Document Amendment Record

Client:	Roadstone Provinces Ltd.
Project:	Exploratory Site Investigation at Brownswood
Title:	Factual Site Investigation Report

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FACTUAL SITE INVESTIGATION REPORT
AT BROWNSWOOD, CO. WEXFORD

June 2008

TABLE OF CONTENTS

FIGURES AND TABLES

APPENDICES

1 INTRODUCTION

Roadstone Provinces Ltd own and operate a quarry located approximately 3 km to the south of Enniscorthy, in the townland of Brownswood. The site comprises an old disused quarry and a new quarry ('Paul Murphy Quarry'). The site location is shown Figure 1 and a the quarry site is shown in detail in Appendix A.

TOBIN Consulting Engineers were retained by Roadstone Provinces Ltd to address allegations raised in relation to activities involving several locations (marked in Appendix A and photographic plate 1) around the old quarry.

TOBIN Consulting Engineers (Tobin) conducted a preliminary site investigation as detailed in the report '*Factual Report on Reconnaissance Site Investigation*' (March 2008) to address allegations raised by a third party involving a number of locations around the 'old quarry' at Brownswood, Enniscorthy, County Wexford. A copy of this report was forwarded to Wexford County Council on 12th March 2008.

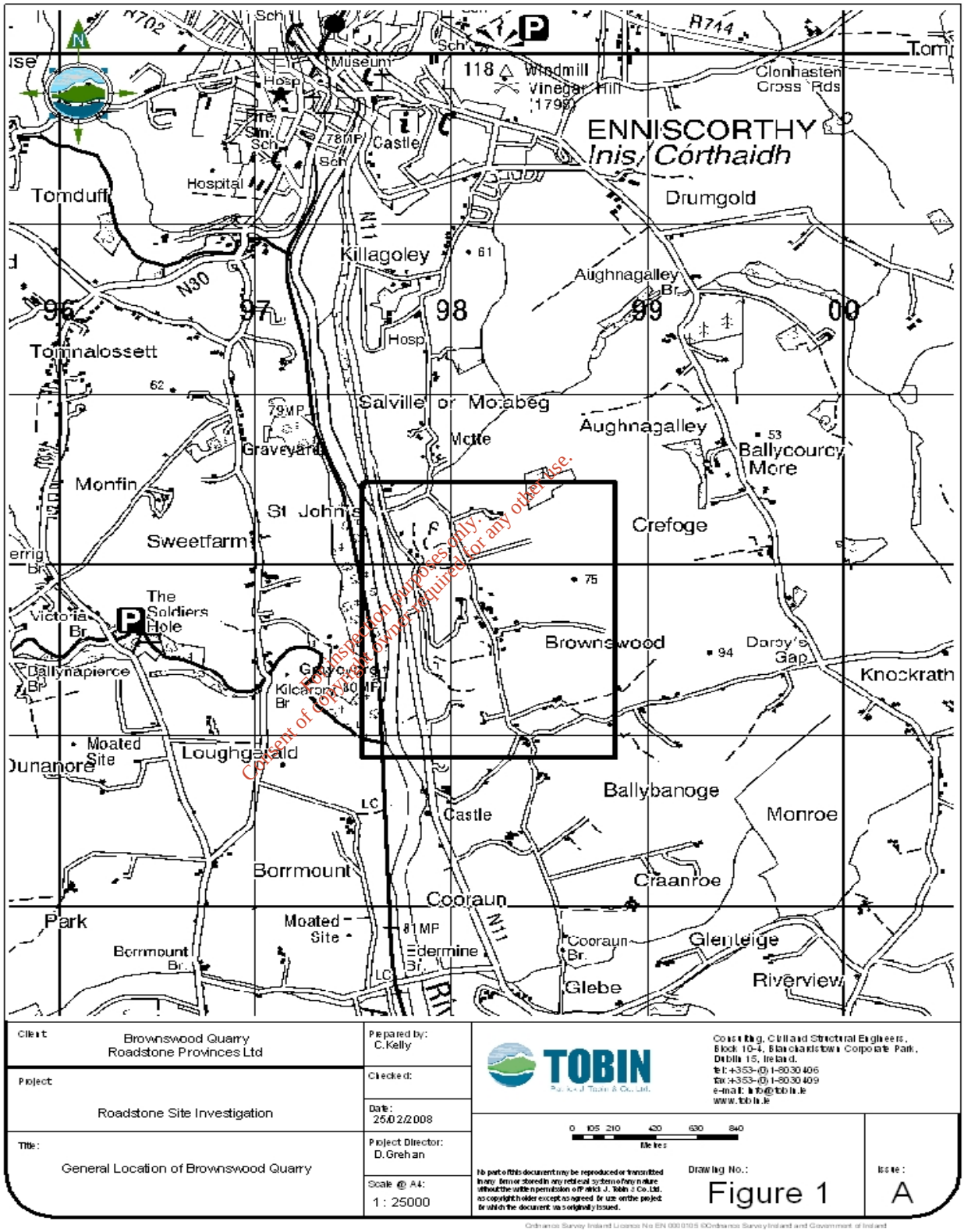
The main area of concern raised by the allegations is the area on the western side of the old quarry, marked as 'Area A'. The other areas are confined to small patches of ground in the vicinity of the garage, the rock breaker, the primary crusher, the lorry washing facility and the area by the western road side boundary to the front of the quarry.

