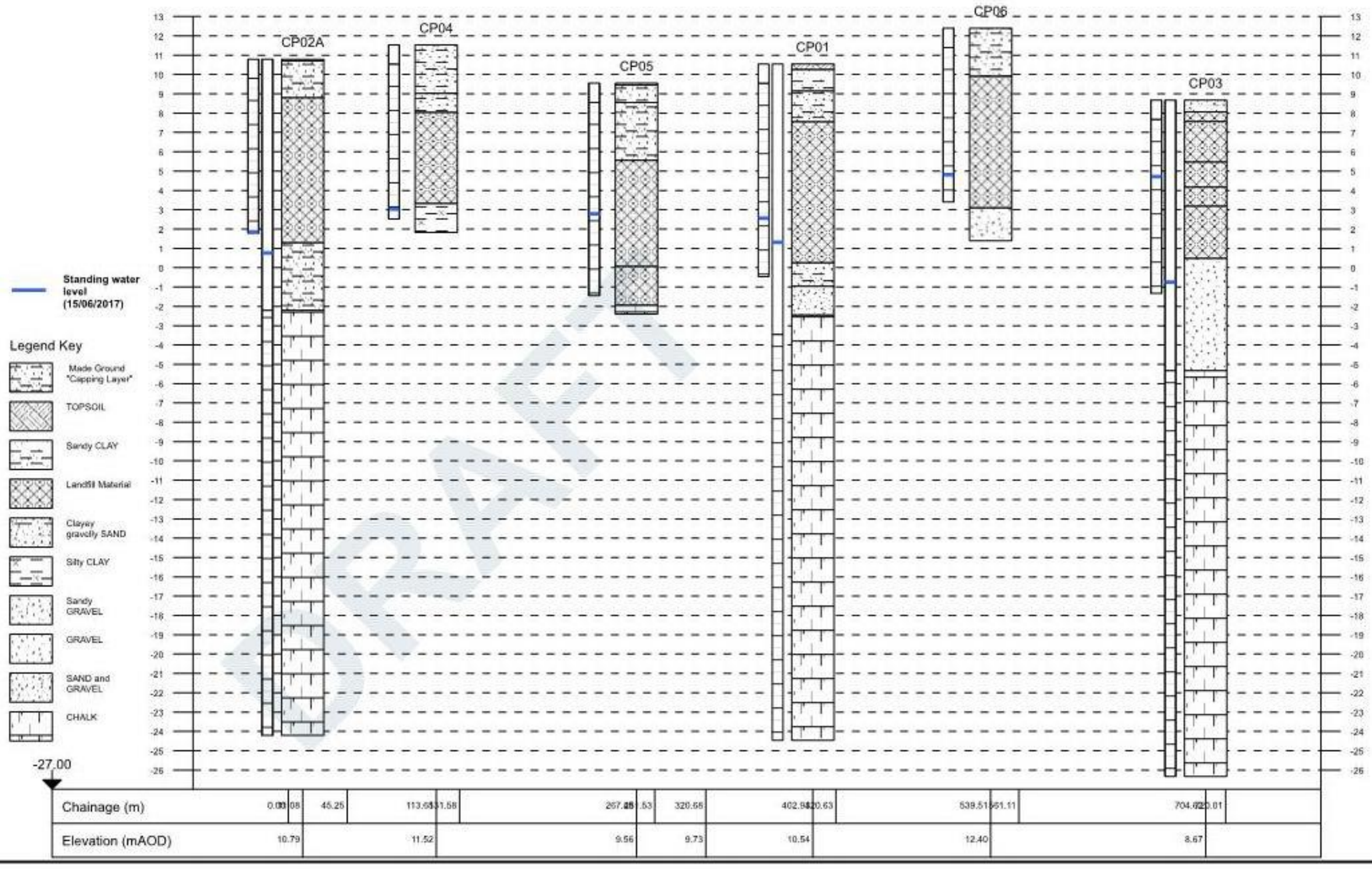
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS05 | 470020.691 | 105572.027 | 18/05/2017 | 34.7 | 23.3 | 30.1 | 22.1 | 2.1 | 0 | 0 | -0.1 | -0.1 |
| WS05 | 470020.691 | 105572.027 | 25/05/2017 | 30.7 | 21.9 | 30.4 | 21.7 | 0.1 | 1 | 0 | -0.5 | |
| WS05 | 470020.691 | 105572.027 | 02/06/2017 | 34.9 | 23.6 | 33 | 23.6 | 0 | 0 | 0 | -0.2 | |
| WS05 | 470020.691 | 105572.027 | 08/06/2017 | 56.1 | 28.2 | 19.9 | 20.9 | 0.5 | 1 | 0 | -0.1 | |
| WS05 | 470020.691 | 105572.027 | 15/06/2017 | 0.1 | 3 | 0.1 | 2.9 | 18.1 | 0 | 0 | -0.3 | |
| WS05 | 470020.691 | 105572.027 | 27/06/2017 | 8 | 12.8 | 7.6 | 12.8 | 7.3 | 0 | 0 | -0.4 | |
| WS06 | 470051.703 | 105635.004 | 18/05/2017 | 69.8 | 28.5 | 69.6 | 28.6 | 0 | 1 | 10 | -0.4 | -0.1 |
| WS06 | 470051.703 | 105635.004 | 25/05/2017 | 67.6 | 28.8 | 67.4 | 28.6 | 0.1 | 2 | 8 | -0.5 | |
| WS06 | 470051.703 | 105635.004 | 02/06/2017 | 66.8 | 29 | 66.6 | 29 | 0 | 0 | 3 | -0.5 | |
| WS06 | 470051.703 | 105635.004 | 08/06/2017 | 78.2 | 46.4 | 68.7 | 30.2 | 0.8 | 1 | 2 | -0.1 | |
| WS06 | 470051.703 | 105635.004 | 15/06/2017 | 66 | 28.8 | 66 | 28.8 | 0.1 | 0 | 4 | -0.5 | |
| WS06 | 470051.703 | 105635.004 | 27/06/2017 | 65.1 | 30.7 | 65.1 | 30.7 | 0.1 | 0 | 3 | -0.4 | |
| WS07 | 470086.625 | 105618.924 | 18/05/2017 | 98.2 | 28.9 | 98.2 | 29 | 0.1 | 0 | 0 | -0.1 | 0 |
| WS07 | 470086.625 | 105618.924 | 25/05/2017 | 64.8 | 28 | 64.8 | 28 | 0.1 | 1 | 0 | -0.5 | |
| WS07 | 470086.625 | 105618.924 | 02/06/2017 | 65.1 | 28.9 | 64.9 | 28.9 | 0.1 | 0 | 0 | 0 | |
| WS07 | 470086.625 | 105618.924 | 08/06/2017 | 60.7 | 28.7 | 60.7 | 28.7 | 0.4 | 1 | 0 | -0.1 | |
| WS07 | 470086.625 | 105618.924 | 15/06/2017 | 63 | 29.3 | 62.8 | 29.3 | 0.2 | 0 | 1 | -0.2 | |
| WS07 | 470086.625 | 105618.924 | 27/06/2017 | 63.6 | 29.7 | 63.6 | 29.7 | 0.1 | 0 | 0 | -0.3 | |
| WS08 | 470172.28 | 105741.859 | 18/05/2017 | 60 | 21.5 | 60 | 21.5 | 0.1 | 0 | 0 | -0.4 | -0.1 |
| WS08 | 470172.28 | 105741.859 | 25/05/2017 | 57.6 | 20.7 | 56.3 | 20.7 | 0.1 | 1 | 12 | -0.6 | |
| WS08 | 470172.28 | 105741.859 | 02/06/2017 | 56.3 | 21.5 | 56.2 | 21.5 | 0.36 | 1 | 10 | -0.5 | |
| WS08 | 470172.28 | 105741.859 | 08/06/2017 | 59.8 | 22.5 | 56.9 | 22.5 | 0.3 | 1 | 10 | -0.1 | |
| WS08 | 470172.28 | 105741.859 | 15/06/2017 | 53.5 | 23.3 | 53.2 | 23.3 | 0.1 | 1 | 13 | -0.3 | |
| WS08 | 470172.28 | 105741.859 | 27/06/2017 | 63.4 | 29.2 | 51 | 25.1 | 0 | 0 | 12 | -0.5 | |
| WS09 | 470177.466 | 105681.742 | 18/05/2017 | 50.3 | 21 | 49.2 | 21 | 1 | 8 | 0 | 0.1 | 0.1 |
| WS09 | 470177.466 | 105681.742 | 25/05/2017 | 56.9 | 21.2 | 51.5 | 20.4 | 0.2 | 1 | 0 | -0.4 | |
| WS09 | 470177.466 | 105681.742 | 02/06/2017 | Inaccesbile | | | | | | | | |
| WS09 | 470177.466 | 105681.742 | 08/06/2017 | | | | | | | | | |
| WS09 | 470177.466 | 105681.742 | 15/06/2017 | | | | | | | | | |
| WS09 | 470177.466 | 105681.742 | 27/06/2017 | | | | | | | | | |
| WS10 | 470249.371 | 105705.341 | 18/05/2017 | 46.5 | 17.1 | 46.2 | 17.1 | 0.2 | 0 | 3 | -0.4 | -0.1 |
| WS10 | 470249.371 | 105705.341 | 25/05/2017 | 44.1 | 16.5 | 44.1 | 16.5 | 0.2 | 1 | 5 | -0.6 | |
| WS10 | 470249.371 | 105705.341 | 02/06/2017 | 44 | 17 | 44 | 17 | 0.2 | 0 | 4 | -0.5 | |
| WS10 | 470249.371 | 105705.341 | 08/06/2017 | 31.8 | 17.7 | 39.6 | 17.4 | 0.7 | 2 | 0 | -0.1 | |
| WS10 | 470249.371 | 105705.341 | 15/06/2017 | 40.2 | 17.7 | 40.2 | 17.7 | 0 | 1 | 0 | -0.5 | |
| WS10 | 470249.371 | 105705.341 | 27/06/2017 | 54.6 | 22.7 | 40.3 | 18 | 0 | 1 | 0 | -0.5 | |

# Appendix F – Geological Cross Section

DRAFT

Project Id: A102760
Project Title: Brockhampton West
Location: Harts Farm Way
Client: Havant Borough Council

Title: Section line 1
Vertical Scale: 1:262
Horizontal Scale: 1:3888
Engineer: WYG




| Chainage (m) | 0.00 | 0.08 | 45.25 | 113.68 | 131.58 | 267.85 | 281.53 | 320.66 | 402.94 | 420.63 | 539.51 | 561.11 | 704.62 | 720.01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Elevation (mAOD) | 10.79 | | 11.52 | | | 9.56 | | 9.73 | 10.54 | | 12.40 | | 8.67 | |

# Appendix G – Chemical Laboratory Testing Results

DRAFT

# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

WYG
100 St John Street
London
EC1M 4EH

| | |
|---|---|
| **Attention :** | Alice Hayton |
| **Date :** | 22nd May, 2017 |
| **Your reference :** | A102760 |
| **Our reference :** | Test Report 17/7894 Batch 1 |
| **Location :** | Brockhampton West |
| **Date samples received :** | 4th May, 2017 |
| **Status :** | Final report |
| **Issue :** | 2 |

Five samples were received for analysis on 4th May, 2017 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

**Compiled By:**

[redacted]

**Phil Sommerton BSc**
**Project Manager**

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 1-3 | 10-12 | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP01 | CP01 | | | | | | | | | | | |
| Depth | 0.95 | 7.00 | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | | | | | | | | | | | |
| Sample Date | 02/05/2017 | 02/05/2017 | | | | | | | | | | | |
| Sample Type | Soil | Soil | | | | | | | | | | | |
| Batch Number | 1 | 1 | | | | | | | | | | | |
| Date of Receipt | 04/05/2017 | 04/05/2017 | | | | | | | | | | | |
| Arsenic [SM] | 5.0 | 9.6 | | | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Beryllium | <0.5 | 1.0 | | | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Cadmium [SM] | 0.2 | 0.4 | | | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Chromium [SM] | 43.3 | 57.3 | | | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Copper [SM] | 6 | 17 | | | | | | | | | <1 | mg/kg | TM30/PM15 |
| Lead [SM] | 14 | 167 | | | | | | | | | <5 | mg/kg | TM30/PM15 |
| Mercury [SM] | <0.1 | <0.1 | | | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Nickel [SM] | 7.6 | 17.9 | | | | | | | | | <0.7 | mg/kg | TM30/PM15 |
| Selenium [SM] | <1 | <1 | | | | | | | | | <1 | mg/kg | TM30/PM15 |
| Vanadium | 25 | 50 | | | | | | | | | <1 | mg/kg | TM30/PM15 |
| Water Soluble Boron [SM] | 0.8 | 4.7 | | | | | | | | | <0.1 | mg/kg | TM74/PM32 |
| Zinc [SM] | 29 | 92 | | | | | | | | | <5 | mg/kg | TM30/PM15 |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene [SM] | <0.04 | 0.64 | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Acenaphthylene | <0.03 | 0.05 | | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Acenaphthene [SM] | <0.05 | 0.38 | | | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Fluorene [SM] | <0.04 | 0.32 | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Phenanthrene [SM] | <0.03 | 1.09 | | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Anthracene [#] | <0.04 | 0.24 | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Fluoranthene [SM] | <0.03 | 0.95 | | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Pyrene [#] | <0.03 | 0.68 | | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Benzo(a)anthracene [#] | <0.06 | 0.37 | | | | | | | | | <0.06 | mg/kg | TM4/PM8 |
| Chrysene [SM] | <0.02 | 0.28 | | | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| Benzo(bk)fluoranthene [SM] | <0.07 | 0.38 | | | | | | | | | <0.07 | mg/kg | TM4/PM8 |
| Benzo(a)pyrene [#] | <0.04 | 0.21 | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Indeno(123cd)pyrene [SV] | <0.04 | 0.15 | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Dibenzo(ah)anthracene [#] | <0.04 | <0.04 | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Benzo(ghi)perylene [#] | <0.04 | 0.13 | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| PAH 16 Total | <0.6 | 5.9 | | | | | | | | | <0.6 | mg/kg | TM4/PM8 |
| Benzo(b)fluoranthene | <0.05 | 0.27 | | | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Benzo(k)fluoranthene | <0.02 | 0.11 | | | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| PAH Surrogate % Recovery | 111 | 97 | | | | | | | | | <0 | % | TM4/PM8 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 1-3 | 10-12 | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP01 | CP01 | | | | | | | | | | | |
| Depth | 0.95 | 7.00 | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | | | | | | | | | | | |
| Sample Date | 02/05/2017 | 02/05/2017 | | | | | | | | | | | |
| Sample Type | Soil | Soil | | | | | | | | | | | |
| Batch Number | 1 | 1 | | | | | | | | | | | |
| Date of Receipt | 04/05/2017 | 04/05/2017 | | | | | | | | | | | |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 [#M] | <0.1 | <0.1 | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C6-C8 [#M] | <0.1 | <0.1 | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C8-C10 | <0.1 | 0.5 | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C10-C12 [#M] | <0.2 | <0.2 | | | | | | | | | <0.2 | mg/kg | TM5/PM16 |
| >C12-C16 [#M] | <4 | <4 | | | | | | | | | <4 | mg/kg | TM5/PM16 |
| >C16-C21 [#M] | <7 | <7 | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >C21-C35 [#M] | <7 | 54 | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >C35-C44 | <7 | 23 | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| Total aliphatics C5-44 | <26 | 78 | | | | | | | | | <26 | mg/kg | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 [#] | <0.1 | <0.1 | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC7-EC8 [#] | <0.1 | <0.1 | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC8-EC10 [#M] | <0.1 | 0.3 | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC10-EC12 [#] | <0.2 | 3.3 | | | | | | | | | <0.2 | mg/kg | TM5/PM16 |
| >EC12-EC16 [#] | <4 | 15 | | | | | | | | | <4 | mg/kg | TM5/PM16 |
| >EC16-EC21 [#] | <7 | 76 | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >EC21-EC35 [#] | 21 | 187 | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >EC35-EC44 | 39 | 74 | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| Total aromatics C5-44 | 60 | 356 | | | | | | | | | <26 | mg/kg | |
| Total aliphatics and aromatics(C5-44) | 60 | 434 | | | | | | | | | <52 | mg/kg | |
| MTBE [#] | <5 | <5 | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Benzene [#] | <5 | 8 | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Toluene [#] | <5 | 27 | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Ethylbenzene [#] | <5 | 95 | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| m/p-Xylene [#] | <5 | 188 | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| o-Xylene [#] | <5 | 46 | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Phenol [#M] | <0.01 | 0.03 | | | | | | | | | <0.01 | mg/kg | TM26/PM21 |
| Natural Moisture Content | 20.3 | 27.4 | | | | | | | | | <0.1 | % | PM4/PM0 |
| Hexavalent Chromium [#] | <0.3 | <0.3 | | | | | | | | | <0.3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) [#M] | 214 | 150 | | | | | | | | | <3 | mg/kg | TM38/PM20 |
| Free Cyanide | <0.5 | <0.5 | | | | | | | | | <0.5 | mg/kg | TM89/PM45 |
| Fraction Organic Carbon | 0.005 | 0.004 | | | | | | | | | <0.001 | None | TM21/PM24 |
| pH [#M] | 8.57 | 8.23 | | | | | | | | | <0.01 | pH units | TM73/PM11 |
| Sample Type | Clay | Clay | | | | | | | | | | None | PM13/PM0 |
| Sample Colour | Light Brown | Dark Grey | | | | | | | | | | None | PM13/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 1-3 | 10-12 | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP01 | CP01 | | | | | | | | | | | |
| Depth | 0.95 | 7.00 | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | | | | | | | | | | | |
| Sample Date | 02/05/2017 | 02/05/2017 | | | | | | | | | | | |
| Sample Type | Soil | Soil | | | | | | | | | | | |
| Batch Number | 1 | 1 | | | | | | | | | | | |
| Date of Receipt | 04/05/2017 | 04/05/2017 | | | | | | | | | | | |
| Other Items | stones | stones | | | | | | | | | | None | PM13/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **J E Sample No.** | 10-12 | | | | | | | | | | LOD/LOR | Units | Method No. |
| **Sample ID** | CP01 | | | | | | | | | | | | |
| **Depth** | 7.00 | | | | | | | | | | | | |
| **COC No / misc** | | | | | | | | | | | | | |
| **Containers** | V J T | | | | | | | | | | | | |
| **Sample Date** | 02/05/2017 | | | | | | | | | | | | |
| **Sample Type** | Soil | | | | | | | | | | | | |
| **Batch Number** | 1 | | | | | | | | | | | | |
| **Date of Receipt** | 04/05/2017 | | | | | | | | | | | | |
| Dissolved Antimony # | 8 | | | | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Arsenic # | 8.7 | | | | | | | | | | <2.5 | ug/l | TM30/PM14 |
| Dissolved Barium # | 26 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Beryllium # | <0.5 | | | | | | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Boron # | 340 | | | | | | | | | | <12 | ug/l | TM30/PM14 |
| Dissolved Cadmium # | <0.5 | | | | | | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Chromium # | <1.5 | | | | | | | | | | <1.5 | ug/l | TM30/PM14 |
| Dissolved Copper # | <3 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Lead # | <0.4 | | | | | | | | | | <0.4 | ug/l | TM30/PM14 |
| Dissolved Molybdenum # | 21 | | | | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Nickel # | 6 | | | | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Selenium # | <3 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Zinc # | 5 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Mercury Dissolved by CVAF # | 0.40 | | | | | | | | | | <0.01 | ug/l | TM61/PM38 |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene | 26.5 ++ | | | | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Acenaphthylene | 0.21 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Acenaphthene | 9.07 ++ | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluorene | 5.06 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Phenanthrene | 6.73 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Anthracene | 1.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluoranthene | 2.06 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Pyrene | 1.34 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)anthracene | 0.40 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Chrysene | 0.47 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(bk)fluoranthene | 0.46 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)pyrene | 0.27 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Indeno(123cd)pyrene | 0.09 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Dibenzo(ah)anthracene | 0.02 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(ghi)perylene | 0.10 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH 16 Total | 53.8 | | | | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Benzo(b)fluoranthene | 0.33 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(k)fluoranthene | 0.13 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH Surrogate % Recovery | 74 | | | | | | | | | | <0 | % | TM4/PM30 |
| Methyl Tertiary Butyl Ether | <1 | | | | | | | | | | <1 | ug/l | TM15/PM69 |
| Benzene | <0.5 | | | | | | | | | | <0.5 | ug/l | TM15/PM69 |
| Toluene | <5 | | | | | | | | | | <5 | ug/l | TM15/PM69 |
| Ethylbenzene | 2 | | | | | | | | | | <1 | ug/l | TM15/PM69 |
| p/m-Xylene | 3 | | | | | | | | | | <2 | ug/l | TM15/PM69 |
| o-Xylene | <1 | | | | | | | | | | <1 | ug/l | TM15/PM69 |
| Surrogate Recovery Toluene D8 | 122 | | | | | | | | | | <0 | % | TM15/PM69 |
| Surrogate Recovery 4-Bromofluorobenzene | 76 | | | | | | | | | | <0 | % | TM15/PM69 |

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 10-12 | | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP01 | | | | | | | | | | | | |
| Depth | 7.00 | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | | | | | | | | | | | | |
| Sample Date | 02/05/2017 | | | | | | | | | | | | |
| Sample Type | Soil | | | | | | | | | | | | |
| Batch Number | 1 | | | | | | | | | | | | |
| Date of Receipt | 04/05/2017 | | | | | | | | | | | | |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C6-C8 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C8-C10 | 15 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C10-C12 | <5 | | | | | | | | | | <5 | ug/l | TM5/PM30 |
| >C12-C16 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >C16-C21 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >C21-C35 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aliphatics C5-35 | 15 | | | | | | | | | | <10 | ug/l | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC7-EC8 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC8-EC10 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC10-EC12 | 49 | | | | | | | | | | <5 | ug/l | TM5/PM30 |
| >EC12-EC16 | 80 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC16-EC21 | 100 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC21-EC35 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aromatics C5-35 | 229 | | | | | | | | | | <10 | ug/l | |
| Total aliphatics and aromatics(C5-35) | 244 | | | | | | | | | | <10 | ug/l | |
| Phenol | 1.7 | | | | | | | | | | <0.5 | ug/l | TM26/PM0 |
| Sulphate as SO4 # | 12.69 | | | | | | | | | | <0.05 | mg/l | TM38/PM0 |
| Chloride # | 72.6 | | | | | | | | | | <0.3 | mg/l | TM38/PM0 |
| Nitrate as NO3 # | <0.2 | | | | | | | | | | <0.2 | mg/l | TM38/PM0 |
| Nitrite as NO2 # | <0.02 | | | | | | | | | | <0.02 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH3 # | 50.73 | | | | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH4 # | 53.73 | | | | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Total Cyanide # | 0.02 | | | | | | | | | | <0.01 | mg/l | TM89/PM0 |
| Dissolved Organic Carbon | 20 | | | | | | | | | | <2 | mg/l | TM60/PM0 |
| pH | 8.21 | | | | | | | | | | <0.01 | pH units | TM73/PM0 |
| Total Alkalinity as CaCO3 | 240 | | | | | | | | | | <1 | mg/l | TM75/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

**Note:**

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 1 | CP01 | 0.95 | 2 | 18/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 1 | CP01 | 7.00 | 11 | 05/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 05/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 05/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 05/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 05/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 05/05/2017 | **Asbestos Type** | NAD |
| | | | | | 05/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 05/05/2017 | **Asbestos Level Screen** | NAD |

**Client Name:** WYG

**Reference:** A102760

**Location:** Brockhampton West

**Contact:** Alice Hayton

**Matrix : Solid**

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Analysis | Reason |
|---|---|---|---|---|---|---|
| 17/7894 | 1 | CP01 | 0.95 | 1-3 | EPH, GRO, PAH, Phenols | Sample holding time exceeded |

DRAFT

**Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.**

**Only analyses which are accredited are recorded as deviating if set criteria are not met.**

# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***JE Job No.:*** 17/7894

## SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

## WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

## DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

## SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

## DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS) accredited - UK. |
| SA | ISO17025 (SANAS) accredited - South Africa. |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| ++ | Result outside calibration range, results should be considered as indicative only and are not accredited. |
| * | Analysis subcontracted to a Jones Environmental approved laboratory. |
| AD | Samples are dried at 35°C ±5°C |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | | |
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | Yes | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | Yes | AR | Yes |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM12/PM16 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM30/PM69 | PM030: Eluate samples are extracted with solvent using a magnetic stirrer to create a vortex.PM069: One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| PM13 | A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description. | PM0 | No preparation is required. | | | AR | |
| TM15 | Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM21 | Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. | PM24 | Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis. | | | AD | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM0 | No preparation is required. | | | AR | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM21 | As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker. | Yes | Yes | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM14 | Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | Yes | | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | | | AD | Yes |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | Yes | Yes | AD | Yes |
| TM31 | Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | Yes | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | Yes | AD | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | | AR | Yes |
| TM60 | Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR). | PM0 | No preparation is required. | | | AR | Yes |

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM61 | Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence. | PM38 | Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061. | Yes | | AR | Yes |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | | | AR | |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | Yes | | AR | |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM0 | No preparation is required. | | | AR | Yes |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM11 | Extraction of as received solid samples using one part solid to 2.5 parts deionised water. | Yes | Yes | AR | No |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM32 | Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio. | Yes | Yes | AD | Yes |
| TM75 | Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser. | PM0 | No preparation is required. | | | AR | Yes |
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM45 | As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis. | | | AR | Yes |
| NONE | No Method Code | PM17 | Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio. | | | | |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| NONE | No Method Code | PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | | | AR | |
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# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

WYG
100 St John Street
London
EC1M 4EH

| | |
|---|---|
| **Attention :** | Alice Hayton |
| **Date :** | 12th May, 2017 |
| **Your reference :** | A102760 |
| **Our reference :** | Test Report 17/7894 Batch 2 |
| **Location :** | Brockhampton West |
| **Date samples received :** | 5th May, 2017 |
| **Status :** | Final report |
| **Issue :** | 1 |

One sample was received for analysis on 5th May, 2017 of which one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

**Compiled By:**

[redacted]

**Phil Sommerton BSc**
**Project Manager**

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 16-18 | | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID** | CP01 | | | | | | | | | | | | |
| **Depth** | 15.00 | | | | | | | | | | | | |
| **COC No / misc** | | | | | | | | | | | | | |
| **Containers** | V J T | | | | | | | | | | | | |
| **Sample Date** | 03/05/2017 | | | | | | | | | | | | |
| **Sample Type** | Soil | | | | | | | | | | | | |
| **Batch Number** | 2 | | | | | | | | | | | | |
| **Date of Receipt** | 05/05/2017 | | | | | | | | | | | | |
| Arsenic [SM] | 1.5 | | | | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Beryllium | <0.5 | | | | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Cadmium [SM] | 0.3 | | | | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Chromium [SM] | 7.1 | | | | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Copper [SM] | 2 | | | | | | | | | | <1 | mg/kg | TM30/PM15 |
| Lead [SM] | <5 | | | | | | | | | | <5 | mg/kg | TM30/PM15 |
| Mercury [SM] | <0.1 | | | | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Nickel [SM] | 5.5 | | | | | | | | | | <0.7 | mg/kg | TM30/PM15 |
| Selenium [SM] | 1 | | | | | | | | | | <1 | mg/kg | TM30/PM15 |
| Vanadium | 5 | | | | | | | | | | <1 | mg/kg | TM30/PM15 |
| Water Soluble Boron [SM] | 0.3 | | | | | | | | | | <0.1 | mg/kg | TM74/PM32 |
| Zinc [SM] | 15 | | | | | | | | | | <5 | mg/kg | TM30/PM15 |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene [SM] | <0.04 | | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Acenaphthylene | <0.03 | | | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Acenaphthene [SM] | <0.05 | | | | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Fluorene [SM] | <0.04 | | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Phenanthrene [SM] | <0.03 | | | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Anthracene [#] | <0.04 | | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Fluoranthene [SM] | <0.03 | | | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Pyrene [#] | <0.03 | | | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Benzo(a)anthracene [#] | <0.06 | | | | | | | | | | <0.06 | mg/kg | TM4/PM8 |
| Chrysene [SM] | <0.02 | | | | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| Benzo(bk)fluoranthene [SM] | <0.07 | | | | | | | | | | <0.07 | mg/kg | TM4/PM8 |
| Benzo(a)pyrene [#] | <0.04 | | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Indeno(123cd)pyrene [SM] | <0.04 | | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Dibenzo(ah)anthracene [#] | <0.04 | | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Benzo(ghi)perylene [#] | <0.04 | | | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| PAH 16 Total | <0.6 | | | | | | | | | | <0.6 | mg/kg | TM4/PM8 |
| Benzo(b)fluoranthene | <0.05 | | | | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Benzo(k)fluoranthene | <0.02 | | | | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| PAH Surrogate % Recovery | 94 | | | | | | | | | | <0 | % | TM4/PM8 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 16-18 | | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP01 | | | | | | | | | | | | |
| Depth | 15.00 | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | | | | | | | | | | | | |
| Sample Date | 03/05/2017 | | | | | | | | | | | | |
| Sample Type | Soil | | | | | | | | | | | | |
| Batch Number | 2 | | | | | | | | | | | | |
| Date of Receipt | 05/05/2017 | | | | | | | | | | | | |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 [#M] | <0.1 | | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C6-C8 [#M] | <0.1 | | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C8-C10 | <0.1 | | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C10-C12 [#M] | <0.2 | | | | | | | | | | <0.2 | mg/kg | TM5/PM16 |
| >C12-C16 [#M] | <4 | | | | | | | | | | <4 | mg/kg | TM5/PM16 |
| >C16-C21 [#M] | <7 | | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >C21-C35 [#M] | <7 | | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >C35-C44 | <7 | | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| Total aliphatics C5-44 | <26 | | | | | | | | | | <26 | mg/kg | [illegible] |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 [#] | <0.1 | | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC7-EC8 [#] | <0.1 | | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC8-EC10 [#M] | <0.1 | | | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC10-EC12 [#] | <0.2 | | | | | | | | | | <0.2 | mg/kg | TM5/PM16 |
| >EC12-EC16 [#] | <4 | | | | | | | | | | <4 | mg/kg | TM5/PM16 |
| >EC16-EC21 [#] | <7 | | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >EC21-EC35 [#] | <7 | | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >EC35-EC44 | <7 | | | | | | | | | | <7 | mg/kg | TM5/PM16 |
| Total aromatics C5-44 | <26 | | | | | | | | | | <26 | mg/kg | [illegible] |
| Total aliphatics and aromatics(C5-44) | <52 | | | | | | | | | | <52 | mg/kg | [illegible] |
| MTBE [#] | <5 | | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Benzene [#] | <5 | | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Toluene [#] | <5 | | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Ethylbenzene [#] | <5 | | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| m/p-Xylene [#] | <5 | | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| o-Xylene [#] | <5 | | | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Phenol [#M] | <0.01 | | | | | | | | | | <0.01 | mg/kg | TM26/PM21 |
| Natural Moisture Content | 45.9 | | | | | | | | | | <0.1 | % | PM4/PM0 |
| Hexavalent Chromium [#] | <0.3 | | | | | | | | | | <0.3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) [#M] | 23 | | | | | | | | | | <3 | mg/kg | TM38/PM20 |
| Free Cyanide | <0.5 | | | | | | | | | | <0.5 | mg/kg | TM89/PM45 |
| Fraction Organic Carbon | 0.007 | | | | | | | | | | <0.001 | None | TM21/PM24 |
| pH [#M] | 8.60 | | | | | | | | | | <0.01 | pH units | TM73/PM11 |
| Sample Type | Clay | | | | | | | | | | | None | PM13/PM0 |
| Sample Colour | Light Brown | | | | | | | | | | | None | PM13/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 16-18 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID** | CP01 | | | | | | | | | | | | |
| **Depth** | 15.00 | | | | | | | | | | | | |
| **COC No / misc** | | | | | | | | | | | | | |
| **Containers** | V J T | | | | | | | | | | | | |
| **Sample Date** | 03/05/2017 | | | | | | | | | | | | |
| **Sample Type** | Soil | | | | | | | | | | | | |
| **Batch Number** | 2 | | | | | | | | | | | | |
| **Date of Receipt** | 05/05/2017 | | | | | | | | | | | | |
| Other Items | stones, shells, wood | | | | | | | | | | | None | PM13/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

**Note:**

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

[redacted]

Ryan Butterworth
Asbestos Team Leader

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 2 | CP01 | 15.00 | 17 | 09/05/2017 | **General Description (Bulk Analysis)** | stones/chalk |
| | | | | | 09/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 09/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 09/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 09/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 09/05/2017 | **Asbestos Type** | NAD |
| | | | | | 09/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 09/05/2017 | **Asbestos Level Screen** | NAD |

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**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Analysis | Reason |
|---|---|---|---|---|---|---|
| No deviating sample report results for job 17/7894 | | | | | | |

DRAFT

**Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.**
**Only analyses which are accredited are recorded as deviating if set criteria are not met.**

# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***JE Job No.:*** 17/7894

## SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

## WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

## DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

## SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

## DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS) accredited - UK. |
| SA | ISO17025 (SANAS) accredited - South Africa. |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| ++ | Result outside calibration range, results should be considered as indicative only and are not accredited. |
| * | Analysis subcontracted to a Jones Environmental approved laboratory. |
| AD | Samples are dried at 35°C ±5°C |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | Yes | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | Yes | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID.<br>TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM12/PM16 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| PM13 | A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description. | PM0 | No preparation is required. | | | AR | |
| TM21 | Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. | PM24 | Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis. | | | AD | Yes |

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM21 | As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker. | Yes | Yes | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | | | AD | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | Yes | Yes | AD | Yes |
| TM31 | Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | Yes | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | Yes | AD | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | | AR | Yes |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | | | AR | |

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | Yes | | AR | |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM11 | Extraction of as received solid samples using one part solid to 2.5 parts deionised water. | Yes | Yes | AR | No |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM32 | Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio. | Yes | Yes | AD | Yes |
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM45 | As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis. | | | AR | Yes |

DRAFT

# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

WYG
100 St John Street
London
EC1M 4EH

| | |
|---|---|
| **Attention :** | Alice Hayton |
| **Date :** | 22nd May, 2017 |
| **Your reference :** | A102760 |
| **Our reference :** | Test Report 17/7894 Batch 3 |
| **Location :** | Brockhampton West |
| **Date samples received :** | 5th May, 2017 |
| **Status :** | Final report |
| **Issue :** | 2 |

Four samples were received for analysis on 5th May, 2017 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

**Compiled By:**

[redacted]

**Phil Sommerton BSc**
**Project Manager**

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 19-21 | 25-27 | 28-30 | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP02A | CP02A | CP02A | | | | | | | | | | |
| Depth | 0.75 | 4.50 | 7.00 | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | | | | | | | | | | |
| Sample Date | 04/05/2017 | 04/05/2017 | 04/05/2017 | | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | | | | | | | | | | |
| Batch Number | 3 | 3 | 3 | | | | | | | | | | |
| Date of Receipt | 05/05/2017 | 05/05/2017 | 05/05/2017 | | | | | | | | | | |
| Arsenic [SM] | 5.0 | - | - | | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Beryllium | <0.5 | - | - | | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Cadmium [SM] | 0.5 | - | - | | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Chromium [SM] | 72.9 | - | - | | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Copper [SM] | 12 | - | - | | | | | | | | <1 | mg/kg | TM30/PM15 |
| Lead [SM] | 17 | - | - | | | | | | | | <5 | mg/kg | TM30/PM15 |
| Mercury [SM] | <0.1 | - | - | | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Nickel [SM] | 11.3 | - | - | | | | | | | | <0.7 | mg/kg | TM30/PM15 |
| Selenium [SM] | <1 | - | - | | | | | | | | <1 | mg/kg | TM30/PM15 |
| Vanadium | 20 | - | - | | | | | | | | <1 | mg/kg | TM30/PM15 |
| Water Soluble Boron [SM] | 1.1 | - | - | | | | | | | | <0.1 | mg/kg | TM74/PM32 |
| Zinc [SM] | 60 | - | - | | | | | | | | <5 | mg/kg | TM30/PM15 |
| Arsenic | - | 12.3 | 7.1 | | | | | | | | <0.5 | mg/kg | TM30/PM62 |
| Beryllium | - | 0.9 | 0.8 | | | | | | | | <0.5 | mg/kg | TM30/PM62 |
| Cadmium | - | 9.9 | 1.9 | | | | | | | | <0.1 | mg/kg | TM30/PM62 |
| Chromium | - | 61.6 | 36.1 | | | | | | | | <0.5 | mg/kg | TM30/PM62 |
| Copper | - | 170 | 52 | | | | | | | | <1 | mg/kg | TM30/PM62 |
| Lead | - | 168 | 104 | | | | | | | | <5 | mg/kg | TM30/PM62 |
| Mercury | - | <0.1 | <0.1 | | | | | | | | <0.1 | mg/kg | TM30/PM62 |
| Nickel | - | 45.1 | 21.7 | | | | | | | | <0.7 | mg/kg | TM30/PM62 |
| Selenium | - | <1 | 1 | | | | | | | | <1 | mg/kg | TM30/PM62 |
| Vanadium | - | 31 | 74 | | | | | | | | <1 | mg/kg | TM30/PM62 |
| Water Soluble Boron | - | 1.7 | 4.3 | | | | | | | | <0.1 | mg/kg | TM74/PM61 |
| Zinc | - | 517 | 169 | | | | | | | | <5 | mg/kg | TM30/PM62 |

Please see attached notes for all abbreviations and acronyms

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Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 19-21 | 25-27 | 28-30 | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP02A | CP02A | CP02A | | | | | | | | | | |
| Depth | 0.75 | 4.50 | 7.00 | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | | | | | | | | | | |
| Sample Date | 04/05/2017 | 04/05/2017 | 04/05/2017 | | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | | | | | | | | | | |
| Batch Number | 3 | 3 | 3 | | | | | | | | | | |
| Date of Receipt | 05/05/2017 | 05/05/2017 | 05/05/2017 | | | | | | | | | | |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene [#M] | <0.04 | 0.15 | 2.25 AA | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Acenaphthylene | 0.03 | <0.03 | <0.30 AA | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Acenaphthene [#M] | <0.05 | 1.01 | 15.99 AA | | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Fluorene [#M] | 0.06 | 1.01 | 15.14 AA | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Phenanthrene [#M] | 0.43 | 4.23 | 52.26 AA | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Anthracene [#] | 0.27 | 0.86 | 9.79 AA | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Fluoranthene [#M] | 0.86 | 2.08 | 22.02 AA | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Pyrene [#] | 0.77 | 1.52 | 14.22 AA | | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Benzo(a)anthracene [#] | 0.43 | 0.60 | 4.37 AA | | | | | | | | <0.06 | mg/kg | TM4/PM8 |
| Chrysene [#M] | 0.47 | 0.55 | 3.84 AA | | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| Benzo(bk)fluoranthene [#M] | 0.76 | 0.82 | 3.73 AA | | | | | | | | <0.07 | mg/kg | TM4/PM8 |
| Benzo(a)pyrene [#] | 0.48 | 0.51 | 1.69 AA | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Indeno(123cd)pyrene [#M] | 0.29 | 0.34 | 0.97 AA | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Dibenzo(ah)anthracene [#] | 0.06 | 0.06 | <0.40 AA | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Benzo(ghi)perylene [#] | 0.30 | 0.28 | 0.84 AA | | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| PAH 16 Total | 5.2 | 14.0 | 147.3 AA | | | | | | | | <0.6 | mg/kg | TM4/PM8 |
| Benzo(b)fluoranthene | 0.55 | 0.59 | 2.69 AA | | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Benzo(k)fluoranthene | 0.21 | 0.23 | 1.04 AA | | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| PAH Surrogate % Recovery | 107 | 101 | 111 AA | | | | | | | | <0 | % | TM4/PM8 |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 [#M] | <0.1 | <0.1 | <0.1 | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C6-C8 [#M] | <0.1 | 0.1 | 0.1 | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C8-C10 | <0.1 | 1.3 | 1.4 | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C10-C12 [#M] | <0.2 | 13.8 | 29.5 | | | | | | | | <0.2 | mg/kg | TM5/PM16 |
| >C12-C16 [#M] | 12 | 27 | 63 | | | | | | | | <4 | mg/kg | TM5/PM16 |
| >C16-C21 [#M] | <7 | 86 | 126 | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >C21-C35 [#M] | 122 | 568 | 691 | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >C35-C44 | 131 | 158 | 171 | | | | | | | | <7 | mg/kg | TM5/PM16 |
| Total aliphatics C5-44 | 265 | 854 | 1082 | | | | | | | | <26 | mg/kg | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 [#] | <0.1 | <0.1 | <0.1 | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC7-EC8 [#] | <0.1 | <0.1 | <0.1 | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC8-EC10 [#M] | <0.1 | 0.1 | <0.1 | | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC10-EC12 [#] | <0.2 | 7.4 | 17.3 | | | | | | | | <0.2 | mg/kg | TM5/PM16 |
| >EC12-EC16 [#] | 20 | 31 | 108 | | | | | | | | <4 | mg/kg | TM5/PM16 |
| >EC16-EC21 [#] | 147 | 129 | 374 | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >EC21-EC35 [#] | 632 | 603 | 1148 | | | | | | | | <7 | mg/kg | TM5/PM16 |
| >EC35-EC44 | 578 | 362 | 476 | | | | | | | | <7 | mg/kg | TM5/PM16 |
| Total aromatics C5-44 | 1377 | 1133 | 2123 | | | | | | | | <26 | mg/kg | |
| Total aliphatics and aromatics(C5-44) | 1642 | 1987 | 3205 | | | | | | | | <52 | mg/kg | |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 19-21 | 25-27 | 28-30 | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP02A | CP02A | CP02A | | | | | | | | | | |
| Depth | 0.75 | 4.50 | 7.00 | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | | | | | | | | | | |
| Sample Date | 04/05/2017 | 04/05/2017 | 04/05/2017 | | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | | | | | | | | | | |
| Batch Number | 3 | 3 | 3 | | | | | | | | | | |
| Date of Receipt | 05/05/2017 | 05/05/2017 | 05/05/2017 | | | | | | | | | | |
| MTBE [#] | <5 | <5 | <5 | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Benzene [#] | <5 | <5 | 10 | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Toluene [#] | <5 | <5 | <5 | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Ethylbenzene [#] | <5 | 16 | 15 | | | | | | | | <5 | ug/kg | TM31/PM12 |
| m/p-Xylene [#] | <5 | 17 | 19 | | | | | | | | <5 | ug/kg | TM31/PM12 |
| o-Xylene [#] | <5 | 168 | 49 | | | | | | | | <5 | ug/kg | TM31/PM12 |
| Phenol [#M] | <0.01 | <0.01 | <0.01 | | | | | | | | <0.01 | mg/kg | TM26/PM21 |
| Natural Moisture Content | 9.1 | - | - | | | | | | | | <0.1 | % | PM4/PM0 |
| Natural Moisture Content | - | 34.2 | 37.1 | | | | | | | | <0.1 | % | PM4/PM0 |
| Hexavalent Chromium [#] | <0.3 | <0.3 | <0.3 | | | | | | | | <0.3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) [#M] | 326 | - | - | | | | | | | | <3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) | - | 0.4104 | 0.3990 | | | | | | | | <0.0015 | g/l | TM38/PM80 |
| Free Cyanide | <0.5 | <0.5 | <0.5 | | | | | | | | <0.5 | mg/kg | TM89/PM45 |
| Fraction Organic Carbon | 0.005 | NDP | NDP | | | | | | | | <0.001 | None | TM21/PM24 |
| pH [#M] | 8.45 | 7.70 | 7.80 | | | | | | | | <0.01 | pH units | TM73/PM11 |
| Sample Type | Clay | NDP | NDP | | | | | | | | | None | PM13/PM0 |
| Sample Colour | Light Brown | NDP | NDP | | | | | | | | | None | PM13/PM0 |
| Other Items | stones and sand | NDP | NDP | | | | | | | | | None | PM13/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **J E Sample No.** | 25-27 | | | | | | | | | | Please see attached notes for all abbreviations and acronyms | | |
| **Sample ID** | CP02A | | | | | | | | | | | | |
| **Depth** | 4.50 | | | | | | | | | | | | |
| **COC No / misc** | | | | | | | | | | | | | |
| **Containers** | V J T | | | | | | | | | | | | |
| **Sample Date** | 04/05/2017 | | | | | | | | | | | | |
| **Sample Type** | Soil | | | | | | | | | | | | |
| **Batch Number** | 3 | | | | | | | | | | | | |
| **Date of Receipt** | 05/05/2017 | | | | | | | | | | | | |
| | | | | | | | | | | | LOD/LOR | Units | Method No. |
| Dissolved Antimony # | 11 | | | | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Arsenic # | 3.4 | | | | | | | | | | <2.5 | ug/l | TM30/PM14 |
| Dissolved Barium # | 50 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Beryllium # | <0.5 | | | | | | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Boron # | 63 | | | | | | | | | | <12 | ug/l | TM30/PM14 |
| Dissolved Cadmium # | <0.5 | | | | | | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Chromium # | <1.5 | | | | | | | | | | <1.5 | ug/l | TM30/PM14 |
| Dissolved Copper # | <3 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Lead # | <0.4 | | | | | | | | | | <0.4 | ug/l | TM30/PM14 |
| Dissolved Molybdenum # | 44 | | | | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Nickel # | <2 | | | | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Selenium # | <3 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Zinc # | <3 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Mercury Dissolved by CVAF # | <0.01 | | | | | | | | | | <0.01 | ug/l | TM61/PM38 |
| | | | | | | | | | | | | | |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene | 3.6 | | | | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Acenaphthylene | 0.18 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Acenaphthene | 7.62 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluorene | 4.59 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Phenanthrene | 6.26 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Anthracene | 0.91 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluoranthene | 1.13 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Pyrene | 0.70 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)anthracene | 0.10 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Chrysene | 0.11 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(bk)fluoranthene | 0.08 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)pyrene | 0.04 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Indeno(123cd)pyrene | 0.02 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Dibenzo(ah)anthracene | <0.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(ghi)perylene | 0.03 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH 16 Total | 25.4 | | | | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Benzo(b)fluoranthene | 0.06 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(k)fluoranthene | 0.02 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH Surrogate % Recovery | 79 | | | | | | | | | | <0 | % | TM4/PM30 |
| | | | | | | | | | | | | | |
| Methyl Tertiary Butyl Ether | <1 | | | | | | | | | | <1 | ug/l | TM15/PM69 |
| Benzene | <0.5 | | | | | | | | | | <0.5 | ug/l | TM15/PM69 |
| Toluene | <5 | | | | | | | | | | <5 | ug/l | TM15/PM69 |
| Ethylbenzene | <1 | | | | | | | | | | <1 | ug/l | TM15/PM69 |
| p/m-Xylene | <2 | | | | | | | | | | <2 | ug/l | TM15/PM69 |
| o-Xylene | <1 | | | | | | | | | | <1 | ug/l | TM15/PM69 |
| Surrogate Recovery Toluene D8 | 127 | | | | | | | | | | <0 | % | TM15/PM69 |
| Surrogate Recovery 4-Bromofluorobenzene | 124 | | | | | | | | | | <0 | % | TM15/PM69 |

