# APPENDIX VIII

Exploratory Hole Logs

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# TP01

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.25 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 1m | Loose light brown slightly silty fine to coarse SAND. | |
| | | | | … becoming silty from 1.00m depth. | |
| | | | | … sidewall collapse from 1.20m depth. | |
| 1.40 | B | | | | |
| | | | 2m 2.10 | | |
| | | | | Exploratory location completed at 2.10m depth. | |
| | | | 3m | | |
| | | | 4m | | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1 | Groundwater: | Date : 05/10/16 |
| Logged by: AD | | Logged by: AD |

## TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# TP02

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | Legend |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | |
| | | | 0.10 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | | Loose brown grey mottled slightly silty fine to coarse SAND. | |
| | | | | … becoming silty from 0.50m depth. | |
| | | | 1m | | |
| | | | | … becoming very silty from 1.80m depth. | |
| | | | 1.90 | | |
| 2.10 | B | | 2m | Soft grey brown slightly clayey sandy fine to coarse SILT. | |
| | | | 3m | | |
| | | | 3.80 | | |
| | | | | Exploratory location completed at 3.80m depth. | |
| | | | 4m | | |
| | | | 5m | | |

Sheet 1 of 1

Logged by: AD

Groundwater:

Date : 05/10/16

Logged by: AD

## TRIAL PIT RECORD

GEOMATTERS

Remarks:

1)

Strength descriptions of granular soils are based on Engineer's field description(s)

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP03 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 0.60 | Loose brown grey mottled silty fine to coarse SAND. | |
| | | | 3.80 | Soft grey brown slightly clayey sandy fine to coarse SILT. | |
| | | | | Exploratory location completed at 3.80m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP04 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 0.80 | B | | 1.80 | Loose light brown slightly silty fine to coarse SAND. | |
| | | | 3.90 | Soft brown grey mottled slightly sandy slightly clayey fine to medium SILT. | |
| | | | | Exploratory location completed at 3.90m depth. | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP05 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.15 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 1.00 | B | | 1.10 | Loose light brown grey silty fine to medium SAND. | |
| | | | 3.60 | Soft brown grey mottled slightly sandy slightly clayey fine to medium SILT. … becoming black grey from2.60m depth. | |
| | | | | Exploratory location completed at 3.60m depth. | |

1m 2m 3m 4m 5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP06 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.15 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 0.60 | B | | 1.10 | Loose light brown grey silty fine to medium SAND. | |
| | | | 2.80 | Soft light brown very sandy fine to medium SILT. | |
| | | | | Exploratory location completed at 2.80m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP07 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | Legend |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 0.50 | Loose light brown grey silty fine to medium SAND. | |
| 0.70 | B | | | Soft light brown very sandy fine to medium SILT. | |
| | | | | … becoming grey from 2.60m depth. | |
| | | | 3.70 | Exploratory location completed at 3.70m depth. | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

TRIAL PIT RECORD

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach<br>Client: Ashwood Homes | TP08 |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | Legend |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | |
| | | | 0.15 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 1m | Loose light brown grey slightly silty fine to medium SAND. | |
| | | | 1.70 | | |
| 1.80 | B | | 2m | Soft brown grey mottled slightly sandy slightly clayey fine to medium SILT. | |
| | | | 3m | | |
| | | | 3.60 | | |
| | | | 4m | Exploratory location completed at 3.60m depth. | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP09 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | Legend |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 1.30 | B | | 1.60 | Loose light brown grey slightly silty fine to medium SAND. | |
| | | | 3.50 | Soft brown grey mottled sandy fine to medium SILT. | |
| | | | | Exploratory location completed at 3.50m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP10 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.15 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 1.00 | Loose light brown grey slightly silty fine to medium SAND. | |
| | | | 3.90 | Soft brown grey mottled sandy fine to medium SILT.<br>… becoming grey from 2.10m depth. | |
| | | | | Exploratory location completed at 3.90m depth. | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

TRIAL PIT RECORD

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP11 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 0.50 | Loose light brown grey slightly silty fine to medium SAND. | |
| | | | | Soft brown grey mottled sandy fine to medium SILT. | |
| | | | | … becoming grey from 2.10m depth. | |
| | | | 2.60 | Exploratory location completed at 2.60m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

Remarks:
1) Hole terminated due to side wall collapse from 1.60m depth.

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# TP12

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 1.10 | Loose light brown grey slightly silty fine to medium SAND. | |
| 2.40 | B | | 3.60 | Soft brown grey mottled slightly clayey sandy fine to medium SILT. | |
| | | | | Exploratory location completed at 3.60m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

## TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# TP13

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.15 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 0.60 | Loose light brown grey slightly silty fine to medium SAND. | |
| 1.50 | B | | 3.90 | Soft to firm brown grey mottled slightly clayey sandy fine to medium SILT. … becoming grey from 3.30m depth. | |
| | | | | Exploratory location completed at 3.90m depth. | |

1m 2m 3m 4m 5m

| | | |
|---|---|---|
| Sheet 1 of 1 | Groundwater: | Date : 05/10/16 |
| Logged by: AD | | Logged by: AD |

## TRIAL PIT RECORD

Remarks:
1)

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP14 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.25 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 1.80 | Loose light brown silty fine to medium SAND. | |
| | | | 3.30 | Soft to firm brown grey mottled very sandy fine to medium SILT. | |
| | | | | Exploratory location completed at 3.30m depth. | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP15 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.25 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 0.60 | Loose light brown slightly silty fine to medium SAND. | |
| 0.90 | B | | 3.40 | Soft to firm brown grey mottled slightly clayey very sandy fine to medium SILT.<br>… becoming grey and slightly sandy from 2.20m depth. | |
| | | | | Exploratory location completed at 3.40m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

TRIAL PIT RECORD

Remarks:
1)

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP16 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.25 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 1m | Loose light brown slightly silty fine to medium SAND. | |
| | | | 2m | … becoming silty from 1.00m depth | |
| | | | 3m | … becoming grey from 2.70m depth. | |
| | | | 3.50 | | |
| | | | 4m | Exploratory location completed at 3.50m depth. | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 05/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

Remarks:
1)

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP17 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 0.70 | B | | 1.80 | Loose light brown slightly silty fine to medium SAND.<br>… becoming very silty from 0.60m depth. | |
| | | | 3.50 | Soft to firm brown grey mottled sandy fine to medium SILT.<br>… becoming grey from 3.10m depth. | |
| | | | | Exploratory location completed at 3.50m depth. | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 06/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

Remarks:
1)

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP18 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.15 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | | Loose light brown silty fine to medium SAND. | |
| | | | 1m | … becoming very silty from 1.00m depth. | |
| 1.90 | JT | | 2m | | |
| | | | 3m | | |
| | | | 3.20 | Exploratory location completed at 3.20m depth. | |
| | | | 4m | | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 06/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach<br>Client: Ashwood Homes | TP19 |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| 0.15 | JT | | 0.30 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 2.60 | Loose light brown silty fine to medium SAND. | |
| | | | 3.20 | Soft to firm brown grey mottled sandy fine to medium SILT. | |
| | | | | Exploratory location completed at 3.20m depth. | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 06/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# TP20

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 1.50 | B | | 2.20 | Loose light brown silty fine to medium SAND. | |
| | | | 2.70 | Soft to firm brown grey mottled sandy fine to medium SILT. | |
| | | | | Exploratory location completed at 2.70m depth. | |

1m 2m 3m 4m 5m

Sheet 1 of 1

Logged by: AD

Groundwater:

Date : 06/10/16

Logged by: AD

## TRIAL PIT RECORD

Remarks:

1) Sidewall collapse from 1.70m depth.

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach<br>Client: Ashwood Homes | TP21 |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | Legend |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | |
| | | | 0.15 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 1.10 | B | | 2.30 | Very loose to loose light brown grey silty fine to coarse SAND. | |
| | | | 2.80 | Soft to firm grey very sandy fine to medium SILT. | |
| | | | | Exploratory location completed at 2.80m depth. | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 07/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

Remarks:
1) Sidewall collapse from 1.30m depth.

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach<br>Client: Ashwood Homes | TP22 |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | Legend |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | |
| 0.10 | JT | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 1.80 | JT | | 2.40 | Loose light brown silty fine SAND. | |
| | | | 3.20 | Soft to firm brown grey mottled very sandy fine to medium SILT. | |
| | | | | Exploratory location completed at 3.20m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 06/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# TP23

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 0.90 | JT | | 2.60 | Loose light brown grey mottled silty fine to coarse SAND. | |
| | | | | Exploratory location completed at 2.60m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 06/10/16<br>Logged by: AD |

## TRIAL PIT RECORD

Remarks:
1) Sidewall collapse from 1.30m depth.

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# TP24

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.25 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 1.40 | B | | 1m | Loose light brown grey mottled silty fine to coarse SAND. | |
| | | | 2m | … becoming grey and very silty from 2.10m depth. | |
| | | | 2.30 | Exploratory location completed at 2.30m depth. | |
| | | | 3m | | |
| | | | 4m | | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 06/10/16<br>Logged by: AD |

## TRIAL PIT RECORD

Remarks:
1) Sidewall collapse from 1.20m depth.

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach<br>Client: Ashwood Homes | TP25 |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 2.20 | Loose light brown grey mottled silty fine to coarse SAND. | |
| | | | 3.10 | Soft to firm brown grey very sandy fine to medium SILT.<br><br>… becoming grey from 2.60m depth. | |
| | | | | Exploratory location completed at 3.10m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 07/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1) Sidewall collapse from 1.40m depth.

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP26 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | | Loose light brown slightly silty fine to coarse SAND. | |
| 2.10 | B | | | … becoming grey from 2.30m depth. | |
| | | | 2.80 | Exploratory location completed at 2.80m depth. | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 07/10/16<br>Logged by: AD |
| TRIAL PIT RECORD | Remarks:<br>1) Sidewall collapse from 1.10m depth. | |
| GEOMATTERS | Strength descriptions of granular soils are based on Engineer's field description(s)<br>HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$) | |

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP27 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 0.50 | JT | | | Loose light brown grey mottled silty fine to coarse SAND. | |
| 1.20 | B | | | | |
| 2.40 | JT | | 2.50 | | |
| | | | | Exploratory location completed at 2.50m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 06/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1) Sidewall collapse from 1.00m depth.

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# TP28

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.25 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 0.70 | B | | 2.50 | Loose light brown grey silty fine to coarse SAND. | |
| | | | | Exploratory location completed at 2.50m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 06/10/16<br>Logged by: AD |

## TRIAL PIT RECORD

Remarks:
1) Sidewall collapse from 1.30m depth.

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach<br>Client: Ashwood Homes | TP29 |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.25 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 2.40 | Very loose to loose light brown grey silty fine to coarse SAND. | |
| | | | | Exploratory location completed at 2.40m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 06/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

Remarks:
1) Sidewall collapse from 1.50m depth.

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP30 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 6th October 2016 |

| Field Monitoring and Sampling | | | Strata | | Legend |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | |
| | | | 0.15 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 1.20 | JT | | 1m | Very loose to loose light brown grey silty fine to coarse SAND. | |
| 1.60 | B | | 2m | | |
| | | | 2.20 | Soft to firm brown grey mottled very sandy fine to medium SILT. | |
| | | | 3m | … becoming grey from 2.90m depth. | |
| | | | 3.50 | Exploratory location completed at 3.50m depth. | |
| | | | 4m | | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 06/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1)

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP31 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | | Very loose to loose light brown grey slightly silty fine to coarse SAND. | |
| | | | | … becoming silty from 0.40m depth. | |
| | | | 1m | | |
| | | | | … becoming mottled from 1.60m depth. | |
| | | | 2m | | |
| 2.20 | B | | | | |
| | | | 2.40 | | |
| | | | | Exploratory location completed at 2.40m depth. | |
| | | | 3m | | |
| | | | 4m | | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1 | Groundwater: | Date : 07/10/16 |
| Logged by: AD | | Logged by: AD |

# TRIAL PIT RECORD

Remarks:
1) Sidewall collapse from 2.10m depth

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP32 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.25 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 0.60 | B | | 1m | Very loose to loose light brown grey slightly clayey silty fine to coarse SAND. … clay absent from 1.00m depth. | |
| | | | 2m 2.10 | Exploratory location completed at 2.10m depth. | |
| | | | 3m | | |
| | | | 4m | | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 07/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1) Sidewall collapse from 1.20m depth.

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP33 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.25 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 1.60 | Loose light brown grey slightly clayey silty fine to coarse SAND. | |
| | | | 2.80 | Soft to firm brown grey mottled slightly clayey sandy fine to medium SILT. | |
| | | | | Exploratory location completed at 2.80m depth. | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 07/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1) Sidewall collapse from 1.50m depth.