The main findings of the preliminary site investigation were that there was no visible evidence of contamination in the main area of concern (Area A) and that it comprised inert Construction and Demolition Waste (C&D). It was confirmed that elsewhere within the site minor, confined visible staining is located in the vicinity of the garage and the primary crusher. There is no visible contamination at the other sites.

Available historical water quality records for the water in the main sump of the old quarry for a limited set of parameters do not suggest any contamination. Copies of this data was included in the '*Factual Report on Reconnaissance Site Investigation*' (March 2008) forwarded to Wexford County Council on 12th March 2008.

TOBIN Consulting Engineers (TOBIN) conducted an exploratory site investigation within an area of Roadstone Provinces Ltd. property at Brownswood, Co. Wexford. The site investigation area is located within an area previously quarried and in associated areas in the nearby vicinity. The areas under investigation are within the immediate surrounds of the 'Old Quarry'. Quarrying has not been undertaken within this area within the last 5 years, with previous quarry benches partially restored with soil strippings from within the site. Site investigations were necessitated by Roadstone Provinces Ltd. to determine the validity of accusations regarding the dumping/fly tipping of waste and oil spillages.

Figure 1 General Site Location



2 METHODOLOGY

The aims of the exploratory site investigation were to investigate the identified areas using intrusive techniques (trial pits and boreholes) and water sampling. Trial pitting and shell & auger drilling were employed at Area A and trial pitting at all the other sites. The investigation was carried out in accordance with the following documents:

- IGI guidelines "*Recommended Collection, Presentation and Interpretation of Geological and Hydrogeological Information for Quarry Developments*";
- British Standards 5930 "*Code of Practice for Site Investigation*";
- British Standards 10175 "*Investigation of potentially contaminated sites – code of practice*"; and,
- Land Quality Press, "*Generic Assessment Criteria for Human Health Risk Assessment*".

3 TOPOGRAPHIC, GEOLOGICAL AND HYDROGEOLOGICAL SETTING

The quarry is located on the western flanks of high ground bordering the eastern side of the Slaney on the eastern side of the river. A tributary of the Slaney flows approximately 250 m to the north of the site. Elevation ranges from approximately 10 m OD to approximately 75 m OD across the area of the site. The natural topographic gradient is approximately 0.1. The old quarry is located approximately 300 m east of the River Slaney.

The bedrock geology comprises the Ordovician Volcanics. The subsoils (Teagasc) are mapped as 'Rck' close to surface. Further east, the subsoil is mapped as Till (Lower Palaeozoic). Alluvium and a thin strip of gravel are mapped between the river and the quarry.

The bedrock aquifer is classified as a Regionally Important Fissured Aquifer (Rf). Groundwater is present within the quarry at approximately (-)22 mOD, which is an artificial level due to continued pumping. It is assumed that the Slaney is, in general the lowest discharge point, and that groundwater flows to the river from higher topographic areas to the east and west of the river. Within the vicinity of the quarry the water level in the sump is assumed to be the lowest discharge point. The regional gradient is assumed to be toward the Slaney and it is expected that there is a localised groundwater divide between the Slaney and the sump in the quarry.