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 25-27 | | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP02A | | | | | | | | | | | | |
| Depth | 4.50 | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | | | | | | | | | | | | |
| Sample Date | 04/05/2017 | | | | | | | | | | | | |
| Sample Type | Soil | | | | | | | | | | | | |
| Batch Number | 3 | | | | | | | | | | | | |
| Date of Receipt | 05/05/2017 | | | | | | | | | | | | |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C6-C8 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C8-C10 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C10-C12 | <5 | | | | | | | | | | <5 | ug/l | TM5/PM30 |
| >C12-C16 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >C16-C21 | 180 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >C21-C35 | 2030 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aliphatics C5-35 | 2210 | | | | | | | | | | <10 | ug/l | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC7-EC8 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC8-EC10 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC10-EC12 | <5 | | | | | | | | | | <5 | ug/l | TM5/PM30 |
| >EC12-EC16 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC16-EC21 | 30 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC21-EC35 | 480 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aromatics C5-35 | 510 | | | | | | | | | | <10 | ug/l | |
| Total aliphatics and aromatics(C5-35) | 2720 | | | | | | | | | | <10 | ug/l | |
| Phenol | <0.5 | | | | | | | | | | <0.5 | ug/l | TM26/PM0 |
| Sulphate as SO4 # | 38.39 | | | | | | | | | | <0.05 | mg/l | TM38/PM0 |
| Chloride # | 9.4 | | | | | | | | | | <0.3 | mg/l | TM38/PM0 |
| Nitrate as NO3 # | <0.2 | | | | | | | | | | <0.2 | mg/l | TM38/PM0 |
| Nitrite as NO2 # | <0.02 | | | | | | | | | | <0.02 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH3 # | 3.20 | | | | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH4 # | 3.39 | | | | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Total Cyanide # | <0.01 | | | | | | | | | | <0.01 | mg/l | TM89/PM0 |
| Dissolved Organic Carbon | <2 | | | | | | | | | | <2 | mg/l | TM60/PM0 |
| pH | 8.08 | | | | | | | | | | <0.01 | pH units | TM73/PM0 |
| Total Alkalinity as CaCO3 | 174 | | | | | | | | | | <1 | mg/l | TM75/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

**Note:**

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

[redacted]

Ryan Butterworth
Asbestos Team Leader

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 3 | CP02A | 0.75 | 20 | 18/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 3 | CP02A | 4.50 | 28 | 09/05/2017 | **General Description (Bulk Analysis)** | soil-stones |
| | | | | | 09/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 09/05/2017 | **Asbestos Fibres (2)** | Fibre Bundles |
| | | | | | 09/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 09/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 09/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 09/05/2017 | **Asbestos Type (2)** | Amosite |
| | | | | | 09/05/2017 | **Asbestos Level Screen** | <0.1% |
| 17/7894 | 3 | CP02A | 7.00 | 29 | 09/05/2017 | **General Description (Bulk Analysis)** | soil-stones |
| | | | | | 09/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 09/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 09/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 09/05/2017 | **Asbestos Level Screen** | <0.1% |

**Client Name:** WYG **Matrix : Solid**
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | NDP Reason |
|---|---|---|---|---|---|
| 17/7894 | 3 | CP02A | 4.50 | 25-27 | Asbestos detected in sample |
| 17/7894 | 3 | CP02A | 7.00 | 28-30 | Asbestos detected in sample |

DRAFT

# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***JE Job No.:*** 17/7894

## SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

## WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

## DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

## SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

## DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS) accredited - UK. |
| SA | ISO17025 (SANAS) accredited - South Africa. |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| ++ | Result outside calibration range, results should be considered as indicative only and are not accredited. |
| * | Analysis subcontracted to a Jones Environmental approved laboratory. |
| AD | Samples are dried at 35°C ±5°C |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |
| AA | x10 Dilution |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | | |
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | Yes | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | Yes | AR | Yes |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM12/PM16 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM30/PM69 | PM030: Eluate samples are extracted with solvent using a magnetic stirrer to create a vortex.PM069: One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| PM13 | A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description. | PM0 | No preparation is required. | | | AR | |
| TM15 | Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM21 | Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. | PM24 | Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis. | | | AD | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM0 | No preparation is required. | | | AR | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM21 | As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker. | Yes | Yes | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM14 | Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | Yes | | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | | | AD | Yes |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | Yes | Yes | AD | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM62 | Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C. | | | AR | Yes |
| TM31 | Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | Yes | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | Yes | AD | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | | AR | Yes |

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM60 | As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid. | | | AR | Yes |
| TM60 | Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR). | PM0 | No preparation is required. | | | AR | Yes |
| TM61 | Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence. | PM38 | Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061. | Yes | | AR | Yes |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | | | AR | |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | Yes | | AR | |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM0 | No preparation is required. | | | AR | Yes |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM11 | Extraction of as received solid samples using one part solid to 2.5 parts deionised water. | Yes | Yes | AR | No |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM32 | Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio. | Yes | Yes | AD | Yes |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM61 | As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP. | | | AR | Yes |
| TM75 | Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser. | PM0 | No preparation is required. | | | AR | Yes |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM45 | As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis. | | | AR | Yes |
| NONE | No Method Code | PM17 | Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio. | | | | |
| NONE | No Method Code | PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | | | AR | |

DRAFT

# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

WYG
100 St John Street
London
EC1M 4EH

| | |
|---|---|
| **Attention :** | Alice Hayton |
| **Date :** | 22nd May, 2017 |
| **Your reference :** | A102760 |
| **Our reference :** | Test Report 17/7894 Batch 4 |
| **Location :** | Brockhampton West |
| **Date samples received :** | 9th May, 2017 |
| **Status :** | Final report |
| **Issue :** | 1 |

Seven samples were received for analysis on 9th May, 2017 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

**Compiled By:**

[redacted]

**Phil Sommerton BSc**
**Project Manager**

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 34-36 | 37-39 | 43-45 | 49-51 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP02A | CP05 | CP05 | CP05 | | | | | | | | | |
| Depth | 20.00 | 0.20 | 4.20 | 9.50 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | | | | | | | | | |
| Sample Date | 08/05/2017 | 08/05/2017 | 08/05/2017 | 08/05/2017 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 4 | 4 | 4 | 4 | | | | | | | | | |
| Date of Receipt | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | | | | | | | | | |
| Arsenic [SM] | 0.8 | 6.1 | - | - | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Beryllium | <0.5 | 0.6 | - | - | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Cadmium [SM] | 0.3 | 0.5 | - | - | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Chromium [SM] | 5.1 | 71.3 | - | - | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Copper [SM] | 2 | 18 | - | - | | | | | | | <1 | mg/kg | TM30/PM15 |
| Lead [SM] | <5 | 34 | - | - | | | | | | | <5 | mg/kg | TM30/PM15 |
| Mercury [SM] | <0.1 | <0.1 | - | - | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Nickel [SM] | 3.2 | 13.2 | - | - | | | | | | | <0.7 | mg/kg | TM30/PM15 |
| Selenium [SM] | <1 | 1 | - | - | | | | | | | <1 | mg/kg | TM30/PM15 |
| Vanadium | 2 | 30 | - | - | | | | | | | <1 | mg/kg | TM30/PM15 |
| Water Soluble Boron [SM] | 0.2 | 0.8 | - | - | | | | | | | <0.1 | mg/kg | TM74/PM32 |
| Zinc [SM] | 9 | 66 | - | - | | | | | | | <5 | mg/kg | TM30/PM15 |
| Arsenic | - | - | 8.4 | 9.1 | | | | | | | <0.5 | mg/kg | TM30/PM62 |
| Beryllium | - | - | 0.8 | 1.2 | | | | | | | <0.5 | mg/kg | TM30/PM62 |
| Cadmium | - | - | 0.4 | 1.9 | | | | | | | <0.1 | mg/kg | TM30/PM62 |
| Chromium | - | - | 25.2 | 30.6 | | | | | | | <0.5 | mg/kg | TM30/PM62 |
| Copper | - | - | 17 | 38 | | | | | | | <1 | mg/kg | TM30/PM62 |
| Lead | - | - | 89 | 110 | | | | | | | <5 | mg/kg | TM30/PM62 |
| Mercury | - | - | <0.1 | <0.1 | | | | | | | <0.1 | mg/kg | TM30/PM62 |
| Nickel | - | - | 13.9 | 30.8 | | | | | | | <0.7 | mg/kg | TM30/PM62 |
| Selenium | - | - | <1 | <1 | | | | | | | <1 | mg/kg | TM30/PM62 |
| Vanadium | - | - | 34 | 41 | | | | | | | <1 | mg/kg | TM30/PM62 |
| Water Soluble Boron | - | - | 1.3 | 2.3 | | | | | | | <0.1 | mg/kg | TM74/PM61 |
| Zinc | - | - | 214 | 678 | | | | | | | <5 | mg/kg | TM30/PM62 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 34-36 | 37-39 | 43-45 | 49-51 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP02A | CP05 | CP05 | CP05 | | | | | | | | | |
| Depth | 20.00 | 0.20 | 4.20 | 9.50 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | | | | | | | | | |
| Sample Date | 08/05/2017 | 08/05/2017 | 08/05/2017 | 08/05/2017 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 4 | 4 | 4 | 4 | | | | | | | | | |
| Date of Receipt | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | | | | | | | | | |

Please see attached notes for all abbreviations and acronyms

| | | | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PAH MS | | | | | | | | | | | | | |
| Naphthalene [#M] | <0.04 | 0.05 | <0.04 | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Acenaphthylene | <0.03 | 0.14 | <0.03 | <0.03 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Acenaphthene [#M] | <0.05 | <0.05 | <0.05 | <0.05 | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Fluorene [#M] | <0.04 | <0.04 | <0.04 | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Phenanthrene [#M] | <0.03 | 0.67 | 0.08 | <0.03 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Anthracene [#] | <0.04 | 0.30 | <0.04 | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Fluoranthene [#M] | <0.03 | 2.21 | 0.09 | <0.03 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Pyrene [#] | <0.03 | 1.93 | 0.09 | <0.03 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Benzo(a)anthracene [#] | <0.06 | 1.18 | 0.09 | <0.06 | | | | | | | <0.06 | mg/kg | TM4/PM8 |
| Chrysene [#M] | <0.02 | 1.24 | 0.08 | <0.02 | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| Benzo(bk)fluoranthene [#M] | <0.07 | 2.19 | 0.17 | <0.07 | | | | | | | <0.07 | mg/kg | TM4/PM8 |
| Benzo(a)pyrene [#] | <0.04 | 1.45 | 0.11 | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Indeno(123cd)pyrene [#M] | <0.04 | 0.87 | 0.09 | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Dibenzo(ah)anthracene [#] | <0.04 | 0.16 | <0.04 | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Benzo(ghi)perylene [#] | <0.04 | 0.91 | 0.08 | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| PAH 16 Total | <0.6 | 13.3 | 0.9 | <0.6 | | | | | | | <0.6 | mg/kg | TM4/PM8 |
| Benzo(b)fluoranthene | <0.05 | 1.58 | 0.12 | <0.05 | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Benzo(k)fluoranthene | <0.02 | 0.61 | 0.05 | <0.02 | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| PAH Surrogate % Recovery | 103 | 104 | 107 | 107 | | | | | | | <0 | % | TM4/PM8 |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 [#M] | <0.1 | <0.1 | <0.1 [SV] | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C6-C8 [#M] | <0.1 | <0.1 | 0.1 [SV] | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C8-C10 | <0.1 | <0.1 | 9.3 [SV] | 1.2 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C10-C12 [#M] | <0.2 | <0.2 | 9.2 | 4.1 | | | | | | | <0.2 | mg/kg | TM5/PM16 |
| >C12-C16 [#M] | <4 | <4 | 18 | <4 | | | | | | | <4 | mg/kg | TM5/PM16 |
| >C16-C21 [#M] | <7 | <7 | 19 | 34 | | | | | | | <7 | mg/kg | TM5/PM16 |
| >C21-C35 [#M] | <7 | <7 | 399 | 351 | | | | | | | <7 | mg/kg | TM5/PM16 |
| >C35-C44 | <7 | <7 | 117 | 91 | | | | | | | <7 | mg/kg | TM5/PM16 |
| Total aliphatics C5-44 | <26 | <26 | 572 | 481 | | | | | | | <26 | mg/kg | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 [#] | <0.1 | <0.1 | <0.1 [SV] | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC7-EC8 [#] | <0.1 | <0.1 | <0.1 [SV] | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC8-EC10 [#M] | <0.1 | <0.1 | 0.6 [SV] | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC10-EC12 [#] | <0.2 | <0.2 | 9.4 | <0.2 | | | | | | | <0.2 | mg/kg | TM5/PM16 |
| >EC12-EC16 [#] | <4 | <4 | 28 | <4 | | | | | | | <4 | mg/kg | TM5/PM16 |
| >EC16-EC21 [#] | <7 | <7 | 55 | 44 | | | | | | | <7 | mg/kg | TM5/PM16 |
| >EC21-EC35 [#] | <7 | 67 | 332 | 271 | | | | | | | <7 | mg/kg | TM5/PM16 |
| >EC35-EC44 | <7 | 79 | 117 | 142 | | | | | | | <7 | mg/kg | TM5/PM16 |
| Total aromatics C5-44 | <26 | 146 | 542 | 457 | | | | | | | <26 | mg/kg | |
| Total aliphatics and aromatics(C5-44) | <52 | 146 | 1114 | 938 | | | | | | | <52 | mg/kg | |

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 34-36 | 37-39 | 43-45 | 49-51 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP02A | CP05 | CP05 | CP05 | | | | | | | | | |
| Depth | 20.00 | 0.20 | 4.20 | 9.50 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | | | | | | | | | |
| Sample Date | 08/05/2017 | 08/05/2017 | 08/05/2017 | 08/05/2017 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 4 | 4 | 4 | 4 | | | | | | | | | |
| Date of Receipt | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | | | | | | | | | |
| MTBE # | <5 | <5 | <5 SV | <5 | | | | | | | <5 | ug/kg | TM31/PM12 |
| Benzene # | <5 | <5 | <5 SV | <5 | | | | | | | <5 | ug/kg | TM31/PM12 |
| Toluene # | <5 | <5 | <5 SV | <5 | | | | | | | <5 | ug/kg | TM31/PM12 |
| Ethylbenzene # | <5 | <5 | 78 SV | <5 | | | | | | | <5 | ug/kg | TM31/PM12 |
| m/p-Xylene # | <5 | <5 | 480 SV | 22 | | | | | | | <5 | ug/kg | TM31/PM12 |
| o-Xylene # | <5 | <5 | 116 SV | 15 | | | | | | | <5 | ug/kg | TM31/PM12 |
| Phenol AM | <0.01 | <0.01 | <0.01 | 1.82 AA | | | | | | | <0.01 | mg/kg | TM26/PM21 |
| Natural Moisture Content | 21.6 | 7.8 | - | - | | | | | | | <0.1 | % | PM4/PM0 |
| Natural Moisture Content | - | - | 27.1 | 36.1 | | | | | | | <0.1 | % | PM4/PM0 |
| Hexavalent Chromium # | <0.3 | <0.3 | <0.3 | <0.3 | | | | | | | <0.3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) AM | 44 | 66 | - | - | | | | | | | <3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) | - | - | 287 | 370 | | | | | | | <3 | mg/kg | TM38/PM80 |
| Free Cyanide | <0.5 | <0.5 | <0.5 | <0.5 | | | | | | | <0.5 | mg/kg | TM89/PM45 |
| Fraction Organic Carbon | 0.007 | 0.025 | NDP | NDP | | | | | | | <0.001 | None | TM21/PM24 |
| pH AM | 8.49 | 8.39 | 7.62 | 7.70 | | | | | | | <0.01 | pH units | TM73/PM11 |
| Sample Type | Clay | Clayey Loam | NDP | NDP | | | | | | | | None | PM13/PM0 |
| Sample Colour | White | Medium Brown | NDP | NDP | | | | | | | | None | PM13/PM0 |
| Other Items | stones & chalk | stones and vegertation | NDP | NDP | | | | | | | | None | PM13/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

| J E Sample No. | 40-42 | | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP05 | | | | | | | | | | | | |
| Depth | 2.00 | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | | | | | | | | | | | | |
| Sample Date | 08/05/2017 | | | | | | | | | | | | |
| Sample Type | Soil | | | | | | | | | | | | |
| Batch Number | 4 | | | | | | | | | | | | |
| Date of Receipt | 09/05/2017 | | | | | | | | | | | | |
| Dissolved Antimony [#] | <2 | | | | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Arsenic [#] | 3.0 | | | | | | | | | | <2.5 | ug/l | TM30/PM14 |
| Dissolved Barium [#] | 27 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Beryllium [#] | <0.5 | | | | | | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Boron [#] | 19 | | | | | | | | | | <12 | ug/l | TM30/PM14 |
| Dissolved Cadmium [#] | <0.5 | | | | | | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Chromium [#] | <1.5 | | | | | | | | | | <1.5 | ug/l | TM30/PM14 |
| Dissolved Copper [#] | <3 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Lead [#] | 0.5 | | | | | | | | | | <0.4 | ug/l | TM30/PM14 |
| Dissolved Molybdenum [#] | 5 | | | | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Nickel [#] | <2 | | | | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Selenium [#] | <3 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Zinc [#] | <3 | | | | | | | | | | <3 | ug/l | TM30/PM14 |
| Mercury Dissolved by CVAF [#] | 0.01 | | | | | | | | | | <0.01 | ug/l | TM61/PM38 |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene | <0.1 [B] | | | | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Acenaphthylene | 0.03 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Acenaphthene | 0.04 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluorene | 0.08 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Phenanthrene | 0.19 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Anthracene | 0.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluoranthene | 0.03 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Pyrene | 0.02 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)anthracene | <0.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Chrysene | <0.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(bk)fluoranthene | 0.02 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)pyrene | <0.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Indeno(123cd)pyrene | <0.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Dibenzo(ah)anthracene | <0.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(ghi)perylene | <0.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH 16 Total | 0.4 | | | | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Benzo(b)fluoranthene | 0.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(k)fluoranthene | <0.01 | | | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH Surrogate % Recovery | 89 | | | | | | | | | | <0 | % | TM4/PM30 |
| Methyl Tertiary Butyl Ether | <1 | | | | | | | | | | <1 | ug/l | TM15/PM69 |
| Benzene | <0.5 | | | | | | | | | | <0.5 | ug/l | TM15/PM69 |
| Toluene | <5 | | | | | | | | | | <5 | ug/l | TM15/PM69 |
| Ethylbenzene | <1 | | | | | | | | | | <1 | ug/l | TM15/PM69 |
| p/m-Xylene | <2 | | | | | | | | | | <2 | ug/l | TM15/PM69 |
| o-Xylene | <1 | | | | | | | | | | <1 | ug/l | TM15/PM69 |
| Surrogate Recovery Toluene D8 | 101 | | | | | | | | | | <0 | % | TM15/PM69 |
| Surrogate Recovery 4-Bromofluorobenzene | 103 | | | | | | | | | | <0 | % | TM15/PM69 |

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 40-42 | | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP05 | | | | | | | | | | | | |
| Depth | 2.00 | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | | | | | | | | | | | | |
| Sample Date | 08/05/2017 | | | | | | | | | | | | |
| Sample Type | Soil | | | | | | | | | | | | |
| Batch Number | 4 | | | | | | | | | | | | |
| Date of Receipt | 09/05/2017 | | | | | | | | | | | | |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C6-C8 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C8-C10 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C10-C12 | <5 | | | | | | | | | | <5 | ug/l | TM5/PM30 |
| >C12-C16 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >C16-C21 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >C21-C35 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aliphatics C5-35 | <10 | | | | | | | | | | <10 | ug/l | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC7-EC8 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC8-EC10 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC10-EC12 | <5 | | | | | | | | | | <5 | ug/l | TM5/PM30 |
| >EC12-EC16 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC16-EC21 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC21-EC35 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aromatics C5-35 | <10 | | | | | | | | | | <10 | ug/l | |
| Total aliphatics and aromatics(C5-35) | <10 | | | | | | | | | | <10 | ug/l | |
| Phenol | <0.5 | | | | | | | | | | <0.5 | ug/l | TM26/PM0 |
| Sulphate as SO4 # | 51.30 | | | | | | | | | | <0.05 | mg/l | TM38/PM0 |
| Chloride # | 1.1 | | | | | | | | | | <0.3 | mg/l | TM38/PM0 |
| Nitrate as NO3 # | <0.2 | | | | | | | | | | <0.2 | mg/l | TM38/PM0 |
| Nitrite as NO2 # | 0.03 | | | | | | | | | | <0.02 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH3 # | 2.65 | | | | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH4 # | 2.81 | | | | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Total Cyanide # | <0.01 | | | | | | | | | | <0.01 | mg/l | TM89/PM0 |
| Dissolved Organic Carbon | 7 | | | | | | | | | | <2 | mg/l | TM60/PM0 |
| pH | 7.90 | | | | | | | | | | <0.01 | pH units | TM73/PM0 |
| Total Alkalinity as CaCO3 | 116 | | | | | | | | | | <1 | mg/l | TM75/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

**Note:**

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

[redacted]

Ryan Butterworth
Asbestos Team Leader

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 4 | CP02A | 20.00 | 35 | 15/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone/Chalk |
| | | | | | 15/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 15/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 15/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 4 | CP05 | 0.20 | 38 | 18/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 4 | CP05 | 4.20 | 44 | 15/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone |
| | | | | | 15/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 15/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 15/05/2017 | **Asbestos Level Screen** | <0.1% |
| 17/7894 | 4 | CP05 | 9.50 | 50 | 15/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone |
| | | | | | 15/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 15/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 15/05/2017 | **Asbestos Level Screen** | <0.1% |

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

**Matrix : Solid**

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | NDP Reason |
|---|---|---|---|---|---|
| 17/7894 | 4 | CP05 | 4.20 | 43-45 | Asbestos detected in sample |
| 17/7894 | 4 | CP05 | 9.50 | 49-51 | Asbestos detected in sample |

DRAFT

# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***JE Job No.:*** 17/7894

## SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

## WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

## DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

## SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

## DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS) accredited - UK. |
| SA | ISO17025 (SANAS) accredited - South Africa. |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| ++ | Result outside calibration range, results should be considered as indicative only and are not accredited. |
| * | Analysis subcontracted to a Jones Environmental approved laboratory. |
| AD | Samples are dried at 35°C ±5°C |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |
| AA | x10 Dilution |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | | |
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | Yes | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | Yes | AR | Yes |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM12/PM16 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM30/PM69 | PM030: Eluate samples are extracted with solvent using a magnetic stirrer to create a vortex.PM069: One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| PM13 | A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description. | PM0 | No preparation is required. | | | AR | |
| TM15 | Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM21 | Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. | PM24 | Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis. | | | AD | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM0 | No preparation is required. | | | AR | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM21 | As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker. | Yes | Yes | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM14 | Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | Yes | | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | | | AD | Yes |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | Yes | Yes | AD | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM62 | Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C. | | | AR | Yes |
| TM31 | Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | Yes | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | Yes | AD | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | | AR | Yes |

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM60 | As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid. | | | AR | Yes |
| TM60 | Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR). | PM0 | No preparation is required. | | | AR | Yes |
| TM61 | Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence. | PM38 | Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061. | Yes | | AR | Yes |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | | | AR | |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | Yes | | AR | |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM0 | No preparation is required. | | | AR | Yes |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM11 | Extraction of as received solid samples using one part solid to 2.5 parts deionised water. | Yes | Yes | AR | No |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM32 | Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio. | Yes | Yes | AD | Yes |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM61 | As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP. | | | AR | Yes |
| TM75 | Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser. | PM0 | No preparation is required. | | | AR | Yes |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM45 | As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis. | | | AR | Yes |
| NONE | No Method Code | PM17 | Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio. | | | | |
| NONE | No Method Code | PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | | | AR | |

DRAFT

# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

WYG
100 St John Street
London
EC1M 4EH

| | |
|---|---|
| **Attention :** | Alice Hayton |
| **Date :** | 22nd May, 2017 |
| **Your reference :** | A102760 |
| **Our reference :** | Test Report 17/7894 Batch 5 |
| **Location :** | Brockhampton West |
| **Date samples received :** | 10th May, 2017 |
| **Status :** | Final report |
| **Issue :** | 1 |

Nineteen samples were received for analysis on 10th May, 2017 of which nine were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

**Compiled By:**

[redacted]

**Phil Sommerton BSc**
**Project Manager**

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 52-54 | 61-63 | 64-66 | 73-75 | 79-81 | 85-87 | 91-93 | 97-99 | 103-105 | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP01 | TP01 | TP01 | TP11 | TP03 | TP03 | TP04 | TP04 | TP07 | | | | |
| Depth | 0.30 | 1.90 | 3.40 | 2.50 | 0.40 | 1.80 | 0.60 | 3.30 | 2.50 | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | | | | |
| Sample Date | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | | | |
| Batch Number | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | | | | |
| Date of Receipt | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | | | | |
| Arsenic [SM] | 9.6 | 9.6 | - | - | - | 7.3 | 13.1 | 4.7 | 8.3 | | <0.5 | mg/kg | TM30/PM15 |
| Beryllium | 0.9 | 1.0 | - | - | - | 1.6 | 2.0 | 0.6 | 0.7 | | <0.5 | mg/kg | TM30/PM15 |
| Cadmium [SM] | <0.1 | 12.2 | - | - | - | <0.1 | <0.1 | 0.9 | 2.3 | | <0.1 | mg/kg | TM30/PM15 |
| Chromium [SM] | 61.8 | 84.4 | - | - | - | 69.2 | 52.6 | 117.3 | 58.6 | | <0.5 | mg/kg | TM30/PM15 |
| Copper [SM] | 10 | 138 | - | - | - | 12 | 27 | 14 | 34 | | <1 | mg/kg | TM30/PM15 |
| Lead [SM] | 25 | 108 | - | - | - | 10 | 26 | 23 | 108 | | <5 | mg/kg | TM30/PM15 |
| Mercury [SM] | <0.1 | <0.1 | - | - | - | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | mg/kg | TM30/PM15 |
| Nickel [SM] | 11.4 | 95.2 | - | - | - | 16.4 | 21.6 | 12.5 | 17.2 | | <0.7 | mg/kg | TM30/PM15 |
| Selenium [SM] | <1 | 4 | - | - | - | 2 | 6 | 1 | 1 | | <1 | mg/kg | TM30/PM15 |
| Vanadium | 41 | 37 | - | - | - | 50 | 71 | 22 | 33 | | <1 | mg/kg | TM30/PM15 |
| Water Soluble Boron [SM] | 0.7 | 2.6 | - | - | - | 0.6 | 2.7 | 1.4 | 1.3 | | <0.1 | mg/kg | TM74/PM32 |
| Zinc [SM] | 43 | 516 | - | - | - | 60 | 42 | 49 | 114 | | <5 | mg/kg | TM30/PM15 |
| Arsenic | - | - | 16.6 | 6.3 | 5.1 | - | - | - | - | | <0.5 | mg/kg | TM30/PM62 |
| Beryllium | - | - | 1.3 | <0.5 | 1.3 | - | - | - | - | | <0.5 | mg/kg | TM30/PM62 |
| Cadmium | - | - | 1.3 | 6.8 | <0.1 | - | - | - | - | | <0.1 | mg/kg | TM30/PM62 |
| Chromium | - | - | 32.3 | 25.0 | 22.9 | - | - | - | - | | <0.5 | mg/kg | TM30/PM62 |
| Copper | - | - | 77 | 29 | 25 | - | - | - | - | | <1 | mg/kg | TM30/PM62 |
| Lead | - | - | 181 | 306 | 34 | - | - | - | - | | <5 | mg/kg | TM30/PM62 |
| Mercury | - | - | <0.1 | 0.4 | <0.1 | - | - | - | - | | <0.1 | mg/kg | TM30/PM62 |
| Nickel | - | - | 26.4 | 11.2 | 16.1 | - | - | - | - | | <0.7 | mg/kg | TM30/PM62 |
| Selenium | - | - | <1 | <1 | <1 | - | - | - | - | | <1 | mg/kg | TM30/PM62 |
| Vanadium | - | - | 42 | 24 | 42 | - | - | - | - | | <1 | mg/kg | TM30/PM62 |
| Water Soluble Boron | - | - | 3.1 | 6.8 | 1.3 | - | - | - | - | | <0.1 | mg/kg | TM74/PM61 |
| Zinc | - | - | 243 | 227 | 62 | - | - | - | - | | <5 | mg/kg | TM30/PM62 |

Please see attached notes for all abbreviations and acronyms

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 52-54 | 61-63 | 64-66 | 73-75 | 79-81 | 85-87 | 91-93 | 97-99 | 103-105 | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP01 | TP01 | TP01 | TP11 | TP03 | TP03 | TP04 | TP04 | TP07 | | | | |
| Depth | 0.30 | 1.90 | 3.40 | 2.50 | 0.40 | 1.80 | 0.60 | 3.30 | 2.50 | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | | | | |
| Sample Date | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | | | |
| Batch Number | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | | | | |
| Date of Receipt | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | | | | |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene [#M] | <0.04 | 0.55 | 1.31 | 4.18 | <0.04 | <0.04 | <0.04 | 0.23 | <0.04 | | <0.04 | mg/kg | TM4/PM8 |
| Acenaphthylene | <0.03 | 0.09 | <0.03 | 0.51 | <0.03 | <0.03 | 0.04 | 0.10 | <0.03 | | <0.03 | mg/kg | TM4/PM8 |
| Acenaphthene [#M] | <0.05 | 0.32 | 3.24 | 1.75 | <0.05 | <0.05 | <0.05 | 0.17 | <0.05 | | <0.05 | mg/kg | TM4/PM8 |
| Fluorene [#M] | <0.04 | 0.43 | 2.10 | 2.07 | <0.04 | <0.04 | <0.04 | 0.33 | <0.04 | | <0.04 | mg/kg | TM4/PM8 |
| Phenanthrene [#M] | <0.03 | 2.58 | 2.80 | 6.25 | 0.39 | <0.03 | 0.23 | 2.35 | 0.31 | | <0.03 | mg/kg | TM4/PM8 |
| Anthracene [#] | <0.04 | 0.49 | 0.64 | 1.95 | 0.15 | <0.04 | 0.11 | 0.82 | 0.11 | | <0.04 | mg/kg | TM4/PM8 |
| Fluoranthene [#M] | <0.03 | 2.64 | 1.39 | 6.68 | 0.73 | <0.03 | 0.95 | 3.74 | 0.56 | | <0.03 | mg/kg | TM4/PM8 |
| Pyrene [#] | <0.03 | 2.13 | 0.99 | 5.41 | 0.61 | <0.03 | 0.81 | 3.05 | 0.45 | | <0.03 | mg/kg | TM4/PM8 |
| Benzo(a)anthracene [#] | <0.06 | 1.06 | 0.39 | 3.27 | 0.41 | <0.06 | 0.57 | 2.00 | 0.33 | | <0.06 | mg/kg | TM4/PM8 |
| Chrysene [#M] | <0.02 | 1.08 | 0.40 | 3.03 | 0.39 | <0.02 | 0.54 | 1.90 | 0.31 | | <0.02 | mg/kg | TM4/PM8 |
| Benzo(bk)fluoranthene [#M] | <0.07 | 1.70 | 0.61 | 4.35 | 0.68 | <0.07 | 0.98 | 3.03 | 0.58 | | <0.07 | mg/kg | TM4/PM8 |
| Benzo(a)pyrene [#] | <0.04 | 1.03 | 0.35 | 2.74 | 0.46 | <0.04 | 0.67 | 1.91 | 0.38 | | <0.04 | mg/kg | TM4/PM8 |
| Indeno(123cd)pyrene [#M] | <0.04 | 0.68 | 0.23 | 1.56 | 0.29 | <0.04 | 0.45 | 1.11 | 0.25 | | <0.04 | mg/kg | TM4/PM8 |
| Dibenzo(ah)anthracene [#] | <0.04 | 0.14 | 0.05 | 0.42 | 0.07 | <0.04 | 0.07 | 0.32 | <0.04 | | <0.04 | mg/kg | TM4/PM8 |
| Benzo(ghi)perylene [#] | <0.04 | 0.57 | 0.20 | 1.32 | 0.26 | <0.04 | 0.39 | 0.93 | 0.21 | | <0.04 | mg/kg | TM4/PM8 |
| PAH 16 Total | <0.6 | 15.5 | 14.7 | 45.5 | 4.4 | <0.6 | 5.8 | 22.0 | 3.5 | | <0.6 | mg/kg | TM4/PM8 |
| Benzo(b)fluoranthene | <0.05 | 1.22 | 0.44 | 3.13 | 0.49 | <0.05 | 0.71 | 2.18 | 0.42 | | <0.05 | mg/kg | TM4/PM8 |
| Benzo(k)fluoranthene | <0.02 | 0.48 | 0.17 | 1.22 | 0.19 | <0.02 | 0.27 | 0.85 | 0.16 | | <0.02 | mg/kg | TM4/PM8 |
| PAH Surrogate % Recovery | 108 | 108 | 110 | 87 | 105 | 106 | 102 | 110 | 104 | | <0 | % | TM4/PM8 |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 [#M] | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | mg/kg | TM36/PM12 |
| >C6-C8 [#M] | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | mg/kg | TM36/PM12 |
| >C8-C10 | <0.1 | 8.0 | 0.4 | 3.0 | <0.1 | <0.1 | <0.1 | 0.5 | <0.1 | | <0.1 | mg/kg | TM36/PM12 |
| >C10-C12 [#M] | <0.2 | 161.5 | <0.2 | 39.5 | <0.2 | <0.2 | <0.2 | 118.9 | <0.2 | | <0.2 | mg/kg | TM5/PM16 |
| >C12-C16 [#M] | <4 | 196 | <4 | 97 | <4 | <4 | <4 | 259 | <4 | | <4 | mg/kg | TM5/PM16 |
| >C16-C21 [#M] | <7 | 534 | <7 | 65 | <7 | <7 | <7 | 1085 | <7 | | <7 | mg/kg | TM5/PM16 |
| >C21-C35 [#M] | <7 | 5634 | <7 | 319 | <7 | <7 | <7 | 4616 | <7 | | <7 | mg/kg | TM5/PM16 |
| >C35-C44 | <7 | 999 | <7 | 89 | <7 | <7 | <7 | 375 | <7 | | <7 | mg/kg | TM5/PM16 |
| Total aliphatics C5-44 | <26 | 7533 | <26 | 613 | <26 | <26 | <26 | 6454 | <26 | | <26 | mg/kg | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 [#] | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | mg/kg | TM36/PM12 |
| >EC7-EC8 [#] | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | mg/kg | TM36/PM12 |
| >EC8-EC10 [#M] | <0.1 | 0.6 | <0.1 | 0.9 | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | | <0.1 | mg/kg | TM36/PM12 |
| >EC10-EC12 [#] | <0.2 | 84.8 | <0.2 | 65.9 | 0.9 | <0.2 | <0.2 | 35.8 | <0.2 | | <0.2 | mg/kg | TM5/PM16 |
| >EC12-EC16 [#] | <4 | 107 | <4 | 73 | <4 | <4 | <4 | 201 | <4 | | <4 | mg/kg | TM5/PM16 |
| >EC16-EC21 [#] | <7 | 478 | <7 | 280 | <7 | <7 | <7 | 862 | <7 | | <7 | mg/kg | TM5/PM16 |
| >EC21-EC35 [#] | <7 | 2805 | <7 | 1304 | <7 | <7 | <7 | 2061 | <7 | | <7 | mg/kg | TM5/PM16 |
| >EC35-EC44 | <7 | 581 | <7 | 221 | 11 | <7 | <7 | 236 | <7 | | <7 | mg/kg | TM5/PM16 |
| Total aromatics C5-44 | <26 | 4056 | <26 | 1945 | <26 | <26 | <26 | 3396 | <26 | | <26 | mg/kg | |
| Total aliphatics and aromatics(C5-44) | <52 | 11589 | <52 | 2558 | <52 | <52 | <52 | 9850 | <52 | | <52 | mg/kg | |

Please see attached notes for all abbreviations and acronyms

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 52-54 | 61-63 | 64-66 | 73-75 | 79-81 | 85-87 | 91-93 | 97-99 | 103-105 | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP01 | TP01 | TP01 | TP11 | TP03 | TP03 | TP04 | TP04 | TP07 | | | | |
| Depth | 0.30 | 1.90 | 3.40 | 2.50 | 0.40 | 1.80 | 0.60 | 3.30 | 2.50 | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | | | | |
| Sample Date | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | | | |
| Batch Number | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | | | | |
| Date of Receipt | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | | | | |
| MTBE [#] | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | | <5 | ug/kg | TM31/PM12 |
| Benzene [#] | <5 | 8 | <5 | 69 | <5 | <5 | <5 | <5 | <5 | | <5 | ug/kg | TM31/PM12 |
| Toluene [#] | <5 | 6 | <5 | 25 | <5 | <5 | <5 | <5 | <5 | | <5 | ug/kg | TM31/PM12 |
| Ethylbenzene [#] | <5 | 28 | 12 | 186 | <5 | <5 | <5 | 67 | <5 | | <5 | ug/kg | TM31/PM12 |
| m/p-Xylene [#] | <5 | 498 | 40 | 605 | <5 | <5 | <5 | 49 | <5 | | <5 | ug/kg | TM31/PM12 |
| o-Xylene [#] | <5 | 112 | 15 | 186 | <5 | <5 | <5 | 18 | <5 | | <5 | ug/kg | TM31/PM12 |
| Phenol [#M] | <0.01 | 0.39 | 0.04 | 0.04 | <0.01 | <0.01 | <0.01 | 3.23 $_{AA}$ | <0.01 | | <0.01 | mg/kg | TM26/PM21 |
| Natural Moisture Content | 11.6 | 16.6 | - | - | - | 20.4 | 16.1 | 10.3 | 18.2 | | <0.1 | % | PM4/PM0 |
| Natural Moisture Content | - | - | 22.3 | 30.7 | 17.5 | - | - | - | - | | <0.1 | % | PM4/PM0 |
| Hexavalent Chromium [#] | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | | <0.3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) [#M] | 26 | 265 | - | - | - | 193 | 184 | 196 | 697 | | <3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) | - | - | 240 | 231 | 32 | - | - | - | - | | <3 | mg/kg | TM38/PM80 |
| Free Cyanide | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | <0.5 | mg/kg | TM89/PM45 |
| Fraction Organic Carbon | 0.004 | 0.085 | NDP | NDP | NDP | 0.006 | 0.006 | 0.003 | 0.003 | | <0.001 | None | TM21/PM24 |
| pH [#M] | 8.47 | 7.64 | 8.07 | 7.58 | 8.52 | 6.96 | 8.34 | 7.75 | 7.87 | | <0.01 | pH units | TM73/PM11 |
| Sample Type | Clay | Loam | NDP | NDP | NDP | Clayey Sand | Clay | Clay | Clay | | | None | PM13/PM0 |
| Sample Colour | Medium Brown | Dark Brown | NDP | NDP | NDP | Light Brown | Medium Brown | Dark Brown | Medium Brown | | | None | PM13/PM0 |
| Other Items | stones, roots | plastic stones, roots | NDP | NDP | NDP | NA | NA | stones & roots | stones, brick | | | None | PM13/PM0 |