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP34 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.15 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 1.30 | B | | 1m | Loose light brown silty fine to coarse SAND. | |
| | | | 2m | … becoming grey from 1.80m depth. | |
| | | | 3m | | |
| | | | 3.40 | Exploratory location completed at 3.40m depth. | |
| | | | 4m | | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1 | Groundwater: | Date : 07/10/16 |
| Logged by: AD | | Logged by: AD |

# TRIAL PIT RECORD

Remarks:
1)

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# TP35

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | | Strata | Legend |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | |
| | | | 0.25 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 2.60 | Loose light brown silty fine to coarse SAND. | |
| | | | | Exploratory location completed at 2.60m depth. | |

1m
2m
3m
4m
5m

Sheet 1 of 1

Logged by: AD

Groundwater:

Date : 07/10/16

Logged by: AD

## TRIAL PIT RECORD

Remarks:

1) Sidewall collapse from 1.40m depth.

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP36 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.15 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 0.70 | Loose light brown silty fine to coarse SAND. | |
| | | | 0.90 | Soft to firm brown grey mottled slightly clayey sandy fine to medium SILT. | |
| | | | 2.50 | Loose light brown grey silty fine to coarse SAND.<br>… becoming grey from 1.70m depth. | |
| | | | | Exploratory location completed at 2.50m depth. | |

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 07/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

GEOMATTERS

Remarks:
1) Sidewall collapse from 1.40m depth.

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | TP37 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| 1.50 | B | | 2.90 | Loose light brown grey slightly silty fine to coarse SAND. … becoming grey from 1.80m depth. | |
| | | | | Exploratory location completed at 2.90m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 07/10/16<br>Logged by: AD |

TRIAL PIT RECORD

Remarks:
1) Sidewall collapse from 1.90m depth.

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach<br>Client: Ashwood Homes | TP38 |

| | | |
|---|---|---|
| Contractor: N/A | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: JCB 3CX Excavator | Logged by: AD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (HSV/PP) | depth (m) | Description | Legend |
| | | | 0.20 | Brown slightly sandy slightly silty TOPSOIL with rootlets. | |
| | | | 2.70 | Loose light brown grey slightly silty fine to coarse SAND. | |
| | | | | Exploratory location completed at 2.70m depth. | |

1m
2m
3m
4m
5m

| | | |
|---|---|---|
| Sheet 1 of 1<br>Logged by: AD | Groundwater: | Date : 07/10/16<br>Logged by: AD |

# TRIAL PIT RECORD

Remarks:
1) Sidewall collapse from 1.20m depth.

GEOMATTERS

Strength descriptions of granular soils are based on Engineer's field description(s)
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | WS01 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| 0.10 | JT | | 0.20 | Dark brown silty sandy TOPSOIL. | |
| | | | 0.80 | Loose light brown silty fine to medium SAND. | |
| | | SPT 1.00m = 3 | 1m | Soft brown mottled grey slightly sandy clayey SILT (damp). | |
| 1.50 | JT | | | | |
| | | SPT 2.00m = 0 | 2m | … 2.00m begl becomes very soft. | |
| 2.80 | JT | | | | |
| | | SPT 3.00m = 0 | 3m | | |
| | | SPT 4.00m = 3 | 4.00 | | |
| | | | | Borehole completed at 4.00m depth. | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1 | Groundwater: | Date : 05/10/16 |
| Logged by: PD | Damp strata encountered from 0.80m depth. | Drilled by: RP |
| | | Logged by: PD |

# BOREHOLE RECORD

GEOMATTERS

Remarks:

1) 3.00m - 4.00m begl very poor recovery.

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS02

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 2 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| | | | 0.15 | Dark brown silty sandy TOPSOIL. | |
| | | SPT 1.00m = 7 | 1m | Loose light brown silty fine to medium SAND. | |
| 1.30 | JT | | 1.60 | | |
| | | SPT 2.00m = 5 | 2m | Soft to firm brown mottled grey slightly sandy clayey SILT (damp). | |
| 2.80 | JT | | | … becoming grey from 2.70m depth. | |
| | | SPT 3.00m = 2 | 3m | … 2.00m begl becoming very soft. | |
| | | | 3.40 | | |
| | | SPT 4.00m = 0 | | Very soft grey slightly sandy SILT (damp). | |
| 4.80 | JT | | | | |
| | | SPT 5.00m = 1 | 5m | | |
| | | | | Continued on sheet 2. | |

Sheet 1 of 2

Logged by: PD

Groundwater:

Damp strata encountered from 1.60m depth.

Date : 05/10/16

Drilled by: RP

Logged by: PD

# BOREHOLE RECORD

Remarks:

1) 4.00m - 7.00m begl very poor recovery.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | WS02 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 2 of 2 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | | Strata | Legend | Well |
|---|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | | |
| | | | | Continued from Sheet 1. | | |
| | | SPT 6.00m = 4 | 6m | | | |
| 6.60 | B | | | | | |
| | | SPT 7.00m = 13 | 7m | … 7.00m begl becoming stiff. | | |
| | | | | Borehole completed at 7.00m depth. | | |

| | | |
|---|---|---|
| Sheet 2 of 2 | Groundwater: | Date : 05/10/16 |
| Logged by: PD | | Drilled by: RP |
| | Damp strata encountered from 1.60m depth. | Logged by: PD |

# BOREHOLE RECORD

Remarks:
1) 4.00m - 7.00m begl very poor recovery.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach<br>Client: Ashwood Homes | WS03 |

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 2 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| | | | | Legend | Well |
| Depth (m) | Type | Result (SPT) | depth (m) | Description | |
| 0.20 | JT | | 0.30 | Dark brown silty sandy TOPSOIL. | |
| | | | 0.70 | Loose light brown silty fine to medium SAND. Rare shell fragments. | |
| 0.70 | JT | SPT 1.00m = 3 | 1m | Soft brown mottled grey slightly sandy clayey SILT.<br>… 1.30m begl becoming very soft and damp. | |
| | | SPT 2.00m = 2 | 2m | | |
| | | SPT 3.00m = 0 | 3m | | |
| 3.50 - 4.90 | B | | 3.50 | Very soft dark grey slightly sandy clayey SILT (wet). | |
| | | SPT 4.00m = 0 | 4m | | |
| 4.90 | JT | SPT 5.00m = 0 | 5m | | |
| | | | | Continued on sheet 2. | |

| | | |
|---|---|---|
| Sheet 1 of 2<br>Logged by: PD | Groundwater:<br>Water strike at 2.90m begl.<br>Water level at 2.10m begl in borehole after 5 mins stand time. | Date : 05/10/16<br>Drilled by: RP<br>Logged by: PD |

# BOREHOLE RECORD

Remarks:
1) 5.00m - 7.00m very poor recovery.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS03

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 2 of 2 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | | Strata | | |
|---|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend | Well |
| | | | | Continued from sheet 1. | | |
| | | SPT 6.00m = 3 | 6m | | | |
| 7.00 | T | SPT 7.00m = 23 | 7.00 | | | |
| | | | | Borehole completed at 7.00m depth. | | |

Sheet 2 of 2

Logged by: PD

Groundwater:
Water strike at 2.90m begl.
Water at 2.10m begl in borehole after 5 mins stand time.

Date : 05/10/16
Drilled by: RP
Logged by: PD

## BOREHOLE RECORD

Remarks:
1) 5.00m - 7.00m very poor recovery.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS04

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| | | | 0.25 | Dark brown silty sandy TOPSOIL. | |
| | | | 0.80 | Loose light brown silty fine to medium SAND. | |
| | | SPT 1.00m = 2 | 1m | Soft brown mottled grey slightly clayey sandy SILT (damp). | |
| | | SPT 2.00m = 3 | 2m | | |
| | | | | … becoming grey from 2.80m depth | |
| | | SPT 3.00m = 6 | 3m | … becoming firm from 3.00m depth. | |
| | | SPT 4.00m = 3 | 4.00 | … becoming soft from 4.00m depth. | |
| | | | | Borehole completed at 4.00m depth. | |
| | | | 5m | | |

Sheet 1 of 1

Logged by: PD

Groundwater:

Damp strata encountered from 0.80m depth.

Date : 05/10/16

Drilled by: RP

Logged by: PD

# BOREHOLE RECORD

Remarks:

1) 3.00m - 4.00m begl very poor recovery.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS05

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | | Strata | Legend | Well |
|---|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | | |
| 0.20 | JT | | | Dark brown silty sandy TOPSOIL. | | |
| | | | 0.30 | | | |
| | | | | Loose light brown silty fine to medium SAND. Rare shell fragments. | | |
| | | | 0.60 | | | |
| 0.70 | JT | | | Soft brown mottled grey slightly sandy clayey SILT. | | |
| | | SPT 1.00m = 2 | | … 1.00m begl becoming wet. | | |
| | | SPT 2.00m = 0 | 2m | … 2.00m begl becoming very soft. | | |
| 2.60 | JT | | | | | |
| | | SPT 3.00m = 1 | 3m | | | |
| | | SPT 4.00m = 5 | 4.00 | … 4.00m begl becoming soft to firm. | | |
| | | | | Borehole completed at 4.00m depth. | | |
| | | | 5m | | | |

Sheet 1 of 1

Logged by: PD

Groundwater:
Water strike encountered at 1.00m begl.

Date : 05/10/16
Drilled by: RP
Logged by: PD

# BOREHOLE RECORD

Remarks:
1) 1.00m - 4.00m very poor recovery.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS06

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| | | | 0.10 | Dark brown silty sandy TOPSOIL. | |
| | | SPT 1.00m = 6 | 1m | Firm brown mottled grey slightly sandy clayey SILT. | |
| 1.30 | JT | | | | |
| | | | | . . . 1.70m begl becoming very soft. | |
| | | | 1.90 | | |
| | | SPT 2.00m = 0 | 2m | Very soft dark grey sandy SILT (damp). | |
| 2.60 | JT | | | | |
| | | SPT 3.00m = 0 | 3m | | |
| | | SPT 4.00m = 4 | 4.00 | … 4.00m begl becoming soft to firm. | |
| | | | | Borehole completed at 4.00m depth. | |
| | | | 5m | | |

Sheet 1 of 1

Logged by: PD

Groundwater:
Damp strata encountered from 1.90m begl.

Date : 05/10/16
Drilled by: RP
Logged by: PD

# BOREHOLE RECORD

Remarks:
1) 2.00m - 4.00m poor recovery.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS07

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 2 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| 0.10 | JT | | 0.20 | Dark brown silty sandy TOPSOIL. | |
| | | | | Loose light brown silty fine to medium SAND. Rare shell fragments. | |
| | | | 0.80 | | |
| | | SPT 1.00m = 4 | 1m | Soft to firm brown mottled grey slightly sandy clayey SILT. … 1.00m begl becomes soft and damp. | |
| 1.60 | JT | | | | |
| | | SPT 2.00m = 0 | | … 2.00m begl becoming very soft and wet. | |
| | | SPT 3.00m = 0 | 3.00 | | |
| | | | | Very soft dark grey sandy SILT (wet). | |
| 3.70 | JT | | | | |
| | | SPT 4.00m = 5 | 4m | … 4.00m begl becoming soft to firm. | |
| | | SPT 5.00m = 4 | 5m | | |
| | | | | Continued on sheet 2. | |

Sheet 1 of 2

Logged by: PD

Groundwater:
Water strike encountered at 2.00m begl.

Date : 05/10/16
Drilled by: RP
Logged by: PD

# BOREHOLE RECORD

Remarks:
1)

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | WS07 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 2 of 2 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 5th October 2016 |

| Field Monitoring and Sampling | | | | Strata | Legend | Well |
|---|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | | |
| | | | | Continued from sheet 1. | | |
| 6.00 - 7.00 | B | SPT 6.00m = 4 | 6m | | | |
| | | SPT 7.00m = 8 | 7.00 | . . . 7.00m begl becoming firm. | | |
| | | | | Borehole completed at 7.00m depth. | | |

| | | |
|---|---|---|
| Sheet 2 of 2<br>Logged by: PD | Groundwater:<br>Water strike encountered at 2.00m begl. | Date : 05/10/16<br>Drilled by: RP<br>Logged by: PD |

# BOREHOLE RECORD

GEOMATTERS

Remarks:
1)

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS08

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| 0.20 | JT | | 0.30 | Dark brown silty sandy clayey TOPSOIL. | |
| | | SPT 1.00m = 9 | 1m | Loose light brown silty fine to medium SAND. | |
| 1.70 | JT | | | … 1.80m begl becoming wet. | |
| | | SPT 2.00m = 5 | 2m | | |
| | | | 2.20 | Medium dense dark grey silty fine to medium SAND (wet). Occasional shell fragments. | |
| 2.50 | JT | | | . . . 2.70m begl becoming light brown. | |
| | | SPT 3.00m = 14 | 3m | | |
| | | SPT 4.00m = 31 | 4m | | |
| | | | | Borehole completed 4.00m depth. | |
| | | | 5m | | |

Sheet 1 of 1

Logged by: PD

Groundwater:
Water strike at 1.80m begl.

