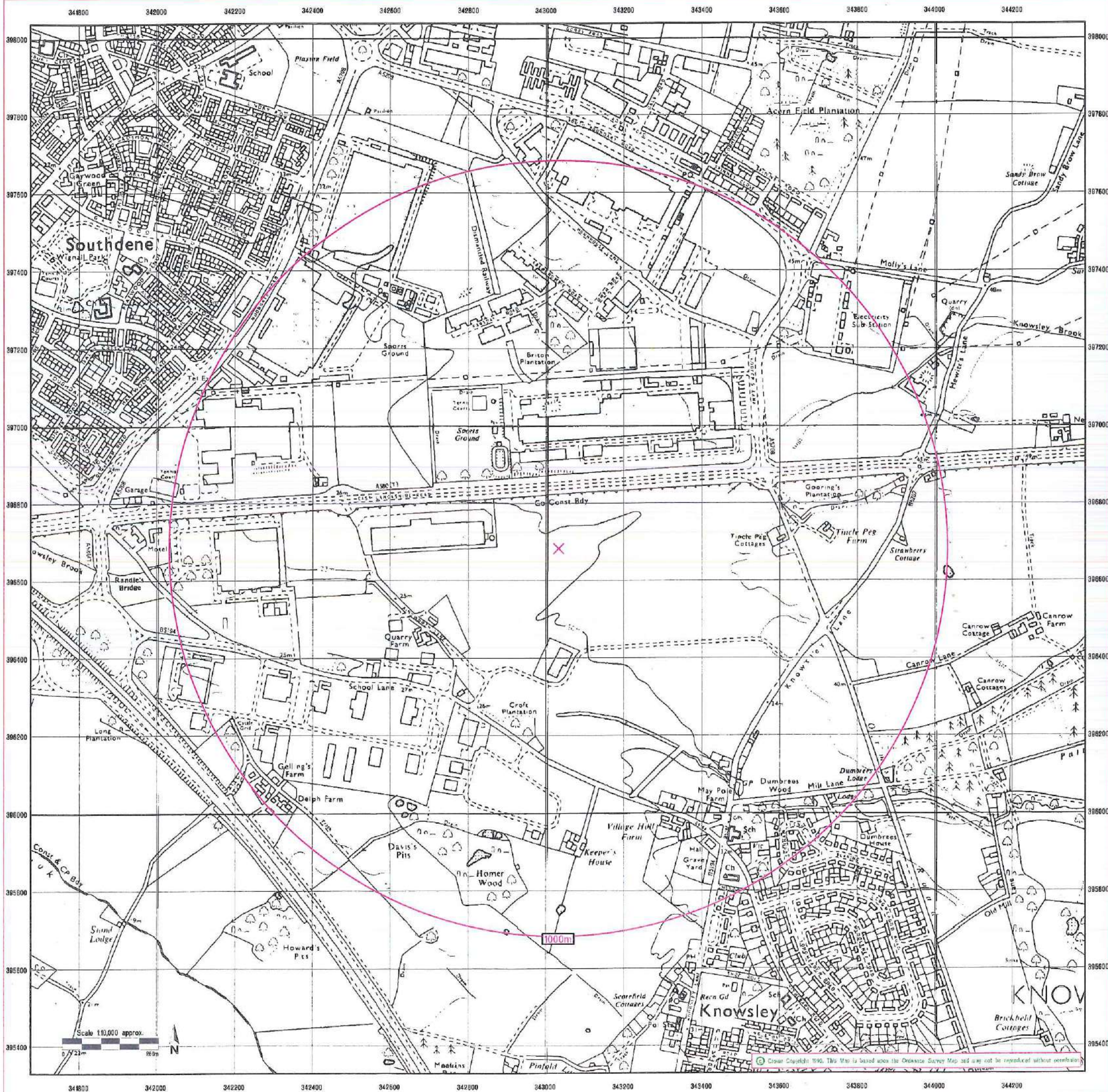




**CLIENT DETAILS**

Order No. EH23807-1

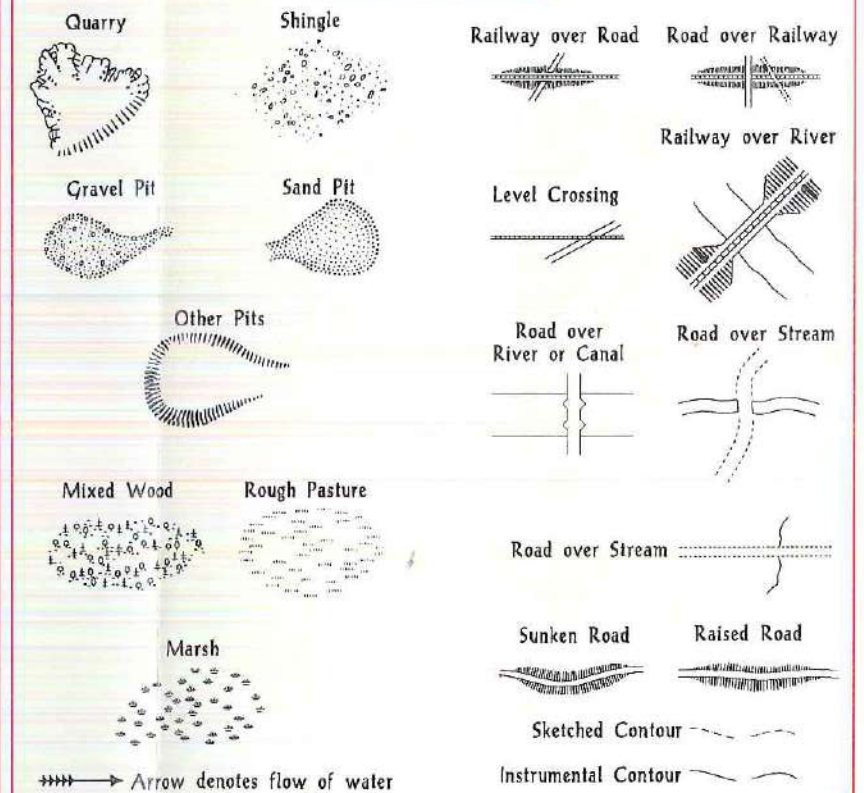
Customer Ref: Robert Tinsley  
AIG Consultants Limited  
PIER HOUSE WALLGATE  
WIGAN  
WN3 4AL

**SITE DETAILS**

Grid Reference 343032 396683

Contract Chemicals Ltd  
Penrhyn Road  
Knowsley Business Park  
PRESCOT  
Merseyside L34 9HY

**Historical Map Legend**



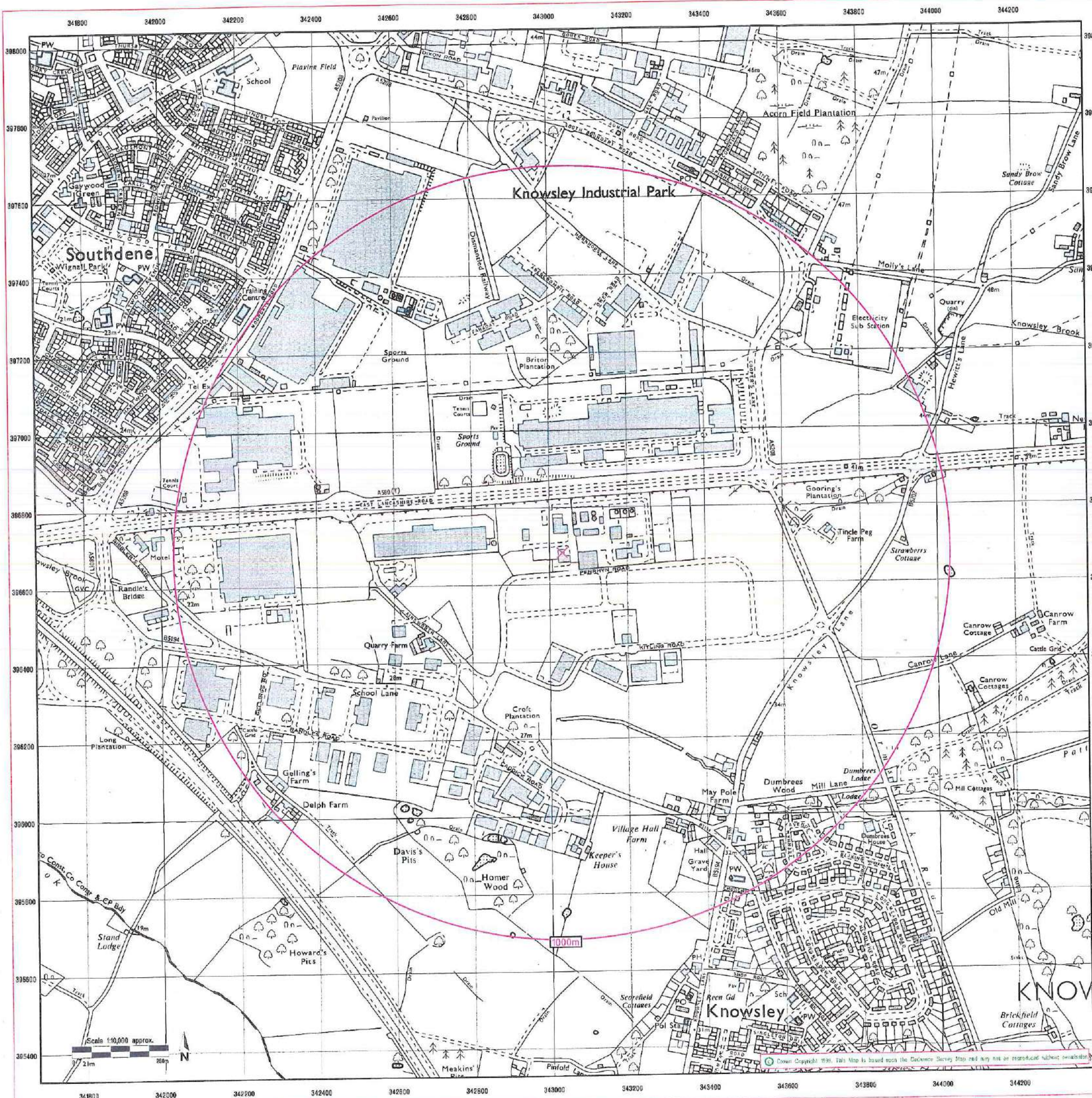
**Ordnance Survey Plan**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1853 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,000 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

In the late 1940's a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

1970

Date(s) of Publication



## CLIENT DETAILS

Order No. EH23807-1

Customer Ref: Robert Tinsley  
AIG Consultants Limited  
PIER HOUSE WALLGATE  
WIGAN  
WN3 4AL

## SITE DETAILS

Grid Reference 343032 396683

Contract Chemicals Ltd  
Penrhyn Road  
Knowsley Business Park  
PRESCOT  
Merseyside L34 9HY

## Historical Map Legend

|                             |            |                          |                      |
|-----------------------------|------------|--------------------------|----------------------|
| Quarry                      | Shingle    | Railway over Road        | Road over Railway    |
| Gravel Pit                  | Sand Pit   | Level Crossing           | Railway over River   |
| Other Pits                  | Mixed Wood | Road over River or Canal | Road over Stream     |
| Rough Pasture               | Marsh      | Sunken Road              | Raised Road          |
| Arrow denotes flow of water |            | Sketched Contour         | Instrumental Contour |

## Ordnance Survey Plan

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:25,000 scale was adopted for mapping urban areas; these maps were used to update the 1:62,500 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:62,500 mapping from a number of sources. The maps appear unaltered - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:62,500 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

1990

Date(s) of Publication

**APPENDIX C**  
**BGS BOREHOLE LOGS**

# HOLST & CO. LTD.

SITE INVESTIGATION DEPT.  
5-7, NEW YORK ROAD  
LEEDS, 2

42870, 96762  
SJ49NW-132

Contract No. M.1691/F.1217

Borehole No. 3

Location Knowsley

Ground Level

Client Liverpool City Engineer

Date 23rd April 1969

## BOREHOLE LOG

| STRATA                                                 | Legend | Depth below Ground Level | Thickness of Strata | Type of Sample | c lb/sq. ft. | $\phi$ deg. | m.c % | $\gamma$ lb/cu. ft. | N         |
|--------------------------------------------------------|--------|--------------------------|---------------------|----------------|--------------|-------------|-------|---------------------|-----------|
| Topsoil                                                |        | 1'0"                     | 1'0"                |                |              |             |       |                     |           |
| Firm/Stiff Red Boulder Clay                            |        |                          | 8'0"                | 3'0" [         | 1440         | 0           | 16.1  | 132                 |           |
| Stiff Red Marl with bands of red shaley fine sandstone |        | 9'0"                     | 8'0"                | 9'0" [         | 2740         | 17          | 13.3  | 138                 |           |
|                                                        |        |                          | 14'0"               | [              | 2800         | 10          | 12.6  | 143                 |           |
|                                                        |        | 17'0"                    |                     | 17'3" I        |              |             |       |                     | 50 for 3" |
| Red Sandstone                                          |        | 20'0"                    | 3'0"                |                |              |             |       |                     |           |

Water Struck at 9'0"

Maximum Observed Water Level 6'0"

Undisturbed Sample  $c$  = Cohesion  
Disturbed Sample  $\phi$  = Angle of Internal Friction  
Water Sample m.c = Moisture Content  
Penetration Test  $\gamma$  = Bulk Density  
N = Standard Penetration Value

Water levels are subject to seasonal or tidal variation and should not be taken as constant

# HOLST & CO. LTD.

SITE INVESTIGATION DEPT. 43022, 96770  
5-7, NEW YORK ROAD SJ49NW-133  
LEEDS, 2

Contract No. M.1691/F.1217

Borehole No. 4

Location Knowsley

Ground Level

Client Liverpool City Engineer

Date 23rd April 1969

## BOREHOLE LOG

| STRATA                                                           | Legend | Depth below Ground Level | Thickness of Strata | Type of Sample | c lb/sq. ft. | $\phi$ deg. | m.c % | $\gamma$ lb/cu. ft. | N               |
|------------------------------------------------------------------|--------|--------------------------|---------------------|----------------|--------------|-------------|-------|---------------------|-----------------|
| Topsoil                                                          |        | 1'0"                     | 1'0"                |                |              |             |       |                     |                 |
| ed Sand and Gravel                                               |        | 2'6"                     | 1'6"                |                |              |             |       |                     |                 |
| ard Brown Boulder Clay                                           |        |                          | 7'6"                |                |              |             |       |                     |                 |
|                                                                  |        | 10'0"                    |                     | 8'0"<br>I      | 3400         | 0           | 12.2  | 142                 |                 |
| weathered red shaley<br>fine sandstone with bands<br>of red marl |        | 17'0"                    | 7'0"                | 14'0"<br>I     |              |             |       |                     | 50<br>for<br>8" |
| ed Sandstone                                                     |        | 20'0"                    | 3'0"                | 18'6"<br>I     |              |             |       |                     | 50<br>for<br>6" |

Water Struck at 9'0" Maximum Observed Water Level 3'6"

undisturbed Sample ☐   
 disturbed Sample ☐   
 Water Sample ☐   
 Penetration Test ☐

c = Cohesion  
 $\phi$  = Angle of Internal Friction  
 m.c = Moisture Content  
 $\gamma$  = Bulk Density  
 N = Standard Penetration Value

Water levels are subject to seasonal or tidal variation and should not be taken as constant

**HOLST & CO. LTD.**

SITE INVESTIGATION DEPT.

5-7, NEW YORK ROAD

LEEDS, 2

43029, 96652

SJ49NW-142

Contract No. M.1691/F1217

Borehole No. 12

Location Knowsley

Ground Level

Client Liverpool City Engineer

Date 21st April 1969

**BOREHOLE LOG**

| STRATA                                                           | Legend | Depth below<br>Ground Level | Thickness<br>of Strata | Type of<br>Sample | c<br>lb/sq. ft. | $\phi$<br>deg. | m.c.<br>% | $\gamma$<br>lb/cu. ft. | N  |
|------------------------------------------------------------------|--------|-----------------------------|------------------------|-------------------|-----------------|----------------|-----------|------------------------|----|
| Topsoil                                                          |        | 1'0"                        | 1'0"                   |                   |                 |                |           |                        |    |
| Greyish brown sand<br>Traces of gravel                           |        |                             | 7'0"                   | 5'0"<br>I         |                 |                |           |                        | 10 |
|                                                                  |        | 8'0"                        |                        |                   |                 |                |           |                        |    |
| Hard red sandy marl<br>with bands of weathered<br>red sandstone. |        |                             | 12'0"                  | 10'0"<br>II       | 2080            | 23             | 13.3      | 143                    |    |
|                                                                  |        | 20'0"                       |                        |                   |                 |                |           |                        |    |

Water Struck at 4'0"

Maximum Observed Water Level 3'0"

Undisturbed Sample ☐Disturbed Sample ☐Water Sample ☐Penetration Test ☐

c = Cohesion

 $\phi$  = Angle of Internal Friction

m.c. = Moisture Content

 $\gamma$  = Bulk Density

N = Standard Penetration Value

Water levels are subject to seasonal or tidal variation and should not be taken as constant

**APPENDIX D**  
**PREVIOUS GROUND INVESTIGATION REPORTS**

**Extract Of Cremer And Warner  
Ground Investigation Report No. 93169**

#### 4.4 Interpretation of Results

The results may be interpreted as follows:

- (i) Generally the highest concentrations of contaminants were found in the sample collected from Row 1 (TP3,4) 15m from the boundary fence on CC land.
- (ii) Only low concentration levels of several contaminants were detected in Row 2 near the boundary fence on CC land (TP1,2).
- (iii) Sample BH1 collected from the top of the underlying clay strata contained low concentrations of hydrocarbon contaminants with the exception of benzophenone.
- (iv) Moderate concentrations of aromatic contaminants were found in the sample collected from Row 3 (TP7,8). Row 3 was located on the MC site where surface run-off from the CC site appeared to have collected.
- (v) Row 3 (TP7,8) contained four compounds, two of which were unidentified, which were not detected at any other locations, either on MC land or CC property.
- (vi) Row 4 (TP5,6), located 5m from the boundary fence contained very low concentrations of only 2 contaminants present in Row 3 (TP7,8). Any of the other compounds which were being tested for were below detectable limits.
- (vii) All samples tested were slightly alkaline. The highest levels of pH are at Row 1 (TP3,4) and Row 3 (TP7,8) where the highest levels of organic contamination were detected.

These results indicate that contamination by identified compounds is probably limited on MC land to the vicinity of the boundary between CC and MC property. The identification of the proprietary compound "Permanax 6PPD" on MC land could only have originated from the CC site with migration of this and other compounds occurring overland through surface run-off from the drum storage area.

In conjunction with on-site observations the results from sample BH1 would indicate that the contamination was restricted mainly to the upper 0.5m of soil and that the underlying clay restricted vertical migration of contamination.

## 5.0 SUMMARY

The following key points and tentative conclusions can be drawn from this preliminary site investigation.

- (i) Soil contaminants identified on CC and MC sites suggests that contamination has migrated from CC property onto land owned by MC.
- (ii) From visual observations, migration appears to have occurred overland at two principal points, with contaminated surface water being channelled along the embankment bordering the MC and CC sites to collect in the south west corner of MC property. Based upon analytical results, contamination would appear to be concentrated in this area as a result and only very low levels of contamination were detected on MC property 5m from the site boundary.
- (iii) For most of the compounds identified, ground contamination standards are unavailable. However, where guidelines are available, for example, for total aromatic compounds, 'moderate' rather than 'heavy' contamination of the samples was identified.
- (iv) The surface ponding observed is a consequence of the impermeability of the underlying clay strata, generally found at a depth of 0.5m.
- (v) It is likely that the clay strata has restricted the vertical migration of contaminants to the upper soil layers.

**Sub Soil Surveys Limited**  
**Ground Investigations Report No. 97/2, February 1997**

COPY  
A Hannon  
4/3/97

# Glendinning Hanson Partnership

Chartered Architects



Planning Supervisors

175 King Cross Road, Halifax HX1 3LN 01422 367285 Fax 01422 330352  
RAP/LL/96:162M/HSE/GH3.

4th March 1997

For the attention of Mr. G. Hannon

Ashall Construction Ltd.,  
Greenway,  
Manchester Road,  
Warrington.  
WA1 3EF

Dear Sirs,

**Contract Chemicals, Knowsley.**

As discussed recently over the telephone, we have now received the ground investigation report and we enclose a copy of this for your information.

Please attach the report to our Pre-Contract Health and Safety Plan, as Appendix B.

It should be noted that this report advises the support of the sides of excavations (see item 4.5).

Yours faithfully,

Andrew Portch  
Glendinning Hanson Partnership

c.c. Mr. P. Kinley - Contract Chemicals

Encl.....

# REPORT ON GROUND INVESTIGATION



APPENDIX B

SUB SOIL SURVEYS LIMITED

Chaddock Lane, Astley, Nr. Manchester  
M29 7LD

Tel: ATHERTON (STD 01942) 883565

Report No 97/2

John Newton and Partners

Parkview House  
Woodvale Office Park  
Woodvale Road  
Brighouse  
West Yorkshire  
HD6 4AB

Contract Chemicals Ltd

Penrhyn Road  
Knowsley Industrial Park South  
Prescot  
Mersyside  
L34 9HY  
Order No P002 28402

Report on Ground Investigation

at Site of

Proposed Development

at

Contract Chemicals Ltd., Knowsley

February 1997

Sub Soil Surveys Ltd.  
Manchester

## CONTENTS

- 1 Introduction and Object
- 2 Site Geology
- 3 Site Investigation and Soil Profile
- 4 Groundwater and Excavations
- 5 Chemical Tests
- 6 Soil Tests and Bearing Capacities
- 7 Recommendations for Foundation Design

### APPENDIX 'A'

Light Cable Percussion Borehole Logs

### APPENDIX 'B'

- i) Classification and Strength Tests
- ii) Consolidation Tests
- iii) Chemical Tests

### APPENDIX 'C'

Fig 1 Soil Sections through Boreholes

Fig 2 Site Plan indicating location of Boreholes

## 1 INTRODUCTION AND OBJECT

- 1.1 This investigation has been carried out to the instructions of John Newton and Partners at the site of a proposed new process building at Contract Chemicals Ltd., Knowsley.
- 1.2 The Contract Chemicals site lies approximately 1.0km to the northwest of Knowsley village centre between Penrhyn Road which runs along the south of the site and the East Lancashire Road (A580) which runs along the north of the site. As indicated on the enclosed site plan (fig 2) the site of the proposed development lies on the western part of the works site at approximate National Grid Reference SJ 429 968.
- 1.3 At the time of the investigation the site was an open area of land raised above the surrounding roadways with what appeared to be clay, brick rubble, etc., probably from the construction of adjacent plant, etc. A manhole was present on the central northern area of the site, with connecting sewers as indicated on the enclosed site plan.  
  
Old maps indicate the site of the proposed structure to have remained undeveloped in the past although we understand that this general area may have been subject to landscaping associated with the culverting of a stream which used to run approximately east/west in a shallow valley across the Contract Chemicals site, but to the south of the proposed development.
- 1.4 The proposed development consists of the construction of a new three storey plant building which will be 36m by 15m on plan. The structure will be constructed with frames at 5 m centres with the anticipated column loadings being about 900 kN.
- 1.5 The object of the investigation was to sink the specified boreholes and to
  - a) report on the type, thickness and variability of the soil strata proved underlying the site
  - b) establish groundwater conditions
  - c) determine the maximum safe bearing capacities of the various soil strata and
  - d) give recommendations on economic foundation design for the proposed structure.

## 2 SITE GEOLOGY

2.1 The site is situated in an area where the geological succession is estimated to be possibly as follows:

- i) Greyish brown silty SAND with lenses and layers of PEAT - Shirdley Hill Sands
- ii) Firm, stiff and very stiff CLAY with sandy zones and variable gravel content and possibly with zones or lenses of silt, sand and gravel - Glacial Deposits
- iii) Reddish brown silty SANDSTONE possibly with pebbles - Sherwood Sandstone

2.2 The Shirdley Hill Sands deposits are often relatively or absent in some areas and previous investigations in the area have generally proved this, with this deposit varying from 0-2.1 m thick.

2.3 In the past this company has carried out investigations on the Contract Chemicals site with a borehole having been sunk close to the present site, but before the plant was originally built, with the following strata being proved :

|                                                                               |                                                 |
|-------------------------------------------------------------------------------|-------------------------------------------------|
| Stiff reddish brown mottled sandy CLAY with grey fissures and a little gravel | <u>Glacial Clay - Zone 1</u><br>1.8 m thick     |
| Hard reddish brown very sandy CLAY/clayey SAND with a little gravel           | <u>Glacial Clay - Zone 2</u><br>proved to 9.0 m |

Groundwater was not proved during the sinking of the borehole but a standing water level of 3.7 m below ground level (bgl) was measured some time after completion.

A more recent investigation consisting of two machine dug trial pits has been carried out with one pit being located close to the northwestern corner of the present site.

This pit proved the following strata :

|                                                                    |                                                |
|--------------------------------------------------------------------|------------------------------------------------|
| Stone onto stiff clay with sand, sandstone pieces, etc.            | <u>Made or Disturbed Ground</u><br>1.1 m thick |
| Stiff and very stiff reddish brown sandy CLAY with a little gravel | <u>Glacial Clay</u><br>proved to 3.0 m         |

No groundwater was encountered in this pit.

### 3 SITE INVESTIGATION AND SOIL PROFILE

- 3.1 Three light cable percussion boreholes were sunk to depths varying between 9.1 and 12.2 m bgl at the locations indicated on the enclosed site plan (Fig 2). The borehole logs are detailed in Appendix A and soil sections are plotted in Fig 1.
- 3.2 From these results it can be seen that the soil strata vary between the boreholes but can be approximated as follows:-

Table 1

Soil Profile

| Description of stratum                                                                            | Depth to top of stratum (m) | Thickness of stratum (m) | Remarks                                          |
|---------------------------------------------------------------------------------------------------|-----------------------------|--------------------------|--------------------------------------------------|
| Clay with sand, stone, brick, ash, etc.                                                           | 0                           | 1.1-2.6                  | <u>Made Ground</u>                               |
| Medium dense brown silty SAND with gravelly zones                                                 | 1.1-1.7                     | 0-1.8                    | <u>Shirdlev Hill Sands</u><br>proved in BH's 1&2 |
| Very stiff reddish brown very sandy CLAY with a little gravel, sand lenses and occasional cobbles | 1.9-3.5                     | 4.7-8.1                  | <u>Glacial Clay</u><br>firm upper zone in BH3    |
| Reddish brown SANDSTONE and MUDSTONE, weak to moderately weak or stronger                         | 6.6-10.9                    | -                        | <u>Sherwood Sandstone Group</u>                  |

- 3.3 It should be noted that although the maximum proved thickness of Made Ground was 2.6 m in BH2, thicker zones may well be present below the site, between and away from the borehole positions (eg. in areas of old service excavations, etc.).

It should also be appreciated that there may well be greater variation in the depths to and thicknesses of the various strata between and away from the borehole positions than indicated by the above table or the enclosed diagrammatic soil section (Fig. 1).

- 3.1 The upper surface of the Sherwood Sandstone deposit varied from 6.6-10.9 m bgl at the borehole positions this variation corresponding to a similar depression in the surface of this deposit proved below a site to the south in a previous investigation by

this company. Clearly, there could be greater variations in the depth to the sandstone surface elsewhere below the site, between and away from the borehole positions.

#### 4 GROUNDWATER AND EXCAVATIONS

- 4.1 Groundwater observations are detailed in the borehole logs, plotted in Fig 1 and tabulated below:

Table 2  
Groundwater Observations

| Position | Depth on striking groundwater (m bgl) | Highest recorded water level |
|----------|---------------------------------------|------------------------------|
| 1        | None                                  | 6.2                          |
| 2        | None                                  | 5.7                          |
| 3        | 6.3 on pulling casing                 | 6.3                          |

- 4.2 These observations indicate that during the investigation period there was a groundwater table present below the site at about 5.7-6.3 m bgl. Higher water levels and possibly perched groundwater tables in the Made Ground should be expected during and after periods of wet weather conditions with correspondingly lower levels during protracted dry spells.
- 4.3 Groundwater control may well be required in excavations to be taken below the water table in order to prevent the onset of 'running' conditions or the 'piping' and 'heaving' of the base of excavations. Any system of groundwater control to be adopted at this site should be designed and operated so as to prevent the loss of 'fines' from the surrounding ground thereby causing a loss of support and attendant settlement to the ground and any nearby structures, etc.
- 4.4 The clay deposits proved at this site will soften rapidly in contact with rain or groundwater. We recommend, therefore, that the base of all excavations for footings founded in these clay deposits be blinded with lean concrete or any other suitable material as soon as formation level is reached.

- 4.5 It would be advisable to provide adequate lateral support for the vertical sides of all deep excavations at this site.

## 5 CHEMICAL TESTS

- 5.1 Sulphate and pH tests were carried out on samples of Made Ground and the results are detailed and tabulated in Appendix B and summarised below:

### Made Ground

Sulphate Concentration = <50-150 mg/l  $\text{SO}_4$  in 2:1 water:soil extract

pH = 7.8-8.0

- 5.2 From these results it can be seen that relatively low sulphate concentrations have been proved in the samples tested indicating that there should not be any deterioration due to sulphate attack of good quality dense concrete made from Ordinary Portland Cement.

## 6 SOIL TESTS AND BEARING CAPACITIES

- 6.1 The following in-situ and laboratory tests were carried out in order to provide the required data for estimating the maximum safe bearing capacities of the various deposits:

- i) Undrained Triaxial Compression tests carried out on 38mm diameter relatively 'undisturbed' samples. Detailed results are tabulated in Appendix Bi) and undrained shear strength ( $C_u$ ) values are plotted in Fig 1.
- ii) Standard Penetration Tests carried out in the boreholes. Detailed results are tabulated in the borehole logs (Appendix 'A') and "N" values (blows per 300mm) are plotted in Fig 1.
- iv) Hand penetrometer tests carried out on disturbed and undisturbed samples.

From the above it may be seen that :

### 6.2 Glacial Clay

Beneath an impersistent upper firm zone proved in BH3 with a Standard Penetration Test result of

N = 11 blows for 300mm penetration

this deposit was proved to be of a very stiff consistency with measured undrained shear strength values of

$$C_u = 189-572 \text{ kN/m}^2$$

although some results showed a marked  $C_u/\phi_u$  response.

We estimate the maximum safe bearing capacity of the very stiff clay to be about  
 $300 \text{ kN/m}^2$

### 6.3 Sherwood Sandstone

This deposit was proved to be generally a very weak to moderately weak or stronger sandstone or mudstone. An undrained triaxial compression test carried out in borehole 3 in the very weak mudstone gave a result of

$$C_u = 418 \text{ kN/m}^2$$

indicating the deposit here to be a very stiff clay / very weak mudstone.

Below this zone and elsewhere the deposit was proved to be weak to moderately weak or stronger with Standard Penetration Test results of

$$N = 123 \text{ blows for } 300 \text{ mm penetration}$$

$$\text{to } N = 50-106 \text{ blows for } 225 \text{ mm penetration or less}$$

We estimate the maximum safe end bearing capacity of the moderately weak or stronger sandstone or mudstone to be about

$$1500 \text{ kN/m}^2 \text{ (piled foundations)}$$

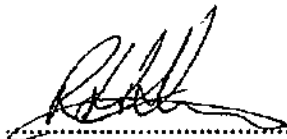
## 7 RECOMMENDATIONS FOR FOUNDATION DESIGN

- 7.1 It is stated that the proposed development will consist of the construction of a new three storey plant building which will be 36m by 15m on plan. The structure will be constructed with frames at 5 m centres with the anticipated column loadings being about 900 kN.
- 7.2 From the borehole logs, Fig 1 and table 1 it can be seen that 1.1-2.6m of Made Ground was proved in the boreholes, underlain by an impersistent Shirdley Hill Sands deposit which in turn lies on a generally very stiff Glacial Clay. Sherwood Sandstone, which also contained Mudstone layers was proved below 6.6-10.7 m bgl. As noted in Section 3 above there could be wider variation in these strata between and away from the boreholes.
- 7.3 We are of the opinion that the Made Ground and Shirdley Hill Sands are unsuitable for the support of the proposed structure due to the risk of excessive total and differential settlements developing. We recommend therefore that the proposed

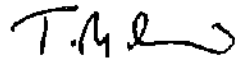
structure is supported on foundations taken below the Made Ground and Shirdley Hill Sands deposits and any softened upper zone of the underlying Glacial Clay, established into the underlying very stiff Glacial Clay stratum and designed on a maximum safe bearing capacity of

300 kN/m<sup>2</sup>

With this design foundations at least 3.5 m deep will be required and it should be noted that the Made Ground and Shirdley Hill Sands deposits may well be water bearing during the construction period hence groundwater control could be required. If the foundation depth or the use of groundwater control is considered to be uneconomic, it would be necessary to support the proposed structure on piled foundations established into either the very stiff Glacial Clay deposits or the underlying moderately weak or stronger Sherwood Sandstone deposits.



Eur Ing R H Shires



T M Smith  
Engineering Geologist

APPENDIX 'A'

## STANDARD PENETRATION TEST

This test is carried out in accordance with BS 1377 Test 19.

On the following logs the test example given would be reported as shown.

### TEST DATA

### LOG PRESENTATION

| Start of Test<br>(m bgl.) | Blow Count            | Penetration of Sampler |      | No. of<br>Blows |    |
|---------------------------|-----------------------|------------------------|------|-----------------|----|
|                           |                       | From                   | To   |                 |    |
| 1.0                       | 2.3/3.4.4.3           | 1.15                   | 1.45 | 14              |    |
| 1.0                       | 2.3/17.34.50 for 50mm | 1.15                   | 1.35 | 101             |    |
| 1.0                       | 38.50 for 50mm        | 1.0                    | 1.13 | 88              | SP |
| 1.0                       | 50 for 38mm           | 1.0                    | 1.04 | 50              | SP |

The note 'SP' refers to the test being terminated within the seating penetration.

The number of blows is only the 'N' value if a full penetration has been achieved.

The note 'NR' refers to no recovery being made in the SPT sampler.