Please see attached notes for all abbreviations and acronyms

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

| J E Sample No. | 64-66 | 73-75 | 85-87 | 97-99 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP01 | TP11 | TP03 | TP04 | | | | | | | | | |
| Depth | 3.40 | 2.50 | 1.80 | 3.30 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | | | | | | | | | |
| Sample Date | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 5 | 5 | 5 | 5 | | | | | | | | | |
| Date of Receipt | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | | | | | | | | | |
| Dissolved Antimony [#] | 11 | 6 | <2 | <2 | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Arsenic [#] | 4.8 | 4.9 | <2.5 | 5.3 | | | | | | | <2.5 | ug/l | TM30/PM14 |
| Dissolved Barium [#] | 65 | 72 | <3 | 42 | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Beryllium [#] | <0.5 | <0.5 | <0.5 | <0.5 | | | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Boron [#] | 209 | 254 | <12 | 88 | | | | | | | <12 | ug/l | TM30/PM14 |
| Dissolved Cadmium [#] | <0.5 | <0.5 | <0.5 | <0.5 | | | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Chromium [#] | <1.5 | <1.5 | <1.5 | <1.5 | | | | | | | <1.5 | ug/l | TM30/PM14 |
| Dissolved Copper [#] | <3 | <3 | <3 | <3 | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Lead [#] | 1.0 | <0.4 | <0.4 | <0.4 | | | | | | | <0.4 | ug/l | TM30/PM14 |
| Dissolved Molybdenum [#] | 22 | 14 | <2 | 43 | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Nickel [#] | 5 | <2 | <2 | 3 | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Selenium [#] | <3 | <3 | <3 | <3 | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Zinc [#] | 7 | 6 | 7 | 4 | | | | | | | <3 | ug/l | TM30/PM14 |
| Mercury Dissolved by CVAF [#] | 0.06 | 0.20 | 0.08 | 0.06 | | | | | | | <0.01 | ug/l | TM61/PM38 |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene | 2.5 [B] | 0.7 [B] | <0.1 [B] | <0.1 [B] | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Acenaphthylene | 0.09 | 0.05 | 0.02 | 0.03 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Acenaphthene | 5.06 | 0.39 | 0.03 | 0.44 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluorene | 1.49 | 0.29 | 0.05 | 0.27 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Phenanthrene | 1.05 | 0.75 | 0.07 | 0.20 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Anthracene | 0.25 | 0.20 | <0.01 | 0.09 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluoranthene | 0.41 | 0.69 | <0.01 | 0.28 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Pyrene | 0.30 | 0.59 | <0.01 | 0.22 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)anthracene | 0.12 | 0.21 | <0.01 | 0.09 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Chrysene | 0.13 | 0.25 | <0.01 | 0.10 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(bk)fluoranthene | 0.17 | 0.30 | <0.01 | 0.13 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)pyrene | 0.10 | 0.18 | <0.01 | 0.09 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Indeno(123cd)pyrene | 0.04 | 0.09 | <0.01 | 0.04 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Dibenzo(ah)anthracene | 0.01 | 0.02 | <0.01 | <0.01 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(ghi)perylene | 0.04 | 0.09 | <0.01 | 0.04 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH 16 Total | 11.8 | 4.8 | 0.2 | 2.0 | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Benzo(b)fluoranthene | 0.12 | 0.22 | <0.01 | 0.09 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(k)fluoranthene | 0.05 | 0.08 | <0.01 | 0.04 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH Surrogate % Recovery | 86 | 91 | 82 | 89 | | | | | | | <0 | % | TM4/PM30 |
| Methyl Tertiary Butyl Ether | <1 | <1 | <1 | <1 | | | | | | | <1 | ug/l | TM15/PM69 |
| Benzene | <0.5 | <0.5 | <0.5 | <0.5 | | | | | | | <0.5 | ug/l | TM15/PM69 |
| Toluene | <5 | <5 | <5 | <5 | | | | | | | <5 | ug/l | TM15/PM69 |
| Ethylbenzene | <1 | <1 | <1 | <1 | | | | | | | <1 | ug/l | TM15/PM69 |
| p/m-Xylene | <2 | 4 | <2 | <2 | | | | | | | <2 | ug/l | TM15/PM69 |
| o-Xylene | <1 | 1 | <1 | <1 | | | | | | | <1 | ug/l | TM15/PM69 |
| Surrogate Recovery Toluene D8 | 101 | 100 | 101 | 103 | | | | | | | <0 | % | TM15/PM69 |
| Surrogate Recovery 4-Bromofluorobenzene | 102 | 104 | 102 | 102 | | | | | | | <0 | % | TM15/PM69 |

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 64-66 | 73-75 | 85-87 | 97-99 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP01 | TP11 | TP03 | TP04 | | | | | | | | | |
| Depth | 3.40 | 2.50 | 1.80 | 3.30 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | | | | | | | | | |
| Sample Date | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 5 | 5 | 5 | 5 | | | | | | | | | |
| Date of Receipt | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | | | | | | | | | |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM36/PM69 |
| >C6-C8 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM36/PM69 |
| >C8-C10 | 23 | 35 | <10 | 51 | | | | | | | <10 | ug/l | TM36/PM69 |
| >C10-C12 | <5 | <5 | <5 | <5 | | | | | | | <5 | ug/l | TM5/PM30 |
| >C12-C16 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM5/PM30 |
| >C16-C21 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM5/PM30 |
| >C21-C35 | <10 | <10 | <10 | 380 | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aliphatics C5-35 | 23 | 35 | <10 | 431 | | | | | | | <10 | ug/l | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC7-EC8 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC8-EC10 | <10 | 14 | <10 | 27 | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC10-EC12 | <5 | <5 | <5 | <5 | | | | | | | <5 | ug/l | TM5/PM30 |
| >EC12-EC16 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC16-EC21 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC21-EC35 | <10 | <10 | <10 | 140 | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aromatics C5-35 | <10 | 14 | <10 | 167 | | | | | | | <10 | ug/l | |
| Total aliphatics and aromatics(C5-35) | 23 | 49 | <10 | 598 | | | | | | | <10 | ug/l | |
| Phenol | <0.5 | <0.5 | <0.5 | <0.5 | | | | | | | <0.5 | ug/l | TM26/PM0 |
| Sulphate as SO4 # | 86.37 | 58.67 | 27.47 | 47.19 | | | | | | | <0.05 | mg/l | TM38/PM0 |
| Chloride # | 24.9 | 107.5 | 37.3 | 2.1 | | | | | | | <0.3 | mg/l | TM38/PM0 |
| Nitrate as NO3 # | <0.2 | <0.2 | 0.6 | <0.2 | | | | | | | <0.2 | mg/l | TM38/PM0 |
| Nitrite as NO2 # | <0.02 | <0.02 | <0.02 | <0.02 | | | | | | | <0.02 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH3 # | 11.72 | 12.54 | 2.70 | 12.44 | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH4 # | 12.41 | 13.28 | 2.86 | 13.18 | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Total Cyanide # | <0.01 | 0.01 | <0.01 | <0.01 | | | | | | | <0.01 | mg/l | TM89/PM0 |
| Dissolved Organic Carbon | 19 | 26 | 23 | 9 | | | | | | | <2 | mg/l | TM60/PM0 |
| pH | 8.00 | 7.93 | 7.06 | 8.06 | | | | | | | <0.01 | pH units | TM73/PM0 |
| Total Alkalinity as CaCO3 | 142 | 128 | 62 | 146 | | | | | | | <1 | mg/l | TM75/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

**Note:**

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

[redacted]

Ryan Butterworth
Asbestos Team Leader

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 5 | TP01 | 0.30 | 53 | 18/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 5 | TP01 | 1.90 | 62 | 15/05/2017 | **General Description (Bulk Analysis)** | soil-stones-chalk |
| | | | | | 15/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 15/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 15/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 5 | TP01 | 3.40 | 65 | 15/05/2017 | **General Description (Bulk Analysis)** | soil-stones |
| | | | | | 15/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 15/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type** | Amosite |
| | | | | | 15/05/2017 | **Asbestos Level Screen** | <0.1% |
| 17/7894 | 5 | TP11 | 2.50 | 74 | 15/05/2017 | **General Description (Bulk Analysis)** | soil-stones |
| | | | | | 15/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 15/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type** | Amosite |
| | | | | | 15/05/2017 | **Asbestos Level Screen** | <0.1% |
| 17/7894 | 5 | TP03 | 0.40 | 80 | 15/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone/Brick |
| | | | | | 15/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 15/05/2017 | **Asbestos Fibres (2)** | Fibre Bundles |
| | | | | | 15/05/2017 | **Asbestos ACM** | Asbestos Insulating Board Debris |
| | | | | | 15/05/2017 | **Asbestos ACM (2)** | Asbestos Insulating Board Debris |
| | | | | | 15/05/2017 | **Asbestos Type** | Amosite |
| | | | | | 15/05/2017 | **Asbestos Type (2)** | Chrysotile |
| | | | | | 15/05/2017 | **Asbestos Level Screen** | Asbestos level cannot be determined from Screen. Quantification required. |

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 5 | TP03 | 1.80 | 86 | 15/05/2017 | **General Description (Bulk Analysis)** | soil-stones |
| | | | | | 15/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 15/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 15/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 5 | TP04 | 0.60 | 92 | 15/05/2017 | **General Description (Bulk Analysis)** | soil-stones |
| | | | | | 15/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 15/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 15/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 5 | TP04 | 3.30 | 98 | 15/05/2017 | **General Description (Bulk Analysis)** | soil-stones |
| | | | | | 15/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 15/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 15/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type** | NAD |
| | | | | | 15/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 15/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 5 | TP07 | 2.50 | 104 | 16/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 16/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 16/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 16/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 16/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 16/05/2017 | **Asbestos Type** | NAD |
| | | | | | 16/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 16/05/2017 | **Asbestos Level Screen** | NAD |

**Client Name:** WYG **Matrix : Solid**
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | NDP Reason |
|---|---|---|---|---|---|
| 17/7894 | 5 | TP01 | 3.40 | 64-66 | Asbestos detected in sample |
| 17/7894 | 5 | TP11 | 2.50 | 73-75 | Asbestos detected in sample |
| 17/7894 | 5 | TP03 | 0.40 | 79-81 | Asbestos detected in sample |

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Analysis | Reason |
|---|---|---|---|---|---|---|
| No deviating sample report results for job 17/7894 | | | | | | |

DRAFT

**Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.**
**Only analyses which are accredited are recorded as deviating if set criteria are not met.**

# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***JE Job No.:*** 17/7894

## SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

## WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

## DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

## SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

## DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS) accredited - UK. |
| SA | ISO17025 (SANAS) accredited - South Africa. |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| ++ | Result outside calibration range, results should be considered as indicative only and are not accredited. |
| * | Analysis subcontracted to a Jones Environmental approved laboratory. |
| AD | Samples are dried at 35°C ±5°C |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |
| AA | x10 Dilution |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | | |
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | Yes | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | Yes | AR | Yes |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM12/PM16 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM30/PM69 | PM030: Eluate samples are extracted with solvent using a magnetic stirrer to create a vortex.PM069: One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| PM13 | A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description. | PM0 | No preparation is required. | | | AR | |
| TM15 | Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM21 | Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. | PM24 | Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis. | | | AD | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM0 | No preparation is required. | | | AR | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM21 | As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker. | Yes | Yes | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM14 | Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | Yes | | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | | | AD | Yes |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | Yes | Yes | AD | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM62 | Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C. | | | AR | Yes |
| TM31 | Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | Yes | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | Yes | AD | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | | AR | Yes |

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM60 | As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid. | | | AR | Yes |
| TM60 | Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR). | PM0 | No preparation is required. | | | AR | Yes |
| TM61 | Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence. | PM38 | Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061. | Yes | | AR | Yes |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | | | AR | |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | Yes | | AR | |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM0 | No preparation is required. | | | AR | Yes |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM11 | Extraction of as received solid samples using one part solid to 2.5 parts deionised water. | Yes | Yes | AR | No |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM32 | Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio. | Yes | Yes | AD | Yes |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM61 | As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP. | | | AR | Yes |
| TM75 | Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser. | PM0 | No preparation is required. | | | AR | Yes |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM45 | As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis. | | | AR | Yes |
| NONE | No Method Code | PM17 | Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio. | | | | |
| NONE | No Method Code | PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | | | AR | |

DRAFT

# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781


WYG
100 St John Street
London
EC1M 4EH

| | |
|---|---|
| **Attention :** | Alice Hayton |
| **Date :** | 1st June, 2017 |
| **Your reference :** | A102760 |
| **Our reference :** | Test Report 17/7894 Batch 6 |
| **Location :** | Brockhampton West |
| **Date samples received :** | 11th May, 2017 |
| **Status :** | Final report |
| **Issue :** | 1 |

Twenty three samples were received for analysis on 11th May, 2017 of which fourteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

**Compiled By:**

[redacted]

**Phil Sommerton BSc**
**Project Manager**

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 112-114 | 115-117 | 118-120 | 127-129 | 133-135 | 136-138 | 139-141 | 142-144 | 151-153 | 154-156 | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP10 | TP10 | TP09 | TP09 | TP06 | TP08 | TP05 | TP05 | TP06 | TP06 | | | |
| Depth | 2.50 | 3.30 | 0.40 | 3.80 | 2.30 | 3.20 | 1.00 | 2.40 | 2.00 | 3.10 | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | | | |
| Sample Date | 09/05/2017 | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | | |
| Batch Number | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | | | |
| Date of Receipt | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | |
| Arsenic [SM] | 6.8 | - | 9.5 | 18.6 | - | - | 5.6 | 7.3 | - | - | <0.5 | mg/kg | TM30/PM15 |
| Beryllium | 0.9 | - | 0.8 | 2.6 | - | - | 0.7 | 0.8 | - | - | <0.5 | mg/kg | TM30/PM15 |
| Cadmium [SM] | <0.1 | - | 0.5 | <0.1 | - | - | <0.1 | 6.1 | - | - | <0.1 | mg/kg | TM30/PM15 |
| Chromium [SM] | 67.1 | - | 87.0 | 48.3 | - | - | 72.7 | 62.5 | - | - | <0.5 | mg/kg | TM30/PM15 |
| Copper [SM] | 10 | - | 21 | 87 | - | - | 11 | 145 | - | - | <1 | mg/kg | TM30/PM15 |
| Lead [SM] | 19 | - | 247 | 47 | - | - | 30 | 217 | - | - | <5 | mg/kg | TM30/PM15 |
| Mercury [SM] | <0.1 | - | <0.1 | 0.6 | - | - | <0.1 | 0.1 | - | - | <0.1 | mg/kg | TM30/PM15 |
| Nickel [SM] | 12.5 | - | 7.9 | 114.2 | - | - | 15.4 | 24.7 | - | - | <0.7 | mg/kg | TM30/PM15 |
| Selenium [SM] | 1 | - | <1 | 1 | - | - | <1 | 1 | - | - | <1 | mg/kg | TM30/PM15 |
| Vanadium | 42 | - | 21 | 25 | - | - | 33 | 23 | - | - | <1 | mg/kg | TM30/PM15 |
| Water Soluble Boron [SM] | 0.5 | - | 0.5 | 2.7 | - | - | 0.7 | 2.8 | - | - | <0.1 | mg/kg | TM74/PM32 |
| Zinc [SM] | 46 | - | 79 | 181 | - | - | 53 | 691 | - | - | <5 | mg/kg | TM30/PM15 |
| Arsenic | - | 9.4 | - | - | 9.6 | 6.7 | - | - | 9.4 | 32.4 | <0.5 | mg/kg | TM30/PM62 |
| Beryllium | - | 1.7 | - | - | 1.3 | 1.5 | - | - | 1.9 | 2.7 | <0.5 | mg/kg | TM30/PM62 |
| Cadmium | - | 0.5 | - | - | 29.6 | 12.1 | - | - | 28.6 | 9.2 | <0.1 | mg/kg | TM30/PM62 |
| Chromium | - | 22.8 | - | - | 56.2 | 61.2 | - | - | 190.8 | 226.1 | <0.5 | mg/kg | TM30/PM62 |
| Copper | - | 103 | - | - | $395_{AA}$ | $630_{AA}$ | - | - | $589_{AA}$ | $3521_{AC}$ | <1 | mg/kg | TM30/PM62 |
| Lead | - | 134 | - | - | 1063 | 409 | - | - | 1051 | 533 | <5 | mg/kg | TM30/PM62 |
| Mercury | - | 0.1 | - | - | 0.9 | 0.5 | - | - | 1.5 | 0.4 | <0.1 | mg/kg | TM30/PM62 |
| Nickel | - | 29.8 | - | - | $378.0_{AA}$ | 41.4 | - | - | 51.1 | $440.3_{AA}$ | <0.7 | mg/kg | TM30/PM62 |
| Selenium | - | 1 | - | - | 3 | 1 | - | - | 4 | 3 | <1 | mg/kg | TM30/PM62 |
| Vanadium | - | 15 | - | - | 18 | 17 | - | - | 23 | 42 | <1 | mg/kg | TM30/PM62 |
| Water Soluble Boron | - | 3.8 | - | - | 7.6 | 7.2 | - | - | 9.2 | 10.2 | <0.1 | mg/kg | TM74/PM61 |
| Zinc | - | 187 | - | - | 2837 | 2366 | - | - | 2635 | 2404 | <5 | mg/kg | TM30/PM62 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 112-114 | 115-117 | 118-120 | 127-129 | 133-135 | 136-138 | 139-141 | 142-144 | 151-153 | 154-156 | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP10 | TP10 | TP09 | TP09 | TP06 | TP08 | TP05 | TP05 | TP06 | TP06 | | | |
| Depth | 2.50 | 3.30 | 0.40 | 3.80 | 2.30 | 3.20 | 1.00 | 2.40 | 2.00 | 3.10 | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | | | |
| Sample Date | 09/05/2017 | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | | |
| Batch Number | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | | | |
| Date of Receipt | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene [#M] | <0.04 | 0.06 | 0.73 [AB] | 0.99 | 1.04 | 0.26 | <0.04 | 0.51 | <0.04 | 0.14 | <0.04 | mg/kg | TM4/PM8 |
| Acenaphthylene | <0.03 | <0.03 | 3.94 [AB] | <0.03 | 0.05 | 0.04 | <0.03 | 0.20 | <0.03 | 0.05 | <0.03 | mg/kg | TM4/PM8 |
| Acenaphthene [#M] | <0.05 | <0.05 | 2.15 [AB] | 0.50 | 0.25 | 0.20 | <0.05 | 1.25 | <0.05 | 0.22 | <0.05 | mg/kg | TM4/PM8 |
| Fluorene [#M] | <0.04 | <0.04 | 1.95 [AB] | 0.34 | 0.16 | 0.12 | <0.04 | 0.88 | <0.04 | 0.08 | <0.04 | mg/kg | TM4/PM8 |
| Phenanthrene [#M] | <0.03 | 0.20 | 20.00 [AB] | 0.72 | 0.52 | 0.47 | 0.19 | 1.37 | 0.10 | 0.27 | <0.03 | mg/kg | TM4/PM8 |
| Anthracene [#] | <0.04 | <0.04 | 10.62 [AB] | 0.12 | 0.13 | 0.09 | 0.06 | 0.86 | <0.04 | 0.08 | <0.04 | mg/kg | TM4/PM8 |
| Fluoranthene [#M] | <0.03 | 0.37 | 56.34 [AB] | 0.46 | 0.62 | 0.41 | 0.25 | 4.47 | 0.10 | 0.37 | <0.03 | mg/kg | TM4/PM8 |
| Pyrene [#] | <0.03 | 0.33 | 48.65 [AB] | 0.46 | 0.43 | 0.35 | 0.20 | 3.58 | 0.09 | 0.33 | <0.03 | mg/kg | TM4/PM8 |
| Benzo(a)anthracene [#] | <0.06 | 0.19 | 30.80 [AB] | 0.32 | 0.26 | 0.15 | 0.15 | 1.56 | 0.10 | 0.19 | <0.06 | mg/kg | TM4/PM8 |
| Chrysene [#M] | <0.02 | 0.25 | 28.34 [AB] | 0.34 | 0.25 | 0.12 | 0.14 | 1.39 | 0.09 | 0.20 | <0.02 | mg/kg | TM4/PM8 |
| Benzo(bk)fluoranthene [#M] | <0.07 | 0.45 | 55.29 [AB] | 0.50 | 0.38 | 0.24 | 0.23 | 2.20 | 0.10 | 0.34 | <0.07 | mg/kg | TM4/PM8 |
| Benzo(a)pyrene [#] | <0.04 | 0.24 | 36.63 [AB] | 0.28 | 0.21 | 0.12 | 0.14 | 1.38 | 0.05 | 0.20 | <0.04 | mg/kg | TM4/PM8 |
| Indeno(123cd)pyrene [#M] | <0.04 | 0.16 | 23.58 [AB] | 0.18 | 0.14 | 0.07 | 0.08 | 0.78 | <0.04 | 0.17 | <0.04 | mg/kg | TM4/PM8 |
| Dibenzo(ah)anthracene [#] | <0.04 | <0.04 | 4.72 [AB] | <0.04 | <0.04 | <0.04 | <0.04 | 0.15 | <0.04 | <0.04 | <0.04 | mg/kg | TM4/PM8 |
| Benzo(ghi)perylene [#] | <0.04 | 0.15 | 21.67 [AB] | 0.22 | 0.12 | 0.07 | 0.08 | 0.69 | <0.04 | 0.14 | <0.04 | mg/kg | TM4/PM8 |
| PAH 16 Total | <0.6 | 2.4 | 345.4 [AB] | 5.4 | 4.6 | 2.7 | 1.5 | 21.3 | 0.6 | 2.8 | <0.6 | mg/kg | TM4/PM8 |
| Benzo(b)fluoranthene | <0.05 | 0.32 | 39.81 [AB] | 0.36 | 0.27 | 0.17 | 0.17 | 1.58 | 0.07 | 0.24 | <0.05 | mg/kg | TM4/PM8 |
| Benzo(k)fluoranthene | <0.02 | 0.13 | 15.48 [AB] | 0.14 | 0.11 | 0.07 | 0.06 | 0.62 | 0.03 | 0.10 | <0.02 | mg/kg | TM4/PM8 |
| PAH Surrogate % Recovery | 106 | 116 | 99 [AB] | 106 | 111 | 105 | 114 | 108 | 109 | 108 | <0 | % | TM4/PM8 |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 [#M] | <0.1 | <0.1 | <0.1 | <0.1 [SV] | <0.1 | <0.1 [SV] | <0.1 | <0.1 | <0.1 [SV] | <0.1 [SV] | <0.1 | mg/kg | TM36/PM12 |
| >C6-C8 [#M] | <0.1 | <0.1 | <0.1 | <0.1 [SV] | <0.1 | <0.1 [SV] | <0.1 | <0.1 | <0.1 [SV] | <0.1 [SV] | <0.1 | mg/kg | TM36/PM12 |
| >C8-C10 | <0.1 | 0.1 | <0.1 | 5.6 [SV] | 0.3 | 0.5 [SV] | <0.1 | 1.1 | 0.3 [SV] | 0.5 [SV] | <0.1 | mg/kg | TM36/PM12 |
| >C10-C12 [#M] | <0.2 | <0.2 | <0.2 | 65.0 | <0.2 | 6.6 | <0.2 | 1.5 | 7.0 | <0.2 | <0.2 | mg/kg | TM5/PM16 |
| >C12-C16 [#M] | <4 | <4 | 8 | 85 | <4 | <4 | <4 | <4 | <4 | <4 | <4 | mg/kg | TM5/PM16 |
| >C16-C21 [#M] | <7 | <7 | 24 | 38 | <7 | <7 | <7 | 23 | <7 | <7 | <7 | mg/kg | TM5/PM16 |
| >C21-C35 [#M] | <7 | 87 | 180 | 493 | 69 | 39 | <7 | 106 | 68 | 168 | <7 | mg/kg | TM5/PM16 |
| >C35-C44 | <7 | 11 | 117 | 161 | 45 | 24 | <7 | 80 | 46 | 37 | <7 | mg/kg | TM5/PM16 |
| Total aliphatics C5-44 | <26 | 98 | 329 | 848 | 114 | 70 | <26 | 212 | 121 | 206 | <26 | mg/kg | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 [#] | <0.1 | <0.1 | <0.1 | <0.1 [SV] | <0.1 | <0.1 [SV] | <0.1 | <0.1 | <0.1 [SV] | <0.1 [SV] | <0.1 | mg/kg | TM36/PM12 |
| >EC7-EC8 [#] | <0.1 | <0.1 | <0.1 | <0.1 [SV] | <0.1 | <0.1 [SV] | <0.1 | <0.1 | <0.1 [SV] | <0.1 [SV] | <0.1 | mg/kg | TM36/PM12 |
| >EC8-EC10 [#M] | <0.1 | <0.1 | <0.1 | <0.1 [SV] | <0.1 | <0.1 [SV] | <0.1 | <0.1 | <0.1 [SV] | 0.3 [SV] | <0.1 | mg/kg | TM36/PM12 |
| >EC10-EC12 [#] | <0.2 | <0.2 | <0.2 | 22.3 | 9.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | mg/kg | TM5/PM16 |
| >EC12-EC16 [#] | <4 | <4 | 15 | 44 | 22 | <4 | <4 | 11 | <4 | <4 | <4 | mg/kg | TM5/PM16 |
| >EC16-EC21 [#] | <7 | 24 | 284 | 115 | 31 | 10 | <7 | 65 | <7 | 34 | <7 | mg/kg | TM5/PM16 |
| >EC21-EC35 [#] | <7 | 157 | 1699 | 1514 | 160 | 139 | <7 | 292 | 97 | 169 | <7 | mg/kg | TM5/PM16 |
| >EC35-EC44 | <7 | 64 | 826 | 401 | 100 | 76 | <7 | 253 | 116 | 92 | <7 | mg/kg | TM5/PM16 |
| Total aromatics C5-44 | <26 | 245 | 2824 | 2096 | 322 | 225 | <26 | 621 | 213 | 295 | <26 | mg/kg | |
| Total aliphatics and aromatics(C5-44) | <52 | 343 | 3153 | 2944 | 436 | 295 | <52 | 833 | 334 | 501 | <52 | mg/kg | |

Please see attached notes for all abbreviations and acronyms

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 112-114 | 115-117 | 118-120 | 127-129 | 133-135 | 136-138 | 139-141 | 142-144 | 151-153 | 154-156 | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP10 | TP10 | TP09 | TP09 | TP06 | TP08 | TP05 | TP05 | TP06 | TP06 | | | |
| Depth | 2.50 | 3.30 | 0.40 | 3.80 | 2.30 | 3.20 | 1.00 | 2.40 | 2.00 | 3.10 | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | V J T | | | |
| Sample Date | 09/05/2017 | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | | |
| Batch Number | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | | | |
| Date of Receipt | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | |
| MTBE # | <5 | <5 | <5 | <5 SV | <5 | <5 SV | <5 | <5 | <5 SV | <5 SV | <5 | ug/kg | TM31/PM12 |
| Benzene # | <5 | <5 | <5 | <5 SV | <5 | <5 SV | <5 | <5 | <5 SV | 10 SV | <5 | ug/kg | TM31/PM12 |
| Toluene # | <5 | <5 | <5 | <5 SV | 9 | 14 SV | <5 | 13 | 14 SV | 32 SV | <5 | ug/kg | TM31/PM12 |
| Ethylbenzene # | <5 | 14 | <5 | 22 SV | 7 | 7 SV | <5 | <5 | 15 SV | 71 SV | <5 | ug/kg | TM31/PM12 |
| m/p-Xylene # | <5 | 52 | <5 | 87 SV | 34 | 22 SV | <5 | 15 | 38 SV | 124 SV | <5 | ug/kg | TM31/PM12 |
| o-Xylene # | <5 | 11 | <5 | 77 SV | 38 | 19 SV | <5 | 7 | 18 SV | 65 SV | <5 | ug/kg | TM31/PM12 |
| Phenol # M | <0.01 | 0.10 | <0.01 | 0.04 | 0.05 | 0.04 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | mg/kg | TM26/PM21 |
| Natural Moisture Content | 15.9 | - | 9.0 | 58.9 | - | - | 13.3 | 17.4 | - | - | <0.1 | % | PM4/PM0 |
| Natural Moisture Content | - | 27.3 | - | - | 31.1 | 24.8 | - | - | 26.5 | 27.4 | <0.1 | % | PM4/PM0 |
| Hexavalent Chromium # | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) # M | 331 | - | 94 | 782 | - | - | 53 | 865 | - | - | <3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) | - | 278 | - | - | 579 | 280 | - | - | 209 | 55 | <3 | mg/kg | TM38/PM80 |
| Free Cyanide | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | mg/kg | TM89/PM45 |
| Fraction Organic Carbon | 0.003 | NDP | 0.026 | 0.053 | NDP | NDP | 0.004 | 0.019 | NDP | NDP | <0.001 | None | TM21/PM24 |
| pH # M | 5.92 | 7.83 | 8.54 | 7.58 | 7.98 | 7.95 | 8.49 | 7.94 | 8.47 | 8.12 | <0.01 | pH units | TM73/PM11 |
| Sample Type | Clayey Sand | NDP | Loamy Sand | Clayey Loam | NDP | NDP | Clayey Loam | Clayey Sand | NDP | NDP | | None | PM13/PM0 |
| Sample Colour | Light Brown | NDP | Dark Brown | Dark Brown | NDP | NDP | Light Brown | Light Brown | NDP | NDP | | None | PM13/PM0 |
| Other Items | stones | NDP | stones | stones | NDP | NDP | stones, roots | stones | NDP | NDP | | None | PM13/PM0 |

Please see attached notes for all abbreviations and acronyms

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 157-159 | 163-165 | 166-168 | 175-177 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP02 | TP02 | CP03 | CP03 | | | | | | | | | |
| Depth | 1.00 | 3.50 | 1.00 | 4.80 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | | | | | | | | | |
| Sample Date | 10/05/2017 | 10/05/2017 | 09/05/2017 | 09/05/2017 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 6 | 6 | 6 | 6 | | | | | | | | | |
| Date of Receipt | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | | | | | | | |
| Arsenic [SM] | 6.9 | 9.3 | 7.2 | 6.7 | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Beryllium | 0.7 | 0.9 | 0.6 | 1.1 | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Cadmium [SM] | <0.1 | 1.4 | 3.0 | 9.1 | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Chromium [SM] | 75.8 | 50.2 | 62.9 | 54.2 | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Copper [SM] | 8 | 100 | 41 | 328$_{AA}$ | | | | | | | <1 | mg/kg | TM30/PM15 |
| Lead [SM] | 11 | 110 | 68 | 253 | | | | | | | <5 | mg/kg | TM30/PM15 |
| Mercury [SM] | <0.1 | <0.1 | <0.1 | 0.3 | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Nickel [SM] | 10.2 | 30.3 | 14.2 | 32.7 | | | | | | | <0.7 | mg/kg | TM30/PM15 |
| Selenium [SM] | <1 | <1 | 1 | 2 | | | | | | | <1 | mg/kg | TM30/PM15 |
| Vanadium | 35 | 93 | 29 | 22 | | | | | | | <1 | mg/kg | TM30/PM15 |
| Water Soluble Boron [SM] | 0.5 | 3.0 | 0.9 | 6.9 | | | | | | | <0.1 | mg/kg | TM74/PM32 |
| Zinc [SM] | 34 | 431 | 143 | 1088 | | | | | | | <5 | mg/kg | TM30/PM15 |
| Arsenic | - | - | - | - | | | | | | | <0.5 | mg/kg | TM30/PM62 |
| Beryllium | - | - | - | - | | | | | | | <0.5 | mg/kg | TM30/PM62 |
| Cadmium | - | - | - | - | | | | | | | <0.1 | mg/kg | TM30/PM62 |
| Chromium | - | - | - | - | | | | | | | <0.5 | mg/kg | TM30/PM62 |
| Copper | - | - | - | - | | | | | | | <1 | mg/kg | TM30/PM62 |
| Lead | - | - | - | - | | | | | | | <5 | mg/kg | TM30/PM62 |
| Mercury | - | - | - | - | | | | | | | <0.1 | mg/kg | TM30/PM62 |
| Nickel | - | - | - | - | | | | | | | <0.7 | mg/kg | TM30/PM62 |
| Selenium | - | - | - | - | | | | | | | <1 | mg/kg | TM30/PM62 |
| Vanadium | - | - | - | - | | | | | | | <1 | mg/kg | TM30/PM62 |
| Water Soluble Boron | - | - | - | - | | | | | | | <0.1 | mg/kg | TM74/PM61 |
| Zinc | - | - | - | - | | | | | | | <5 | mg/kg | TM30/PM62 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 157-159 | 163-165 | 166-168 | 175-177 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP02 | TP02 | CP03 | CP03 | | | | | | | | | |
| Depth | 1.00 | 3.50 | 1.00 | 4.80 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | | | | | | | | | |
| Sample Date | 10/05/2017 | 10/05/2017 | 09/05/2017 | 09/05/2017 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 6 | 6 | 6 | 6 | | | | | | | | | |
| Date of Receipt | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | | | | | | | |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene [#M] | <0.04 | 0.26 | <0.04 | 1.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Acenaphthylene | <0.03 | 0.04 | <0.03 | 0.26 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Acenaphthene [#M] | <0.05 | 0.17 | <0.05 | 6.27 | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Fluorene [#M] | <0.04 | 0.17 | <0.04 | 4.47 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Phenanthrene [#M] | <0.03 | 0.94 | <0.03 | 10.99 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Anthracene [#] | <0.04 | 0.31 | <0.04 | 2.37 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Fluoranthene [#M] | <0.03 | 1.58 | 0.04 | 9.71 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Pyrene [#] | <0.03 | 1.25 | <0.03 | 6.44 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Benzo(a)anthracene [#] | <0.06 | 0.45 | <0.06 | 2.43 | | | | | | | <0.06 | mg/kg | TM4/PM8 |
| Chrysene [#M] | <0.02 | 0.45 | <0.02 | 2.29 | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| Benzo(bk)fluoranthene [#M] | <0.07 | 0.55 | <0.07 | 3.26 | | | | | | | <0.07 | mg/kg | TM4/PM8 |
| Benzo(a)pyrene [#] | <0.04 | 0.34 | <0.04 | 1.74 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Indeno(123cd)pyrene [#M] | <0.04 | 0.20 | <0.04 | 1.18 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Dibenzo(ah)anthracene [#] | <0.04 | <0.04 | <0.04 | 0.26 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Benzo(ghi)perylene [#] | <0.04 | 0.18 | <0.04 | 0.99 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| PAH 16 Total | <0.6 | 6.9 | <0.6 | 53.7 | | | | | | | <0.6 | mg/kg | TM4/PM8 |
| Benzo(b)fluoranthene | <0.05 | 0.40 | <0.05 | 2.35 | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Benzo(k)fluoranthene | <0.02 | 0.15 | <0.02 | 0.91 | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| PAH Surrogate % Recovery | 106 | 106 | 93 | 98 | | | | | | | <0 | % | TM4/PM8 |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 [#M] | <0.1 | <0.1 | <0.1 | <0.1 [SV] | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C6-C8 [#M] | <0.1 | 0.1 | <0.1 | <0.1 [SV] | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C8-C10 | <0.1 | 1.6 | <0.1 | 0.3 [SV] | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C10-C12 [#M] | <0.2 | 3.1 | <0.2 | <0.2 | | | | | | | <0.2 | mg/kg | TM5/PM16 |
| >C12-C16 [#M] | <4 | 5 | <4 | 18 | | | | | | | <4 | mg/kg | TM5/PM16 |
| >C16-C21 [#M] | <7 | 29 | <7 | 80 | | | | | | | <7 | mg/kg | TM5/PM16 |
| >C21-C35 [#M] | <7 | 153 | <7 | 279 | | | | | | | <7 | mg/kg | TM5/PM16 |
| >C35-C44 | <7 | 39 | <7 | 98 | | | | | | | <7 | mg/kg | TM5/PM16 |
| Total aliphatics C5-44 | <26 | 231 | <26 | 475 | | | | | | | <26 | mg/kg | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 [#] | <0.1 | <0.1 | <0.1 | <0.1 [SV] | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC7-EC8 [#] | <0.1 | <0.1 | <0.1 | <0.1 [SV] | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC8-EC10 [#M] | <0.1 | <0.1 | <0.1 | <0.1 [SV] | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC10-EC12 [#] | <0.2 | 4.9 | <0.2 | 6.4 | | | | | | | <0.2 | mg/kg | TM5/PM16 |
| >EC12-EC16 [#] | <4 | 16 | <4 | 38 | | | | | | | <4 | mg/kg | TM5/PM16 |
| >EC16-EC21 [#] | <7 | 89 | <7 | 257 | | | | | | | <7 | mg/kg | TM5/PM16 |
| >EC21-EC35 [#] | 12 | 615 | <7 | 1073 | | | | | | | <7 | mg/kg | TM5/PM16 |
| >EC35-EC44 | <7 | 129 | <7 | 326 | | | | | | | <7 | mg/kg | TM5/PM16 |
| Total aromatics C5-44 | <26 | 854 | <26 | 1700 | | | | | | | <26 | mg/kg | |
| Total aliphatics and aromatics(C5-44) | <52 | 1085 | <52 | 2175 | | | | | | | <52 | mg/kg | |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 157-159 | 163-165 | 166-168 | 175-177 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP02 | TP02 | CP03 | CP03 | | | | | | | | | |
| Depth | 1.00 | 3.50 | 1.00 | 4.80 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | | | | | | | | | |
| Sample Date | 10/05/2017 | 10/05/2017 | 09/05/2017 | 09/05/2017 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 6 | 6 | 6 | 6 | | | | | | | | | |
| Date of Receipt | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | | | | | | | |
| MTBE # | <5 | <5 | <5 | <5 SV | | | | | | | <5 | ug/kg | TM31/PM12 |
| Benzene # | <5 | <5 | <5 | 8 SV | | | | | | | <5 | ug/kg | TM31/PM12 |
| Toluene # | <5 | <5 | <5 | 8 SV | | | | | | | <5 | ug/kg | TM31/PM12 |
| Ethylbenzene # | <5 | <5 | <5 | 9 SV | | | | | | | <5 | ug/kg | TM31/PM12 |
| m/p-Xylene # | <5 | 75 | <5 | 13 SV | | | | | | | <5 | ug/kg | TM31/PM12 |
| o-Xylene # | <5 | 23 | <5 | <5 SV | | | | | | | <5 | ug/kg | TM31/PM12 |
| Phenol AM | <0.01 | <0.01 | <0.01 | 0.08 | | | | | | | <0.01 | mg/kg | TM26/PM21 |
| Natural Moisture Content | 16.5 | 26.4 | 14.2 | 17.0 | | | | | | | <0.1 | % | PM4/PM0 |
| Natural Moisture Content | - | - | - | - | | | | | | | <0.1 | % | PM4/PM0 |
| Hexavalent Chromium # | <0.3 | <0.3 | <0.3 | <0.3 | | | | | | | <0.3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) AM | 169 | 553 | 38 | 903 | | | | | | | <3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) | - | - | - | - | | | | | | | <3 | mg/kg | TM38/PM80 |
| Free Cyanide | <0.5 | <0.5 | <0.5 | <0.5 | | | | | | | <0.5 | mg/kg | TM89/PM45 |
| Fraction Organic Carbon | 0.003 | 0.024 | 0.005 | 0.027 | | | | | | | <0.001 | None | TM21/PM24 |
| pH AM | 7.71 | 7.80 | 7.84 | 7.71 | | | | | | | <0.01 | pH units | TM73/PM11 |
| Sample Type | Clayey Sand | Clay | Clay | Clayey Sand | | | | | | | | None | PM13/PM0 |
| Sample Colour | Light Brown | Medium Brown | Medium Brown | Medium Brown | | | | | | | | None | PM13/PM0 |
| Other Items | stones | stones, paper | stones and sand | stones | | | | | | | | None | PM13/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 115-117 | 127-129 | 133-135 | 142-144 | 151-153 | 175-177 | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP10 | TP09 | TP08 | TP05 | TP06 | CP03 | | | | | | | |
| Depth | 3.30 | 3.80 | 2.30 | 2.40 | 2.00 | 4.80 | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | V J T | V J T | | | | | | | |
| Sample Date | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 09/05/2017 | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | | | | | | | |
| Batch Number | 6 | 6 | 6 | 6 | 6 | 6 | | | | | | | |
| Date of Receipt | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | | | | | |
| Dissolved Antimony # | <2 | <2 | 22 | 16 | 73 | 12 | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Arsenic # | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | | | | | <2.5 | ug/l | TM30/PM14 |
| Dissolved Barium # | 43 | 67 | 119 | 76 | 67 | 77 | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Beryllium # | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Boron # | 81 | 160 | 222 | 67 | 331 | 232 | | | | | <12 | ug/l | TM30/PM14 |
| Dissolved Cadmium # | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Chromium # | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | | | | | <1.5 | ug/l | TM30/PM14 |
| Dissolved Copper # | <3 | <3 | <3 | <3 | <3 | <3 | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Lead # | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | | | | | <0.4 | ug/l | TM30/PM14 |
| Dissolved Molybdenum # | 51 | 11 | 77 | 29 | 102 | 25 | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Nickel # | <2 | 6 | 13 | <2 | 10 | 3 | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Selenium # | <3 | <3 | <3 | <3 | <3 | <3 | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Zinc # | 4 | 5 | 4 | 5 | 6 | 4 | | | | | <3 | ug/l | TM30/PM14 |
| Mercury Dissolved by CVAF # | 0.02 | 0.08 | 0.12 | <0.01 | 0.14 | <0.01 | | | | | <0.01 | ug/l | TM61/PM38 |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene | <0.1 B | 0.1 B | 2.4 B | <0.1 B | <0.1 B | 1.1 B | | | | | <0.1 | ug/l | TM4/PM30 |
| Acenaphthylene | 0.06 | 0.03 | 0.22 | 0.04 | 0.01 | 0.37 | | | | | <0.01 | ug/l | TM4/PM30 |
| Acenaphthene | 0.03 | 0.50 | 0.81 | 0.21 | 0.04 | 14.39 ++ | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluorene | 0.03 | 0.28 | 0.44 | 0.09 | 0.02 | 4.55 | | | | | <0.01 | ug/l | TM4/PM30 |
| Phenanthrene | 0.28 | 0.45 | 0.40 | 0.06 | 0.03 | 2.98 | | | | | <0.01 | ug/l | TM4/PM30 |
| Anthracene | 0.13 | 0.10 | 0.14 | 0.06 | <0.01 | 0.80 | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluoranthene | 1.07 | 0.38 | 0.17 | 0.29 | 0.04 | 1.94 | | | | | <0.01 | ug/l | TM4/PM30 |
| Pyrene | 1.00 | 0.35 | 0.15 | 0.20 | 0.03 | 1.14 | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)anthracene | 0.57 | 0.12 | 0.04 | 0.07 | 0.02 | 0.16 | | | | | <0.01 | ug/l | TM4/PM30 |
| Chrysene | 0.56 | 0.23 | 0.06 | 0.07 | 0.02 | 0.17 | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(bk)fluoranthene | 1.18 | 0.28 | 0.08 | 0.08 | 0.03 | 0.11 | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)pyrene | 0.75 | 0.15 | 0.04 | 0.04 | 0.02 | 0.05 | | | | | <0.01 | ug/l | TM4/PM30 |
| Indeno(123cd)pyrene | 0.48 | 0.10 | 0.03 | 0.03 | 0.01 | 0.02 | | | | | <0.01 | ug/l | TM4/PM30 |
| Dibenzo(ah)anthracene | 0.06 | 0.02 | <0.01 | <0.01 | <0.01 | <0.01 | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(ghi)perylene | 0.43 | 0.13 | 0.03 | 0.03 | 0.01 | 0.02 | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH 16 Total | 6.7 | 3.2 | 5.0 | 1.3 | 0.3 | 27.8 | | | | | <0.1 | ug/l | TM4/PM30 |
| Benzo(b)fluoranthene | 0.85 | 0.20 | 0.06 | 0.06 | 0.02 | 0.06 | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(k)fluoranthene | 0.33 | 0.08 | 0.02 | 0.02 | <0.01 | 0.03 | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH Surrogate % Recovery | 90 | 90 | 109 | 80 | 96 | 91 | | | | | <0 | % | TM4/PM30 |
| Methyl Tertiary Butyl Ether | <1 | <1 | <1 | <1 | <1 | <1 | | | | | <1 | ug/l | TM15/PM69 |
| Benzene | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | | | | <0.5 | ug/l | TM15/PM69 |
| Toluene | <5 | <5 | <5 | <5 | <5 | <5 | | | | | <5 | ug/l | TM15/PM69 |
| Ethylbenzene | <1 | <1 | <1 | <1 | <1 | <1 | | | | | <1 | ug/l | TM15/PM69 |
| p/m-Xylene | <2 | <2 | <2 | <2 | <2 | <2 | | | | | <2 | ug/l | TM15/PM69 |
| o-Xylene | <1 | <1 | <1 | <1 | <1 | <1 | | | | | <1 | ug/l | TM15/PM69 |
| Surrogate Recovery Toluene D8 | 100 | 110 | 106 | 105 | 103 | 104 | | | | | <0 | % | TM15/PM69 |
| Surrogate Recovery 4-Bromofluorobenzene | 99 | 105 | 105 | 104 | 103 | 98 | | | | | <0 | % | TM15/PM69 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 115-117 | 127-129 | 133-135 | 142-144 | 151-153 | 175-177 | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP10 | TP09 | TP08 | TP05 | TP06 | CP03 | | | | | | | |
| Depth | 3.30 | 3.80 | 2.30 | 2.40 | 2.00 | 4.80 | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | V J T | V J T | | | | | | | |
| Sample Date | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 09/05/2017 | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | | | | | | | |
| Batch Number | 6 | 6 | 6 | 6 | 6 | 6 | | | | | | | |
| Date of Receipt | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | | | | | |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 | <10 | <10 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM36/PM69 |
| >C6-C8 | <10 | <10 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM36/PM69 |
| >C8-C10 | <10 | 38 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM36/PM69 |
| >C10-C12 | <5 | <5 | <5 | <5 | <5 | <5 | | | | | <5 | ug/l | TM5/PM30 |
| >C12-C16 | <10 | <10 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM5/PM30 |
| >C16-C21 | <10 | <10 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM5/PM30 |
| >C21-C35 | 1470 | <10 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM5/PM30 |
| Total aliphatics C5-35 | 1470 | 38 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | [illegible] |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 | <10 | <10 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM36/PM69 |
| >EC7-EC8 | <10 | <10 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM36/PM69 |
| >EC8-EC10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM36/PM69 |
| >EC10-EC12 | <5 | <5 | 15 | <5 | <5 | <5 | | | | | <5 | ug/l | TM5/PM30 |
| >EC12-EC16 | <10 | <10 | 80 | <10 | <10 | <10 | | | | | <10 | ug/l | TM5/PM30 |
| >EC16-EC21 | <10 | <10 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM5/PM30 |
| >EC21-EC35 | 610 | <10 | <10 | <10 | <10 | <10 | | | | | <10 | ug/l | TM5/PM30 |
| Total aromatics C5-35 | 610 | <10 | 95 | <10 | <10 | <10 | | | | | <10 | ug/l | [illegible] |
| Total aliphatics and aromatics(C5-35) | 2080 | 38 | 95 | <10 | <10 | <10 | | | | | <10 | ug/l | [illegible] |
| Phenol | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | | | | <0.5 | ug/l | TM26/PM0 |
| Sulphate as SO4 # | 52.39 | 33.01 | 81.49 | 92.74 | 27.63 | 78.74 | | | | | <0.05 | mg/l | TM38/PM0 |
| Chloride # | 7.4 | 21.0 | 26.2 | 1.7 | 70.3 | 19.1 | | | | | <0.3 | mg/l | TM38/PM0 |
| Nitrate as NO3 # | 0.8 | 0.3 | <0.2 | <0.2 | <0.2 | <0.2 | | | | | <0.2 | mg/l | TM38/PM0 |
| Nitrite as NO2 # | 0.12 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | | | <0.02 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH3 # | 8.34 | 16.22 | 11.85 | 5.75 | 25.70 | 1.58 | | | | | <0.03 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH4 # | 8.83 | 17.18 | 12.55 | 6.09 | 27.22 | 1.67 | | | | | <0.03 | mg/l | TM38/PM0 |
| Total Cyanide # | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | | <0.01 | mg/l | TM89/PM0 |
| Dissolved Organic Carbon | 15 | 23 | 12 | 9 | 14 | 6 | | | | | <2 | mg/l | TM60/PM0 |
| pH | 8.04 | 8.13 | 8.05 | 7.85 | 8.32 | 7.75 | | | | | <0.01 | pH units | TM73/PM0 |
| Total Alkalinity as CaCO3 | 140 | 190 | 212 | 132 | 258 | 150 | | | | | <1 | mg/l | TM75/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