Date : 07/10/16
Drilled by: RP
Logged by: PD

# BOREHOLE RECORD

Remarks:
1) 3.00m - 4.00m poor recovery.
2) Cased to 4.00m begl.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | WS09 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| | | | 0.20 | Dark brown silty sandy clayey TOPSOIL. | |
| 0.40 | JT | | | Loose light brown silty fine to medium SAND. | |
| | | | 0.90 | | |
| | | SPT 1.00m = 8 | 1m | Loose dark brown mottled orangish brown silty fine to medium SAND. | |
| 1.30 | JT | | | | |
| | | SPT 2.00m = 8 | | … 2.00m begl becoming wet. | |
| | | | 2.50 | | |
| | | | | Loose dark grey silty fine to medium SAND (wet). | |
| 3.00 - 4.00 | B | SPT 3.00m = 4 | 3m | | |
| | | SPT 4.00m = 12 | 4.00 | | |
| | | | | Borehole completed at 4.00m depth. | |
| | | | 5m | | |

| | | |
|---|---|---|
| Sheet 1 of 1 | Groundwater: | Date : 07/10/16 |
| Logged by: PD | Water strike at 2.00m begl. | Drilled by: RP |
| | | Logged by: PD |

# BOREHOLE RECORD

GEOMATTERS

Remarks:
1)

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS10

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| | | | 0.30 | Dark brown clayey silty sandy TOPSOIL. | |
| 0.50 | JT | | 0.90 | Medium dense light brown clayey silty fine to medium SAND. | |
| | | SPT 1.00m = 10 | 1m | Loose light brown mottled orange brown silty fine to medium SAND. | |
| 1.50 | JT | | | | |
| | | SPT 2.00m = 6 | 2m | … 1.90m begl becoming wet. | |
| | | | 2.70 | | |
| 2.80 | JT | | | Loose dark grey silty fine to medium SAND (wet). | |
| | | SPT 3.00m = 2 | 3m | | |
| | | | | … 3.80m begl becoming light grey. | |
| | | SPT 4.00m = 31 | 4m | … 4.00m begl beoming medium dense to dense. | |
| | | | | Borehole completed at 4.00m depth | |
| | | | 5m | | |

Sheet 1 of 1

Logged by: PD

Groundwater:
Water strike at 1.90m depth.

Date : 07/10/16
Drilled by: RP
Logged by: PD

# BOREHOLE RECORD

Remarks:
1)

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS11

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| 0.20 | JT | | 0.30 | Dark brown clayey silty sandy TOPSOIL. | |
| 0.90 | JT | SPT 1.00m = 7 | 1m | Loose light brown mottled orangish brown silty fine to medium SAND. | |
| | | | | … 1.50m begl becoming wet. | |
| | | SPT 2.00m = 8 | 2m | | |
| | | | 2.30 | Loose dark grey silty fine to medium SAND (wet). | |
| | | SPT 3.00m = 24 | 3m | … 3.00m begl becoming medium dense. | |
| | | SPT 4.00m = 14 | 4.00 | Borehole completed at 4.00m begl. | |
| | | | 5m | | |

Sheet 1 of 1

Logged by: PD

Groundwater:
Water strike at 1.50m begl.

Date : 07/10/16
Drilled by: RP
Logged by: PD

# BOREHOLE RECORD

Remarks:
1)

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

| | | |
|---|---|---|
| GEOMATTERS | Site: Holbeach Meadows, Holbeach | WS12 |
| | Client: Ashwood Homes | |

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | | Strata | Legend | Well |
|---|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | | |
| | | | | Dark brown clayey silty sandy TOPSOIL. | | |
| | | | 0.30 | | | |
| | | | | Loose light brown mottled orangish brown silty fine to medium SAND. | | |
| | | | 0.90 | | | |
| 1.10 | JT | SPT 1.00m = 8 | 1m | Loose dark brown mottled orangish brown silty fine to medium SAND (damp). | | |
| | | | | … 1.50m begl becoming wet. | | |
| | | SPT 2.00m = 13 | 2m | … 2.00m begl becoming medium dense. | | |
| 2.20 | JT | | | | | |
| | | | 2.80 | | | |
| | | SPT 3.00m = 11 | 3m | Medium dense dark grey silty fine to medium SAND (wet). Rare shell fragments. | | |
| | | SPT 4.00m = 34 | 4.00 | | | |
| | | | | Borehole completed at 4.00m depth. | | |
| | | | 5m | | | |

| | | |
|---|---|---|
| Sheet 1 of 1 | Groundwater: | Date : 07/10/16 |
| Logged by: PD | Water strike at 1.50m begl. | Drilled by: RP |
| | | Logged by: PD |

# BOREHOLE RECORD

Remarks:
1) Cased to 2.00m begl.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS13

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| 0.10 | JT | | 0.20 | MADE GROUND (Comprising dark brown silty sandy clay). | |
| | | | | MADE GROUND (Comprising light brown slightly gravelly silty sand. Gravel is fine to medium brick and tile fragments. | |
| 0.80 | JT | | | | |
| | | SPT 1.00m = 6 | 1.00 | Loose dark brown clayey silty fine to medium SAND. | |
| | | | | … 1.80m begl becoming wet. | |
| | | SPT 2.00m = 7 | 2m | | |
| | | | 2.60 | | |
| | | | | Loose dark grey silty fine to medium SAND (wet). | |
| | | SPT 3.00m = 2 | 3m | | |
| | | | 3.60 | | |
| 3.70 | JT | | | Loose light grey silty fine to medium SAND. | |
| | | SPT 4.00m = 19 | 4.00 | … 4.00m begl becoming medium dense. | |
| | | | | Borehole completed at 4.00m depth. | |
| | | | 5m | | |

Sheet 1 of 1

Logged by: PD

Groundwater:
Water strike at 1.80m begl.
Water level at 1.60m begl in borehole after 5 mins stand time.

Date : 07/10/16
Drilled by: RP
Logged by: PD

## BOREHOLE RECORD

Remarks:
1) Cased to 1.00m begl.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

GEOMATTERS

Site: Holbeach Meadows, Holbeach

Client: Ashwood Homes

# WS14

| | | |
|---|---|---|
| Contractor: RP Drilling | Project No: GML16197 | Sheet: 1 of 1 |
| Equipment: Window Sampler Rig | Logged by: PD | Date: 7th October 2016 |

| Field Monitoring and Sampling | | | Strata | | |
|---|---|---|---|---|---|
| Depth (m) | Type | Result (SPT) | depth (m) | Description | Legend / Well |
| 0.10 | JT | | 0.30 | Dark brown sandy silty TOPSOIL. | |
| | | SPT 1.00m = 10 | 1m | Loose light brown silty fine to medium SAND. … 0.90m begl becoming dark brown. | |
| | | | 1.60 ▼ | | |
| 1.80 | JT | SPT 2.00m = 9 | 2m | Loose dark brown mottled orangish brown silty fine to medium SAND (wet). | |
| | | | 2.50 | | |
| 2.90 | JT | SPT 3.00m = 1 | 3m | Loose dark grey silty fine to medium SAND (wet). | |
| | | SPT 4.00m = 19 | 4.00 | | |
| | | | | Borehole completed at 4.00m depth. | |
| | | | 5m | | |

Sheet 1 of 1

Logged by: PD

Groundwater:
Water strike at 1.60m begl.

Date : 07/10/16
Drilled by: RP
Logged by: PD

## BOREHOLE RECORD

Remarks:
1) Cased to 1.00m begl.

GEOMATTERS

HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm$^2$)

# APPENDIX IX

Laboratory Testing Data

**Amy Downs**
Geo-Matters Limited
104 Bondgate
Castle Donington
DE74 2NR

**t:** 01332817644

**e:** info@geo-matters.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

**t:** 01923 225404
**f:** 01923 237404
**e:** reception@i2analytical.com

# Analytical Report Number : 16-29842

| | | | |
|---|---|---|---|
| **Project / Site name:** | Holbeach Meadows, Holbeach | **Samples received on:** | 11/10/2016 |
| **Your job number:** | GML16197 | **Samples instructed on:** | 11/10/2016 |
| **Your order number:** | GML16197-AD-007 | **Analysis completed by:** | 18/10/2016 |
| **Report Issue Number:** | 1 | **Report issued on:** | 18/10/2016 |
| **Samples Analysed:** | 31 soil samples | | |

**Signed:** CCStone

Dr Claire Stone
Quality Manager
**For & on behalf of i2 Analytical Ltd.**

**Signed:**

Emma Winter
Assistant Reporting Manager
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

| | |
|---|---|
| soils | - 4 weeks from reporting |
| leachates | - 2 weeks from reporting |
| waters | - 2 weeks from reporting |
| asbestos | - 6 months from reporting |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 16-29842**

**Project / Site name: Holbeach Meadows, Holbeach**
**Your Order No: GML16197-AD-007**

| Lab Sample Number | | | | 641999 | 642000 | 642001 | 642002 | 642003 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | WS01 | WS01 | WS02 | WS02 | WS02 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.10 | 1.50 | 1.30 | 2.80 | 4.80 |
| Date Sampled | | | | 05/10/2016 | 05/10/2016 | 05/10/2016 | 05/10/2016 | 05/10/2016 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | N/A | NONE | 17 | 24 | 21 | 21 | 36 |
| Total mass of sample received | kg | 0.001 | NONE | 1.5 | 1.4 | 1.2 | 1.3 | 1.1 |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | - | - | - | - |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 8.4 | 8.9 | 9.1 | 9.2 | 9.3 |
| Total Sulphate as $SO_4$ | mg/kg | 50 | MCERTS | 440 | 260 | 210 | 760 | 770 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | 0.049 | 0.037 | 0.039 | 0.20 | 0.24 |
| Total Organic Carbon (TOC) | % | 0.1 | MCERTS | 1.2 | 0.5 | 0.4 | 0.3 | 2.3 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Acenaphthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Fluorene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenanthrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Benzo(a)anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Benzo(k)fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Benzo(a)pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Dibenz(a,h)anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 1.6 | MCERTS | < 1.60 | < 1.60 | < 1.60 | < 1.60 | < 1.60 |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | 4.1 | 4.0 | < 1.0 | 20 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | MCERTS | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 16 | 13 | 12 | 9.3 | 35 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 24 | 12 | 10 | 9.4 | 19 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 15 | 8.1 | 6.6 | 5.3 | 16 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | 0.4 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 13 | 15 | 12 | 8.6 | 32 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | 1.5 | 4.7 | 1.5 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 39 | 34 | 31 | 23 | 75 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| Petroleum Range Organics (C6 - C10) | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | - |
| TPH (C10 - C25) | mg/kg | 10 | MCERTS | - | - | < 10 | - | - |
| TPH (C25 - C40) | mg/kg | 10 | NONE | - | - | < 10 | - | - |
| **Pesticide and Herbicide Screen** | | | | | | | | |
| Pesticides/Herbicides Screen in Soil | P/A | N/A | NONE | Absent | - | - | - | - |


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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 16-29842**

**Project / Site name: Holbeach Meadows, Holbeach**
**Your Order No: GML16197-AD-007**

| Lab Sample Number | | | | 642004 | 642005 | 642006 | 642007 | 642008 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS03 | WS03 | WS04 | WS05 | WS05 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 4.90 | 7.00 | 0.20 | 0.20 | 0.70 |
| **Date Sampled** | | | | 05/10/2016 | 05/10/2016 | 05/10/2016 | 05/10/2016 | 05/10/2016 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | N/A | NONE | 30 | 26 | 17 | 16 | 20 |
| Total mass of sample received | kg | 0.001 | NONE | 0.91 | 0.60 | 1.1 | 1.3 | 1.2 |
| Asbestos in Soil | Type | N/A | ISO 17025 | - | - | - | - | - |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 9.4 | 9.3 | - | 8.4 | - |
| Total Sulphate as $SO_4$ | mg/kg | 50 | MCERTS | 740 | 740 | - | 350 | - |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | 0.17 | 0.26 | - | 0.022 | - |
| Total Organic Carbon (TOC) | % | 0.1 | MCERTS | 1.5 | 1.2 | - | 1.1 | - |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 | - |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| Acenaphthylene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Acenaphthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Fluorene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Phenanthrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Benzo(a)anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| Benzo(b)fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Benzo(k)fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Benzo(a)pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Dibenz(a,h)anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | - | < 0.10 | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 1.6 | MCERTS | < 1.60 | < 1.60 | - | < 1.60 | - |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 14 | 7.5 | - | 13 | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | < 0.2 | - |
| Chromium (hexavalent) | mg/kg | 4 | MCERTS | < 4.0 | < 4.0 | - | < 4.0 | - |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 39 | 27 | - | 13 | - |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 21 | 15 | - | 21 | - |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 18 | 12 | - | 14 | - |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | 0.4 | - | < 0.3 | - |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 31 | 22 | - | 12 | - |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | 2.3 | - | < 1.0 | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 73 | 48 | - | 43 | - |
| **Petroleum Hydrocarbons** | | | | | | | | |
| Petroleum Range Organics (C6 - C10) | mg/kg | 0.1 | NONE | - | - | - | - | - |
| TPH (C10 - C25) | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH (C25 - C40) | mg/kg | 10 | NONE | - | - | - | - | - |
| **Pesticide and Herbicide Screen** | | | | | | | | |
| Pesticides/Herbicides Screen in Soil | P/A | N/A | NONE | - | - | Absent | - | Absent |


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**Analytical Report Number: 16-29842**