4 EXPLORATORY SITE INVESTIGATION UNDERTAKEN

A reconnaissance site investigation was undertaken by Tobin at the site on 22nd February (Report 4644/01). A draft report was submitted to Wexford County Council on the 6th March 2008 at a meeting and a site walkover with staff from the Environmental Enforcement Section. A final report was issued on 25th March 2008 designating clearly the areas requiring investigation. The outcome of the

reconnaissance site investigation was to propose a site investigation in all the areas under allegations, shown in Appendix A. The intrusive site investigations were carried out by Geotech Specialists Limited (Appendix B). The resultant site investigations consisted of the following:

1. Ten trial pits with a long reach excavator;
2. Six Shell & Auger Boreholes;
3. Soil sampling of excavated material;
4. Logging of subsoil and photographic record; and,
5. Water sampling of the 'old quarry', the 'Paul Murphy quarry' and discharge from the wheel wash.

The site investigation areas are tabulated in Table 1, and shown Appendix A. Trial pitting and drilling of shell and auger boreholes was conducted on a grid basis within Area A. Trial pits were excavated at specific locations in the remaining sites highlighted during the reconnaissance site investigations and walkovers with staff from Roadstone and Wexford County Council.

Area	Location	Elevation	Reason for investigation
Area A	Northern part of old quarry	30mOD	Alleged waste location
Area B	Garage	30mOD	Alleged oil spillages
Area C	Primary crusher	14mOD	Alleged oil spillages
Area D	Rock breaker	14mOD	Alleged oil spillages
Area E	Washing area	24mOD	Alleged poor practice
Area F	Waste ground between western boundary and main car park	6-8mOD	Alleged waste location

Table 1 Areas of intrusive site investigation

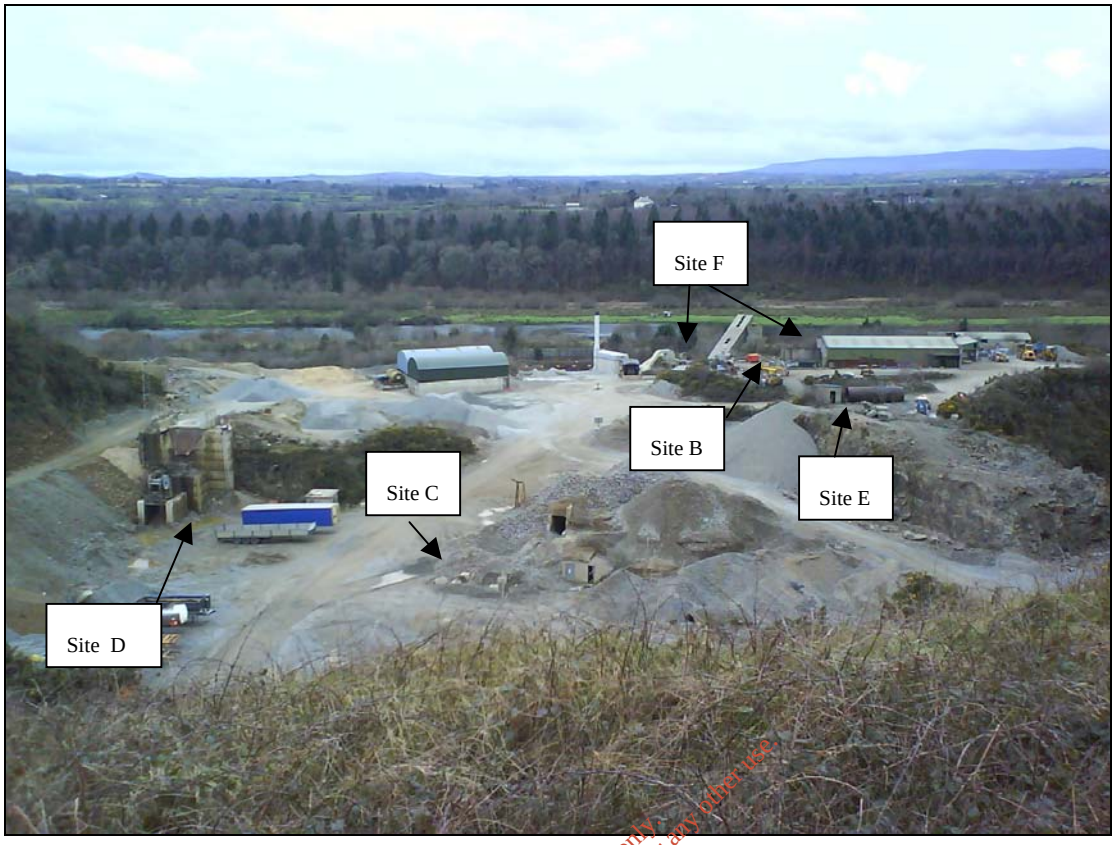


Plate 1. Overview of Areas B-F.
Area A is outside frame to the right hand side.
Photograph taken from road on northern eastern boundary.