**Note:**

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

[redacted]
Ryan Butterworth
Asbestos Team Leader

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 6 | TP10 | 2.50 | 113 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 6 | TP10 | 3.30 | 116 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone/Glass |
| | | | | | 18/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | <0.1% |
| 17/7894 | 6 | TP09 | 0.40 | 119 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 6 | TP09 | 3.80 | 128 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 6 | TP08 | 2.30 | 134 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stones/Cement |
| | | | | | 18/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 18/05/2017 | **Asbestos ACM** | Asbestos Cement Debris |
| | | | | | 18/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | Asbestos level cannot be determined from Screen. Quantification required. |

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 6 | TP08 | 3.20 | 137 | 18/05/2017 | **General Description (Bulk Analysis)** | soil-stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | <0.1% |
| 17/7894 | 6 | TP05 | 1.00 | 140 | 18/05/2017 | **General Description (Bulk Analysis)** | soil-stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 6 | TP05 | 2.40 | 143 | 18/05/2017 | **General Description (Bulk Analysis)** | soil-stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 6 | TP06 | 2.00 | 152 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone |
| | | | | | 18/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | <0.1% |
| 17/7894 | 6 | TP06 | 3.10 | 155 | 18/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 18/05/2017 | **Asbestos ACM** | Insulation Debris |
| | | | | | 18/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | Asbestos level cannot be determined from Screen. Quantification required. |
| 17/7894 | 6 | TP02 | 1.00 | 158 | 18/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 6 | TP02 | 3.50 | 164 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 6 | CP03 | 1.00 | 167 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 6 | CP03 | 4.80 | 176 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |

DRAFT

**Client Name:** WYG **Matrix : Solid**
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | NDP Reason |
|---|---|---|---|---|---|
| 17/7894 | 6 | TP10 | 3.30 | 115-117 | Asbestos detected in sample |
| 17/7894 | 6 | TP08 | 2.30 | 133-135 | Asbestos detected in sample |
| 17/7894 | 6 | TP08 | 3.20 | 136-138 | Asbestos detected in sample |
| 17/7894 | 6 | TP06 | 2.00 | 151-153 | Asbestos detected in sample |
| 17/7894 | 6 | TP06 | 3.10 | 154-156 | Asbestos detected in sample |

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Analysis | Reason |
|---|---|---|---|---|---|---|
| No deviating sample report results for job 17/7894 | | | | | | |

DRAFT

**Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.**
**Only analyses which are accredited are recorded as deviating if set criteria are not met.**

# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***JE Job No.:*** 17/7894

## SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

## WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

## DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

## SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

## DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS) accredited - UK. |
| SA | ISO17025 (SANAS) accredited - South Africa. |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| ++ | Result outside calibration range, results should be considered as indicative only and are not accredited. |
| * | Analysis subcontracted to a Jones Environmental approved laboratory. |
| AD | Samples are dried at 35°C ±5°C |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |
| AA | x5 Dilution |
| AB | x10 Dilution |
| AC | x20 Dilution |

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | | |
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | Yes | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | Yes | AR | Yes |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM12/PM16 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM30/PM69 | PM030: Eluate samples are extracted with solvent using a magnetic stirrer to create a vortex.PM069: One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| PM13 | A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description. | PM0 | No preparation is required. | | | AR | |
| TM15 | Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM21 | Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. | PM24 | Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis. | | | AD | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM0 | No preparation is required. | | | AR | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM21 | As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker. | Yes | Yes | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM14 | Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | Yes | | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | | | AD | Yes |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | Yes | Yes | AD | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM62 | Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C. | | | AR | Yes |
| TM31 | Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | Yes | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | Yes | AD | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | | AR | Yes |

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM60 | As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid. | | | AR | Yes |
| TM60 | Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR). | PM0 | No preparation is required. | | | AR | Yes |
| TM61 | Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence. | PM38 | Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061. | Yes | | AR | Yes |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | | | AR | |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | Yes | | AR | |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM0 | No preparation is required. | | | AR | Yes |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM11 | Extraction of as received solid samples using one part solid to 2.5 parts deionised water. | Yes | Yes | AR | No |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM32 | Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio. | Yes | Yes | AD | Yes |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM61 | As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP. | | | AR | Yes |
| TM75 | Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser. | PM0 | No preparation is required. | | | AR | Yes |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM45 | As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis. | | | AR | Yes |
| NONE | No Method Code | PM17 | Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio. | | | | |
| NONE | No Method Code | PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | | | AR | |

DRAFT

# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

WYG
100 St John Street
London
EC1M 4EH

| | |
|---|---|
| **Attention :** | Alice Hayton |
| **Date :** | 24th May, 2017 |
| **Your reference :** | A102760 |
| **Our reference :** | Test Report 17/7894 Batch 7 |
| **Location :** | Brockhampton West |
| **Date samples received :** | 12th May, 2017 |
| **Status :** | Final report |
| **Issue :** | 1 |

Nine samples were received for analysis on 12th May, 2017 of which seven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

**Compiled By:**

[redacted]

**Bruce Leslie**
**Project Co-ordinator**

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 178-180 | 184-186 | 187-189 | 190-192 | 193-194 | 198-200 | 201-203 | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP03 | CP05 | CP05 | CP05 | CP04 | CP04 | CP04 | | | | | | |
| Depth | 24.00 | 2.50 | 5.00 | 7.00 | 0.50 | 4.50 | 7.00 | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | J T | V J T | V J T | | | | | | |
| Sample Date | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | | | | | |
| Batch Number | 7 | 7 | 7 | 7 | 7 | 7 | 7 | | | | | | |
| Date of Receipt | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | | | | | | |
| Arsenic [SM] | <0.5 | - | 9.1 | 7.7 | - | - | 6.6 | | | | <0.5 | mg/kg | TM30/PM15 |
| Beryllium | <0.5 | - | 1.3 | 1.1 | - | - | 0.8 | | | | <0.5 | mg/kg | TM30/PM15 |
| Cadmium [SM] | 0.3 | - | 3.9 | 4.2 | - | - | <0.1 | | | | <0.1 | mg/kg | TM30/PM15 |
| Chromium [SM] | 6.4 | - | 116.5 | 86.8 | - | - | 157.7 | | | | <0.5 | mg/kg | TM30/PM15 |
| Copper [SM] | 3 | - | 210 | 1837 [AB] | - | - | 110 | | | | <1 | mg/kg | TM30/PM15 |
| Lead [SM] | 6 | - | 203 | 417 | - | - | 77 | | | | <5 | mg/kg | TM30/PM15 |
| Mercury [SM] | <0.1 | - | 0.2 | 0.5 | - | - | <0.1 | | | | <0.1 | mg/kg | TM30/PM15 |
| Nickel [SM] | 4.1 | - | 47.8 | 146.9 | - | - | 18.3 | | | | <0.7 | mg/kg | TM30/PM15 |
| Selenium [SM] | <1 | - | 1 | 1 | - | - | <1 | | | | <1 | mg/kg | TM30/PM15 |
| Vanadium | 4 | - | 43 | 35 | - | - | 24 | | | | <1 | mg/kg | TM30/PM15 |
| Water Soluble Boron [SM] | 0.1 | - | 5.2 | 6.6 | - | - | 2.5 | | | | <0.1 | mg/kg | TM74/PM32 |
| Zinc [SM] | 15 | - | 801 | 811 | - | - | 252 | | | | <5 | mg/kg | TM30/PM15 |
| Arsenic | - | 12.2 | - | - | 6.5 | 8.5 | - | | | | <0.5 | mg/kg | TM30/PM62 |
| Beryllium | - | 1.1 | - | - | 0.6 | 0.7 | - | | | | <0.5 | mg/kg | TM30/PM62 |
| Cadmium | - | 1.5 | - | - | 3.0 | 0.8 | - | | | | <0.1 | mg/kg | TM30/PM62 |
| Chromium | - | 108.1 | - | - | 27.4 | 22.7 | - | | | | <0.5 | mg/kg | TM30/PM62 |
| Copper | - | 66 | - | - | 22 | 142 | - | | | | <1 | mg/kg | TM30/PM62 |
| Lead | - | 732 | - | - | 36 | 322 | - | | | | <5 | mg/kg | TM30/PM62 |
| Mercury | - | <0.1 | - | - | <0.1 | <0.1 | - | | | | <0.1 | mg/kg | TM30/PM62 |
| Nickel | - | 86.7 | - | - | 13.5 | 21.4 | - | | | | <0.7 | mg/kg | TM30/PM62 |
| Selenium | - | <1 | - | - | <1 | <1 | - | | | | <1 | mg/kg | TM30/PM62 |
| Vanadium | - | 32 | - | - | 27 | 16 | - | | | | <1 | mg/kg | TM30/PM62 |
| Water Soluble Boron | - | 9.4 | - | - | 0.8 | 3.1 | - | | | | <0.1 | mg/kg | TM74/PM61 |
| Zinc | - | 449 | - | - | 117 | 702 | - | | | | <5 | mg/kg | TM30/PM62 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 178-180 | 184-186 | 187-189 | 190-192 | 193-194 | 198-200 | 201-203 | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP03 | CP05 | CP05 | CP05 | CP04 | CP04 | CP04 | | | | | | |
| Depth | 24.00 | 2.50 | 5.00 | 7.00 | 0.50 | 4.50 | 7.00 | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | J T | V J T | V J T | | | | | | |
| Sample Date | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | | | | | |
| Batch Number | 7 | 7 | 7 | 7 | 7 | 7 | 7 | | | | | | |
| Date of Receipt | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | | | | | | |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene [#M] | <0.04 | 0.06 | <0.04 | 0.08 | <0.04 | 4.75 | 4.35 | | | | <0.04 | mg/kg | TM4/PM8 |
| Acenaphthylene | <0.03 | <0.03 | <0.03 | 0.06 | <0.03 | 0.18 | 0.09 | | | | <0.03 | mg/kg | TM4/PM8 |
| Acenaphthene [#M] | <0.05 | 0.15 | <0.05 | 0.08 | <0.05 | 2.57 | 2.08 | | | | <0.05 | mg/kg | TM4/PM8 |
| Fluorene [#M] | <0.04 | 0.06 | <0.04 | <0.04 | <0.04 | 1.66 | 1.77 | | | | <0.04 | mg/kg | TM4/PM8 |
| Phenanthrene [#M] | <0.03 | 0.15 | <0.03 | 0.29 | <0.03 | 4.13 | 4.88 | | | | <0.03 | mg/kg | TM4/PM8 |
| Anthracene [#] | <0.04 | <0.04 | <0.04 | 0.10 | <0.04 | 1.09 | 1.07 | | | | <0.04 | mg/kg | TM4/PM8 |
| Fluoranthene [#M] | <0.03 | 0.15 | <0.03 | 0.94 | 0.07 | 2.75 | 3.24 | | | | <0.03 | mg/kg | TM4/PM8 |
| Pyrene [#] | <0.03 | 0.17 | <0.03 | 0.77 | 0.06 | 2.28 | 2.81 | | | | <0.03 | mg/kg | TM4/PM8 |
| Benzo(a)anthracene [#] | <0.06 | 0.11 | <0.06 | 0.53 | <0.06 | 1.44 | 1.75 | | | | <0.06 | mg/kg | TM4/PM8 |
| Chrysene [#M] | <0.02 | 0.17 | <0.02 | 0.46 | 0.05 | 1.14 | 2.08 | | | | <0.02 | mg/kg | TM4/PM8 |
| Benzo(bk)fluoranthene [#M] | <0.07 | 0.17 | <0.07 | 0.75 | <0.07 | 2.16 | 2.37 | | | | <0.07 | mg/kg | TM4/PM8 |
| Benzo(a)pyrene [#] | <0.04 | 0.10 | <0.04 | 0.43 | 0.05 | 1.30 | 1.62 | | | | <0.04 | mg/kg | TM4/PM8 |
| Indeno(123cd)pyrene [#M] | <0.04 | 0.10 | <0.04 | 0.28 | <0.04 | 0.79 | 0.73 | | | | <0.04 | mg/kg | TM4/PM8 |
| Dibenzo(ah)anthracene [#] | <0.04 | <0.04 | <0.04 | 0.07 | <0.04 | 0.22 | 0.24 | | | | <0.04 | mg/kg | TM4/PM8 |
| Benzo(ghi)perylene [#] | <0.04 | 0.07 | <0.04 | 0.25 | <0.04 | 0.72 | 0.70 | | | | <0.04 | mg/kg | TM4/PM8 |
| PAH 16 Total | <0.6 | 1.5 | <0.6 | 5.1 | <0.6 | 27.2 | 29.8 | | | | <0.6 | mg/kg | TM4/PM8 |
| Benzo(b)fluoranthene | <0.05 | 0.12 | <0.05 | 0.54 | <0.05 | 1.56 | 1.71 | | | | <0.05 | mg/kg | TM4/PM8 |
| Benzo(k)fluoranthene | <0.02 | 0.05 | <0.02 | 0.21 | <0.02 | 0.60 | 0.66 | | | | <0.02 | mg/kg | TM4/PM8 |
| PAH Surrogate % Recovery | 97 | 109 | 108 | 101 | 102 | 98 | 111 | | | | <0 | % | TM4/PM8 |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 [#M] | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <1.0$_{AB}$ | <1.0$_{AB}$ | | | | <0.1 | mg/kg | TM36/PM12 |
| >C6-C8 [#M] | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <1.0$_{AB}$ | <1.0$_{AB}$ | | | | <0.1 | mg/kg | TM36/PM12 |
| >C8-C10 | <0.1 | 0.3 | 0.5 | 1.4 | 0.1 | 3.2$_{AB}$ | 3.6$_{AB}$ | | | | <0.1 | mg/kg | TM36/PM12 |
| >C10-C12 [#M] | <0.2 | 22.4 | <0.2 | 69.2 | <0.2 | 42.7 | 33.6 | | | | <0.2 | mg/kg | TM5/PM16 |
| >C12-C16 [#M] | <4 | 43 | <4 | 84 | <4 | 61 | 29 | | | | <4 | mg/kg | TM5/PM16 |
| >C16-C21 [#M] | <7 | 86 | <7 | 58 | <7 | 237 | 27 | | | | <7 | mg/kg | TM5/PM16 |
| >C21-C35 [#M] | <7 | 848 | 48 | 673 | <7 | 596 | 165 | | | | <7 | mg/kg | TM5/PM16 |
| >C35-C44 | <7 | 109 | <7 | 144 | <7 | 89 | 72 | | | | <7 | mg/kg | TM5/PM16 |
| Total aliphatics C5-44 | <26 | 1109 | 49 | 1030 | <26 | 1029 | 330 | | | | <26 | mg/kg | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 [#] | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <1.0$_{AB}$ | <1.0$_{AB}$ | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC7-EC8 [#] | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <1.0$_{AB}$ | <1.0$_{AB}$ | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC8-EC10 [#M] | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | 1.8$_{AB}$ | 1.4$_{AB}$ | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC10-EC12 [#] | <0.2 | 4.8 | <0.2 | 9.8 | <0.2 | 16.5 | 15.9 | | | | <0.2 | mg/kg | TM5/PM16 |
| >EC12-EC16 [#] | <4 | 10 | <4 | 21 | <4 | 37 | 30 | | | | <4 | mg/kg | TM5/PM16 |
| >EC16-EC21 [#] | <7 | 159 | <7 | 58 | <7 | 182 | 92 | | | | <7 | mg/kg | TM5/PM16 |
| >EC21-EC35 [#] | <7 | 699 | 61 | 538 | <7 | 719 | 399 | | | | <7 | mg/kg | TM5/PM16 |
| >EC35-EC44 | <7 | 75 | <7 | 86 | <7 | 188 | 227 | | | | <7 | mg/kg | TM5/PM16 |
| Total aromatics C5-44 | <26 | 948 | 61 | 713 | <26 | 1144 | 765 | | | | <26 | mg/kg | |
| Total aliphatics and aromatics(C5-44) | <52 | 2057 | 110 | 1743 | <52 | 2173 | 1095 | | | | <52 | mg/kg | |

Please see attached notes for all abbreviations and acronyms

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 178-180 | 184-186 | 187-189 | 190-192 | 193-194 | 198-200 | 201-203 | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP03 | CP05 | CP05 | CP05 | CP04 | CP04 | CP04 | | | | | | |
| Depth | 24.00 | 2.50 | 5.00 | 7.00 | 0.50 | 4.50 | 7.00 | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | V J T | V J T | J T | V J T | V J T | | | | | | |
| Sample Date | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | | | | | |
| Batch Number | 7 | 7 | 7 | 7 | 7 | 7 | 7 | | | | | | |
| Date of Receipt | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | 12/05/2017 | | | | | | |
| MTBE [#] | <5 | <5 | <5 | <5 | <5 | <50 AB | <50 AB | | | | <5 | ug/kg | TM31/PM12 |
| Benzene [#] | <5 | <5 | <5 | <5 | <5 | <50 AB | <50 AB | | | | <5 | ug/kg | TM31/PM12 |
| Toluene [#] | <5 | <5 | 12 | 12 | <5 | <50 AB | <50 AB | | | | <5 | ug/kg | TM31/PM12 |
| Ethylbenzene [#] | <5 | 14 | 6 | 25 | <5 | 398 AB | 242 AB | | | | <5 | ug/kg | TM31/PM12 |
| m/p-Xylene [#] | <5 | 14 | 35 | 93 | <5 | 1109 AB | 858 AB | | | | <5 | ug/kg | TM31/PM12 |
| o-Xylene [#] | <5 | 10 | 9 | 30 | <5 | 299 AB | 237 AB | | | | <5 | ug/kg | TM31/PM12 |
| Phenol [#M] | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 1.48 AA | 0.02 | | | | <0.01 | mg/kg | TM26/PM21 |
| Natural Moisture Content | 56.2 | - | 39.8 | 28.2 | - | - | 41.9 | | | | <0.1 | % | PM4/PM0 |
| Natural Moisture Content | - | 38.1 | - | - | 20.8 | 20.2 | - | | | | <0.1 | % | PM4/PM0 |
| Hexavalent Chromium [#] | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | 0.9 | | | | <0.3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) [#M] | 21 | - | 677 | 537 | - | - | 4133 | | | | <3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) | - | 692 | - | - | 1599 | 53 | - | | | | <3 | mg/kg | TM38/PM80 |
| Free Cyanide | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | | | <0.5 | mg/kg | TM89/PM45 |
| Fraction Organic Carbon | <0.001 | NDP | 0.029 | 0.040 | NDP | NDP | 0.037 | | | | <0.001 | None | TM21/PM24 |
| pH [#M] | 8.59 | 7.82 | 7.97 | 8.01 | 7.74 | 7.07 | 7.72 | | | | <0.01 | pH units | TM73/PM11 |
| Sample Type | Clay | NDP | Clay | Clay | NDP | NDP | Clay | | | | | None | PM13/PM0 |
| Sample Colour | White | NDP | Medium Brown | Medium Brown | NDP | NDP | Dark Brown | | | | | None | PM13/PM0 |
| Other Items | chalk | NDP | [illegible] | [illegible] | NDP | NDP | [illegible] | | | | | None | PM13/PM0 |

Please see attached notes for all abbreviations and acronyms



Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 184-186 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP05 | | | | | | | | | | | | |
| Depth | 2.50 | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | | | | | | | | | | | | |
| Sample Date | 11/05/2017 | | | | | | | | | | | | |
| Sample Type | Soil | | | | | | | | | | | | |
| Batch Number | 7 | | | | | | | | | | | | |
| Date of Receipt | 12/05/2017 | | | | | | | | | | | | |

Please see attached notes for all abbreviations and acronyms

| | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|
| Dissolved Antimony # | 13 | <2 | ug/l | TM30/PM14 |
| Dissolved Arsenic # | <2.5 | <2.5 | ug/l | TM30/PM14 |
| Dissolved Barium # | 8 | <3 | ug/l | TM30/PM14 |
| Dissolved Beryllium # | <0.5 | <0.5 | ug/l | TM30/PM14 |
| Dissolved Boron # | 426 | <12 | ug/l | TM30/PM14 |
| Dissolved Cadmium # | <0.5 | <0.5 | ug/l | TM30/PM14 |
| Dissolved Chromium # | <1.5 | <1.5 | ug/l | TM30/PM14 |
| Dissolved Copper # | <3 | <3 | ug/l | TM30/PM14 |
| Dissolved Lead # | <0.4 | <0.4 | ug/l | TM30/PM14 |
| Dissolved Molybdenum # | 38 | <2 | ug/l | TM30/PM14 |
| Dissolved Nickel # | 9 | <2 | ug/l | TM30/PM14 |
| Dissolved Selenium # | <3 | <3 | ug/l | TM30/PM14 |
| Dissolved Zinc # | 7 | <3 | ug/l | TM30/PM14 |
| Mercury Dissolved by CVAF # | 0.03 | <0.01 | ug/l | TM61/PM38 |
| | | | | |
| PAH MS | | | | |
| Naphthalene | $1.0^{B}_{AB}$ | <0.1 | ug/l | TM4/PM30 |
| Acenaphthylene | $0.59_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Acenaphthene | $6.37_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Fluorene | $2.91_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Phenanthrene | $4.82_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Anthracene | $0.71_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Fluoranthene | $4.35_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Pyrene | $3.84_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)anthracene | $1.68_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Chrysene | $2.71_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Benzo(bk)fluoranthene | $3.73_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)pyrene | $1.67_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Indeno(123cd)pyrene | $0.98_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Dibenzo(ah)anthracene | $0.35_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Benzo(ghi)perylene | $1.06_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| PAH 16 Total | $36.8_{AB}$ | <0.1 | ug/l | TM4/PM30 |
| Benzo(b)fluoranthene | $2.69_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| Benzo(k)fluoranthene | $1.04_{AB}$ | <0.01 | ug/l | TM4/PM30 |
| PAH Surrogate % Recovery | $78_{AB}$ | <0 | % | TM4/PM30 |
| | | | | |
| Methyl Tertiary Butyl Ether | <1 | <1 | ug/l | TM15/PM69 |
| Benzene | <0.5 | <0.5 | ug/l | TM15/PM69 |
| Toluene | <5 | <5 | ug/l | TM15/PM69 |
| Ethylbenzene | <1 | <1 | ug/l | TM15/PM69 |
| p/m-Xylene | <2 | <2 | ug/l | TM15/PM69 |
| o-Xylene | <1 | <1 | ug/l | TM15/PM69 |
| Surrogate Recovery Toluene D8 | 117 | <0 | % | TM15/PM69 |
| Surrogate Recovery 4-Bromofluorobenzene | 106 | <0 | % | TM15/PM69 |

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton
**JE Job No.:** 17/7894

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| J E Sample No. | 184-186 | | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP05 | | | | | | | | | | | | |
| Depth | 2.50 | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | | | | | | | | | | | | |
| Sample Date | 11/05/2017 | | | | | | | | | | | | |
| Sample Type | Soil | | | | | | | | | | | | |
| Batch Number | 7 | | | | | | | | | | | | |
| Date of Receipt | 12/05/2017 | | | | | | | | | | | | |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C6-C8 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C8-C10 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >C10-C12 | <5 | | | | | | | | | | <5 | ug/l | TM5/PM30 |
| >C12-C16 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >C16-C21 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >C21-C35 | 580 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aliphatics C5-35 | 580 | | | | | | | | | | <10 | ug/l | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC7-EC8 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC8-EC10 | <10 | | | | | | | | | | <10 | ug/l | TM36/PM69 |
| >EC10-EC12 | <5 | | | | | | | | | | <5 | ug/l | TM5/PM30 |
| >EC12-EC16 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC16-EC21 | <10 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC21-EC35 | 310 | | | | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aromatics C5-35 | 310 | | | | | | | | | | <10 | ug/l | |
| Total aliphatics and aromatics(C5-35) | 890 | | | | | | | | | | <10 | ug/l | |
| Phenol | <0.5 | | | | | | | | | | <0.5 | ug/l | TM26/PM0 |
| Sulphate as SO4 # | 136.42 | | | | | | | | | | <0.05 | mg/l | TM38/PM0 |
| Chloride # | 20.0 | | | | | | | | | | <0.3 | mg/l | TM38/PM0 |
| Nitrate as NO3 # | <0.2 | | | | | | | | | | <0.2 | mg/l | TM38/PM0 |
| Nitrite as NO2 # | <0.02 | | | | | | | | | | <0.02 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH3 # | 18.32 | | | | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH4 # | 19.41 | | | | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Total Cyanide # | <0.01 | | | | | | | | | | <0.01 | mg/l | TM89/PM0 |
| Dissolved Organic Carbon | 31 | | | | | | | | | | <2 | mg/l | TM60/PM0 |
| pH | 7.98 | | | | | | | | | | <0.01 | pH units | TM73/PM0 |
| Total Alkalinity as CaCO3 | 212 | | | | | | | | | | <1 | mg/l | TM75/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

**Note:**

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

[redacted]
Asbestos Team Leader

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 7 | CP03 | 24.00 | 179 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Chalk |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 7 | CP06 | 2.50 | 185 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone |
| | | | | | 18/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 18/05/2017 | **Asbestos ACM** | Asbestos Cement Debris |
| | | | | | 18/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | Asbestos level cannot be determined from Screen. Quantification required. |
| 17/7894 | 7 | CP06 | 5.00 | 188 | 18/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 7 | CP06 | 7.00 | 191 | 18/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |
| 17/7894 | 7 | CP04 | 0.50 | 193 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone |
| | | | | | 18/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | <0.1% |

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|
| 17/7894 | 7 | CP04 | 4.50 | 199 | 18/05/2017 | **General Description (Bulk Analysis)** | Soil/Stone |
| | | | | | 18/05/2017 | **Asbestos Fibres** | Fibre Bundles |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | Chrysotile |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | <0.1% |
| 17/7894 | 7 | CP04 | 7.00 | 202 | 18/05/2017 | **General Description (Bulk Analysis)** | soil/stones |
| | | | | | 18/05/2017 | **Asbestos Fibres** | NAD |
| | | | | | 18/05/2017 | **Asbestos Fibres (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM** | NAD |
| | | | | | 18/05/2017 | **Asbestos ACM (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type** | NAD |
| | | | | | 18/05/2017 | **Asbestos Type (2)** | NAD |
| | | | | | 18/05/2017 | **Asbestos Level Screen** | NAD |

DRAFT

**Client Name:** WYG **Matrix : Solid**
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Alice Hayton

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | NDP Reason |
|---|---|---|---|---|---|
| 17/7894 | 7 | CP06 | 2.50 | 184-186 | Asbestos detected in sample |
| 17/7894 | 7 | CP04 | 0.50 | 193-194 | Asbestos detected in sample |
| 17/7894 | 7 | CP04 | 4.50 | 198-200 | Asbestos detected in sample |

DRAFT

# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***JE Job No.:*** 17/7894

## SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

## WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

## DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

## SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

## DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS) accredited - UK. |
| SA | ISO17025 (SANAS) accredited - South Africa. |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| ++ | Result outside calibration range, results should be considered as indicative only and are not accredited. |
| * | Analysis subcontracted to a Jones Environmental approved laboratory. |
| AD | Samples are dried at 35°C ±5°C |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |
| AA | x2 Dilution |
| AB | x10 Dilution |

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | | |
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | PM0 | No preparation is required. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | | AR | Yes |
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | Yes | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | | AR | Yes |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | Yes | AR | Yes |

DRAFT

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM12/PM16 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of | PM30/PM69 | PM030: Eluate samples are extracted with solvent using a magnetic stirrer to create a vortex.PM069: One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| PM13 | A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description. | PM0 | No preparation is required. | | | AR | |
| TM15 | Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM21 | Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. | PM24 | Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis. | | | AD | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM0 | No preparation is required. | | | AR | Yes |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM21 | As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker. | Yes | Yes | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM14 | Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | Yes | | AR | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | | | AD | Yes |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | Yes | Yes | AD | Yes |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM62 | Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C. | | | AR | Yes |
| TM31 | Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | Yes | AR | Yes |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM69 | Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis. | | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | Yes | AD | Yes |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | | AR | Yes |

**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM60 | As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid. | | | AR | Yes |
| TM60 | Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR). | PM0 | No preparation is required. | | | AR | Yes |
| TM61 | Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence. | PM38 | Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061. | Yes | | AR | Yes |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | | | AR | |
| TM65 | Asbestos Bulk Identification method based on HSG 248. | PM42 | Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | Yes | | AR | |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM0 | No preparation is required. | | | AR | Yes |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM11 | Extraction of as received solid samples using one part solid to 2.5 parts deionised water. | Yes | Yes | AR | No |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM32 | Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio. | Yes | Yes | AD | Yes |
| TM74 | Analysis of water soluble boron (20:1 extract) by ICP-OES. | PM61 | As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP. | | | AR | Yes |
| TM75 | Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser. | PM0 | No preparation is required. | | | AR | Yes |

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**JE Job No:** 17/7894

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM45 | As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis. | | | AR | Yes |
| NONE | No Method Code | PM17 | Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio. | | | | |
| NONE | No Method Code | PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377. | | | AR | |

DRAFT

# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

WYG
100 St John Street
London
EC1M 4EH

| | |
|---|---|
| **Attention :** | Nick Brown |
| **Date :** | 20th June, 2017 |
| **Your reference :** | A102760 |
| **Our reference :** | Test Report 17/10227 Batch 1 |
| **Location :** | Brockhampton West |
| **Date samples received :** | 10th June, 2017 |
| **Status :** | Final report |
| **Issue :** | 1 |

Seven samples were received for analysis on 10th June, 2017 of which seven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

**Compiled By:**

[redacted]

**Bruce Leslie**
**Project Co-ordinator**

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Nick Brown
**JE Job No.:** 17/10227

**Report : Liquid**

**Liquids/products:** V=40ml vial, G=glass bottle, P=plastic bottle
H=$H_2SO_4$, Z=ZnAc, N=NaOH, HN=$HN0_3$

| J E Sample No. | 1-7 | 8-14 | 15-21 | 22-28 | 29-35 | 36-42 | 43-46 | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP01 (D) | CP02 (D) | CP02 (S) | CP03 (D) | CP03 (S) | DUP01 | IBC01 | | | | | | |
| Depth | | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V H HN N P G | V H HN N P G | V H HN N P G | V H HN N P G | V H HN N P G | V H HN N P G | V HN G | | | | | | |
| Sample Date | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | | | | | | |
| Sample Type | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water | | | | | | |
| Batch Number | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | |
| Date of Receipt | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | | | | | | |
| Dissolved Antimony # | <2 | 4 | 2 | <2 | <2 | <2 | <2 | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Arsenic # | <0.9 | 9.8 | 5.2 | <0.9 | <0.9 | <0.9 | <0.9 | | | | <0.9 | ug/l | TM30/PM14 |
| Dissolved Barium # | 24.9 | 551.2 | 914.3 | 31.8 | 155.4 | 30.8 | 84.5 | | | | <1.8 | ug/l | TM30/PM14 |
| Dissolved Beryllium | <0.5 | <0.5 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Boron | 44 | 1167 | 1279 | 66 | 451 | 72 | 594 | | | | <12 | ug/l | TM30/PM14 |
| Dissolved Cadmium # | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | | | <0.03 | ug/l | TM30/PM14 |
| Dissolved Calcium # | 110.2 | 193.6 | $268.4_{AA}$ | 120.5 | 187.9 | 115.7 | 117.0 | | | | <0.2 | mg/l | TM30/PM14 |
| Total Dissolved Chromium # | <0.2 | 1.0 | 2.4 | <0.2 | <0.2 | <0.2 | 6.1 | | | | <0.2 | ug/l | TM30/PM14 |
| Dissolved Copper # | <3 | <3 | 4 | <3 | <3 | <3 | <3 | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Lead # | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | | | | <0.4 | ug/l | TM30/PM14 |
| Dissolved Molybdenum # | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.7 | | | | <0.2 | ug/l | TM30/PM14 |
| Dissolved Nickel # | 0.5 | 7.3 | 5.2 | 4.6 | 5.2 | 4.8 | 15.5 | | | | <0.2 | ug/l | TM30/PM14 |
| Dissolved Selenium # | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | | | | <1.2 | ug/l | TM30/PM14 |
| Dissolved Zinc # | 4.6 | 4.5 | 3.8 | 12.4 | 3.0 | 11.7 | 24.9 | | | | <1.5 | ug/l | TM30/PM14 |
| Mercury Dissolved by CVAF # | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM61/PM38 |
| Total Hardness Dissolved (as CaCO3) | 291 | 773 | $915_{AA}$ | 326 | 585 | 315 | - | | | | <1 | mg/l | TM30/PM14 |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene | <0.1 B | 0.4 B | 0.4 B | <0.1 B | 0.1 B | <0.1 B | <0.1 B | | | | <0.1 | ug/l | TM4/PM30 |
| Acenaphthylene | 0.01 | 0.09 | 0.09 | 0.01 | 0.03 | <0.01 | 0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Acenaphthene | <0.01 B | 1.69 B | 1.67 B | 0.04 B | 0.51 B | 0.04 B | <0.01 B | | | | <0.01 | ug/l | TM4/PM30 |
| Fluorene | <0.01 B | 1.01 B | 0.67 B | 0.01 B | 0.12 B | <0.01 B | <0.01 B | | | | <0.01 | ug/l | TM4/PM30 |
| Phenanthrene | <0.01 B | 0.76 B | 0.03 B | 0.01 B | 0.02 B | <0.01 B | <0.01 B | | | | <0.01 | ug/l | TM4/PM30 |
| Anthracene | <0.01 | 0.21 | 0.13 | <0.01 | 0.02 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Fluoranthene | <0.01 | 0.22 | 0.25 | <0.01 | 0.05 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Pyrene | <0.01 | 0.13 | 0.15 | <0.01 | 0.04 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)anthracene | <0.01 | 0.02 | 0.02 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Chrysene | <0.01 | 0.02 | 0.03 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(bk)fluoranthene | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)pyrene | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Indeno(123cd)pyrene | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Dibenzo(ah)anthracene | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(ghi)perylene | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| PAH 16 Total | <0.1 | 4.6 | 3.4 | <0.1 | 0.9 | <0.1 | <0.1 | | | | <0.1 | ug/l | TM4/PM30 |
| Benzo(b)fluoranthene | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(k)fluoranthene | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM4/PM30 |
| PAH Surrogate % Recovery | 85 | 84 | 83 | 83 | 85 | 80 | 83 | | | | <0 | % | TM4/PM30 |
| Methyl Tertiary Butyl Ether # | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | | <0.1 | ug/l | TM15/PM10 |
| Benzene # | <0.5 | 6.7 | 5.1 | <0.5 | <0.5 | <0.5 | <0.5 | | | | <0.5 | ug/l | TM15/PM10 |
| Toluene # | <5 | <5 | <5 | <5 | <5 | <5 | <5 | | | | <5 | ug/l | TM15/PM10 |
| Ethylbenzene # | <1 | 12 | <1 | <1 | <1 | <1 | <1 | | | | <1 | ug/l | TM15/PM10 |
| p/m-Xylene # | <2 | <2 | <2 | <2 | <2 | <2 | <2 | | | | <2 | ug/l | TM15/PM10 |
| o-Xylene # | <1 | <1 | <1 | <1 | <1 | <1 | <1 | | | | <1 | ug/l | TM15/PM10 |

Please see attached notes for all abbreviations and acronyms

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Nick Brown
**JE Job No.:** 17/10227

**Report : Liquid**

**Liquids/products:** V=40ml vial, G=glass bottle, P=plastic bottle
H=$H_2SO_4$, Z=ZnAc, N=NaOH, HN=$HN0_3$

| J E Sample No. | 1-7 | 8-14 | 15-21 | 22-28 | 29-35 | 36-42 | 43-46 | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP01 (D) | CP02 (D) | CP02 (S) | CP03 (D) | CP03 (S) | DUP01 | IBC01 | | | | | | |
| Depth | | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V H HN N P G | V H HN N P G | V H HN N P G | V H HN N P G | V H HN N P G | V H HN N P G | V HN G | | | | | | |
| Sample Date | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | | | | | | |
| Sample Type | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water | | | | | | |
| Batch Number | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | |
| Date of Receipt | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | | | | | | |
| Surrogate Recovery Toluene D8 | 112 | 111 | 111 | 111 | 110 | 107 | 106 | | | | <0 | % | TM15/PM10 |
| Surrogate Recovery 4-Bromofluorobenzene | 105 | 115 | 114 | 117 | 115 | 114 | 111 | | | | <0 | % | TM15/PM10 |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 # | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM36/PM12 |
| >C6-C8 # | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM36/PM12 |
| >C8-C10 # | <10 | 25 | 20 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM36/PM12 |
| >C10-C12 # | <5 | <5 | <5 | <5 | <5 | <5 | <5 | | | | <5 | ug/l | TM5/PM30 |
| >C12-C16 # | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM5/PM30 |
| >C16-C21 # | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM5/PM30 |
| >C21-C35 # | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM5/PM30 |
| Total aliphatics C5-35 # | <10 | 25 | 20 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | [illegible] |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 # | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM36/PM12 |
| >EC7-EC8 # | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM36/PM12 |
| >EC8-EC10 # | <10 | 16 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM36/PM12 |
| >EC10-EC12 # | <5 | 31 | 23 | <5 | <5 | <5 | <5 | | | | <5 | ug/l | TM5/PM30 |
| >EC12-EC16 # | <10 | 10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM5/PM30 |
| >EC16-EC21 # | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM5/PM30 |
| >EC21-EC35 # | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM5/PM30 |
| Total aromatics C5-35 # | <10 | 57 | 23 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | [illegible] |
| Total aliphatics and aromatics(C5-35) # | <10 | 82 | 43 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | [illegible] |
| Phenol | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - | | | | <0.5 | ug/l | TM26/PM0 |
| Sulphate as SO4 # | 14.9 | 63.5 | <0.5 | 13.0 | 3.0 | 13.0 | - | | | | <0.5 | mg/l | TM38/PM0 |
| Chloride # | 40.2 | 643.4 | 400.5 | 34.1 | 103.0 | 33.4 | - | | | | <0.3 | mg/l | TM38/PM0 |
| Nitrate as NO3 # | 27.5 | 0.4 | <0.2 | 23.0 | 0.4 | 23.0 | - | | | | <0.2 | mg/l | TM38/PM0 |
| Nitrite as NO2 # | <0.02 | <0.02 | <0.02 | 1.44 | <0.02 | 1.48 | - | | | | <0.02 | mg/l | TM38/PM0 |
| Total Cyanide | <1 | 2 | 3 | <1 | 1 | <1 | - | | | | <1 | ug/l | TM89/PM0 |
| Ammoniacal Nitrogen as NH3 # | 3.12 | 100.20 | 161.38 | 2.16 | 15.79 | 2.11 | - | | | | <0.03 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH4 # | 3.31 | 106.13 | 170.93 | 2.29 | 16.72 | 2.24 | - | | | | <0.03 | mg/l | TM38/PM0 |
| Total Alkalinity as CaCO3 # | 262 | 1236 | 1486 | 298 | 736 | 348 | - | | | | <1 | mg/l | TM75/PM0 |
| Dissolved Organic Carbon # | <2 | 44 | 56 | <2 | 21 | <2 | - | | | | <2 | mg/l | TM60/PM0 |
| pH # | 7.20 | 6.96 | 7.05 | 7.16 | 6.91 | 7.16 | - | | | | <0.01 | pH units | TM73/PM0 |