**Project / Site name: Holbeach Meadows, Holbeach**
**Your Order No: GML16197-AD-007**

| Lab Sample Number | | | | 642009 | 642010 | 642011 | 642012 | 642013 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS05 | WS07 | WS07 | WS07 | WS08 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 2.60 | 0.10 | 1.60 | 3.70 | 0.20 |
| **Date Sampled** | | | | 05/10/2016 | 05/10/2016 | 05/10/2016 | 05/10/2016 | 07/10/2016 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | N/A | NONE | 31 | 16 | 20 | 33 | 16 |
| Total mass of sample received | kg | 0.001 | NONE | 1.2 | 1.3 | 1.5 | 1.2 | 1.4 |
| Asbestos in Soil | Type | N/A | ISO 17025 | - | Not-detected | - | - | Not-detected |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 8.8 | 8.3 | 8.8 | 9.2 | 7.4 |
| Total Sulphate as $SO_4$ | mg/kg | 50 | MCERTS | 1100 | 410 | 480 | 970 | 210 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | 0.41 | 0.018 | 0.054 | 0.36 | 0.012 |
| Total Organic Carbon (TOC) | % | 0.1 | MCERTS | 1.0 | 1.2 | 0.6 | 1.6 | 1.1 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Acenaphthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Fluorene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenanthrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Benzo(a)anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Benzo(k)fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Benzo(a)pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Dibenz(a,h)anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 1.6 | MCERTS | < 1.60 | < 1.60 | < 1.60 | < 1.60 | < 1.60 |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 23 | < 1.0 | 10 | 11 | 21 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | MCERTS | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 36 | 17 | 22 | 38 | 20 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 20 | 26 | 14 | 24 | 23 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 15 | 14 | 12 | 18 | 38 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | 0.6 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 30 | 14 | 25 | 33 | 17 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 70 | 40 | 51 | 87 | 53 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| Petroleum Range Organics (C6 - C10) | mg/kg | 0.1 | NONE | - | - | - | - | - |
| TPH (C10 - C25) | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH (C25 - C40) | mg/kg | 10 | NONE | - | - | - | - | - |
| **Pesticide and Herbicide Screen** | | | | | | | | |
| Pesticides/Herbicides Screen in Soil | P/A | N/A | NONE | - | - | - | - | - |


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**Analytical Report Number: 16-29842**

**Project / Site name: Holbeach Meadows, Holbeach**
**Your Order No: GML16197-AD-007**

| Lab Sample Number | | | | 642014 | 642015 | 642016 | 642017 | 642018 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS08 | WS09 | WS09 | WS10 | WS10 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 2.50 | 0.40 | 1.30 | 0.50 | 1.50 |
| **Date Sampled** | | | | 07/10/2016 | 07/10/2016 | 07/10/2016 | 07/10/2016 | 07/10/2016 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | N/A | NONE | 21 | 11 | 22 | 14 | 21 |
| Total mass of sample received | kg | 0.001 | NONE | 1.6 | 1.2 | 1.5 | 1.2 | 1.2 |
| Asbestos in Soil | Type | N/A | ISO 17025 | - | - | - | Not-detected | - |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 8.9 | - | 9.0 | 8.6 | 9.0 |
| Total Sulphate as $SO_4$ | mg/kg | 50 | MCERTS | 710 | - | 220 | 210 | 240 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | 0.26 | - | 0.056 | 0.021 | 0.028 |
| Total Organic Carbon (TOC) | % | 0.1 | MCERTS | 0.3 | - | 0.5 | 0.6 | 0.4 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | - | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Acenaphthene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Fluorene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Phenanthrene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Benzo(a)anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Benzo(k)fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Benzo(a)pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Dibenz(a,h)anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | < 0.05 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 1.6 | MCERTS | < 1.60 | - | < 1.60 | < 1.60 | < 1.60 |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 6.6 | - | 6.4 | 16 | 6.8 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | - | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | MCERTS | < 4.0 | - | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 8.0 | - | 11 | 18 | 13 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 9.6 | - | 10 | 17 | 12 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 4.5 | - | 6.8 | 12 | 6.2 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | - | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 8.0 | - | 11 | 17 | 15 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | - | < 1.0 | < 1.0 | 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 17 | - | 29 | 40 | 30 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| Petroleum Range Organics (C6 - C10) | mg/kg | 0.1 | NONE | - | - | - | - | - |
| TPH (C10 - C25) | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH (C25 - C40) | mg/kg | 10 | NONE | - | - | - | - | - |
| **Pesticide and Herbicide Screen** | | | | | | | | |
| Pesticides/Herbicides Screen in Soil | P/A | N/A | NONE | - | Absent | - | - | - |


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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 16-29842**

**Project / Site name: Holbeach Meadows, Holbeach**
**Your Order No: GML16197-AD-007**

| Lab Sample Number | | | | 642019 | 642020 | 642021 | 642022 | 642023 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS11 | WS11 | WS12 | WS12 | WS13 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.20 | 0.90 | 1.10 | 2.20 | 0.10 |
| **Date Sampled** | | | | 07/10/2016 | 07/10/2016 | 07/10/2016 | 07/10/2016 | 07/10/2016 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | N/A | NONE | 13 | 20 | 19 | 23 | 13 |
| Total mass of sample received | kg | 0.001 | NONE | 1.3 | 1.3 | 1.4 | 1.4 | 1.1 |
| Asbestos in Soil | Type | N/A | ISO 17025 | - | - | - | - | Not-detected |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | - | 8.9 | - | 8.7 | 8.2 |
| Total Sulphate as $SO_4$ | mg/kg | 50 | MCERTS | - | 300 | - | 270 | 260 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | - | 0.038 | - | 0.039 | 0.031 |
| Total Organic Carbon (TOC) | % | 0.1 | MCERTS | - | 0.2 | - | 0.5 | 1.3 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | < 1.0 | - | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Acenaphthene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Fluorene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Phenanthrene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Anthracene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Fluoranthene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Pyrene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Benzo(a)anthracene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Chrysene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Benzo(k)fluoranthene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Benzo(a)pyrene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Dibenz(a,h)anthracene | mg/kg | 0.1 | MCERTS | - | < 0.10 | - | < 0.10 | < 0.10 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | < 0.05 | < 0.05 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 1.6 | MCERTS | - | < 1.60 | - | < 1.60 | < 1.60 |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 6.2 | - | 10 | 11 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | MCERTS | - | < 4.0 | - | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 17 | - | 19 | 21 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 17 | - | 18 | 29 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 6.4 | - | 10 | 38 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | - | 0.6 | - | < 0.3 | 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 13 | - | 17 | 17 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 2.9 | - | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 34 | - | 41 | 58 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| Petroleum Range Organics (C6 - C10) | mg/kg | 0.1 | NONE | < 0.1 | - | < 0.1 | - | < 0.1 |
| TPH (C10 - C25) | mg/kg | 10 | MCERTS | < 10 | - | < 10 | - | < 10 |
| TPH (C25 - C40) | mg/kg | 10 | NONE | < 10 | - | < 10 | - | < 10 |
| **Pesticide and Herbicide Screen** | | | | | | | | |
| Pesticides/Herbicides Screen in Soil | P/A | N/A | NONE | - | Absent | - | - | - |


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**Analytical Report Number: 16-29842**

**Project / Site name: Holbeach Meadows, Holbeach**
**Your Order No: GML16197-AD-007**

| Lab Sample Number | | | | 642024 | 642025 | 642026 | 642027 | 642028 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS13 | WS14 | WS14 | WS14 | TP27 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.80 | 0.10 | 1.80 | 2.90 | 0.50 |
| **Date Sampled** | | | | 07/10/2016 | 07/10/2016 | 07/10/2016 | 07/10/2016 | 07/10/2016 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | N/A | NONE | 11 | 15 | 21 | 22 | 19 |
| Total mass of sample received | kg | 0.001 | NONE | 1.1 | 1.2 | 1.5 | 1.3 | 1.3 |
| Asbestos in Soil | Type | N/A | ISO 17025 | - | - | - | - | Not-detected |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 7.9 | - | 9.2 | 9.2 | 8.9 |
| Total Sulphate as $SO_4$ | mg/kg | 50 | MCERTS | 330 | - | 190 | 520 | 200 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | 0.023 | - | 0.022 | 0.095 | 0.028 |
| Total Organic Carbon (TOC) | % | 0.1 | MCERTS | 1.0 | - | 0.1 | 0.3 | 0.2 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | - | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Acenaphthene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Fluorene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Phenanthrene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Benzo(a)anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Benzo(k)fluoranthene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Benzo(a)pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Dibenz(a,h)anthracene | mg/kg | 0.1 | MCERTS | < 0.10 | - | < 0.10 | < 0.10 | < 0.10 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | < 0.05 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 1.6 | MCERTS | < 1.60 | - | < 1.60 | < 1.60 | < 1.60 |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 3.7 | - | 5.8 | 3.0 | 1.9 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | - | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | MCERTS | < 4.0 | - | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 18 | - | 11 | 7.7 | 18 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 14 | - | 6.6 | 10 | 11 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 25 | - | 4.8 | 4.5 | 7.0 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | - | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 16 | - | 7.3 | 8.2 | 14 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | - | 1.8 | < 1.0 | 2.1 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 42 | - | 19 | 25 | 31 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| Petroleum Range Organics (C6 - C10) | mg/kg | 0.1 | NONE | < 0.1 | - | - | - | - |
| TPH (C10 - C25) | mg/kg | 10 | MCERTS | < 10 | - | - | - | - |
| TPH (C25 - C40) | mg/kg | 10 | NONE | < 10 | - | - | - | - |
| **Pesticide and Herbicide Screen** | | | | | | | | |
| Pesticides/Herbicides Screen in Soil | P/A | N/A | NONE | - | Absent | - | - | - |


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**Analytical Report Number: 16-29842**

**Project / Site name: Holbeach Meadows, Holbeach**
**Your Order No: GML16197-AD-007**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lab Sample Number** | | | | 642029 | | | | |
| **Sample Reference** | | | | TP30 | | | | |
| **Sample Number** | | | | None Supplied | | | | |
| **Depth (m)** | | | | 1.20 | | | | |
| **Date Sampled** | | | | 06/10/2016 | | | | |
| **Time Taken** | | | | None Supplied | | | | |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | | | | |
| Moisture Content | % | N/A | NONE | 20 | | | | |
| Total mass of sample received | kg | 0.001 | NONE | 1.2 | | | | |
| Asbestos in Soil | Type | N/A | ISO 17025 | - | | | | |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | - | | | | |
| Total Sulphate as $SO_4$ | mg/kg | 50 | MCERTS | - | | | | |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | - | | | | |
| Total Organic Carbon (TOC) | % | 0.1 | MCERTS | - | | | | |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | | | | |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | | | | |
| Acenaphthylene | mg/kg | 0.1 | MCERTS | - | | | | |
| Acenaphthene | mg/kg | 0.1 | MCERTS | - | | | | |
| Fluorene | mg/kg | 0.1 | MCERTS | - | | | | |
| Phenanthrene | mg/kg | 0.1 | MCERTS | - | | | | |
| Anthracene | mg/kg | 0.1 | MCERTS | - | | | | |
| Fluoranthene | mg/kg | 0.1 | MCERTS | - | | | | |
| Pyrene | mg/kg | 0.1 | MCERTS | - | | | | |
| Benzo(a)anthracene | mg/kg | 0.1 | MCERTS | - | | | | |
| Chrysene | mg/kg | 0.05 | MCERTS | - | | | | |
| Benzo(b)fluoranthene | mg/kg | 0.1 | MCERTS | - | | | | |
| Benzo(k)fluoranthene | mg/kg | 0.1 | MCERTS | - | | | | |
| Benzo(a)pyrene | mg/kg | 0.1 | MCERTS | - | | | | |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | MCERTS | - | | | | |
| Dibenz(a,h)anthracene | mg/kg | 0.1 | MCERTS | - | | | | |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | | | | |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 1.6 | MCERTS | - | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | - | | | | |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | - | | | | |
| Chromium (hexavalent) | mg/kg | 4 | MCERTS | - | | | | |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | | | | |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | - | | | | |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | - | | | | |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | - | | | | |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | - | | | | |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | | | | |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | - | | | | |
| **Petroleum Hydrocarbons** | | | | | | | | |
| Petroleum Range Organics (C6 - C10) | mg/kg | 0.1 | NONE | < 0.1 | | | | |
| TPH (C10 - C25) | mg/kg | 10 | MCERTS | < 10 | | | | |
| TPH (C25 - C40) | mg/kg | 10 | NONE | < 10 | | | | |
| **Pesticide and Herbicide Screen** | | | | | | | | |
| Pesticides/Herbicides Screen in Soil | P/A | N/A | NONE | - | | | | |


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**Analytical Report Number : 16-29842**