5 RESULTS FROM EXPLORATORY INVESTIGATIONS

5.1 Area A

Material uncovered consisted predominantly of subsoil and broken rock with very occasional inert construction and demolition (C&D) material (<1%), which is concentrated within the uppermost 1-3 m. C&D material included concrete, macadam blacktop, metal and plastic. Material encountered is believed to have originated from the 'Paul Murphy' quarry, comprising 'strippings' (soil, subsoil, weathered and broken rock). Material uncovered is shown below in Plate No. 2. No odour or hydrocarbon staining was encountered within Area A. No domestic waste or tyres was encountered within this area. The logs for the trial pits and the auger holes are presented in Appendix B. The drilling of the shell & auger holes in this type of terrain is recognised as being difficult and several attempts at drilling ended in obstructions, generally within the upper 3 m. Two drill holes were successfully drilled to 10 m and one successful to 23 m. No water table was met in any of the boreholes. Plate 3 and 4 show views into Trial Pit 1 and Trial Pit 2.

Plate 2. Spoil from Trial Pit 1.

Plate 3. View into Trial Pit 1.

Plate 4. View into Trial Pit 2.

5.2 Area B

Trial Pit No. 3 was located next to the oil bund as can be seen in Plate 5, 6 and 7. Material uncovered consisted primarily of compacted hardcore, subsoil and broken rock. Odour and hydrocarbon staining was encountered in the uppermost 0.5m. The uppermost material is compacted hardcore, below which comprises broken rock and subsoil. There is no staining or odour from the material deeper in the trial pit. The deeper material recovered can be seen in Plate 7.

Plate 5. View of location of Trial Pit 3 and material recovered.

Plate 6. Another view of Trial Pit 3.

Plate 7. View of material recovered from Trial Pit 3.

5.3 Area C

Trial Pit No. 7 was located next to the dismantled primary crushing area, where oil staining was identified from the reconnaissance survey. Material uncovered consisted primarily of compacted hardcore, subsoil and broken rock. Views of the trial pit in Area C are given in Photographs 7, 8, and 9 below. Odour and hydrocarbon staining was encountered in the uppermost 1m. The uppermost material is compacted hardcore, below which comprises broken rock and subsoil. There is no staining or odour from the material deeper in the trial pit.

Plate 7. Trial Pit 7.

Plate 8. View of Trial Pit 7.

Plate 9. View of Trial Pit 7.

5.4 Area D

Two trial pits were excavated (Trial Pit No. 5 & 6) next to the dismantled rock breaker, shown in Plate 10. Material uncovered consisted primarily of broken rock. Standing water was present. There is no staining or odour from the excavated material or the trial pit.

Plate 10: Location of Trial Pit 6 next to dismantled rock breaker

Plate 11: Trial Pit 6

5.5 Area E

Trial Pit No. 4 was located in an area designated for washing vehicles, shown in Plate 12. Material uncovered consisted primarily of broken rock. There is no staining or odour from the excavated material or the trial pit.

Plate 12: Location of Trial Pit 4

5.6 Area F

Trial Pits No. 8, 9 and 10 were located in an area to the front of the site, shown in Plates 13, 14 and 15. There is no staining or hydrocarbon odour from the excavated material or the trial pits, apart from a sulphur smell in Trial Pit No. 8 at approximately 1.2m bgl to 1.5 m bgl where a fibrous vegetative horizon is located. This area has bull rushes and a boggy saturated area located immediately longside. .

Plate 13: Trial Pit 8

Plate 14: Trial Pit 9

Plate 15: Trial Pit 10

5.7 Initial Conclusions

Trial pitting and Shell and Auger drilling was conducted within the areas identified as potentially containing waste material. No significant deposits of waste appear to underlie the area identified as Area A. The material uncovered largely comprised subsoil, and the depths were drilled to 10 m in two boreholes and 23 m in another. Isolated zones comprising waste oils appear to be located in Areas B and C.

5.8 Testing Schedule

Soil sampling has been undertaken within area A-F to establish the quality of the material. A total of 3 (no.) sediment samples were submitted to ALcontrol Geochem Laboratories, who are an ISO 17025 and UKAS accredited laboratory, for analysis of Polycyclic Aromatic Hydrocarbons (PAHs). The samples were taken from Trial Pits 1, 2 and 3. Sufficient parameters were included so that the samples could be analysed for the presence of oil contamination. The sample suite selected was based on physical observations made on-site.