Please see attached notes for all abbreviations and acronyms



Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Nick Brown

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Analysis | Reason |
|---|---|---|---|---|---|---|
| No deviating sample report results for job 17/10227 | | | | | | |

DRAFT

**Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.**
**Only analyses which are accredited are recorded as deviating if set criteria are not met.**

# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***JE Job No.:*** 17/10227

## SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

## WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

## DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

## SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

## DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS) accredited - UK. |
| SA | ISO17025 (SANAS) accredited - South Africa. |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| ++ | Result outside calibration range, results should be considered as indicative only and are not accredited. |
| * | Analysis subcontracted to a Jones Environmental approved laboratory. |
| AD | Samples are dried at 35°C ±5°C |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |
| AA | x5 Dilution |

DRAFT

**JE Job No:** 17/10227

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | | |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | Yes | | | |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID.<br>TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID, including determination of | PM30/PM12 | CWG GC-FID | Yes | | | |
| TM15 | Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS. | PM10 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | | | | |
| TM15 | Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS. | PM10 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | | |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM0 | No preparation is required. | | | | |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM14 | Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | | | | |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM14 | Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | Yes | | | |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | | |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM0 | No preparation is required. | Yes | | | |

DRAFT

**JE Job No:** 17/10227

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM60 | Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR). | PM0 | No preparation is required. | Yes | | | |
| TM61 | Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence. | PM38 | Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061. | Yes | | | |
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM0 | No preparation is required. | Yes | | | |
| TM75 | Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser. | PM0 | No preparation is required. | Yes | | | |
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM0 | No preparation is required. | | | | |
| | | | | | | | |
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DRAFT

# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PF

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781


WYG
100 St John Street
London
EC1M 4EH

| | |
|---|---|
| **Attention :** | Nick Brown |
| **Date :** | 29th June, 2017 |
| **Your reference :** | A102760 |
| **Our reference :** | Test Report 17/10227 Batch 2 |
| **Location :** | Brockhampton West |
| **Date samples received :** | 17th June, 2017 |
| **Status :** | Final report |
| **Issue :** | 1 |

Four samples were received for analysis on 17th June, 2017 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

**Compiled By:**

[redacted]

**Phil Sommerton BSc**
**Project Manager**

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Nick Brown
**JE Job No.:** 17/10227

**Report : Liquid**

**Liquids/products:** V=40ml vial, G=glass bottle, P=plastic bottle
H=$H_2SO_4$, Z=ZnAc, N=NaOH, HN=$HN0_3$

| J E Sample No. | 47-53 | 54-60 | 61-67 | 68-74 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP05 | CP04 | CP01 (S) | CP06 | | | | | | | | | |
| Depth | 7.5 | 7.5 | 8.0 | 8.0 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V H HN N P G | V H HN N P G | V H HN N P G | V H HN N P G | | | | | | | | | |
| Sample Date | 15/06/2017 | 15/06/2017 | 15/06/2017 | 15/06/2017 | | | | | | | | | |
| Sample Type | Liquid | Liquid | Liquid | Liquid | | | | | | | | | |
| Batch Number | 2 | 2 | 2 | 2 | | | | | | | | | |
| Date of Receipt | 17/06/2017 | 17/06/2017 | 17/06/2017 | 17/06/2017 | | | | | | | | | |
| Dissolved Antimony | 3 | 6 | <2 | <2 | | | | | | | <2 | ug/l | TM30/PM14 |
| Dissolved Arsenic | <0.9 | <0.9 | <0.9 | <0.9 | | | | | | | <0.9 | ug/l | TM30/PM14 |
| Dissolved Barium | 779.8 | 367.6 | 219.8 | 805.9 | | | | | | | <1.8 | ug/l | TM30/PM14 |
| Dissolved Beryllium | <0.5 | <0.5 | <0.5 | <0.5 | | | | | | | <0.5 | ug/l | TM30/PM14 |
| Dissolved Boron | 1042 | 1576 | 2122 | 1002 | | | | | | | <12 | ug/l | TM30/PM14 |
| Dissolved Cadmium | <0.03 | <0.03 | <0.03 | <0.03 | | | | | | | <0.03 | ug/l | TM30/PM14 |
| Dissolved Calcium | - | - | 117.2 | - | | | | | | | <0.2 | mg/l | TM30/PM14 |
| Total Dissolved Chromium | <0.2 | 5.0 | 1.9 | <0.2 | | | | | | | <0.2 | ug/l | TM30/PM14 |
| Dissolved Copper | <3 | 5 | <3 | <3 | | | | | | | <3 | ug/l | TM30/PM14 |
| Dissolved Lead | <0.4 | <0.4 | <0.4 | <0.4 | | | | | | | <0.4 | ug/l | TM30/PM14 |
| Dissolved Molybdenum | <0.2 | <0.2 | <0.2 | <0.2 | | | | | | | <0.2 | ug/l | TM30/PM14 |
| Dissolved Nickel | 1.7 | 9.3 | 10.7 | 0.8 | | | | | | | <0.2 | ug/l | TM30/PM14 |
| Dissolved Selenium | <1.2 | <1.2 | <1.2 | <1.2 | | | | | | | <1.2 | ug/l | TM30/PM14 |
| Dissolved Zinc | 10.8 | 6.4 | 2.4 | 5.2 | | | | | | | <1.5 | ug/l | TM30/PM14 |
| Mercury Dissolved by CVAF | <0.01 | <0.01 | <0.01 | <0.01 | | | | | | | <0.01 | ug/l | TM61/PM38 |
| Total Hardness Dissolved (as CaCO3) | $975_{AA}$ | $1138_{AA}$ | 710 | $889_{AA}$ | | | | | | | <1 | mg/l | TM30/PM14 |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene | 1.0 | 7.1 | 33.7 | 7.1 | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Acenaphthylene | 0.02 | 0.07 | 0.04 | 0.06 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Acenaphthene | 1.66 | 1.40 | 3.19 | 2.04 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluorene | 1.09 | 0.86 | 1.67 | 0.92 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Phenanthrene | 0.61 | 1.20 | 2.40 | 0.75 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Anthracene | 0.13 | 0.23 | 0.27 | 0.09 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Fluoranthene | 0.10 | 0.21 | 0.52 | 0.08 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Pyrene | 0.06 | 0.13 | 0.30 | 0.07 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)anthracene | <0.01 | 0.02 | 0.05 | <0.01 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Chrysene | 0.01 | 0.03 | 0.04 | <0.01 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(bk)fluoranthene | <0.01 | <0.01 | 0.03 | <0.01 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(a)pyrene | <0.01 | <0.01 | 0.01 | <0.01 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Indeno(123cd)pyrene | <0.01 | <0.01 | <0.01 | <0.01 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Dibenzo(ah)anthracene | <0.01 | <0.01 | <0.01 | <0.01 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(ghi)perylene | <0.01 | <0.01 | <0.01 | <0.01 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH 16 Total | 4.7 | 11.3 | 42.2 | 11.1 | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Benzo(b)fluoranthene | <0.01 | <0.01 | 0.02 | <0.01 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(k)fluoranthene | <0.01 | <0.01 | <0.01 | <0.01 | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH Surrogate % Recovery | 78 | 75 | 85 | 70 | | | | | | | <0 | % | TM4/PM30 |
| Methyl Tertiary Butyl Ether | <0.1 | 0.3 | 0.3 | 0.1 | | | | | | | <0.1 | ug/l | TM15/PM10 |
| Benzene | 7.3 | 7.4 | 2.4 | 1.4 | | | | | | | <0.5 | ug/l | TM15/PM10 |
| Toluene | <5 | <5 | <5 | <5 | | | | | | | <5 | ug/l | TM15/PM10 |
| Ethylbenzene | <1 | 3 | <1 | 1 | | | | | | | <1 | ug/l | TM15/PM10 |
| p/m-Xylene | <2 | 9 | 2 | 4 | | | | | | | <2 | ug/l | TM15/PM10 |
| o-Xylene | <1 | 2 | 1 | <1 | | | | | | | <1 | ug/l | TM15/PM10 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Nick Brown
**JE Job No.:** 17/10227

**Report : Liquid**

**Liquids/products:** V=40ml vial, G=glass bottle, P=plastic bottle
H=$H_2SO_4$, Z=ZnAc, N=NaOH, HN=$HNO_3$

| J E Sample No. | 47-53 | 54-60 | 61-67 | 68-74 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | CP05 | CP04 | CP01 (S) | CP06 | | | | | | | | | |
| Depth | 7.5 | 7.5 | 8.0 | 8.0 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V H HN N P G | V H HN N P G | V H HN N P G | V H HN N P G | | | | | | | | | |
| Sample Date | 15/06/2017 | 15/06/2017 | 15/06/2017 | 15/06/2017 | | | | | | | | | |
| Sample Type | Liquid | Liquid | Liquid | Liquid | | | | | | | | | |
| Batch Number | 2 | 2 | 2 | 2 | | | | | | | | | |
| Date of Receipt | 17/06/2017 | 17/06/2017 | 17/06/2017 | 17/06/2017 | | | | | | | | | |
| Surrogate Recovery Toluene D8 | 98 | 97 | 97 | 97 | | | | | | | <0 | % | TM15/PM10 |
| Surrogate Recovery 4-Bromofluorobenzene | 97 | 98 | 97 | 97 | | | | | | | <0 | % | TM15/PM10 |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 | <10 | 21 | <10 | <10 | | | | | | | <10 | ug/l | TM36/PM12 |
| >C6-C8 | <10 | 40 | <10 | <10 | | | | | | | <10 | ug/l | TM36/PM12 |
| >C8-C10 | 16 | 40 | 13 | 34 | | | | | | | <10 | ug/l | TM36/PM12 |
| >C10-C12 | <5 | <5 | <5 | <5 | | | | | | | <5 | ug/l | TM5/PM30 |
| >C12-C16 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM5/PM30 |
| >C16-C21 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM5/PM30 |
| >C21-C35 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aliphatics C5-35 | 16 | 101 | 13 | 34 | | | | | | | <10 | ug/l | |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM36/PM12 |
| >EC7-EC8 | <10 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM36/PM12 |
| >EC8-EC10 | <10 | 24 | <10 | 13 | | | | | | | <10 | ug/l | TM36/PM12 |
| >EC10-EC12 | 27 | 37 | <5 | 37 | | | | | | | <5 | ug/l | TM5/PM30 |
| >EC12-EC16 | <10 | 40 | <10 | <10 | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC16-EC21 | 70 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM5/PM30 |
| >EC21-EC35 | 130 | <10 | <10 | <10 | | | | | | | <10 | ug/l | TM5/PM30 |
| Total aromatics C5-35 | 227 | 101 | <10 | 50 | | | | | | | <10 | ug/l | |
| Total aliphatics and aromatics(C5-35) | 243 | 202 | 13 | 84 | | | | | | | <10 | ug/l | |
| Phenol | <0.5 | <0.5 | <0.5 | <0.5 | | | | | | | <0.5 | ug/l | TM26/PM0 |
| Sulphate as SO4 | <0.5 | <0.5 | <0.5 | <0.5 | | | | | | | <0.5 | mg/l | TM38/PM0 |
| Chloride | 312.1 | 1291.4 | 1242.9 | 214.2 | | | | | | | <0.3 | mg/l | TM38/PM0 |
| Nitrate as NO3 | <0.2 | <0.2 | <0.2 | <0.2 | | | | | | | <0.2 | mg/l | TM38/PM0 |
| Nitrite as NO2 | <0.02 | <0.02 | <0.02 | <0.02 | | | | | | | <0.02 | mg/l | TM38/PM0 |
| Total Cyanide | 2 | 3 | 3 | <1 | | | | | | | <1 | ug/l | TM89/PM0 |
| Ammoniacal Nitrogen as NH3 | 116.66 | 186.80 | 506.03 | 105.13 | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH4 | 123.57 | 197.86 | 535.99 | 111.36 | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Total Alkalinity as CaCO3 | 1454 | 1446 | 2346 | 1318 | | | | | | | <1 | mg/l | TM75/PM0 |
| Dissolved Organic Carbon | 33 | 112 | 109 | 25 | | | | | | | <2 | mg/l | TM60/PM0 |
| pH | 6.91 | 6.82 | 7.11 | 6.92 | | | | | | | <0.01 | pH units | TM73/PM0 |

Please see attached notes for all abbreviations and acronyms

DRAFT

**Client Name:** WYG
**Reference:** A102760
**Location:** Brockhampton West
**Contact:** Nick Brown

| J E Job No. | Batch | Sample ID | Depth | J E Sample No. | Analysis | Reason |
|---|---|---|---|---|---|---|
| No deviating sample report results for job 17/10227 | | | | | | |

DRAFT

**Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.**
**Only analyses which are accredited are recorded as deviating if set criteria are not met.**

# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***JE Job No.:*** 17/10227

## SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

## WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

## DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

## SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

## DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS) accredited - UK. |
| SA | ISO17025 (SANAS) accredited - South Africa. |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| ++ | Result outside calibration range, results should be considered as indicative only and are not accredited. |
| * | Analysis subcontracted to a Jones Environmental approved laboratory. |
| AD | Samples are dried at 35°C ±5°C |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |
| AA | x5 Dilution |

DRAFT

**JE Job No:** 17/10227

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM4 | Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | | |
| TM5 | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | | | | |
| TM5/TM36 | TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID.<br>TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID, including determination of | PM30/PM12 | CWG GC-FID | | | | |
| TM15 | Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS. | PM10 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | | | | |
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM0 | No preparation is required. | | | | |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009 | PM14 | Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | | | | |
| TM36 | Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis. | | | | |
| TM38 | Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | PM0 | No preparation is required. | | | | |
| TM60 | Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR). | PM0 | No preparation is required. | | | | |
| TM61 | Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence. | PM38 | Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061. | | | | |

DRAFT

**JE Job No:** 17/10227

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM73 | Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser. | PM0 | No preparation is required. | | | | |
| TM75 | Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser. | PM0 | No preparation is required. | | | | |
| TM89 | Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PM0 | No preparation is required. | | | | |
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# Appendix H – Landfill Forensic Testing Results

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Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel; 0161 368 4921
Fax; 0161 368 5827

**Quote ref:** **P-17-0267**
Date: 05/05/17
Client: White Young Green
Contact: Nick Brown & Alice Hayton
Number: 0207 250 7500
e-mail: -
Site Ref: Portsmouth

| Analysis | Rate nett (£) | T/A | Surcharge (%) | Rate incl Surcharge nett (£) | Quantity | Total (£) |
|---|---|---|---|---|---|---|
| **Soil** | | | | | | |
| Basic Forensic Description Suite - up to 1kg | 25.50 | 10 | - | - | 30 | 765.00 |
| Additional Forensic Description TOC | 5.00 | 10 | - | - | r/o | |
| Additional Forensic Description combined TOC calculation | 10.00 | - | - | - | r/o | |
| Additional Forensic Description Sorting of sample per kg | 5.00 | - | - | - | r/o | |
| | | | | | | |
| Sample disposal | 1.00 | - | - | - | 30 | 30.00 |
| | | | | **Grand Total (nett)** | | **£795.00** |

**Envirolab's minimum analysis charge is £50.00**

Should this contract be awarded to Envirolab, Envirolab have assumed you will be the company that invoices should be addressed to and payable by.

Costs, accreditation status and LODs for analyses outside the scope of this proposal will be detailed on your Standard Rates document where appropriate.

Compiled by:

[redacted]

Laura Brown
Sales Executive

Authorised by:

[redacted]

Sarah Rummens
Sales Director

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| Analysis | Method | LOD | Accreditation | | Holding Time (days) |
|---|---|---|---|---|---|
| | | | UKAS (ISO17025) | MCERTS | |
| **Basic Forensic Description Suite** | | | | | |
| | | | | | |
| **Forensic description sample prep** | | | | | |
| % of total sample weight | Calc | 0.1% w/w | N | N | |
| | | | | | |
| **Additional Forensic Description TOC** | | | | | |
| | | | | | |
| **Total Organic Carbon (Forensic Description)** | | | | | |
| % Moisture at 40C | Stones & moisture | 0.1% w/w | N | N | |
| Total Organic Carbon (Forensic Description) | Combustion IR | 0.03% w/w | Y | N | |
| | | | | | |
| **Additional Forensic Description combined TOC calculation** | | | | | |
| Sorting of sample (Forensic Description) 1st kg | | | N | | |
| | | | | | |
| **Additional Forensic Description Sorting of sample per kg** | | | | | |
| Sorting of sample (Forensic Description) Additional kgs | | | N | | |

**Key**
P - Partial

Y - Yes
N - No

Pend - Pending

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# Notes

**Invoicing**

For clients without a payment history full payment may be requested prior to commencement of the first project or before results are released. Following the first project, and receipt of satisfactory credit references, a credit account may be opened for future projects.
A purchase order must be supplied prior to work commencing along with instructions as to how our invoice is to be addressed.
Envirolab reserve the right to apply a £50 minimum analysis charge per Envirolab project, unless otherwise agreed.
Mainland UK courier deliveries will be charged at £20, unless otherwise agreed.
Mainland UK courier collections will be charged at £30, unless otherwise agreed.
Containers will be supplied and delivered free of charge but disposal and any courier costs incurred will be charged for samples placed on hold and then not scheduled for analysis. Current charges are £1 per sample for disposal and £15 for the first box and £5 for each subsequent box collected by our courier.
Envirolab reserve the right to charge for failed or cancelled pickups.
Envirolab reserves the right to charge for subsampling or sample amalgamation when required or requested (charges to be agreed prior to work).
Non-mainland UK couriers will be charged at cost + 10% if arranged by Envirolab.
A sample disposal fee of £1.00 per sample will be applied for all sample types, even if not tested.
Please note that reporting costs do not include the supply of chromatograms. These can be supplied at an additional charge of £2.00 per sample.
Envirolab reserve the right to apply additional administration charges for re-issued report requests or for the supply of QA data of £25.00 per project, unless otherwise agreed.
Payment terms are strictly 30 days nett. Failure to observe this condition may result in loss of any discount previously agreed.

**Turnaround times and surcharges**

All samples should be accompanied with a completed Chain of Custody Form or a Chemical Analysis Schedule; samples will only be scheduled with written instructions.
The date of receipt of samples is day one if samples arrive, with clear instructions, before noon.
Standard turnaround for general chemical analysis is 10 working days, unless agreed otherwise.
Turnaround times may be longer than 10 working days for unusual or less frequently requested analysis.
Faster turnarounds maybe available at a premium but must be confirmed with the laboratory prior to submission of the samples.
9 day turnaround will be surcharged at 5% unless otherwise agreed.
8 day turnaround will be surcharged at 10% unless otherwise agreed.
7 day turnaround will be surcharged at 15% unless otherwise agreed.
6 day turnaround will be surcharged at 20% unless otherwise agreed.
5 day turnaround will be surcharged at 25% unless otherwise agreed.
4 day turnaround will be surcharged at 35% unless otherwise agreed.
3 day turnaround will be surcharged at 50% unless otherwise agreed.
Next day turnaround will be surcharged at 100% unless otherwise agreed.
Same day turnaround will be surcharged at 200% unless otherwise agreed.
Turnaround times are quoted on a best endeavours basis.
Surcharges will be applied to data that is sent before 9am the day following the agreed due date. A reduced surcharge may be applied if the majority of data is supplied within the specified turnaround.

**Sample containers, couriers and storage**

For sample containers, please contact ask@envlab.co.uk. Requests received before noon can normally be dispatched to within the UK that day.
Envirolab recommend that clients organise their own overseas couriers back to Envirolab, UK.
For next day mainland UK courier collections to return samples to Envirolab, please contact your Client Manager or ask@envlab.co.uk before noon on the day of collection.
Bottles and jars should be placed upright in coolboxes and water bottles should not be stacked on top of one another.
Wrap bottles and jars individually with bubble wrap or bubble bags and pack any voids with adequate packing (bubble wrap, shredded paper or cardboard) to minimise movement while in transit to the laboratory and secure box lids with tape. Frozen ice packs will assist in reducing sample temperature from ambient.
Envirolab cannot accept responsibility for samples damaged whilst in transit to the laboratory.
If sufficient sample is received a sub sample will be retained free of charge for one month after our report date.
If Envirolab are instructed to extend the storage period, a storage charge of £1 per sample per month may be applied for each month or part thereof.

**General**

All rates are in £ sterling - UK, unless specified, and exclude VAT.
Costs, accreditation status and LODs for analyses outside the scope of this proposal will be detailed on your Standard Rates document where appropriate.
The information contained in our proposal is confidential and is the intellectual property of Envirolab Limited, and cannot be used for anything other than the purpose for which it is requested, without the prior written agreement of Envirolab Limited.
Our standard terms and conditions apply and will be supplied on request.
Quotations are valid for 30 days unless otherwise stated.
Quoted LODs (limits of detection) and accreditation status (MCertS and/or BS EN 17025) may not always be achievable due to circumstances beyond our control.
Please advise us if our limits of detection are not appropriate for your critical levels of interest (ie guidelines etc that you are working to).
As part of ongoing quality control review, validation and performance testing of methodologies, LODs may be amended without notice.
Clients must inform Envirolab in writing of any known or potential safety risk associated with any batch of samples, eg asbestos, anthrax, explosives, radiological etc.
If asbestos is suspected, further preparation and analysis will be suspended on that sample until the asbestos ID result is known.
Asbestos in soil analysis is performed on an aliquot of the submitted sample and cannot guarantee to identify asbestos if present at low concentrations or as discrete fibres/fragments.
Final analytical reports are issued in pdf, Excel and AGS formats. Hardcopy reports can be included upon request.
Data will be stored for six years and will then destroyed unless a previous agreement has been made in writing.
All accreditation details refer to our UKAS schedule at the time of issuing and may be subject to change.
A table containing the date of analysis for each parameter is not routinely included with the report but is available on request.
MCertS validation has been carried out for sand, loam and clay, unless otherwise stated.
Metals analysis on soils is performed with an aqua regia digest and, on waters and prepared leachates, is performed after filtration through a 0.45µm filter.
Tests marked with "*" are subcontracted.

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# Appendix I – Geotechnical Testing Results

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# LABORATORY REPORT

4043

**Contract Number: PSL17/2446**

Report Date: 14 June 2017

Client's Reference: A102760

Client Name: WYG London
100 St John Street
London
EC1M 4EH

**For the attention of: Alice Hayton**

Contract Title: Brockhampton West

Date Received: 24/5/2017
Date Commenced: 24/5/2017
Date Completed: 14/6/2017

**Notes: Opinions and Interpretations are outside the UKAS Accreditation**

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

| | | |
|---|---|---|
| R Gunson (Director) | A Watkins (Director) | R Berriman (Quality Manager) |
| L Knight (Senior Technician) | S Eyre (Senior Technician) | A Fry (Senior Technician) |



**5 – 7 Hexthorpe Road, Hexthorpe,**
**Doncaster DN4 0AR**
**tel: +44 (0)844 815 6641**
**fax: +44 (0)844 815 6642**
**e-mail: rgunson@prosoils.co.uk**
**awatkins@prosoils.co.uk**

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# SUMMARY OF LABORATORY SOIL DESCRIPTIONS

| Hole Number | Sample Number | Sample Type | Top Depth m | Base Depth m | Description of Sample |
|---|---|---|---|---|---|
| CP01 | | B | 12.00 | 12.50 | Light brown very sandy slightly silty GRAVEL. |
| CP02A | | B | 9.50 | 10.00 | Brown mottled grey gravelly sandy CLAY. |
| CP02A | | D | 10.50 | 11.95 | Light brown slightly gravelly very sandy CLAY. |
| CP03 | | B | 9.00 | 9.50 | Light grey sandy clayey GRAVEL. |
| CP03 | | B | 12.00 | 12.50 | Light brown slightly sandy clayey GRAVEL. |
| CP03 | | B | 13.50 | 14.00 | Light grey slightly sandy clayey silty GRAVEL. |
| CP04 | | U | 8.20 | 8.65 | Soft brown slightly gravelly slightly sandy PEATY CLAY. |
| CP04 | | D | 9.20 | | Brown slightly gravelly slightly sandy CLAY. |
| CP05 | | D | 11.50 | 11.95 | Brown gravelly very sandy CLAY. |
| | | | | | |
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UKAS TESTING 4043

PSL Professional Soils Laboratory

Brockhampton West

Contract No: PSL17/2446

Client Ref: A102760

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# SUMMARY OF SOIL CLASSIFICATION TESTS

**(BS1377 : PART 2 : 1990)**

| Hole Number | Sample Number | Sample Type | Top Depth m | Base Depth m | Moisture Content % Clause 3.2 | Linear Shrinkage % Clause 6.5 | Particle Density $Mg/m^3$ Clause 8.2 | Liquid Limit % Clause 4.3/4 | Plastic Limit % Clause 5.3 | Plasticity Index % Clause 5.4 | Passing .425mm % | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CP02A | | B | 9.50 | 10.00 | 27 | | | 41 | 18 | 23 | 87 | Intermediate plasticity CI. |
| CP02A | | D | 10.50 | 11.95 | 22 | | | 26 | 17 | 9 | 93 | Low plasticity CL. |
| CP04 | | U | 8.20 | 8.65 | 48 | | | 88 | 38 | 50 | 91 | Very high plasticity CV. |
| CP04 | | D | 9.20 | | 26 | | | 76 | 31 | 45 | 93 | Very high plasticity CV. |
| CP05 | | D | 11.50 | 11.95 | 14 | | | 28 | 17 | 11 | 82 | Low plasticity CL. |
| | | | | | | | | | | | | |
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**SYMBOLS :** **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

**Brockhampton West**

**Contract No:**

**PSL17/2446**

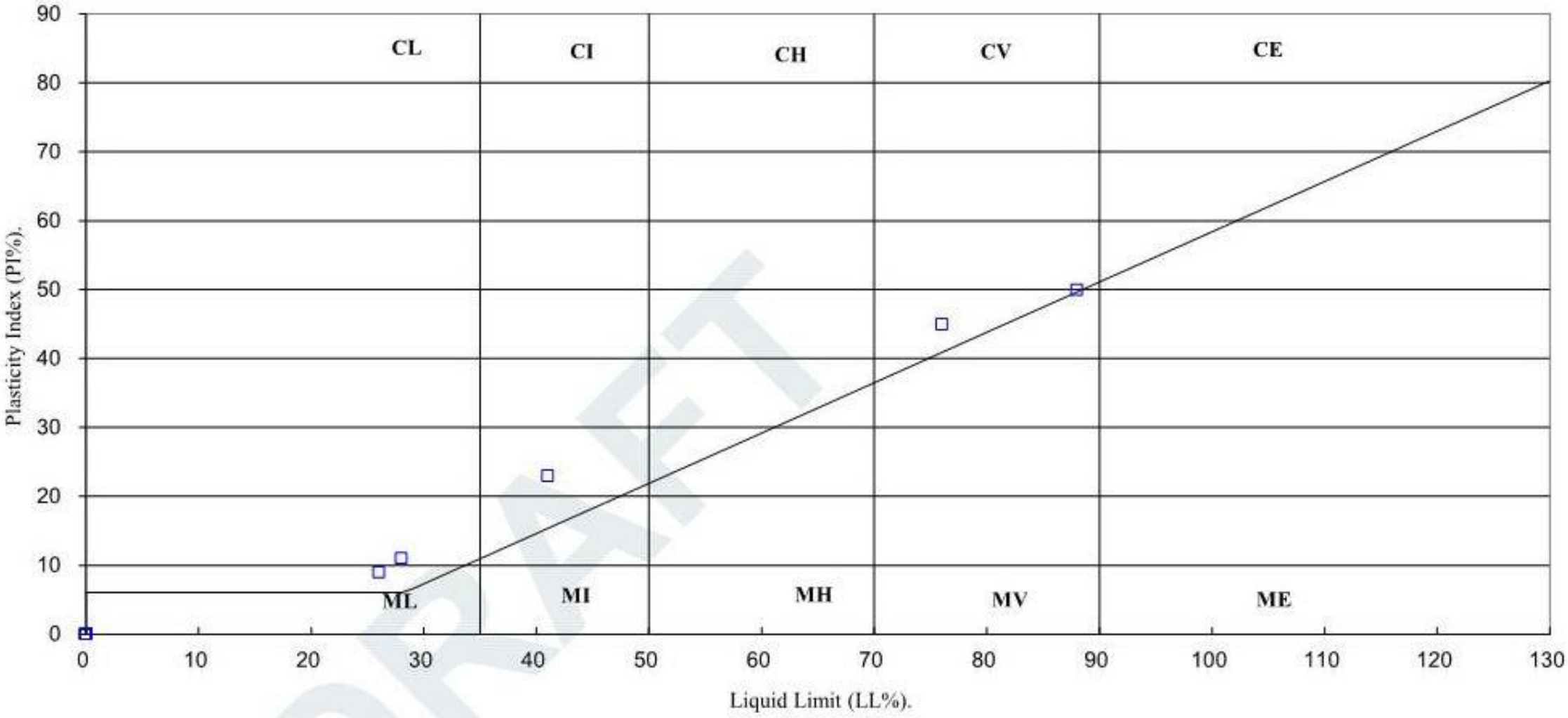
**Client Ref:**

**A102760**

DRAFT

# PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

**(BS5930 :2015)**




| | | | |
|---|---|---|---|
| UKAS TESTING 4043 | PSL Professional Soils Laboratory | Brockhampton West | Contract No: PSL17/2446 Client Ref: A102760 |

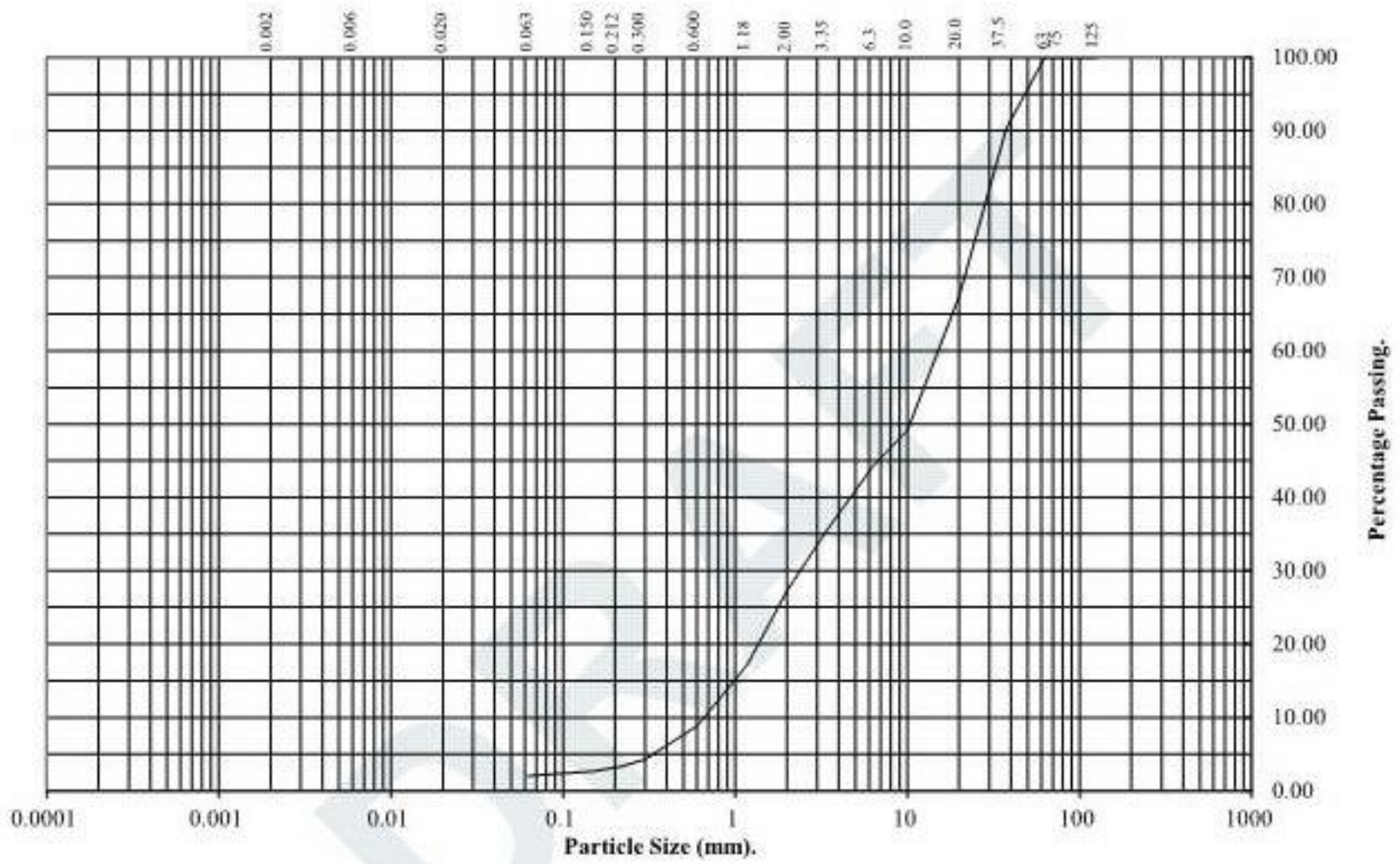
DRAFT

# PARTICLE SIZE DISTRIBUTION TEST

**BS1377 : Part 2 : 1990**

Wet Sieve, Clause 9.2

| | | | |
|---|---|---|---|
| **Hole Number:** | **CP01** | **Top Depth (m):** | **12.00** |
| **Sample Number:** | | **Base Depth(m):** | **12.50** |
| **Sample Type:** | **B** | | |




| BS Test Sieve | Percentage Passing |
|---|---|
| 125 | 100 |
| 75 | 100 |
| 63 | 100 |
| 37.5 | 90 |
| 20 | 67 |
| 10 | 49 |
| 6.3 | 44 |
| 3.35 | 35 |
| 2 | 27 |
| 1.18 | 17 |
| 0.6 | 9 |
| 0.3 | 4 |
| 0.212 | 3 |
| 0.15 | 3 |
| 0.063 | 2 |

| Soil Fraction | Total Percentage |
|---|---|
| Cobbles | 0 |
| Gravel | 73 |
| Sand | 25 |
| Silt/Clay | 2 |

**Remarks:**

UKAS TESTING 4043

PSL Professional Soils Laboratory

**Brockhampton West**

**Contract No:** PSL17/2446

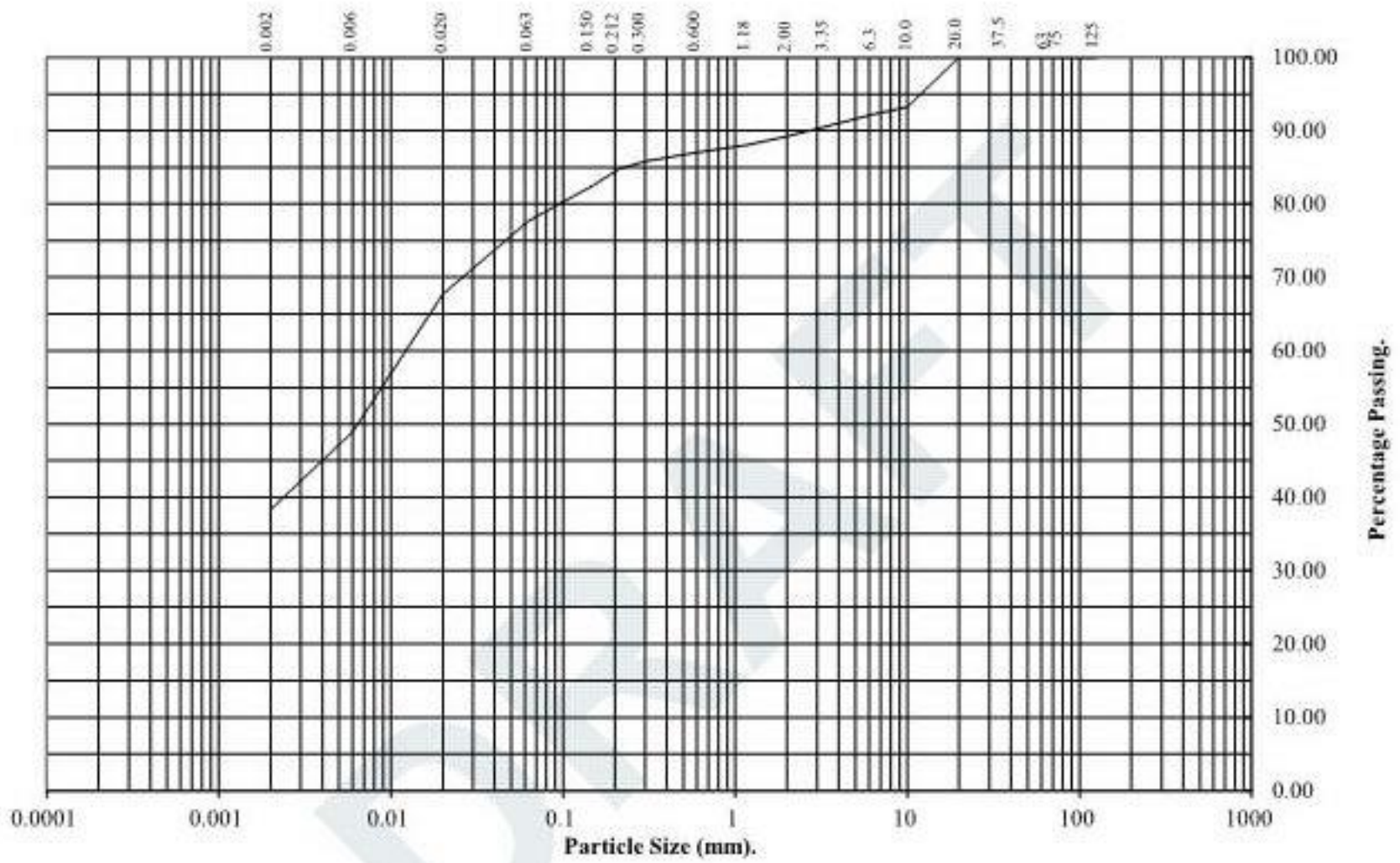
**Client Ref:** A102760

# PARTICLE SIZE DISTRIBUTION TEST

**BS1377 : Part 2 : 1990**

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

| | | | |
|---|---|---|---|
| **Hole Number:** | **CP02A** | **Top Depth (m):** | **9.50** |
| **Sample Number:** | | **Base Depth(m):** | **10.00** |
| **Sample Type:** | **B** | | |




| BS Test Sieve | Percentage Passing |
|---|---|
| 125 | 100 |
| 75 | 100 |
| 63 | 100 |
| 37.5 | 100 |
| 20 | 100 |
| 10 | 93 |
| 6.3 | 92 |
| 3.35 | 91 |
| 2 | 89 |
| 1.18 | 88 |
| 0.6 | 87 |
| 0.3 | 86 |
| 0.212 | 85 |
| 0.15 | 83 |
| 0.063 | 78 |

| Particle Diameter | Percentage Passing |
|---|---|
| 0.02 | 68 |
| 0.006 | 49 |
| 0.002 | 38 |

| Soil Fraction | Total Percentage |
|---|---|
| Cobbles | 0 |
| Gravel | 11 |
| Sand | 11 |
| Silt | 40 |
| Clay | 38 |

**Remarks:**

UKAS TESTING 4043

PSL Professional Soils Laboratory

**Brockhampton West**

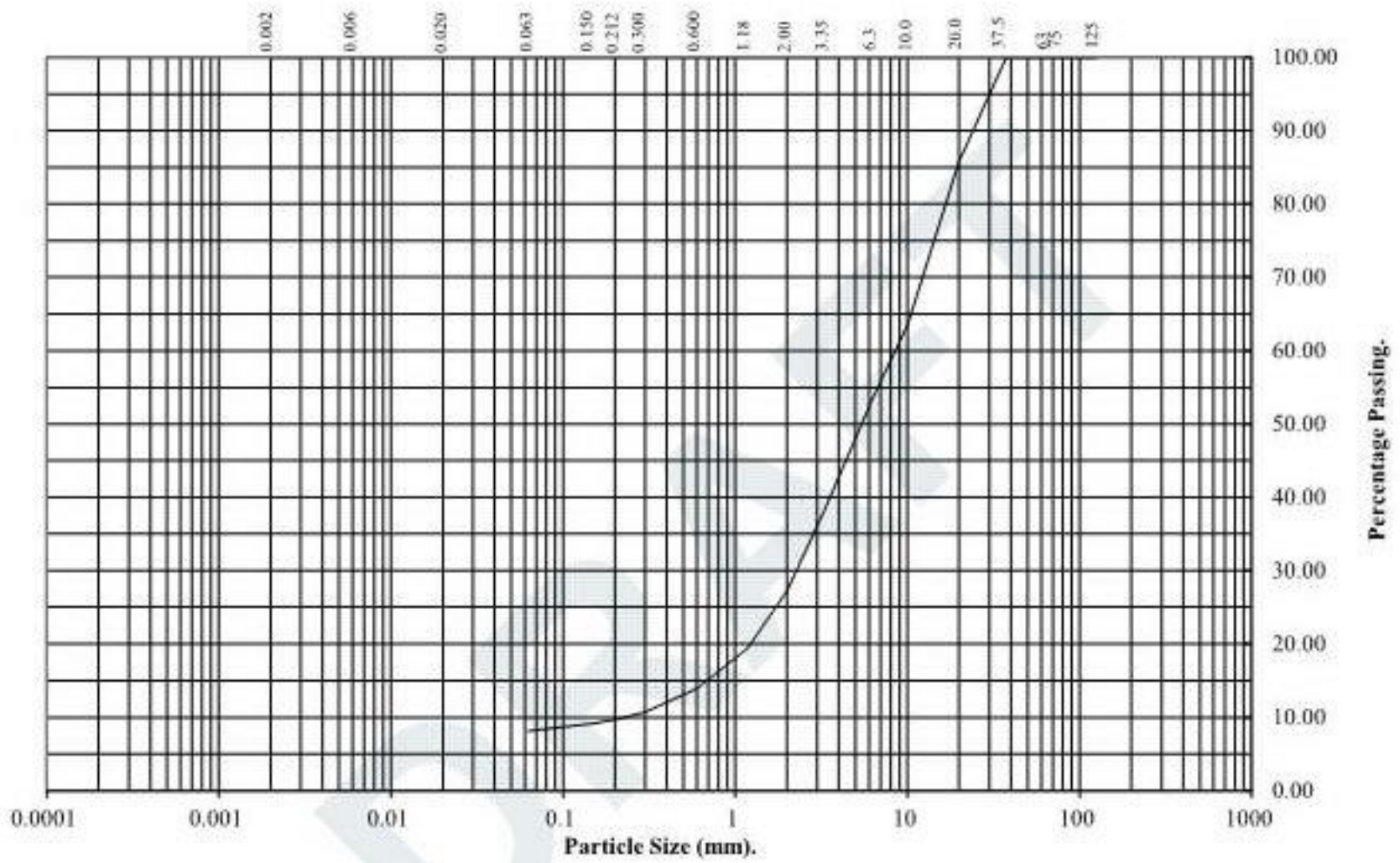
| **Contract No:** |
|---|
| **PSL17/2446** |
| **Client Ref:** |
| **A102760** |