### SOIL STRENGTHS

Soil strengths are assessed from undrained shear strengths values obtained from triaxial compression tests and/or hand penetrometer tests using the following scale.

|                 | Undrained Shear Strength (kN/m <sup>2</sup> ) |
|-----------------|-----------------------------------------------|
| Very Soft       | < 20                                          |
| Soft            | 20 - 40                                       |
| Firm            | 40 - 75                                       |
| Stiff           | 75 - 150                                      |
| Very Stiff      | 150 - 300                                     |
| Very Stiff/Hard | > 300                                         |

|                                                    |        |
|----------------------------------------------------|--------|
| In addition we also use the following subdivisions |        |
| Undrained Shear Strength (kN/m <sup>2</sup> )      |        |
| Soft/Firm                                          | 40-50  |
| Firm/Stiff                                         | 45-100 |

### Morning and Evening Water Levels

This column contains water level observations taken in the borehole at the start and end of each shift. The values given are the depths below ground level to a free water surface in the borehole at the time. Where no free water surface is observed, the hole is recorded as "dry". Clearly if a low permeability water bearing stratum is exposed in the borehole and sufficient water has not entered the borehole by then to give a free water surface, the borehole is noted 'dry' although the stratum penetrated is not. A more detailed appraisal can be obtained from a geotechnical analysis of the strata proved.

|                                                                         |  |                                  |  |                  |  |                                  |  |             |  |
|-------------------------------------------------------------------------|--|----------------------------------|--|------------------|--|----------------------------------|--|-------------|--|
| <b>SUB SOIL</b> MANCHESTER<br><i>Surveys Ltd M29 7LD</i><br>0942 883565 |  | Ground Level                     |  | Site Reference   |  | Borehole No.                     |  | 1<br>1 of 2 |  |
|                                                                         |  |                                  |  | 97/2             |  |                                  |  |             |  |
| Working Method<br>Light Cable Percussion                                |  | CASING<br>150mm to depth of 5.0m |  | Site    Knowsley |  | Client    John Newton & Partners |  |             |  |
|                                                                         |  |                                  |  |                  |  |                                  |  |             |  |

| Date     | Depth of Casing Below G.L. | Water Level Morning & Evening | Depth of Strata Below G.L. | Description of Strata<br><small>(all depths given in metres)</small>          | Reduced Level | No. & Type of Sample | Penetration of Sampler |      | Number of Blows | Symbolic Log |
|----------|----------------------------|-------------------------------|----------------------------|-------------------------------------------------------------------------------|---------------|----------------------|------------------------|------|-----------------|--------------|
|          |                            |                               |                            |                                                                               |               |                      | From                   | To   |                 |              |
| 08.01.97 |                            |                               |                            | Brown sandy clay, sand, brick, ash etc.<br>(MADE GROUND)                      |               | 1B                   | 0.50                   | 1.00 |                 |              |
|          |                            |                               |                            |                                                                               | 2X            | 1.35                 | 1.65                   | 13   |                 |              |
|          |                            |                               |                            | Medium dense brown silty SAND with gravelly zones                             |               | 3X                   | 1.95                   | 2.25 | 25              |              |
|          |                            |                               |                            |                                                                               | 4D<br>5X      | 2.40<br>2.75         | 3.05                   | 23   |                 |              |
|          |                            |                               |                            | Very stiff reddish brown very sandy CLAY with a little gravel and sand lenses |               | 6D<br>7X             | 3.40<br>3.65           | 3.95 | 45              |              |
|          |                            |                               |                            |                                                                               |               | 8U                   | 4.30                   | 4.75 |                 |              |
|          |                            |                               |                            |                                                                               |               | 9D                   | 4.85                   |      |                 |              |
|          |                            |                               |                            |                                                                               |               | 10U                  | 5.50                   | 5.95 |                 |              |
|          |                            |                               |                            |                                                                               |               | 11D                  | 6.05                   |      |                 |              |
|          |                            |                               |                            |                                                                               |               | 12U                  | 6.50                   | 6.95 |                 |              |
|          |                            |                               |                            |                                                                               |               | 13D                  | 7.05                   |      |                 |              |
|          |                            |                               |                            |                                                                               |               | 14U                  | 7.50                   | 7.95 |                 |              |

Sample Key:   B.Bulk    D.Disturbed    U.Open Tube    V.Vane    W.Water    X.Standard Penetration Test

| Water Level Observations during boring depths below ground level |               |                |                |                | Estimated Seepage | Depth of Casing when sealed<br><small>N.S. - Not Sealed</small> | Water level in Cased/Uncased Borehole on Completion depth below ground level |             |                 |
|------------------------------------------------------------------|---------------|----------------|----------------|----------------|-------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------|-------------|-----------------|
| depth observed                                                   | after 5 mins. | after 10 mins. | after 15 mins. | after 20 mins. |                   |                                                                 | Date                                                                         | Water Level | Depth of Casing |
| None                                                             |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |

Water Added to Assist Boring at:

**REMARKS**  
Time spent excavating by hand - 45 minutes

|                                                                                 |  |                                  |  |                        |  |                                  |  |
|---------------------------------------------------------------------------------|--|----------------------------------|--|------------------------|--|----------------------------------|--|
| <b>SUB SOIL</b> <small>Surveys Ltd</small><br>MANCHESTER M29 7LD<br>0942 883565 |  | Ground Level                     |  | Site Reference<br>97/2 |  | Borehole No. 1<br>2 of 2         |  |
|                                                                                 |  | CASING<br>150mm to depth of 6.0m |  | Site<br>Knowsley       |  | Client<br>John Newton & Partners |  |
| Boring Method<br>Light Cable Percussion                                         |  |                                  |  |                        |  |                                  |  |

| Date     | Depth of Casing Below G.L. | Water Level Morning & Evening | Depth of Strata Below G.L.         | Description of Strata<br><small>(all depths given in metres)</small>          | Reduced Level | No. & Type of Sample | Penetration of Sampler |    | Number of Blows | Symbolic Log |
|----------|----------------------------|-------------------------------|------------------------------------|-------------------------------------------------------------------------------|---------------|----------------------|------------------------|----|-----------------|--------------|
|          |                            |                               |                                    |                                                                               |               |                      | From                   | To |                 |              |
| 08.01.97 | 6.0                        | Dry                           | 10.90<br>11.2                      | Very stiff reddish brown very sandy CLAY with a little gravel and sand lenses |               | 150                  | 8.05                   |    |                 |              |
|          |                            |                               |                                    |                                                                               | 160           | 8.50                 | 8.95                   |    |                 |              |
|          |                            |                               |                                    |                                                                               | 170           | 9.05                 |                        |    |                 |              |
|          |                            |                               |                                    |                                                                               | 180           | 9.50                 | 9.95                   |    |                 |              |
|          |                            |                               |                                    |                                                                               | 190           | 10.05                |                        |    |                 |              |
|          |                            |                               |                                    |                                                                               | 200           | 10.50                | 10.90                  |    |                 |              |
|          |                            |                               |                                    |                                                                               | 210           | 11.05                | 11.20                  | 89 |                 |              |
|          |                            |                               | Reddish brown sandy MUDSTONE, weak |                                                                               |               |                      |                        |    |                 |              |

Sample Key: B.Bulk    D.Disturbed    U.Open Tube    V.Vane    W.Water    X.Standard Penetration Test

| Water Level Observations during boring depths below ground level |               |                |                |                | Estimated Seepage | Depth of Casing when sealed<br><small>N.S. - Not Sealed</small> | Water level in Cased/Uncased Borehole on Completion depth below ground level |             |                 |
|------------------------------------------------------------------|---------------|----------------|----------------|----------------|-------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------|-------------|-----------------|
| depth observed                                                   | after 5 mins. | after 10 mins. | after 15 mins. | after 20 mins. |                   |                                                                 | Date                                                                         | Water Level | Depth of Casing |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                                 |                                                                              |             |                 |

Water Added to Assist Boring at:

REMARKS

|                                               |                                         |                                  |                            |                                     |
|-----------------------------------------------|-----------------------------------------|----------------------------------|----------------------------|-------------------------------------|
| <b>SUB SOIL</b><br><small>Surveys Ltd</small> | MANCHESTER<br>M29 7LD<br>0842 883565    | Ground Level                     | Site Reference<br><br>97/2 | Borehole No. <b>2</b><br><br>1 of 2 |
|                                               | Casing Method<br>Light Cable Percussion | Casing<br>150mm to depth of 6.0m | Site<br>Knowsley           | Client<br>John Newton & Partners    |

| Date     | Depth of Casing Below G.L. | Water Level Morning & Evening | Depth of Strata Below G.L.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Description of Strata<br><br>(all depths given in metres) | Reduced Level | No. & Type of Sample | Penetration of Sampler |    | Number of Blows | Symbolic Log |
|----------|----------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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| 09.01.97 |                            |                               | <div><div></div><div>2.60</div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></d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|                                                           |               |                      |                        |    |                 |              |

Sample Key: B.Bulk    D.Disturbed    U.Open Tube    V.Vane    W.Water    X.Standard Penetration Test

| Water Level Observations during boring depths below ground level |               |                |                |                | Estimated Seepage | Depth of Casing when sealed<br>N.S. - Not Sealed | Water level in Cased/Uncased Borehole on Completion depth below ground level |             |                 |
|------------------------------------------------------------------|---------------|----------------|----------------|----------------|-------------------|--------------------------------------------------|------------------------------------------------------------------------------|-------------|-----------------|
| depth observed                                                   | after 5 mins. | after 10 mins. | after 15 mins. | after 20 mins. |                   |                                                  | Date                                                                         | Water Level | Depth of Casing |
| None                                                             |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   | 10.01.97                                         | 5.70                                                                         | Nil         |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
| Water Added to Assist Boring at:                                 |               |                |                |                |                   |                                                  |                                                                              |             |                 |

**REMARKS**

Time spent chiselling - 1.25 hrs.    Time spent excavating by hand - 30 minutes

|                                            |                                      |              |                            |                                     |
|--------------------------------------------|--------------------------------------|--------------|----------------------------|-------------------------------------|
| <b>SUB SOIL</b> <small>Surveys Ltd</small> | MANCHESTER<br>M29 7LD<br>0942 883665 | Ground Level | Site Reference<br><br>97/2 | Borehole No. <b>2</b><br><br>2 of 2 |
|                                            |                                      |              |                            |                                     |

|                                         |                                  |                  |
|-----------------------------------------|----------------------------------|------------------|
| Boring Method<br>Light Cable Percussion | CASING<br>150mm to depth of 6.0m | Site<br>Knowsley |
| Client<br>John Newton & Partners        |                                  |                  |

| Date     | Depth of Casing Below G.L. | Water Level Morning & Evening | Depth of Strata Below G.L. | Description of Strata<br><br>(all depths given in metres)                | Reduced Level | No. & Type of Sample | Penetration of Sampler |       | Number of Blows | Symbolic Log                                                                        |                                                                                      |    |       |
|----------|----------------------------|-------------------------------|----------------------------|--------------------------------------------------------------------------|---------------|----------------------|------------------------|-------|-----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----|-------|
|          |                            |                               |                            |                                                                          |               |                      | From                   | To    |                 |                                                                                     |                                                                                      |    |       |
| 09.01.97 | 6.0                        | Dry                           | 10.70                      | Very stiff reddish brown sandy CLAY with a little gravel and sand lenses |               | 15C                  | 8.05                   |       | 50              |  |                                                                                      |    |       |
|          |                            |                               |                            |                                                                          |               | 16C                  | 8.50                   | 8.95  |                 |                                                                                     |                                                                                      |    |       |
|          |                            |                               |                            |                                                                          |               | 17C                  | 9.05                   |       |                 |                                                                                     |                                                                                      |    |       |
|          |                            |                               |                            |                                                                          |               | 18C                  | 9.50                   | 9.95  |                 |                                                                                     |                                                                                      |    |       |
|          |                            |                               |                            |                                                                          |               | 19C                  | 10.05                  |       |                 |                                                                                     |                                                                                      |    |       |
|          |                            |                               |                            |                                                                          |               | 20C                  | 10.50                  | 10.90 |                 |                                                                                     |                                                                                      |    |       |
|          |                            |                               | 12.15                      | Reddish brown SANDSTONE, weak to moderately weak or stronger             |               | 21C                  | 11.05                  | 11.10 |                 | 50                                                                                  |  |    |       |
|          |                            |                               |                            |                                                                          |               | 22C                  | 11.30                  |       |                 |                                                                                     |                                                                                      |    |       |
|          |                            |                               |                            |                                                                          |               | 23C                  | 11.70                  | 11.78 |                 |                                                                                     |                                                                                      | 50 | SP    |
|          |                            |                               |                            |                                                                          |               | 24C                  | 12.00                  |       |                 |                                                                                     |                                                                                      |    |       |
|          |                            |                               |                            |                                                                          |               | 25C                  | 12.10                  | 12.15 |                 |                                                                                     |                                                                                      | 50 | SP NR |
|          |                            |                               |                            |                                                                          |               |                      |                        |       |                 |                                                                                     |                                                                                      |    |       |

|                                                                                                      |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|------------------------------------------------------------------------------------------------------|---------------|----------------|----------------|----------------|-------------------|--------------------------------------------------|------------------------------------------------------------------------------|-------------|-----------------|
| Sample Key: B.Bulk    D.Disturbed    U.Open Tube    V.Vane    W.Water    X.Standard Penetration Test |               |                |                |                |                   |                                                  |                                                                              |             |                 |
| Water Level Observations during boring depths below ground level                                     |               |                |                |                | Estimated Seepage | Depth of Casing when sealed<br>N.S. - Not Sealed | Water level in Cased/Uncased Borehole on Completion depth below ground level |             |                 |
| depth observed                                                                                       | after 5 mins. | after 10 mins. | after 15 mins. | after 20 mins. |                   |                                                  | Date                                                                         | Water Level | Depth of Casing |
|                                                                                                      |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                                                      |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                                                      |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                                                      |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                                                      |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                                                      |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                                                      |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                                                      |               |                |                |                |                   |                                                  |                                                                              |             |                 |
| Water Added to Assist Boring at:                                                                     |               |                |                |                |                   |                                                  |                                                                              |             |                 |

REMARKS

|                                                                                 |                                         |                                  |                                                                       |
|---------------------------------------------------------------------------------|-----------------------------------------|----------------------------------|-----------------------------------------------------------------------|
| <b>SUB SOIL</b> <small>Surveys Ltd</small><br>MANCHESTER M29 7LD<br>0942 883565 | Ground Level                            | Site Reference<br>97/2           | Borehole No. <b>3</b><br><div style="text-align: right;">1 of 2</div> |
|                                                                                 | Boring Method<br>Light Cable Percussion | CASING<br>150mm to depth of 4.5m | Site<br>Knowsley                                                      |
|                                                                                 | Client<br>John Newton & Partners        |                                  |                                                                       |

John Newton & Partners

| Date     | Depth of Casing Below G.L. | Water Level Morning & Evening | Depth of Strata Below G.L. | Description of Strata<br><small>(all depths given in metres)</small>     | Reduced Level | No. & Type of Sample | Penetration of Sampler |      | Number of Blows                                                                       | Symbolic Log                                                                          |
|----------|----------------------------|-------------------------------|----------------------------|--------------------------------------------------------------------------|---------------|----------------------|------------------------|------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|          |                            |                               |                            |                                                                          |               |                      | From                   | To   |                                                                                       |                                                                                       |
| 10.01.97 |                            |                               |                            | Clay with stone, brick, cloth etc.<br>(MADE GROUND)                      |               | 1B                   | 0.50                   |      |                                                                                       |    |
|          |                            |                               | 1.10                       | Medium dense greyish brown silty SAND                                    |               | 2X                   | 1.35                   | 1.65 | 10                                                                                    |    |
|          |                            |                               | 1.90                       | Firm brown sandy CLAY with a little gravel and greyish zones             |               | 3D<br>4X             | 1.80<br>1.95           | 2.25 | 11                                                                                    |    |
|          |                            |                               | 2.40                       | Very stiff reddish sandy brown CLAY with a little gravel and sand lenses |               | 5U                   | 2.40                   | 2.85 |                                                                                       |    |
|          |                            |                               |                            |                                                                          |               | 6D                   | 2.95                   |      |                                                                                       |    |
|          |                            |                               |                            |                                                                          |               | 7U                   | 3.50                   | 3.95 |                                                                                       |   |
|          |                            |                               |                            |                                                                          |               | 8D                   | 4.05                   |      |                                                                                       |  |
|          |                            |                               |                            |                                                                          |               | 9U                   | 4.50                   | 4.95 |                                                                                       |  |
|          |                            |                               |                            |                                                                          |               | 10D                  | 5.05                   |      |                                                                                       |  |
|          |                            |                               |                            |                                                                          |               | 11U                  | 5.50                   | 5.95 |                                                                                       |  |
|          |                            |                               |                            |                                                                          |               | 12D                  | 6.05                   |      |                                                                                       |  |
|          |                            |                               | 6.60                       | Reddish brown MUDSTONE, weak                                             |               | 13U                  | 6.50                   | 6.90 |                                                                                       |  |
|          |                            |                               |                            |                                                                          |               | 14D<br>15X           | 6.90<br>7.05           | 7.35 | 123                                                                                   |  |
|          |                            |                               |                            |                                                                          | 16D           | 7.50                 |                        |      |  |                                                                                       |
|          |                            |                               | -8.00                      |                                                                          |               | 17X                  | 8.05                   | 8.28 | 106                                                                                   |  |

Sample Key: B.Bulk    D.Disturbed    U.Open Tube    V.Vane    W.Water    X.Standard Penetration Test

| Water Level Observations during boring depths below ground level |               |                |                |                | Estimated Seepage | Depth of Casing when sealed<br>N.S. - Not Sealed | Water level in Cased/Uncased Borehole on Completion depth below ground level |             |                 |
|------------------------------------------------------------------|---------------|----------------|----------------|----------------|-------------------|--------------------------------------------------|------------------------------------------------------------------------------|-------------|-----------------|
| depth observed                                                   | after 5 mins. | after 10 mins. | after 15 mins. | after 20 mins. |                   |                                                  | Date                                                                         | Water Level | Depth of Casing |
| 6.30                                                             |               |                |                |                | On pulling casing |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
| Water Added to Assist Boring at:                                 |               |                |                |                |                   |                                                  |                                                                              |             |                 |

**REMARKS**  
 Time spent chiselling - 1 hrs.    Time spent excavating by hand - 30 minutes

|                                         |  |                                      |              |                        |                   |        |
|-----------------------------------------|--|--------------------------------------|--------------|------------------------|-------------------|--------|
| <b>SUB SOIL</b>                         |  | MANCHESTER<br>M28 7LD<br>0942 883555 | Ground Level | Site Reference<br>97/2 | Borehole No.<br>3 | 2 of 2 |
| Boring Method<br>Light Cable Percussion |  | CASING<br>150mm to depth of 4.5m     |              | Site<br>Knowsley       |                   |        |
| Client<br>John Newton & Partners        |  |                                      |              |                        |                   |        |

| Date     | Depth of Casing Below G.L. | Water Level Morning & Evening | Depth of Strata Below G.L. | Description of Strata<br>(all depths given in metres)                           | Reduced Level | No. & Type of Sample | Penetration of Sampler |      | Number of Blows | Symbolic Log |
|----------|----------------------------|-------------------------------|----------------------------|---------------------------------------------------------------------------------|---------------|----------------------|------------------------|------|-----------------|--------------|
|          |                            |                               |                            |                                                                                 |               |                      | From                   | To   |                 |              |
| 10.01.97 | 4.5                        |                               | 9.05                       | Reddish brown sandy MUDSTONE and SANDSTONE, weak to moderately weak or stronger |               | 18D                  | 8.60                   |      |                 |              |
|          |                            |                               |                            |                                                                                 |               | 19X<br>20W           | 8.90<br>6.30           | 9.05 | 79              | SP NR        |

Sample Key: B.Bulk D.Disturbed U.Open Tube V.Vane W.Water X.Standard Penetration Test

| Water Level Observations during boring depths below ground level |               |                |                |                | Estimated Seepage | Depth of Casing when sealed<br>N.S. - Not Sealed | Water level in Cased/Uncased Borehole on Completion depth below ground level |             |                 |
|------------------------------------------------------------------|---------------|----------------|----------------|----------------|-------------------|--------------------------------------------------|------------------------------------------------------------------------------|-------------|-----------------|
| depth observed                                                   | after 5 mins. | after 10 mins. | after 15 mins. | after 20 mins. |                   |                                                  | Date                                                                         | Water Level | Depth of Casing |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |
|                                                                  |               |                |                |                |                   |                                                  |                                                                              |             |                 |

Water Added to Assist Boring at:

REMARKS

APPENDIX 'B'

## TEST RESULTS - EXPLANATION OF TABLE HEADINGS

### CLASSIFICATION & STRENGTH

#### Classification

$I_p$  - Plasticity Index  
 $W_L$  - Liquid Limit  
 $W_p$  - Plastic Limit  
} - Atterberg Limits

$W\%$  - Moisture Content

#### Strength

Test - U1 - Single 38mm Undrained Triaxial  
U2 - Set of Two 38mm Undrained Triaxials  
U3 - Set of Three 38mm Undrained Triaxials

Test - M1 - Single Stage 100mm Undrained Triaxial  
M2 - Two Stage 100mm Undrained Triaxial  
M3 - Three Stage 100mm Undrained Triaxial

Test - UC - Unconfined compressive strength

$\gamma_b$  - Bulk Density

$\sigma_3$  - Cell Pressure

$\sigma_1 - \sigma_3$  - Maximum Deviator Stress

$c$  - Shear Strength

$\phi$  - Angle of Friction

### CHEMICAL ANALYSIS

Total (%) - Percentage sulphate ( $SO_3$ ) in dried soil sample

2:1 Extract (g/l) - Grams per litre sulphate ( $SO_3$ ) in 2:1 water:soil extract

Groundwater (g/l) - Grams per litre sulphate ( $SO_3$ ) in groundwater sample

To convert  $SO_3$  to  $SO_4$  multiply  $SO_3$  by 1.2

# LABORATORY RESULTS - Classification and Strength

Project: Knowsley

Project No: 97/2

| Sample  |              |      |                                                                                                  | Classification    |                |                |                |         | Strength |                                     |                                     |                                                     |                        |          |
|---------|--------------|------|--------------------------------------------------------------------------------------------------|-------------------|----------------|----------------|----------------|---------|----------|-------------------------------------|-------------------------------------|-----------------------------------------------------|------------------------|----------|
| Hole    | Depth        | Type | Description                                                                                      | % pass.<br>425 mm | I <sub>P</sub> | W <sub>L</sub> | W <sub>P</sub> | W%      | Test     | γ <sub>b</sub><br>Mg/m <sup>3</sup> | σ <sub>3</sub><br>kN/m <sup>2</sup> | σ <sub>1</sub> ·σ <sub>3</sub><br>kN/m <sup>2</sup> | c<br>kN/m <sup>2</sup> | φ<br>deg |
| 1       | 4.30<br>4.75 | 8U   | Very stiff reddish brown sandy CLAY with a little gravel                                         |                   |                |                |                | 7.6     | U2       | 2.33                                | 138<br>414                          | 1081<br>918                                         | 500                    | 0        |
|         | 5.50<br>5.95 | 10U  | Very stiff reddish brown sandy CLAY with a little gravel and occasional sand lenses              |                   |                |                |                | 7.6     | U2       | 2.33                                | 138<br>414                          | 792<br>1576                                         | 102                    | 36       |
|         | 6.50<br>6.95 | 12U  | Very stiff reddish brown very sandy CLAY with a little gravel                                    |                   |                |                |                | NO TEST |          |                                     |                                     |                                                     |                        |          |
|         | 7.50<br>7.95 | 14U  | Very stiff reddish brown sandy CLAY with a little gravel                                         |                   |                |                |                | 7.9     | U3       | 2.33                                | 138<br>276<br>414                   | 898<br>870<br>1256                                  | 504                    | 0        |
|         | 8.50<br>8.95 | 16U  | Very stiff reddish brown sandy CLAY with a little gravel and occasional sand lenses              |                   |                |                |                | 8.9     | U2       | 2.35                                | 138<br>414                          | 789<br>1415                                         | 132                    | 32       |
|         | 9.50<br>9.95 | 18U  | Very stiff reddish brown very sandy CLAY with a little gravel                                    |                   |                |                |                | NO TEST |          |                                     |                                     |                                                     |                        |          |
| 2       | 3.30<br>3.75 | 6U   | Very stiff reddish brown sandy CLAY with a little gravel                                         |                   |                |                |                | 7.2     | U2       | 2.38                                | 138<br>414                          | 1129<br>1091                                        | 555                    | 0        |
|         | 4.50<br>4.95 | 8U   | Very stiff reddish brown very sandy CLAY with sand lenses and a little gravel                    |                   |                |                |                | 8.3     | U2       | 2.31                                | 138<br>414                          | 472<br>1586                                         | 0                      | 41       |
|         | 5.50<br>5.95 | 10U  | Very stiff reddish brown very sandy CLAY with a little gravel                                    |                   |                |                |                | NO TEST |          |                                     |                                     |                                                     |                        |          |
|         | 6.50<br>6.95 | 12U  | Very stiff reddish brown very sandy CLAY with occasional sand lenses and a little gravel         |                   |                |                |                | 8.7     | U3       | 2.31                                | 138<br>276<br>414                   | 731<br>863<br>995                                   | 431                    | 0        |
|         | 7.50<br>7.95 | 14U  | Very stiff reddish brown sandy CLAY with a little gravel                                         |                   |                |                |                | NO TEST |          |                                     |                                     |                                                     |                        |          |
|         | 8.50<br>8.95 | 16U  | Very stiff reddish brown very sandy CLAY with a little gravel                                    |                   |                |                |                | NO TEST |          |                                     |                                     |                                                     |                        |          |
|         | 9.50<br>9.95 | 18U  | Very stiff reddish brown sandy CLAY with a little gravel and occasional sand lenses and a cobble |                   |                |                |                | 7.9     | U2       | 2.27                                | 138<br>414                          | 617<br>1281                                         | 77                     | 33       |
| 3       | 2.40<br>2.85 | 5U   | Very stiff brown sandy CLAY with a little gravel and occasional sand lenses                      |                   |                |                |                | 12      | U2       | 2.30                                | 138<br>414                          | 348<br>410                                          | 189                    | 0        |
|         | 3.50<br>3.95 | 7U   | Very stiff reddish brown very sandy CLAY with a little gravel and occasional sand lenses         |                   |                |                |                | 8.5     | U2       | 2.30                                | 138<br>414                          | 566<br>1236                                         | 62                     | 33       |
|         | 4.50<br>4.95 | 9U   | Very stiff reddish brown very sandy CLAY with a little gravel and sand lenses                    |                   |                |                |                | NO TEST |          |                                     |                                     |                                                     |                        |          |
|         | 5.50<br>5.95 | 11U  | Very stiff reddish brown sandy CLAY with a little gravel and occasional lenses of sand           |                   |                |                |                | 8.4     | U3       | 2.29                                | 138<br>276<br>414                   | 832<br>1205<br>1395                                 | 572                    | 0        |
|         | 6.50<br>6.90 | 13U  | Friable reddish brown very sandy CLAY/weathered MUDSTONE                                         |                   |                |                |                | 11      | U3       | 2.32                                | 138<br>276<br>414                   | 578<br>964<br>964                                   | 418                    | 0        |
| Remarks |              |      |                                                                                                  |                   |                |                |                |         |          |                                     | SUB SOIL                            |                                                     |                        |          |
|         |              |      |                                                                                                  |                   |                |                |                |         |          |                                     | M29 7LD 01942 883565                |                                                     |                        |          |

### LABORATORY RESULTS - Consolidation

Project: Knowsley

Project No: 97/2

[illegible]

Remarks

## SUB SOIL

M29 7LD 01942 983565

APPENDIX 'C'

# KEY - FOR SOIL SECTION

B.H



100

UNDRAINED SHEAR STRENGTH -  $C_u$  Value ( $\text{KN/m}^2$ )

- approximated to the nearest whole number

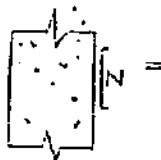
B.H



15

MOISTURE CONTENT (%)

- approximated to the nearest whole number



STANDARD PENETRATION TEST

- Number of blows per 300mm unless otherwise stated

- SP - test terminated within the seating penetration



HIGHEST STANDING WATER LEVEL



20 mins.

Struck

OBSERVED GROUNDWATER SEEPAGE



100 000 (1:500)

EQUIPMENT STORE

BOILER HOUSE

WORK SHOP

COOLING TOWERS

SH1

BH3

BH2

WORKSHOPS

SWITCH ROOM

DRIVER HOUSE

SURFACTANT HALL

DIST. PLANT

LABS

ENGINEERING OFFICES

MAIN INTERCEPTOR

VALVE CHAMBER

WAREHOUSE

OFFICE BLOCK

CAR PARK

PENRYN ROAD



Site plan

SUB SOIL

01942 883565

Scale

1:1000

Ref

97/2

Copy Safety 66

# JOHN NEWTON & PARTNERS

Consulting Civil Structural & Environmental Engineers

PARKVIEW HOUSE, WOODVALE OFFICE PARK, WOODVALE ROAD,  
BRIGHOUSE, WEST YORKSHIRE, HD6 4AB  
TEL: BRIGHOUSE (01484) 400691 FAX: (01484) 400696  
OFFICES IN BUCKINGHAMSHIRE & LONDON



Our ref: NG1019.3\UNTJAWe

27 February 1997

Alan Blackburn, Esq.  
Contract Chemicals,  
Knowlesley Industrial Estate,  
Penrhyn Road,  
Knowlesley,  
Nr Liverpool

Dear Mr Blackburn,

**Re: New Production Building**

Please find enclosed copy of a letter received from Sub Soil Survey Ltd giving details of the Contamination Test Results.

Should you wish to discuss this with me then please do not hesitate to contact me.

Yours sincerely,

J.A. WOOD  
BSc, C.Eng, MStruct E.  
Partner

Enc.

cc: Mr J Sugden - Glendinning Hanson Partnership,  
Ashall Construction Ltd ✓

JOHN NEWTON & PARTNERS NORTHERN  
J.A. WOOD, BSc, CEng, MStructE, S.W. EVANS, BEng, CEng, MICE, MStructE,  
J. NEWTON, CEng, MICE, A.N. BRACKLEY, BEng (Hons), CEng, MICE, MStructE,  
A.K. DAWSON, BSc, CEng, MICE, P.L. HURD, BSc, CEng, MICE.

# SUB SOIL



## Surveys Ltd.

---

**Specialists in Geotechnical Engineering**

---

YOUR REF.

OUR REF. RHS

26 February 1997

CHADDOCK LANE, ASTLEY, MANCHESTER M29 7LD  
Telephone: 01942 883565  
Fax No: 01942 883566

**John Newton and Partners**

Parkview House  
Woodvale Office Park  
Woodvale Road  
Brighouse  
West Yorkshire  
HD6 4AB

**For the Attention of Mr. J Wood**

Dear Sir,

**Contamination Test Results at Contract Chemicals, Knowsley**  
**Contract No 97/2**

Further to our recent report on the Ground Investigation at this site we are pleased to enclose the results of testing for specific contaminants carried out on samples recovered from the site and comment on these as follows:

1. The levels of the specific contaminants tested for all lie below the lowest of the ICRCCL trigger concentrations (for gardens, allotment, etc.), hence the results indicate that there should be no specific risk associated with similar soils on the site. Clearly it would be advisable, however, for normal construction hygiene practice to be followed by site operatives and any materials found on site that may be suspected of containing higher levels of contaminants (eg unusual colours, odours, etc.) should be subjected to further testing.

2. With regard to disposal of material arising from the site, it appears that there may be a premium to pay due to elevated levels of Phenols and Nickel in two of the samples tested which would classify these material as Class B on the Kelly tables. Further advice on disposal should, however be obtained from the Waste Regulation Authority controlling this area

We trust that these comments prove to be of value and apologise for any inconvenience that the delay in submitting these results/comments may have caused, however should any further help or advice be required please do not hesitate to contact us.

Yours faithfully,  
pp Sub Soil Surveys Ltd

A handwritten signature in black ink, appearing to be 'R H Shires', with a long horizontal flourish extending to the right.

Eur Ing R H Shires

# SAL

**Job 7245/Inorganic**

**Analysis for Inorganics**

**For**

**Sub Soil Consultancy Services Limited  
Chaddock Lane  
Astley  
MANCHESTER M29 7LD**

**F.A.O: Sean A Lee**

**Order No: 96/615/C/SL      Job No: Knowsley 97/2**

**Date of Sample Receipt: 16.01.97**

**Date of Sample Testing: 16.01.97 - 23.01.97**

**Date of Report Issue : 23.01.97**

**No. of Pages: 2**

**Signed:** *E. Hollywell*

**E. Hollywell**

**Date:** 23.01.97

**Checked:** *C.M. Dever*

**C.M. Dever**

**Date:** 23/1/97

**Unless otherwise noted all tests were performed in accordance with SAL Inorganic SOP's.**

**Scientific Analysis Laboratories Limited  
Medlock House  
New Elm Road  
Manchester M3 4JH**

## Certificate of Analysis

Our ref: 7245

|                                              |       |           |           |           |           |  |  |
|----------------------------------------------|-------|-----------|-----------|-----------|-----------|--|--|
| SOILS: Results are based on air dried sample |       | Client ID | Client ID | Client ID | Client ID |  |  |
|                                              |       | BH1 B1    | BH2 B1    | BH2 B4    | BH3 B1    |  |  |
|                                              |       | 0.5-1.0   | 0.5-1.0   | 2.0-2.5   | 0.5       |  |  |
|                                              |       | SAL Ref   | SAL Ref   | SAL Ref   | SAL Ref   |  |  |
|                                              |       | 7245 001  | 7245 002  | 7245 003  | 7245 004  |  |  |
| Determinand                                  | Units |           |           |           |           |  |  |
| Arsenic                                      | mg/kg | <5        | 10        | 5         | 5         |  |  |
| Mercury                                      | mg/kg | <1.0      | <1.0      | <1.0      | <1.0      |  |  |
| Selenium                                     | mg/kg | <1.0      | <1.0      | <1.0      | <1.0      |  |  |
| Copper                                       | mg/kg | 15        | 35        | 20        | 30        |  |  |
| Lead                                         | mg/kg | 30        | 45        | 15        | 30        |  |  |
| Zinc                                         | mg/kg | 40        | 75        | 45        | 40        |  |  |
| Cadmium                                      | mg/kg | <1.0      | <1.0      | <1.0      | <1.0      |  |  |
| Chromium                                     | mg/kg | 20        | 25        | 30        | 20        |  |  |
| Nickel                                       | mg/kg | 20        | 30        | 40        | 20        |  |  |
| Water soluble Boron                          | mg/kg | <1.0      | <1.0      | <1.0      | <1.0      |  |  |
| pH                                           |       | 8.0       | 8.0       | 8.0       | 7.8       |  |  |
| 2:1 Sulphate as SO <sub>4</sub>              | mg/l  | 100       | <50       | 150       | 150       |  |  |
| Monohydric Phenols                           | mg/kg | 1         | <1        | <1        | <1        |  |  |
| Total Cyanide                                | mg/kg | 6         | 2         | 1         | <1        |  |  |
| Sulphide                                     | mg/kg | <10       | <10       | <10       | <10       |  |  |
| Toluene extract                              | mg/kg | 1200      | <500      | <500      | <500      |  |  |

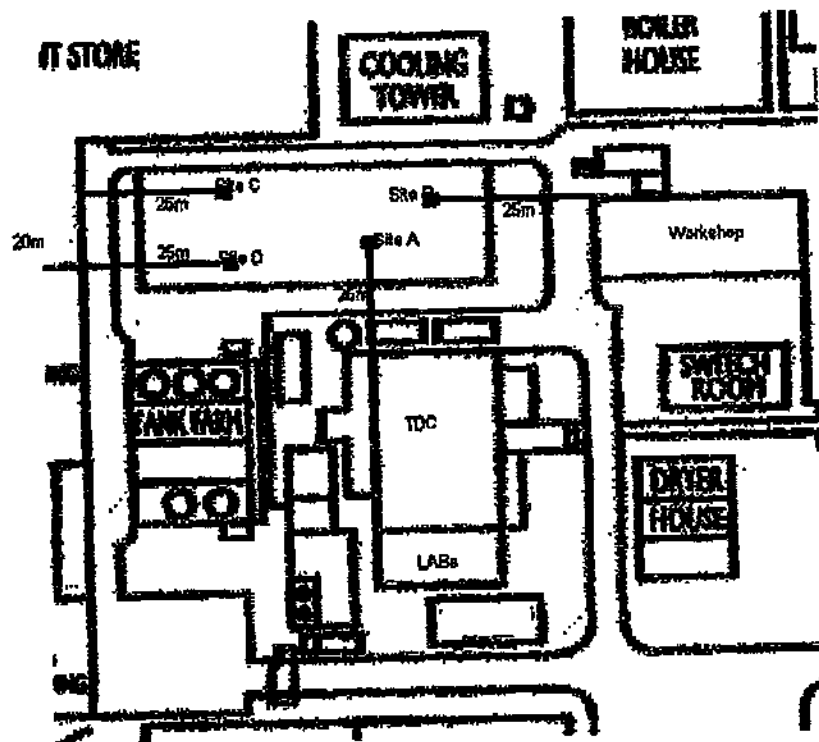
**CCL Ground Investigation  
Prior To Constuction of Bonner Building**

RL 2/2/97

### Contract Chemicals (Knowsley) Limited New Production Building Land Investigation

As part of the Environmental Management System objectives and targets it was stated that prior to any major construction or excavation work land investigation would be carried out. Samples were taken in four strategic locations which will eventually be covered by hardstanding and the new production building. Samples were taken at a depth of 20-30cm in the locations identified on the plan which were 25m from existing points.

Sampling was carried out by R. Leese and C. Tilston.  
Analysis was carried out by Alcontrol Laboratories.