There are no set standards or legislation for contaminated land or soil in Ireland. The accepted industry best practice is to apply international standards such as those used by the United Kingdom Environment Agency or the Dutch Ministry of Housing, Spatial Planning & Environment (VROM).

These Dutch Standards (2002) outline two values for selected contaminants, the Target Value and the Intervention Value. The Target Value (TV) is the baseline concentration value below which compounds and/or elements are known or assumed not to effect the natural properties of the soil. The target value quoted in the Dutch Standards for PAHs is 1,000 µg/kg (1 mg/kg). The Intervention Value (IV) is the maximum tolerable concentration above which further investigation, assessment, or remediation is required. The intervention value quoted in the Dutch Standards for PAHs is 40,000 µg/kg (40 mg/kg).

Water sampling has also been undertaken of the quarry sump water at both the old quarry, the new quarry (Paul Murphy quarry) and the wheel wash. The samples were also submitted to ALcontrol Geochem Laboratories and analysed for a range of parameters including metals, diesel range organics and speciated PAHs.

6 RESULTS

6.1 Soil results

The soil results are given in Appendix B. The soil results support the visual inspections and initial conclusions, that there is no contamination except in localised zones around the old oil bund at the garage and in the immediate vicinity to the

primary crusher.

Area A: Two samples were taken from the two trial pits located in this area. The concentrations of total PAH are less than 1 µg/kg and 1669 µg/kg, which are very low concentrations and are well below the Dutch Intervention Values.

Area B: The results taken from Area B (Trial Pit 3) indicate hydrocarbon contamination at the surface. The sample taken from Area B supports the visual inspection that there is a localised zone of oil spillage and corresponds to the strong odour noted during the trial pitting. The results from Area B indicate that the total concentration of the sixteen speciated hydrocarbons are elevated (31,596 µg/kg), indicate contamination and are just below the Dutch Intervention Value of 40,000 µg/kg. The extent is limited to the area around the oil bund.

The water results in Section 6.2 indicate that PAH concentrations are very low, indicating the limited extent of the contamination.

6.2 Water results

The results are given in Appendix C. The key points are identified as follows:

- Concentrations of diesel range organics and for sixteen speciated PAHs are below 10 µg/litre.
- Biological Oxygen Demand concentration is less than 2 mg/l for all three samples.
- Nitrate concentrations are 24.9 mg/l and 28.3 mg/l in the Old Quarry and Paul Murphy quarry. Whilst these concentrations appear high, they correspond to the background concentrations evident across the groundwater body in which the site is located (South Eastern RBD characterisation report, 2003).
- Ortho-phosphate concentrations are below 0.03 mg/l.
- Concentrations of Iron, Potassium and pH are elevated in the sample taken at the wheel wash.
- Ammonia concentration for the sample taken from the Paul Murphy quarry is elevated.
- The sample taken from the exit point of the wheel wash contrast in a number of parameters with the samples taken from both the quarry sumps. They appear to be anomalous with those taken from quarry and do not reflect the water quality in the quarries.

In general, the water results do not indicate significant contamination that can be attributed to alleged waste practices at the Old Quarry. The water results from the sumps are regarded as being representative as the water in both sumps is kept at approximately -22mOD, by pumping, thus there is a relatively short residence time.

7 CONCLUSIONS

For each area the findings and actions required are described.

1. Area A:
   Finding: It is concluded that area consists predominantly of subsoil strippings. The borehole and trial pit logs and the soils results and the water results suggest that the area is uncontaminated.
   Action: It is concluded that Area does not require remediation. However, in accordance with the Section 55 Notice groundwater monitoring wells are to be placed in locations to allow long term groundwater quality monitoring to take place.
2. Areas B (immediately next to the old oil bund on the southern end of the garage):
   Finding: an upper layer of made ground appears to be contaminated based on the visual inspection, the trial pit and the soil sample results.
   Action: It is concluded that the area is remediated by digging out the contaminated ground and disposed of by a permitted contractor and replaced with inert material.
3. Area C (dismantled primary crusher)
   Finding: an upper layer of made ground which appears to be contaminated based on the visual inspection and the trial pit.
   Action: It is concluded that the area is remediated by digging out the contaminated ground and disposed of by a permitted contractor and replaced with inert material.
4. Area D (dismantled rock breaker)
   Finding: It is concluded that this ground around the rock breaker does not appear to be contaminated.
   Action: No further action is required.
5. Area E (lorry washing area across from the garage)
   Finding: It is concluded that this ground does not appear to be contaminated.
   Action: No further action is required.
6. Area F (to the front of the quarry along the main road boundary)
   Finding: It is concluded that this ground does not appear to be contaminated.
   Action: No further action is required.

