


| Drilling Method | | | Cable Percussion & Rotary | Borehole Diameter | Casing Diameter | BOREHOLE No. | BH37400 | | | | |
|-----------------|------------------|-------------------------------------|------------------------------------|---|-----------------------------------|--------------------------------|--|--|-----------------------|------------|--------|
| Equipment | | | Dando 2000 Hanjin Water | 250mm to 3.80m 150mm to 11.00m 116mm to 11.80m 101mm to 15.10m | 250mm to 3.60m 150mm to 11.00m | Coordinates (National Grid) | | | E N m OD | | |
| Drill Fluid | | | J Burnlees/M Patterson | | | Ground Level | | | | | |
| Crew/Vessel | | | | | | | | | | | |
| Dates Drilled | | | Start 06/11/2015 End 16/11/2015 | Logged by CC 15/11/2015 | Compiled by sw 10/11/2015 | Approved by BC 19/01/2016 | | | | | |
| Date & Time | Casing Depth (m) | Water Depth (m) (Flush Return %) | Sample/Core Recovery | | | SPT Blows / N | Result of U100 Blows / Rec. mm or Fracture Index | Description of Strata | Depth (Thickness) (m) | Level m OD | Legend |
| 06/11 | 0.00 | | From To | Type TCR % | No. SCR % | RQD % | Core Size (mm) | Grass over TOPSOIL: Firm brown sandy clay. Sand is fine to coarse. | (0.30) | | |
| | | | 0.30 | D | 1 | | | | | | |
| | | | 0.30-0.70 | B | 2 | | | Grey brown silty fine to coarse SAND and angular to subrounded fine to coarse GRAVEL of mixed lithologies predominantly of psammite and pelite. | 0.30 | 89.85 | |
| | | | | | | | | ALLUVIUM (Possibly into GLACIOFLUVIAL DEPOSIT). | | | |
| | | | 0.80 | D | 3 | | | | | | |
| | | | 0.80-1.20 | B | 4 | | | | | | |
| 06/11 | 0.00 | DRY | | | | | | | | | |
| 09/11 | 1.20 | DRY | 1.20-1.44 | D | 5 | | S50/ 153 | Below 1.20m: Low cobble content. Cobbles are subrounded to rounded of mixed lithologies (100mm x 60mm). | | | |
| | | | 1.20-1.70 | B | 6 | | | | (2.70) | | |
| | 1.80 | DRY | 2.00 | D | 7 | | C50/ 103 | | | | |
| | | | 2.00-2.20 | D | 8 | | | | | | |
| | | | 2.00-2.50 | B | 9 | | | | | | |
| | 3.00 | DRY | 3.00 | D | 10 | | S50/ 107 | Dark grey angular to subangular COBBLES of pelite (130mm x 120mm). | 3.00 | 87.15 | |
| | | | 3.00-3.19 | D | 11 | | | GLACIOFLUVIAL DEPOSIT | (0.68) | | |
| | | | 3.00-3.60 | B | 12 | | | | | | |
| 09/11 | 3.60 | DRY | 3.60-3.68 | | | | S50/ 0 | | 3.68 | 86.47 | |
| 12/11 | 3.60 | DRY | | | | | | Multicoloured very angular to well rounded fine to coarse GRAVEL of mixed lithologies including psammite, pelite and quartzite with medium cobble content. Cobbles are subangular to rounded (150mm x 90mm x 70mm) of psammite, pelite and quartzite. (CQI=1). | | | |
| | 3.80 | (100) | 3.80-4.10 | 100 | | | | | | | |
| 12/11 | 3.80 | 3.10 | | | | | | | | | |
| 13/11 | 3.80 | 3.21 | | | | | | GLACIOFLUVIAL DEPOSIT | | | |
| | | (100) | 4.10-4.50 | 68 | | | | Between 4.10m and 4.23m: Assumed zone of core loss | | | |
| | | | | | | | | Between 4.50m and 4.85m: Assumed zone of core loss | | | |
| | | (100) | 4.50-5.20 | 64 | | | | | | | |