**Project / Site name: Holbeach Meadows, Holbeach**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 641999 | WS01 | None Supplied | 0.10 | Brown clay and loam. |
| 642000 | WS01 | None Supplied | 1.50 | Brown clay. |
| 642001 | WS02 | None Supplied | 1.30 | Brown sandy clay. |
| 642002 | WS02 | None Supplied | 2.80 | Brown sandy clay. |
| 642003 | WS02 | None Supplied | 4.80 | Brown clay. |
| 642004 | WS03 | None Supplied | 4.90 | Brown clay. |
| 642005 | WS03 | None Supplied | 7.00 | Brown clay with fibres. |
| 642006 | WS04 | None Supplied | 0.20 | Brown clay. |
| 642007 | WS05 | None Supplied | 0.20 | Brown sandy clay. |
| 642008 | WS05 | None Supplied | 0.70 | Brown clay. |
| 642009 | WS05 | None Supplied | 2.60 | Brown clay. |
| 642010 | WS07 | None Supplied | 0.10 | Brown clay. |
| 642011 | WS07 | None Supplied | 1.60 | Brown clay. |
| 642012 | WS07 | None Supplied | 3.70 | Brown clay. |
| 642013 | WS08 | None Supplied | 0.20 | Brown clay and loam with vegetation. |
| 642014 | WS08 | None Supplied | 2.50 | Brown sandy clay. |
| 642015 | WS09 | None Supplied | 0.40 | Light brown sandy clay with gravel and vegetation. |
| 642016 | WS09 | None Supplied | 1.30 | Brown sandy clay. |
| 642017 | WS10 | None Supplied | 0.50 | Brown sandy clay. |
| 642018 | WS10 | None Supplied | 1.50 | Brown sandy clay. |
| 642019 | WS11 | None Supplied | 0.20 | Brown clay and loam. |
| 642020 | WS11 | None Supplied | 0.90 | Brown sandy clay. |
| 642021 | WS12 | None Supplied | 1.10 | Brown sandy clay. |
| 642022 | WS12 | None Supplied | 2.20 | Brown clay. |
| 642023 | WS13 | None Supplied | 0.10 | Brown clay and loam. |
| 642024 | WS13 | None Supplied | 0.80 | Brown clay and loam with vegetation. |
| 642025 | WS14 | None Supplied | 0.10 | Brown clay and loam with vegetation. |
| 642026 | WS14 | None Supplied | 1.80 | Light brown sand. |
| 642027 | WS14 | None Supplied | 2.90 | Brown sand. |
| 642028 | TP27 | None Supplied | 0.50 | Brown sandy clay. |
| 642029 | TP30 | None Supplied | 1.20 | Brown clay. |


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**Analytical Report Number : 16-29842**

**Project / Site name: Holbeach Meadows, Holbeach**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Asbestos identification in soil | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques. | In house method based on HSG 248 | A001-PL | D | ISO 17025 |
| Hexavalent chromium in soil | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | MCERTS |
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests | L019-UK/PL | W | NONE |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| Pesticides and Herbicides in soil screening | In-house method | In-house method | | W | NONE |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests | L099-PL | D | MCERTS |
| PRO (Soil) | Determination of hydrocarbons C6-C10 by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | NONE |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES. | L038-PL | D | NONE |
| Total organic carbon in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests | L023-PL | D | MCERTS |
| Total sulphate (as SO4 in soil) | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES. | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests | L038-PL | D | MCERTS |
| TPH Oils (Soils) | Determination of extractable hydrocarbons in soil by GC-MS/FID. | In-house method | L076-PL | D | NONE |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**


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UKAS TESTING
4041

# TEST CERTIFICATE

## Determination of Moisture Content

Tested in Accordance with BS 1377-2:1990: Clause 3.2

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Analytical i2 Environmental Science

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 05/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 19/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

### Test results

| Laboratory Reference | Sample Reference | Location | Depth Top [m] | Depth Base [m] | Sample Type | Description | Moisture Content [%] |
|---|---|---|---|---|---|---|---|
| 641912 | Not Given | TP06 | 0.6 | Not Given | B | Light brown sandy CLAY | 26 |
| 641919 | Not Given | TP30 | 1.6 | Not Given | B | Light brown silty CLAY | 29 |
| 641922 | Not Given | TP32 | 0.6 | Not Given | B | Brown sandy CLAY. Sand is fine | 27 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Remarks

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Date Reported: 24/10/2016

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Liquid and Plastic Limits

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

4041

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 05/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 19/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

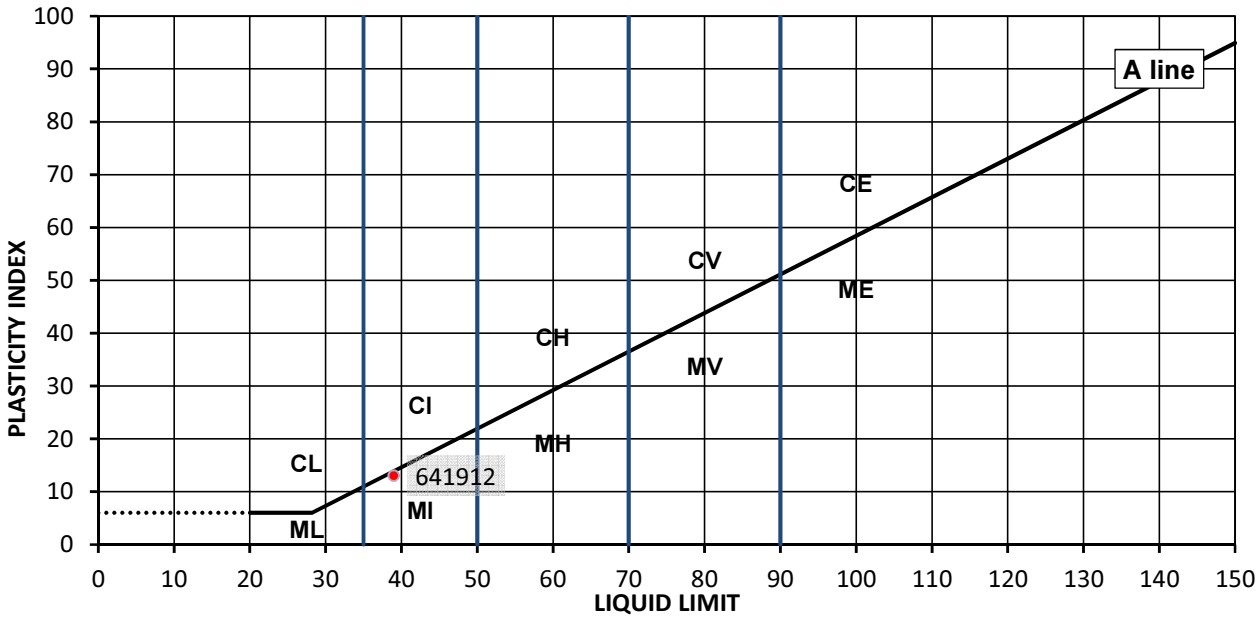
**TEST RESULTS**

Laboratory Reference: 641912
Sample Reference: Not Given

Description: Light brown sandy CLAY
Location: TP06
Sample Preparation: Tested in natural condition

Sample Type: B
Depth Top [m]: 0.6
Depth Base [m]: Not Given

| As Received Moisture Content [%] | Liquid Limit [%] | Plastic Limit [%] | Plasticity Index [%] | % Passing 425µm BS Test Sieve |
|---|---|---|---|---|
| 26 | 39 | 26 | 13 | 100 |




Legend, based on BS 5930:1999 +A2: 2010 Code of practice for site investigations

| | | Plasticity | | Liquid Limit |
|---|---|---|---|---|
| C | Clay | L | Low | below 35 |
| M | Silt | I | Medium | 35 to 50 |
| | | H | High | 50 to 70 |
| | | V | Very high | 70 to 90 |
| | | E | Extremely high | exceeding 90 |
| | Organic | O | append to classification for organic material ( eg CHO ) | |

Remarks

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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GF 105.9

# TEST CERTIFICATE

## Determination of Liquid and Plastic Limits

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

4041

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 06/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 19/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

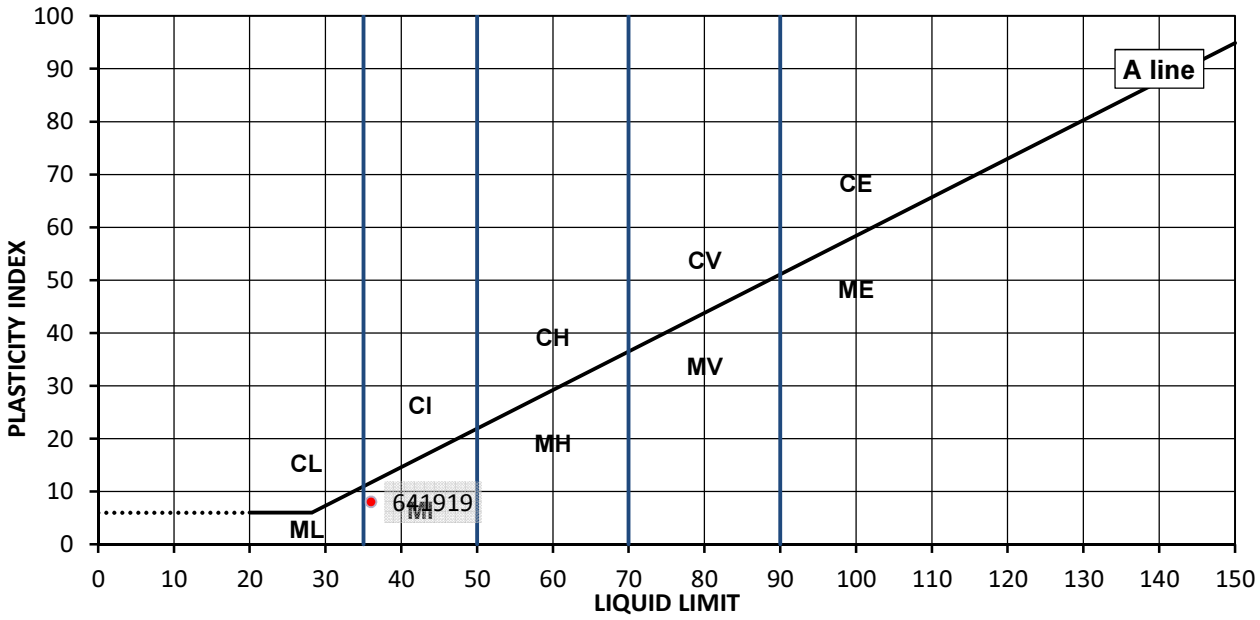
**TEST RESULTS**

Laboratory Reference: 641919
Sample Reference: Not Given

Description: Light brown silty CLAY
Location: TP30
Sample Preparation: Tested in natural condition

Sample Type: B
Depth Top [m]: 1.6
Depth Base [m]: Not Given

| As Received Moisture Content [%] | Liquid Limit [%] | Plastic Limit [%] | Plasticity Index [%] | % Passing 425µm BS Test Sieve |
|---|---|---|---|---|
| 29 | 36 | 28 | 8 | 100 |




Legend, based on BS 5930:1999 +A2: 2010 Code of practice for site investigations

| | | Plasticity | | Liquid Limit |
|---|---|---|---|---|
| C | Clay | L | Low | below 35 |
| M | Silt | I | Medium | 35 to 50 |
| | | H | High | 50 to 70 |
| | | V | Very high | 70 to 90 |
| | | E | Extremely high | exceeding 90 |
| | Organic | O | append to classification for organic material ( eg CHO ) | |

Remarks

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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GF 105.9

# TEST CERTIFICATE

## Determination of Liquid and Plastic Limits

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

UKAS TESTING 4041

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 07/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 19/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

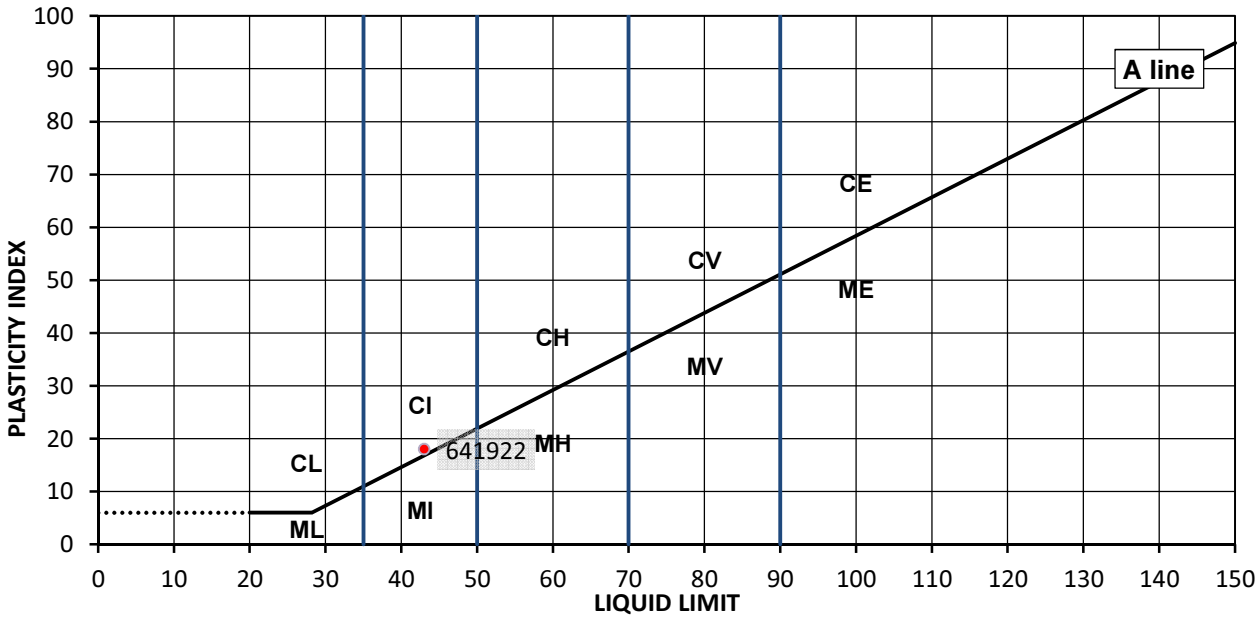
**TEST RESULTS**

Laboratory Reference: 641922
Sample Reference: Not Given

Description: Brown sandy CLAY. Sand is fine
Location: TP32
Sample Preparation: Tested in natural condition