**ALcontrol UK**

Analytical Services

Templeborough House, Mill Close,  
Rotherham, S60 1BZ**Yorkshire Environmental**

Tel : 01709 841096

Fax : 01709 841100

## Certificate of Analysis

Customer : Contract Chemicals,  
Penrhyn Road,  
Knowsley Industrial Park South  
Prescot,  
Merseyside

Sample Date: 28/01/97

Sample Received: 29/01/97

Analysis Completed: 14/02/97

Sample: Site A

Laboratory Number: 97609109

Order no.3984

| Determination            | Result | Units    | Method |
|--------------------------|--------|----------|--------|
| pH (soil)                | 8.4    | pH Units | 3.6.2  |
| Solids air dried         | 87.7   | %        | 11.3   |
| Stones greater than 10mm | < 0.00 | %        | 11.7   |
| Sulphate (soil)          | 0.049  | % SO4    | 8B     |
| Thiocyanate (DSB)        | < 10.0 | mg/kg    | 2.11.1 |
| Cyanide (total) (DSB)    | 2.51   | mg/kg    | 2.5.1  |
| Phenol monohydric (DSB)  | < 1.46 | mg/kg    | 2.21.2 |
| Sulphide (DSB)           | < 1.0  | mg/kg    | *      |
| Arsenic (soil)           | < 5.0  | mg/kg    | 8B     |
| Cadmium (soil)           | 0.18   | mg/kg    | 8B     |
| Chromium (soil)          | 35.5   | mg/kg    | 8B     |
| Lead (soil)              | < 50.0 | mg/kg    | 8B     |
| Mercury (soil)           | < 0.10 | mg/kg    | 9A     |
| Selenium (soil)          | 0.20   | mg/kg    | 9B     |
| Copper (soil)            | 46.0   | mg/kg    | 8B     |
| Nickel (soil)            | 24.3   | mg/kg    | 8B     |
| Zinc (soil)              | 96.7   | mg/kg    | 8B     |
| Boron (soil) (water sol) | 0.69   | mg/kg    | 8B     |
| PAH Screen FID           | < 50.0 | mg/kg    | *      |

Signed:

Mark Johnson

14/02/97

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TESTING  
No. 0955  
No. 0956

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## Certificate of Analysis

Customer : Contract Chemicals,  
Penrhyn Road,  
Knowsley Industrial Park South  
Prescot,  
Merseyside

Sample Date: 28/01/97

Sample Received: 29/01/97

Analysis Completed: 14/02/97

Sample: Site B

Laboratory Number: 97609110

Order no.3984

| Determination            | Result | Units    | Method |
|--------------------------|--------|----------|--------|
| pH (soil)                | 8.3    | pH Units | 3.6.2  |
| Solids air dried         | 86.8   | %        | 11.3   |
| Stones greater than 10mm | < 0.00 | %        | 11.7   |
| Sulphate (soil)          | 0.056  | % SO4    | 8B     |
| Thiocyanate (DSB)        | < 10.0 | mg/kg    | 2.11.1 |
| Cyanide (total) (DSB)    | < 2.00 | mg/kg    | 2.5.1  |
| Phenol monohydric (DSB)  | < 1.46 | mg/kg    | 2.21.2 |
| Sulphide (DSB)           | 1.2    | mg/kg    | *      |
| Arsenic (soil)           | 5.7    | mg/kg    | 8B     |
| Cadmium (soil)           | 0.17   | mg/kg    | 8B     |
| Chromium (soil)          | 27.0   | mg/kg    | 8B     |
| Lead (soil)              | 70.5   | mg/kg    | 8B     |
| Mercury (soil)           | < 0.10 | mg/kg    | 9A     |
| Selenium (soil)          | 0.26   | mg/kg    | 9B     |
| Copper (soil)            | 37.9   | mg/kg    | 8B     |
| Nickel (soil)            | 19.2   | mg/kg    | 8B     |
| Zinc (soil)              | 133    | mg/kg    | 8B     |
| Boron (soil) (water sol) | 0.67   | mg/kg    | 8B     |
| PAH Screen FID           | < 50.0 | mg/kg    | *      |

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14/02/97

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TESTING  
No. 0995  
No. 0996

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of

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Penrhyn Road,  
Knowsley Industrial Park South  
Prescot,  
Merseyside

Sample Date: 28/01/97

Sample Received: 29/01/97

Analysis Completed: 14/02/97

Sample: Site C

Laboratory Number: 97609111

Order no.3984

| Determination            | Result | Units    | Method |
|--------------------------|--------|----------|--------|
| pH (soil)                | 8.1    | pH Units | 3.6.2  |
| Solids air dried         | 89.1   | %        | 11.3   |
| Stones greater than 10mm | 40.9   | %        | 11.7   |
| Sulphate (soil)          | 1.98   | % SO4    | 8B     |
| Thiocyanate (DSB)        | < 10.0 | mg/kg    | 2.11.1 |
| Cyanide (total) (DSB)    | < 2.00 | mg/kg    | 2.5.1  |
| Phenol monohydric (DSB)  | < 1.46 | mg/kg    | 2.21.2 |
| Sulphide (DSB)           | < 1.0  | mg/kg    | *      |
| Arsenic (soil)           | < 5.0  | mg/kg    | 8B     |
| Cadmium (soil)           | 0.30   | mg/kg    | 8B     |
| Chromium (soil)          | 35.7   | mg/kg    | 8B     |
| Lead (soil)              | 52.7   | mg/kg    | 8B     |
| Mercury (soil)           | 0.15   | mg/kg    | 9A     |
| Selenium (soil)          | 0.19   | mg/kg    | 9B     |
| Copper (soil)            | 36.3   | mg/kg    | 8B     |
| Nickel (soil)            | 23.6   | mg/kg    | 8B     |
| Zinc (soil)              | 126    | mg/kg    | 8B     |
| Boron (soil) (water sol) | 1.96   | mg/kg    | 8B     |
| PAH Screen FID           | < 50.0 | mg/kg    | *      |

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14/02/97

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TESTING  
No. 0995  
No. 0996

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Customer : Contract Chemicals,  
Penrhyn Road,  
Knowsley Industrial Park South  
Prescot,  
Merseyside

Sample Date: 28/01/97

Sample Received: 29/01/97

Analysis Completed: 14/02/97

Laboratory Number: 97609112

Sample: Site D

Order no.3984

| Determination            | Result | Units    | Method |
|--------------------------|--------|----------|--------|
| pH (soil)                | 9.9    | pH Units | 3.6.2  |
| Solids air dried         | 90.4   | %        | 11.3   |
| Stones greater than 10mm | 34.1   | %        | 11.7   |
| Sulphate (soil)          | 0.078  | % SO4    | 8B     |
| Thiocyanate (DSB)        | < 10.0 | mg/kg    | 2.11.1 |
| Cyanide(total) (DSB)     | < 2.00 | mg/kg    | 2.5.1  |
| Phenol monohydric (DSB)  | < 1.46 | mg/kg    | 2.21.2 |
| Sulphide (DSB)           | 1.4    | mg/kg    | *      |
| Arsenic (soil)           | 5.2    | mg/kg    | 8B     |
| Cadmium (soil)           | 0.29   | mg/kg    | 8B     |
| Chromium (soil)          | 25.3   | mg/kg    | 8B     |
| Lead (soil)              | 52.4   | mg/kg    | 8B     |
| Mercury (soil)           | < 0.10 | mg/kg    | 9A     |
| Selenium (soil)          | 0.29   | mg/kg    | 9B     |
| Copper (soil)            | 36.4   | mg/kg    | 8B     |
| Nickel (soil)            | 17.7   | mg/kg    | 8B     |
| Zinc (soil)              | 104    | mg/kg    | 8B     |
| Boron (soil) (water sol) | 1.22   | mg/kg    | 8B     |
| PAH Screen FID           | 72.0   | mg/kg    | *      |

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14/02/97

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No. 0995  
No. 0996

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**CCL Ground Investigation  
Prior To Construction Of Flammable Store**



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Rotherham, S60 1BZ

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### Certificate of Analysis

Customer : Contract Chemicals,  
Penrhyn Road,  
Knowsley Industrial Park South  
Prescot,  
Merseyside

Sample Date: 22/07/97

Sample Received: 23/07/97

Analysis Completed: 04/08/97

Laboratory Number: 47405795

Your Order : 4332

Sample : Sample 1

| Determination            | Result | Units    | Method |
|--------------------------|--------|----------|--------|
| pH (soil)                | 8.0    | pH Units | 3.6.2  |
| Solids air dried         | 88.6   | %        | 11.3   |
| Stones greater than 10mm | 1.69   | %        | 11.7   |
| Sulphate (soil)          | 0.007  | % SO4    | 8B     |
| Cyanide (total) (DSB)    | < 2.00 | mg/kg    | 2.5.1  |
| Thiocyanate (DSB)        | < 10.0 | mg/kg    | 2.11.1 |
| Phenol monohydric (DSB)  | < 1.5  | mg/kg    | 2.21.2 |
| Sulphide (DSB)           | < 1.0  | mg/kg    | *      |
| Arsenic (soil)           | < 5.0  | mg/kg    | 8B     |
| Cadmium (soil)           | 0.12   | mg/kg    | 8B     |
| Chromium (soil)          | 37.3   | mg/kg    | 8B     |
| Lead (soil)              | < 50.0 | mg/kg    | 8B     |
| Mercury (soil)           | < 0.10 | mg/kg    | 9A     |
| Selenium (soil)          | < 0.10 | mg/kg    | 9B     |
| Copper (soil)            | < 10.0 | mg/kg    | 8B     |
| Nickel (soil)            | 21.7   | mg/kg    | 8B     |
| Zinc (soil)              | 33.7   | mg/kg    | 8B     |
| Boron (soil) (water sol) | 0.53   | mg/kg    | 8B     |
| PAH Screen FID           | 60.0   | mg/kg    | *      |

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Mark Johnson

04/08/97

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TESTING  
No 0905  
No 0906  
No 0907



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Rotherham, S60 1BZ

## Yorkshire Environmental

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## Certificate of Analysis

Customer : Contract Chemicals,  
Penrhyn Road,  
Knowsley Industrial Park South  
Prescot,  
Merseyside

Sample Date: 22/07/97

Sample Received: 23/07/97

Analysis Completed: 04/08/97

Your Order : 4332

Laboratory Number: 47405796

Sample : Sample 2

| Determination            | Result | Units    | Method |
|--------------------------|--------|----------|--------|
| pH (soil)                | 9.7    | pH Units | 3.6.2  |
| Solids air dried         | 86.5   | %        | 11.3   |
| Stones greater than 10mm | 7.59   | %        | 11.7   |
| Sulphate (soil)          | 0.067  | % SO4    | 8B     |
| Cyanide (total) (DSB)    | < 2.00 | mg/kg    | 2.5.1  |
| Thiocyanate (DSB)        | < 10.0 | mg/kg    | 2.11.1 |
| Phenol monohydric (DSB)  | < 1.5  | mg/kg    | 2.21.2 |
| Sulphide (DSB)           | 9.7    | mg/kg    | *      |
| Arsenic (soil)           | 7.2    | mg/kg    | 8B     |
| Cadmium (soil)           | 0.40   | mg/kg    | 8B     |
| Chromium (soil)          | 22.8   | mg/kg    | 8B     |
| Lead (soil)              | 54.8   | mg/kg    | 8B     |
| Mercury (soil)           | < 0.10 | mg/kg    | 9A     |
| Selenium (soil)          | 0.17   | mg/kg    | 9B     |
| Copper (soil)            | 26.3   | mg/kg    | 8B     |
| Nickel (soil)            | 15.6   | mg/kg    | 8B     |
| Zinc (soil)              | 51.0   | mg/kg    | 8B     |
| Boron (soil) (water sol) | 0.71   | mg/kg    | 8B     |
| PAH Screen FID           | < 50.0 | mg/kg    | *      |

Signed:

Mark Johnson

04/08/97

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1



TESTING  
No 9395  
No 9396  
No 9397

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Rotherham, S60 1BZ

## Yorkshire Environmental

Tel : 01709 841096

Fax : 01709 841100

## Certificate of Analysis

Customer : Contract Chemicals,  
Penrhyn Road,  
Knowsley Industrial Park South  
Prescot,  
Merseyside

Sample Date: 22/07/97

Sample Received: 23/07/97

Analysis Completed: 04/08/97

Laboratory Number: 47405797

Your Order : 4332

Sample : Sample 3

| Determination            | Result | Units    | Method |
|--------------------------|--------|----------|--------|
| pH (soil)                | 9.3    | pH Units | 3.6.2  |
| Solids air dried         | 89.6   | %        | 11.3   |
| Stones greater than 10mm | 19.3   | %        | 11.7   |
| Sulphate (soil)          | 0.051  | % SO4    | 8B     |
| Cyanide (total) (DSB)    | < 2.00 | mg/kg    | 2.5.1  |
| Thiocyanate (DSB)        | < 10.0 | mg/kg    | 2.11.1 |
| Phenol monohydric (DSB)  | < 1.5  | mg/kg    | 2.21.2 |
| Sulphide (DSB)           | 14.7   | mg/kg    | *      |
| Arsenic (soil)           | 5.8    | mg/kg    | 8B     |
| Cadmium (soil)           | 0.34   | mg/kg    | 8B     |
| Chromium (soil)          | 22.4   | mg/kg    | 8B     |
| Lead (soil)              | 65.9   | mg/kg    | 8B     |
| Mercury (soil)           | < 0.10 | mg/kg    | 9A     |
| Selenium (soil)          | 0.20   | mg/kg    | 9B     |
| Copper (soil)            | 18.8   | mg/kg    | 8B     |
| Nickel (soil)            | 15.8   | mg/kg    | 8B     |
| Zinc (soil)              | 56.2   | mg/kg    | 8B     |
| Boron (soil) (water sol) | 0.67   | mg/kg    | 8B     |
| PAH Screen FID           | < 50.0 | mg/kg    | *      |

Signed:

Mark Johnson

04/08/97

1

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TESTING  
No 3995  
No 3996  
No 3997

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**APPENDIX E**  
**REMEDATION WORKS METHOD STATEMENT**

Report No: 15128/1  
Date: November 1993

**METHOD STATEMENT DETAILING  
INSTALLATION OF SURFACE DRAINAGE SYSTEM  
AND ASSOCIATED EARTHWORKS**

**prepared for  
CONTRACT CHEMICALS**

**ROBINSON FLETCHER CONSULTANTS LIMITED  
Pier House  
Wallgate  
Wigan  
WN3 4AL**

**METHOD STATEMENT DETAILING  
INSTALLATION OF SURFACE DRAINAGE SYSTEM  
AND ASSOCIATED EARTHWORKS**

**at  
CONTRACT CHEMICALS KNOWSLEY FACILITY**

**1. INTRODUCTION**

- 1.1 Robinson Fletcher Consultants Limited (RFC) have been instructed by Contract Chemicals Limited (CC) to provide recommendations and designs to control surface run off from a former waste products chemical storage area which occupies the north western border of the CC site.
- 1.2 Additionally, Robinson Fletcher have also been instructed to provide a method statement detailing removal of ground affected by surface run off of water and soil from the former waste chemical storage area, onto land occupied by McGregor Cory (MC) which lies adjacent to the north western border of the CC site.
- 1.3 The remediation measures proposed follow an earlier site investigation undertaken by Cremer and Warner in April 1993, which concluded that surface run off of water was eroding soil materials from the CC site and depositing them on the ground in the south eastern corner of the MC site.
- 1.4 The report also determined that the surface ponding in the area is a consequence of the impermeability of the underlying clay strata, found at a depth of 0.5m. It is not, therefore, anticipated that it will be necessary to excavate substantially deeper than the upper 0.5m of the soil profile in order to remove the eroded materials on site.
- 1.5 To prevent further deposition of eroded materials it is proposed to intercept and divert surface water run off away from the MC site via a system of kerbing (i.e. bunds) and drains. Following the installation of this system the affected ground in the south eastern corner of the MC site will be excavated and removed.
- 1.6 Based on the information provided in the Cremer and Warner report and also from a visual inspection of the MC site, it is estimated that approximately 400m<sup>3</sup> of soil material will need to be removed and be replaced with clean subsoil and topsoil.
- 1.7 The installation of both the drainage system and the proposed earthworks operations, will be assessed by an engineer from RFC. The engineer will be present on site during installation of the drainage system and during excavation and replacement of soil materials from the adjacent MC site.

## **2. INSTALLATION OF SURFACE RUN-OFF DRAINAGE SYSTEM**

### **2.1 General**

- 2.1.1 It is proposed to construct the surface drainage system prior to excavation of the ground on the MC property. Works will need to be staged in this manner to prevent redeposition of any eroded materials on the clean soil materials which will be used to remediate the MC site.
- 2.1.2 During all stages of construction the guidelines, principles and conditions as outlined by the Water Authorities Association in their 1989 publication 'Sewers for adoption' (3rd Edition) will be followed.
- 2.1.3 The relevant drawings detailing the construction of the proposed drainage system are shown in Appendix A. The drawings are referenced Nos. 15128/1 to 15128/7, inclusive.

### **2.2 Outline of Proposed Drainage Scheme**

- 2.2.1 A full topographical survey of the site has been undertaken to determine the characteristics of site drainage on the former waste chemical storage area. The survey has determined that an area approximately 3500m<sup>2</sup> in size drains towards the southern and western border of the hardstanding. Based on an anticipated rainfall figure of 50mm/hr and therefore a flow of approximately 50 litres per second, the following scheme has been proposed to deal with surface run-off.

#### **2.2.2 Kerbing**

- (i) It is proposed to construct a 200mm high reinforced concrete kerb along the western border of the site to prevent surface waters overspilling onto the adjacent MC site. The kerbing will follow the gradient of the site which falls at approximately 1 in 30 to the south and will channel the water towards the south western corner of the site where it will enter a land drain. A plan of the kerb line is shown on Drawing No. 15128/1 in Appendix A.
- (ii) The kerb will be laid in 10.0m sections and each joint will incorporate a waterproof seal to prevent leakage through the structure. The kerb will adjoin the existing concrete bund that surrounds the current waste chemical storage compound. Drawing No. 15128/2 in Appendix A shows the kerbing in section.

- (iii) Subject to a further brief investigation it may be necessary to extend the kerbing system along the back of the existing waste chemical storage compound and tie this in with the proposed land drain.

### **2.2.3 Formation of Proposed Land Drain (RE to S1)**

- (i) It is proposed to install a land drain in the south western corner of the former waste chemical storage area. A detailed section drawing is given as Drawing No. 15128/3 in Appendix A.
- (ii) The drain will extend for a distance of 30m and will fall at a gradient of 1 in 30 to the south. The drain will comprise a perforated 225mm diameter glazed clay pipe, the base of which will lie at a depth of approximately 1.0m. The appropriate invert levels for RE (the most northerly part of the drain) and S1 (the first manhole) are provided on the drainage plan for the site (see Drawing No. 15128/1).
- (iii) The trench in which the pipe is laid will be at least 0.6m wide. The trench will be partly lined along its base and western wall with a LDPE geomembrane. The geomembrane and the eastern wall will then be covered with a geotextile, which will act to prevent the underlying membrane from being pierced/torn by any sharp backfill material. Additionally, the geotextile should prevent sediment contained in groundwater from entering through the sides of the trench. Once the lining membrane and geotextile have been laid and anchored in the base of the trench the perforated drainage pipe will be installed at the appropriate invert levels. The drainage trench will then be carefully backfilled with non deleterious 20-40mm diameter limestone gravel which will form a permeable surround to the perforated pipe. A schematic cross section highlighting construction of the land drain is given as Drawing No. 15128/3 in Appendix A. Once installed, the land drain will require maintaining to prevent the potential spread of vegetation across the surface of the feature.
- (iv) A rodding eye will be installed at the most northerly part of the trench (i.e. at location RE) in order to facilitate maintenance of the pipe.
- (v) Manhole S1 will be constructed at the southern point of the land drain. The manhole construction is shown in section on Drawing No. 15128/4 in Appendix A. The manhole will incorporate a sediment trap which will intercept any sediment associated with the surface run-off before the water is drained to sewer. The sediment trap will therefore require regular inspection and should be emptied of any debris at appropriate intervals.
- (vi) A surplus of soil will be generated by work to excavate the land drain. This will be disposed of at a landfill site suitably licensed to accept such material.

#### **2.2.4 Formation of Branch Connection Between Land Drain and Effluent Drainage System (S1 to S3)**

- (i) It is proposed to connect the land drain with the trade effluent discharge drain which lies to the east of the current waste chemicals storage compound. The connection will be made in two parts.
- (ii) The first drain run will be laid between Manhole S1 and S2. The run will extend for a distance of approximately 46.0m and will fall from the west at a gradient of 1 in 100. The depth of excavation, in order to lay the pipe, will therefore vary between approximately 1.0 and 3.0m along its length. A schematic section highlighting construction of the drainage pipe is shown on Drawing No. 15128/5.
- (iii) Essentially the drain will comprise a non perforated, vitrified clay pipe 225mm in diameter which will be well bedded in a granular surround. Arisings from the excavation of the trench will be used to backfill above the pipe bedding. The upper 0.5m of excavated soil will be taken off site and disposed of at a landfill suitably licensed to accept such material.
- (iv) Manhole S2 should be constructed as shown in section on Drawing No. 15128/6. A second shorter drain run will then be constructed between Manholes S2 and S3. Manhole S3 already exists on site, associated with the current effluent discharge system. It will consequently require modification in order to accept the new branch drain from Manhole S2 which will enter through the side of the manhole just above the existing bench, at the base of the structure.
- (v) The invert level of the effluent drain in Manhole S3 lies at 3.5m below ground level. Consequently, the branch connecting, S2 with S3 will fall at a gradient of approximately 1 in 5.8. A cross section of Manhole S3 is shown on Drawing No. 15128/7.

### **3. EXCAVATION OF GROUND AFFECTED BY SURFACE WATER RUN OFF FROM MCGREGOR CORY PROPERTY**

#### **3.1 General**

- 3.1.1 Once the land drain and branch connection to trade effluent discharge have been constructed, and surface run-off from the former waste chemical storage area is subsequently controlled, work can then commence to excavate the ground affected by surface water run off on the adjacent MC property.
- 3.1.2 The results of Cremer and Warner's investigation on the MC site suggest that the ground that is affected by drainage run off lies predominantly within the upper 0.5m of the soil profile. It was also concluded that ponding within the area of contamination is a consequence of the impermeability of the underlying clay strata.
- 3.1.3 The approximate area of land which will require removal, is shown on Drawing No. 15128/8 in Appendix A. It is proposed to excavate this area to at least 0.5m or to a depth where Robinson Fletcher are satisfied that the ground has been remediated satisfactorily. The estimated volume of soil to be excavated and removed from the site is approximately 400m<sup>3</sup>.

#### **3.2 Excavation of Ground From McGregor Cory Property**

- 3.2.1 The extent of the area to be excavated will be discussed with MC and will be delineated by pole and fluorescent tape before excavation works commence.
- 3.2.2 Thereafter, it is proposed to construct an access to the affected area through the fence that forms the boundary of MC's land as shown on Drawing No. 15128/8. It is anticipated that most of the concrete pillars of the chain link fence will need to be removed from the area surrounding the affected ground in order to allow appropriate excavation to take place. The approximate extent of fencing to be removed is shown on Drawing No. 15128/8.
- 3.2.3 A bridge will be constructed over the newly formed land drainage system in order to accommodate plant access to the area. Access to the MC site will be made through the former waste chemical storage area on the MC site. Consequently, the access route will need to be temporarily covered with a wooden lattice roadway to prevent mud being take off site on the wheels of plant vehicles.
- 3.2.4 The contractor will use a tracked excavator to dig out the ground on site until clean subsoil is encountered. The contractor will be required to acquaint himself and if necessary devise a scheme to deal with the potential problem of ponding which may affect the area of excavation. The excavated material will be stockpiled in a safe manner i.e. stable slopes and to a shallow height adjacent to the access point to the MC land. The stockpiled material will be removed off site

through CC's site in one operation and disposed of at a suitably licensed disposal point.

### **3.3 Restoration**

3.3.1 Once all the affected material has been removed and disposed from the MC site the excavated area will be restored to original ground level with clean subsoil dressed with a 100mm layer of topsoil. It is anticipated that the subsoil and topsoil will be stockpiled separately on the MC site close to the access point. Alternatively it may be brought in as required. The subsoil and topsoil can then be spread across the excavated area in a continuous operation.

3.3.2 On completion of works to lay the topsoil, the area will be re-seeded and the original chain link fencing reinstated to a condition which is as near as possible to the existing fence condition. If any parts of the fence are damaged by works to remove or reinstall the feature then these will be accordingly repaired.

### **3.4 Areas of Further Excavation**

3.4.1 During a general inspection of MC land lying adjacent to CC's former chemical waste storage area, it became apparent that pockets of ground have been affected by surface run off at two further locations along the western border with CC's site.

3.4.2 The affected areas appear limited in size and it is proposed to treat both areas in a similar manner to that proposed for the south eastern corner of MC's property (i.e. take down fence, excavate affected soil, replace with clean soil and topsoil, seed and reinstate fence.).

**4 MONITORING OF WORKS**

- 4.1 During works to construct the surface drainage system on the CC site and subsequent works to excavate and reinstate the land on MC's site, an engineer from Robinson Fletcher will undertake daily site visits to supervise operations.
- 4.2 For the purposes of consultation during the course of site works, the supervising engineer will be contactable either on site or at the offices of Robinson Fletcher Consultants Limited. The telephone numbers are:
- |     |                 |             |
|-----|-----------------|-------------|
| i)  | Site Mobile No. | 0860 433033 |
| ii) | RFC Office No.  | 0942 824406 |
- 4.3 Daily records will be kept outlining progress of the works. A sample record is provided in Appendix B.
- 4.4 The engineer will advise the contractor as to whether the specified site works are being undertaken in a satisfactory manner and will advise on satisfactory completion or as to whether any further work is required.
- 4.5 Any alterations to the specified works will be subject to the approval of the engineer from Robinson Fletcher Consultants Limited.

Our Ref: UK93/15128/BWB/mb/lcc0604.doc

Date: 6 April 1994

Contract Chemicals (Knowsley) Limited  
Penrhyn Road  
Knowsley Industrial Park South  
Prescot  
Merseyside  
L34 9HY

**For the attention of Mr Paul Kinley**

Dear Paul,

**Re: Remediation Work Knowsley**

Further to recent discussions and our letter of 31 March 1994, please find enclosed a draft plan which has been drawn up from the additional survey work conducted at the McGregor Cory site last week.

The surveyor has attempted to delineate the visually affected areas (hatched on the plan) which amounts to an area of approximately 440m<sup>2</sup>. Assuming that a nominal 0.5m of soil is to be removed for decontamination purposes, this would amount to 220m<sup>3</sup> of soil material that will require off-site disposal.

There will, undoubtedly, be a slightly greater volume of material generated by the decontamination operations. However, our original estimate of 400m<sup>3</sup> of soil material requiring disposal, and the associated budget costs set aside it, should cover the required scope of works.

We will be preparing a formal response to Messrs. White Young's letter of 28 March 1994, in due course and would welcome any comments you should have. We will be incorporating our survey plan with our response in order to agree the maximum extent of the decontamination excavations.

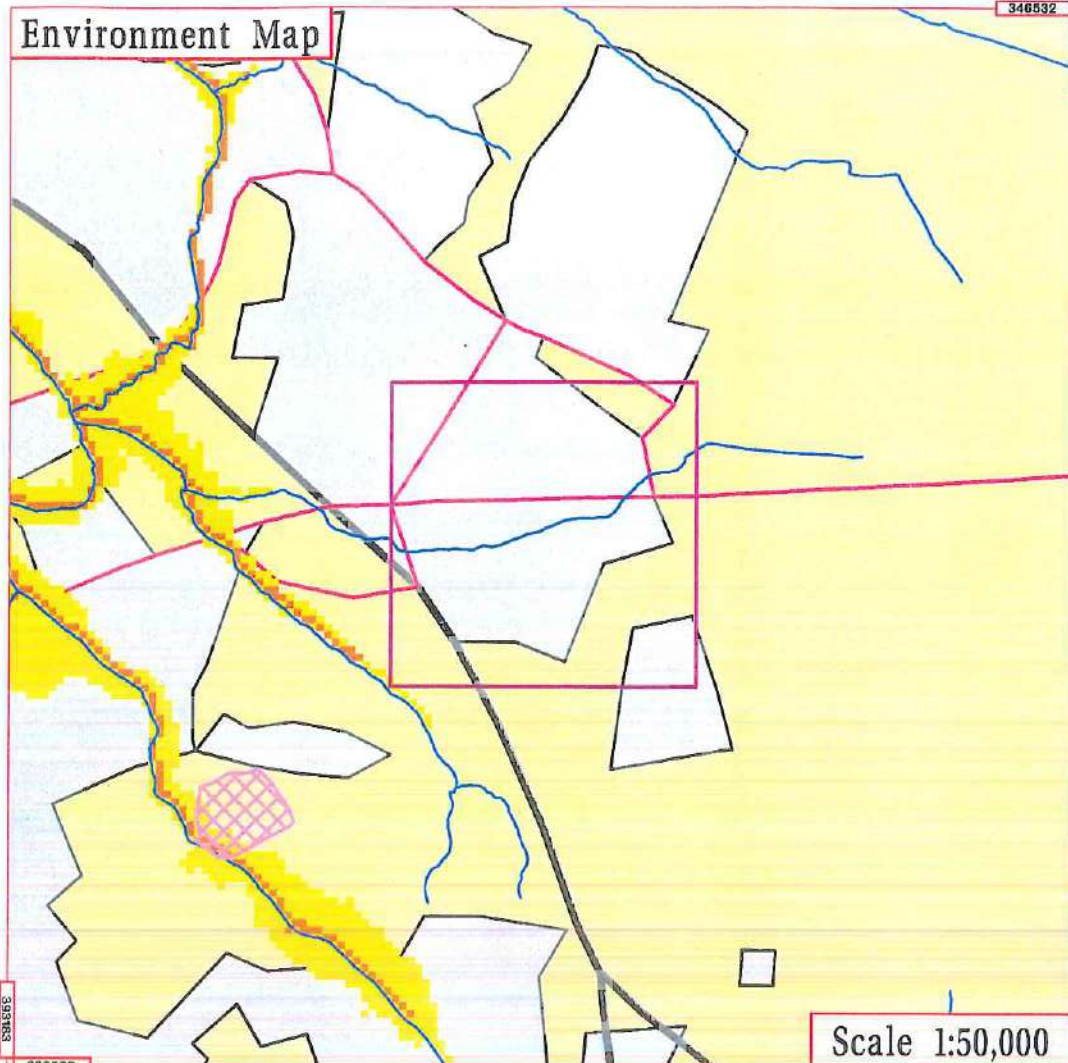
I will be out of the office until Tuesday 12 April 1994, hence should you wish to discuss any matter in greater detail, please contact Mr John Martin (Director) at the above office.

Yours sincerely

**B. W. Blundell**  
for and on behalf of  
**Robinson Fletcher consultants Limited**

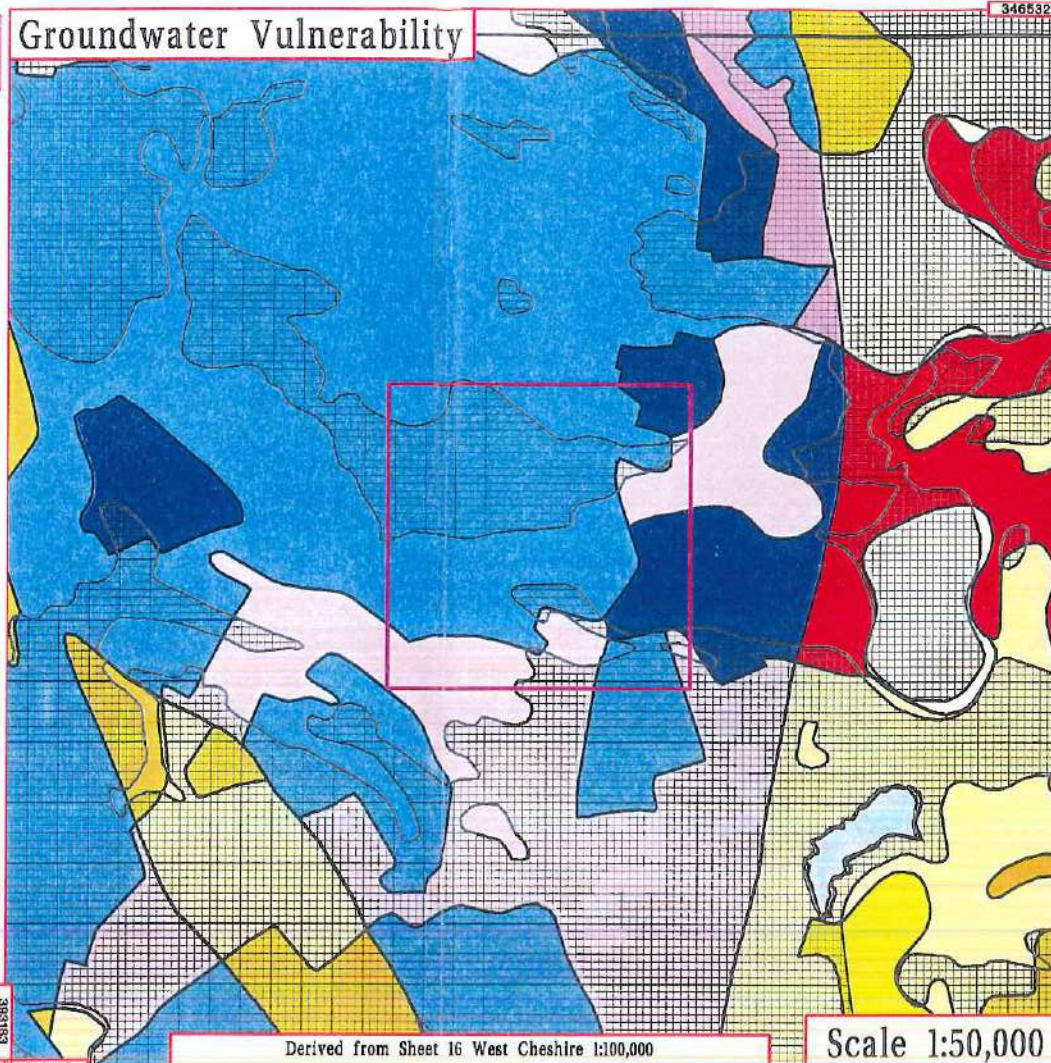
*CC - David Mawdsley, Alsop Wilkinson Solicitors*