Remarks

- Prior to boring a Cable Avoidance Tool (CAT) survey was carried out. An inspection pit (minimum dimension approx 400mm x 400mm) was hand-dug to 1.20m depth and rescanned using the CAT to check for services. Services were not located.
- Chiselled using CH from 1.20m to 1.30m (30 mins);chiselled using CH from 1.80m to 1.95m (30 mins);chiselled using CH from 2.10m to 2.40m (60 mins);chiselled using CH from 2.40m to 2.80m (60 mins);chiselled using CH from 2.80m to 3.20m (60 mins);chiselled using CH from 3.20m to 3.60m (60 mins);chiselled using CH from 3.60m to 3.60m (60 mins).
- See separate sheet for installation.

Scale 1:25



28/08/2018

Project

A9 PITLOCHRY TO KILLIECRANKIE
TRANSPORT SCOTLAND

Contract No. G151043UC

Figure No. FR7 (1 of 5)

| | | | | | | | |
|---|--|--|--|--|--|---------------------------------|--|
| Drilling Method Cable Percussion & Rotary | | Borehole Diameter 250mm to 3.80m 150mm to 11.00m 116mm to 11.80m 101mm to 15.10m | | Casing Diameter 250mm to 3.60m 150mm to 11.00m | | BOREHOLE No. BH37400 | |
| Equipment Dando 2000 Hanjin Water J Burnlees/M Patterson | | Logged by CC 15/11/2015 | | Compiled by sw 10/11/2015 | | Approved by BC 19/01/2016 | |
| Drill Fluid Crew/Vessel Dates Drilled Start 06/11/2015 End 16/11/2015 | | Coordinates (National Grid) Ground Level | | E N m OD | | | |

| Date & Time | Casing Depth (m) | Water Depth (m) (Flush Return %) | Sample/Core Recovery | | | SPT Blows /N Core Size (mm) | Result or Fracture Index | Description of Strata | Depth (Thickness) (m) | Level m OD | Legend |
|-------------|------------------|-------------------------------------|----------------------|---------------|-----------------------|-----------------------------------|--------------------------|-----------------------|-----------------------|------------|--------|
| | | | Depth (m) From To | Type TCR % | No. SCR % RQD % | | | | | | |
| 13/11 | 6.10 | | | | | | | | | | |
| | | (100) | 5.20-5.35 | 100 | | | | | | | |
| | | (100) | 5.35-5.95 | 42 | | | | | | | |
| | | | 5.85-5.95 | C | 14 | | | | | | |
| 13/11 | 6.10 | 4.51 | | | | | | | | | |
| 14/11 | 6.10 | 4.21 | | | | | | | | | |
| | | (100) | 6.25-7.25 | 0 | | | | | | | |
| | | (100) | 7.25-8.00 | 0 | | | | | | | |
| | | (100) | 8.00-9.10 | 27 | | | | | | | |
| 14/11 | 9.45 | 1.86 | | | | | | | | | |
| 15/11 | 9.45 | 5.11 | | | | | | | | | |

Between 5.35m and 5.70m: Assumed zone of core loss


Between 6.25m and 8.80m: Assumed zone of core loss

Between 9.45m and 10.40m: Assumed zone of core loss

(7.47)

Remarks 4 Groundwater not encountered during boring.
(See notes & keysheets)

Scale 1:25


| | | |
|---|--|-------------------------|
|  28/06/2010 | Project A9 PITLOCHRY TO KILLIECRANKIE TRANSPORT SCOTLAND | Contract No. G151043UC |
| | | Figure No. FR7 (2 of 5) |