8 RECOMMENDATIONS

Suitable remediation and disposal is recommended for Area B (around the old oil bund at the eastern end of the garage) and Area C (around the dismantled primary rock crusher).

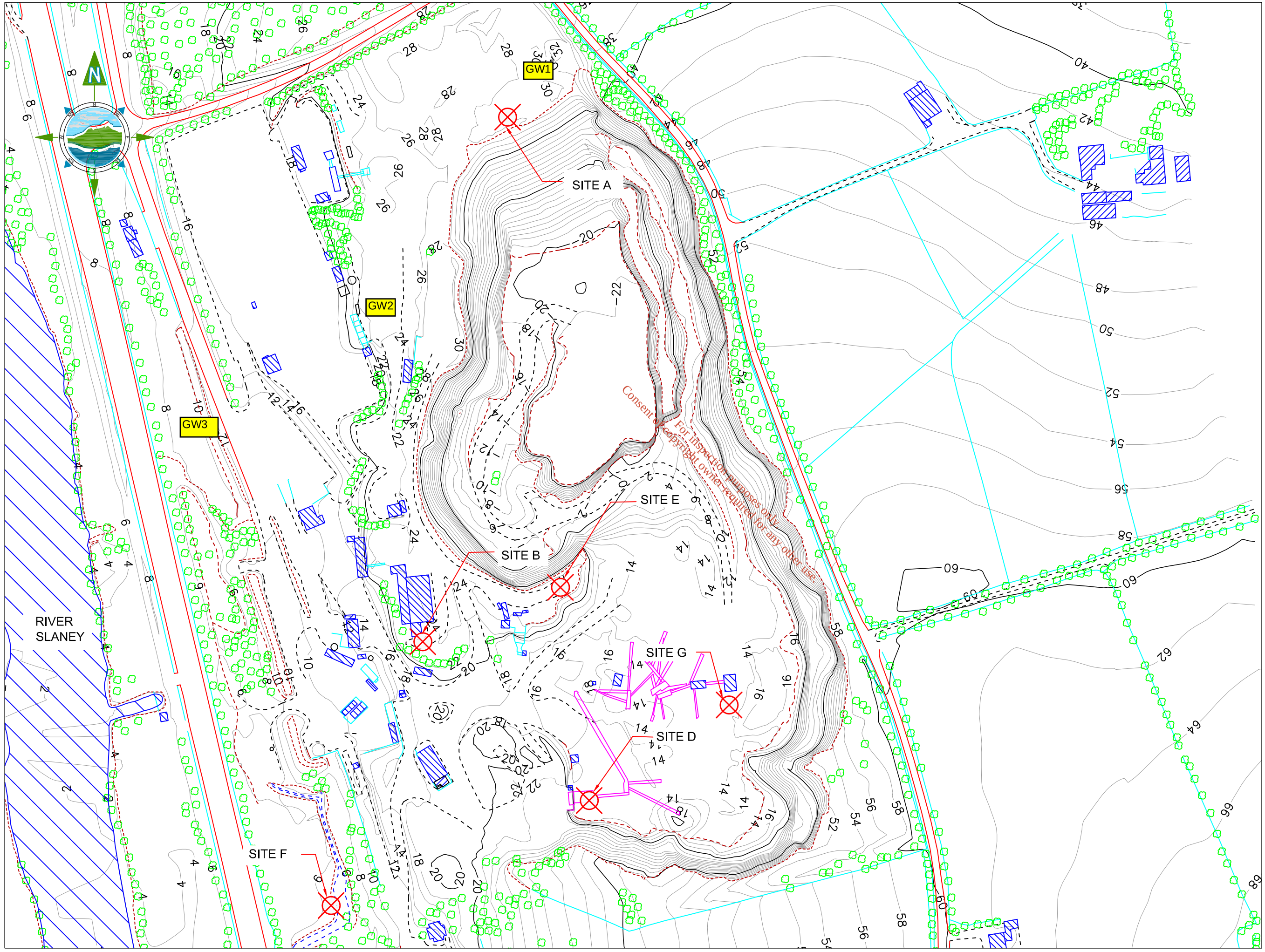
Installation of three boreholes in the vicinity of the Old Quarry. The proposed

locations are shown in Appendix A. It is recommended that two are placed downgradient of the quarry, and one upgradient of the quarry.