# Environment Map



Scale 1:50,000

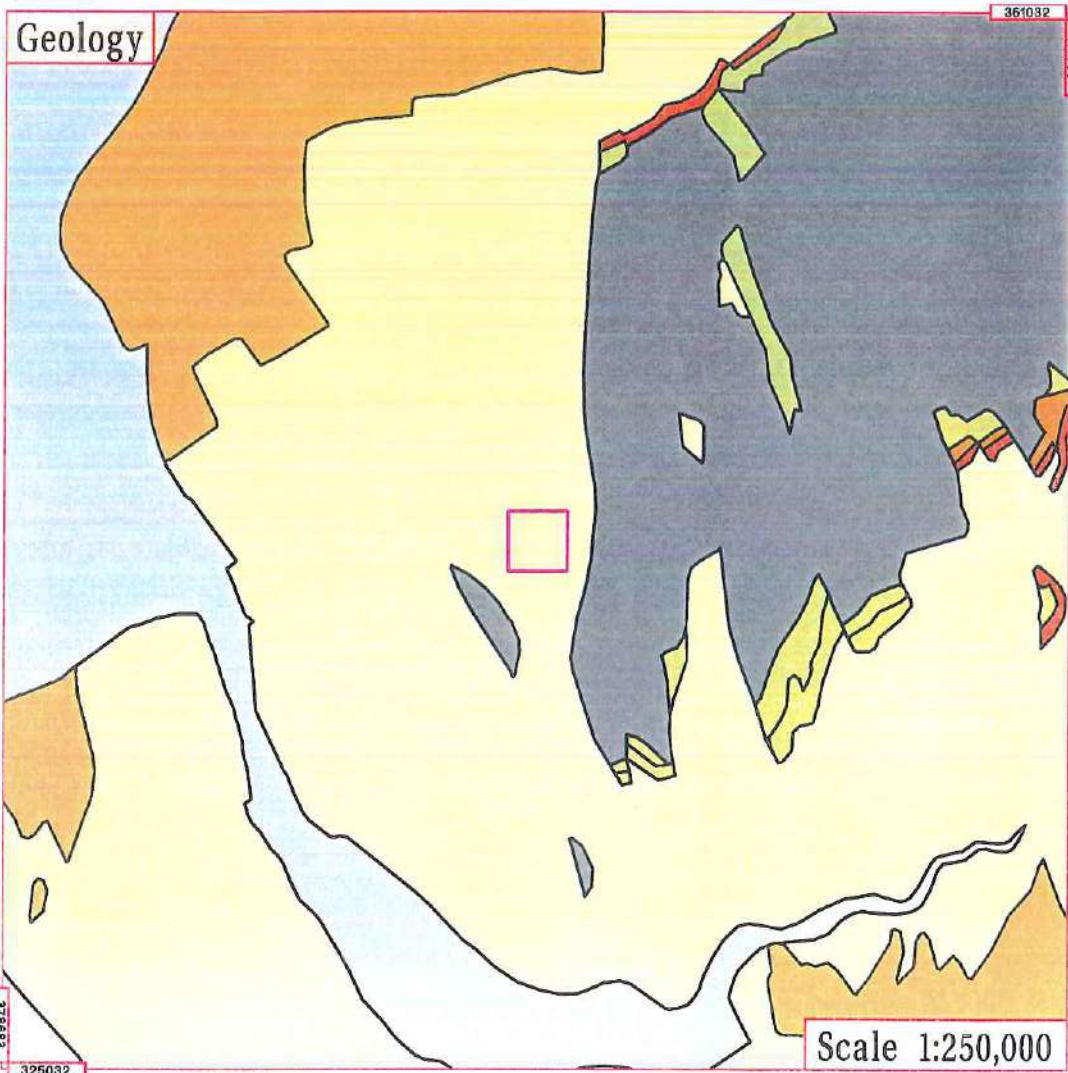
# Groundwater Vulnerability



Derived from Sheet 16 West Cheshire 1:100,000

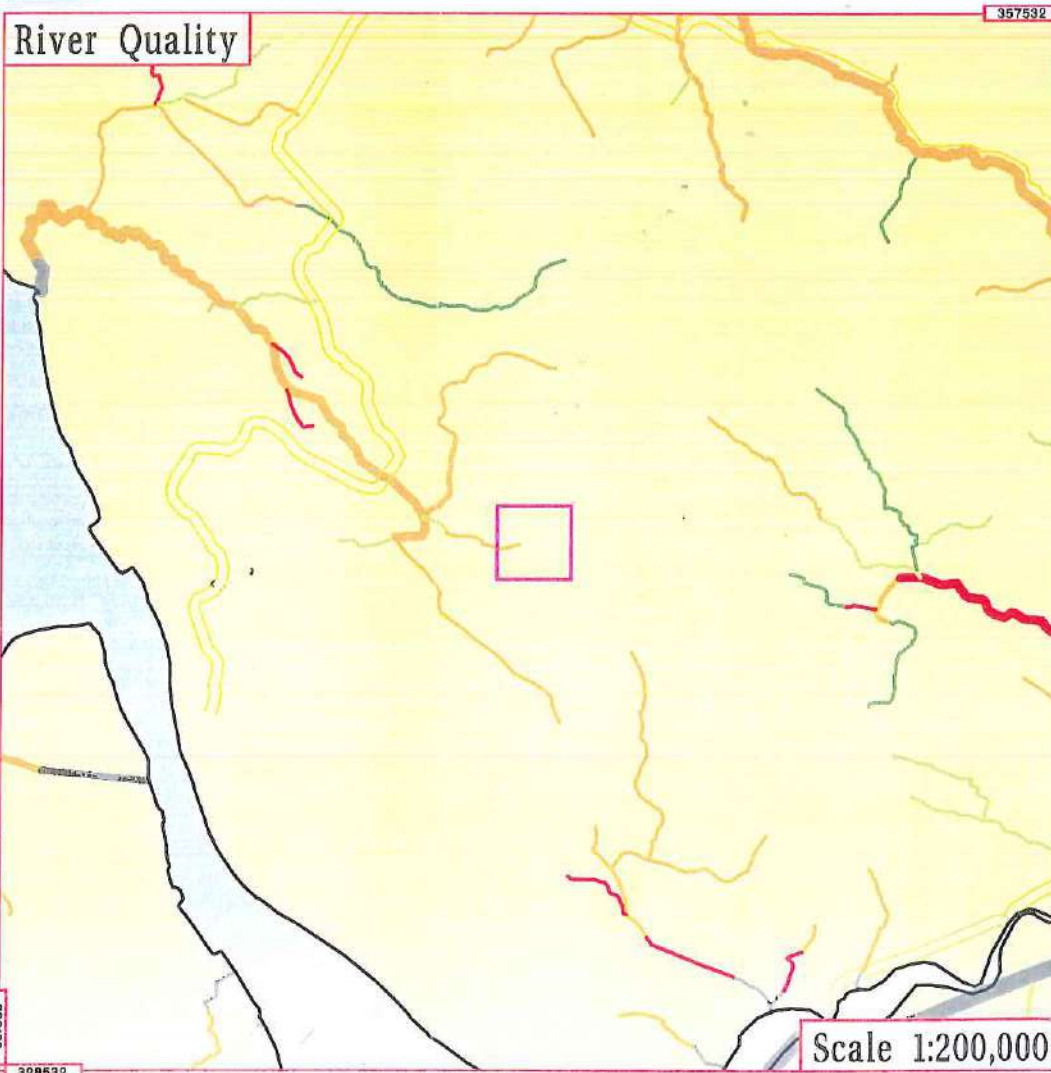
Scale 1:50,000

# Geology



Scale 1:250,000

# River Quality



Scale 1:200,000



# EnviroCheck

Environmental Site Sensitivity Data

## CLIENT DETAILS

Order No. ES23807-1

Customer Ref: Robert Tinsley  
AIG Consultants Limited  
PIER HOUSE WALLGATE  
WIGAN  
WN3 4AL

## SITE DETAILS

Grid Reference 343032 396683

Contract Chemicals Ltd  
Penrhyn Road  
Knowsley Business Park  
PRESCOT  
Merseyside L34 9HY

## Guide to the Environment Map

- |                                      |                                      |                                       |                                 |
|--------------------------------------|--------------------------------------|---------------------------------------|---------------------------------|
| Urban Areas                          | Motorways                            | 'A' Roads                             | Extent of Search                |
| 0 - 1 m estimated 100 yr flood depth | 1 - 2 m estimated 100 yr flood depth | over 2 m estimated 100 yr flood depth | River Network and Water Feature |
- The flooded areas have been generated using a generalised technique and should not, by themselves, be used to infer that specific areas are or are not at risk of inundation. Flood risk at any specific location may be influenced by local factors - not least flood defences - that have not been taken into account.
- Local Nature Reserve

## Guide to the Groundwater Vulnerability Map

Derived from Sheet 16 West Cheshire 1:100,000

- |                      |                              |                              |
|----------------------|------------------------------|------------------------------|
| Minor Aquifer High U | Minor Aquifer Low            | Minor Aquifer Intermediate 2 |
| Minor Aquifer High 1 | Major Aquifer High U         | Major Aquifer Low            |
| Major Aquifer High 3 | Major Aquifer High 1         | Major Aquifer Intermediate 2 |
| Water                | Minor Aquifer Intermediate 1 | Minor Aquifer High 3         |
| Drift Deposit        |                              |                              |

## Guide to the Geology Map

- |                                                                |                                                                                |                                                                               |
|----------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Oxford Clay and Kellaways Beds                                 | Permian and Triassic sandstones, undifferentiated, including Bunter and Keuper | Triassic mudstones (including Keuper Marl, Dolomitic and Rhaetic)             |
| Ludlow                                                         | Namurian (Millstone Grit Series)                                               | Lower Westphalian (mainly Productive Coal Measures)                           |
| Westphalian and Stephanian, undivided, of Barren Red lithology | Upper Westphalian (including Pennine Measures)                                 | Permian mudstones (including Middle and Upper Marls, Eden and St Bees shales) |
| Permian basal breccias, sandstones and mudstones               | Water / Unclassified Geology                                                   |                                                                               |

## Guide to the River Quality Map

- |                    |                          |                 |
|--------------------|--------------------------|-----------------|
| River Quality E    | River Quality C          | Canal Quality D |
| River Quality D    | River Quality F          | Canal Quality E |
| Unclassified River | Unclassified Tidal River | Sea             |



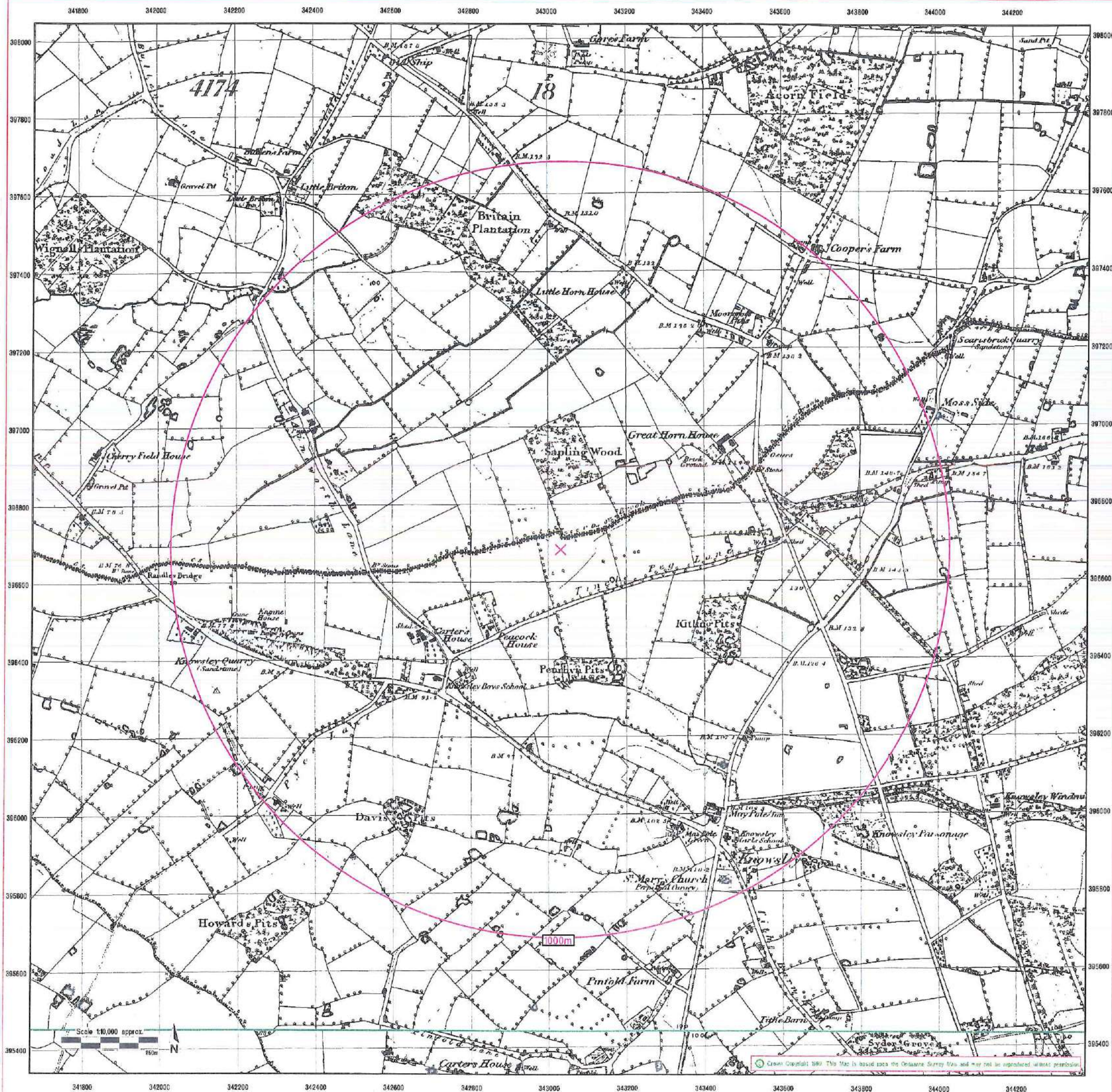
British Geological Survey



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Environmental Site Sensitivity Data

## CLIENT DETAILS

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Customer Ref: Robert Tinsley  
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## SITE DETAILS

Grid Reference 343032 396683

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Penrhyn Road  
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Merseyside L34 9HY

## Historical Map Legend

|                             |               |                          |                      |
|-----------------------------|---------------|--------------------------|----------------------|
| Quarry                      | Shingle       | Railway over Road        | Road over Railway    |
| Gravel Pit                  | Sand Pit      | Level Crossing           | Railway over River   |
| Other Pits                  |               | Road over River or Canal | Road over Stream     |
| Mixed Wood                  | Rough Pasture | Road over Stream         |                      |
| Marsh                       |               | Sunken Road              | Raised Road          |
|                             |               | Sketched Contour         | Instrumental Contour |
| Arrow denotes flow of water |               |                          |                      |

## LANCASHIRE AND FURNESS county

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1894 the 1:25,000 scale was adopted for mapping urban areas; these maps were used to update the 1:10,000 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1930, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

In the late 1940's, a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1974, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

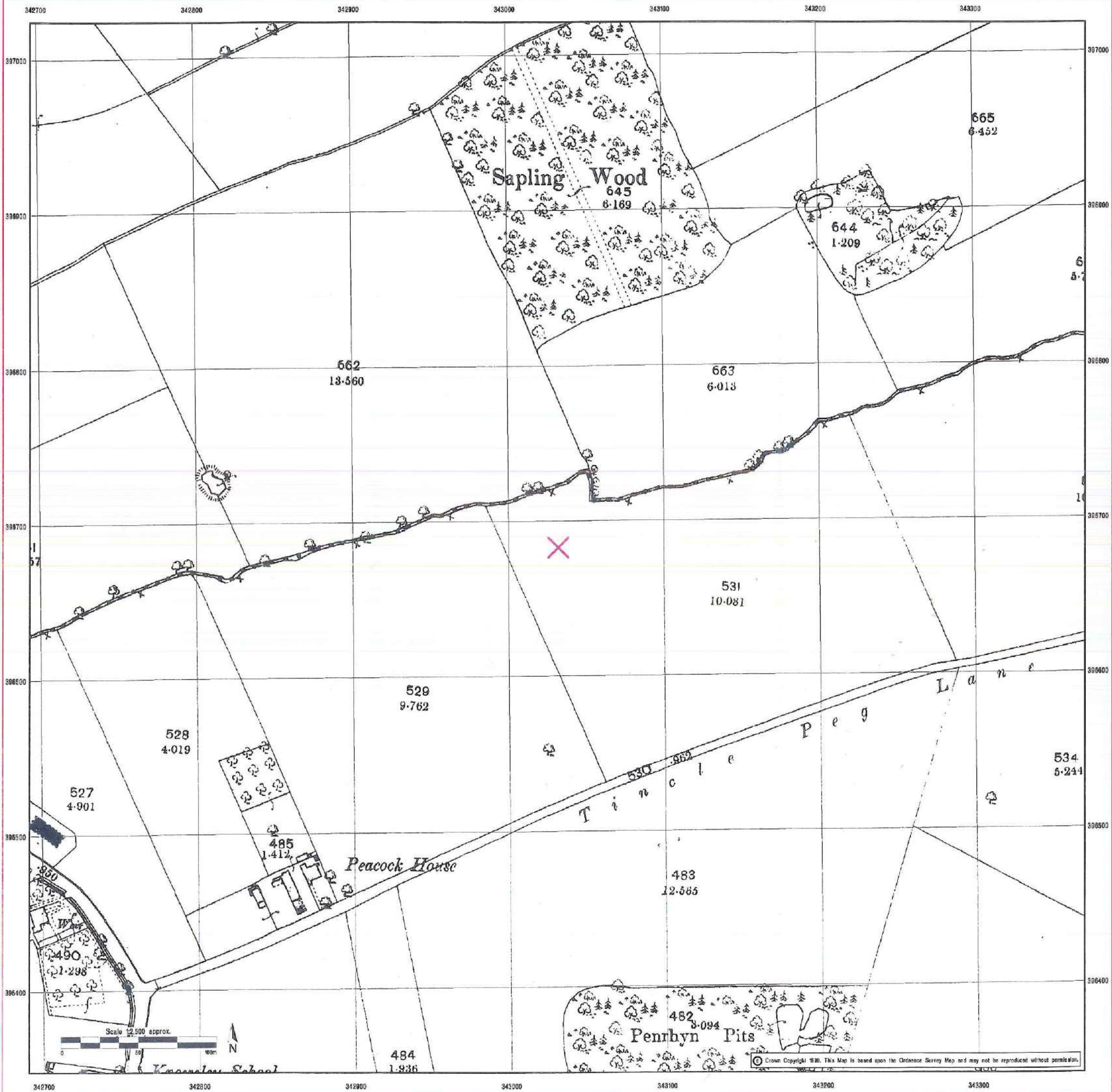
1850

1850

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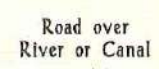
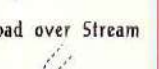
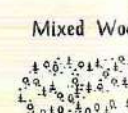
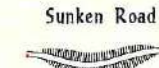
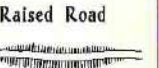
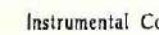
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 WIGAN  
 WN3 4AL

## SITE DETAILS

Grid Reference 343032 396683

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 Knowsley Business Park  
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 Merseyside L34 9HY

## Historical Map Legend

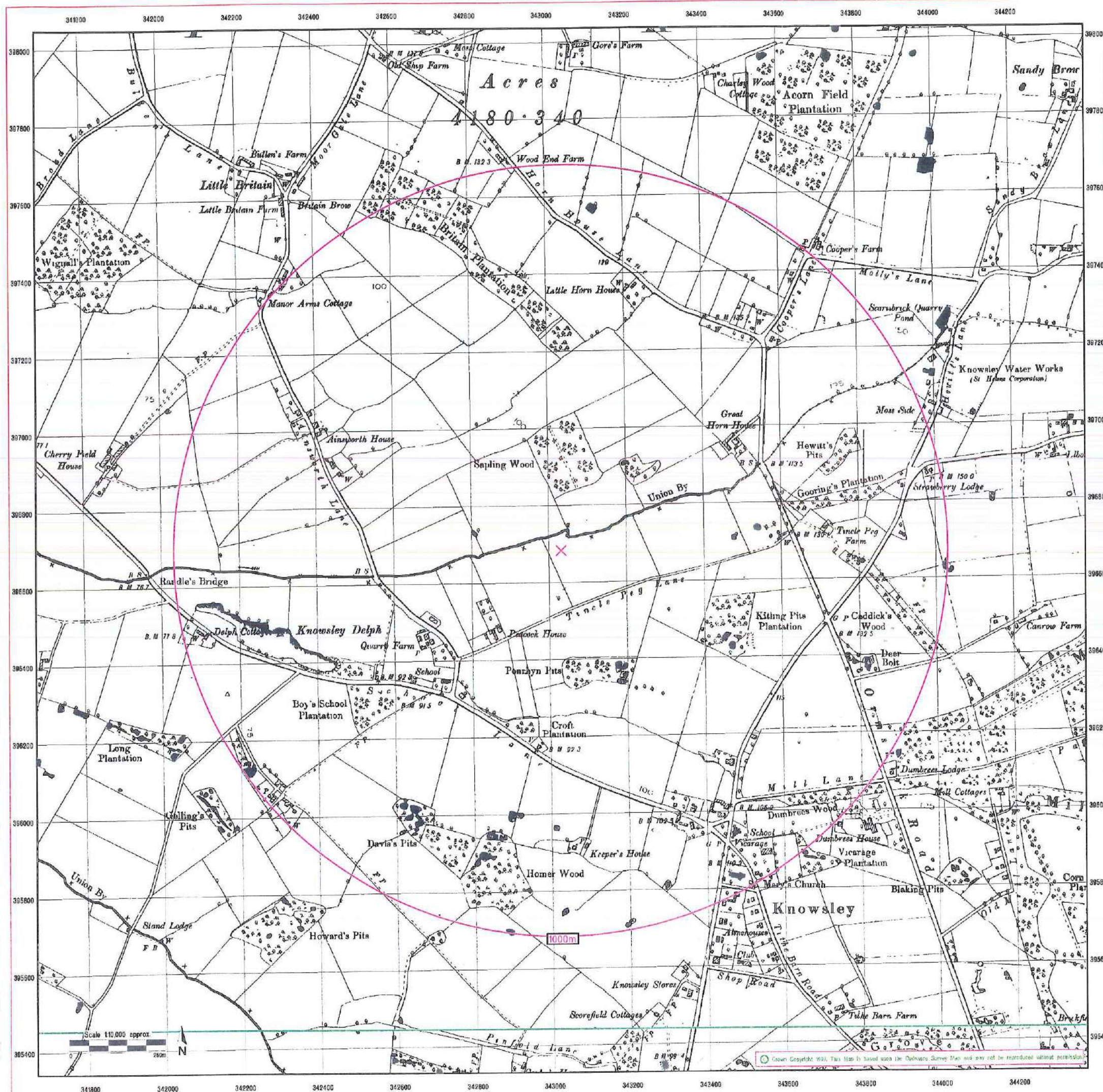
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Arrow denotes flow of water

## Lancashire And Furness

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Environmental Site Sensitivity Data

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AIG Consultants Limited  
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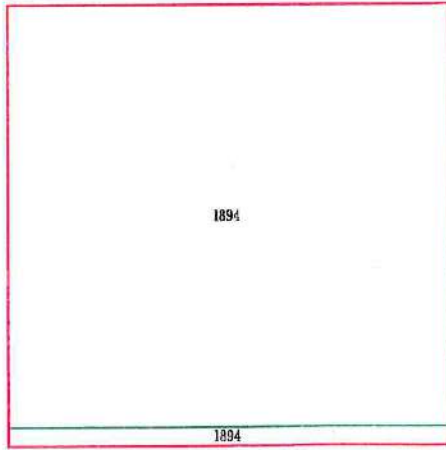
## Historical Map Legend

|                             |               |                          |                      |
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## LANCASHIRE AND FURNESS county

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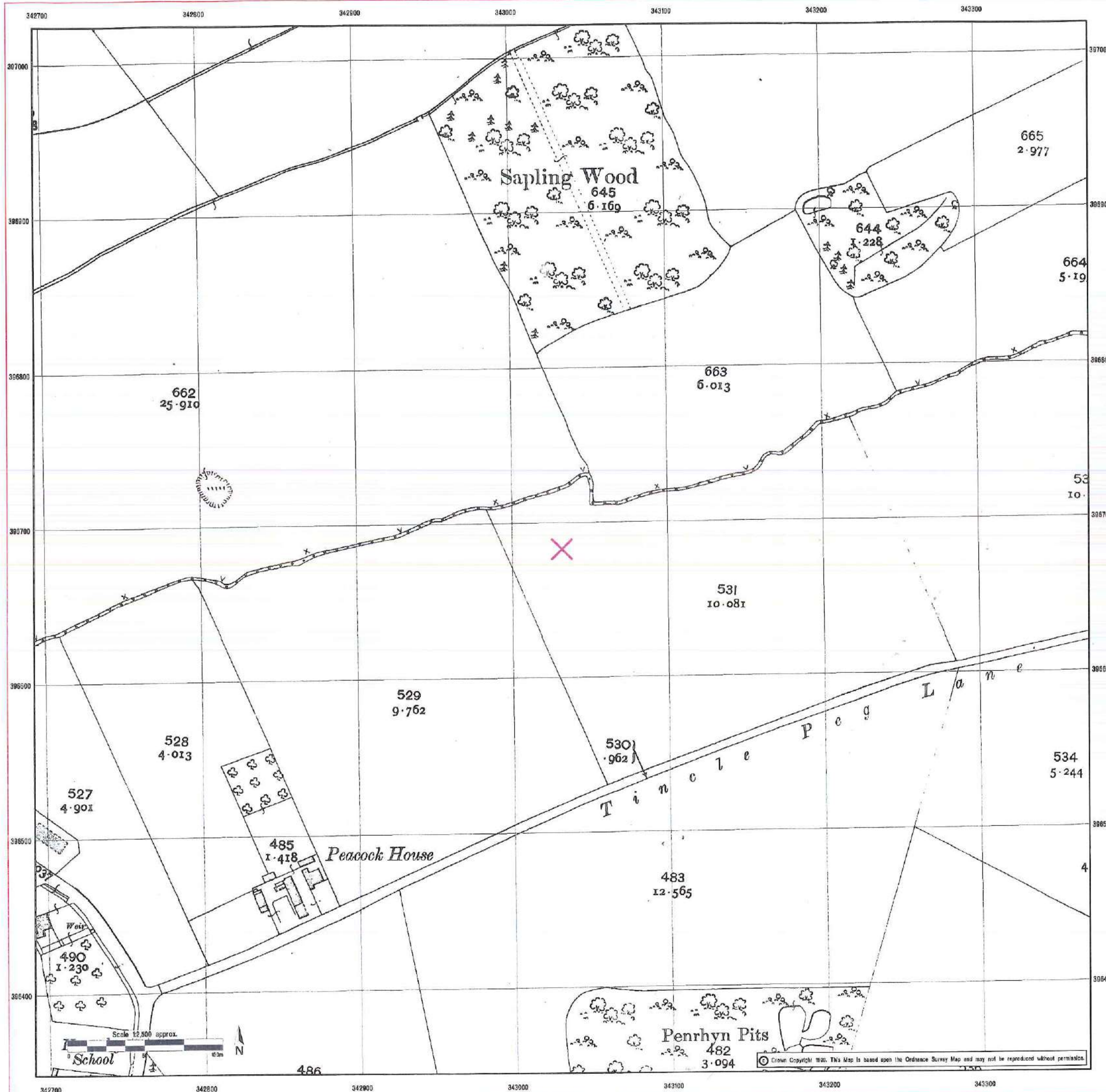
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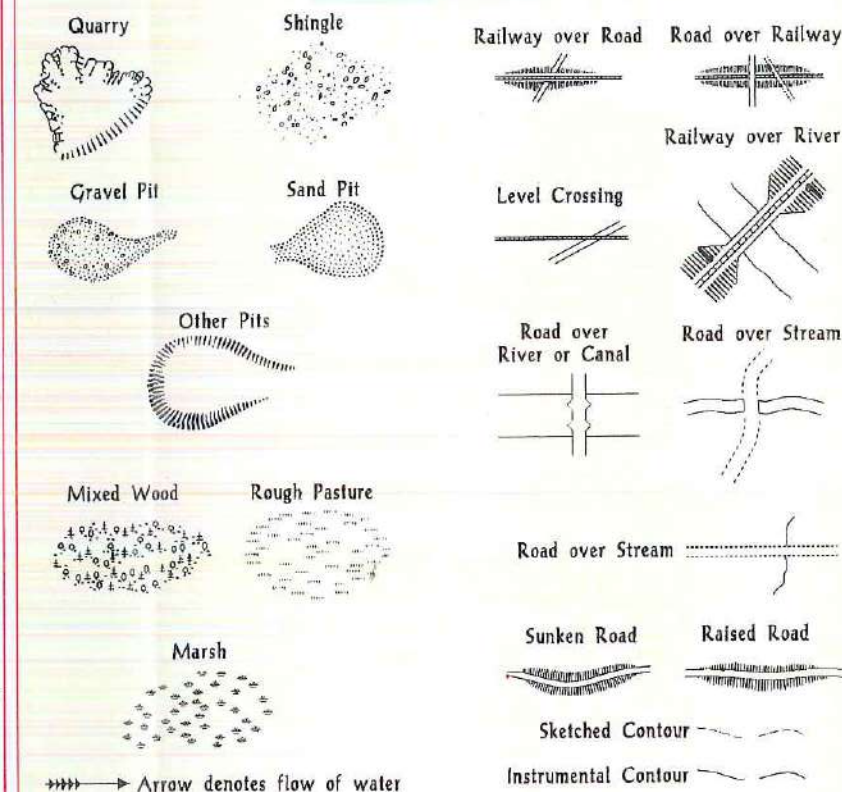
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PIER HOUSE WALLGATE  
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WN3 4AL

## SITE DETAILS

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Penrhyn Road  
Knowsley Business Park  
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## Historical Map Legend



## Lancashire And Furness

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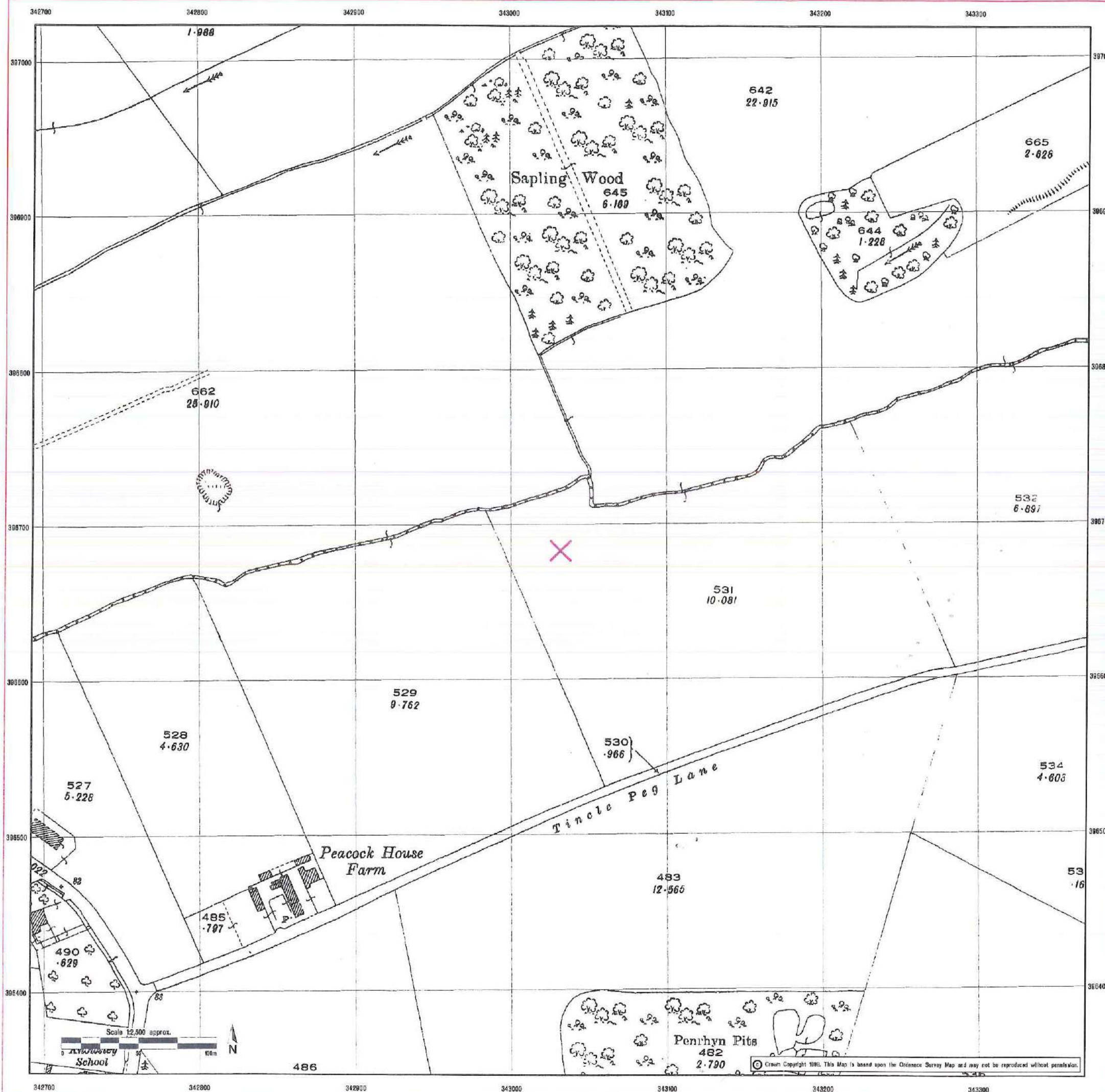
1908

**Ordnance Survey**  
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7 Abbey Court, Eagle Way, Sowton  
Exeter EX2 7HY  
Telephone 01392 441729 Fax 01392 441708





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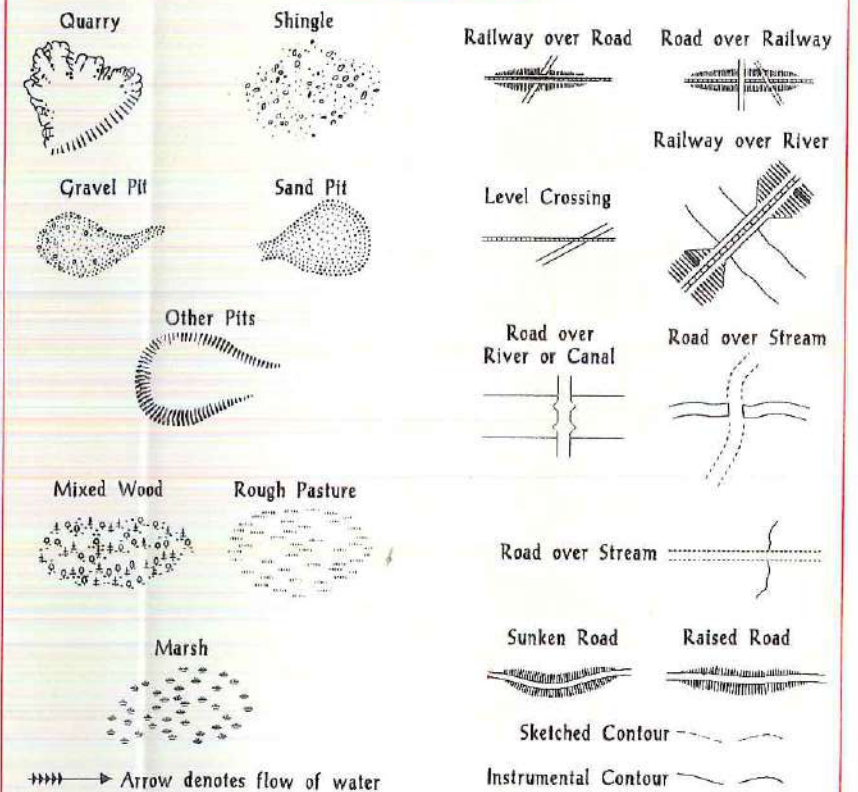
Customer Ref: Robert Tinsley  
AIG Consultants Limited  
PIER HOUSE WALLGATE  
WIGAN  
WN3 4AL

**SITE DETAILS**

Grid Reference 343032 396683

Contract Chemicals Ltd  
Penrhyn Road  
Knowsley Business Park  
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Merseyside L34 9HY

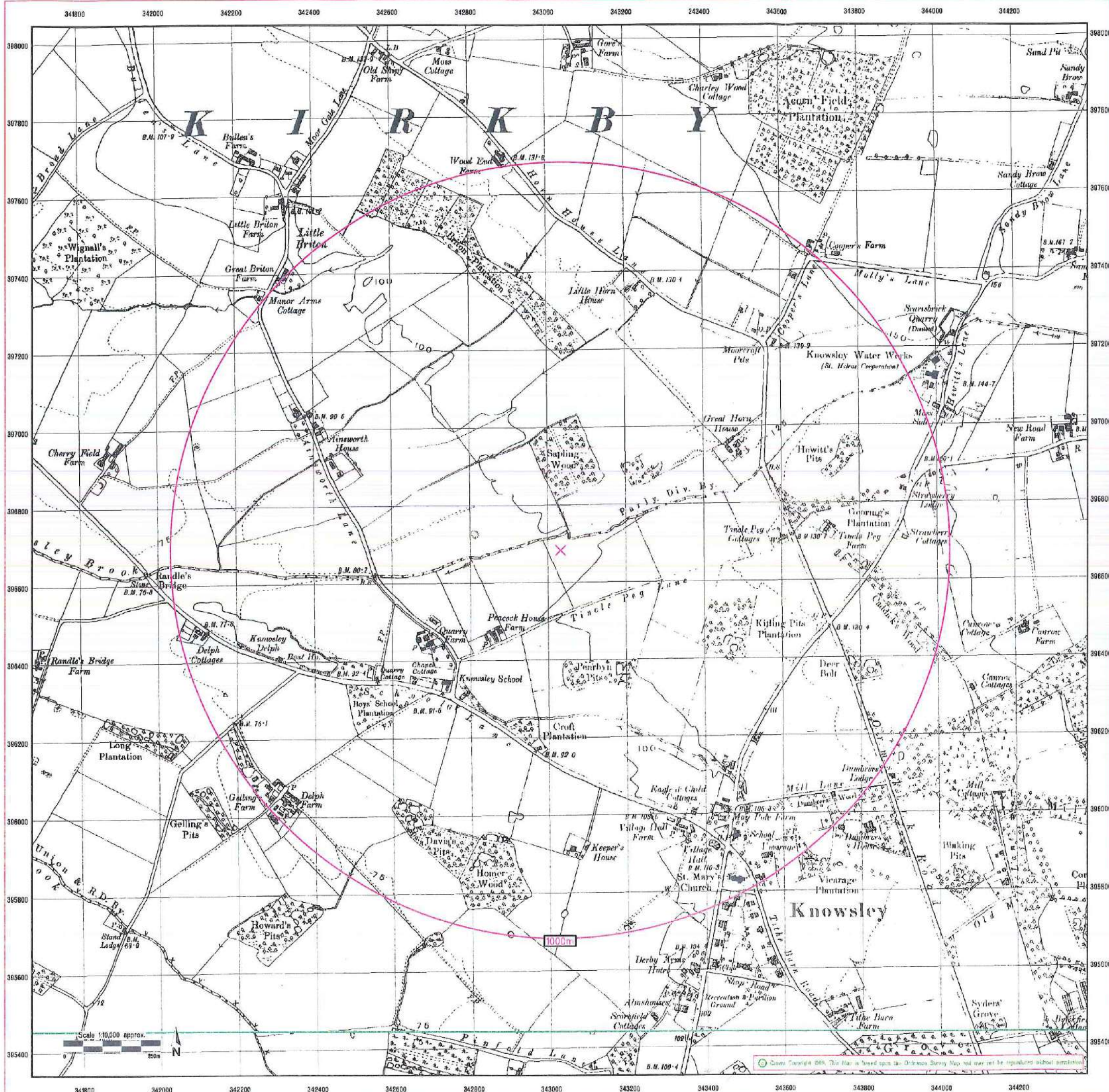
**Historical Map Legend**



**Lancashire And Furness**

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1927



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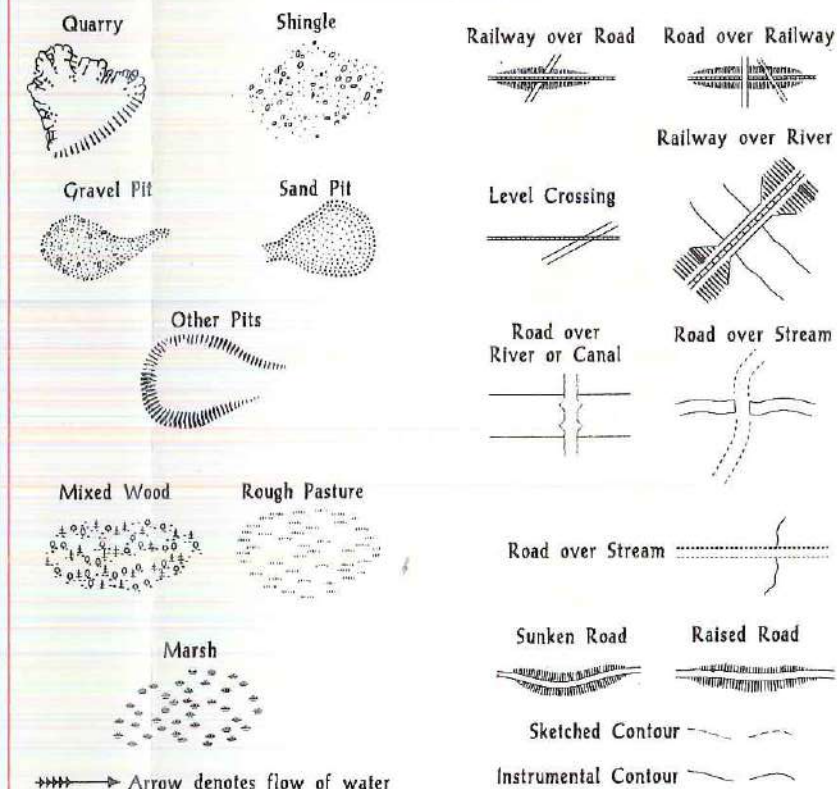
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AIG Consultants Limited  
PIER HOUSE WALLGATE  
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WN3 4AL