304/03

| Drilling Method Cable Percussion & Rotary | | | | Borehole Diameter | | Casing Diameter | | BOREHOLE No. | | BH37400 | |
|---|------------------|----------------------------------|----------------------|------------------------|-----------|-----------------|--------------------------|---|-----------------------|-------------|--------|
| Equipment | | | | Dando 2000 | | 250mm to 3.80m | | 250mm to 3.60m | | Coordinates | |
| Drill Fluid | | | | Hanjin | | 150mm to 11.00m | | 150mm to 11.00m | | E | |
| Crew/Vessel | | | | Water | | 116mm to 11.80m | | | | N | |
| Dates Drilled | | | | J Burnlees/M Patterson | | 101mm to 15.10m | | | | m OD | |
| Start | | | | 06/11/2015 | | Logged by | | Compiled by | | Approved by | |
| End | | | | 16/11/2015 | | CC | | SW | | BC | |
| | | | | | | 15/11/2015 | | 10/11/2015 | | 19/01/2016 | |
| Date & Time | Casing Depth (m) | Water Depth (m) (Flush Return) % | Sample/Core Recovery | | | SPT Blows /N | Result or Fracture Index | Description of Strata | Depth (Thickness) (m) | Level m OD | Legend |
| | | | Depth (m) From To | Type TCR % | No. SCR % | | | | | | |
| 15/11 | 11.00 | (100) | 9.45-10.75 | 27 | | | | | | | |
| | | (100) | 10.75-11.35 | 67 | 33 | 0 | | Between 10.75m and 10.95m: Assumed zone of core loss | | | |
| 15/11 | 11.00 | (100) | 11.35-11.80 | 22 | 22 | 22 | 5 | Medium strong thinly foliated dark grey PELITE with very thin very closely to closely spaced locally extremely closely spaced bands of quartz and occasional pink garnet crystals (upto 2mm). Weathering: partial discolouration with brown staining on fracture surfaces and whole grain disintegration into clay. Fracture set 1: subhorizontal to inclined 20 degrees closely to medium spaced planar rough. | 11.15 | 79.00 | |
| | | (100) | 11.75-11.85 | C | 15 | | 0 | | | | |
| 16/11 | 11.00 | (100) | 11.80-13.20 | 86 | 64 | 64 | 7 | SOUTHERN HIGHLAND GROUP Between 11.35m and 11.70m: Assumed zone of core loss Between 11.80m and 12.00m: Assumed zone of core loss Between 12.28m and 12.60m: Non intact. | | | |
| | | (100) | 12.63-12.82 | C | 16 | | 2 | | | | |
| 16/11 | 11.00 | (100) | 12.82-12.97 | C | 17 | | NI | | | | |
| | | (100) | 12.97-13.17 | C | 18 | | 2 | | | | |
| 16/11 | 11.00 | (100) | 13.17-13.20 | C | 19 | | NI | Between 13.20m and 13.27m: Non intact. | (3.95) | | |
| | | (100) | 13.20-13.90 | 100 | 87 | 87 | 5 | | | | |
| 16/11 | 11.00 | (100) | 13.65-13.69 | C | 20 | | | | | | |
| | | (100) | 14.35-14.41 | C | 21 | | | | | | |
| 16/11 | 11.00 | (100) | 13.90-15.10 | 100 | 93 | 75 | | | | | |
| | | (100) | 14.95-15.00 | C | 22 | | | Between 15.01m and 15.10m: Non intact. | | | |

Remarks
(See notes & keysheets)

Scale 1:25


28/06/2016

Project
A9 PITLOCHRY TO KILLIECRANKIE
TRANSPORT SCOTLAND

Contract No. G151043UC

Figure No. FR7 (3 of 5)


304/03

| | | | | | | | |
|--|--|---|--|---|--|---|--|
| Drilling Method Cable Percussion & Rotary | | Borehole Diameter 250mm to 3.80m 150mm to 11.00m 116mm to 11.80m 101mm to 15.10m | | Casing Diameter 250mm to 3.60m 150mm to 11.00m | | BOREHOLE No. BH37400 | |
| Equipment Dando 2000 | | Drill Fluid Hanjin | | Drill Fluid Water | | Coordinates (National Grid) E N m OD | |
| Crew/Vessel J Burnlees/M Patterson | | Dates Drilled Start 06/11/2015 End 16/11/2015 | | Logged by CC 15/11/2015 | | Compiled by sw 10/11/2015 | |
| | | | | Approved by BC 19/01/2016 | | Ground Level | |