Sample Type: B
Depth Top [m]: 0.6
Depth Base [m]: Not Given

| As Received Moisture Content [%] | Liquid Limit [%] | Plastic Limit [%] | Plasticity Index [%] | % Passing 425µm BS Test Sieve |
|---|---|---|---|---|
| 27 | 43 | 25 | 18 | 100 |




Legend, based on BS 5930:1999 +A2: 2010 Code of practice for site investigations

| | | Plasticity | | Liquid Limit |
|---|---|---|---|---|
| C | Clay | L | Low | below 35 |
| M | Silt | I | Medium | 35 to 50 |
| | | H | High | 50 to 70 |
| | | V | Very high | 70 to 90 |
| | | E | Extremely high | exceeding 90 |
| | Organic | O | append to classification for organic material ( eg CHO ) | |

Remarks

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

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# TEST CERTIFICATE

## Summary of Classification Test Results

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Client: Geo-Matters Limited
Client Address: 104 Bondgate
Castle Donington
DE74 2NR
Contact: Amy Downs
Site Name: Holbeach Meadows, Holbeach
Site Address: Not Given

Client Reference: GML16197
Job Number: 16-29827
Date Sampled: 05/10/2016
Date Received: 11/10/2016
Date Tested: 19/10/2016
Sampled By: AD

**Test results**

| Laboratory Reference | Hole No. | Sample | | | | Soil Description | Density | | M/C | Attenberg | | | | PD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Reference | Top depth [m] | Base depth [m] | Type | | bulk Mg/m3 | dry Mg/m3 | % | % Passing 425um % | LL % | PL % | PI % | Mg/m3 |
| 641912 | TP06 | Not Given | 0.60 | Not Given | B | Light brown sandy CLAY | - | - | 26 | 100 | 39 | 26 | 13 | - |
| 641919 | TP30 | Not Given | 1.60 | Not Given | B | Light brown silty CLAY | - | - | 29 | 100 | 36 | 28 | 8 | - |
| 641922 | TP32 | Not Given | 0.60 | Not Given | B | Brown sandy CLAY. Sand is fine | - | - | 27 | 100 | 43 | 25 | 18 | - |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | |

Comments:

Approved:

Mirosława Pytlik
PL Head of Geotechnical Section

Signed:

Sushil Sharda
Technical Manager (Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

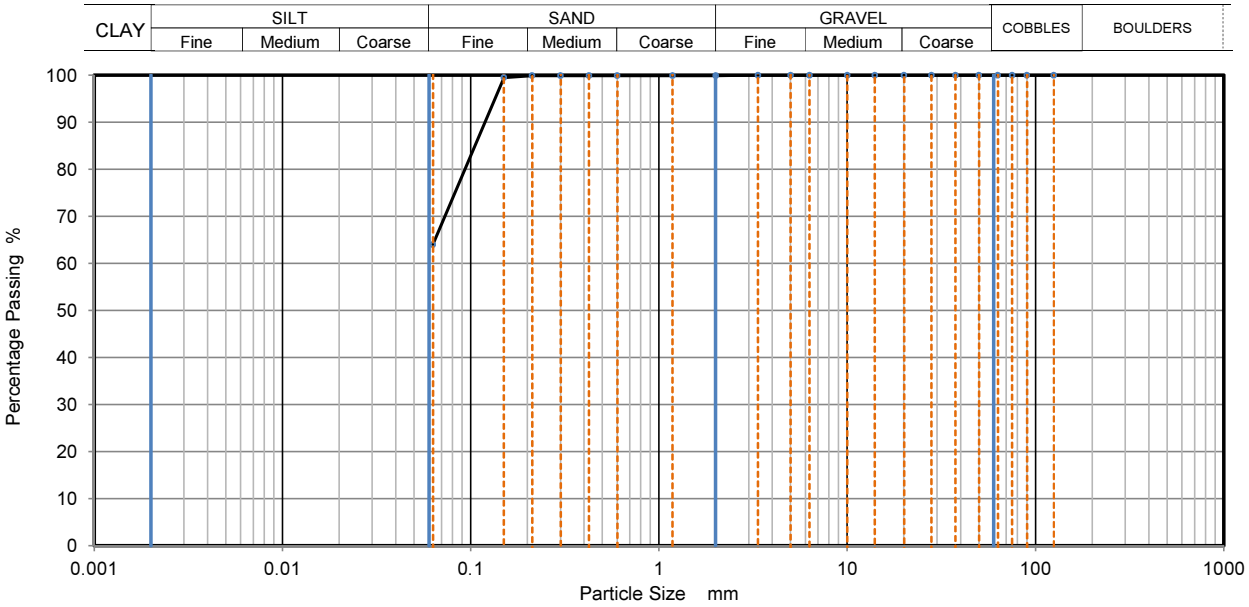
4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 05/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS** Laboratory Reference: 641911 Sample Reference: Not Given

| | | | |
|---|---|---|---|
| Sample description: | Yellowish brown sandy SILT | Sample Type: | B |
| Location: | TP01 | Depth Top [m]: | 1.4 |
| Supplier: | Not Given | Depth Base [m]: | Not Given |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 100 | | |
| 0.425 | 100 | | |
| 0.3 | 100 | | |
| 0.212 | 100 | | |
| 0.15 | 100 | | |
| 0.063 | 64 | | |

Dry Mass of sample [g]: 226

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.10 |
| Sand | 35.90 |
| | |
| Fines <0.063mm | 64.00 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 3.35 |
| D60 | mm | |
| D30 | mm | |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

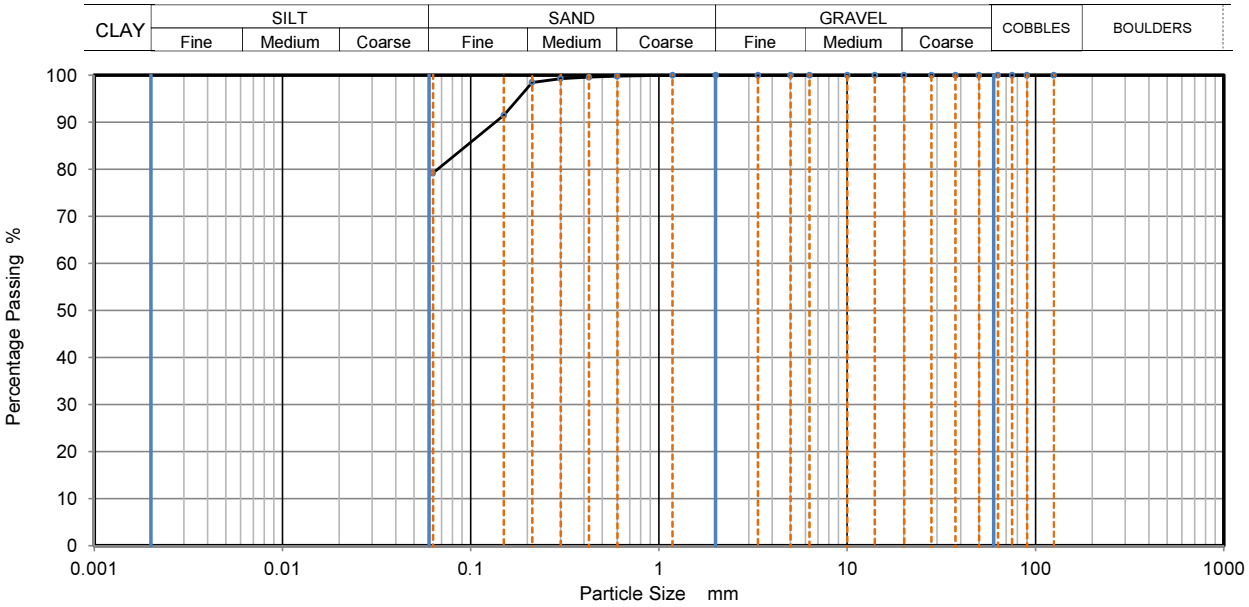
4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 05/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS** Laboratory Reference: 641913 Sample Reference: Not Given

| | | | |
|---|---|---|---|
| Sample description: | Yellowish brown slightly sandy SILT | Sample Type: | B |
| Location: | TP09 | Depth Top [m]: | 1.3 |
| Supplier: | Not Given | Depth Base [m]: | Not Given |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 100 | | |
| 0.425 | 100 | | |
| 0.3 | 99 | | |
| 0.212 | 99 | | |
| 0.15 | 92 | | |
| 0.063 | 79 | | |

Dry Mass of sample [g]: 240

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.00 |
| Sand | 20.80 |
| | |
| Fines <0.063mm | 79.20 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 2 |
| D60 | mm | |
| D30 | mm | |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

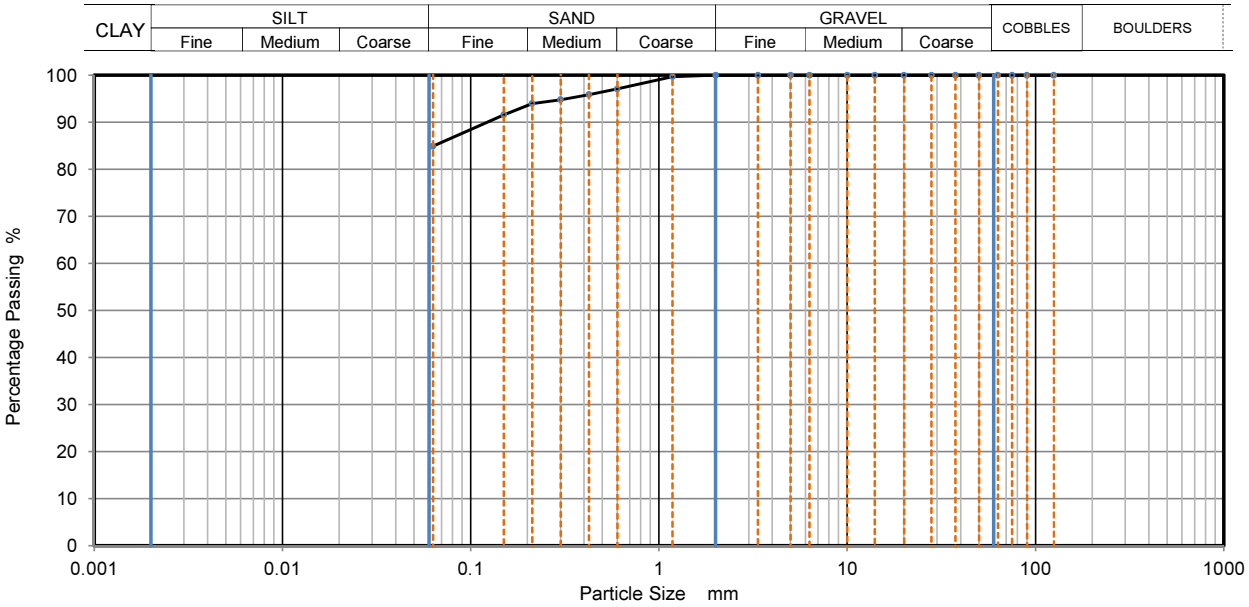
4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 05/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS**

| | | | |
|---|---|---|---|
| Laboratory Reference: | 641914 | Sample Reference: | Not Given |
| Sample description: | Brown slightly sandy CLAY | Sample Type: | B |
| Location: TP13 | | Depth Top [m]: | 1.5 |
| Supplier: Not Given | | Depth Base [m]: | Not Given |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 97 | | |
| 0.425 | 96 | | |
| 0.3 | 95 | | |
| 0.212 | 94 | | |
| 0.15 | 92 | | |
| 0.063 | 85 | | |

Dry Mass of sample [g]: 174

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.00 |
| Sand | 15.10 |
| | |
| Fines <0.063mm | 84.90 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 2 |
| D60 | mm | |
| D30 | mm | |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