**SITE DETAILS**

Grid Reference 343032 396683

Contract Chemicals Ltd  
Penrhyn Road  
Knowsley Business Park  
PRESCOT  
Merseyside L34 9HY

**Historical Map Legend**



**LANCASHIRE AND FURNESS county**

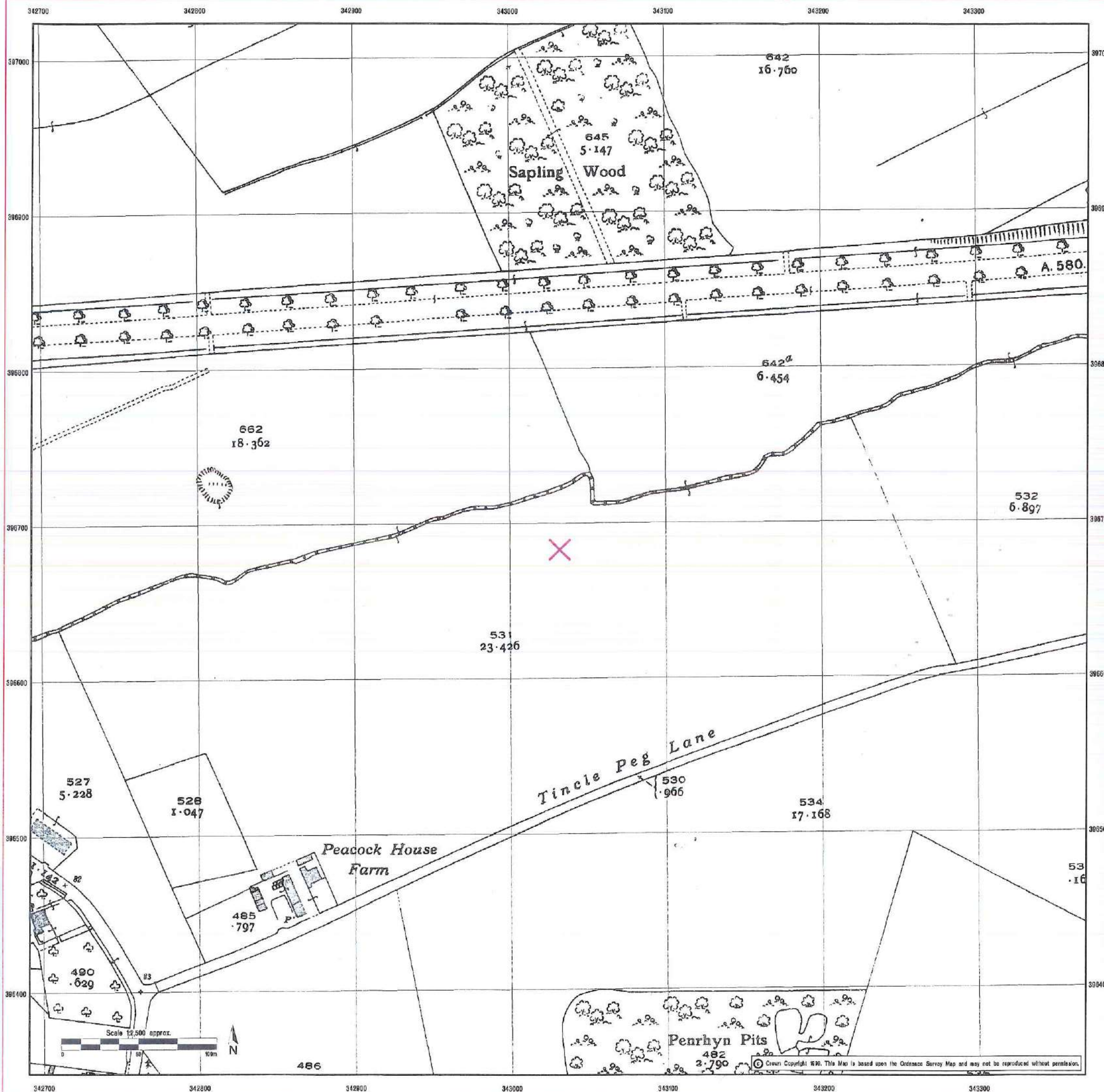
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1928

1928

Date(s) of Publication



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Customer Ref: Robert Tinsley  
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**SITE DETAILS** Grid Reference 343032 396683

Contract Chemicals Ltd  
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 Knowsley Business Park  
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 Merseyside L34 9HY

**Historical Map Legend**

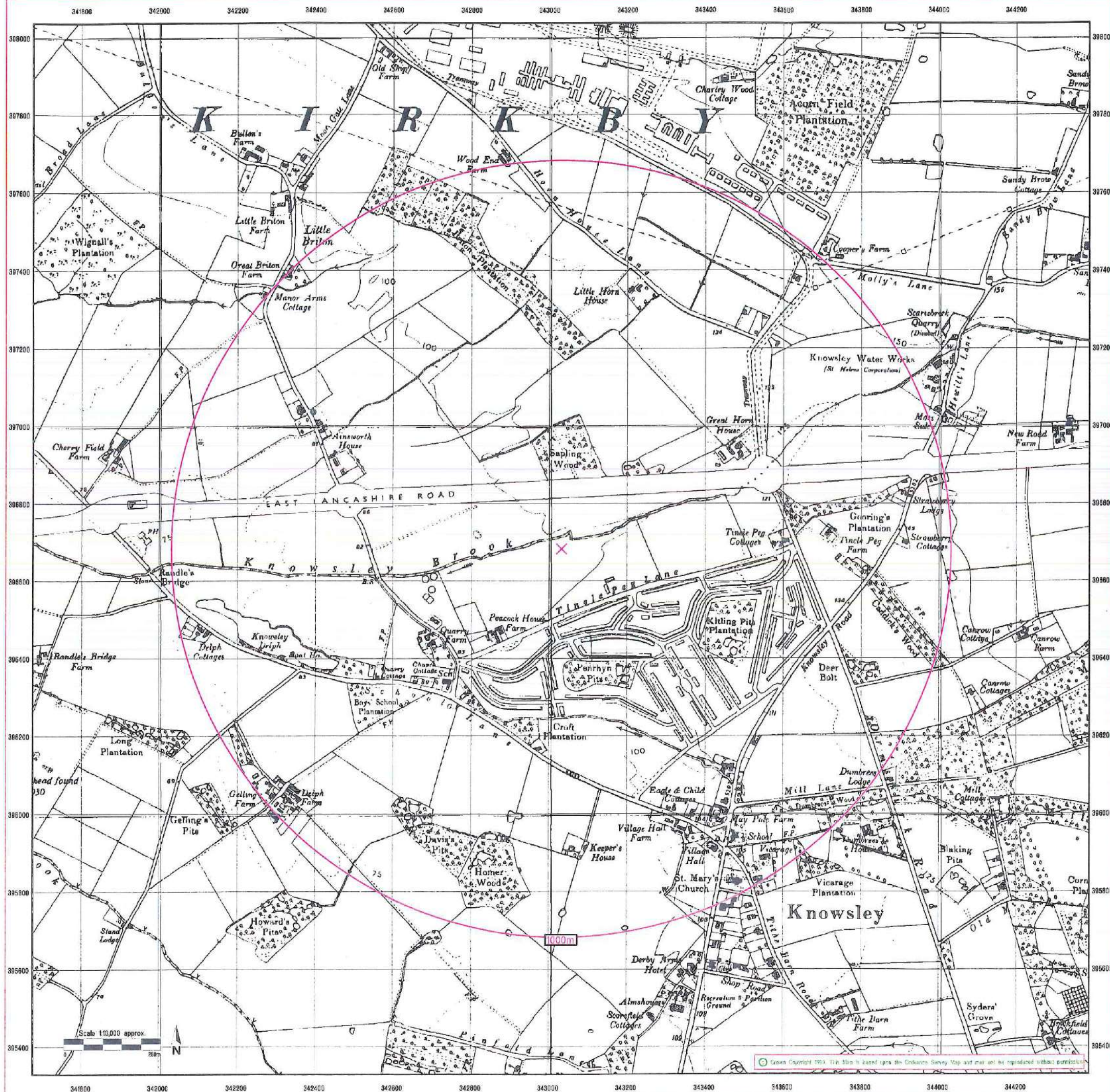
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|------------|---------------|--------------------------|--------------------|
| Quarry     | Shingle       | Railway over Road        | Road over Railway  |
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|            |               | Instrumental Contour     |                    |

→ Arrow denotes flow of water

**Lancashire And Furness**

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1937



# EnviroCheck

Environmental Site Sensitivity Data

## CLIENT DETAILS

Order No. EH23807-1

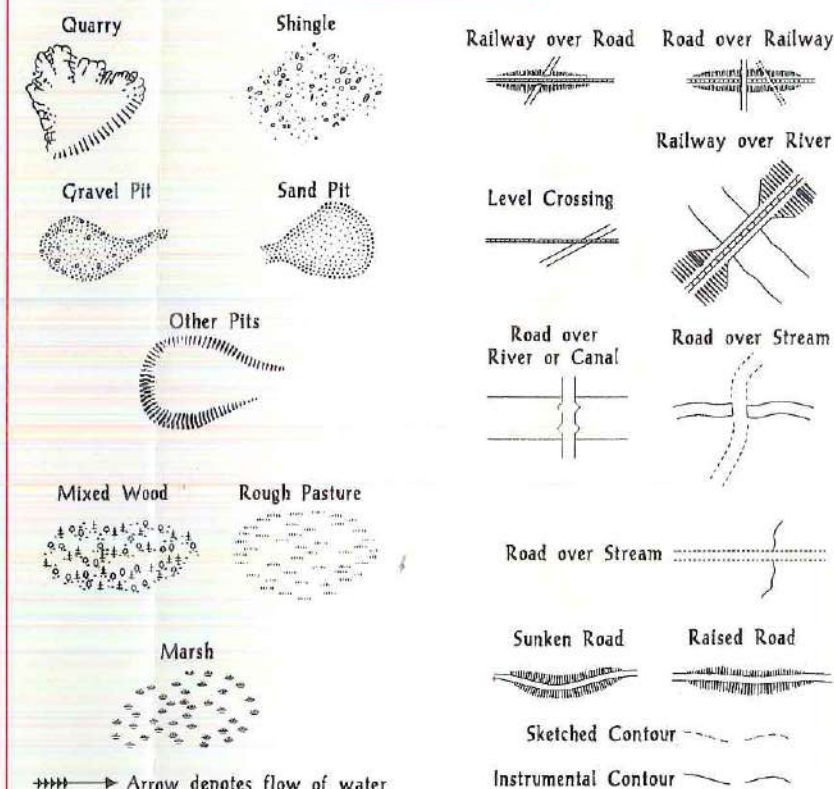
Customer Ref: Robert Tinsley  
AIG Consultants Limited  
PIER HOUSE WALLGATE  
WIGAN  
WN3 4AL

## SITE DETAILS

Grid Reference 343032 396683

Contract Chemicals Ltd  
Penrhyn Road  
Knowsley Business Park  
PRESCOT  
Merseyside L34 9HY

## Historical Map Legend



## Ordnance Survey Plan

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1954 the 1:25,000 scale was adopted for mapping urban areas; these maps were used to update the 1:50,000 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1958, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

In the late 1940's, a Provisional Edition was produced, which updated the 1:25,000 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overlaid with the National Grid. In 1970, the first 1:50,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

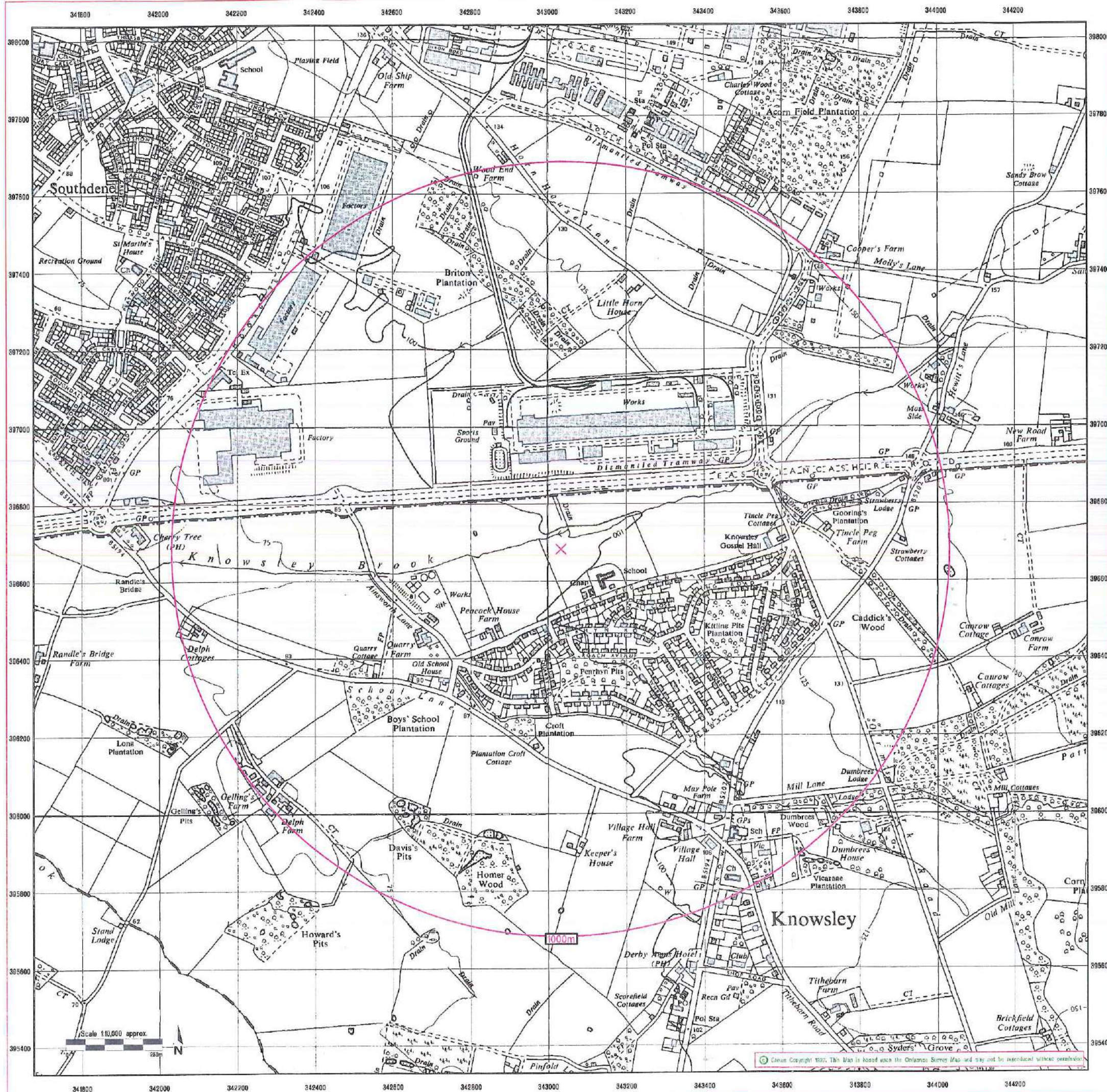
1956

Date(s) of Publication

Ordnance Survey  
Value Added Reseller



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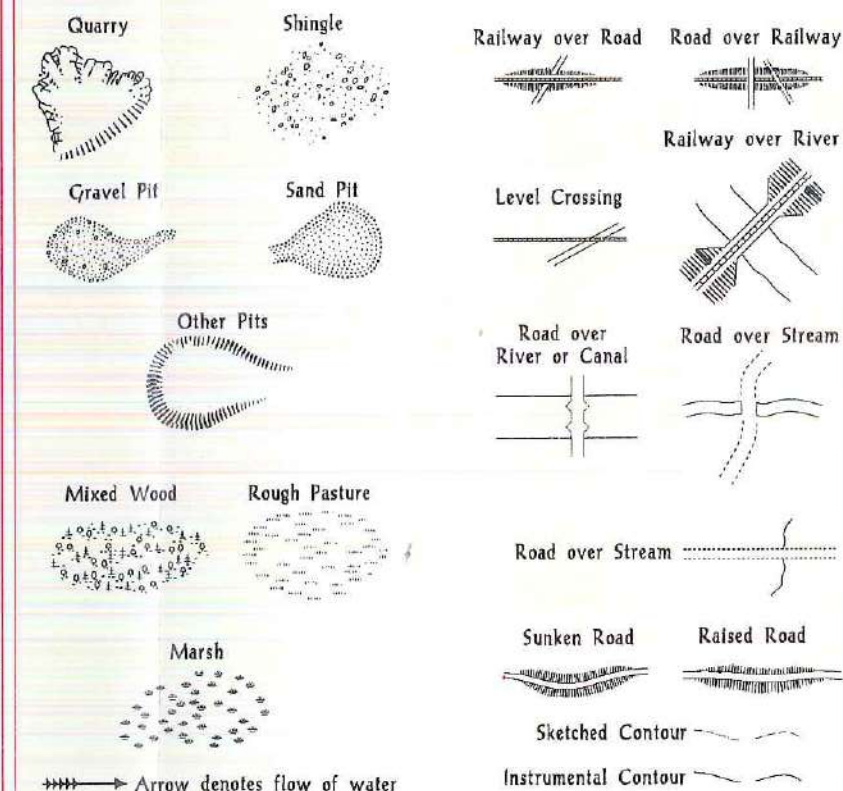
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1966

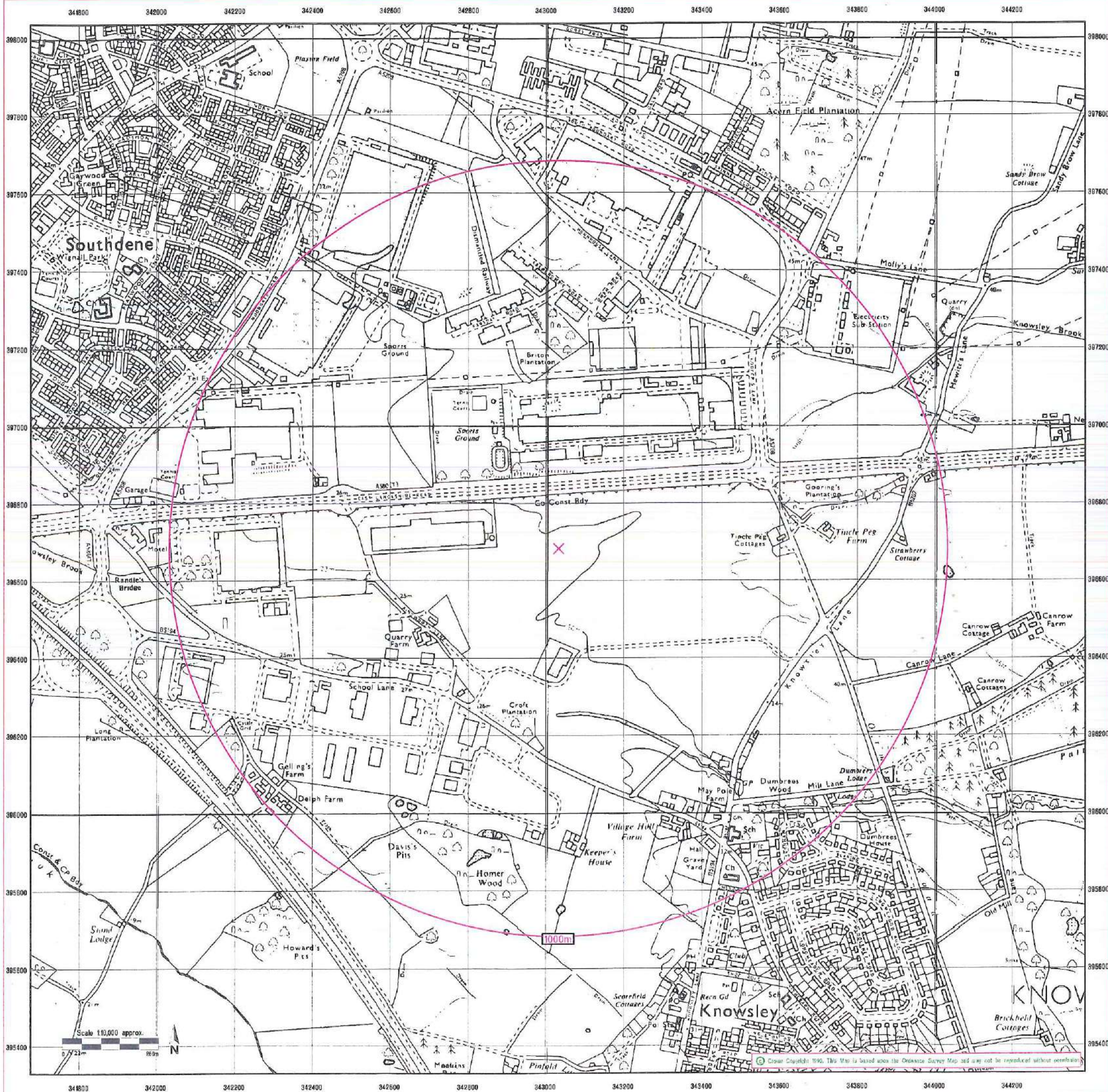
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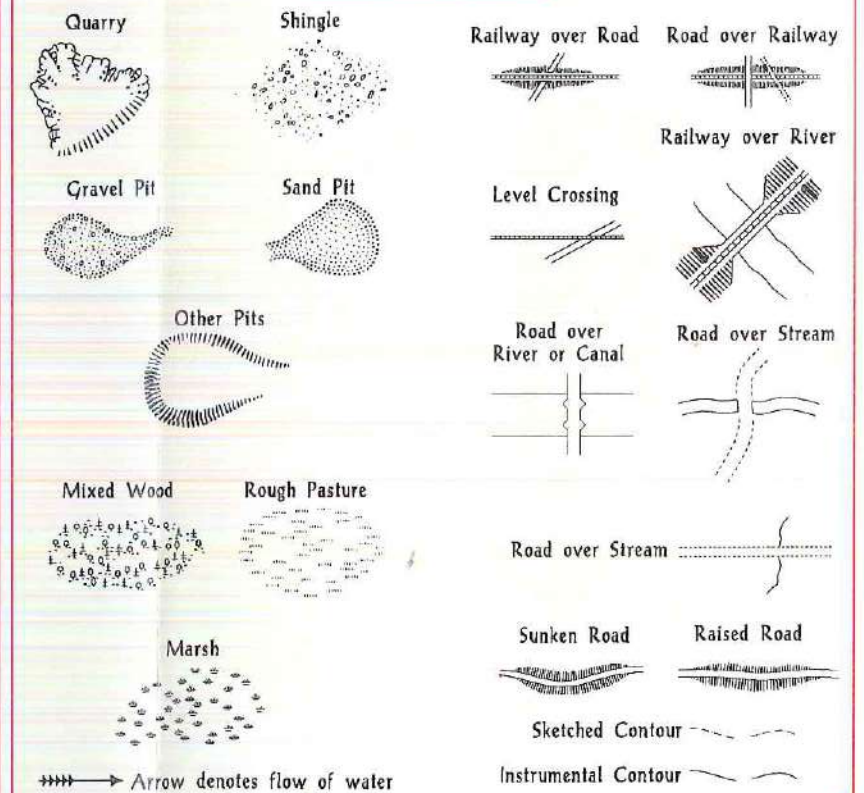
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**Historical Map Legend**



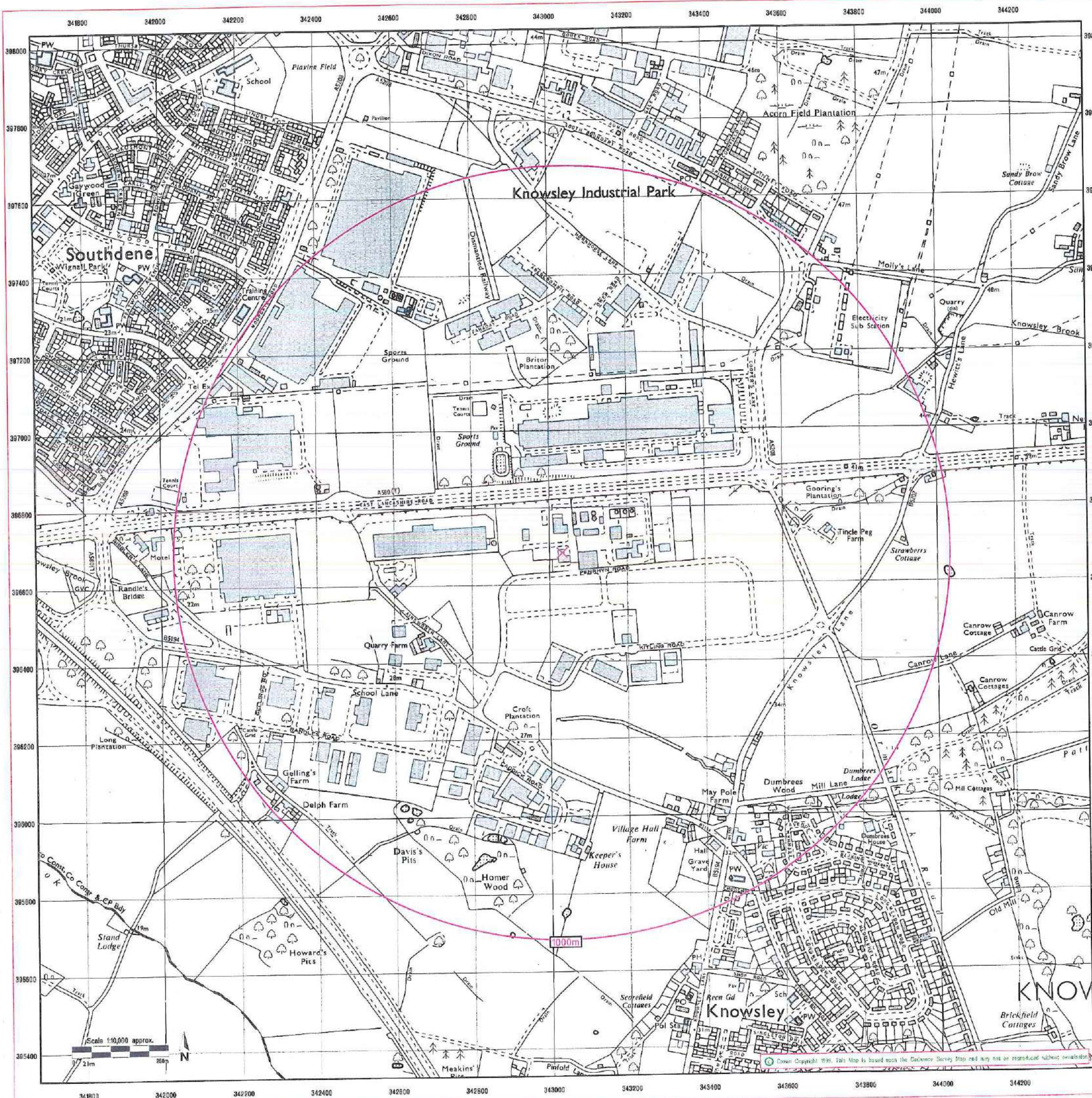
**Ordnance Survey Plan**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1853 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,000 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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1970

Date(s) of Publication



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Merseyside L34 9HY

**Historical Map Legend**

|                             |            |                          |                      |
|-----------------------------|------------|--------------------------|----------------------|
| Quarry                      | Shingle    | Railway over Road        | Road over Railway    |
| Gravel Pit                  | Sand Pit   | Level Crossing           | Railway over River   |
| Other Pits                  | Mixed Wood | Road over River or Canal | Road over Stream     |
| Rough Pasture               | Marsh      | Sunken Road              | Raised Road          |
| Arrow denotes flow of water |            | Sketched Contour         | Instrumental Contour |

**Ordnance Survey Plan**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:25,000 scale was adopted for mapping urban areas; these maps were used to update the 1:62,500 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:62,500 mapping from a number of sources. The maps appear unaltered - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:62,500 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

1990

Date(s) of Publication

# PORTWAY

## **ADDITIONAL INFORMATION PHASE 1 VALIDATION REPORT DETAILED SAMPLING AND REMEDIATION**

**FOR WORKS AT**

**FORMER CONTRACT CHEMICALS  
KNOWSLEY, LIVERPOOL**

**CLIENT: KNOWSLEY REDEVELOPMENTS  
LTD**

**Date: 15/08/2025**

**Ref: PTW25025 CR1**

**Portway Remediation**

Holly Farm  
Whitepits Lane  
Portway  
Birmingham  
B48 7HP

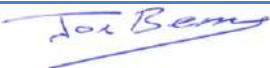
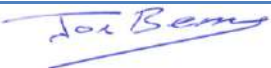
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 Client: Knowsley Redevelopments Ltd  
  
 Project Ref: **PTW25025 CR1**  
  
 Title: **Site Verification Report**  
  
 Status: **Draft**  
  
 Date: **21<sup>th</sup> August 2025**

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|           | Produced By                                                                         | Reviewed By                                                                         | Approved By                                                                            |
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### Document Revision Record

| Issue Version | Date       | Revision Details                                           |
|---------------|------------|------------------------------------------------------------|
| A1            | 18/08/2025 | Fully updated with new test data added to the older report |
|               |            |                                                            |

Portway has prepared this document under instruction of the above-named client for their sole specific use. Any third parties who use the information contained herein do so at their own risk.

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## 1.0 EXECUTIVE SUMMARY

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Portway was appointed by Knowsley Redevelopments Ltd to apply for the surrender of the Environment Agency issued permit at the former Contract Chemicals, Penrhyn Road, Knowsley in 2021. Portway was appointed again to assist with the discharge of planning conditions and verification reporting with remediation to suspected hotspots in 2025 following the site investigation and reporting by G and J Geoenvironmental Consultants Ltd for Knowsley Redevelopments Ltd who also recently produced the following documents.

Remediation Strategy and Verification Plan April 2025

DQRA March 2025

### Summary Principle Objectives

Listed below is a brief outline of the works completed in 2021:

- Formal decommissioning of all tanks, vessels and pipework (water flush with testing).
- Removal of all chemicals/wastes.
- Recovery of office files, reports and paperwork to assist with the surrender application.
- Demolition of the structures, buildings and removal of the concrete slab.
- Termination of internal services, (water, gas, power and drainage).

Listed below is a brief outline of the remedial works/actions carried out for this project following the production of the G and J site investigation and RMS;

- Monitoring of BH's and validation testing of soil on a 10m grid in the central section and 20m grid on the outer section of the site with groundwater sampling and testing.
- Verification Report for works.

This report should be read in conjunction with the reports and documents listed within the surrender application. Due to the large number of reports and incidents a complete list cannot be issued due to the large size as over 112 large binder files have been saved from the offices.

To reflect the good practice used on site, certain documents have been scanned in full or limited sections have been scanned as the general housekeeping recorded ALL events both major and minor. An example of a major event would be a spillage or a system failure within the chemical plant; a minor event could be someone on site using a mobile phone.

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## 2.0 INTRODUCTION

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### 2.1 Appointment

Portway was appointed by Knowsley Redevelopments Ltd to carry out the surrender application at the former Contract Chemicals Ltd, Penrhyn Road, Knowsley in 2021 and again in 2025 to undertake verification sampling and remediation.

### 2.2 Roles and Responsibilities

The project team responsible for the delivery of the remedial works is described in Table 1, below.

**Table 1 Summary of Roles**

| <i>Team Member</i>          | <i>Role</i>              |
|-----------------------------|--------------------------|
| GMI                         | Principle Contractor     |
| Portway Remediation Ltd     | Remediation Contractor   |
| G and J                     | Environmental Consultant |
| Knowsley Redevelopments Ltd | Client                   |

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## 3.0 SITE SETTINGS

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### 3.1 Site Details

|                            |                                                       |
|----------------------------|-------------------------------------------------------|
| Site Address               | Contract Chemicals, Penrhyn Road,<br>Prescot, L34 9HY |
| National Grid<br>Reference | SJ 43032 96683                                        |

### 3.2 Current Site Use

#### Site Description 2025

The site comprised of the former Chemical Works on a rectangular shaped parcel of land. The site is accessed from the south, off Penrhyn Road. The area had an impermeable surface due to the concrete covering, with all the former buildings demolished resulting in 2 large stockpiles of crushed material being placed within the site; a limited amount of vegetation was present around the periphery of the site. The surrounding area is heavy industrial.

The level across the site was generally flat.

#### Contaminative uses/structures

As detailed briefly above, and with reference to reporting undertaken by others previously, contaminated uses and associated structures present on site comprise:

Former chemical works with upper tier COMAH status (surrendered) and storage of hazardous chemicals and by products as permitted by the Environment Agency (surrendered).

#### Surrounding Area

The surrounding land uses are summarised below:

| Direction | Land Use       |
|-----------|----------------|
| North     | Main Road A580 |
| East      | Commercial     |
| South     | Commercial     |
| West      | Commercial     |

### 3.3 Redevelopment Plans

The site has been zoned for the use of commercial redevelopment.

### 3.4 Site Zoning

The site has only been subject to the installation of 6 rotary boreholes by G and J with additional sampling across the site as recorded within Phase 2 G and J investigation to obtain soil and wate samples from across the site to provide an overview of the general condition. In addition to this a grid of soil samples were taken from across the site as denoted within the G and J Remediation Strategy and Verification Report, dated April 2025. Samples were collected from a depth of 3m to near surface within the sandy matrix at depth and within the upper clay horizon. The sample location plan and results can be found within the appendix.

### **3.5 Geology**

Assessment of the geology can be found in Geo-Environmental Ground Investigation by AIG, dated 2001.

In summary the site is underlain by Shirdley Hill Sand overlying glacial deposits and Triassic Sandstone strata (Sherwood Sandstone).

The reported trial holes and boreholes noted that the upper 2m of the site strata comprised of a reworked clay.

### **3.6 Hydrogeology**

Assessment of the Hydrogeology can be found in DQRA by G and J, dated March 2025.

In summary the site and surrounding land is noted to be underlain by Devensian Till in the north and Shirdley Hill Sand Formation in the south and the bedrock is sandstone of the Chester Formation. A surficial layer of made ground covers the upper 2m comprising of reworked clay.