# PARTICLE SIZE DISTRIBUTION TEST

**BS1377 : Part 2 : 1990**

Wet Sieve, Clause 9.2

| | | | |
|---|---|---|---|
| **Hole Number:** | **CP03** | **Top Depth (m):** | **9.00** |
| **Sample Number:** | | **Base Depth(m):** | **9.50** |
| **Sample Type:** | **B** | | |




| BS Test Sieve | Percentage Passing |
|---|---|
| 125 | 100 |
| 75 | 100 |
| 63 | 100 |
| 37.5 | 100 |
| 20 | 86 |
| 10 | 63 |
| 6.3 | 53 |
| 3.35 | 39 |
| 2 | 27 |
| 1.18 | 19 |
| 0.6 | 14 |
| 0.3 | 11 |
| 0.212 | 10 |
| 0.15 | 9 |
| 0.063 | 8 |

| Soil Fraction | Total Percentage |
|---|---|
| Cobbles | 0 |
| Gravel | 73 |
| Sand | 19 |
| Silt/Clay | 8 |

**Remarks:**

UKAS TESTING 4043

PSL Professional Soils Laboratory

**Brockhampton West**

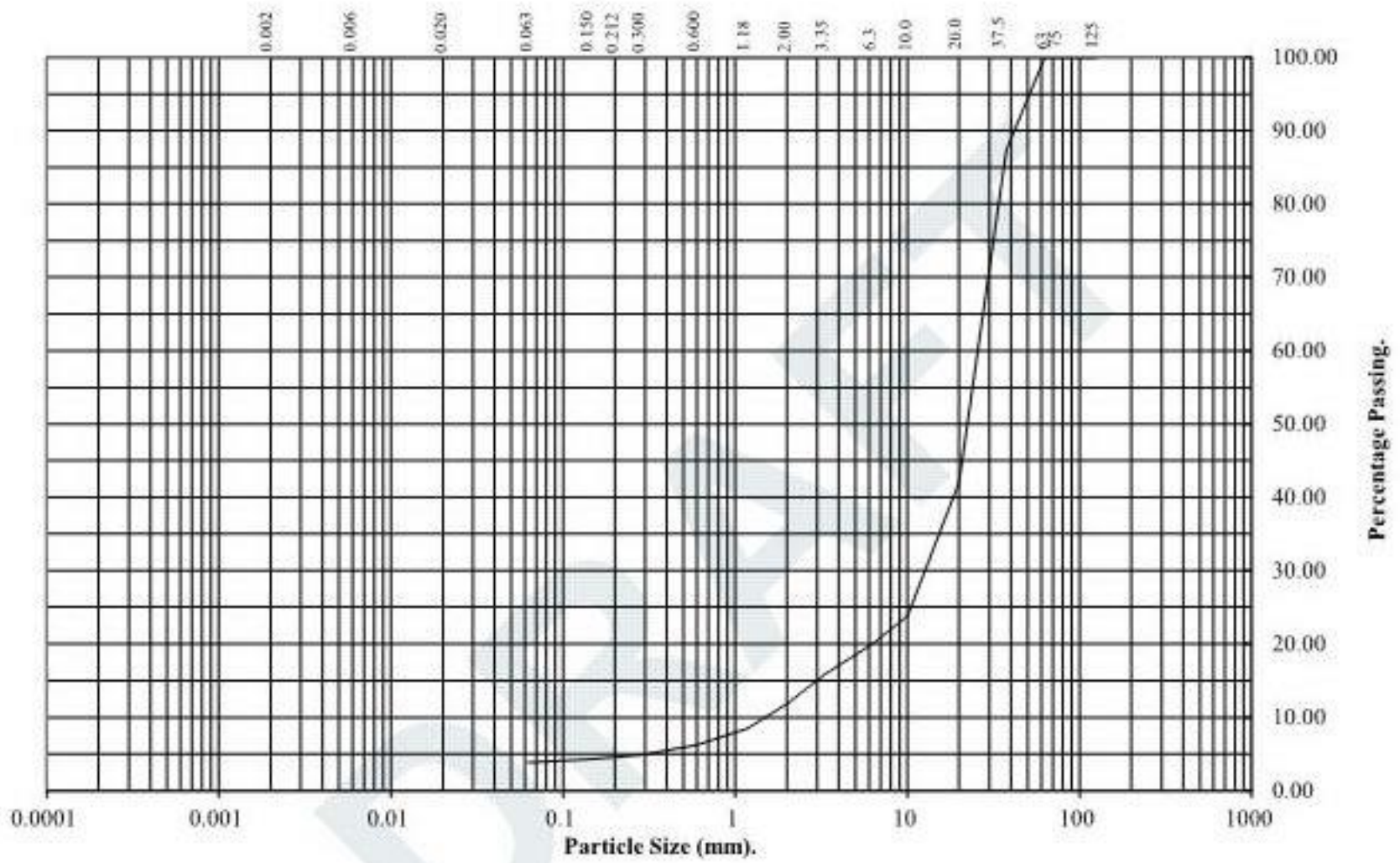
| **Contract No:** |
|---|
| **PSL17/2446** |
| **Client Ref:** |
| **A102760** |

# PARTICLE SIZE DISTRIBUTION TEST

**BS1377 : Part 2 : 1990**

Wet Sieve, Clause 9.2

| | | | |
|---|---|---|---|
| **Hole Number:** | **CP03** | **Top Depth (m):** | **12.00** |
| **Sample Number:** | | **Base Depth(m):** | **12.50** |
| **Sample Type:** | **B** | | |




| BS Test Sieve | Percentage Passing |
|---|---|
| 125 | 100 |
| 75 | 100 |
| 63 | 100 |
| 37.5 | 87 |
| 20 | 42 |
| 10 | 24 |
| 6.3 | 20 |
| 3.35 | 16 |
| 2 | 12 |
| 1.18 | 8 |
| 0.6 | 6 |
| 0.3 | 5 |
| 0.212 | 5 |
| 0.15 | 4 |
| 0.063 | 4 |

| Soil Fraction | Total Percentage |
|---|---|
| Cobbles | 0 |
| Gravel | 88 |
| Sand | 8 |
| Silt/Clay | 4 |

**Remarks:**

UKAS TESTING 4043

PSL Professional Soils Laboratory

**Brockhampton West**

**Contract No:** PSL17/2446

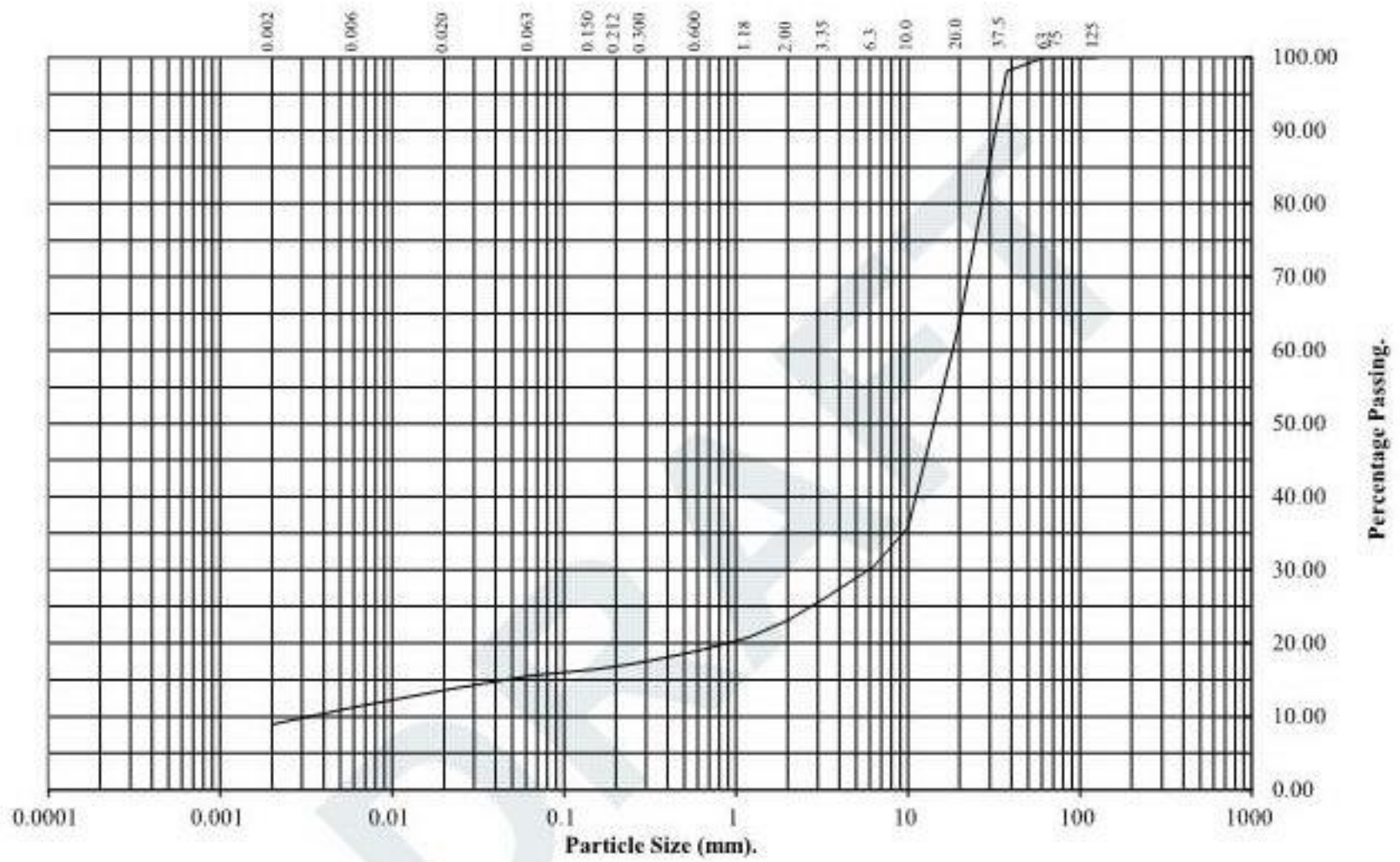
**Client Ref:** A102760

# PARTICLE SIZE DISTRIBUTION TEST

**BS1377 : Part 2 : 1990**

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

| | | | |
|---|---|---|---|
| **Hole Number:** | **CP03** | **Top Depth (m):** | **13.50** |
| **Sample Number:** | | **Base Depth(m):** | **14.00** |
| **Sample Type:** | **B** | | |




| BS Test Sieve | Percentage Passing |
|---|---|
| 125 | 100 |
| 75 | 100 |
| 63 | 100 |
| 37.5 | 98 |
| 20 | 64 |
| 10 | 36 |
| 6.3 | 30 |
| 3.35 | 26 |
| 2 | 23 |
| 1.18 | 21 |
| 0.6 | 19 |
| 0.3 | 17 |
| 0.212 | 17 |
| 0.15 | 16 |
| 0.063 | 16 |

| Particle Diameter | Percentage Passing |
|---|---|
| 0.02 | 14 |
| 0.006 | 11 |
| 0.002 | 9 |

| Soil Fraction | Total Percentage |
|---|---|
| Cobbles | 0 |
| Gravel | 77 |
| Sand | 7 |
| Silt | 7 |
| Clay | 9 |

**Remarks:**

UKAS TESTING 4043

PSL Professional Soils Laboratory

**Brockhampton West**

**Contract No:** PSL17/2446

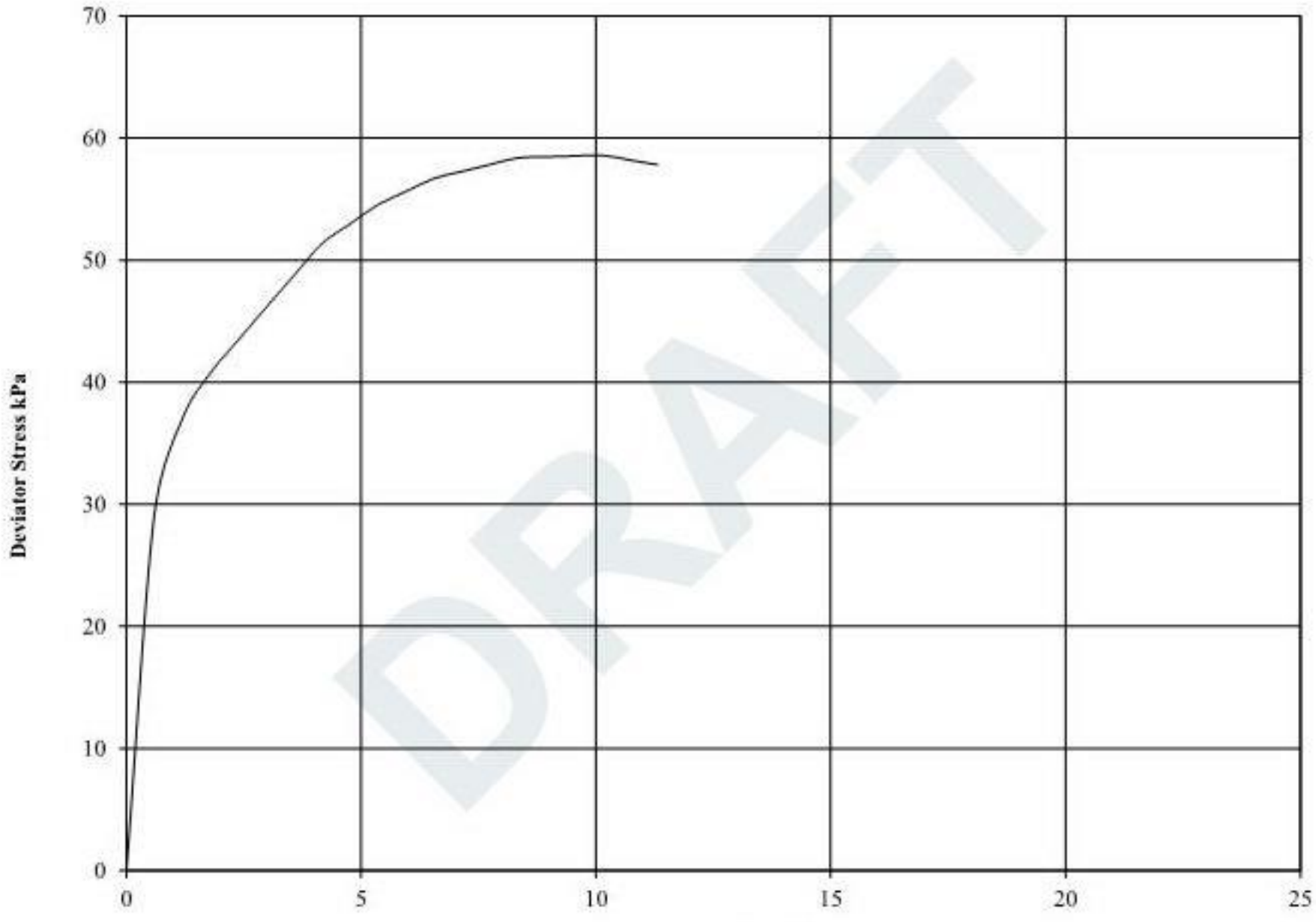
**Client Ref:** A102760

# UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

## WITHOUT MEASUREMENT OF PORE PRESSURE

**BS1377 : Part7 : 1990: Clause 8**

| | | | |
|---|---|---|---|
| **Hole Number:** | **CP04** | **Top Depth (m):** | **8.20** |
| **Sample Number:** | | **Base Depth (m):** | **8.65** |
| **Sample Type** | **U** | | |




| Diameter (mm): | | 100.0 | Height (mm): | | 168.0 | Test: | UU Single Stage | | Remarks: |
|---|---|---|---|---|---|---|---|---|---|
| Specimen | Moisture Content (%) | Bulk Density (Mg/m3) | Dry Density (Mg/m3) | Cell Pressure (kPa) $\theta_3$ | Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$ | Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$ | Failure Strain (%) | Mode of Failure | Undisturbed Sample<br>Sample taken from top of tube<br>Rate of strain = 2 %/min<br>Latex Membrane used 0.2 mm thick,<br>Correction applied 0.36 |
| 1 | 48 | 1.66 | 1.12 | 164 | 59 | 29 | 10.1 | Plastic | See summary of soil descriptions |

UKAS TESTING 4043

PSL Professional Soils Laboratory

**Brockhampton West**

| **Contract No:** |
|---|
| **PSL17/2446** |
| **Client Ref:** |
| **A102760** |

# Appendix J – Tier 1 Screening Sheets - Soil

DRAFT

**Project - A102760**
**Brickhampton West**

**Screening Against Public Open Space (Park)**

| | | Min | Max | TSV POS Park | Date Sampled | 02/05/2017 | 02/05/2017 | 03/05/2017 | 04/05/2017 | 04/05/2017 | 04/05/2017 | 08/05/2017 | 08/05/2017 | 08/05/2017 | 08/05/2017 | 08/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Lab Ref. No: | 17/7894 R1 | 17/7894 R1 | 17/7894 R2 | 17/7894 R3 | 17/7894 R3 | 17/7894 R3 | 17/7894 R4 | 17/7894 R4 | 17/7894 R4 | 17/7894 R4 | 17/7894 R5 | 17/7894 R5 | 17/7894 R5 | 17/7894 R5 |
| | | | | | Customer Ref. No. | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 |
| | | | | | Sample Type | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil |
| | | | | | Trial Pit / Borehole No. | CP05 | CP01 | CP01 | CP02A | CP02A | CP02A | CP02A | CP05 | CP05 | CP05 | TP01 | TP01 | TP01 | TP15 |
| | | | | | Depth (m) | 0.05 | 7.00 | 15.00 | 0.75 | 4.50 | 7.00 | 20.00 | 0.20 | 4.20 | 8.50 | 0.30 | 1.90 | 3.40 | 2.50 |
| | | | | | Exceedances | | | | | | | | | | | | | | |
| pH | Value | 5.92 | 8.6 | <5, >9 | 0 | 8.57 | 8.23 | 8.6 | 8.45 | 7.7 | 7.8 | 8.49 | 8.38 | 7.62 | 7.7 | 8.47 | 7.64 | 8.07 | 7.58 |
| Asbestos Containing Material Screen | Y/N | | | N | | N | N | N | N | | | N | N | | | N | N | | |
| Fraction of Organic Carbon | None | 0.0007 | 0.085 | | | 0.005 | 0.004 | 0.0007 | 0.005 | ndp | ndp | 0.007 | 0.025 | ndp | ndp | 0.004 | 0.085 | ndp | ndp |
| Total Organic Matter | % | 0.12069 | 14.6552 | | | 0.86 | 0.69 | 0.12 | 0.86 | | | 1.21 | 4.31 | | | 0.69 | 14.66 | | |
| **PHENOLICS** | | | | | | | | | | | | | | | | | | | |
| Phenol | mg/kg | 0.02 | 3.23 | 440 | 0 | <0.03 | 0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | 1.82 | <0.03 | 0.39 | 0.04 | 0.04 |
| **HEAVY METALS/METALLOIDS** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | 0.8 | 32.4 | 170 | 0 | 5 | 9.6 | 1.5 | 5 | 12.3 | 7.1 | 0.8 | 6.1 | 8.4 | 9.1 | 9.6 | 9.6 | 16.6 | 6.3 |
| Beryllium | mg/kg | 0.6 | 2.7 | 63 | 0 | <0.5 | 1 | <0.5 | <0.5 | 0.9 | 0.8 | <0.5 | 0.6 | 0.8 | 1.2 | 0.9 | 1 | 1.3 | <0.5 |
| Boron | mg/kg | 0.1 | 10.2 | 46,000 | 0 | | | | 1.1 | 1.7 | 4.2 | 0.2 | 0.8 | 1.3 | 2.3 | 0.7 | 2.6 | 3.1 | 0.8 |
| Cadmium | mg/kg | 0.2 | 30.6 | 800 | 0 | 0.2 | 0.4 | 0.3 | 0.5 | 0.9 | 1.9 | 0.3 | 0.5 | 25.2 | 30.6 | <0.1 | 12.2 | 1.3 | 6.8 |
| Chromium (III) | mg/kg | 5.1 | 236.1 | 33000 | 0 | 43.3 | 57.3 | 7.1 | 22.9 | 61.6 | 36.1 | 5.1 | 71.3 | 75.2 | 93.6 | 61.8 | 64.4 | 32.3 | 25 |
| Chromium (VI) | mg/kg | 0.9 | 0.9 | 250 | 0 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Copper | mg/kg | 2 | 3521 | 44000 | 0 | 6 | 17 | 2 | 12 | 178 | 52 | 2 | 18 | 17 | 38 | 10 | 138 | 77 | 29 |
| Lead | mg/kg | 6 | 1063 | 1300 | 0 | 34 | 167 | <6 | 37 | 168 | 184 | <6 | 34 | 89 | 110 | 25 | 108 | 181 | 306 |
| Mercury (Inorganic) | mg/kg | 0.1 | 1.5 | 340 | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.4 |
| Nickel | mg/kg | 3.2 | 448.3 | 800 | 0 | 7.6 | 17.9 | 5.5 | 11.3 | 46.1 | 21.7 | 3.2 | 13.2 | 33.9 | 38.8 | 11.4 | 96.2 | 26.4 | 11.2 |
| Selenium | mg/kg | 1 | 6 | 1800 | 0 | <1 | <1 | 1 | <1 | <1 | 1 | <1 | 1 | <1 | <1 | <1 | 4 | <1 | <1 |
| Vanadium | mg/kg | 2 | 93 | 5000 | 0 | 23 | 50 | 3 | 28 | 51 | 74 | 2 | 30 | 34 | 43 | 41 | 37 | 42 | 24 |
| Zinc | mg/kg | 8 | 3837 | 170000 | 0 | 29 | 92 | 15 | 88 | 517 | 389 | 9 | 66 | 214 | 678 | 43 | 516 | 243 | 227 |
| **US EPA PRIORITY PAH's** | | | | | | | | | | | | | | | | | | | |
| Acenaphthene | mg/kg | 0.08 | 15.99 | 29,000 | 0 | <0.08 | 0.38 | <0.08 | <0.08 | 1.41 | 15.99 | <0.08 | <0.08 | <0.08 | <0.08 | <0.08 | 0.32 | 1.24 | 1.75 |
| Acenaphthylene | mg/kg | 0.03 | 3.94 | 29,000 | 0 | <0.03 | 0.05 | <0.03 | 0.03 | <0.03 | <0.03 | <0.03 | 0.14 | <0.03 | <0.03 | <0.03 | 0.09 | <0.03 | 0.51 |
| Anthracene | mg/kg | 0.06 | 18.62 | 150,000 | 0 | <0.04 | 0.24 | <0.04 | 0.27 | 0.86 | 9.79 | <0.04 | 0.3 | <0.04 | <0.04 | <0.04 | 0.49 | 0.64 | 1.55 |
| Benzo(a)Anthracene | mg/kg | 0.09 | 30.8 | 49 | 0 | <0.09 | 0.37 | <0.09 | 0.43 | 8.6 | 4.37 | <0.09 | 1.18 | 0.09 | <0.09 | <0.09 | 1.06 | 0.39 | 3.27 |
| Benzo(b)fluoranthene | mg/kg | 0.07 | 39.01 | 13.0 | 1 | <0.07 | 0.27 | <0.08 | 0.48 | 0.51 | 3.89 | <0.07 | 1.45 | 0.11 | <0.07 | <0.07 | 1.22 | 0.44 | 3.13 |
| Benzo(k)fluoranthene | mg/kg | 0.03 | 15.48 | 370 | 0 | <0.03 | 0.13 | <0.03 | 0.55 | 0.59 | 2.69 | <0.03 | 1.58 | 0.12 | <0.03 | <0.03 | 0.48 | 0.17 | 1.22 |
| Benzo(g,h,i)perylene | mg/kg | 0.07 | 21.67 | 1400 | 0 | <0.04 | 0.13 | <0.04 | 0.3 | 0.28 | 0.84 | <0.04 | 0.91 | 0.08 | <0.04 | <0.04 | 0.57 | 0.2 | 1.32 |
| Benzo(a)Pyrene | mg/kg | 0.05 | 38.63 | 21 | 1 | <0.04 | 0.21 | <0.05 | 0.21 | 0.23 | 1.04 | <0.05 | 0.61 | 0.05 | <0.05 | <0.04 | 1.03 | 0.35 | 2.74 |
| Chrysene | mg/kg | 0.05 | 28.34 | 93 | 0 | <0.05 | 0.28 | <0.05 | 0.47 | 0.55 | 3.84 | <0.05 | 1.24 | 0.08 | <0.05 | <0.05 | 1.08 | 0.4 | 3.03 |
| Di-benzo(a,h)anthracene | mg/kg | 0.05 | 4.72 | 1.1 | 1 | <0.04 | <0.04 | <0.04 | 0.06 | 0.08 | <0.40 | <0.04 | 0.16 | <0.04 | <0.04 | <0.04 | 0.14 | 0.05 | 0.42 |
| Fluoranthene | mg/kg | 0.04 | 58.34 | 6,300 | 0 | <0.10 | 0.95 | <0.10 | 0.86 | 2.68 | 22.82 | <0.10 | 2.21 | 0.09 | <0.10 | <0.10 | 2.44 | 1.29 | 6.68 |
| Fluorene | mg/kg | 0.06 | 15.14 | 29,000 | 0 | <0.04 | 0.32 | <0.04 | 0.06 | 1.81 | 15.14 | <0.04 | <0.04 | <0.04 | <0.04 | <0.04 | 0.43 | 2.1 | 2.07 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.07 | 23.58 | 150 | 0 | <0.04 | 0.25 | <0.05 | 0.25 | 0.34 | 0.97 | <0.04 | 0.83 | 0.09 | <0.04 | <0.04 | 0.68 | 0.25 | 1.58 |
| Naphthalene | mg/kg | 0.05 | 4.75 | 1200 (76.4) sol | 0 | <0.04 | 0.64 | <0.04 | <2.04 | 0.25 | 2.25 | <0.04 | 0.05 | <0.04 | <0.04 | <0.04 | 0.55 | 1.31 | 4.18 |
| Phenanthrene | mg/kg | 0.08 | 52.26 | 6,300 | 0 | <0.10 | 1.89 | <0.10 | 1.43 | 4.23 | 52.26 | <0.10 | 0.67 | 0.08 | <0.10 | <0.10 | 2.58 | 2.8 | 6.25 |
| Pyrene | mg/kg | 0.06 | 48.65 | 15,000 | 0 | <0.07 | 0.68 | <0.07 | 0.77 | 1.52 | 14.22 | <0.07 | 1.93 | 0.09 | <0.07 | <0.07 | 2.13 | 0.99 | 5.45 |
| **GENERAL INORGANICS** | | | | | | | | | | | | | | | | | | | |
| Easily Liberatable Cyanide (Free) | mg/kg | 1 | 0 | 24 | 0 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |

DRAFT

**Project - A102760**
**Brockhampton West**

**Screening Against Public Open Space (Park)**

| | | Min | Max | TSV POS/Park | Date Sampled | 02/05/2017 | 02/05/2017 | 03/05/2017 | 04/05/2017 | 04/05/2017 | 04/05/2017 | 08/05/2017 | 08/05/2017 | 08/05/2017 | 08/05/2017 | 08/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Lab Ref. No: | 17/17894 R1 | 17/17894 R1 | 17/17894 R2 | 17/17894 R3 | 17/17894 R3 | 17/17894 R3 | 17/17894 R4 | 17/17894 R4 | 17/17894 R4 | 17/17894 R4 | 17/17894 R5 | 17/17894 R5 | 17/17894 R5 | 17/17894 R5 |
| | | | | | Customer Ref. No. | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 |
| | | | | | Sample Type | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil |
| | | | | | Trial Pit / Borehole No. | CP05 | CP01 | CP01 | CP02A | CP02A | CP02A | CP02A | CP05 | CP05 | CP05 | TP01 | TP01 | TP01 | TP15 |
| | | | | | Depth (m) | 0.55 | 7.00 | 15.00 | 0.75 | 4.50 | 7.00 | 20.00 | 0.20 | 4.20 | 8.50 | 0.30 | 1.90 | 3.40 | 2.50 |
| | | | | | Exceedances | | | | | | | | | | | | | | |
| **MONOAROMATICS** | | | | | | | | | | | | | | | | | | | |
| Benzene | mg/kg | 0.001 | 0.069 | 190 | 0 | <0.001 | 0.006 | <0.001 | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.006 | <0.001 | 0.069 |
| Toluene | mg/kg | 0.006 | 0.032 | 87000 (369)vap | 0 | <0.005 | 0.008 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.008 | <0.005 | 0.025 |
| Ethylbenzene | mg/kg | 0.006 | 0.398 | 17000 (518)vap | 0 | <0.005 | 0.095 | <0.005 | <0.005 | 0.016 | 0.015 | <0.005 | <0.005 | 0.078 | <0.005 | <0.005 | 0.028 | 0.012 | 0.196 |
| Ortho Xylene | mg/kg | 0.007 | 0.237 | 17000 (478)sol | 0 | <0.005 | 0.046 | <0.005 | <0.005 | 0.168 | 0.048 | <0.005 | <0.005 | 0.116 | 0.005 | <0.005 | 0.112 | 0.015 | 0.186 |
| m & p Xylene | mg/kg | 0.013 | 1.109 | 17000 (425)vap | 0 | <0.010 | 0.188 | <0.010 | <0.010 | 0.017 | 0.019 | <0.010 | <0.010 | 0.116 | 0.005 | <0.010 | 0.498 | 0.04 | 0.605 |
| **PAHs** | | | | | | | | | | | | | | | | | | | |
| Acenaphthene | mg/kg | 0.08 | 15.99 | 29000 | 0 | <0.08 | 0.38 | <0.08 | <0.08 | 1.81 | 15.99 | <0.08 | <0.08 | <0.08 | <0.08 | <0.08 | 0.32 | 3.24 | 1.79 |
| Acenaphthylene | mg/kg | 0.03 | 3.94 | 29000 | 0 | <0.03 | 0.05 | <0.03 | 0.03 | <0.03 | <0.03 | <0.03 | 0.14 | <0.03 | <0.03 | <0.03 | 0.09 | <0.03 | 0.53 |
| Anthracene | mg/kg | 0.06 | 10.62 | 150000 | 0 | <0.04 | 0.24 | <0.04 | 0.27 | 0.86 | 9.79 | <0.04 | 0.3 | <0.04 | <0.04 | <0.04 | 0.49 | 0.64 | 1.85 |
| Benzo(a)Anthracene | mg/kg | 0.09 | 30.8 | 49 | 0 | <0.08 | 0.37 | <0.08 | 0.43 | 0.6 | 4.37 | <0.08 | 1.18 | 0.09 | <0.08 | <0.08 | 1.36 | 0.39 | 3.27 |
| Benzo(b)fluoranthene | mg/kg | 0.07 | 29.81 | 13 | 1 | <0.08 | 0.27 | <0.08 | 0.48 | 0.51 | 1.89 | <0.08 | 1.45 | 0.11 | <0.08 | <0.08 | 1.22 | 0.44 | 3.13 |
| Benzo(k)fluoranthene | mg/kg | 0.03 | 15.48 | 370 | 0 | <0.03 | 0.11 | <0.03 | 0.55 | 0.59 | 2.69 | <0.03 | 1.58 | 0.12 | <0.03 | <0.03 | 0.48 | 0.17 | 1.32 |
| Benzo(g,h,i)perylene | mg/kg | 0.07 | 21.67 | 1400 | 0 | <0.04 | 0.13 | <0.04 | 0.3 | 0.28 | 0.84 | <0.04 | 0.91 | 0.08 | <0.04 | <0.04 | 0.37 | 0.2 | 1.32 |
| Benzo(a)Pyrene | mg/kg | 0.05 | 36.63 | 21 | 1 | <0.04 | 0.22 | <0.04 | 0.23 | 0.23 | 1.04 | <0.04 | 3.61 | 0.05 | <0.04 | <0.04 | 1.03 | 0.05 | 2.74 |
| Chrysene | mg/kg | 0.05 | 28.34 | 93 | 0 | <0.03 | 0.28 | <0.03 | 0.47 | 0.55 | 3.84 | <0.03 | 1.24 | 0.08 | <0.03 | <0.03 | 1.08 | 0.4 | 3.03 |
| Di-benzo(a,h)anthracene | mg/kg | 0.05 | 4.72 | 1.1 | 1 | <0.04 | <0.04 | <0.04 | 0.06 | 0.08 | <0.40 | <0.04 | 0.56 | <0.04 | <0.04 | <0.04 | 0.14 | 0.05 | 0.42 |
| Fluoranthene | mg/kg | 0.04 | 56.54 | 6300 | 0 | <0.03 | 0.95 | <0.03 | 0.86 | 2.08 | 22.82 | <0.03 | 2.21 | 0.09 | <0.03 | <0.03 | 2.64 | 1.39 | 6.68 |
| Fluorene | mg/kg | 0.06 | 15.14 | 28000 | 0 | <0.04 | 0.32 | <0.04 | 0.06 | 1.01 | 15.14 | <0.04 | <0.24 | <0.04 | <0.04 | <0.04 | 0.43 | 2.1 | 2.07 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.07 | 23.58 | 150 | 0 | <0.04 | 0.15 | <0.04 | 0.29 | 0.34 | 0.97 | <0.04 | 0.87 | 0.09 | <0.04 | <0.04 | 0.68 | 0.23 | 1.58 |
| Naphthalene | mg/kg | 0.05 | 4.75 | 1200 (76.4)sol | 0 | <0.04 | 0.64 | <0.04 | <0.04 | 0.15 | 2.25 | <0.04 | 3.05 | <0.04 | <0.04 | <0.04 | 0.55 | 1.31 | 4.18 |
| Phenanthrene | mg/kg | 0.08 | 52.26 | 6200 | 0 | <0.03 | 1.09 | <0.03 | 0.42 | 4.23 | 52.26 | <0.03 | 0.67 | 0.08 | <0.03 | <0.03 | 2.58 | 2.8 | 6.25 |
| Pyrene | mg/kg | 0.06 | 48.65 | 35000 | 0 | <0.03 | 0.68 | <0.03 | 0.77 | 1.52 | 14.22 | <0.03 | 1.93 | 0.09 | <0.03 | <0.03 | 2.15 | 0.99 | 5.41 |
| **TPH** | | | | | | | | | | | | | | | | | | | |
| TPH Aliphatic >$C_5$-$C_6$ | mg/kg | 0 | 0 | 95000 (304)sol | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TPH Aliphatic >$C_6$-$C_8$ | mg/kg | 0.1 | 0.1 | 150000 (344)sol | 0 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | 0.1 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 |
| TPH Aliphatic >$C_8$-$C_{10}$ | mg/kg | 0.1 | 9.3 | 14000 (78)sol | 0 | <0.1 | 0.5 | <0.1 | <0.1 | 1.3 | 1.4 | <0.1 | <0.1 | 9.3 | 1.2 | <0.1 | 8 | 0.4 | 3 |
| TPH Aliphatic >$C_{10}$-$C_{12}$ | mg/kg | 1.5 | 161.5 | 21000 (48)sol | 0 | <0.2 | <0.2 | <0.2 | <0.2 | 13.8 | 29.5 | <0.2 | <0.2 | 9.2 | 4.1 | <0.2 | 161.5 | <0.2 | 39.5 |
| TPH Aliphatic >$C_{12}$-$C_{16}$ | mg/kg | 5 | 259 | 25000 (24)sol | 0 | <4 | <4 | <4 | 12 | 27 | 63 | <4 | <4 | 18 | <4 | <4 | 196 | <4 | 87 |
| TPH Aliphatic >$C_{16}$-$C_{21}$ | mg/kg | 19 | 1085 | 450000 | 0 | <7 | <7 | <7 | <7 | 86 | 126 | <7 | <7 | 19 | 34 | <7 | 534 | <7 | 85 |
| TPH Aliphatic >$C_{21}$-$C_{35}$ | mg/kg | 39 | 5634 | 450000 | 0 | <7 | 54 | <7 | 122 | 568 | 691 | <7 | <7 | 399 | 351 | <7 | 5634 | <7 | 319 |
| TPH Aliphatic >$C_{35}$-$C_{44}$ | mg/kg | 11 | 999 | 450000 | 0 | <7 | 23 | <7 | 131 | 158 | 171 | <7 | <7 | 117 | 91 | <7 | 999 | <7 | 89 |
| TPH Aromatic >$EC_5$-$EC_7$ | mg/kg | 0 | 0 | 190 | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TPH Aromatic >$EC_7$-$EC_8$ | mg/kg | 0 | 0 | 87000 (369)vap | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TPH Aromatic >$EC_8$-$EC_{10}$ | mg/kg | 0.1 | 1.8 | 7200 (61)vap | 0 | <0.1 | 0.2 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | 0.6 | <0.1 | <0.1 | 0.6 | <0.1 | 0.9 |
| TPH Aromatic >$EC_{10}$-$EC_{12}$ | mg/kg | 0.9 | 84.8 | 8200 (364)vap | 0 | <0.2 | 3.3 | <0.2 | <0.2 | 7.4 | 17.3 | <0.2 | <0.2 | 9.4 | <0.2 | <0.2 | 84.8 | <0.2 | 65.9 |
| TPH Aromatic >$EC_{12}$-$EC_{16}$ | mg/kg | 10 | 201 | 19000 | 0 | <4 | 15 | <4 | 16 | 31 | 108 | <4 | <4 | 28 | <4 | <4 | 107 | <4 | 73 |
| TPH Aromatic >$EC_{16}$-$EC_{21}$ | mg/kg | 10 | 862 | 7600 | 0 | <7 | 26 | <7 | 147 | 129 | 374 | <7 | <7 | 55 | 44 | <7 | 478 | <7 | 280 |
| TPH Aromatic >$EC_{21}$-$EC_{35}$ | mg/kg | 12 | 2805 | 7800 | 0 | 21 | 187 | <7 | 632 | 603 | 1148 | <7 | 67 | 332 | 271 | <7 | 2805 | <7 | 1334 |
| TPH Aromatic >$EC_{35}$-$EC_{44}$ | mg/kg | 11 | 826 | 7800 | 0 | 39 | 74 | <7 | 578 | 362 | 476 | <7 | 79 | 117 | 142 | <7 | 581 | <7 | 221 |
| Total TPH | mg/kg | 60 | 11589 | | | 60 | 434 | <50 | 1842 | 1987 | 3205 | <50 | 146 | 1114 | 930 | <50 | 11589 | <50 | 2558 |

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**Project - A102760**
**Brickhampton West**