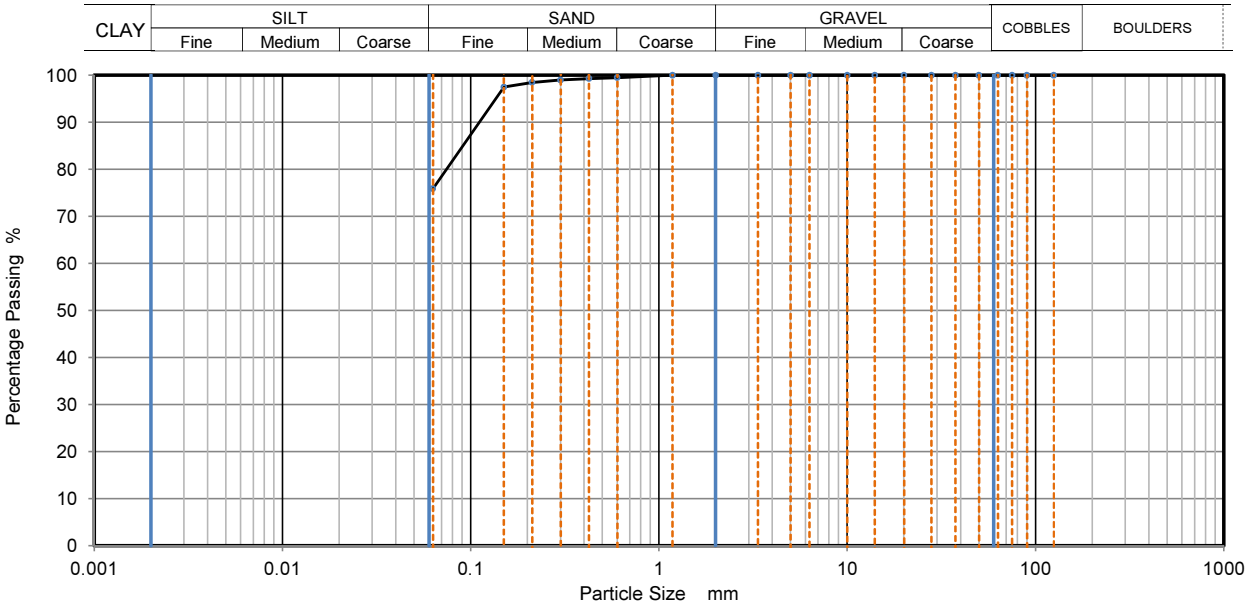
4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 05/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS** Laboratory Reference: 641915 Sample Reference: Not Given

| | | | |
|---|---|---|---|
| Sample description: | Yellowish brown slightly sandy CLAY | Sample Type: | B |
| Location: | TP15 | Depth Top [m]: | 0.9 |
| Supplier: | Not Given | Depth Base [m]: | Not Given |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 100 | | |
| 0.425 | 99 | | |
| 0.3 | 99 | | |
| 0.212 | 99 | | |
| 0.15 | 98 | | |
| 0.063 | 76 | | |

Dry Mass of sample [g]: 198

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.00 |
| Sand | 24.10 |
| | |
| Fines <0.063mm | 75.90 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 1.18 |
| D60 | mm | |
| D30 | mm | |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

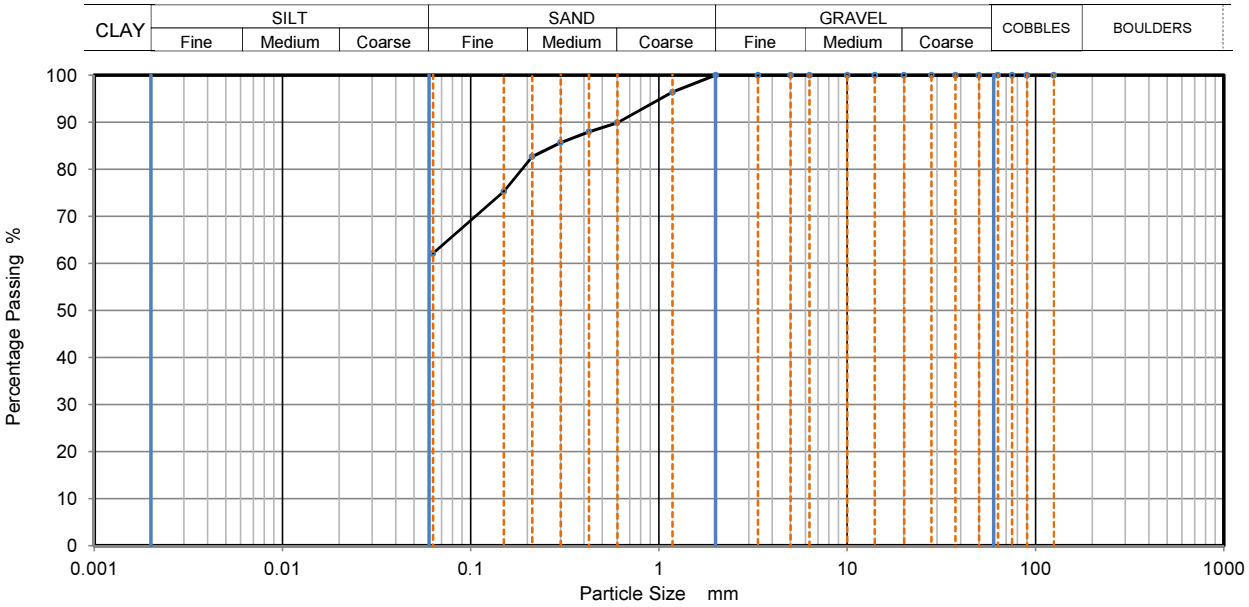
4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 05/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS**

| | | | | | |
|---|---|---|---|---|---|
| Laboratory Reference: | 641916 | Sample Reference: | Not Given |
| Sample description: | Brown sandy CLAY | Sample Type: | B |
| Location: | WS02 | Depth Top [m]: | 3.5 |
| Supplier: | Not Given | Depth Base [m]: | 4.9 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 96 | | |
| 0.6 | 90 | | |
| 0.425 | 88 | | |
| 0.3 | 86 | | |
| 0.212 | 83 | | |
| 0.15 | 75 | | |
| 0.063 | 62 | | |

Dry Mass of sample [g]: 159

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.00 |
| Sand | 37.90 |
| | |
| Fines <0.063mm | 62.10 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 2 |
| D60 | mm | |
| D30 | mm | |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

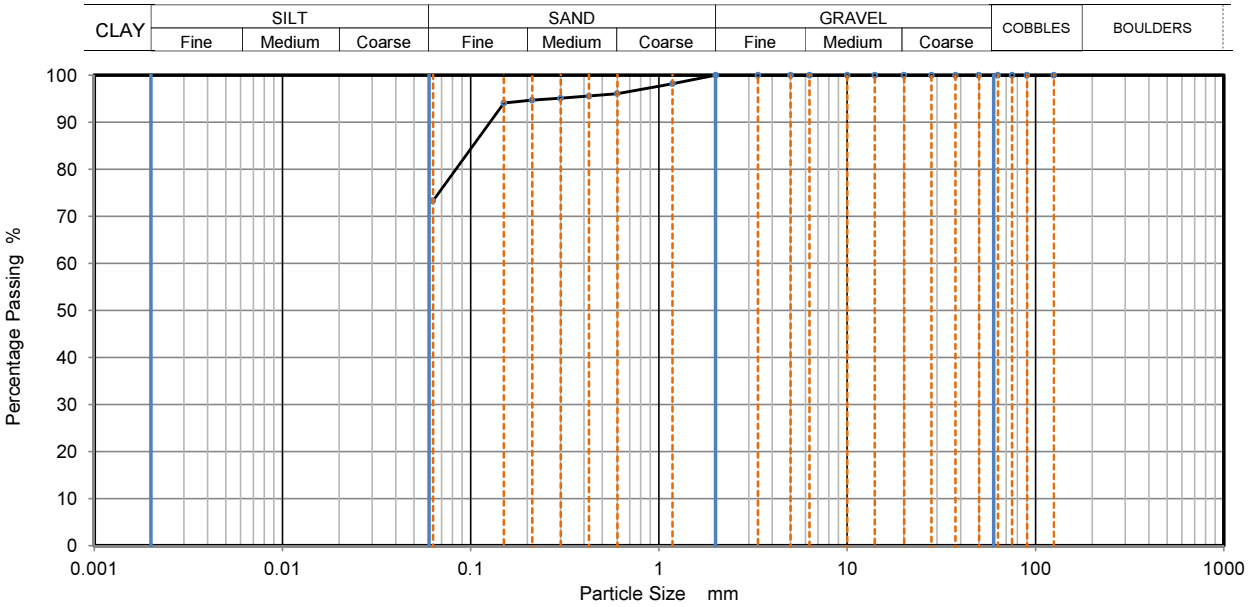
4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 05/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS**

| | | | |
|---|---|---|---|
| Laboratory Reference: | 641917 | Sample Reference: | Not Given |
| Sample description: | Brown slightly sandy CLAY | Sample Type: | B |
| Location: WS07 | | Depth Top [m]: | 6 |
| Supplier: Not Given | | Depth Base [m]: | 7 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 98 | | |
| 0.6 | 96 | | |
| 0.425 | 96 | | |
| 0.3 | 95 | | |
| 0.212 | 95 | | |
| 0.15 | 94 | | |
| 0.063 | 73 | | |

Dry Mass of sample [g]: 189

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.00 |
| Sand | 26.70 |
| | |
| Fines <0.063mm | 73.30 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 2 |
| D60 | mm | |
| D30 | mm | |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

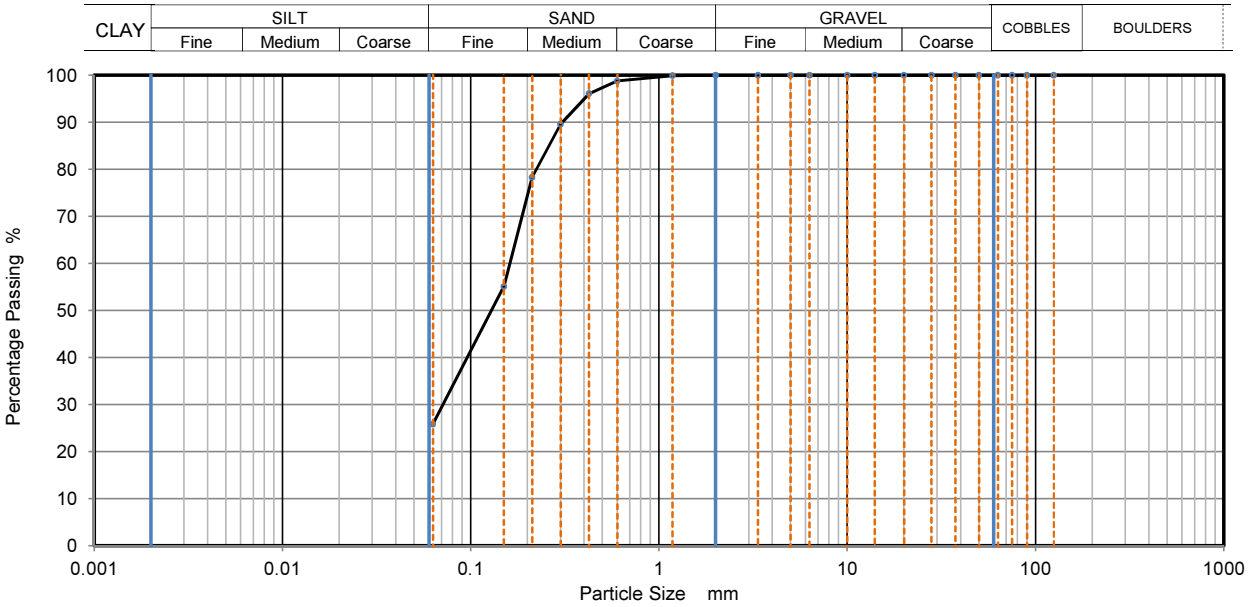
4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 06/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS** Laboratory Reference: 641918

| | | | |
|---|---|---|---|
| Sample description: | Yellowish brown silty fine to coarse SAND | Sample Reference: | Not Given |
| Location: | TP20 | Sample Type: | B |
| Supplier: | Not Given | Depth Top [m]: | 1.5 |
| | | Depth Base [m]: | Not Given |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 99 | | |
| 0.425 | 96 | | |
| 0.3 | 90 | | |
| 0.212 | 78 | | |
| 0.15 | 55 | | |
| 0.063 | 26 | | |

Dry Mass of sample [g]: 216

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.00 |
| Sand | 74.20 |
| | |
| Fines <0.063mm | 25.80 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 2 |
| D60 | mm | 0.161 |
| D30 | mm | 0.0713 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