Further details can be found within DQRA produced by G and J Geoenvironmental Consultants Ref GJ224-03-R002-DQRA-V1 dated March 2025.

## 4.0 DECOMMISSIONING

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The decommissioning that has been carried out on site is the full cleaning, purging and flushing of all chemical vessels and pipe work. Following this final decommissioning procedure, the water used to clean down each section was sampled and tested to prove that all systems had been correctly deep cleaned. Then the demolition was undertaken followed by the formal surrendering of site Permits issued by the Environment Agency and other Regulators was completed in 2021.

### 4.1 Statement – Site Operations and Closure

Contact Chemicals had in place several layers of safeguards to prevent uncontrolled releases of chemicals due to the upper tier COMAH status. The management, recording and actions taken to address any uncontrolled leak, reaction or spillage have been documented ranging from minor events recorded within the annual Abnormal Occurrences and significant events being formally reported and investigated in conjunction with the regulators (HSE, EA and LA).

An example of an Abnormal Occurrence is the use of a mobile phone on site by contractor who was informed that the use of mobile phones in certain areas is prohibited. An example of a significant event which was subject to a detailed investigation was the 6300 Incident, Distillation of Benzyl Bromoacetate on 5<sup>th</sup> Jan 2002 where the “pressurisation blew the bursting disc”.

After an event which resulted in the release or spillage of a chemical; reporting and actions to clean, contain, react or disburse the chemical are quickly undertaken to prevent an escalation of the problem. To prevent accidents/spills/leaks/uncontrolled reactions strict operation methodology is followed. All chemicals and chemical by-products are held within a warehouse or open bunded storage with a sealed drainage system with interceptor and monitor linked to the Statutory Water Undertaker.

Prior to the demolition works commencing 5 number boreholes were installed and samples were obtained from the upper and deeper soils also 4 ground water samples were obtained. In addition, 11 number of surface soil samples were obtained and tested after removing the concrete slab, this was reported by Portway in 2021 within report PTW210 CR1 Site Condition Report.

### 4.2 Chemical Removal

The site decommissioning has continued with the appointment of Avanti to remove and dispose of the redundant chemicals, by products and wastes. An example of this is shown within the appendix, the chemical list denoting that all materials have been removed in 2021.

Soil/water sampling and results from 2021 show that the site was not contaminated and that the former chemical works policies, procedures, operating practices, reporting, safeguards and mitigation methods used after an event have worked effectively. While a more detailed ground investigation may be required by the Planning Authority. It is likely that no remediation will be required after the demolition phase based on the current samples obtained.

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## 5.0 TESTING UNDERTAKEN ON SITE

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### 5.1 Program

The decommissioning works carried out from January 2021 and this will be completed by October 2021. Site redevelopment will commence in 2025 until 2026.

### 5.2 Enabling Works

#### 5.2.1 Pre Start Works

Discussions were held with the Environmental Agency regarding the surrender process for this site in 2021.

Following these discussions with the Environment Agency and considering the volumes of chemical/waste on site, the removal offsite for disposal was deemed a requirement before surrendering the COMAH status.

Also, the site was subject to being fully decommissioned/flushed and the cleaning waters used were then sampled and analysed to prove that the chemical works equipment could be safely removed.

All live services in and out of the site were then terminated to allow the demolition phase.

#### 5.2.2 Demolition and Hard Standing Removal

After completing the decommissioning phase the physical demolition works commenced to remove the relic metal items for recycling, destruction of the buildings and crushing of the concrete slab covering the surface.

#### 5.2.3 Ground Proving

Ground proving was deemed necessary on this site due to the foundations of the former structures, during this operation no odours or discolouration was noted within the ground conditions. As further supported by the soil test results.

### 5.3 Other Site Works

#### 5.3.1 Removal of Wastes and Chemicals

Due to the history of the site and use as a chemical works,

The storage area holding chemical products and by products was fenced off with signage erected to restrict access to relevant site operatives only. Before commencement of the intrusive demolition works a quarantine and treatment storage areas were constructed also using the above methodology in accordance with EA guidelines. These works were undertaken in 2021.

### 5.3.2 Pre Excavation Works

No excavation works were required in this instance.

### 5.3.3 Ground Waters dated 2021

Hand bailed samples obtained from 4 of the 5 wells as one well did not yield any water. Sample analysis and did not contain significant elevated levels of chemicals below is a summary table of the results of interest.

Below is a summary of the only substances detected within the groundwater samples obtained. Contained within Appendix C is a complete set of results showing the limit of detection.

**Analytical Report Number: 21-72714**

**Project / Site name: Contract Chemicals**

|                                                  |               |                               |                                 |               |
|--------------------------------------------------|---------------|-------------------------------|---------------------------------|---------------|
| <b>Lab Sample Number</b>                         | 1858591       | 1858592                       | 1858593                         | 1858594       |
| <b>Sample Reference</b>                          | BH4           | BH5                           | BH1                             | BH3           |
| <b>Sample Number</b>                             | None Supplied | None Supplied                 | None Supplied                   | None Supplied |
| <b>Depth (m)</b>                                 | 2.00          | 2.00                          | 2.00                            | 2.00          |
| <b>Date Sampled</b>                              | 27/04/2021    | 27/04/2021                    | 29/04/2021                      | 29/04/2021    |
| <b>Time Taken</b>                                | None Supplied | None Supplied                 | None Supplied                   | None Supplied |
| <b>Analytical Parameter<br/>(Water Analysis)</b> | <b>Units</b>  | <b>Limit of<br/>detection</b> | <b>Accreditation<br/>Status</b> |               |

**General Inorganics**

|    |             |     |              |     |     |     |     |
|----|-------------|-----|--------------|-----|-----|-----|-----|
| pH | pH<br>Units | N/A | ISO<br>17025 | 7.0 | 6.6 | 6.8 | 7.2 |
|----|-------------|-----|--------------|-----|-----|-----|-----|

**Heavy Metals / Metalloids**

|                      |      |      |              |        |        |        |        |
|----------------------|------|------|--------------|--------|--------|--------|--------|
| Boron (dissolved)    | µg/l | 10   | ISO<br>17025 | 66     | 97     | 58     | 57     |
| Arsenic (dissolved)  | µg/l | 0.15 | ISO<br>17025 | 0.28   | 0.91   | 2.10   | 1.81   |
| Cadmium (dissolved)  | µg/l | 0.02 | ISO<br>17025 | 0.08   | 0.13   | 0.04   | 0.13   |
| Chromium (dissolved) | µg/l | 0.2  | ISO<br>17025 | 3.3    | 1.7    | 9.2    | 3.4    |
| Copper (dissolved)   | µg/l | 0.5  | ISO<br>17025 | 4.0    | 4.1    | 4.6    | 10     |
| Lead (dissolved)     | µg/l | 0.2  | ISO<br>17025 | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Mercury (dissolved)  | µg/l | 0.05 | ISO<br>17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nickel (dissolved)   | µg/l | 0.5  | ISO<br>17025 | 11     | 38     | 5.9    | 14     |
| Selenium (dissolved) | µg/l | 0.6  | ISO<br>17025 | 4.8    | 6.9    | 2.7    | 3.0    |
| Zinc (dissolved)     | µg/l | 0.5  | ISO<br>17025 | 13     | 22     | 6.6    | 43     |

### 5.3.4 Soil Samples 2021

The soil samples obtained from the 5 window samples and 11 near surface samples can be found within the appendix with a sample location plan. The window sample soils taken from the upper and lower section of the soil matrix were obtained by GRM during the installation process. From the soil window sampling BH2 found 800 ug/kg of 1,2 Dichlorobenzene.

The 11 soil samples taken from the near surface after removing the concrete showing only trace amounts of 1,2 Dichlorobenzene (under 220ug/mg) were found at sample locations PPS1, PPS2 and PPS6, proving that the site has not been significantly impacted from the industrial usage.

Target values for 1,2 Dichlorobenzene; 23 mg/kg in residential gardens being the most conservative, this value increases for industrial and open space with significantly higher target levels. However due to the small amounts detected it is not necessary to use higher values.

All the soil sampling results can be seen within appendix C.

### 5.3.5 Sample Grid Testing August 2025

Following the production and issue of the RMS by G and J samples were taken on a 10m and 20m grid to confirm if Dichlorobenzene contamination was spread across the site or if the contamination was confirmed to certain areas.

During the month of August, a 360 excavator was used to advance the trial holes rapidly and allow samples to be collected within the VOC 30g or 60g brown amber jars. The samples were taken from the top to the bottom of the excavation to obtain representative samples, but with an emphasis on the deeper strata/material.

On occasions malodorous material was discovered between 1.6m and 2.5m below ground level within the made ground in close proximity to relic/live service ducts and near to the borehole G and J RO3.

Impacted material was confirmed to be in excess of the soil, groundwater target value suggested by G and J of 41mg/kg in a number of samples taken within the 10m sampling grid. The sampling is on going at the time of writing as the crushed stockpiles are located within the 10m grid and these stockpiles are required to be moved in order to complete the testing grid process.

It was also observed that the made ground within the trial holes was a suspected reworked clay. This is likely to have aided in preventing significant contamination from entering the deeper strata by acting as a capping layer should any spillage occur when the site was an operational chemical works. With this in mind a proposed soil target values for human health has been issued by G and J at a limit of 2000mg/kg.

The table below is taken from the remediation strategy and verification report produced by G and J Geoenvironmental Consultants Ref G and J Remediation Strategy and Verification Plan dated March 2025.

• **Table 4.1 Soil Remedial Targets and Benchmark Concentrations**

| Substance              | Human Health Targets - Commercial GAC (mg/kg)                                                                                      | Controlled Waters Targets (mg/kg)    |                                 |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------|
|                        |                                                                                                                                    | Remedial Target Derived Using Consim | Maximum Recorded Concentration* |
| 1,2-dichlorobenzene    | 2000                                                                                                                               | <b>41</b>                            | <i>512</i>                      |
| chlorobenzene          | 56                                                                                                                                 | -                                    | <i>0.1</i>                      |
| 1,2,4-trimethylbenzene | 42                                                                                                                                 | -                                    | <i>5.7</i>                      |
| 1,3,5-trimethylbenzene | -                                                                                                                                  | -                                    | <i>1.3</i>                      |
| n-propylbenzene        | 4100                                                                                                                               | -                                    | <i>0.6</i>                      |
| Toluene                | 56000                                                                                                                              | -                                    | <i>0.11</i>                     |
| Ethylbenzene           | 5700                                                                                                                               | -                                    | <i>0.25</i>                     |
| p-&m-xylene            | 5900                                                                                                                               | -                                    | <i>0.49</i>                     |
| o-xylene               | 6600                                                                                                                               | -                                    | <i>0.30</i>                     |
| Bromoform              | 760                                                                                                                                | -                                    | <i>0.9</i>                      |
| Organic Contamination  | <b>Absence of evidence of significant organic contamination, such as free phase contamination, heavy staining or strong odours</b> |                                      |                                 |

\*to be used as a benchmark to determine if further assessment of the risks to the water environment is required  
**Bold** are anticipated targets for remediation works based on the current information

Thus far the currently available test results have recorded the highest value of 150mg/kg for Dichlorobenzene in the central area between the 2 crushed stockpiles. It is suspected that the areas partly under these stockpiles may yield levels of dichlorobenzene above the proposed soil target values. The sampling and testing is on going within the central area where samples are being taken on a 10m grid. When this is completed the further information will be presented with the remediation which is likely to be required.

During the sampling a PID meter was used to check the soils for elevated solvent concentrations. Generally, the PID did not detect anything above 4ppm. However, the ground did contain odorous material as the human nose is able to detect significantly lower levels of solvents than the PID meter. Therefore, any contractors undertaking any works within this site must also undertake their own health and safety assessments.

The upper horizons with the made ground to a depth of <1.5m are likely to not yield, elevated solvent levels, hence this material will be recovered, stockpiled and retested to allow reuse within the site. The material encountered at >1.5m which has been proven to show that contaminants (solvents) of concern are present will be subjected to bioremediation or stabilization at depth where groundwater interface has been found.

No elevated contaminants of concern were encountered within the lower 20m grid, with samples reference number lines 8, 9, 10, 11 and 12. As a result of these findings we will

be moving the crushed stockpile into this location to complete the 10m grid sampling within the center of the site.

As gridlines 8, 9, 10, 11 and 12 have passed the validation criteria, this section of the site will not undergo any further remediation or testing and this is to be considered a phased completion as the lower half of the site has not been impacted with contamination based on the recent sampling and testing. A full copy of the results for gridlines 8, 9, 10, 11 and 12 with a sampling location plan can be found within the appendix.

## 6.0 CONCLUSIONS

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All required sampling and reporting have been undertaken by Portway, and this has been carried out and completed to a satisfactory conclusion to confirm that the lower section of the site has not been significantly impacted by the chemical works. The good housekeeping with the impermeable concrete has prevented any significant pollution to the site or the wider environment.

However elevated hotspots have been discovered due to the increased testing frequency across the site. As such Dichlorobenzene which is considered to be the main contaminant of concern has been detected. It is present within the deeper soils, confirmed in the 10m grid squares, that will be subjected to treatment in order to reduce the levels of contamination within this site as denoted within the RSVP by G and J consultants.

It is hoped that the shallow reworked clay can be reused at depth to act as a capping layer and then the treated impacted material will be placed on top of this capping thus adding further protection to the groundwater. This may also allow slightly higher target values to be considered by the Env Agency between the groundwater and commercial levels proposed by G and J.

In addition to the ongoing soil validation sampling and testing, groundwater samples will be collected from the 6 serviceable monitoring wells installed by G and J. Groundwater monitoring will continue every 2 weeks to assess the levels of VOCs present during the sampling, remediation and post monitoring phases to confirm that any hotspots/sources/pathways have been identified and correctly addressed to prove that betterment has occurred before the monitoring wells become inaccessible due to construction related works (G and J RO3). By increasing the number of sampling and monitoring visits, this will seek to establish that a wider risk to the groundwater is not present as denoted within the DQRA by demonstrating that the source contamination of concern is below the target value of 41mg/kg (1,2 Dichlorobenzene) within the soil matrix. Post remediation monitoring is proposed to be 4 - 8 weeks with fortnightly sampling and testing with ongoing open dialog with the Environment Agency.

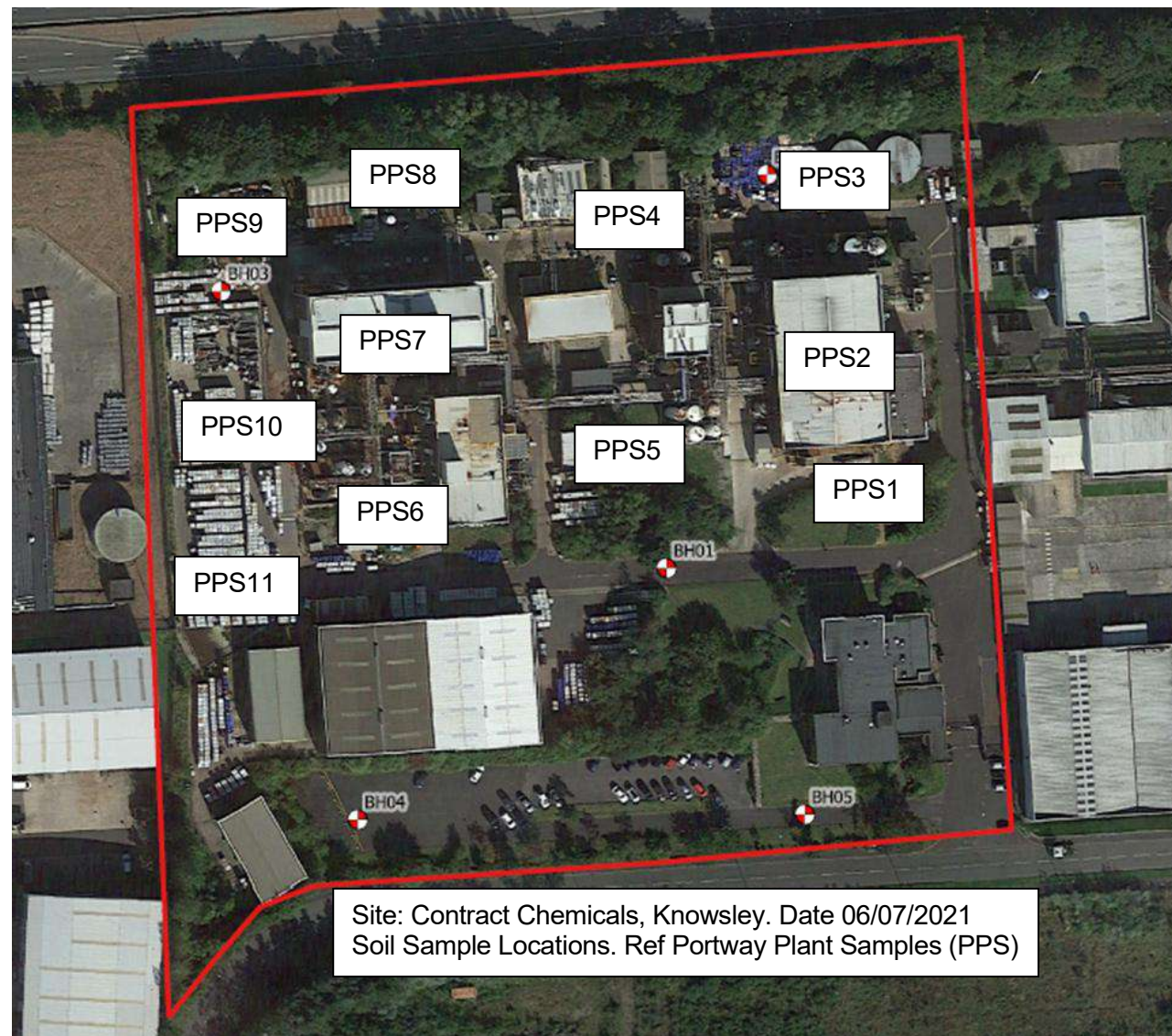
While monitoring of well G and J RO6 has recorded as being dry, assessments will continue in case the groundwater levels change within the site accounting for seasonal variations.

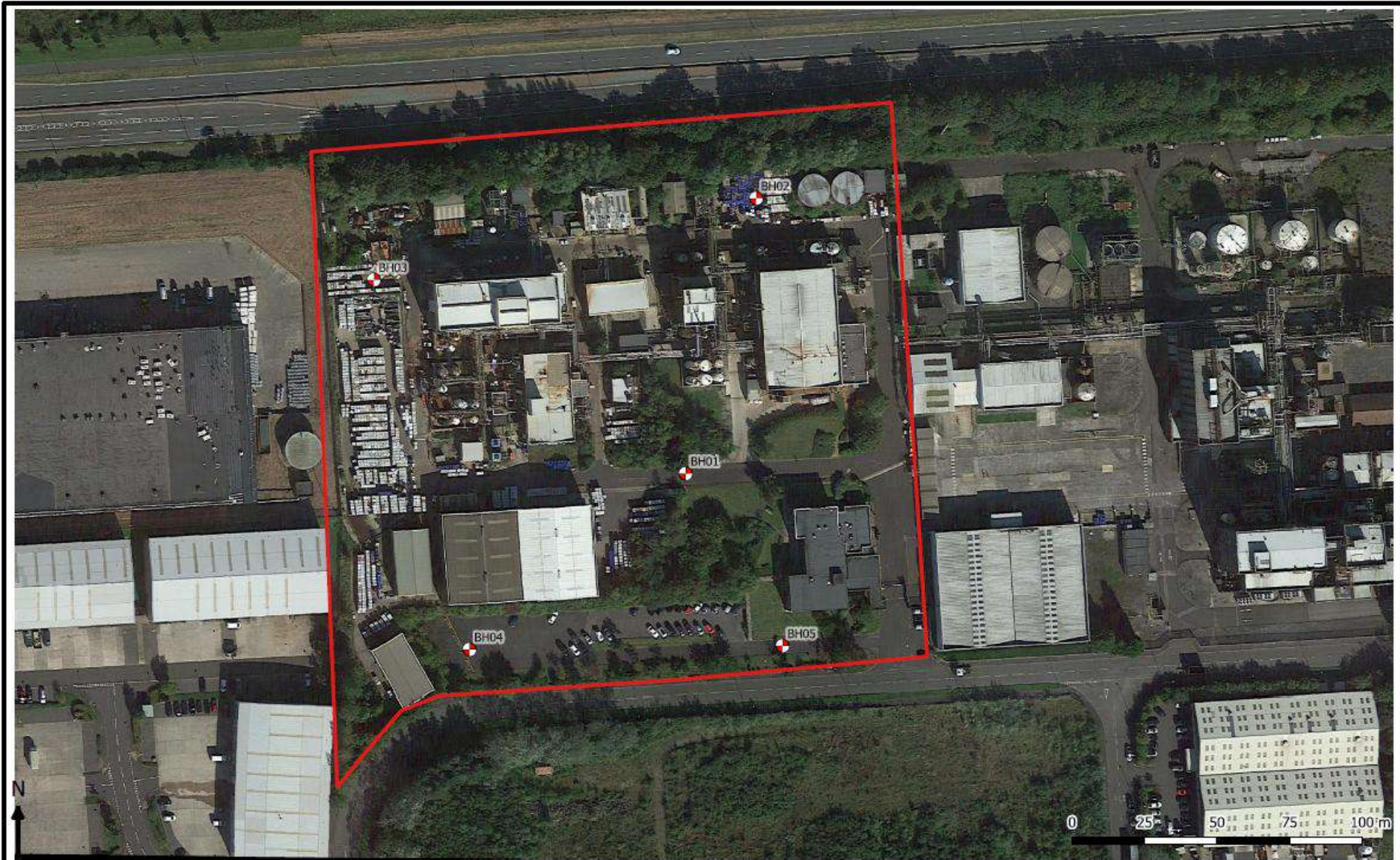
Any monitoring wells that cannot be maintained due to redevelopment of the site will be correctly decommissioned and filled to ensure that no future pathway remains within the site. It is proposed to use bentonite clay pellets to interlock with the reworked clay/sandy clay materials encountered to seal boreholes.

This report acts as a record of tests carried out by Portway and is submitted for the validation of the site to the relevant regulatory Authorities. A further update will be produced post remediation

to assist with the discharge of planning conditions and the upper phase of the validation for this site.

## APPENDIX A - SITE DRAWING, SAMPLE LOCATION PLAN





|        |                                       |  |                                                                 |                |                  |
|--------|---------------------------------------|--|-----------------------------------------------------------------|----------------|------------------|
| NOTES: | CLIENT: PORTWAY REMEDIATION           |  | PROJECT No: P9656                                               | DATE: APR 2021 | DESIGNER/DRN: JB |
|        | PROJECT: CONTRACT CHEMICALS, KNOWSLEY |  | DRAWING NUMBER: 001                                             | SCALE: FINAL   |                  |
|        | TITLE: EXPLORATORY HOLE LOCATION PLAN |  | © GRM Development Solutions Ltd © Crown Copyright. AL 100014100 |                |                  |
|        |                                       |  |                                                                 |                |                  |



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## APPENDIX B - REMOVED CHEMICAL WASTE

| Storage Row | Name                                              | Form   | Quantity | Container | Size |  |  |
|-------------|---------------------------------------------------|--------|----------|-----------|------|--|--|
| Flam 1      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Aqueous ex Trichloroacetamide                     | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Distillation residues ex Hexyl Bromide            | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Distillation residues ex Hexyl Bromide            | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Distillation residues ex Hexyl Bromide            | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Distillation residues ex Hexyl Bromide            | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Distillation residues ex Hexyl Bromide            | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Fores ex isopropyl-2-bromoisobutyrate             | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Fores ex isopropyl-2-bromoisobutyrate             | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Distillation residues ex Ethyl-2-bromobutyrate    | Liquid | Full     | IBC       |      |  |  |
| Flam 1      | Aqueous ex Trichloroacetamide                     | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Xylene Distillations ex Irgafos                   | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Distillation foreruns ex BDCB                     | Sludge | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex Ethyl-2-bromobutyrate    | Sludge | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex Ethyl-2-bromobutyrate    | Sludge | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex Ethyl-2-bromobutyrate    | Sludge | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex Ethyl-2-bromobutyrate    | Sludge | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex Ethyl-2-bromobutyrate    | Sludge | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex phenylacetylene          | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex phenylacetylene          | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex phenylacetylene          | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex phenylacetylene          | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex phenylacetylene          | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex phenylacetylene          | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Heptane ex 1,4 DBBE                               | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Heptane ex 1,4 DBBE                               | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | E2BB Fores                                        | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | E2BB Fores                                        | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Ethanol ex E2BB                                   | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Ethanol ex E2BB                                   | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Acetic Anhydride                                  | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex Butyl Bromide            | Liquid | Full     | IBC       |      |  |  |
| Flam 2      | Distillation residues ex Methyl trichloroacetatae | Liquid | Full     | IBC       |      |  |  |
| Flam 3      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 3      | Acetone containing organic impurities (LACHRY)    | Liquid | Full     | IBC       |      |  |  |
| Flam 3      | Distillation residues ex Ethyl-2-bromobutyrate    | Sludge | Full     | IBC       |      |  |  |
| Flam 3      | Distillation residues ex Ethyl-2-bromobutyrate    | Sludge | Full     | IBC       |      |  |  |
| Flam 3      | Distillation residues ex Ethyl-2-bromobutyrate    | Sludge | Full     | IBC       |      |  |  |
| Flam 3      | Distillation residues ex Ethyl-2-bromobutyrate    | Sludge | Full     | IBC       |      |  |  |

|        |                                                                   |        |      |     |
|--------|-------------------------------------------------------------------|--------|------|-----|
| Flam 3 | Distillation residues ex Ethyl-2-bromobutyrate                    | Sludge | Full | IBC |
| Flam 3 | Distillation residues ex Ethyl-2-bromobutyrate                    | Sludge | Full | IBC |
| Flam 3 | Distillation residues ex Ethyl-2-bromobutyrate                    | Sludge | Full | IBC |
| Flam 3 | Ethanol ex E2BB                                                   | Liquid | Full | IBC |
| Flam 3 | Ethanol ex E2BB                                                   | Liquid | Full | IBC |
| Flam 3 | Ethanol ex E2BB                                                   | Liquid | Full | IBC |
| Flam 3 | Ethanol ex E2BB                                                   | Liquid | Full | IBC |
| Flam 3 | Ethanol ex E2BB                                                   | Liquid | Full | IBC |
| Flam 3 | Distillation residues ex Ethyl-2-bromobutyrate                    | Sludge | Full | IBC |
| Flam 3 | Distillation residues ex Ethyl-2-bromobutyrate                    | Sludge | Full | IBC |
| Flam 3 | E2BB Fores                                                        | Liquid | Full | IBC |
| Flam 3 | 1,2 Dichlorobenzene ex MOCL                                       | Sludge | Full | IBC |
| Flam 3 | IPA/2 Ethyl hexanoic acid                                         | Solid  | Full | IBC |
| Flam 3 | Acetone/Methanol ex TCA                                           | Liquid | Full | IBC |
| Flam 3 | Toluene distillate BDCB                                           | Sludge | Full | IBC |
| Flam 3 | BDCB Distillation residues in toluene                             | Sludge | Full | IBC |
| Flam 3 | Distillation residues ex Hunigs Base                              | Liquid | Full | IBC |
| Flam 4 | Mixed acidic aqueous And organics                                 | Liquid | Full | IBC |
| Flam 4 | Acetone ex 1,4 dibromobutane                                      | Liquid | Full | IBC |
| Flam 4 | Acetone ex 1,4 dibromobutane                                      | Liquid | Full | IBC |
| Flam 4 | Distillation residues ex isopropyl bromide                        | Liquid | Full | IBC |
| Flam 4 | Distillation residues ex Butyl Bromide                            | Liquid | Full | IBC |
| Flam 4 | Propyl bromide                                                    | Liquid | Full | IBC |
| Flam 4 | Propyl bromide                                                    | Liquid | Full | IBC |
| Flam 4 | Distillation residues containing Methanol, MBA and methyl acetate | Liquid | Full | IBC |
| Flam 4 | Pentyl Bromide                                                    | Liquid | Full | IBC |
| Flam 4 | Ethanol ex E2BB                                                   | Liquid | Full | IBC |
| Flam 4 | Aqueous ex MOCL                                                   | Liquid | Full | IBC |
| Flam 4 | Toluene distillate BDCB                                           | Sludge | Full | IBC |
| Flam 4 | Crude BDCB                                                        | Sludge | Full | IBC |
| Flam 4 | Potassium 2-ethyl hexanoate/acetone                               | Solid  | Full | IBC |
| Flam 4 | Potassium 2-ethyl hexanoate/acetone                               | Solid  | Full | IBC |
| Flam 4 | Xylene foreruns ex Irgafos                                        | Liquid | Full | IBC |
| Flam 4 | Xylene foreruns ex Irgafos                                        | Liquid | Full | IBC |
| Flam 4 | IPA/2 Ethyl hexanoic acid                                         | Solid  | Full | IBC |
| Flam 4 | Acetone containing organic impurities (LACHRY)                    | Liquid | Full | IBC |
| Flam 4 | Heptane ex 1,4 DBBE                                               | Liquid | Full | IBC |
| Flam 4 | Distillation residues ex Ethyl-2-bromobutyrate                    | Sludge | Full | IBC |
| Flam 4 | Distillation residues ex Butyl Bromide                            | Liquid | Full | IBC |
| Flam 4 | IPA/2 Ethyl hexanoic acid                                         | Solid  | Full | IBC |
| Flam 4 | Solvent ex Labs                                                   | Liquid | 11   | 205 |
| Flam 4 | Samples ex Labs                                                   | Mixed  | 4    | 205 |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |
| 1      | Sludges ex interceptor                                            | Sludge | Full | IBC |

|   |                                                |             |     |  |  |
|---|------------------------------------------------|-------------|-----|--|--|
| 1 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |
| 1 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |
| 1 | Distillation residues ex 2-ethyl hexyl bromide | Liquid Full | IBC |  |  |
| 1 | Fores ex 2-ethyl hexyl bromide                 | Liquid Full | IBC |  |  |
| 1 | Fores ex 2-ethyl hexyl bromide                 | Liquid Full | IBC |  |  |
| 1 | 1,2 Dichlorobenzene ex MOCL                    | Sludge Full | IBC |  |  |
| 1 | 1,2 Dichlorobenzene ex MOCL                    | Sludge Full | IBC |  |  |
| 1 | Distillation residues ex BDCB                  | Sludge Full | IBC |  |  |
| 1 | Distillation residues ex BDCB                  | Sludge Full | IBC |  |  |
| 1 | Caustic ex Pentyl Bromide                      | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Neutralised Aqueous ex BDCB                    | Liquid Full | IBC |  |  |
| 2 | Distillation residues ex BDCB + PCB's          | Sludge Full | IBC |  |  |
| 2 | Distillation residues ex BDCB + PCB's          | Sludge Full | IBC |  |  |
| 2 | Distillation residues ex BDCB + PCB's          | Sludge Full | IBC |  |  |
| 2 | Distillation residues ex BDCB + PCB's          | Sludge Full | IBC |  |  |
| 2 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |
| 2 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |
| 2 | Distillation residues ex 2ethyl hexyl bromide  | Sludge Full | IBC |  |  |
| 2 | Distillation residues ex 1,6 Dibromohexane     | Sludge Full | IBC |  |  |
| 2 | Residues ex 1,2 dichlorobenzene                | Sludge Full | IBC |  |  |
| 3 | Alkaline waste ex E2BB                         | Mixed Full  | IBC |  |  |
| 3 | Distillation residues ex Hexyl Bromide         | Liquid Full | IBC |  |  |
| 3 | Distillation residues ex BDCB                  | Sludge Full | IBC |  |  |
| 3 | Distillation residues ex BDCB                  | Sludge Full | IBC |  |  |
| 3 | Distillation residues ex BDCB                  | Sludge Full | IBC |  |  |
| 3 | Distillation residues ex 2ethyl hexyl bromide  | Sludge Full | IBC |  |  |
| 3 | Distillation residues ex 2ethyl hexyl bromide  | Sludge Full | IBC |  |  |
| 3 | Caustic ex 2EHB                                | Liquid Full | IBC |  |  |
| 3 | Caustic ex 2EHB                                | Liquid Full | IBC |  |  |
| 3 | Fores ex 2-ethyl hexyl bromide                 | Mixed Full  | IBC |  |  |
| 3 | Caustic ex n Butyl Bromide                     | Mixed Full  | IBC |  |  |
| 3 | Distillation residues ex BDCB + PCB's          | Sludge Full | IBC |  |  |
| 3 | Distillation residues ex BDCB + PCB's          | Sludge Full | IBC |  |  |
| 3 | Distillation residues ex BDCB + PCB's          | Sludge Full | IBC |  |  |
| 3 | Treated Phos Acid ex 2EHB                      | Mixed Full  | IBC |  |  |
| 3 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |
| 3 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |
| 3 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |
| 3 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |
| 3 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |
| 3 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |
| 3 | Sludges ex interceptor                         | Sludge Full | IBC |  |  |

|   |                                            |        |        |             |      |     |
|---|--------------------------------------------|--------|--------|-------------|------|-----|
| 4 | Caustic ex TDC                             | Liquid | Full   | IBC         |      |     |
| 4 | Caustic ex TDC                             | Liquid | Full   | IBC         |      |     |
| 4 | 1,2 Dichlorobenzene ex MOCL                |        |        | Sludge Full | IBC  |     |
| 4 | 1,2 Dichlorobenzene ex MOCL                |        |        | Sludge Full | IBC  |     |
| 4 | Sludges ex interceptor                     | Sludge | Full   | IBC         |      |     |
| 4 | Sludges ex interceptor                     | Sludge | Full   | IBC         |      |     |
| 4 | Sludges ex interceptor                     | Sludge | Full   | IBC         |      |     |
| 4 | Sludges ex interceptor                     | Sludge | Full   | IBC         |      |     |
| 4 | Sludges ex interceptor                     | Sludge | Full   | IBC         |      |     |
| 4 | Distillation residues ex BDCB + PCB's      |        |        | Sludge Full | IBC  |     |
| 4 | Neutralised Aqueous ex BDCB                |        | Liquid | Full        | IBC  |     |
| 4 | Neutralised Aqueous ex BDCB                |        | Liquid | Full        | IBC  |     |
| 4 | Neutralised Aqueous ex BDCB                |        | Liquid | Full        | IBC  |     |
| 4 | Neutralised Aqueous ex BDCB                |        | Liquid | Full        | IBC  |     |
| 4 | Neutralised Aqueous ex BDCB                |        | Liquid | Full        | IBC  |     |
| 4 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 4 | Aqueous ex Hunigs                          | Mixed  | Full   | IBC         |      |     |
| 4 | Ammonia                                    | Liquid | Full   | IBC         |      |     |
| 4 | Ammonia                                    | Liquid | Full   | IBC         |      |     |
| 4 | Ammonia                                    | Liquid | Full   | IBC         |      |     |
| 4 | Ammonia                                    | Liquid | Full   | IBC         |      |     |
| 4 | Caustic ex Bonner                          | Liquid | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Treated Phos Acid ex 2EHB                  | Mixed  | Full   | IBC         |      |     |
| 5 | Sludges ex interceptor                     | Sludge | Full   | IBC         |      |     |
| 5 | Sludges ex interceptor                     | Sludge | Full   | IBC         |      |     |
| 5 | Sludges ex interceptor                     | Sludge | Full   | IBC         |      |     |
| 5 | Mother Liquors                             | Liquid | Full   | IBC         |      |     |
| 5 | Caustic ex BDCB                            | Liquid | Full   | IBC         |      |     |
| 5 | Caustic ex BDCB                            | Liquid | Full   | IBC         |      |     |
| 6 | Distillation residues ex BDCB              | Sludge | Full   | IBC         |      |     |
| 6 | Distillation residues ex o-Dichlorobenzene |        |        |             | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene |        |        |             | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene |        |        |             | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene |        |        |             | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene |        |        |             | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene |        |        |             | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene |        |        |             | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene |        |        |             | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene |        |        |             | Full | IBC |

|   |                                               |        |      |      |     |
|---|-----------------------------------------------|--------|------|------|-----|
| 6 | Distillation residues ex o-Dichlorobenzene    |        |      | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene    |        |      | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene    |        |      | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene    |        |      | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene    |        |      | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene    |        |      | Full | IBC |
| 6 | Distillation residues ex o-Dichlorobenzene    |        |      | Full | IBC |
| 6 | Distillation residues ex MDBMP                | Liquid | Full | IBC  |     |
| 6 | Caustic ex 2EHB                               | Liquid | Full | IBC  |     |
| 6 | Caustic ex 2EHB                               | Liquid | Full | IBC  |     |
| 6 | Caustic ex 2EHB                               | Liquid | Full | IBC  |     |
| 6 | Caustic ex 2EHB                               | Liquid | Full | IBC  |     |
| 7 | Distillation residues ex bromopropionic acid  | Liquid | Full | IBC  |     |
| 7 | Distillation residues ex bromopropionic acid  | Liquid | Full | IBC  |     |
| 7 | Distillation residues ex 1,6 Dibromohexane    | Sludge | Full | IBC  |     |
| 7 | Distillation residues ex 1,6 Dibromohexane    | Sludge | Full | IBC  |     |
| 7 | Distillation residues ex 1,6 Dibromohexane    | Sludge | Full | IBC  |     |
| 7 | Distillation residues ex 1,6 Dibromohexane    | Sludge | Full | IBC  |     |
| 7 | Distillation residues ex 1,6 Dibromohexane    | Sludge | Full | IBC  |     |
| 7 | Distillation residues ex o-Dichlorobenzene    |        | Full | IBC  |     |
| 7 | Distillation residues ex o-Dichlorobenzene    |        | Full | IBC  |     |
| 7 | Distillation residues ex o-Dichlorobenzene    |        | Full | IBC  |     |
| 7 | Aqueous alkaline ex cyclopentyl bromide       | Liquid | Full | IBC  |     |
| 7 | Aqueous alkaline ex cyclopentyl bromide       | Liquid | Full | IBC  |     |
| 7 | Distillation residues ex 2ethyl hexyl bromide | Sludge | Full | IBC  |     |
| 7 | Distillation residues ex 2ethyl hexyl bromide | Sludge | Full | IBC  |     |
| 7 | Aqueous ex dicyclohexylamine                  | Liquid | Full | IBC  |     |
| 7 | Aqueous ex dicyclohexylamine                  | Liquid | Full | IBC  |     |
| 7 | Distillation residues ex MDBMP                | Liquid | Full | IBC  |     |
| 7 | Distillation residues ex MDBMP                | Liquid | Full | IBC  |     |
| 7 | Distillation residues ex MDBMP                | Liquid | Full | IBC  |     |
| 7 | Distillation residues ex MDBMP                | Liquid | Full | IBC  |     |
| 7 | Distillation residues ex MDBMP                | Liquid | Full | IBC  |     |
| 7 | Residues ex dibromobutene                     | Liquid | 3    | 205  |     |
| 8 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC  |     |
| 8 | Caustic ex n Butyl Bromide                    | Mixed  | Full | IBC  |     |
| 8 | Caustic ex n Butyl Bromide                    | Mixed  | Full | IBC  |     |
| 8 | Distillation residues ex o-Dichlorobenzene    |        | Full | IBC  |     |
| 8 | Distillation residues ex o-Dichlorobenzene    |        | Full | IBC  |     |
| 8 | Distillation residues ex o-Dichlorobenzene    |        | Full | IBC  |     |
| 8 | Caustic ex BDCB                               | Liquid | Full | IBC  |     |
| 8 | Caustic ex BDCB                               | Liquid | Full | IBC  |     |
| 8 | Caustic ex hexyl Bromide                      | Liquid | Full | IBC  |     |
| 8 | Fores ex 2-ethyl hexyl bromide                | Liquid | Full | IBC  |     |
| 8 | Residues ex 1,2 dichlorobenzene               | Sludge | Full | IBC  |     |
| 8 | Residues ex 1,2 dichlorobenzene               | Sludge | Full | IBC  |     |
| 8 | Distillation residues ex 2ethyl hexyl bromide | Sludge | Full | IBC  |     |
| 8 | Chimexane                                     | Liquid | Full | IBC  |     |
| 8 | Chimexane                                     | Liquid | Full | IBC  |     |
| 8 | Chimexane                                     | Liquid | Full | IBC  |     |
| 8 | Fores ex isopropyl-2-bromoisobutyrate         | Liquid | Full | IBC  |     |
| 8 | Fores ex isopropyl-2-bromoisobutyrate         | Liquid | Full | IBC  |     |
| 8 | Distillation residues ex BDCB                 | Sludge | Full | IBC  |     |
| 8 | Distillation residues ex BDCB                 | Sludge | Full | IBC  |     |