**Screening Against Public Open Space (Park)**

| | | Min | Max | TSV POS Park | Date Sampled | 09/05/2017 | 08/05/2017 | 09/05/2017 | 09/05/2017 | 08/05/2017 | 09/05/2017 | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Lab Ref. No: | 17/17894 B5 | 17/17894 B5 | 17/17894 B5 | 17/17894 B5 | 17/17894 B5 | 17/17894 B6 | 17/17894 B6 | 17/17894 B6 | 17/17894 B6 | 17/17894 B6 | 17/17894 B6 | 17/17894 B6 | 17/17894 B6 |
| | | | | | Customer Ref. No. | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 |
| | | | | | Sample Type | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil |
| | | | | | Trial Pit / Borehole No. | TP03 | TP03 | TP04 | TP04 | TP07 | TP10 | TP10 | TP09 | TP09 | TP08 | TP08 | TP05 | TP05 |
| | | | | | Depth (m) | 0.40 | 1.80 | 0.60 | 3.30 | 2.50 | 2.50 | 3.30 | 0.40 | 3.80 | 2.30 | 3.20 | 1.00 | 2.40 |
| | | | | | Exceedances | | | | | | | | | | | | | |
| pH | Value | 5.92 | 8.6 | <5, >9 | 0 | 8.52 | 6.98 | 8.34 | 7.75 | 7.87 | 5.92 | 7.83 | 8.54 | 7.58 | 7.06 | 7.65 | 8.49 | 7.94 |
| Asbestos Containing Material Screen | Y/N | | | N | | | N | N | N | N | N | | N | N | | | N | N |
| Fraction of Organic Carbon | None | 0.0007 | 0.085 | | | ndp | 0.006 | 0.004 | 0.003 | 0.003 | 0.003 | ndp | 0.026 | 0.053 | ndp | ndp | 0.004 | 0.019 |
| Total Organic Matter | % | 0.12069 | 14.6552 | | | | 1.03 | 1.03 | 0.52 | 0.52 | 0.52 | | 4.48 | 9.14 | | | 0.69 | 3.28 |
| **PHENOLICS** | | | | | | | | | | | | | | | | | | |
| Phenol | mg/kg | 0.02 | 3.23 | 440 | 0 | <0.02 | <0.01 | <0.01 | 3.23 | <0.01 | <0.01 | 0.1 | <0.01 | 0.04 | 0.05 | 0.04 | <0.01 | <0.01 |
| **HEAVY METALS/METALLOIDS** | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | 0.8 | 32.4 | 170 | 0 | 5.1 | 7.3 | 13.1 | 4.7 | 8.3 | 6.8 | 9.4 | 9.5 | 18.6 | 9.6 | 6.7 | 5.6 | 7.3 |
| Beryllium | mg/kg | 0.6 | 2.7 | 63 | 0 | 1.3 | 1.6 | 2 | 0.6 | 0.7 | 0.5 | 1.7 | 0.8 | 2.6 | 1.3 | 1.5 | 0.7 | 0.8 |
| Boron | mg/kg | 0.1 | 10.2 | 46,000 | 0 | 1.3 | 0.6 | 2.7 | 1.4 | 1.3 | 0.5 | 3.8 | 0.5 | 2.7 | 7.6 | 7.2 | 0.7 | 2.8 |
| Cadmium | mg/kg | 0.2 | 30.6 | 800 | 0 | <0.1 | <0.1 | <0.1 | 0.9 | 2.3 | <0.1 | 0.5 | 0.5 | <0.1 | 29.6 | 12.1 | <0.1 | 0.5 |
| Chromium (III) | mg/kg | 5.1 | 236.1 | 33000 | 0 | 22.9 | 69.2 | 52.6 | 117.3 | 58.6 | 67.1 | 22.8 | 87 | 48.3 | 56.2 | 61.3 | 72.7 | 62.5 |
| Chromium (VI) | mg/kg | 0.9 | 0.9 | 250 | 0 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Copper | mg/kg | 2 | 3521 | 44000 | 0 | 25 | 12 | 27 | 34 | 34 | 10 | 103 | 21 | 87 | 395 | 650 | 11 | 145 |
| Lead | mg/kg | 6 | 1063 | 1300 | 0 | 34 | 10 | 26 | 23 | 108 | 19 | 134 | 247 | 47 | 1063 | 400 | 30 | 217 |
| Mercury (Inorganic) | mg/kg | 0.1 | 1.5 | 340 | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | 0.6 | 0.9 | 0.5 | <0.1 | 0.1 |
| Nickel | mg/kg | 3.2 | 448.3 | 890 | 0 | 16.1 | 16.4 | 23.6 | 12.5 | 12.2 | 12.5 | 29.8 | 7.8 | 114.2 | 328 | 41.4 | 15.4 | 24.7 |
| Selenium | mg/kg | 1 | 6 | 1800 | 0 | <1 | 2 | 6 | 1 | 1 | 1 | 1 | <1 | 1 | 3 | 1 | <1 | 1 |
| Vanadium | mg/kg | 2 | 93 | 5000 | 0 | 42 | 50 | 71 | 22 | 33 | 42 | 15 | 21 | 25 | 18 | 17 | 20 | 23 |
| Zinc | mg/kg | 8 | 2837 | 170000 | 0 | 62 | 60 | 42 | 48 | 114 | 46 | 187 | 79 | 181 | 2837 | 2366 | 53 | 691 |
| **US EPA PRIORITY PAH's** | | | | | | | | | | | | | | | | | | |
| Acenaphthene | mg/kg | 0.08 | 15.99 | 29,000 | 0 | <0.08 | <0.05 | <0.05 | 0.17 | <0.05 | <0.05 | <0.05 | 2.15 | 0.5 | 0.25 | 0.2 | <0.05 | 1.25 |
| Acenaphthylene | mg/kg | 0.03 | 3.94 | 29,000 | 0 | <0.03 | <0.03 | 0.04 | 0.1 | <0.03 | <0.03 | <0.03 | 3.94 | <0.03 | 0.05 | 0.04 | <0.03 | 0.2 |
| Anthracene | mg/kg | 0.06 | 38.62 | 150,000 | 0 | 0.15 | <0.04 | 0.11 | 0.82 | 0.11 | <0.04 | <0.04 | 38.62 | 0.12 | 0.13 | 0.05 | 0.06 | 0.86 |
| Benzo(a)Anthracene | mg/kg | 0.09 | 30.8 | 40 | 0 | 0.41 | <0.05 | 0.57 | 2 | 0.33 | <0.05 | 0.19 | 30.8 | 0.32 | 0.26 | 0.15 | 0.15 | 1.56 |
| Benzo(b)fluoranthene | mg/kg | 0.07 | 39.01 | 11.0 | 1 | 0.49 | <0.03 | 0.71 | 2.18 | 0.42 | <0.03 | 0.32 | 39.01 | 0.36 | 0.27 | 0.17 | 0.17 | 1.58 |
| Benzo(k)fluoranthene | mg/kg | 0.03 | 15.48 | 370 | 0 | 0.19 | <0.03 | 0.27 | 0.85 | 0.16 | <0.03 | 0.13 | 15.48 | 0.14 | 0.11 | 0.07 | 0.06 | 0.62 |
| Benzo(g,h,i)perylene | mg/kg | 0.07 | 21.67 | 1400 | 0 | 0.26 | <0.04 | 0.39 | 0.93 | 0.21 | <0.04 | 0.15 | 21.67 | 0.22 | 0.12 | 0.07 | 0.08 | 0.69 |
| Benzo(a)Pyrene | mg/kg | 0.05 | 38.63 | 21 | 1 | 0.46 | <0.04 | 0.67 | 1.91 | 0.38 | <0.04 | 0.24 | 38.63 | 0.28 | 0.21 | 0.12 | 0.14 | 1.38 |
| Chrysene | mg/kg | 0.05 | 28.34 | 93 | 0 | 0.39 | <0.02 | 0.54 | 1.9 | 0.31 | <0.02 | 0.25 | 28.34 | 0.34 | 0.25 | 0.12 | 0.14 | 1.39 |
| Di-benzo(a,h)anthracene | mg/kg | 0.05 | 4.72 | 1.3 | 1 | 0.07 | <0.04 | 0.07 | 0.32 | <0.04 | <0.04 | <0.04 | 4.72 | <0.04 | <0.04 | <0.04 | <0.04 | 0.18 |
| Fluoranthene | mg/kg | 0.04 | 56.94 | 6300 | 0 | 0.73 | <0.03 | 0.95 | 3.74 | 0.56 | <0.03 | 0.37 | 56.94 | 0.46 | 0.42 | 0.43 | 0.25 | 4.47 |
| Fluorene | mg/kg | 0.06 | 15.14 | 20,000 | 0 | <0.04 | <0.04 | <0.04 | 0.33 | <0.04 | <0.04 | <0.04 | 1.55 | 0.34 | 0.16 | 0.12 | <0.04 | 0.88 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.07 | 23.58 | 150 | 0 | 0.25 | <0.04 | 0.45 | 1.11 | 0.23 | <0.04 | 0.15 | 23.58 | 0.18 | 0.14 | 0.07 | 0.08 | 0.78 |
| Naphthalene | mg/kg | 0.05 | 4.75 | 1200 (76.4) sol | 0 | <0.04 | <0.04 | <0.04 | 0.23 | <0.04 | <0.04 | 0.08 | 0.73 | 0.99 | 2.04 | 0.28 | <0.04 | 0.51 |
| Phenanthrene | mg/kg | 0.08 | 52.26 | 6,284 | 0 | 0.36 | <0.03 | 0.23 | 2.35 | 0.31 | <0.03 | 0.2 | 20 | 0.72 | 0.52 | 0.47 | 0.19 | 3.37 |
| Pyrene | mg/kg | 0.06 | 48.65 | 15,000 | 0 | 0.61 | <0.03 | 0.81 | 3.05 | 0.45 | <0.03 | 0.35 | 48.65 | 0.46 | 0.43 | 0.35 | 0.2 | 3.06 |
| **GENERAL INORGANICS** | | | | | | | | | | | | | | | | | | |
| Easily Liberatable Cyanide (Free) | mg/kg | 1 | 0 | 24 | 0 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |

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**Project - A102760**
**Brockhampton West**

**Screening Against Public Open Space (Park)**

| | | Min | Max | TSV POS(Park) | Date Sampled | 09/05/2017 | 08/05/2017 | 09/05/2017 | 09/05/2017 | 08/05/2017 | 09/05/2017 | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Lab Ref. No: | 17/17894 BS | 17/17894 BS | 17/17894 BS | 17/17894 BS | 17/17894 BS | 17/17894 BS | 17/17894 BS | 17/17894 BS | 17/17894 BS | 17/17894 BS | 17/17894 BS | 17/17894 BS | 17/17894 BS |
| | | | | | Customer Ref. No. | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 |
| | | | | | Sample Type | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil |
| | | | | | Trial Pit / Borehole No. | TP03 | TP03 | TP04 | TP04 | TP07 | TP10 | TP10 | TP09 | TP09 | TP08 | TP08 | TP05 | TP05 |
| | | | | | Depth (m) | 0.40 | 1.80 | 0.80 | 3.30 | 2.50 | 2.50 | 3.30 | 0.40 | 3.80 | 2.30 | 3.20 | 1.00 | 2.40 |
| | | | | | Exceedances | | | | | | | | | | | | | |
| **MONOAROMATICS** | | | | | | | | | | | | | | | | | | |
| Benzene | mg/kg | 0.001 | 0.069 | 190 | 0 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Toluene | mg/kg | 0.006 | 0.032 | 87000 (369)vap | 0 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.009 | 0.014 | <0.005 | 0.013 |
| Ethylbenzene | mg/kg | 0.006 | 0.398 | 17000 (518)vap | 0 | <0.005 | <0.005 | <0.005 | 0.867 | <0.005 | <0.005 | 0.814 | <0.005 | 0.022 | 0.967 | 0.007 | <0.005 | <0.005 |
| Ortho Xylene | mg/kg | 0.007 | 0.237 | 17000 (470)sol | 0 | <0.005 | <0.005 | <0.005 | 0.918 | <0.005 | <0.005 | 0.611 | <0.005 | 0.077 | 0.838 | 0.019 | <0.005 | 0.007 |
| m & p Xylene | mg/kg | 0.013 | 1.109 | 17000 (625)vap | 0 | <0.005 | <0.005 | <0.005 | 0.549 | <0.005 | <0.005 | 0.852 | <0.005 | 0.067 | 0.834 | 0.022 | <0.005 | 0.015 |
| **PAHs** | | | | | | | | | | | | | | | | | | |
| Acenaphthene | mg/kg | 0.08 | 15.99 | 29000 | 0 | <0.05 | <0.05 | <0.05 | 0.17 | <0.05 | <0.05 | <0.05 | 2.15 | 0.5 | 0.25 | 0.2 | <0.05 | 1.25 |
| Acenaphthylene | mg/kg | 0.03 | 3.94 | 29000 | 0 | <0.03 | <0.03 | 0.04 | 0.1 | <0.03 | <0.03 | <0.03 | 3.94 | <0.03 | 0.05 | 0.04 | <0.03 | 0.2 |
| Anthracene | mg/kg | 0.06 | 18.62 | 150000 | 0 | 0.15 | <0.04 | 0.11 | 0.82 | 0.11 | <0.04 | <0.04 | 18.62 | 0.12 | 0.13 | 0.08 | 0.06 | 0.86 |
| Benzo(a)Anthracene | mg/kg | 0.09 | 30.8 | 49 | 0 | 0.41 | <0.05 | 0.57 | 2 | 0.13 | <0.05 | 0.19 | 30.8 | 0.32 | 0.26 | 0.15 | 0.15 | 1.56 |
| Benzo(b)fluoranthene | mg/kg | 0.07 | 29.81 | 13 | 1 | 0.49 | <0.05 | 0.71 | 2.18 | 0.47 | <0.05 | 0.32 | 29.81 | 0.36 | 0.37 | 0.17 | 0.17 | 1.58 |
| Benzo(k)fluoranthene | mg/kg | 0.03 | 15.48 | 370 | 0 | 0.19 | <0.03 | 0.27 | 0.85 | 0.16 | <0.03 | 0.13 | 15.48 | 0.14 | 0.11 | 0.07 | 0.06 | 0.62 |
| Benzo(g,h,i)perylene | mg/kg | 0.07 | 21.67 | 1400 | 0 | 0.26 | <0.04 | 0.39 | 0.93 | 0.21 | <0.04 | 0.15 | 21.67 | 0.22 | 0.12 | 0.07 | 0.08 | 0.69 |
| Benzo(a)Pyrene | mg/kg | 0.05 | 36.63 | 21 | 1 | 0.46 | <0.04 | 0.67 | 1.96 | 0.38 | <0.04 | 0.24 | 36.63 | 0.28 | 0.23 | 0.12 | 0.14 | 1.38 |
| Chrysene | mg/kg | 0.05 | 28.34 | 93 | 0 | 0.39 | <0.03 | 0.54 | 1.9 | 0.31 | <0.03 | 0.25 | 28.34 | 0.34 | 0.25 | 0.12 | 0.14 | 1.39 |
| Di-benzo(a,h)anthracene | mg/kg | 0.05 | 4.72 | 1.1 | 1 | 0.07 | <0.04 | 0.07 | 0.32 | <0.04 | <0.04 | <0.04 | 4.72 | <0.04 | <0.04 | <0.04 | <0.04 | 0.15 |
| Fluoranthene | mg/kg | 0.04 | 56.59 | 6300 | 0 | 0.73 | <0.03 | 0.95 | 3.74 | 0.56 | <0.03 | 0.37 | 56.59 | 0.46 | 0.62 | 0.41 | 0.25 | 4.47 |
| Fluorene | mg/kg | 0.06 | 15.14 | 28000 | 0 | <0.04 | <0.04 | <0.04 | 0.23 | <0.04 | <0.04 | <0.04 | 1.95 | 0.34 | 0.16 | 0.12 | <0.04 | 0.88 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.07 | 23.58 | 150 | 0 | 0.29 | <0.04 | 0.45 | 1.11 | 0.25 | <0.04 | 0.15 | 23.58 | 0.18 | 0.14 | 0.07 | 0.08 | 0.78 |
| Naphthalene | mg/kg | 0.05 | 4.75 | 1200 (76.4)sol | 0 | <0.04 | <0.04 | <0.04 | 0.23 | <0.04 | <0.04 | 0.08 | 0.73 | 0.99 | 1.04 | 0.26 | <0.04 | 0.51 |
| Phenanthrene | mg/kg | 0.08 | 52.26 | 6200 | 0 | 0.39 | <0.03 | 0.53 | 2.58 | 0.35 | <0.03 | 0.2 | 20 | 0.72 | 0.52 | 0.47 | 0.19 | 1.87 |
| Pyrene | mg/kg | 0.06 | 48.65 | 35000 | 0 | 0.61 | <0.03 | 0.81 | 3.05 | 0.45 | <0.03 | 0.33 | 48.65 | 0.46 | 0.43 | 0.35 | 0.2 | 3.58 |
| **TPH** | | | | | | | | | | | | | | | | | | |
| TPH Aliphatic >$C_5$-$C_6$ | mg/kg | 0 | 0 | 95000 (304)sol | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TPH Aliphatic >$C_6$-$C_8$ | mg/kg | 0.1 | 0.1 | 150000 (344)sol | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TPH Aliphatic >$C_8$-$C_{10}$ | mg/kg | 0.1 | 9.3 | 34000 (78)sol | 0 | <0.1 | <0.1 | <0.1 | 0.5 | <0.1 | <0.1 | 0.1 | <0.1 | 5.6 | 0.3 | 0.5 | <0.1 | 1.1 |
| TPH Aliphatic >$C_{10}$-$C_{12}$ | mg/kg | 1.5 | 161.5 | 21000 (48)sol | 0 | <0.2 | <0.2 | <0.2 | 118.9 | <0.2 | <0.2 | <0.2 | <0.2 | 65 | <0.2 | 6.6 | <0.2 | 1.5 |
| TPH Aliphatic >$C_{12}$-$C_{16}$ | mg/kg | 5 | 259 | 25000 (24)sol | 0 | <5 | <5 | <5 | 259 | <5 | <5 | <5 | 8 | 85 | <5 | <5 | <5 | <5 |
| TPH Aliphatic >$C_{16}$-$C_{21}$ | mg/kg | 19 | 1085 | 450000 | 0 | <7 | <7 | <7 | 1085 | <7 | <7 | <7 | 24 | 58 | <7 | <7 | <7 | 23 |
| TPH Aliphatic >$C_{21}$-$C_{35}$ | mg/kg | 39 | 5634 | 450000 | 0 | <7 | <7 | <7 | 4616 | <7 | <7 | 87 | 180 | 493 | 69 | 39 | <7 | 106 |
| TPH Aliphatic >$C_{35}$-$C_{44}$ | mg/kg | 11 | 999 | 450000 | 0 | <7 | <7 | <7 | 275 | <7 | <7 | 11 | 117 | 161 | 45 | 24 | <7 | 80 |
| TPH Aromatic >$EC_5$-$EC_7$ | mg/kg | 0 | 0 | 190 | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TPH Aromatic >$EC_7$-$EC_8$ | mg/kg | 0 | 0 | 87000 (369)vap | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TPH Aromatic >$EC_8$-$EC_{10}$ | mg/kg | 0.1 | 1.8 | 7200 (613)vap | 0 | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| TPH Aromatic >$EC_{10}$-$EC_{12}$ | mg/kg | 0.9 | 84.8 | 8200 (364)vap | 0 | 0.9 | <0.2 | <0.2 | 35.8 | <0.2 | <0.2 | <0.2 | <0.2 | 22.3 | 9.2 | <0.2 | <0.2 | <0.2 |
| TPH Aromatic >$EC_{12}$-$EC_{16}$ | mg/kg | 10 | 201 | 19000 | 0 | <4 | <4 | <4 | 201 | <4 | <4 | <4 | 15 | 44 | 22 | <4 | <4 | 11 |
| TPH Aromatic >$EC_{16}$-$EC_{21}$ | mg/kg | 10 | 862 | 7600 | 0 | <7 | <7 | <7 | 862 | <7 | <7 | 24 | 284 | 115 | 31 | 10 | <7 | 66 |
| TPH Aromatic >$EC_{21}$-$EC_{35}$ | mg/kg | 12 | 2805 | 7800 | 0 | <7 | <7 | <7 | 2861 | <7 | <7 | 157 | 1699 | 1514 | 160 | 136 | <7 | 292 |
| TPH Aromatic >$EC_{35}$-$EC_{44}$ | mg/kg | 11 | 826 | 7800 | 0 | 11 | <7 | <7 | 236 | <7 | <7 | 84 | 826 | 401 | 100 | 78 | <7 | 253 |
| Total TPH | mg/kg | 60 | 11588 | | | <50 | <50 | <50 | 9853 | <50 | <50 | 345 | 3153 | 2944 | 436 | 398 | <50 | 833 |

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**Project - A102760**
**Brickhampton West**

**Screening Against Public Open Space (Park)**

| | | Min | Max | TSV POS Park | Date Sampled | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Lab Ref. No: | 17/17894 86 | 17/17894 86 | 17/17894 86 | 17/17894 86 | 17/17894 86 | 17/17894 86 | 17/17894 87 | 17/17894 87 | 17/17894 87 | 17/17894 87 | 17/17894 87 | 17/17894 87 | 17/17894 87 |
| | | | | | Customer Ref. No. | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 |
| | | | | | Sample Type | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil |
| | | | | | Trial Pit / Borehole No. | TP16 | TP01 | TP02 | TP02 | CP03 | CP03 | CP03 | CP06 | CP06 | CP06 | CP04 | CP04 | CP04 |
| | | | | | Depth (m) | 2.00 | 3.20 | 1.00 | 3.50 | 1.00 | 4.00 | 24.00 | 2.50 | 5.00 | 7.00 | 0.50 | 4.50 | 7.00 |
| | | | | | Exceedances | | | | | | | | | | | | | |
| pH | Value | 5.92 | 8.6 | <5, >9 | 0 | 8.47 | 8.32 | 7.71 | 7.8 | 7.84 | 7.71 | 8.59 | 7.82 | 7.97 | 8.01 | 7.74 | 7.97 | 7.72 |
| Asbestos Containing Material Screen | Y/N | | | N | | | | N | N | N | N | N | | N | N | | | N |
| Fraction of Organic Carbon | None | 0.0007 | 0.085 | | | ndp | ndp | 0.003 | 0.024 | 0.005 | 0.027 | 0.001 | ndp | 0.025 | 0.04 | ndp | ndp | 0.037 |
| Total Organic Matter | % | 0.12069 | 14.6552 | | | | | 0.52 | 4.14 | 0.86 | 4.66 | 0.17 | | 5.00 | 6.90 | | | 6.38 |
| **PHENOLICS** | | | | | | | | | | | | | | | | | | |
| Phenol | mg/kg | 0.02 | 3.23 | 440 | 0 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.08 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 1.48 | 0.02 |
| **HEAVY METALS/METALLOIDS** | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | 0.8 | 32.4 | 170 | 0 | 9.4 | 32.4 | 6.5 | 9.3 | 7.2 | 6.7 | <0.5 | 12.2 | 9.1 | 7.7 | 6.5 | 8.5 | 6.8 |
| Beryllium | mg/kg | 0.6 | 2.7 | 63 | 0 | 1.9 | 2.7 | 0.7 | 0.9 | 0.6 | 1.1 | <0.5 | 1.1 | 1.3 | 1.1 | 0.6 | 0.7 | 0.8 |
| Boron | mg/kg | 0.1 | 10.2 | 46,000 | 0 | 9.2 | 10.2 | 0.5 | 3 | 0.9 | 6.5 | 0.1 | 9.4 | 5.2 | 6.6 | 0.8 | 3.1 | 2.5 |
| Cadmium | mg/kg | 0.2 | 30.6 | 880 | 0 | 28.6 | 9.2 | <0.1 | 1.4 | 3 | 9.1 | 0.3 | 1.5 | 3.9 | 4.2 | 3 | 0.8 | <0.1 |
| Chromium (III) | mg/kg | 5.1 | 236.1 | 33000 | 0 | 196.8 | 236.1 | 75.8 | 91.2 | 62.9 | 54.2 | 6.4 | 188.1 | 116.5 | 84.8 | 27.4 | 22.7 | 157.7 |
| Chromium (VI) | mg/kg | 0.9 | 0.9 | 250 | 0 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | 0.9 |
| Copper | mg/kg | 2 | 3521 | 44000 | 0 | 589 | 3521 | 8 | 100 | 41 | 328 | 5 | 66 | 210 | 1837 | 22 | 142 | 110 |
| Lead | mg/kg | 6 | 1063 | 1300 | 0 | 1851 | 533 | 11 | 110 | 68 | 353 | 6 | 732 | 283 | 417 | 36 | 322 | 77 |
| Mercury (Inorganic) | mg/kg | 0.1 | 1.5 | 340 | 0 | 1.5 | 0.4 | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | 0.2 | 0.5 | <0.1 | <0.1 | <0.1 |
| Nickel | mg/kg | 3.2 | 448.3 | 880 | 0 | 51.1 | 448.3 | 16.2 | 33.3 | 14.2 | 32.7 | 4.1 | 86.7 | 47.8 | 146.9 | 13.5 | 21.4 | 38.3 |
| Selenium | mg/kg | 1 | 6 | 1800 | 0 | 4 | 3 | <1 | <1 | 1 | 2 | <1 | <1 | 1 | 1 | <1 | <1 | <1 |
| Vanadium | mg/kg | 2 | 93 | 5000 | 0 | 23 | 42 | 35 | 93 | 29 | 22 | 4 | 32 | 45 | 35 | 27 | 16 | 24 |
| Zinc | mg/kg | 8 | 3837 | 170000 | 0 | 3635 | 2404 | 34 | 431 | 141 | 1088 | 15 | 446 | 881 | 811 | 117 | 702 | 252 |
| **US EPA PRIORITY PAH's** | | | | | | | | | | | | | | | | | | |
| Acenaphthene | mg/kg | 0.08 | 15.99 | 29,000 | 0 | <0.05 | 0.22 | <0.05 | 0.17 | <0.05 | 6.27 | <0.05 | 0.15 | <0.05 | 0.08 | <0.05 | 2.57 | 2.08 |
| Acenaphthylene | mg/kg | 0.03 | 3.94 | 29,000 | 0 | <0.03 | 0.03 | <0.03 | 0.04 | <0.03 | 0.26 | <0.03 | <0.03 | <0.03 | 0.06 | <0.03 | 0.18 | 0.09 |
| Anthracene | mg/kg | 0.06 | 38.62 | 150,000 | 0 | <0.04 | 0.08 | <0.04 | 0.21 | <0.04 | 2.37 | <0.04 | <0.04 | <0.04 | 0.1 | <0.04 | 1.39 | 1.07 |
| Benzo(a)Anthracene | mg/kg | 0.09 | 30.8 | 49 | 0 | 0.1 | 0.28 | <0.06 | 0.45 | <0.06 | 2.43 | <0.06 | 0.11 | <0.06 | 0.53 | <0.06 | 1.44 | 1.75 |
| Benzo(b)fluoranthene | mg/kg | 0.07 | 39.01 | 13.0 | 1 | 0.07 | 0.26 | <0.05 | 0.4 | <0.05 | 2.95 | <0.05 | 0.12 | <0.05 | 0.54 | <0.05 | 1.96 | 1.73 |
| Benzo(k)fluoranthene | mg/kg | 0.03 | 15.48 | 370 | 0 | 0.03 | 0.1 | <0.02 | 0.15 | <0.02 | 0.91 | <0.02 | 0.05 | <0.02 | 0.21 | <0.02 | 0.6 | 0.66 |
| Benzo(g,h,i)perylene | mg/kg | 0.07 | 21.67 | 1400 | 0 | <0.04 | 0.14 | <0.04 | 0.18 | <0.04 | 0.99 | <0.04 | 0.07 | <0.04 | 0.25 | <0.04 | 0.72 | 0.7 |
| Benzo(a)Pyrene | mg/kg | 0.05 | 38.63 | 21 | 1 | 0.05 | 0.2 | <0.04 | 0.14 | <0.04 | 1.74 | <0.04 | 0.1 | <0.04 | 0.43 | 0.05 | 1.3 | 1.62 |
| Chrysene | mg/kg | 0.05 | 28.34 | 93 | 0 | 0.09 | 0.2 | <0.02 | 0.45 | <0.02 | 2.29 | <0.02 | 0.17 | <0.02 | 0.46 | 0.05 | 1.14 | 2.08 |
| Di-benzo(a,h)anthracene | mg/kg | 0.05 | 4.72 | 1.1 | 1 | <0.04 | <0.04 | <0.04 | <0.04 | <0.04 | 0.26 | <0.04 | <0.04 | <0.04 | 0.07 | <0.04 | 0.22 | 0.24 |
| Fluoranthene | mg/kg | 0.04 | 58.34 | 6,300 | 0 | 0.1 | 0.37 | <0.03 | 1.58 | 0.04 | 9.71 | <0.03 | 0.15 | <0.03 | 0.94 | 0.07 | 2.75 | 3.24 |
| Fluorene | mg/kg | 0.06 | 15.14 | 29,000 | 0 | <0.04 | 0.08 | <0.04 | 0.17 | <0.04 | 4.47 | <0.04 | 0.06 | <0.04 | <0.04 | <0.04 | 1.66 | 1.77 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.07 | 23.58 | 150 | 0 | <0.04 | 0.17 | <0.04 | 0.2 | <0.04 | 1.18 | <0.04 | 0.1 | <0.04 | 0.28 | <0.04 | 0.73 | 0.75 |
| Naphthalene | mg/kg | 0.05 | 4.75 | 1200 (76.4) sol | 0 | <0.04 | 0.14 | <0.04 | 0.26 | <0.04 | 1.04 | <0.04 | 0.08 | <0.04 | 0.08 | <0.04 | 4.75 | 4.35 |
| Phenanthrene | mg/kg | 0.08 | 52.26 | 6,184 | 0 | 0.1 | 0.37 | <0.03 | 1.94 | <0.03 | 10.98 | <0.03 | 0.15 | <0.03 | 0.29 | <0.03 | 4.13 | 4.88 |
| Pyrene | mg/kg | 0.06 | 48.65 | 15,000 | 0 | 0.09 | 0.33 | <0.03 | 1.25 | <0.03 | 6.44 | <0.03 | 0.17 | <0.03 | 0.77 | 0.06 | 2.28 | 2.81 |
| **GENERAL INORGANICS** | | | | | | | | | | | | | | | | | | |
| Easily Liberatable Cyanide (free) | mg/kg | 1 | 0 | 24 | 0 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |

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**Project - A102760**
**Brockhampton West**

**Screening Against Public Open Space (Park)**

| | | Min | Max | TSV POS(Park) | Date Sampled | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Lab Ref. No: | 17/17894 86 | 17/17894 86 | 17/17894 86 | 17/17894 86 | 17/17894 86 | 17/17894 86 | 17/17894 87 | 17/17894 87 | 17/17894 87 | 17/17894 87 | 17/17894 87 | 17/17894 87 | 17/17894 87 |
| | | | | | Customer Ref. No. | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 | A102760 |
| | | | | | Sample Type | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil | ES Soil |
| | | | | | Trial Pit / Borehole No. | TP06 | TP06 | TP02 | TP02 | CP03 | CP03 | CP03 | CP06 | CP06 | CP06 | CP04 | CP04 | CP04 |
| | | | | | Depth (m) | 2.00 | 3.20 | 1.00 | 3.50 | 1.00 | 4.00 | 24.00 | 2.50 | 5.00 | 7.00 | 0.50 | 4.50 | 7.00 |
| | | | | | Exceedances | | | | | | | | | | | | | |
| **MONOAROMATICS** | | | | | | | | | | | | | | | | | | |
| Benzene | mg/kg | 0.001 | 0.069 | 190 | 0 | <0.005 | 0.01 | <0.005 | <0.005 | <0.005 | 0.008 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.05 | <0.05 |
| Toluene | mg/kg | 0.006 | 0.032 | 87000 (369)vap | 0 | 0.014 | 0.032 | <0.005 | <0.005 | <0.005 | 0.008 | <0.005 | <0.005 | 0.012 | 0.012 | <0.005 | <0.05 | <0.05 |
| Ethylbenzene | mg/kg | 0.006 | 0.398 | 17000 (518)vap | 0 | 0.015 | 0.071 | <0.005 | <0.005 | <0.005 | 0.009 | <0.005 | 0.014 | 0.006 | 0.025 | <0.005 | 0.358 | 0.242 |
| Ortho Xylene | mg/kg | 0.007 | 0.237 | 17000 (470)sol | 0 | 0.018 | 0.065 | <0.005 | 0.023 | <0.005 | <0.005 | <0.005 | 0.01 | 0.005 | 0.03 | <0.005 | 0.228 | 0.237 |
| m & p Xylene | mg/kg | 0.013 | 1.109 | 17000 (625)vap | 0 | 0.038 | 0.124 | <0.005 | 0.075 | <0.005 | 0.013 | <0.005 | 0.014 | 0.004 | 0.093 | <0.005 | 1.108 | 0.858 |
| **PAHs** | | | | | | | | | | | | | | | | | | |
| Acenaphthene | mg/kg | 0.08 | 15.99 | 29000 | 0 | <0.05 | 0.22 | <0.05 | 0.17 | <0.05 | 6.27 | <0.05 | 0.15 | <0.05 | 0.06 | <0.05 | 2.57 | 2.08 |
| Acenaphthylene | mg/kg | 0.03 | 3.94 | 29000 | 0 | <0.03 | 0.05 | <0.03 | 0.04 | <0.03 | 0.26 | <0.03 | <0.03 | <0.03 | 0.06 | <0.03 | 0.18 | 0.09 |
| Anthracene | mg/kg | 0.06 | 10.62 | 150000 | 0 | <0.04 | 0.08 | <0.04 | 0.31 | <0.04 | 2.37 | <0.04 | <0.04 | <0.04 | 0.1 | <0.04 | 1.09 | 1.07 |
| Benzo(a)Anthracene | mg/kg | 0.09 | 30.8 | 49 | 0 | 0.1 | 0.19 | <0.06 | 0.45 | <0.06 | 2.43 | <0.06 | 0.11 | <0.06 | 0.53 | <0.06 | 1.44 | 1.75 |
| Benzo(b)fluoranthene | mg/kg | 0.07 | 29.81 | 13 | 1 | 0.07 | 0.19 | <0.05 | 0.4 | <0.05 | 2.35 | <0.05 | 0.12 | <0.05 | 0.54 | <0.05 | 1.56 | 1.71 |
| Benzo(k)fluoranthene | mg/kg | 0.03 | 15.48 | 370 | 0 | 0.03 | 0.1 | <0.02 | 0.15 | <0.02 | 0.91 | <0.02 | 0.05 | <0.02 | 0.21 | <0.02 | 0.6 | 0.66 |
| Benzo(g,h,i)perylene | mg/kg | 0.07 | 21.67 | 1400 | 0 | <0.04 | 0.14 | <0.04 | 0.18 | <0.04 | 0.93 | <0.04 | 0.07 | <0.04 | 0.25 | <0.04 | 0.72 | 0.7 |
| Benzo(a)Pyrene | mg/kg | 0.05 | 36.63 | 21 | 1 | 0.05 | 0.2 | <0.04 | 0.34 | <0.04 | 1.74 | <0.04 | 0.1 | <0.04 | 0.43 | 0.05 | 1.4 | 1.62 |
| Chrysene | mg/kg | 0.05 | 28.34 | 93 | 0 | 0.08 | 0.2 | <0.02 | 0.45 | <0.02 | 2.29 | <0.02 | 0.17 | <0.02 | 0.46 | 0.05 | 1.14 | 2.08 |
| Di-benzo(a,h)anthracene | mg/kg | 0.05 | 4.72 | 1.1 | 1 | <0.04 | <0.04 | <0.04 | <0.04 | <0.04 | 0.78 | <0.04 | <0.04 | <0.04 | 0.09 | <0.04 | 0.27 | 0.24 |
| Fluoranthene | mg/kg | 0.04 | 56.54 | 6300 | 0 | 0.1 | 0.37 | <0.03 | 1.58 | 0.04 | 9.71 | <0.03 | 0.15 | <0.03 | 0.94 | 0.07 | 2.75 | 3.24 |
| Fluorene | mg/kg | 0.06 | 15.14 | 28000 | 0 | <0.04 | 0.08 | <0.04 | 0.17 | <0.04 | 4.47 | <0.04 | 0.06 | <0.04 | <0.04 | <0.04 | 1.66 | 1.77 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.07 | 23.58 | 150 | 0 | <0.04 | 0.17 | <0.04 | 0.2 | <0.04 | 1.18 | <0.04 | 0.1 | <0.04 | 0.28 | <0.04 | 0.79 | 0.73 |
| Naphthalene | mg/kg | 0.05 | 4.75 | 1200 (76.4)sol | 0 | <0.04 | 0.14 | <0.04 | 0.26 | <0.04 | 1.04 | <0.04 | 0.08 | <0.04 | 0.08 | <0.04 | 4.75 | 4.25 |
| Phenanthrene | mg/kg | 0.08 | 52.26 | 6200 | 0 | 0.1 | 0.27 | <0.03 | 0.94 | <0.03 | 10.95 | <0.03 | 0.15 | <0.03 | 0.29 | <0.03 | <1.3 | 4.88 |
| Pyrene | mg/kg | 0.06 | 48.65 | 35000 | 0 | 0.09 | 0.33 | <0.03 | 1.25 | <0.03 | 6.44 | <0.03 | 0.17 | <0.03 | 0.77 | 0.06 | 2.28 | 2.81 |
| **TPH** | | | | | | | | | | | | | | | | | | |
| TPH Aliphatic >$C_5$-$C_6$ | mg/kg | 0 | 0 | 95000 (304)sol | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <1.0 | <1.0 |
| TPH Aliphatic >$C_6$-$C_8$ | mg/kg | 0.1 | 0.1 | 150000 (344)sol | 0 | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <1.0 | <1.0 |
| TPH Aliphatic >$C_8$-$C_{10}$ | mg/kg | 0.1 | 0.3 | 34000 (78)sol | 0 | 0.3 | 0.5 | <0.1 | 1.6 | <0.1 | 0.3 | <0.1 | 0.3 | 0.5 | 1.4 | 0.1 | 3.2 | 3.6 |
| TPH Aliphatic >$C_{10}$-$C_{12}$ | mg/kg | 1.5 | 161.5 | 21000 (48)sol | 0 | 7 | <0.2 | <0.2 | 3.1 | <0.2 | <0.2 | <0.2 | 22.4 | <0.2 | 69.2 | <0.2 | 42.7 | 33.6 |
| TPH Aliphatic >$C_{12}$-$C_{16}$ | mg/kg | 5 | 259 | 25000 (24)sol | 0 | <4 | <4 | <4 | 5 | <4 | 18 | <4 | 43 | <4 | 84 | <4 | 61 | 29 |
| TPH Aliphatic >$C_{16}$-$C_{21}$ | mg/kg | 19 | 1085 | 450000 | 0 | <7 | <7 | <7 | 28 | <7 | 80 | <7 | 88 | <7 | 58 | <7 | 237 | 37 |
| TPH Aliphatic >$C_{21}$-$C_{35}$ | mg/kg | 39 | 5634 | 450000 | 0 | 68 | 168 | <7 | 155 | <7 | 279 | <7 | 848 | 48 | 675 | <7 | 596 | 165 |
| TPH Aliphatic >$C_{35}$-$C_{44}$ | mg/kg | 11 | 666 | 450000 | 0 | 46 | 37 | <7 | 39 | <7 | 98 | <7 | 108 | <7 | 144 | <7 | 89 | 72 |
| TPH Aromatic >$EC_5$-$EC_7$ | mg/kg | 0 | 0 | 190 | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <1.0 | <1.0 |
| TPH Aromatic >$EC_7$-$EC_8$ | mg/kg | 0 | 0 | 87000 (369)vap | 0 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <1.0 | <1.0 |
| TPH Aromatic >$EC_8$-$EC_{10}$ | mg/kg | 0.1 | 1.8 | 7200 (613)vap | 0 | <0.1 | 0.2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | 1.6 | 1.4 |
| TPH Aromatic >$EC_{10}$-$EC_{12}$ | mg/kg | 0.9 | 84.8 | 9200 (364)vap | 0 | <0.2 | <0.2 | <0.2 | 4.9 | <0.2 | 0.4 | <0.2 | 4.8 | <0.2 | 9.8 | <0.2 | 16.5 | 15.9 |
| TPH Aromatic >$EC_{12}$-$EC_{16}$ | mg/kg | 10 | 701 | 19000 | 0 | <4 | <4 | <4 | 36 | <4 | 38 | <4 | 10 | <4 | 71 | <4 | 37 | 30 |
| TPH Aromatic >$EC_{16}$-$EC_{21}$ | mg/kg | 10 | 862 | 7600 | 0 | <7 | 34 | <7 | 89 | <7 | 267 | <7 | 159 | <7 | 58 | <7 | 182 | 92 |
| TPH Aromatic >$EC_{21}$-$EC_{35}$ | mg/kg | 12 | 2805 | 7800 | 0 | 87 | 168 | 12 | 615 | <7 | 1073 | <7 | 699 | 61 | 538 | <7 | 729 | 399 |
| TPH Aromatic >$EC_{35}$-$EC_{44}$ | mg/kg | 11 | 826 | 7800 | 0 | 116 | 92 | <7 | 129 | <7 | 328 | <7 | 75 | <7 | 88 | <7 | 188 | 227 |
| Total TPH | mg/kg | 60 | 11589 | | | 334 | 501 | <53 | 1085 | <52 | 2175 | <53 | 3957 | 108 | 1743 | <52 | 2175 | 1085 |