It is proposed that a regular monitoring regime of the monitoring wells and the water in the sumps is put in place. The exact regime should be agreed with Wexford County Council.

Signed : _____

On behalf of TOBIN Consulting Engineers



GENERAL LEGEND

EXCISTING MAJOR CONTOURS
EXCISTING MINOR CONTOURS
EXISTING BUILDING /STRUCTURE
PUBLIC ROAD
EXISTING TREE
AREAS OF INTEREST
PROCESSING PLANT
TRACK
RIVER SLANEY

GW1, GW2, GW3 are proposed groundwater monitoring points

Issue	Date	Description	By	Chkd.
D01	14/03/08	DRAFT ISSUE FOR REVIEW	VB	MN

Client: ROADSTONE PROVINCES LTD

Project: SI RPL BROWNSWOOD

Title: SITE LAYOUT

Scale @ A1: 1:1000

Prepared by:	Checked:	Date:
V.Bonney	M. Nolan	March 2008

Project Director: D.Grehan

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Drawing No.: 4644-1000 Issue: D01

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Roadstone Brownswood Quarry

REPORT ON GROUND INVESTIGATION

Report No. KD8062

Engineer: Tobin Consulting Engineers

Client: Roadstone Provinces Limited

Client:
Roadstone Provinces Limited
Saggart
Co. Dublin

Engineer:
Tobin Consulting Engineers
Block 10 – 4
Blanchardstown Corporate Park
Dublin 15

CONTENTS

1 INTRODUCTION

During April 2008 Geotech Specialists Limited (GSL) were commissioned by Tobin Consulting Engineers (TCE), on behalf of Roadstone Provinces Limited (RPL), to carry out a ground investigation at the Roadstone Quarry facility at Brownswood, Co. Wexford. The investigation was required to obtain geotechnical and geoenvironmental information primarily on the nature of the existing overburden mound on the quarry site.

The scope of the investigation, which was specified by TCE, comprised cable percussion boreholes, trial pits, in situ testing and laboratory testing. The investigation was carried out in accordance with the contract specification and relevant standards (see References). The fieldwork was carried out between 28 April and 6 May 2008.

This report presents the factual records of the fieldwork and laboratory testing.

2 THE SITE AND GEOLOGY

2.1 The Site

The Quarry site is located in the townland of Brownswood, 3km south of Enniscorthy town. The site is located 300m east of the River Slaney and approximately 150m east of the N11, National Primary Route. The aggregate quarry currently functions as a rock chipping and crushing plant as well as a Readymix Concrete and Blacktop production centre. The site is at National Grid reference S 978 373, see Site Location Plan in Enclosure D.

The quarry is bounded to the west by the N11 and to the east by a minor county road running parallel to the north/south trending N11. The main north and south boundaries of the quarry site have thick hedges and established tree lines. Agricultural pastureland and tillage land lie beyond the site to the east, south and west.

A large heaped overburden mound is located in the northeast corner of the quarry. Exploratory holes were located on the summit of this mound in the northeast of the site as well as at varying levels throughout the quarry towards the ground / base level of the quarry in the south west of the site.

2.2 Published Geology

The published geological map covering the site, GSI Sheet 19 (1995) shows bedrock to be Late Ordovician rhyolitic volcanics and grey and brown slates of the Campile Formation. The Campile formation forms part of the sequence of the local Duncannon Group, a group composed primarily of volcanic rock.

3 FIELDWORK

3.1 General

The fieldwork was carried out in general accordance with BS 5930 (1999) and Part 9 of BS 1377 (1990).

The exploratory hole locations were selected and set out by TCE. The exploratory hole locations are shown on the Site Plan in Enclosure D.

3.2 Exploratory Holes

The exploratory holes are listed in the following table.

SUMMARY OF EXPLORATORY HOLES

TYPE	QUANTITY	MAXIMUM DEPTH (m)	REMARKS
Cable Percussion Boring	6	23.30	Dando 2000
Trial Pits	10	5.00	Machine Dug

The exploratory hole records are presented in Enclosure A and should be read in conjunction with the Key included therein. The records provide descriptions, in accordance with BS 5930 (1999), of the materials encountered and details of the samples taken, together with observations made during boring and pitting. Photographs of the trial pits are presented in Enclosure C.

On completion of the fieldwork all geotechnical samples were transported to the Dublin office of GSL for temporary retention. Geoenvironmental samples were transported from site directly to ALcontrol laboratories in Ballycoolin, Dublin 15.