[illegible]

|    |                                                    |             |     |     |
|----|----------------------------------------------------|-------------|-----|-----|
| 11 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 11 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 11 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 11 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 11 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 11 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 11 | Distillation residues ex BDCB (road Barrel France) | Sludge Full | IBC | IBC |
| 11 | Distillation residues ex BDCB (road Barrel France) | Sludge Full | IBC | IBC |
| 11 | Distillation residues ex 2ethyl hexyl bromide      | Sludge Full | IBC |     |
| 11 | Distillation residues ex 1,4 Dibromobutene         | Sludge Full | IBC |     |
| 11 | Mixed Halogenated (Lachry)                         | Liquid Full | IBC |     |
| 11 | Caustic ex n Butyl Bromide                         | Mixed Full  | IBC |     |
| 11 | Distillation residues ex MDBMP                     | Liquid Full | IBC |     |
| 11 | Distillation residues ex o-Dichlorobenzene         | Liquid Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 12 | Residues ex 1,2 dichlorobenzene                    | Sludge Full | IBC |     |
| 12 | Residues ex 1,2 dichlorobenzene                    | Sludge Full | IBC |     |
| 12 | Distillation residues ex o-Dichlorobenzene         | Liquid Full | IBC |     |
| 12 | Distillation residues ex 2ethyl hexyl bromide      | Sludge Full | IBC |     |
| 12 | Distillation residues ex 1,6 Dibromohexane         | Liquid Full | IBC |     |
| 12 | Distillation residues ex 1,6 Dibromohexane         | Liquid Full | IBC |     |
| 12 | Treated Phos Acid ex 2EHB                          | Mixed Full  | IBC |     |
| 12 | Treated Phos Acid ex 2EHB                          | Mixed Full  | IBC |     |
| 12 | Treated Phos Acid ex 2EHB                          | Mixed Full  | IBC |     |
| 13 | Distillation residues ex o-Dichlorobenzene         | Liquid Full | IBC |     |
| 13 | Distillation residues ex o-Dichlorobenzene         | Liquid Full | IBC |     |
| 13 | Distillation residues ex o-Dichlorobenzene         | Liquid Full | IBC |     |
| 13 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 13 | Distillation residues ex BDCB + PCB's              | Sludge Full | IBC |     |
| 13 | Caustic ex n Butyl Bromide                         | Mixed Full  | IBC |     |
| 13 | Caustic ex n Butyl Bromide                         | Mixed Full  | IBC |     |
| 13 | Caustic ex n Butyl Bromide                         | Mixed Full  | IBC |     |
| 13 | Distillation residues ex MDBMP                     | Liquid Full | IBC |     |
| 13 | Treated Phos Acid ex 2EHB                          | Mixed Full  | IBC |     |
| 13 | Caustic ex TDC                                     | Liquid Full | IBC |     |
| 13 | Caustic ex TDC                                     | Liquid Full | IBC |     |
| 13 | Liquid                                             | Full        | IBC |     |
| 13 | Liquid                                             | Full        | IBC |     |
| 13 | Aqueous ex Hunigs                                  | Liquid Full | IBC |     |
| 13 | Aqueous ex 747 (DCB and Chloroform)                | Liquid Full | IBC |     |
| 13 | 1,2 Dichlorobenzene ex MOCL                        | Sludge Full | IBC |     |
| 13 | 1,2 Dichlorobenzene ex MOCL                        | Sludge Full | IBC |     |

|    |                                        |             |             |     |
|----|----------------------------------------|-------------|-------------|-----|
| 13 | 1,2 Dichlorobenzene ex MOCL            |             | Sludge Full | IBC |
| 13 | 1,2 Dichlorobenzene ex MOCL            |             | Sludge Full | IBC |
| 13 | 1,2 Dichlorobenzene ex MOCL            |             | Sludge Full | IBC |
| 13 | 1,2 Dichlorobenzene ex MOCL            |             | Sludge Full | IBC |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Treated Phos Acid ex 2EBH              | Mixed Full  | IBC         |     |
| 14 | Distillation residues ex BDCB + PCB's  |             | Sludge Full | IBC |
| 14 | Distillation residues ex BDCB + PCB's  |             | Sludge Full | IBC |
| 14 | Caustic ex BDCB                        | Liquid Full | IBC         |     |
| 15 | o-DCB residues                         | Sludge Part | IBC         |     |
| 15 | o-DCB residues                         | Sludge Part | IBC         |     |
| 15 | o-DCB residues                         | Sludge Part | IBC         |     |
| 15 | o-DCB residues                         | Sludge Part | IBC         |     |
| 15 | Solids ex Hunigs                       | Solid Part  | IBC         |     |
| 15 | Solids ex Hunigs                       | Solid Part  | IBC         |     |
| 15 | Solids ex Hunigs                       | Solid Part  | IBC         |     |
| 15 | Solids ex Hunigs                       | Solid Part  | IBC         |     |
| 15 | Caustic solids ex MOCL                 | Solid Part  | IBC         |     |
| 15 | Caustic ex TDC                         | Liquid Part | IBC         |     |
| 16 | Solids ex Hunigs                       | Solid Part  | IBC         |     |
| 16 | Solids ex Hunigs                       | Solid Part  | IBC         |     |
| 16 | Solids ex Hunigs                       | Solid Part  | IBC         |     |
| 16 | Solids ex Hunigs                       | Solid Part  | IBC         |     |
| 16 | Solids ex Hunigs                       | Solid Part  | IBC         |     |
| 16 | Solids ex Hunigs                       | Solid Part  | IBC         |     |
| 16 | Caustic solids ex MOCL                 | Solid Part  | IBC         |     |
| 16 | Caustic solids ex MOCL                 | Solid Part  | IBC         |     |
| 16 | Caustic ex TDC                         | Liquid Part | IBC         |     |
| 16 | Caustic ex TDC                         | Liquid Part | IBC         |     |
| 17 | Sulphuric/Phosphorous ex Hexyl Bromide | Liquid Full | IBC         |     |
| 17 | Sulphuric/Sulphurous ex Butyl Bromide  | Liquid Full | IBC         |     |
| 17 | Sulphuric/Sulphurous ex Butyl Bromide  | Liquid Full | IBC         |     |
| 17 | Sulphuric/Sulphurous ex Butyl Bromide  | Liquid Full | IBC         |     |
| 17 | Sulphuric/Sulphurous ex Butyl Bromide  | Liquid Full | IBC         |     |
| 17 | Sulphuric/Sulphurous ex Butyl Bromide  | Liquid Full | IBC         |     |
| 17 | Sulphuric/Sulphurous ex Butyl Bromide  | Liquid Full | IBC         |     |
| 17 | Sulphuric/Sulphurous ex Butyl Bromide  | Liquid Full | IBC         |     |

|    |                                            |        |      |     |  |
|----|--------------------------------------------|--------|------|-----|--|
| 17 | Sulphuric/Phosphorous ex Pentyl Bromide    | Liquid | Full | IBC |  |
| 17 | HBr ex High Vac                            | Liquid | Full | IBC |  |
| 18 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 18 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 18 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 18 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 18 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 18 | Sulphuric/Phosphorous ex Hexyl Bromide     | Liquid | Full | IBC |  |
| 18 | HCL ex Scrubber                            | Liquid | Full | IBC |  |
| 18 | Phosphorous acid and Bromine               | Liquid | Full | IBC |  |
| 18 | Phosphorous acid and Bromine               | Liquid | Full | IBC |  |
| 18 | Packaging c/w thionyl chloride             | Solid  | Full | IBC |  |
| 19 | HCL ex 747                                 | Liquid | Full | IBC |  |
| 19 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 19 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 19 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 19 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 19 | HCL ex Absorber                            | Liquid | Full | IBC |  |
| 19 | Distillation residues ex 1,6 Dibromohexane | Liquid | Full | IBC |  |
| 19 | Sulphuric/Phosphorous ex Hexyl Bromide     | Liquid | Full | IBC |  |
| 19 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 19 | Sulphuric acid ex Absorbers                | Liquid | Full | IBC |  |
| 20 | Sulphuric/Phosphorous ex Hexyl Bromide     | Liquid | Full | IBC |  |
| 20 | Sulphuric/Phosphorous ex Hexyl Bromide     | Liquid | Full | IBC |  |
| 20 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 20 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 20 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 20 | Sodium Hydrogen Sulphate ex DCHAN (NOX!)   | Liquid | Full | IBC |  |
| 20 | Sodium Hydrogen Sulphate ex DCHAN (NOX!)   | Liquid | Full | IBC |  |
| 20 | Sodium Hydrogen Sulphate ex DCHAN (NOX!)   | Liquid | Full | IBC |  |
| 20 | Sodium Hydrogen Sulphate ex DCHAN (NOX!)   | Liquid | Full | IBC |  |
| 20 | Sodium Hydrogen Sulphate ex DCHAN (NOX!)   | Liquid | Full | IBC |  |
| 21 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 21 | Phosphorous acid and Bromine               | Liquid | Full | IBC |  |
| 21 | Phosphorous acid and Bromine               | Liquid | Full | IBC |  |
| 21 | Sulphuric/Phosphorous ex Pentyl Bromide    | Liquid | Full | IBC |  |
| 21 | Phosphoric/Phosphorous ex Pentyl Bromide   | Liquid | Full | IBC |  |
| 21 | Sulphuric acid ex Absorbers                | Liquid | Full | IBC |  |
| 21 | Sulphuric acid ex Absorbers                | Liquid | Full | IBC |  |
| 21 | Aqueous aluminium chloride                 | Liquid | Full | IBC |  |
| 21 | Acidic aqueous washings                    | Liquid | Full | IBC |  |
| 22 | Treated Phos Acid ex 2EHB                  | Mixed  | Full | IBC |  |
| 22 | Treated Phos Acid ex 2EHB                  | Mixed  | Full | IBC |  |
| 22 | Treated Phos Acid ex 2EHB                  | Mixed  | Full | IBC |  |
| 22 | Treated Phos Acid ex 2EHB                  | Mixed  | Full | IBC |  |
| 22 | DCB ex MOCL                                | Mixed  | Full | IBC |  |
| 22 | Sulphuric/Phosphorous ex Pentyl Bromide    | Liquid | Full | IBC |  |
| 22 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 22 | Sulphuric/Sulphurous ex Butyl Bromide      | Liquid | Full | IBC |  |
| 22 | Mixed                                      | Full   | IBC  |     |  |
| 22 | Mixed                                      | Full   | IBC  |     |  |
| 23 | Treated Phos Acid ex 2EHB                  | Mixed  | Full | IBC |  |
| 23 | Treated Phos Acid ex 2EHB                  | Mixed  | Full | IBC |  |
| 23 | Treated Phos Acid ex 2EHB                  | Mixed  | Full | IBC |  |

|    |                                               |        |      |         |  |  |  |
|----|-----------------------------------------------|--------|------|---------|--|--|--|
| 23 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 23 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 23 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 23 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 23 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 23 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 23 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 24 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 24 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 24 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 24 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 24 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 24 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 24 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 24 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 24 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 24 | Treated Phos Acid ex 2EHB                     | Mixed  | Full | IBC     |  |  |  |
| 25 | Dimethylaminopropylmethacrylamide             | Liquid | Full | 4 x 205 |  |  |  |
| 25 | Benzyl Bromide                                | Liquid | Full | 4 x 205 |  |  |  |
| 25 | Sulphur dioxide/HCl                           | Liquid | Full | 3 x 205 |  |  |  |
| 26 | o-DCB residues                                | Sludge | Part | IBC     |  |  |  |
| 26 | Sludges ex interceptor                        | Sludge | Full | IBC     |  |  |  |
| 26 | Sludges ex interceptor                        | Sludge | Full | IBC     |  |  |  |
| 26 | Sludges ex interceptor                        | Sludge | Full | IBC     |  |  |  |
| 26 | Sludges ex interceptor                        | Sludge | Full | IBC     |  |  |  |
| 26 | Sludges ex interceptor                        | Sludge | Full | IBC     |  |  |  |
| 26 | Sludges ex interceptor                        | Sludge | Full | IBC     |  |  |  |
| 26 | Sludges ex interceptor                        | Sludge | Full | IBC     |  |  |  |
| 26 | Sludges ex interceptor                        | Sludge | Full | IBC     |  |  |  |
| 26 | Sludges ex interceptor                        | Sludge | Full | IBC     |  |  |  |
| 27 | Caustic ex TDC                                | Liquid | Full | IBC     |  |  |  |
| 27 | Caustic ex TDC                                | Liquid | Full | IBC     |  |  |  |
| 27 | Water ex BDCB                                 | Liquid | Full | IBC     |  |  |  |
| 27 | Water ex BDCB                                 | Liquid | Full | IBC     |  |  |  |
| 27 | Mixed Aq and organic                          | Liquid | Full | IBC     |  |  |  |
| 27 | Mixed Aq and organic                          | Liquid | Full | IBC     |  |  |  |
| 27 | Caustic ex Phenylacetylene                    | Liquid | Full | IBC     |  |  |  |
| 27 | Distillation residues ex 1,4 Dibromobutene    | Liquid | Full | IBC     |  |  |  |
| 27 | Distillation residues ex 1,4 Dibromobutene    | Liquid | Full | IBC     |  |  |  |
| 27 | Caustic ex Br Scrubber                        | Liquid | Full | IBC     |  |  |  |
| 28 | 1,2 Dichlorobenzene ex MOCL                   | Liquid | Full | IBC     |  |  |  |
| 28 | 1,2 Dichlorobenzene ex MOCL                   | Liquid | Full | IBC     |  |  |  |
| 28 | Water ex Irgafos                              | Liquid | Full | IBC     |  |  |  |
| 28 | Alkaline waste ex E2BB                        | Liquid | Full | IBC     |  |  |  |
| 28 | Caustic ex TDC                                | Liquid | Full | IBC     |  |  |  |
| 28 | Distillation residues ex MDBMP                | Liquid | Full | IBC     |  |  |  |
| 28 | Aqueous ex DCHAN (contains dicyclohexylamine) | Liquid | Full | IBC     |  |  |  |
| 28 | Aqueous ex DCHAN (contains dicyclohexylamine) | Liquid | Full | IBC     |  |  |  |
| 28 | Aqueous ex DCHAN (contains dicyclohexylamine) | Liquid | Full | IBC     |  |  |  |
| 28 | Aqueous ex DCHAN (contains dicyclohexylamine) | Liquid | Full | IBC     |  |  |  |
| 29 | Caustic ex butyl bromide                      | Liquid | Full | IBC     |  |  |  |
| 29 | 1,2 Dichlorobenzene ex MOCL                   | Liquid | Full | IBC     |  |  |  |
| 29 | 1,2 Dichlorobenzene ex MOCL                   | Liquid | Full | IBC     |  |  |  |
| 29 | Alkaline waste ex E2BB                        | Liquid | Full | IBC     |  |  |  |



|    |                   |        |      |     |
|----|-------------------|--------|------|-----|
| W4 | Aqueous ex Hunigs | Liquid | Full | IBC |
| W4 | Aqueous ex Hunigs | Liquid | Full | IBC |
| W4 | Aqueous ex Hunigs | Liquid | Full | IBC |
| W4 | Aqueous ex Hunigs | Liquid | Full | IBC |
| W4 | Aqueous ex Hunigs | Liquid | Full | IBC |
| W4 | Aqueous ex Hunigs | Liquid | Full | IBC |

## APPENDIX C - ANALYTICAL TEST RESULTS SOIL AND WATERS



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### Analytical Report Number : 21-70049

|                             |                    |                                                        |            |
|-----------------------------|--------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Contract Chemicals | <b>Samples received on:</b>                            | 21/04/2021 |
| <b>Your job number:</b>     | P9656              | <b>Samples instructed on/<br/>Analysis started on:</b> | 21/04/2021 |
| <b>Your order number:</b>   |                    | <b>Analysis completed by:</b>                          | 28/04/2021 |
| <b>Report Issue Number:</b> | 1                  | <b>Report issued on:</b>                               | 28/04/2021 |
| <b>Samples Analysed:</b>    | 10 soil samples    |                                                        |            |

**Signed:** 

Zina Abdul Razzak  
Senior Quality Specialist  
**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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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 21-70049  
Project / Site name: Contract Chemicals

| Lab Sample Number                    | 1844595       | 1844596            | 1844597          | 1844598       | 1844599       |
|--------------------------------------|---------------|--------------------|------------------|---------------|---------------|
| Sample Reference                     | BH01          | BH01               | BH02             | BH02          | BH03          |
| Sample Number                        | P9656         | P9656              | P9656            | P9656         | P9656         |
| Depth (m)                            | 0.50          | 5.00               | 0.60             | 5.00          | 0.60          |
| Date Sampled                         | 08/04/2021    | 08/04/2021         | 08/04/2021       | 08/04/2021    | 08/04/2021    |
| Time Taken                           | None Supplied | None Supplied      | None Supplied    | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units         | Limit of detection | Acceptable range |               |               |
| Stone Content                        | %             | 0.1                | NONE             | < 0.1         | < 0.1         |
| Moisture Content                     | %             | 0.01               | NONE             | 10            | 12            |
| Total mass of sample received        | kg            | 0.001              | NONE             | 1.5           | 1.7           |

#### General Inorganics

| pH - Automated | pH Units | N/A | MCERTS | 8.4 | 8.6 | 8.2 | 8.0 | 7.6 |
|----------------|----------|-----|--------|-----|-----|-----|-----|-----|
|----------------|----------|-----|--------|-----|-----|-----|-----|-----|

#### Speciated PAHs

|                        |       |      |        |        |        |        |        |        |
|------------------------|-------|------|--------|--------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Anthracene             | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Pyrene                 | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chrysene               | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 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 | 0.8 | MCERTS | < 0.80 | < 0.80 | < 0.80 | < 0.80 | < 0.80 |
|-----------------------------|-------|-----|--------|--------|--------|--------|--------|--------|

#### Heavy Metals / Metalloids

|                                      |       |     |        |       |       |       |       |       |
|--------------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqueous regia extractable)  | mg/kg | 1   | MCERTS | 5.5   | 4.8   | 3.5   | 4.3   | 7.6   |
| Boron (water soluble)                | mg/kg | 0.2 | MCERTS | 0.5   | 0.3   | 0.8   | 0.2   | 0.5   |
| Cadmium (aqueous regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqueous regia extractable) | mg/kg | 1   | MCERTS | 20    | 16    | 10    | 15    | 30    |
| Copper (aqueous regia extractable)   | mg/kg | 1   | MCERTS | 10    | 15    | 14    | 8.9   | 12    |
| Lead (aqueous regia extractable)     | mg/kg | 1   | MCERTS | 12    | 5.8   | 9.0   | 6.6   | 50    |
| Mercury (aqueous regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqueous regia extractable)   | mg/kg | 1   | MCERTS | 19    | 16    | 12    | 14    | 26    |
| Selenium (aqueous regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqueous regia extractable) | mg/kg | 1   | MCERTS | 19    | 17    | 13    | 15    | 27    |
| Zinc (aqueous regia extractable)     | mg/kg | 1   | MCERTS | 27    | 26    | 69    | 39    | 29    |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

#### Petroleum Hydrocarbons

|                                 |       |       |        |         |         |         |         |         |
|---------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |

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Analytical Report Number: 21-70049  
Project / Site name: Contract Chemicals

| Lab Sample Number                    | 1844595       | 1844596            | 1844597       | 1844598       | 1844599       |
|--------------------------------------|---------------|--------------------|---------------|---------------|---------------|
| Sample Reference                     | BH01          | BH01               | BH02          | BH02          | BH03          |
| Sample Number                        | P9656         | P9656              | P9656         | P9656         | P9656         |
| Depth (m)                            | 0.50          | 5.00               | 0.60          | 5.00          | 0.60          |
| Date Sampled                         | 08/04/2021    | 08/04/2021         | 08/04/2021    | 08/04/2021    | 08/04/2021    |
| Time Taken                           | None Supplied | None Supplied      | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Unit          | Limit of detection | Assessment    |               |               |
| TPH-CWG - Aliphatic >EC10 - EC12     | mg/kg         | 1                  | MCERTS        | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16     | mg/kg         | 2                  | MCERTS        | 4.4           | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21     | mg/kg         | 8                  | MCERTS        | 11            | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35     | mg/kg         | 8                  | MCERTS        | 90            | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)     | mg/kg         | 10                 | MCERTS        | 110           | < 10          |
| TPH-CWG - Aromatic >EC5 - EC7        | mg/kg         | 0.001              | MCERTS        | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8        | mg/kg         | 0.001              | MCERTS        | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10       | mg/kg         | 0.001              | MCERTS        | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12      | mg/kg         | 1                  | MCERTS        | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16      | mg/kg         | 2                  | MCERTS        | < 2.0         | < 2.0         |
| TPH-CWG - Aromatic >EC16 - EC21      | mg/kg         | 10                 | MCERTS        | < 10          | < 10          |
| TPH-CWG - Aromatic >EC21 - EC35      | mg/kg         | 10                 | MCERTS        | 120           | < 10          |
| TPH-CWG - Aromatic (EC5 - EC35)      | mg/kg         | 10                 | MCERTS        | 120           | < 10          |

| VOCs                                  |       |   |           |       |       |
|---------------------------------------|-------|---|-----------|-------|-------|
| Chloromethane                         | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Chloroethane                          | µg/kg | 1 | NONE      | < 1.0 | < 1.0 |
| Bromomethane                          | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Vinyl Chloride                        | µg/kg | 1 | NONE      | < 1.0 | < 1.0 |
| Trichlorofluoromethane                | µg/kg | 1 | NONE      | < 1.0 | < 1.0 |
| 1,1-Dichloroethane                    | µg/kg | 1 | NONE      | < 1.0 | < 1.0 |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Cis-1,2-dichloroethane                | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether)    | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| 1,1-Dichloroethane                    | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| 2,2-Dichloropropane                   | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| Trichloromethane                      | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane                 | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| 1,2-Dichloroethane                    | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| 1,1-Dichloropropene                   | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| Trans-1,2-dichloroethene              | µg/kg | 1 | NONE      | < 1.0 | < 1.0 |
| Benzene                               | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| Tetrachloromethane                    | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| 1,2-Dichloropropane                   | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| Trichloroethene                       | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| Dibromomethane                        | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| Bromodichloromethane                  | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| Cis-1,3-dichloropropene               | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Trans-1,3-dichloropropene             | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Toluene                               | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane                 | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| 1,3-Dichloropropane                   | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Dibromochloromethane                  | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Tetrachloroethene                     | µg/kg | 1 | NONE      | < 1.0 | < 1.0 |
| 1,2-Dibromoethane                     | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Chlorobenzene                         | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| 1,1,1,2-Tetrachloroethane             | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| Ethylbenzene                          | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| p & m-Xylene                          | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| Styrene                               | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |
| Trifluoromethane                      | µg/kg | 1 | NONE      | < 1.0 | < 1.0 |
| o-Xylene                              | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 |

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Analytical Report Number: 21-70049  
Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                               |                    | 1844595       | 1844596       | 1844597       | 1844598       | 1844599       |
|-----------------------------------------|-------|-------------------------------|--------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                               |                    | BH01          | BH01          | BH02          | BH02          | BH03          |
| Sample Number                           |       |                               |                    | P9656         | P9656         | P9656         | P9656         | P9656         |
| Depth (m)                               |       |                               |                    | 0.50          | 5.00          | 0.60          | 5.00          | 0.60          |
| Date Sampled                            |       |                               |                    | 08/04/2021    | 08/04/2021    | 08/04/2021    | 08/04/2021    | 08/04/2021    |
| Time Taken                              |       |                               |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Unit  | Limit of detection<br>(mg/kg) | Accuracy<br>Status |               |               |               |               |               |
|                                         |       |                               |                    |               |               |               |               |               |
| 1,1,2,2-Tetrachloroethane               | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Isopropylbenzene                        | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Bromobenzene                            | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| n-Propylbenzene                         | µg/kg | 1                             | ISO 17025          | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 2-Chlorotoluene                         | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 4-Chlorotoluene                         | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3,5-Trimethylbenzene                  | µg/kg | 1                             | ISO 17025          | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| tert-Butylbenzene                       | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,4-Trimethylbenzene                  | µg/kg | 1                             | ISO 17025          | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| sec-Butylbenzene                        | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3-Dichlorobenzene                     | µg/kg | 1                             | ISO 17025          | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| p-Isopropyltoluene                      | µg/kg | 1                             | ISO 17025          | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dichlorobenzene                     | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | 900           | < 1.0         | < 1.0         |
| 1,4-Dichlorobenzene                     | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Butylbenzene                            | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dibromo-3-chloropropane             | µg/kg | 1                             | ISO 17025          | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,4-Trichlorobenzene                  | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Hexachlorobutadiene                     | µg/kg | 1                             | MCERTS             | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,3-Trichlorobenzene                  | µg/kg | 1                             | ISO 17025          | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |

| SVOCs                       |       |      |           |        |        |        |        |        |
|-----------------------------|-------|------|-----------|--------|--------|--------|--------|--------|
| Aniline                     | mg/kg | 0.1  | NONE      | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Phenol                      | mg/kg | 0.2  | ISO 17025 | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 2-Chlorophenol              | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Bis(2-chloroethyl)ether     | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 1,3-Dichlorobenzene         | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 1,2-Dichlorobenzene         | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 1,4-Dichlorobenzene         | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2-Methylphenol              | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| Hexachloroethane            | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nitrobenzene                | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 4-Methylphenol              | mg/kg | 0.2  | NONE      | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Isophorone                  | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 2-Nitrophenol               | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 2,4-Dimethylphenol          | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| Bis(2-chloroethoxy)methane  | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 1,2,4-Trichlorobenzene      | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| Naphthalene                 | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4-Dichlorophenol          | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 4-Chloroaniline             | mg/kg | 0.1  | NONE      | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Hexachlorobutadiene         | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 4-Chloro-3-methylphenol     | mg/kg | 0.1  | NONE      | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2,4,6-Trichlorophenol       | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2,4,5-Trichlorophenol       | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 2-Methylnaphthalene         | mg/kg | 0.1  | NONE      | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2-Chloronaphthalene         | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Dimethylphthalate           | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2,6-Dinitrotoluene          | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Acenaphthylene              | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene                | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4-Dinitrotoluene          | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Dibenzofuran                | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |

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Analytical Report Number: 21-70049  
Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                    |                         | 1844595       | 1844596       | 1844597       | 1844598       | 1844599       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | BH01          | BH01          | BH02          | BH02          | BH03          |
| Sample Number                           |       |                    |                         | P9656         | P9656         | P9656         | P9656         | P9656         |
| Depth (m)                               |       |                    |                         | 0.50          | 5.00          | 0.60          | 5.00          | 0.60          |
| Date Sampled                            |       |                    |                         | 08/04/2021    | 08/04/2021    | 08/04/2021    | 08/04/2021    | 08/04/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accuracy from<br>Source |               |               |               |               |               |
|                                         |       |                    |                         |               |               |               |               |               |
| 4-Chlorophenyl phenyl ether             | mg/kg | 0.3                | ISO 17025               | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Diethyl phthalate                       | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| 4-Nitroaniline                          | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Fluorene                                | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Azobenzene                              | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Bromophenyl phenyl ether                | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Hexachlorobenzene                       | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Anthracene                              | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Carbazole                               | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Dibutyl phthalate                       | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Anthraquinone                           | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Butyl benzyl phthalate                  | mg/kg | 0.3                | ISO 17025               | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Chrysene                                | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Dibenzo(a,h)anthracene                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 21-70049  
Project / Site name: Contract Chemicals

| Lab Sample Number                    | 1844600       | 1844601            | 1844602          | 1844603       | 1844604       |
|--------------------------------------|---------------|--------------------|------------------|---------------|---------------|
| Sample Reference                     | BH03          | BH04               | BH04             | BH05          | BH05          |
| Sample Number                        | P9656         | P9656              | P9656            | P9656         | P9656         |
| Depth (m)                            | 4.00          | 0.40               | 2.00             | 0.70          | 2.50          |
| Date Sampled                         | 08/04/2021    | 09/04/2021         | 08/04/2021       | 09/04/2021    | 09/04/2021    |
| Time Taken                           | None Supplied | None Supplied      | None Supplied    | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units         | Limit of detection | Acceptable level |               |               |
| Stone Content                        | %             | 0.1                | NONE             | < 0.1         | < 0.1         |
| Moisture Content                     | %             | 0.01               | NONE             | 15            | 11            |
| Total mass of sample received        | kg            | 0.001              | NONE             | 1.7           | 1.2           |

#### General Inorganics

| pH - Automated | pH Units | N/A | MERTS | 8.3 | 7.9 | 6.5 | 8.1 | 4.9 |
|----------------|----------|-----|-------|-----|-----|-----|-----|-----|
|----------------|----------|-----|-------|-----|-----|-----|-----|-----|

#### Speciated PAHs

|                        |       |      |       |        |        |        |        |        |
|------------------------|-------|------|-------|--------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Anthracene             | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Pyrene                 | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)anthracene     | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chrysene               | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

#### Total PAH

|                             |       |     |       |        |        |        |        |        |
|-----------------------------|-------|-----|-------|--------|--------|--------|--------|--------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MERTS | < 0.80 | < 0.80 | < 0.80 | < 0.80 | < 0.80 |
|-----------------------------|-------|-----|-------|--------|--------|--------|--------|--------|

#### Heavy Metals / Metalloids

|                                |       |     |       |       |       |       |       |       |
|--------------------------------|-------|-----|-------|-------|-------|-------|-------|-------|
| Arsenic (aqueous extractable)  | mg/kg | 1   | MERTS | 5.3   | 5.5   | 2.2   | 4.6   | 6.2   |
| Boron (water soluble)          | mg/kg | 0.2 | MERTS | 0.4   | 0.4   | 0.3   | 0.3   | 0.3   |
| Cadmium (aqueous extractable)  | mg/kg | 0.2 | MERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | 0.7   |
| Chromium (aqueous extractable) | mg/kg | 1   | MERTS | 18    | 15    | 21    | 12    | 16    |
| Copper (aqueous extractable)   | mg/kg | 1   | MERTS | 12    | 9.6   | 4.0   | 8.7   | 9.9   |
| Lead (aqueous extractable)     | mg/kg | 1   | MERTS | 5.2   | 11    | 8.5   | 44    | 6.7   |
| Mercury (aqueous extractable)  | mg/kg | 0.3 | MERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqueous extractable)   | mg/kg | 1   | MERTS | 20    | 15    | 7.5   | 7.8   | 20    |
| Selenium (aqueous extractable) | mg/kg | 1   | MERTS | < 1.0 | < 1.0 | < 1.0 | 1.1   | < 1.0 |
| Vanadium (aqueous extractable) | mg/kg | 1   | MERTS | 19    | 16    | 22    | 18    | 23    |
| Zinc (aqueous extractable)     | mg/kg | 1   | MERTS | 25    | 36    | 19    | 94    | 29    |

#### Monoaromatics & Oxygenates

|                                    |       |   |       |       |       |       |       |       |
|------------------------------------|-------|---|-------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

#### Petroleum Hydrocarbons

|                                 |       |       |       |         |         |         |         |         |
|---------------------------------|-------|-------|-------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6  | mg/kg | 0.001 | MERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8  | mg/kg | 0.001 | MERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10 | mg/kg | 0.001 | MERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |

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Analytical Report Number: 21-70049  
Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                    |                      | 1844600       | 1844601       | 1844602       | 1844603       | 1844604       |
|-----------------------------------------|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                      | BH03          | BH04          | BH04          | BH05          | BH05          |
| Sample Number                           |       |                    |                      | P0656         | P0656         | P0656         | P0656         | P0656         |
| Depth (m)                               |       |                    |                      | 4.00          | 0.40          | 2.00          | 0.70          | 2.50          |
| Date Sampled                            |       |                    |                      | 08/04/2021    | 09/04/2021    | 08/04/2021    | 09/04/2021    | 09/04/2021    |
| Time Taken                              |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Unit  | Limit of detection | Acceptable<br>Screen |               |               |               |               |               |
|                                         |       |                    |                      |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS               | < 2.0         | < 2.0         | < 2.0         | 9.8           | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS               | < 8.0         | < 8.0         | < 8.0         | 25            | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS               | < 8.0         | 46            | < 8.0         | 220           | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS               | < 10          | 50            | < 10          | 250           | < 10          |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS               | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS               | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS               | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS               | < 2.0         | < 2.0         | < 2.0         | < 2.0         | 8.0           |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS               | < 10          | < 10          | < 10          | < 10          | 12            |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS               | < 10          | 67            | < 10          | 30            | 40            |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS               | < 10          | 72            | < 10          | 30            | 50            |

| VOCs                                  |       |   |           |       |       |       |       |       |
|---------------------------------------|-------|---|-----------|-------|-------|-------|-------|-------|
| Chloroethane                          | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoethane                           | µg/kg | 1 | NONE      | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane                          | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vinyl Chloride                        | µg/kg | 1 | NONE      | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorofluoromethane                | µg/kg | 1 | NONE      | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane                    | µg/kg | 1 | NONE      | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Cis-1,2-dichloroethane                | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether)    | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane                    | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2,2-Dichloropropane                   | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloromethane                      | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane                 | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane                    | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene                   | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trans-1,2-dichloroethane              | µg/kg | 1 | NONE      | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Benzene                               | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethane                     | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane                   | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene                       | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromomethane                        | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromodichloromethane                  | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Cis-1,3-dichloropropene               | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trans-1,3-dichloropropene             | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                               | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane                 | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane                   | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromochloromethane                  | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene                     | µg/kg | 1 | NONE      | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dibromoethane                     | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene                         | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1,2-Tetrachloroethane             | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                          | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-Xylene                          | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Styrene                               | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tribromomethane                       | µg/kg | 1 | NONE      | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene                              | µg/kg | 1 | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

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Analytical Report Number: 21-70049  
Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                    |                        | 1844600       | 1844601       | 1844602       | 1844603       | 1844604       |
|-----------------------------------------|-------|--------------------|------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                        | BH03          | BH04          | BH04          | BH05          | BH05          |
| Sample Number                           |       |                    |                        | P9656         | P9656         | P9656         | P9656         | P9656         |
| Depth (m)                               |       |                    |                        | 4.00          | 0.40          | 2.00          | 0.70          | 2.50          |
| Date Sampled                            |       |                    |                        | 06/04/2021    | 09/04/2021    | 08/04/2021    | 09/04/2021    | 09/04/2021    |
| Time Taken                              |       |                    |                        | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Unit  | Limit of detection | Acceptance<br>criteria |               |               |               |               |               |
|                                         |       |                    |                        |               |               |               |               |               |
| 1,1,2,2-Tetrachloroethane               | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Isopropylbenzene                        | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Bromobenzene                            | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| n-Propylbenzene                         | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 2-Chlorotoluene                         | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 4-Chlorotoluene                         | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3,5-Trimethylbenzene                  | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| tert-Butylbenzene                       | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,4-Trimethylbenzene                  | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| sec-Butylbenzene                        | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3-Dichlorobenzene                     | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| p-Isopropyltoluene                      | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dichlorobenzene                     | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,4-Dichlorobenzene                     | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Butylbenzene                            | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dibromo-3-chloropropane             | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,4-Trichlorobenzene                  | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Hexachlorobutadiene                     | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,3-Trichlorobenzene                  | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |

## SVOCs

|                             |       |      |           |        |        |        |        |        |
|-----------------------------|-------|------|-----------|--------|--------|--------|--------|--------|
| Aniline                     | mg/kg | 0.1  | NONE      | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Phenol                      | mg/kg | 0.2  | ISO 17025 | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 2-Chlorophenol              | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Bis(2-chloroethyl)ether     | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 1,3-Dichlorobenzene         | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 1,2-Dichlorobenzene         | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 1,4-Dichlorobenzene         | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2-Methylphenol              | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| Hexachloroethane            | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nitrobenzene                | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 4-Methylphenol              | mg/kg | 0.2  | NONE      | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Isophorone                  | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 2-Nitrophenol               | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 2,4-Dimethylphenol          | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| Bis(2-chloroethoxy)methane  | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 1,2,4-Trichlorobenzene      | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| Naphthalene                 | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4-Dichlorophenol          | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 4-Chloroaniline             | mg/kg | 0.1  | NONE      | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Hexachlorobutadiene         | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 4-Chloro-3-methylphenol     | mg/kg | 0.1  | NONE      | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2,4,6-Trichlorophenol       | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2,4,5-Trichlorophenol       | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 2-Methylnaphthalene         | mg/kg | 0.1  | NONE      | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2-Chloronaphthalene         | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Dimethylphthalate           | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2,6-Dinitrotoluene          | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Acenaphthylene              | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene                | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4-Dinitrotoluene          | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Dibenzofuran                | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |

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The results included within the report relate only to the sample(s) submitted for testing.