DRAFT

# Appendix K – Tier 1 Screening Sheets - Groundwater

DRAFT

| Project - A102760<br>Brockhampton West<br><br>Screening of Groundwater Data | | Min | Max | TSV | Source of TSV | Sample ID | CP01 (D) | CP02 (D) | CP02 (S) | CP03 (D) | CP03 (S) | CP05 | CP04 | CP01 (S) | CP06 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Sample Type | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water |
| | | | | | | Sampled Date | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 15/06/2017 | 15/06/2017 | 15/06/2017 | 15/06/2017 |
| | | | | | | Received Date | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 17/06/2017 | 17/06/2017 | 17/06/2017 | 17/06/2017 |
| | | | | | | | | | | | | | | | |
| | | | | | | Exceedances | | | | | | | | | |
| Total Alkalinity as CaCO3 | mg/l | 262 | 2346 | | | | 262 | 1236 | 1486 | 298 | 736 | 1454 | 1446 | 2346 | 1318 |
| Dissolved Calcium | mg/l | 110.2 | 266.4 | | | | 110.2 | 193.6 | 266.4 | 120.5 | 187.9 | NA | NA | 117.2 | NA |
| Total Hardness Dissolved (as CaCO3) | mg/l | 291 | 1138 | | | | 291 | 773 | 915 | 326 | 585 | 975 | 1138 | 710 | 889 |
| Sulphate as SO4 | mg/l | <0.5 | 63.5 | | | | 14.9 | 63.5 | <0.5 | 13 | 3 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloride | mg/l | 34.1 | 1291.4 | | | | 40.2 | 643.4 | 400.5 | 34.1 | 103 | 312.1 | 1291.4 | 1242.9 | 214.2 |
| Nitrate as NO3 | mg/l | 0.4 | 27.5 | | | | 27.5 | 0.4 | <0.2 | 23 | 0.4 | <0.2 | <0.2 | <0.2 | <0.2 |
| Nitrite as NO2 | mg/l | <0.02 | 1.44 | | | | <0.02 | <0.02 | <0.02 | 1.44 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Total Cyanide | ug/l | <1 | 3 | 1 | EQS 2015 | 5 | <1 | 2 | 3 | <1 | 1 | 2 | 3 | 2 | <1 |
| Ammoniacal Nitrogen as NH3 | mg/l | 2.16 | 506.03 | 0.021 | EQS 2015 | 9 | 3.12 | 109.2 | 161.88 | 2.16 | 15.29 | 126.99 | 186.8 | 506.03 | 109.13 |
| Ammoniacal Nitrogen as NH4 | mg/l | 2.29 | 535.99 | | | | 3.31 | 106.13 | 170.93 | 2.29 | 16.72 | 123.57 | 197.86 | 535.99 | 111.36 |
| Dissolved Organic Carbon | mg/l | 2 | 112 | | | | <2 | 44 | 56 | <2 | 21 | 33 | 112 | 109 | 25 |
| pH | pH units | 6.82 | 7.2 | | | | 7.2 | 6.96 | 7.05 | 7.16 | 6.91 | 6.91 | 6.82 | 7.11 | 6.92 |
| **Phenolics** | | 0 | 0 | | | | | | | | | | | | |
| Phenol | ug/l | <0.5 | <0.5 | 7.7 | EQS 2015 | 0 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| **Metals** | | 0 | 0 | | | | | | | | | | | | |
| Dissolved Antimony | ug/l | <2 | 6 | | | | <2 | 4 | 2 | <2 | <2 | 3 | 6 | <2 | <2 |
| Dissolved Arsenic | ug/l | 0.9 | 9.8 | 25 | EQS 2015 | 0 | <0.9 | 9.8 | 5.2 | <0.9 | <0.9 | <0.9 | <0.9 | <0.9 | <0.9 |
| Dissolved Barium | ug/l | 24.9 | 914.3 | | | | 24.9 | 551.2 | 914.3 | 31.8 | 155.4 | 779.8 | 367.6 | 219.8 | 805.9 |
| Dissolved Beryllium | ug/l | <0.5 | 0.5 | | | | <0.5 | <0.5 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Dissolved Boron | ug/l | 44 | 2122 | | | | 44 | 1167 | 1279 | 66 | 451 | 1042 | 1576 | 2122 | 1002 |
| Dissolved Cadmium | ug/l | <0.03 | <0.03 | 0.2 | EQS 2015 | 0 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Total Dissolved Chromium | ug/l | <0.2 | 5 | | | | <0.2 | 1 | 2.4 | <0.2 | <0.2 | <0.2 | 5 | 1.9 | <0.2 |
| Dissolved Copper | ug/l | <3 | 5 | 3.76 | EQS 2015 | 2 | <3 | <3 | 4 | <3 | <3 | <3 | 5 | <3 | <3 |
| Dissolved Lead | ug/l | <0.4 | 0 | 1.3 | EQS 2015 | 0 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 |
| Dissolved Molybdenum | ug/l | <0.2 | 0 | | | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Dissolved Nickel | ug/l | 0.5 | 10.7 | 8.6 | EQS 2015 | 2 | 0.5 | 7.3 | 5.2 | 4.6 | 5.2 | 1.7 | 9.3 | 10.7 | 0.8 |
| Dissolved Selenium | ug/l | <1.2 | <1.2 | | | | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 |
| Dissolved Zinc | ug/l | 2.4 | 12.4 | 7.9 | EQS 2015 | 2 | 4.6 | 4.5 | 3.8 | 12.4 | 3 | 10.5 | 6.4 | 2.4 | 5.2 |
| Mercury Dissolved by CVAF | ug/l | <0.01 | <0.01 | 0.07 | EQS 2015 | 0 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| **PAH MS** | | 0 | 0 | | | | | | | | | | | | |
| Acenaphthene | ug/l | <0.01 | 3.19 | | | | <0.01 | 1.69 | 1.67 | 0.04 | 0.51 | 1.66 | 1.4 | 3.19 | 2.04 |
| Acenaphthylene | ug/l | 0.01 | 0.09 | | | | 0.01 | 0.09 | 0.09 | 0.01 | 0.03 | 0.02 | 0.07 | 0.04 | 0.06 |
| Anthracene | ug/l | <0.01 | 0.27 | 0.1 | EQS 2015 | 5 | <0.01 | 0.21 | 0.13 | <0.01 | 0.02 | 0.13 | 0.23 | 0.27 | 0.09 |
| Benzo(a)anthracene | ug/l | <0.01 | 0.05 | | | | <0.01 | 0.02 | 0.02 | <0.01 | <0.01 | <0.01 | 0.02 | 0.05 | <0.01 |
| Benzo(a)pyrene | ug/l | <0.01 | 0.01 | 0.00017 | EQS 2015 | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.01 | <0.01 |
| Benzo(b)fluoranthene | ug/l | <0.01 | 0.02 | 0.017 | EQS 2015 | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.02 | <0.01 |
| Benzo(ghi)perylene | ug/l | <0.01 | <0.01 | 0.00082 | EQS 2015 | 0 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Benzo(k)fluoranthene | ug/l | <0.01 | <0.01 | 0.017 | EQS 2015 | 0 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Chrysene | ug/l | <0.01 | 0.04 | | | | <0.01 | 0.02 | 0.03 | <0.01 | <0.01 | 0.01 | 0.03 | 0.04 | <0.01 |

| Project - A102760<br>Brockhampton West<br><br>Screening of Groundwater Data | | Min | Max | TSV | Source of TSV | Sample ID | CP01 (D) | CP02 (D) | CP02 (S) | CP03 (D) | CP03 (S) | CP05 | CP04 | CP01 (S) | CP06 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Sample Type | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water |
| | | | | | | Sampled Date | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 15/06/2017 | 15/06/2017 | 15/06/2017 | 15/06/2017 |
| | | | | | | Received Date | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 17/06/2017 | 17/06/2017 | 17/06/2017 | 17/06/2017 |
| | | | | | | | | | | | | | | | |
| | | | | | | Exceedances | | | | | | | | | |
| Dibenzo(ah)anthracene | ug/l | <0.01 | <0.01 | | | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Fluoranthene | ug/l | <0.01 | 0.52 | 0.0063 | EQS 2015 | 7 | <0.01 | 0.29 | 0.25 | <0.01 | 0.05 | 0.1 | 0.31 | 0.52 | 0.08 |
| Fluorene | ug/l | <0.01 | 1.67 | | | | <0.01 | 1.01 | 0.67 | 0.01 | 0.12 | 1.09 | 0.86 | 1.67 | 0.92 |
| Indeno(123cd)pyrene | ug/l | <0.01 | <0.01 | | | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Naphthalene | ug/l | <0.1 | 33.7 | 2 | EQS 2015 | 3 | <0.1 | 0.4 | 0.4 | <0.1 | 0.1 | 1 | 2.1 | 0.1 | 0.1 |
| Phenanthrene | ug/l | <0.01 | 2.4 | | | | <0.01 | 0.76 | 0.03 | 0.01 | 0.02 | 0.61 | 1.2 | 2.4 | 0.75 |
| Pyrene | ug/l | <0.01 | 0.3 | | | | <0.01 | 0.13 | 0.15 | <0.01 | 0.04 | 0.06 | 0.13 | 0.3 | 0.07 |
| PAH 16 Total | ug/l | <0.1 | 42.2 | | | | <0.1 | 4.6 | 3.4 | <0.1 | 0.9 | 4.7 | 11.3 | 42.2 | 11.1 |
| PAH Surrogate % Recovery | % | 70 | 85 | | | | 85 | 84 | 83 | 83 | 85 | 78 | 75 | 85 | 70 |
| Benzo(bk)fluoranthene | ug/l | <0.01 | 0.03 | 0.017 | EQS 2015 | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.03 | <0.01 |
| | | | | | | | | | | | | | | | |
| **BTEX/MTBE MS** | | | | | | | | | | | | | | | |
| Methyl Tertiary Butyl Ether | | <0.1 | 0.3 | | | ug/l | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.3 | 0.3 | 0.1 |
| Benzene | | <0.5 | 7.4 | 8 | EQS 2015 | ug/l | <0.5 | 6.7 | 5.1 | <0.5 | <0.5 | 7.3 | 7.4 | 2.4 | 1.4 |
| Toluene | | <5 | 0 | 74 | EQS 2015 | ug/l | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Ethylbenzene | | <1 | 12 | 20 | EQS 2015 | ug/l | <1 | 12 | <1 | <1 | <1 | <1 | 3 | <1 | 1 |
| p/m-Xylene | | <2 | 9 | 30 | EQS 2015 | ug/l | <2 | <2 | <2 | <2 | <2 | <2 | 9 | 2 | 4 |
| o-Xylene | | <1 | 2 | 30 | EQS 2015 | ug/l | <1 | <1 | <1 | <1 | <1 | <1 | 2 | 1 | <1 |
| Surrogate Recovery Toluene D8 | | 97 | 112 | | | % | 112 | 111 | 111 | 111 | 110 | 98 | 97 | 97 | 97 |
| Surrogate Recovery 4-Bromofluorobenzene | | 97 | 117 | | | % | 105 | 115 | 114 | 117 | 115 | 97 | 98 | 97 | 97 |
| **TPH CWG** | | | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | | | |
| >C5-C6 | | <10 | 21 | | | ug/l | <10 | <10 | <10 | <10 | <10 | <10 | 21 | <10 | <10 |
| >C6-C8 | | <10 | 40 | | | ug/l | <10 | <10 | <10 | <10 | <10 | <10 | 40 | <10 | <10 |
| >C8-C10 | | <10 | 40 | | | ug/l | <10 | 25 | 20 | <10 | <10 | 16 | 40 | 13 | 34 |
| >C10-C12 | | <5 | <5 | | | ug/l | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| >C12-C16 | | <10 | <10 | | | ug/l | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >C16-C21 | | <10 | <10 | | | ug/l | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >C21-C35 | | <10 | <10 | | | ug/l | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Total aliphatics C5-35 | | <10 | 101 | | | ug/l | <10 | 25 | 20 | <10 | <10 | 16 | 101 | 13 | 34 |
| **Aromatics** | | | | | | | | | | | | | | | |
| >C5-EC7 | | <10 | <10 | | | ug/l | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >EC7-EC8 | | <10 | <10 | | | ug/l | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >EC8-EC10 | | <10 | 24 | | | ug/l | <10 | 16 | <10 | <10 | <10 | <10 | 24 | <10 | 13 |
| >EC10-EC12 | | <5 | 37 | | | ug/l | <5 | 31 | 23 | <5 | <5 | 27 | 37 | <5 | 37 |
| >EC12-EC16 | | <10 | 40 | | | ug/l | <10 | 10 | <10 | <10 | <10 | <10 | 40 | <10 | <10 |
| >EC16-EC21 | | <10 | 70 | | | ug/l | <10 | <10 | <10 | <10 | <10 | 70 | <10 | <10 | <10 |
| >EC21-EC35 | | <10 | 130 | | | ug/l | <10 | <10 | <10 | <10 | <10 | 130 | <10 | <10 | <10 |
| Total aromatics C5-35 | | <10 | 227 | | | ug/l | <10 | 57 | 23 | <10 | <10 | 227 | 101 | <10 | 50 |
| Total aliphatics and aromatics(C5-35) | | <10 | 243 | | | ug/l | <10 | 82 | 43 | <10 | <10 | 243 | 202 | 13 | 84 |

EQS for copper, lead, nickel and zinc are intended to applicable to the bioavailoable concentration only - whilst it is possible to predict the proportion that will be bioavailable using the UKTAG PNEC calculator (and thereby adjust the EQS) this requires chemical data applicable to the receiving surface water. In lieu of any chemical data it is conservatively assumed that all of the metal will be bioavailable

| Project - A102760 | | | | | | Sample ID | CP01 (D) | CP02 (D) | CP02 (S) | CP03 (D) | CP03 (S) | CP05 | CP04 | CP01 (S) | CP06 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brockhampton West | | | | | | Sample Type | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water |
| Screening of Groundwater Data | | | | | | Sampled Date | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 15/06/2017 | 15/06/2017 | 15/06/2017 | 15/06/2017 |
| | | | | | | Received Date | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 17/06/2017 | 17/06/2017 | 17/06/2017 | 17/06/2017 |
| Test | Units | Min | Max | TSV | Source of TSV | Exceedances | | | | | | | | | |
| Total Alkalinity as CaCO3 # | mg/l | 262 | 2346 | | | | 262 | 1236 | 1486 | 288 | 736 | 1454 | 1446 | 2346 | 1318 |
| **Metals** | | 0 | 0 | | | | | | | | | | | | |
| Dissolved Antimony # | ug/l | 2 | 6 | 5 | DWS | 1 | <2 | 4 | 2 | <2 | <2 | 3 | 6 | <2 | <2 |
| Dissolved Arsenic # | ug/l | 5.2 | 9.8 | 10 | DWS | 0 | <0.9 | 9.8 | 5.2 | <0.9 | <0.9 | <0.9 | <0.9 | <0.9 | <0.9 |
| Dissolved Barium # | ug/l | 24.9 | 914.3 | 700 | DWS | 3 | 24.9 | 551.2 | 914.3 | 31.8 | 155.4 | 778.8 | 367.6 | 219.8 | 806.3 |
| Dissolved Beryllium | ug/l | 0.5 | 0.5 | | | | <0.5 | <0.5 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Dissolved Boron | ug/l | 44 | 2122 | 1000 | DWS | 6 | 44 | 1192 | 1978 | 66 | 451 | 1942 | 1676 | 2122 | 1936 |
| Dissolved Cadmium # | ug/l | 0 | 0 | 5 | DWS | | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Total Dissolved Chromium # | ug/l | 1 | 5 | 50 | DWS | 0 | <0.2 | 1 | 2.4 | <0.2 | <0.2 | <0.2 | 5 | 1.9 | <0.2 |
| Dissolved Copper # | ug/l | 4 | 5 | 2000 | DWS | 0 | <3 | <3 | 4 | <3 | <3 | <3 | 5 | <3 | <3 |
| Dissolved Lead # | ug/l | 0 | 0 | 10 | DWS | 0 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 |
| Dissolved Molybdenum # | ug/l | 0 | 0 | 70 | DWS | 0 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Dissolved Nickel # | ug/l | 0.5 | 10.7 | 20 | DWS | 0 | 0.5 | 7.3 | 5.2 | 4.6 | 5.2 | 1.7 | 9.3 | 10.7 | 0.8 |
| Dissolved Selenium # | ug/l | 0 | 0 | 10 | DWS | 0 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 |
| Dissolved Zinc # | ug/l | 2.4 | 12.4 | | | | 4.6 | 4.5 | 3.8 | 12.4 | 3 | 10.8 | 6.4 | 2.4 | 5.2 |
| Mercury Dissolved by CVAF # | ug/l | 0 | 0 | 1 | DWS | 0 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| **PAH MS** | | 0 | 0 | | | | | | | | | | | | |
| Acenaphthene | ug/l | 0.04 | 3.19 | | | | <0.01 | 1.69 | 1.67 | 0.04 | 0.51 | 1.66 | 1.4 | 3.19 | 2.04 |
| Acenaphthylene | ug/l | 0.01 | 0.09 | | | | 0.01 | 0.09 | 0.09 | 0.01 | 0.03 | 0.02 | 0.07 | 0.04 | 0.06 |
| Anthracene | ug/l | 0.02 | 0.27 | | | | <0.01 | 0.21 | 0.13 | <0.01 | 0.02 | 0.13 | 0.23 | 0.27 | 0.09 |
| Benzo(a)anthracene | ug/l | 0.02 | 0.05 | | | | <0.01 | 0.02 | 0.02 | <0.01 | <0.01 | <0.01 | 0.02 | 0.05 | <0.01 |
| Benzo(a)pyrene | ug/l | 0.01 | 0.01 | 0.01 | DWS | 0 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.01 | <0.01 |
| Benzo(b)fluoranthene | ug/l | 0.02 | 0.02 | 0.1 | DWS (sum of four) | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.02 | <0.01 |
| Benzo(ghi)perylene | ug/l | 0 | 0 | 0.1 | DWS (sum of four) | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Benzo(k)fluoranthene | ug/l | 0 | 0 | 0.1 | DWS (sum of four) | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Chrysene | ug/l | 0.01 | 0.04 | | | | <0.01 | 0.02 | 0.03 | <0.01 | <0.01 | 0.01 | 0.03 | 0.04 | <0.01 |
| Dibenzo(ah)anthracene | ug/l | 0 | 0 | | | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Fluoranthene | ug/l | 0.05 | 0.52 | | | | <0.01 | 0.22 | 0.25 | <0.01 | 0.05 | 0.1 | 0.21 | 0.52 | 0.08 |
| Fluorene | ug/l | 0.01 | 1.67 | | | | <0.01 | 1.01 | 0.67 | 0.01 | 0.12 | 1.09 | 0.86 | 1.67 | 0.92 |
| Indeno(123cd)pyrene | ug/l | 0 | 0 | 0.1 | DWS (sum of four) | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Naphthalene | ug/l | 0.1 | 33.7 | | | | <0.1 | 0.4 | 0.4 | <0.1 | 0.1 | 1 | 7.1 | 33.7 | 7.1 |
| Phenanthrene | ug/l | 0.01 | 2.4 | | | | <0.01 | 0.76 | 0.03 | 0.01 | 0.02 | 0.61 | 1.2 | 2.4 | 0.75 |
| Pyrene | ug/l | 0.04 | 0.3 | | | | <0.01 | 0.13 | 0.15 | <0.01 | 0.04 | 0.06 | 0.13 | 0.3 | 0.07 |
| PAH 16 Total | ug/l | 0.9 | 42.2 | | | | <0.1 | 4.6 | 3.4 | <0.1 | 0.9 | 4.7 | 11.3 | 42.2 | 11.1 |
| PAH Surrogate % Recovery | % | 70 | 85 | | | | 85 | 84 | 83 | 83 | 85 | 78 | 75 | 85 | 70 |
| Benzo(bk)fluoranthene | ug/l | 0.03 | 0.03 | 0.1 | DWS (sum of four) | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.03 | <0.01 |
| **TPH CWG** | | | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | | | |
| >C5-C6 # | ug/l | 21 | 21 | 10 | DWS | 1 | <10 | <10 | <10 | <10 | <10 | <10 | 21 | <10 | <10 |
| >C6-C8 # | ug/l | 40 | 40 | 10 | DWS | 1 | <10 | <10 | <10 | <10 | <10 | <10 | 40 | <10 | <10 |
| >C8-C10 # | ug/l | 13 | 40 | 10 | DWS | 6 | <10 | 25 | 20 | <10 | <10 | 16 | 40 | 13 | 34 |
| >C10-C12 # | ug/l | 0 | 0 | 10 | DWS | 0 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| >C12-C16 # | ug/l | 0 | 0 | 10 | DWS | 0 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >C16-C21 # | ug/l | 0 | 0 | 10 | DWS | 0 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >C21-C35 # | ug/l | 0 | 0 | 10 | DWS | 0 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Total aliphatics C5-35 # | ug/l | 13 | 101 | | | | <10 | 25 | 20 | <10 | <10 | 16 | 101 | 13 | 34 |

| Project - A102760 | | | | | | Sample ID | CP01 (D) | CP02 (D) | CP02 (S) | CP03 (D) | CP03 (S) | CP05 | CP04 | CP01 (S) | CP06 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brockhampton West | | | | | | Sample Type | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water | ES Water |
| Screening of Groundwater Data | | | | | | Sampled Date | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 08/06/2017 | 15/06/2017 | 15/06/2017 | 15/06/2017 | 15/06/2017 |
| | | | | | | Received Date | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 10/06/2017 | 17/06/2017 | 17/06/2017 | 17/06/2017 | 17/06/2017 |
| Test | Units | Min | Max | TSV | Source of TSV | Exceedances | | | | | | | | | |
| **Aromatics** | | | | | | | | | | | | | | | |
| >C5-EC7 # | ug/l | 0 | 0 | 1 | DWS | 0 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >EC7-EC8 # | ug/l | 0 | 0 | 10 | DWS | 0 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >EC8-EC10 # | ug/l | 13 | 24 | 10 | DWS | 3 | <10 | 24 | <10 | <10 | <10 | <10 | 24 | <10 | 13 |
| >EC10-EC12 # | ug/l | 23 | 37 | 10 | DWS | 5 | <5 | 37 | 23 | <5 | <5 | 23 | 37 | <5 | 27 |
| >EC12-EC16 # | ug/l | 10 | 40 | 10 | DWS | 1 | <10 | 10 | <10 | <10 | <10 | <10 | 40 | <10 | <10 |
| >EC16-EC21 # | ug/l | 70 | 70 | 10 | DWS | 1 | <10 | <10 | <10 | <10 | <10 | 70 | <10 | <10 | <10 |
| >EC21-EC35 # | ug/l | 130 | 130 | 10 | DWS | 1 | <10 | <10 | <10 | <10 | <10 | 130 | <10 | <10 | <10 |
| Total aromatics C5-35 # | ug/l | 23 | 227 | 10 | DWS | 5 | <10 | 82 | 43 | <10 | <10 | 243 | 202 | <10 | 84 |
| Total aliphatics and aromatics(C5-35) # | ug/l | 13 | 243 | | | | <10 | 82 | 43 | <10 | <10 | 243 | 202 | 13 | 84 |
| | | | | | | | | | | | | | | | |
| **BTEX/MTBE MS** | | | | | | | | | | | | | | | |
| Methyl Tertiary Butyl Ether # | ug/l | 0.1 | 0.3 | | | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.3 | 0.3 | 0.1 |
| Benzene # | ug/l | 1.4 | 7.4 | 1 | DWS | 6 | <0.5 | 5.1 | 3.1 | <0.5 | <0.5 | 7.4 | 7.4 | 3.1 | 1.4 |
| Toluene # | ug/l | 0 | 0 | 700 | DWS | 0 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Ethylbenzene # | ug/l | 1 | 12 | | | | <1 | 12 | <1 | <1 | <1 | <1 | 3 | <1 | 1 |
| p/m-Xylene # | ug/l | 2 | 9 | 500 | DWS | 0 | <2 | <2 | <2 | <2 | <2 | <2 | 9 | 2 | 4 |
| o-Xylene # | ug/l | 1 | 2 | 500 | DWS | 0 | <1 | <1 | <1 | <1 | <1 | <1 | 2 | 1 | <1 |
| Surrogate Recovery Toluene D8 | % | 97 | 112 | | | | 112 | 111 | 111 | 111 | 110 | 98 | 97 | 97 | 97 |
| Surrogate Recovery 4-Bromofluorobenzene | % | 97 | 117 | | | | 105 | 115 | 114 | 117 | 115 | 97 | 98 | 97 | 97 |
| Phenol | ug/l | 0 | 0 | | | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Dissolved Calcium # | mg/l | 110 | 266.4 | | | | 110.2 | 193.6 | 266.4 | 110 | 187.9 | NA | NA | 117.2 | NA |
| Total Hardness Dissolved (as CaCO3) | mg/l | 291 | 1138 | | | | 291 | 773 | 915 | 326 | 585 | 975 | 1138 | 710 | 689 |
| Sulphate as SO4 # | mg/l | 3 | 63.5 | 7 | DWS | 2 | 14.2 | 63.5 | <0.5 | 11 | 3 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chloride # | mg/l | 34.1 | 1291.4 | 250 | DWS | 6 | 40.2 | 643.4 | 650.6 | 34.1 | 103 | 312.1 | 1291.4 | 1047.1 | 214.3 |
| Nitrate as NO3 # | mg/l | 0.4 | 27.5 | 50 | DWS | 0 | 27.5 | 0.4 | <0.2 | 23 | 0.4 | <0.2 | <0.2 | <0.2 | <0.2 |
| Nitrite as NO2 # | mg/l | 1.44 | 1.44 | 0.5 | DWS | 1 | <0.02 | <0.02 | <0.02 | 1.44 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Total Cyanide | ug/l | 1 | 3 | 50 | DWS | 0 | <1 | 2 | 3 | <1 | 1 | 2 | 3 | 3 | <1 |
| Ammoniacal Nitrogen as NH3 # | mg/l | 2.16 | 506.03 | | | | 3.12 | 100.2 | 161.38 | 2.16 | 15.79 | 116.66 | 186.8 | 506.03 | 105.13 |
| Ammoniacal Nitrogen as NH4 # | mg/l | 2.29 | 535.99 | 0.5 | DWS | 9 | 3.31 | 106.13 | 170.93 | 2.29 | 16.72 | 123.57 | 197.86 | 535.99 | 111.34 |
| Dissolved Organic Carbon # | mg/l | 21 | 112 | | | | <2 | 44 | 56 | <2 | 21 | 33 | 112 | 109 | 25 |
| pH # | pH units | 6.82 | 7.2 | | | | 7.2 | 6.96 | 7.05 | 7.16 | 6.91 | 6.91 | 6.82 | 7.11 | 6.92 |

EQS for copper, lead, nickel and zinc are intended to applicable to the bioavailable concentration only - whilst it is possible to predict the proportion that will be bioavailable using the UKTAG PNEC calculator (and thereby adjust the EQS) this requires chemical data applicable to the receiving surface water. In lieu of any chemical data it is conservatively assumed that all of the metal will be bioavailable

The EQS for zinc has been adjusted (in accordance with the Water Framework Directive Regulations 2015) by adding the background concentration for the River Thames of 2ug/L

# Appendix L – Tier 1 Screening Sheets - Leachate

DRAFT

| Project - A102760<br>Brockhampton West<br><br>Screening of Leachate Data | | Min | Max | TSV | Source of TSV | Sample ID | CP01 | CP02A | CP05 | TP01 | TP11 | TP03 | TP04 | TP10 | TP09 | TP08 | TP05 | TP06 | CP03 | CP06 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Depth | 7.00 | 4.5 | 2.00 | 3.40 | 2.50 | 1.80 | 3.30 | 3.30 | 3.80 | 2.30 | 2.40 | 2.00 | 4.80 | 2.50 |
| | | | | | | Sample Type | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate |
| | | | | | | Sampled Date | 02/05/2017 | 04/05/2017 | 08/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 09/05/2017 | 11/05/2017 |
| | | | | | | Received Date | 04/05/2017 | 05/05/2017 | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 12/05/2017 |
| | | | | | | Exceedances | | | | | | | | | | | | | | |
| Total Alkalinity as CaCO3 | mg/l | 62 | 258 | | | | 240 | 174 | 116 | 142 | 128 | 62 | 146 | 140 | 190 | 212 | 132 | 258 | 150 | 212 |
| Sulphate as SO4 | mg/l | 12.69 | 136.42 | 250 | DWS 2016 | 0 | 12.69 | 38.39 | 51.3 | 86.37 | 56.67 | 27.47 | 47.19 | 52.39 | 33.01 | 81.49 | 92.74 | 27.63 | 76.74 | 136.42 |
| Chloride | mg/l | 1.1 | 107.5 | 250 | DWS 2016 | 0 | 72.6 | 9.4 | 1.1 | 24.9 | 107.5 | 37.3 | 2.1 | 7.4 | 21 | 26.2 | 1.7 | 70.3 | 19.1 | 20 |
| Nitrate as NO3 | mg/l | <0.2 | 0.8 | 50 | DWS 2016 | 0 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.6 | <0.2 | 0.8 | 0.3 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Nitrite as NO2 | mg/l | <0.02 | 0.12 | 0.5 | DWS 2016 | 0 | <0.02 | <0.02 | 0.03 | <0.02 | <0.02 | <0.02 | <0.02 | 0.12 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Total Cyanide | ug/l | <0.01 | 0.02 | 1 | EQS 2015 | 0 | 0.02 | <0.01 | <0.01 | <0.01 | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Ammoniacal Nitrogen as NH3 | mg/l | 1.58 | 50.73 | 0.021 | EQS | 14 | 50.73 | 3.3 | 3.85 | 11.32 | 12.34 | 2.1 | 10.44 | 4.34 | 16.52 | 11.85 | 5.78 | 25.7 | 1.58 | 18.32 |
| Ammoniacal Nitrogen as NH4 | mg/l | 1.67 | 53.73 | 0.5 | DWS | 14 | 53.73 | 3.49 | 3.81 | 12.41 | 13.28 | 2.86 | 11.13 | 4.83 | 17.83 | 12.53 | 6.09 | 27.23 | 1.67 | 19.41 |
| Dissolved Organic Carbon | mg/l | 6 | 31 | | | | 20 | <2 | 7 | 19 | 26 | 23 | 9 | 15 | 23 | 12 | 9 | 14 | 6 | 31 |
| pH | pH units | 7.06 | 8.32 | | | | 8.21 | 8.08 | 7.9 | 8 | 7.93 | 7.06 | 8.06 | 8.04 | 8.13 | 8.05 | 7.85 | 8.32 | 7.75 | 7.96 |
| **Phenolics** | | | | | | | | | | | | | | | | | | | | |
| Phenol | ug/l | <0.5 | 1.7 | 7.7 | EQS 2015 | 0 | 1.7 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| **Metals** | | | | | | | | | | | | | | | | | | | | |
| Dissolved Antimony | ug/l | 6 | 73 | 5 | DWS 2016 | 9 | 8 | 11 | <2 | 11 | 8 | <2 | <2 | <2 | <2 | 22 | 16 | 20 | 12 | 13 |
| Dissolved Arsenic | ug/l | 3 | 8.7 | 25 | EQS 2015 | 0 | 8.7 | 3.4 | 3 | 4.8 | 4.9 | <2.5 | 5.3 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 |
| Dissolved Barium | ug/l | 8 | 119 | 700 | DWS 2008 | 0 | 26 | 50 | 27 | 65 | 72 | <3 | 42 | 43 | 67 | 119 | 76 | 67 | 77 | 8 |
| Dissolved Beryllium | ug/l | <0.5 | <0.5 | | | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Dissolved Boron | ug/l | 19 | 426 | 1000 | DWS 2016 | 0 | 340 | 63 | 19 | 209 | 254 | <12 | 88 | 81 | 160 | 222 | 67 | 331 | 232 | 426 |
| Dissolved Cadmium | ug/l | <1.5 | <1.5 | 0.2 | EQS 2015 | 0 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total Dissolved Chromium | ug/l | <3 | <3 | 50 | DWS 2016 | 0 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| Dissolved Copper | ug/l | 0 | 0 | 3.76 | EQS 2015 | 0 | <3 | <2 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| Dissolved Lead | ug/l | <0.4 | 1 | 1.3 | EQS 2015 | 0 | <0.4 | <0.4 | 0.5 | 1 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 |
| Dissolved Molybdenum | ug/l | <2 | 102 | 70 | DWS 2008 | 2 | 21 | 44 | 5 | 22 | 14 | <2 | 43 | 51 | 11 | 77 | 29 | 90 | 25 | 38 |
| Dissolved Nickel | ug/l | <3 | 13 | 8.6 | EQS 2015 | 3 | 6 | <2 | <2 | 5 | <2 | <2 | 3 | <2 | 6 | 13 | <2 | 10 | 3 | 9 |
| Dissolved Selenium | ug/l | <3 | <3 | 10 | DWS 2016 | 0 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| Dissolved Zinc | ug/l | <3 | 7 | 7.9 | EQS 2015 | 0 | 5 | <3 | <3 | 7 | 6 | 7 | 4 | 4 | 5 | 4 | 5 | 6 | 4 | 7 |
| Mercury Dissolved by CVAF | ug/l | <0.01 | 0.4 | 0.07 | EQS 2015 | 6 | 0.4 | <0.01 | 0.01 | 0.06 | 0.2 | 0.36 | 0.06 | 0.02 | 0.08 | 0.12 | <0.01 | 0.34 | <0.01 | 0.03 |
| **PAH MS** | | | | | | | | | | | | | | | | | | | | |
| Acenaphthene | ug/l | 0.03 | 14.39 | | | | 9.07 | 7.62 | 0.04 | 5.08 | 0.39 | 0.03 | 0.44 | 0.03 | 0.5 | 0.81 | 0.21 | 0.04 | 14.39 | 6.37 |
| Acenaphthylene | ug/l | 0.01 | 0.59 | | | | 0.21 | 0.18 | 0.03 | 0.09 | 0.05 | 0.02 | 0.03 | 0.08 | 0.03 | 0.22 | 0.04 | 0.01 | 0.37 | 0.59 |
| Anthracene | ug/l | <0.01 | 1.01 | 0.1 | EQS 2015 | 8 | 1.01 | 0.91 | 0.01 | 0.25 | 0.2 | <0.01 | 0.09 | 0.11 | 0.1 | 0.19 | 0.06 | <0.01 | 0.98 | 0.77 |
| Benzo(a)anthracene | ug/l | 0.02 | 1.68 | | | | 0.4 | 0.1 | <0.01 | 0.12 | 0.21 | <0.01 | 0.09 | 0.57 | 0.12 | 0.04 | 0.07 | 0.02 | 0.16 | 1.68 |
| Benzo(a)pyrene | ug/l | <0.01 | 1.67 | 0.00017 | EQS 2015 | 12 | 0.27 | 0.05 | <0.01 | 0.1 | 0.18 | <0.01 | 0.03 | 0.05 | 0.03 | 0.04 | 0.04 | 0.02 | 0.05 | 1.67 |
| Benzo(b)fluoranthene | ug/l | <0.01 | 2.69 | 0.017 | EQS 2015 | 12 | 0.37 | 0.06 | 0.01 | 0.12 | 0.18 | <0.01 | 0.03 | 0.05 | 0.1 | 0.05 | 0.05 | 0.02 | 0.08 | 1.03 |
| Benzo(ghi)perylene | ug/l | <0.01 | 1.06 | 0.00082 | EQS 2015 | 12 | 0.1 | 0.03 | <0.01 | 0.04 | 0.05 | <0.01 | 0.04 | 0.02 | 0.03 | 0.02 | 0.01 | 0.01 | 0.01 | 1.06 |
| Benzo(k)fluoranthene | ug/l | <0.01 | 1.04 | 0.017 | EQS 2015 | 11 | 0.13 | 0.01 | <0.01 | 0.01 | 0.08 | <0.01 | 0.04 | 0.03 | 0.08 | 0.02 | 0.02 | <0.01 | 0.03 | 1.04 |
| Chrysene | ug/l | <0.01 | 2.71 | | | | 0.47 | 0.11 | <0.01 | 0.13 | 0.25 | <0.01 | 0.1 | 0.56 | 0.23 | 0.06 | 0.07 | 0.02 | 0.17 | 2.71 |
| Dibenzo(ah)anthracene | ug/l | <0.01 | 0.35 | | | | 0.02 | <0.01 | <0.01 | 0.01 | 0.02 | <0.01 | <0.01 | 0.06 | 0.02 | <0.01 | <0.01 | <0.01 | <0.01 | 0.35 |
| Fluoranthene | ug/l | <0.01 | 4.35 | 0.0063 | EQS 2015 | 13 | 2.08 | 0.33 | 0.03 | 0.41 | 0.69 | <0.01 | 0.08 | 1.07 | 0.38 | 0.12 | 0.29 | 0.06 | 0.06 | 4.35 |
| Fluorene | ug/l | 0.02 | 5.06 | | | | 5.06 | 4.59 | 0.08 | 1.49 | 0.29 | 0.05 | 0.27 | 0.03 | 0.28 | 0.44 | 0.09 | 0.02 | 4.55 | 2.91 |
| Indeno(123cd)pyrene | ug/l | <0.01 | 0.98 | | | | 0.09 | 0.02 | <0.01 | 0.04 | 0.09 | <0.01 | 0.04 | 0.48 | 0.1 | 0.03 | 0.03 | 0.01 | 0.02 | 0.98 |
| Naphthalene | ug/l | <0.1 | 26.5 | 2 | EQS 2015 | 4 | 26.5 | 8.6 | <0.1 | 3.5 | 0.7 | <0.1 | <0.1 | <0.1 | 0.1 | 2.4 | <0.1 | <0.1 | 1.1 | 1 |
| Phenanthrene | ug/l | 0.03 | 6.73 | | | | 6.73 | 6.26 | 0.19 | 1.05 | 0.75 | 0.07 | 0.2 | 0.28 | 0.45 | 0.4 | 0.06 | 0.03 | 2.98 | 4.82 |
| Pyrene | ug/l | 0.02 | 3.84 | | | | 1.34 | 0.7 | 0.02 | 0.3 | 0.59 | <0.01 | 0.22 | 1 | 0.35 | 0.15 | 0.2 | 0.03 | 1.14 | 3.84 |
| PAH 16 Total | ug/l | 0.2 | 53.8 | | | | 53.8 | 25.4 | 0.4 | 11.8 | 4.8 | 0.2 | 2 | 6.7 | 3.2 | 5 | 1.3 | 0.3 | 27.8 | 36.8 |
| PAH Surrogate % Recovery | % | 74 | 109 | | | | 74 | 79 | 89 | 86 | 91 | 82 | 89 | 90 | 90 | 109 | 80 | 96 | 91 | 78 |
| Benzo(bk)fluoranthene | ug/l | <0.01 | 3.73 | 0.017 | EQS 2015 | 13 | 0.46 | 0.08 | 0.01 | 0.17 | 0.3 | <0.01 | 0.13 | 0.8 | 0.26 | 0.08 | 0.08 | 0.03 | 0.11 | 3.73 |

| Project - A102760<br>Brockhampton West<br><br>Screening of Leachate Data | | Min | Max | TSV | Source of TSV | Sample ID | CP01 | CP02A | CP05 | TP01 | TP11 | TP03 | TP04 | TP10 | TP09 | TP08 | TP05 | TP06 | CP03 | CP06 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Depth | 7.00 | 4.5 | 2.00 | 3.40 | 2.50 | 1.80 | 3.30 | 3.30 | 3.80 | 2.30 | 2.40 | 2.00 | 4.80 | 2.50 |
| | | | | | | Sample Type | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate | ES Leachate |
| | | | | | | Sampled Date | 02/05/2017 | 04/05/2017 | 08/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 09/05/2017 | 11/05/2017 |
| | | | | | | Received Date | 04/05/2017 | 05/05/2017 | 09/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 10/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 11/05/2017 | 12/05/2017 |
| | | | | | | Exceedances | | | | | | | | | | | | | | |
| **BTEX/MTBE MS** | | | | | | | | | | | | | | | | | | | | |
| Methyl Tertiary Butyl Ether | ug/l | <1 | <1 | | | | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Benzene | ug/l | <0.5 | <0.5 | 8 | EQS 2015 | 0 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Toluene | ug/l | <5 | 0 | 74 | EQS 2015 | 0 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Ethylbenzene | ug/l | <1 | 2 | 20 | EQS 2015 | 0 | 2 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| p/m-Xylene | ug/l | <2 | 4 | 30 | EQS 2015 | 0 | 3 | <2 | <2 | <2 | 4 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 |
| o-Xylene | ug/l | <1 | 1 | 30 | EQS 2015 | 0 | <1 | <1 | <1 | <1 | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Surrogate Recovery Toluene D8 | % | 100 | 127 | | | | 122 | 127 | 101 | 101 | 100 | 101 | 103 | 100 | 110 | 108 | 105 | 103 | 104 | 117 |
| Surrogate Recovery 4-Bromofluorobenzene | % | 76 | 124 | | | | 76 | 124 | 103 | 102 | 104 | 102 | 102 | 99 | 105 | 105 | 104 | 103 | 98 | 106 |
| **TPH CWG** | | | | | | | | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | | | | | | | | |
| >C5-C6 | ug/l | <10 | <10 | | | 0 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >C6-C8 | ug/l | <0 | <10 | | | 0 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >C8-C10 | ug/l | <10 | 51 | | | 5 | 15 | <10 | <10 | 23 | 35 | <10 | 51 | <10 | 38 | <10 | <10 | <10 | <10 | <10 |
| >C10-C12 | ug/l | <5 | <5 | | | 0 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| >C12-C16 | ug/l | <10 | <10 | | | 0 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >C16-C21 | ug/l | <10 | 180 | | | 1 | <10 | 180 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >C21-C35 | ug/l | 380 | 2030 | | | 4 | <10 | 2030 | <10 | <10 | <10 | <10 | 380 | 1470 | <10 | <10 | <10 | <10 | <10 | 580 |
| Total aliphatics C5-35 | ug/l | 15 | 2210 | | | | 15 | 2210 | <10 | 23 | 35 | <10 | 431 | 1470 | 38 | <10 | <10 | <10 | <10 | 580 |
| **Aromatics** | | | | | | | | | | | | | | | | | | | | |
| >C5-EC7 | ug/l | <10 | <10 | 8 | EQS 2015 | 0 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >EC7-EC8 | ug/l | <10 | <10 | 74 | EQS 2015 | 0 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >EC8-EC10 | ug/l | <10 | 27 | 20 | EQS 2015 | 1 | <10 | <10 | <10 | <10 | 14 | <10 | 27 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >EC10-EC12 | ug/l | <5 | 49 | 2 | EQS 2015 | 14 | 49 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | 15 | <5 | <5 | <5 | <5 |
| >EC12-EC16 | ug/l | <10 | 80 | 10 | DWS 1989 | 2 | 80 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | 80 | <10 | <10 | <10 | <10 |
| >EC16-EC21 | ug/l | <10 | 100 | 0.00017 | EQS 2015 | 2 | 100 | 30 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| >EC21-EC35 | ug/l | <10 | 610 | 0.0082 | EQS 2015 | 4 | <10 | 480 | <10 | <10 | <10 | <10 | 140 | 610 | <10 | <10 | <10 | <10 | <10 | 310 |
| Total aromatics C5-35 | ug/l | <10 | 610 | | | | 229 | 510 | <10 | <10 | 14 | <10 | 167 | 610 | <10 | 95 | <10 | <10 | <10 | 310 |
| Total aliphatics and aromatics(C5-35) | ug/l | 23 | 2720 | 10 | DWS | 9 | 244 | 2720 | <10 | 23 | 49 | <10 | 598 | 2080 | 38 | 95 | <10 | <10 | <10 | 890 |

EQS for copper, lead, nickel and zinc are intended to applicable to the bioavalloable concentration only - whilst it is possible to predict the proportion that will be bioavailable using the UKTAG PNEC calculator (and thereby adjust the EQS) this requires chemical data applicable to the receiving surface water. In lieu of any chemical data it is conservatively assumed that all of the metal will be bioavailable

DRAFT

# Appendix H – Risk Definitions

# Contaminated Land Risk Definitions

The following methodology is based on the methodology presented in CIRIA C552 Contaminated Land Risk Assessment: A Guide to Good Practice 2001. It requires the classification of the:

- Magnitude of the potential consequence (severity) of the Risk occurring: and
- Magnitude of the Probability (likelihood) of the Risk occurring.

The classifications are then compared to indicate the risk presented by each pollutant linkage.

**Consequence to Receptor Definition Matrix**

| | Human Health | Controlled Waters | Buildings/Services |
|---|---|---|---|
| **Severe Consequence** | Acute or chronic permanent impact on human health. | Sensitive controlled water pollution ongoing, or just about to occur. | Catastrophic collapse |
| **Medium Consequence** | Chronic permanent impact on human health | Gradual pollution of sensitive controlled water | Degradation of materials |
| **Mild Consequence** | Chronic temporary impact on human health | Gradual pollution of non-sensitive controlled water | Damage to building rendering it unsafe.to occupy (eg foundation damage resulting in instability). |
| **Minor Consequence** | Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc). | Slight discoloration of water | Easily repairable effects of damage to buildings, structures and services, i.e discoloration of concrete |

**Probability Definitions**

| Probability | Definition in Context |
|---|---|
| **Higher** | There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.<br>Positive evidence of source, pathway and receptor. |
| **Likely** | There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.<br>Suspect source, pathway, and receptor |
| **Low Likelihood** | There is a pollution linkage and circumstances are possible under which an event could occur.<br>However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term. |
| **Unlikely** | There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term<br>No evidence of hazard, pathway, and receptor |

## Standard Risk Matrix

| | | Consequence/Magnitude of impact | | | |
|---|---|---|---|---|---|
| | | Severe | Medium | Mild | Minor |
| Probability | **High** | Very High | High | Moderate | Moderate/Low |
| | **Likely** | High | Moderate | Moderate/low | Low |
| | **Low Likelihood** | Moderate | Moderate/low | Low | Very Low |
| | **Unlikely** | Moderate/low | Low | Very Low | Very Low |

## Classified risks and likely action

| Significance Level | Definition/Comments |
|---|---|
| **Very High Risk** | There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening.<br>This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.<br>Demonstrable contaminated land situation, highest threat & liability level, urgent action recommended. |
| **High Risk** | Harm is likely to arise to a designated receptor from an identified hazard.<br>Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.<br>Likely contaminated land situation, risk assessment and action recommended. |
| **Moderate** | It is possible that harm could arise to a designated receptor from an identified hazard. However, if is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild<br>Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.<br>Plausible contaminated land situation, risk assessment and possible action recommended. |
| **Low Risk** | It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.<br>Unlikely contaminated land situation, possible risk assessment and possible action. |
| **Very Low Risk** | There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.<br>Negligible risk, no action recommended except vigilance for changes in conditions. |

# Geotechnical Risk Classification

The geohazards listed in the report within Section 4 follow guidance presented in Clayton, C.R.I. (2001) *Managing Geotechnical Risk*, Thomas Telford and the Highways Agency document HD22/08 '*Managing Geotechnical Risk*' (2008) which aims to identify and manage the geotechnical risks associated with a scheme throughout its lifespan, from planning to construction to maintenance.

For each geohazard the probability of the hazard occurring (P) has been considered together with the impact it would have (I) if it were to happen to calculate the risk rating between 1 and 25.

Risks that fall within Moderate, Significant and Severe categories below are considered to be ***substantial*** and are therefore listed within the report.

| **Probability** | **(P)** |
|---|---|
| Very Likely (VLk) | 5 |
| Likely (Lk) | 4 |
| Plausible (P) | 3 |
| Unlikely (U) | 2 |
| Very Unlikely (VU) | 1 |

X

| **Impact** | **(I)** |
|---|---|
| Very High (VH) | 5 |
| High (H) | 4 |
| Medium (M) | 3 |
| Low (L) | 2 |
| Very Low (VL) | 1 |

=

| **(R)** | **Risk** |
|---|---|
| 20 – 25 | Severe |
| 15 – 19 | Substantial |
| 10 – 14 | Moderate |
| 5 – 9 | Minor |
| 1 – 4 | Negligible |