| Date & Time | Casing Depth (m) | Water Depth (m) (Flush Return) % | Sample/Core Recovery | | | SPT Blows /N | Result or Fracture Index | Description of Strata | Depth (Thickness) (m) | Level m OD | Legend |
|-------------|------------------|-------------------------------------|----------------------|---------------|--------------|--------------|--------------------------|-----------------------|-----------------------|------------|--------|
| | | | Depth (m) From To | Type TCR % | No. SCR % | | | | | | |
| 16/11 | 11.00 | 6.21 | | | | | NI | | 15.10 | 75.05 | |
| | | | | | | | | End of Borehole | | | |

Remarks
 (See notes & keysheets)

Scale 1:25

| | | |
|---|---|--------------------------------|
|  28/08/2016 | Project A9 PITLOCHRY TO KILLIECRANKIE TRANSPORT SCOTLAND | Contract No. G151043UC |
| | | Figure No. FR7 (4 of 5) |

304/03

| Drilling Method | | | | | | Cable Percussion & Rotary | Borehole Diameter | | | | | | | | BOREHOLE No. | | | | | | |
|--|------------------------|--|--|--|--|--|---|------------|--|---------------|--|------------------|--|--------------------------|--|--|--|--|--|--|--|
| Equipment | | | | | | Dando 2000 Hanjin Water | 250mm to 3.80m 150mm to 11.00m 116mm to 11.80m 101mm to 15.10m | | | | | | | | Coordinates (National Grid) Ground Level | | | | | | |
| Crew/Vessel | | | | | | J Burnlees/M Patterson | | | | | | | | | E N m OD | | | | | | |
| Dates Drilled | | | | | | Start 06/11/2015 End 16/11/2015 | Logged by CC sw BC 15/11/2015 10/11/2015 19/01/2016 | | | | | | | | | | | | | | |
| Installation Details | | | | | | Installation Depth (m) | | Level m OD | | Water Strikes | | Strata Depth (m) | | Strata Details | | | | | | | |
| Instrumentation: 50mm slotted section (SL) from 1.50 to 11.00m | Concrete | | | | | 0.50 | 89.65 | | | | | 0.30 | | TOPSOIL | | | | | | | |
| | Bentonite Seal | | | | | 1.00 | 89.15 | | | | | | | SAND and GRAVEL, | | | | | | | |
| | Gravel Filter | | | | | | | | | | | 3.00 | | COBBLES | | | | | | | |
| | | | | | | | | | | | | 3.68 | | Cobbly GRAVEL | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| SL=1.50-11.00m | | | | | | | | | | | | | | | | | | | | | |
| | Bentonite Seal | | | | | 11.00 | 79.15 | | | | | 11.15 | | Fine grained METAMORPHIC | | | | | | | |
| | | | | | | 13.00 | 77.15 | | | | | | | | | | | | | | |
| | Cement/Bentonite Grout | | | | | | | | | | | | | | | | | | | | |
| | | | | | | 15.10 | 75.05 | | | | | 15.10 | | Base of Hole | | | | | | | |
| Remarks (See notes & keysheets) | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> Water Strike | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> Water Rise | | | | | | | | | | | | | | | | | | | | | |
| Upstanding cover with gas tap. Pipe diameter 50mm to 11.00m, installed on 17/11/2015. | | | | | | | | | | | | | | | | | | | | | |
| Not to Scale | | | | | | | | | | | | | | | | | | | | | |
| FUGRO | | | | | | Project | | | | | | Contract No. | | | | | | | | | |
| | | | | | | A9 PITLOCHRY TO KILLIECRANKIE TRANSPORT SCOTLAND | | | | | | G151043UC | | | | | | | | | |
| 28/08/2016 | | | | | | | | | | | | Figure No. | | | | | | | | | |
| | | | | | | | | | | | | FR7 (5 of 5) | | | | | | | | | |
| | | | | | | | | | | | | 309/05 | | | | | | | | | |