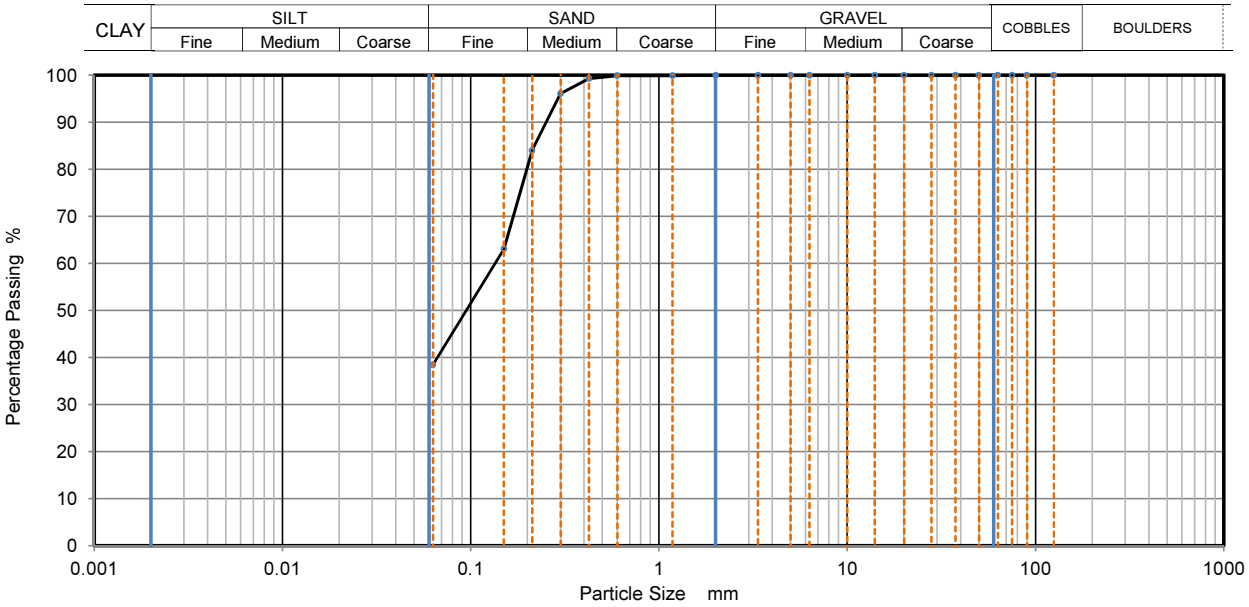
4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 07/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS** Laboratory Reference: 641920

| | | | |
|---|---|---|---|
| Sample description: | Yellowish brown very silty fine to coarse SAND | Sample Reference: | Not Given |
| Location: | TP21 | Sample Type: | B |
| Supplier: | Not Given | Depth Top [m]: | 1.1 |
| | | Depth Base [m]: | Not Given |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 100 | | |
| 0.425 | 99 | | |
| 0.3 | 96 | | |
| 0.212 | 84 | | |
| 0.15 | 63 | | |
| 0.063 | 38 | | |

Dry Mass of sample [g]: 256

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.00 |
| Sand | 61.60 |
| | |
| Fines <0.063mm | 38.40 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 2 |
| D60 | mm | 0.134 |
| D30 | mm | |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

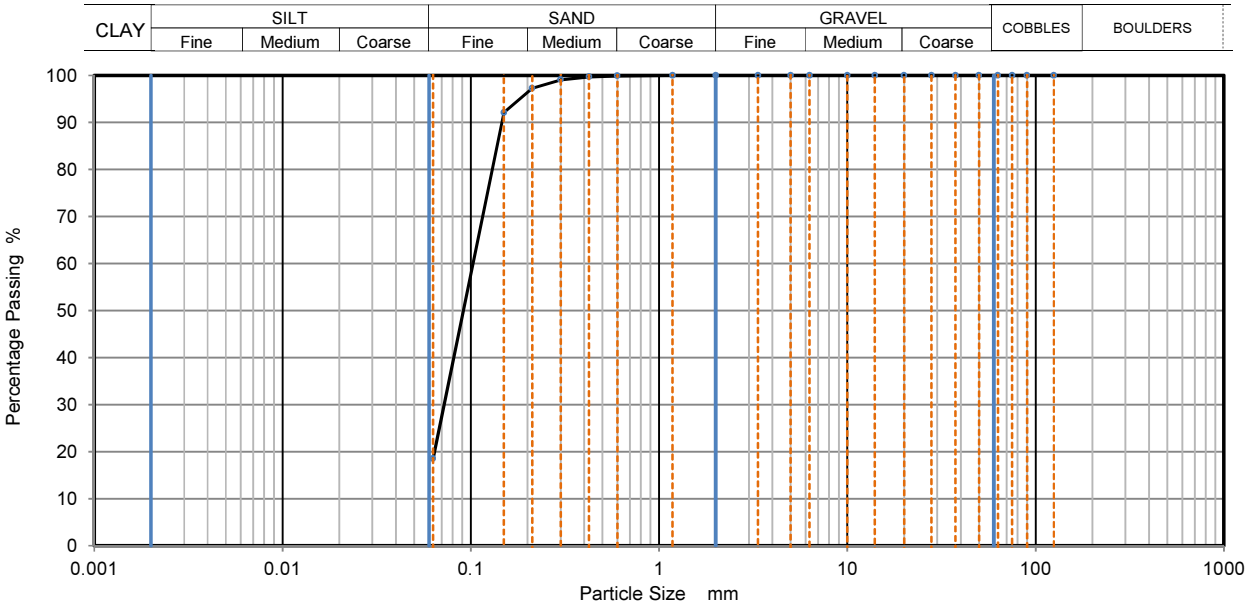
4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 07/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS** Laboratory Reference: 641921 Sample Reference: Not Given

| | | | |
|---|---|---|---|
| Sample description: | Brown silty fine to coarse SAND | Sample Type: | B |
| Location: | TP31 | Depth Top [m]: | 2.2 |
| Supplier: | Not Given | Depth Base [m]: | Not Given |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 100 | | |
| 0.425 | 100 | | |
| 0.3 | 99 | | |
| 0.212 | 97 | | |
| 0.15 | 92 | | |
| 0.063 | 19 | | |

Dry Mass of sample [g]: 259

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.00 |
| Sand | 81.50 |
| | |
| Fines <0.063mm | 18.50 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 1.18 |
| D60 | mm | 0.103 |
| D30 | mm | 0.0721 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

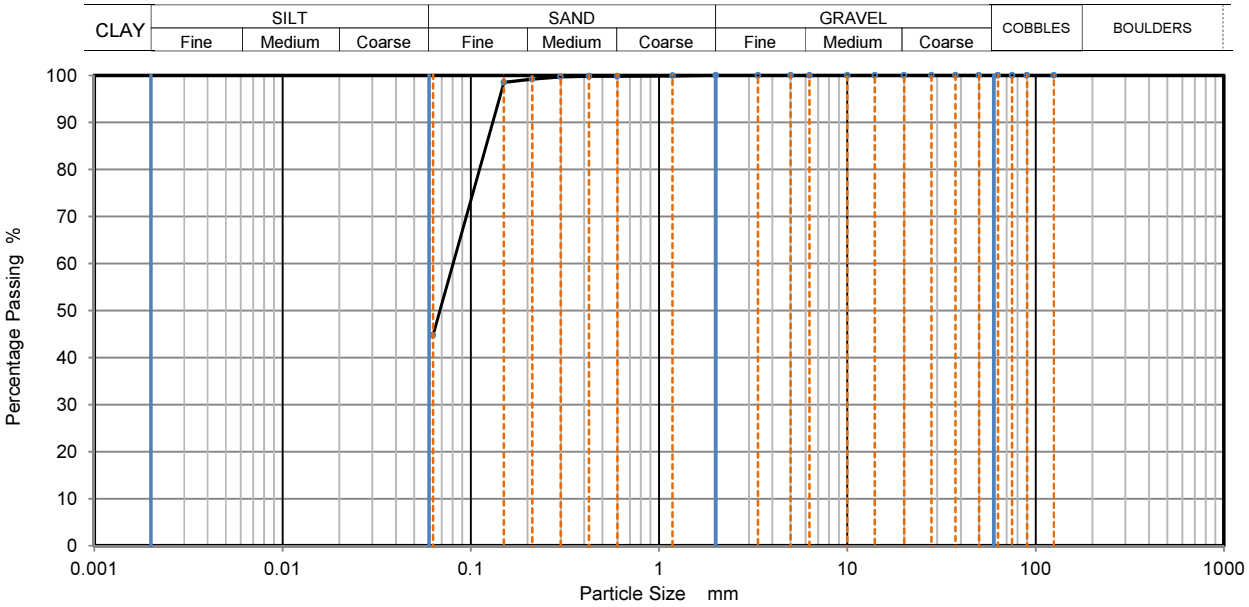
UKAS TESTING 4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 07/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS** Laboratory Reference: 641923 Sample Reference: Not Given

| | | | |
|---|---|---|---|
| Sample description: | Yellowish brown sandy SILT | Sample Type: | B |
| Location: | TP37 | Depth Top [m]: | 1.5 |
| Supplier: | Not Given | Depth Base [m]: | Not Given |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 100 | | |
| 0.425 | 100 | | |
| 0.3 | 100 | | |
| 0.212 | 99 | | |
| 0.15 | 99 | | |
| 0.063 | 45 | | |

Dry Mass of sample [g]: 244

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.00 |
| Sand | 55.30 |
| | |
| Fines <0.063mm | 44.70 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 2 |
| D60 | mm | 0.0807 |
| D30 | mm | |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

**for and on behalf of i2 Analytical Ltd**

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# TEST CERTIFICATE

## Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

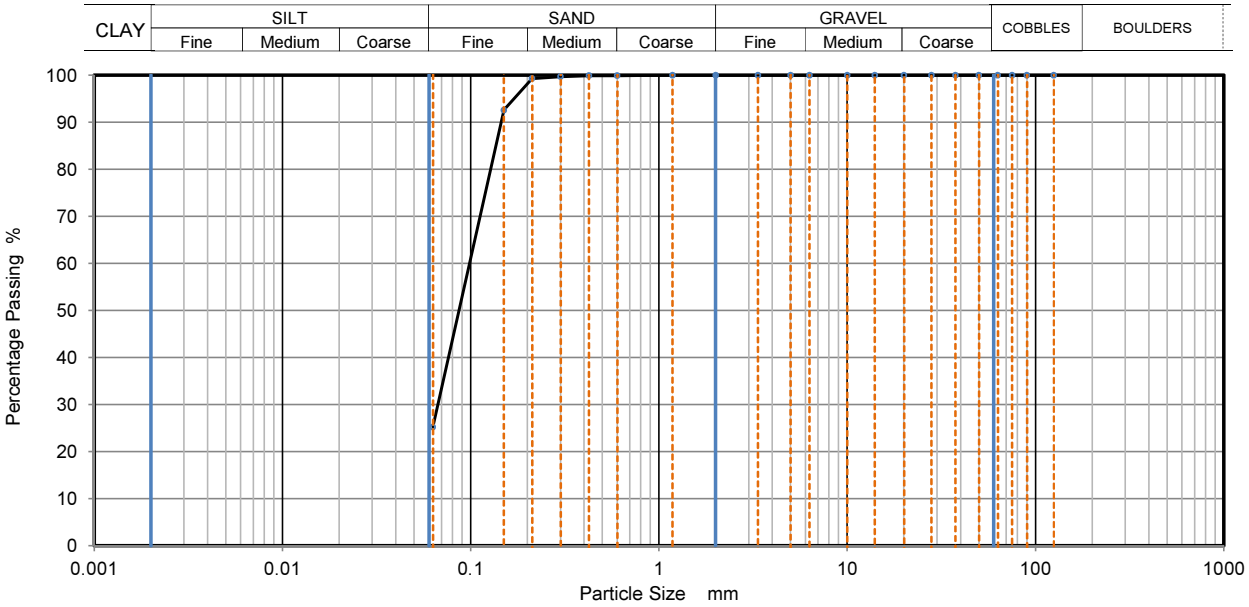
4041

Tested in Accordance with BS1377:Part 2:1990, clause 9.2

| | | | |
|---|---|---|---|
| Client: | Geo-Matters Limited | Client Reference: | GML16197 |
| Client Address: | 104 Bondgate<br>Castle Donington<br>DE74 2NR | Job Number: | 16-29827 |
| | | Date Sampled: | 07/10/2016 |
| | | Date Received: | 11/10/2016 |
| Contact: | Amy Downs | Date Tested: | 18/10/2016 |
| Site Name: | Holbeach Meadows, Holbeach | Sampled By: | AD |
| Site Address: | Not Given | | |

**TEST RESULTS** Laboratory Reference: 641924

| | | | |
|---|---|---|---|
| Sample description: | Brown silty SAND | Sample Reference: | Not Given |
| Location: | WS09 | Sample Type: | B |
| Supplier: | Not Given | Depth Top [m]: | 3 |
| | | Depth Base [m]: | 4 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 100 | | |
| 0.425 | 100 | | |
| 0.3 | 100 | | |
| 0.212 | 99 | | |
| 0.15 | 93 | | |
| 0.063 | 25 | | |

Dry Mass of sample [g]: 252

| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0.00 |
| Gravel | 0.00 |
| Sand | 74.80 |
| | |
| Fines <0.063mm | 25.20 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | 1.18 |
| D60 | mm | 0.0986 |
| D30 | mm | 0.067 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Mirosława Pytlik
PL Head of
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 24/10/2016

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