Iss No 21-70049-1 Contract Chemicals P9656.XLSM  
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Analytical Report Number: 21-70049  
Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                    |                         | 1844600       | 1844601       | 1844602       | 1844603       | 1844604       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | BH03          | BH04          | BH04          | BH05          | BH05          |
| Sample Number                           |       |                    |                         | P9656         | P9656         | P9656         | P9656         | P9656         |
| Depth (m)                               |       |                    |                         | 4.00          | 0.40          | 2.00          | 0.70          | 2.50          |
| Date Sampled                            |       |                    |                         | 08/04/2021    | 09/04/2021    | 08/04/2021    | 09/04/2021    | 09/04/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Unit  | Limit of detection | Accreditation<br>Scheme |               |               |               |               |               |
| 4-Chlorophenyl phenyl ether             | mg/kg | 0.3                | ISO 17025               | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Diethyl phthalate                       | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| 4-Nitroaniline                          | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Fluorene                                | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Azobenzene                              | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Bromophenyl phenyl ether                | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Hexachlorobenzene                       | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Anthracene                              | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Carbazole                               | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Dibutyl phthalate                       | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Anthraquinone                           | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Butyl benzyl phthalate                  | mg/kg | 0.3                | ISO 17025               | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Chrysene                                | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |

U/S = Unsuitable Sample I/S = Insufficient Sample



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## **Analytical Report Number : 21-72714**

|                             |                    |                                                        |            |
|-----------------------------|--------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Contract Chemicals | <b>Samples received on:</b>                            | 04/05/2021 |
| <b>Your job number:</b>     |                    | <b>Samples instructed on/<br/>Analysis started on:</b> | 04/05/2021 |
| <b>Your order number:</b>   |                    | <b>Analysis completed by:</b>                          | 13/05/2021 |
| <b>Report Issue Number:</b> | 1                  | <b>Report issued on:</b>                               | 13/05/2021 |
| <b>Samples Analysed:</b>    | 4 water samples    |                                                        |            |

**Signed:** *A. Czerwinska*

Agnieszka Czerwinska  
Technical Reviewer (Reporting Team)  
**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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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 21-72714  
Project / Site name: Contract Chemicals

|                                       |               |                   |               |               |
|---------------------------------------|---------------|-------------------|---------------|---------------|
| Lab Sample Number                     | 1858591       | 1858592           | 1858593       | 1858594       |
| Sample Reference                      | BH4           | BH5               | BH1           | BH3           |
| Sample Number                         | None Supplied | None Supplied     | None Supplied | None Supplied |
| Depth (m)                             | 2.00          | 2.00              | 2.00          | 2.00          |
| Date Sampled                          | 27/04/2021    | 27/04/2021        | 29/04/2021    | 29/04/2021    |
| Time Taken                            | None Supplied | None Supplied     | None Supplied | None Supplied |
| Analytical Parameter (Water Analysis) | Unit          | Unit of detection | Standard      |               |

#### General Inorganics

|    |          |     |           |     |     |     |     |
|----|----------|-----|-----------|-----|-----|-----|-----|
| pH | pH Units | N/A | ISO 17025 | 7.0 | 6.6 | 6.8 | 7.2 |
|----|----------|-----|-----------|-----|-----|-----|-----|

#### Speciated PAHs

|                        |      |      |           |        |        |        |        |
|------------------------|------|------|-----------|--------|--------|--------|--------|
| Naphthalene            | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthylene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Fluorene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Phenanthrene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Anthracene             | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Fluoranthene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Pyrene                 | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)anthracene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene  | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |

#### Total PAH

|                   |      |      |           |        |        |        |        |
|-------------------|------|------|-----------|--------|--------|--------|--------|
| Total EPA-16 PAHs | µg/l | 0.16 | ISO 17025 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
|-------------------|------|------|-----------|--------|--------|--------|--------|

#### Heavy Metals / Metalloids

|                      |      |      |           |        |        |        |        |
|----------------------|------|------|-----------|--------|--------|--------|--------|
| Boron (dissolved)    | µg/l | 10   | ISO 17025 | 66     | 97     | 58     | 57     |
| Arsenic (dissolved)  | µg/l | 0.15 | ISO 17025 | 0.78   | 0.91   | 2.10   | 1.81   |
| Cadmium (dissolved)  | µg/l | 0.02 | ISO 17025 | 0.08   | 0.13   | 0.04   | 0.13   |
| Chromium (dissolved) | µg/l | 0.2  | ISO 17025 | 3.3    | 1.7    | 9.2    | 3.4    |
| Copper (dissolved)   | µg/l | 0.5  | ISO 17025 | 4.0    | 4.1    | 4.6    | 10     |
| Lead (dissolved)     | µg/l | 0.2  | ISO 17025 | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Mercury (dissolved)  | µg/l | 0.05 | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nickel (dissolved)   | µg/l | 0.5  | ISO 17025 | 11     | 38     | 5.9    | 18     |
| Selenium (dissolved) | µg/l | 0.6  | ISO 17025 | 4.8    | 6.9    | 2.7    | 3.0    |
| Zinc (dissolved)     | µg/l | 0.5  | ISO 17025 | 13     | 22     | 6.6    | 43     |

#### Monoaromatics & Oxygenates

|                                    |      |   |           |       |       |       |       |
|------------------------------------|------|---|-----------|-------|-------|-------|-------|
| Benzene                            | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

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Analytical Report Number: 21-72714  
Project / Site name: Contract Chemicals

| Lab Sample Number                     |  |  |  | 1858591       | 1858592       | 1858593       | 1858594       |
|---------------------------------------|--|--|--|---------------|---------------|---------------|---------------|
| Sample Reference                      |  |  |  | BH4           | BH5           | BH1           | BH3           |
| Sample Number                         |  |  |  | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                             |  |  |  | 2.00          | 2.00          | 2.00          | 2.00          |
| Date Sampled                          |  |  |  | 27/04/2021    | 27/04/2021    | 29/04/2021    | 29/04/2021    |
| Time Taken                            |  |  |  | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Water Analysis) |  |  |  |               |               |               |               |

#### Petroleum Hydrocarbons

| TPH-CWG - Aliphatic >C5 - C6   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
|--------------------------------|------|----|-----------|-------|-------|-------|-------|
| TPH-CWG - Aliphatic >C6 - C8   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10  | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C12 - C16 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C16 - C21 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C21 - C35 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic (C5 - C35) | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |

| TPH-CWG - Aromatic >C5 - C7   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
|-------------------------------|------|----|-----------|-------|-------|-------|-------|
| TPH-CWG - Aromatic >C7 - C8   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10  | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aromatic >C12 - C16 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aromatic >C16 - C21 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aromatic >C21 - C35 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aromatic (C5 - C35) | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |

#### VOCs

| Chloromethane                         | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
|---------------------------------------|------|---|-----------|-------|-------|-------|-------|
| Chloroethane                          | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane                          | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vinyl Chloride                        | µg/l | 1 | NONE      | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorofluoromethane                | µg/l | 1 | NONE      | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane                    | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Cis-1,2-dichloroethane                | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether)    | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane                    | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2,2-Dichloropropane                   | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloromethane                      | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane                 | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane                    | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene                   | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trans-1,2-dichloroethane              | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Benzene                               | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloromethane                    | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane                   | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene                       | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromomethane                        | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromodichloromethane                  | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Cis-1,3-dichloropropene               | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trans-1,3-dichloropropene             | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                               | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane                 | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane                   | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromochloromethane                  | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene                     | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dibromoethane                     | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene                         | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1,2-Tetrachloroethane             | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                          | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

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The results included within the report relate only to the sample(s) submitted for testing.

Iss No 21-72714-1 Contract Chemicals  
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Analytical Report Number: 21-72714  
Project / Site name: Contract Chemicals

| Lab Sample Number                        |       |                    |                         | 1858591       | 1858592       | 1858593       | 1858594       |
|------------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|
| Sample Reference                         |       |                    |                         | BH4           | BH5           | BH1           | BH3           |
| Sample Number                            |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                                |       |                    |                         | 2.00          | 2.00          | 2.00          | 2.00          |
| Date Sampled                             |       |                    |                         | 27/04/2021    | 27/04/2021    | 29/04/2021    | 29/04/2021    |
| Time Taken                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Water Analysis) | Units | Limit of detection | Accreditation<br>Scheme |               |               |               |               |
| p & m-Xylene                             | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Styrene                                  | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Tribromomethane                          | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| o-Xylene                                 | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,2,2-Tetrachloroethane                | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Isopropylbenzene                         | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Bromobenzene                             | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| n-Propylbenzene                          | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 2-Chlorotoluene                          | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 4-Chlorotoluene                          | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3,5-Trimethylbenzene                   | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| tert-Butylbenzene                        | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,4-Trimethylbenzene                   | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| sec-Butylbenzene                         | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3-Dichlorobenzene                      | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| p-Isopropyltoluene                       | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dichlorobenzene                      | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,4-Dichlorobenzene                      | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Butylbenzene                             | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dibromo-3-chloropropane              | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,4-Trichlorobenzene                   | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Hexachlorobutadiene                      | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,3-Trichlorobenzene                   | µg/l  | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         |

## SVOCs

|                              |      |      |           |        |        |        |        |
|------------------------------|------|------|-----------|--------|--------|--------|--------|
| Aniline                      | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenol                       | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Chlorophenol               | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bis(2-chloroethoxy)ether     | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,3-Dichlorobenzene          | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2-Dichlorobenzene          | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,4-Dichlorobenzene          | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bis(2-chloroisopropoxy)ether | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Methylphenol               | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachloroethane             | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nitrobenzene                 | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Methylphenol               | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Isophorone                   | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Nitrophenol                | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4-Dimethylphenol           | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bis(2-chloroethoxy)methane   | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2,4-Trichlorobenzene       | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Naphthalene                  | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| 2,4-Dichlorophenol           | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Chloroaniline              | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachlorobutadiene          | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Chloro-3-methylphenol      | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4,6-Trichlorophenol        | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4,5-Trichlorophenol        | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Methylnaphthalene          | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Chloronaphthalene          | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dimethylnaphthalene          | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,6-Dinitrotoluene           | µg/l | 0.05 | NONE      | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

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Iss No 21-72714-1 Contract Chemicals  
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Analytical Report Number: 21-72714  
Project / Site name: Contract Chemicals

| Lab Sample Number                        |       |                    |                         | 1858591       | 1858592       | 1858593       | 1858594       |
|------------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|
| Sample Reference                         |       |                    |                         | BH4           | BH5           | BH1           | BH3           |
| Sample Number                            |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                                |       |                    |                         | 2.00          | 2.00          | 2.00          | 2.00          |
| Date Sampled                             |       |                    |                         | 27/04/2021    | 27/04/2021    | 29/04/2021    | 29/04/2021    |
| Time Taken                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Water Analysis) | Units | Limit of detection | Accreditation<br>Scheme |               |               |               |               |
| Acrnaphthylene                           | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Acrnaphthene                             | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| 2,4-Dinitrotoluene                       | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Dibenzofuran                             | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| 4-Chlorophenyl phenyl ether              | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Diethyl phthalate                        | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| 4-Nitroaniline                           | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Fluorene                                 | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Azobenzene                               | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Bromophenyl phenyl ether                 | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Hexachlorobenzene                        | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Phenanthrene                             | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Anthracene                               | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Carbazole                                | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Dibutyl phthalate                        | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Anthraquinone                            | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Fluoranthene                             | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Pyrene                                   | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Butyl benzyl phthalate                   | µg/l  | 0.05               | NONE                    | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(a)anthracene                       | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Chrysene                                 | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Benzo(b)fluoranthene                     | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Benzo(k)fluoranthene                     | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Benzo(a)pyrene                           | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Indeno(1,2,3-cd)pyrene                   | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Dibenz(a,h)anthracene                    | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| Benzo(ghi)perylene                       | µg/l  | 0.01               | ISO 17025               | < 0.01        | < 0.01        | < 0.01        | < 0.01        |
| 3,4-Methylphenol                         | µg/l  | 0.1                | NONE                    | < 0.10        | < 0.10        | < 0.10        | < 0.10        |

U/S = Unsuitable Sample    I/S = Insufficient Sample



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## **Analytical Report Number : 21-85847**

|                             |                    |                                                        |            |
|-----------------------------|--------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Contract Chemicals | <b>Samples received on:</b>                            | 08/07/2021 |
| <b>Your job number:</b>     | C CHEM             | <b>Samples instructed on/<br/>Analysis started on:</b> | 08/07/2021 |
| <b>Your order number:</b>   |                    | <b>Analysis completed by:</b>                          | 15/07/2021 |
| <b>Report Issue Number:</b> | 1                  | <b>Report issued on:</b>                               | 15/07/2021 |
| <b>Samples Analysed:</b>    | 11 soil samples    |                                                        |            |

**Signed:** *Karolina Marek*

Karolina Marek  
PL Head of Reporting Team  
**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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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 21-85847  
Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                    |                       | 1932081       | 1932082       | 1932083       | 1932084       | 1932085       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | PPS1          | PPS2          | PPS3          | PPS4          | PPS5          |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     |
| Date Sampled                            |       |                    |                       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accuracy<br>Statement |               |               |               |               |               |
|                                         |       |                    |                       |               |               |               |               |               |
|                                         |       |                    |                       |               |               |               |               |               |
|                                         |       |                    |                       |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                  | 15            | 17            | 12            | 13            | 13            |
| Total mass of sample received           | kg    | 0.001              | NONE                  | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          |

#### General Inorganics

|                |          |     |        |     |     |     |     |     |
|----------------|----------|-----|--------|-----|-----|-----|-----|-----|
| pH - Automated | pH Units | N/A | MCERTS | 9.0 | 9.5 | 9.1 | 8.3 | 8.1 |
|----------------|----------|-----|--------|-----|-----|-----|-----|-----|

#### Speciated PAHs

|                        |       |      |        |        |        |        |        |        |
|------------------------|-------|------|--------|--------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Anthracene             | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | < 0.05 | 0.36   | < 0.05 | < 0.05 | < 0.05 |
| Pyrene                 | mg/kg | 0.05 | MCERTS | < 0.05 | 0.56   | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | < 0.05 | 0.15   | < 0.05 | < 0.05 | < 0.05 |
| Chrysene               | mg/kg | 0.05 | MCERTS | < 0.05 | 0.17   | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | < 0.05 | 0.17   | < 0.05 | < 0.05 | < 0.05 |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | < 0.05 | 0.12   | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | < 0.05 | 0.19   | < 0.05 | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 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 | 0.8 | MCERTS | < 0.80 | 1.72 | < 0.80 | < 0.80 | < 0.80 |
|-----------------------------|-------|-----|--------|--------|------|--------|--------|--------|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 5.6   | 6.0   | 6.8   | 8.6   | 7.8   |
| Boron (water soluble)             | mg/kg | 0.2 | MCERTS | 0.2   | 0.3   | < 0.2 | 0.2   | < 0.2 |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | 0.2   | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 18    | 25    | 15    | 30    | 36    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 31    | 36    | 19    | 27    | 23    |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 19    | 29    | 5.5   | 7.9   | 7.4   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 15    | 25    | 14    | 36    | 24    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1   | MCERTS | 14    | 17    | 15    | 28    | 30    |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 90    | 88    | 47    | 49    | 70    |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |



Analytical Report Number: 21-85847  
Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                    |                         | 1932081       | 1932082       | 1932083       | 1932084       | 1932085       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | PPS1          | PPS2          | PPS3          | PPS4          | PPS5          |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     |
| Date Sampled                            |       |                    |                         | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
|                                         |       |                    |                         |               |               |               |               |               |
|                                         |       |                    |                         |               |               |               |               |               |
| Petroleum Hydrocarbons                  |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
|                                         |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
|                                         |       |                    |                         |               |               |               |               |               |
| VOCs                                    |       |                    |                         |               |               |               |               |               |
| Chloromethane                           | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Chloroethane                            | µg/kg | 1                  | NONE                    | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Bromomethane                            | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Vinyl Chloride                          | µg/kg | 1                  | NONE                    | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Trichlorofluoromethane                  | µg/kg | 1                  | NONE                    | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1-Dichloroethene                      | µg/kg | 1                  | NONE                    | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane   | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Cis-1,2-dichloroethene                  | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| MTBE (Methyl Tertiary Butyl Ether)      | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1-Dichloroethane                      | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 2,2-Dichloropropane                     | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Trichloromethane                        | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,1-Trichloroethane                   | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dichloroethane                      | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1-Dichloropropane                     | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Trans-1,2-dichloroethene                | µg/kg | 1                  | NONE                    | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Benzene                                 | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Tetrachloromethane                      | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dichloropropane                     | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Trichloroethene                         | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Dibromomethane                          | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Bromodichloromethane                    | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Cis-1,3-dichloropropene                 | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |



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Project / Site name: Contract Chemicals

| Lab Sample Number                    |       |                    |                      |       | 1932081       | 1932082       | 1932083       | 1932084       | 1932085       |
|--------------------------------------|-------|--------------------|----------------------|-------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                     |       |                    |                      |       | PPS1          | PPS2          | PPS3          | PPS4          | PPS5          |
| Sample Number                        |       |                    |                      |       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                            |       |                    |                      |       | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     |
| Date Sampled                         |       |                    |                      |       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                           |       |                    |                      |       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of Detection | Accreditation Status |       |               |               |               |               |               |
| Trans-1,3-dichloropropene            | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Toluene                              | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,2-Trichloroethane                | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3-Dichloropropane                  | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Dibromochloromethane                 | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Tetrachloroethene                    | µg/kg | 1                  | NONE                 | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dibromoethane                    | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Chlorobenzene                        | µg/kg | 1                  | MCERTS               | 9.0   | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,1,2-Tetrachloroethane            | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Ethylbenzene                         | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| p & m-Xylene                         | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Styrene                              | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Tribromomethane                      | µg/kg | 1                  | NONE                 | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| o-Xylene                             | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,2,2-Tetrachloroethane            | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Isopropylbenzene                     | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Bromobenzene                         | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| n-Propylbenzene                      | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 2-Chlorotoluene                      | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 4-Chlorotoluene                      | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3,5-Trimethylbenzene               | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| tert-Butylbenzene                    | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,4-Trimethylbenzene               | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| sec-Butylbenzene                     | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3-Dichlorobenzene                  | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| p-Isopropyltoluene                   | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dichlorobenzene                  | µg/kg | 1                  | MCERTS               | 220   | 150           | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,4-Dichlorobenzene                  | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Butylbenzene                         | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dibromo-3-chloropropane          | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,4-Trichlorobenzene               | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Hexachlorobutadiene                  | µg/kg | 1                  | MCERTS               | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,3-Trichlorobenzene               | µg/kg | 1                  | ISO 17025            | < 1.0 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |

## SVOCs

|                             |       |      |           |        |        |        |        |        |        |
|-----------------------------|-------|------|-----------|--------|--------|--------|--------|--------|--------|
| Aniline                     | mg/kg | 0.1  | NONE      | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Phenol                      | mg/kg | 0.2  | ISO 17025 | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 2-Chlorophenol              | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Bis(2-chloroethyl)ether     | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 1,3-Dichlorobenzene         | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 1,2-Dichlorobenzene         | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 1,4-Dichlorobenzene         | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2-Methylphenol              | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| Hexachloroethane            | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nitrobenzene                | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 4-Methylphenol              | mg/kg | 0.2  | NONE      | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Isophorone                  | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 2-Nitrophenol               | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 2,4-Dimethylphenol          | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| Bis(2-chloroethoxy)methane  | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |



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Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                    |                         | 1932081       | 1932082       | 1932083       | 1932084       | 1932085       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | PPS1          | PPS2          | PPS3          | PPS4          | PPS5          |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     |
| Date Sampled                            |       |                    |                         | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>scheme |               |               |               |               |               |
| 1,2,4-Trichlorobenzene                  | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| 2,4-Dichlorophenol                      | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| 4-Chloroaniline                         | mg/kg | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Hexachlorobutadiene                     | mg/kg | 0.1                | MCERTS                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| 4-Chloro-3-methylphenol                 | mg/kg | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| 2,4,6-Trichlorophenol                   | mg/kg | 0.1                | MCERTS                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| 2,4,5-Trichlorophenol                   | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| 2-Methylnaphthalene                     | mg/kg | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| 2-Chloronaphthalene                     | mg/kg | 0.1                | MCERTS                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Dimethylphthalate                       | mg/kg | 0.1                | MCERTS                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| 2,6-Dinitrotoluene                      | mg/kg | 0.1                | MCERTS                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| 2,4-Dinitrotoluene                      | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Dibenzofuran                            | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| 4-Chlorophenyl phenyl ether             | mg/kg | 0.3                | ISO 17025               | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Diethyl phthalate                       | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| 4-Nitroaniline                          | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Fluorene                                | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Azobenzene                              | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Bromophenyl phenyl ether                | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Hexachlorobenzene                       | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Anthracene                              | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Carbazole                               | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Dibutyl phthalate                       | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Anthraquinone                           | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | 0.36          | < 0.05        | < 0.05        | < 0.05        |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | 0.56          | < 0.05        | < 0.05        | < 0.05        |
| Butyl benzyl phthalate                  | mg/kg | 0.3                | ISO 17025               | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                  | < 0.05        | 0.15          | < 0.05        | < 0.05        | < 0.05        |
| Chrysene                                | mg/kg | 0.05               | MCERTS                  | < 0.05        | 0.17          | < 0.05        | < 0.05        | < 0.05        |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | < 0.05        | 0.17          | < 0.05        | < 0.05        | < 0.05        |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | < 0.05        | 0.12          | < 0.05        | < 0.05        | < 0.05        |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                  | < 0.05        | 0.19          | < 0.05        | < 0.05        | < 0.05        |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |

U/S = Unsuitable Sample    I/S = Insufficient Sample



Analytical Report Number: 21-85847

Project / Site name: Contract Chemicals

| Lab Sample Number                    | 1932086       | 1932087            | 1932088              | 1932089       | 1932090       |
|--------------------------------------|---------------|--------------------|----------------------|---------------|---------------|
| Sample Reference                     | PP56          | PP57               | PP58                 | PP59          | PP510         |
| Sample Number                        | None Supplied | None Supplied      | None Supplied        | None Supplied | None Supplied |
| Depth (m)                            | 0.00-0.30     | 0.00-0.30          | 0.00-0.30            | 0.00-0.30     | 0.00-0.30     |
| Date Sampled                         | 06/07/2021    | 06/07/2021         | 06/07/2021           | 06/07/2021    | 06/07/2021    |
| Time Taken                           | None Supplied | None Supplied      | None Supplied        | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units         | Limit of detection | Accreditation Number |               |               |
| Stone Content                        | %             | 0.1                | NONE                 | < 0.1         | < 0.1         |
| Moisture Content                     | %             | 0.01               | NONE                 | 13            | 14            |
| Total mass of sample received        | kg            | 0.001              | NONE                 | 0.50          | 0.50          |

## General Inorganics

| pH - Automated | pH Units | N/A | MCERTS | 9.8 | 7.7 | 7.9 | 8.1 | 8.0 |
|----------------|----------|-----|--------|-----|-----|-----|-----|-----|
|----------------|----------|-----|--------|-----|-----|-----|-----|-----|

## Speciated PAHs

|                        |       |      |        |        |        |        |        |        |
|------------------------|-------|------|--------|--------|--------|--------|--------|--------|
| Naphthalene            | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene           | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Anthracene             | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene           | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Pyrene                 | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)anthracene     | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chrysene               | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene   | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(k)fluoranthene   | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)pyrene         | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibenzo(a,h)anthracene | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(g,h,i)perylene   | ng/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

## Total PAH

|                             |       |     |        |        |        |        |        |        |
|-----------------------------|-------|-----|--------|--------|--------|--------|--------|--------|
| Speciated Total EPA-16 PAHs | ng/kg | 0.8 | MCERTS | < 0.80 | < 0.80 | < 0.80 | < 0.80 | < 0.80 |
|-----------------------------|-------|-----|--------|--------|--------|--------|--------|--------|

## Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 4.1   | 7.4   | 6.5   | 9.9   | 8.7   |
| Boron (water soluble)             | mg/kg | 0.2 | MCERTS | 0.9   | < 0.2 | < 0.2 | 0.2   | 0.3   |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 18    | 35    | 36    | 36    | 38    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 17    | 21    | 25    | 29    | 17    |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 8.2   | 6.3   | 7.3   | 13    | 7.7   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 15    | 36    | 28    | 30    | 21    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1   | MCERTS | 14    | 29    | 29    | 34    | 38    |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 47    | 41    | 42    | 64    | 38    |

## Monoaromatics &amp; Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |



Analytical Report Number: 21-85847  
Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                    |                        | 1932086       | 1932087       | 1932088       | 1932089       | 1932090       |
|-----------------------------------------|-------|--------------------|------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                        | PPS6          | PPS7          | PPS8          | PPS9          | PPS10         |
| Sample Number                           |       |                    |                        | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                        | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     |
| Date Sampled                            |       |                    |                        | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                        | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accuracy test<br>score |               |               |               |               |               |
|                                         |       |                    |                        |               |               |               |               |               |
| Petroleum Hydrocarbons                  |       |                    |                        |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                 | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                 | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                 | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                 | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                 | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                 | 35            | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                 | 35            | < 10          | < 10          | < 10          | < 10          |
|                                         |       |                    |                        |               |               |               |               |               |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                 | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                 | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                 | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                 | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                 | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                 | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                 | < 10          | < 10          | < 10          | < 10          | < 10          |
|                                         |       |                    |                        |               |               |               |               |               |
| VOCs                                    |       |                    |                        |               |               |               |               |               |
| Chloromethane                           | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Chloroethane                            | µg/kg | 1                  | NONE                   | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Bromomethane                            | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Vinyl Chloride                          | µg/kg | 1                  | NONE                   | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Trichlorofluoromethane                  | µg/kg | 1                  | NONE                   | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1-Dichloroethane                      | µg/kg | 1                  | NONE                   | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane   | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Cis-1,2-dichloroethene                  | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| MTBE (Methyl Tertiary Butyl Ether)      | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1-Dichloroethane                      | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 2,2-Dichloropropane                     | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Trichloromethane                        | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,1-Trichloroethane                   | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dichloroethane                      | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3-Dichloropropene                     | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Trans-1,2-dichloroethene                | µg/kg | 1                  | NONE                   | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Benzene                                 | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Tetrachloromethane                      | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dichloropropane                     | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Trichloroethene                         | µg/kg | 1                  | MCERTS                 | 12            | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Dibromomethane                          | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Bromodichloromethane                    | µg/kg | 1                  | MCERTS                 | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Cis-1,3-dichloropropene                 | µg/kg | 1                  | ISO 17025              | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |



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Environmental Science

Analytical Report Number: 21-85847

Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                    |                         | 1932086       | 1932087       | 1932088       | 1932089       | 1932090       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | PPS6          | PPS7          | PPS8          | PPS9          | PPS10         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     |
| Date Sampled                            |       |                    |                         | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Unit  | Limit of detection | Accreditation<br>Scheme |               |               |               |               |               |
|                                         |       |                    |                         |               |               |               |               |               |
| Trans-1,3-dichloropropene               | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Toluene                                 | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,2-Trichloroethane                   | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3-Dichloropropane                     | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Dibromochloromethane                    | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Tetrachloroethene                       | µg/kg | 1                  | NONE                    | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dibromomethane                      | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Chlorobenzene                           | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,1,2-Tetrachloroethane               | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Ethylbenzene                            | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| p & m-Xylene                            | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Styrene                                 | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Tribromomethane                         | µg/kg | 1                  | NONE                    | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| o-Xylene                                | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,1,2,2-Tetrachloroethane               | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Isopropylbenzene                        | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Bromobenzene                            | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| n-Propylbenzene                         | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 2-Chlorotoluene                         | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 4-Chlorotoluene                         | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3,5-Trimethylbenzene                  | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| tert-Butylbenzene                       | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,4-Trimethylbenzene                  | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| sec-Butylbenzene                        | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,3-Dichlorobenzene                     | µg/kg | 1                  | ISO 17025               | 58            | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| p-Isopropyltoluene                      | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dichlorobenzene                     | µg/kg | 1                  | MCERTS                  | 200           | < 1.0         | < 1.0         | 22            | < 1.0         |
| 1,4-Dichlorobenzene                     | µg/kg | 1                  | MCERTS                  | 66            | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Butylbenzene                            | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2-Dibromo-3-chloropropane             | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,4-Trichlorobenzene                  | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Hexachlorobutadiene                     | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| 1,2,3-Trichlorobenzene                  | µg/kg | 1                  | ISO 17025               | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |

## SVOCs

|                             |       |      |           |        |        |        |        |        |
|-----------------------------|-------|------|-----------|--------|--------|--------|--------|--------|
| Aniline                     | mg/kg | 0.1  | NONE      | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Phenol                      | mg/kg | 0.2  | ISO 17025 | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 2-Chlorophenol              | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| Bis(2-chloroethyl)ether     | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 1,3-Dichlorobenzene         | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 1,2-Dichlorobenzene         | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 1,4-Dichlorobenzene         | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1  | MCERTS    | < 0.1  | < 0.1  | < 0.1  | < 0.1  | < 0.1  |
| 2-Methylphenol              | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| Hexachloroethane            | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nitrobenzene                | mg/kg | 0.1  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 4-Methylphenol              | mg/kg | 0.2  | NONE      | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Isophorone                  | mg/kg | 0.2  | MCERTS    | < 0.2  | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| 2-Nitrophenol               | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| 2,4-Dimethylphenol          | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |
| Bis(2-chloroethoxy)methane  | mg/kg | 0.3  | MCERTS    | < 0.3  | < 0.3  | < 0.3  | < 0.3  | < 0.3  |



Analytical Report Number: 21-85847  
Project / Site name: Contract Chemicals

| Lab Sample Number                       |       |                     |                         | 1932086       | 1932087       | 1932088       | 1932089       | 1932090       |
|-----------------------------------------|-------|---------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                     |                         | PP56          | PP57          | PP58          | PP59          | PP510         |
| Sample Number                           |       |                     |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                     |                         | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     | 0.00-0.30     |
| Date Sampled                            |       |                     |                         | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                     |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Unit of Measurement | Accreditation<br>Scheme |               |               |               |               |               |
| 1,2,4-Trichlorobenzene                  | mg/kg | 0.3                 | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Naphthalene                             | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| 2,4-Dichlorophenol                      | mg/kg | 0.3                 | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| 4-Chloroaniline                         | mg/kg | 0.1                 | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Hexachlorobutadiene                     | mg/kg | 0.1                 | MCERTS                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| 4-Chloro-3-methylphenol                 | mg/kg | 0.1                 | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| 2,4,6-Trichlorophenol                   | mg/kg | 0.1                 | MCERTS                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| 2,4,5-Trichlorophenol                   | mg/kg | 0.2                 | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| 2-Methylnaphthalene                     | mg/kg | 0.1                 | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| 2-Chloronaphthalene                     | mg/kg | 0.1                 | MCERTS                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Dimethylphthalate                       | mg/kg | 0.1                 | MCERTS                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| 2,6-Dinitrotoluene                      | mg/kg | 0.1                 | MCERTS                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Acenaphthylene                          | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Acenaphthene                            | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| 2,4-Dinitrotoluene                      | mg/kg | 0.2                 | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Dibenzofuran                            | mg/kg | 0.2                 | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| 4-Chlorophenyl phenyl ether             | mg/kg | 0.3                 | ISO 17025               | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Diethyl phthalate                       | mg/kg | 0.2                 | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| 4-Nitroaniline                          | mg/kg | 0.2                 | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Fluorene                                | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Azobenzene                              | mg/kg | 0.3                 | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Bromophenyl phenyl ether                | mg/kg | 0.2                 | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Hexachlorobenzene                       | mg/kg | 0.3                 | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Phenanthrene                            | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Anthracene                              | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Carbazole                               | mg/kg | 0.3                 | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Dibutyl phthalate                       | mg/kg | 0.2                 | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Anthraquinone                           | mg/kg | 0.3                 | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Fluoranthene                            | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Pyrene                                  | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Butyl benzyl phthalate                  | mg/kg | 0.3                 | ISO 17025               | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Benzo(a)anthracene                      | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Chrysene                                | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(b)fluoranthene                    | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(k)fluoranthene                    | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(a)pyrene                          | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Dibenzo(a,h)anthracene                  | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(ghi)perylene                      | mg/kg | 0.05                | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |

U/S = Unsuitable Sample I/S = Insufficient Sample