4 LABORATORY TESTING

4.1 Geotechnical Testing

No Geotechnical testing was scheduled.

4.2 Geoenvironmental Testing

The testing was scheduled by TCE and was carried out by ALcontrol at their Dublin laboratory.

The results are presented in Enclosure B.

Prepared By	**Claire O'Keeffe BSc (Hons)**
Reviewed By	**John Lawler BSc (Hons)**
Approved for Issue By	**A C Suckling BSc (Hons) CEng MICE**

REFERENCES

GSI Sheet 19 : 1995 : Geology of Carlow - Wexford. 1:100000 geological map (solid). Geological Survey of Ireland.

BS 1377 : 1990 : Methods of test for soils for civil engineering purposes. British Standards Institution.

BS 5930 : 1999 : Code of practice for site investigations. British Standards Institution.

ENCLOSURE A
EXPLORATORY HOLE RECORDS

Key to Exploratory Hole Records	Key
Borehole Logs	BH01, 02, 03, 03A, 04, 04A, 05, 06
Trial Pit Logs	TP01 to 10

Key to Exploratory Hole Records

SAMPLES

Undisturbed

U	Driven tube sample
TW	Pushed thin wall tube sample } nominally 100 mm diameter and full recovery unless otherwise stated
P	Pushed piston sample
L	Liner sample (from Windowless or similar sampler), full recovery unless otherwise stated
CBR	CBR mould sample
BLK	Block sample
CS	Core sample (from rotary core) taken for laboratory testing
AMAL	Amalgamated sample

Disturbed

D	Small sample
B	Bulk sample

Other

W	Water sample
G	Gas sample
	Environmental chemistry samples (in more than one container where appropriate)
ES	Soil sample
EW	Water sample

Comments Sample reference numbers are assigned to every sample taken. A sample reference of 'NR' indicates that attempt was made to take a tube sample, however, there was no recovery.

Monitoring samples taken after completion of hole construction are not shown on the exploratory hole logs.

TESTS

SPT S or SPT C	Standard Penetration Test, open shoe (S) or solid cone (C)

The Standard Penetration Test is defined in BS 1377 : Part 9 (1990). The incremental blow counts are given in the Field Records column; each increment is 75 mm unless stated otherwise and any penetration under self weight in mm (SW) is noted. Where the full 300 mm test drive is achieved the total number of blows for the test drive is presented as N = ** in the Test column. Where the test drive blows reach 50 (either in total or for a single increment) the total blow count beyond the seating drive is given (without the N = prefix).

IV	*in situ* Vane shear strength, peak (p) and remoulded (r)
HV	Hand vane shear strength, peak (p) and remoulded (r)
PP	Pocket penetrometer test, converted to shear strength
KFH, KRH, KPI	Variable head permeability tests (KFH = falling head test, KRH = rising head test, KPI = packer test), permeability value

Test results provided in Field Records column

DRILLING RECORDS

The mechanical indices (TCR/SCR/RQD & If) are defined in BS 5930 (1999)

TCR	Total Core Recovery, %
SCR	Solid Core Recovery, %
RQD	Rock Quality Designation, %
If	Fracture spacing, mm. Minimum, typical and maximum spacings are presented. The term non-intact (NI) is used where the core is fragmented.

Flush returns, estimated percentage with colour where relevant, are given in the Records column

CRF	Core recovered (length in m) in the following run
AZCL	Assessed zone of core loss
NR	Not recovered

GROUNDWATER

▼	Groundwater strike
▽	Groundwater level after standing period

Notes:	Project	Roadstone Brownswood Quarry	Key
	Project No.	KD8062	
	Carried out for	Roadstone	Sheet 1 of 2

Key to Exploratory Hole Records

INSTALLATION

Standpipe/ piezometer

Details of standpipe/piezometer installations are given on the Record. Legend column shows installed instrument depths including slotted pipe section or tip depth, response zone filter material type and layers of backfill.

The type of instrument installed is indicated by a code in the Legend column at the depth of the response zone:

SP Standpipe
SPIE Standpipe piezometer
PPIE Pneumatic piezometer
EPIE Electronic piezometer

Inclinometer or Slip Indicator

The installation of vertical profiling instruments is indicated on the Record. The base of tubing is shown in the Legend column.

The type of instrument installed is indicated by a code in the Legend column at the base of the tubing:

ICE Biaxial inclinometer
ICM Inclinometer tubing for use with probe
SLIP Slip indicator

Settlement Points or Pressure Cells

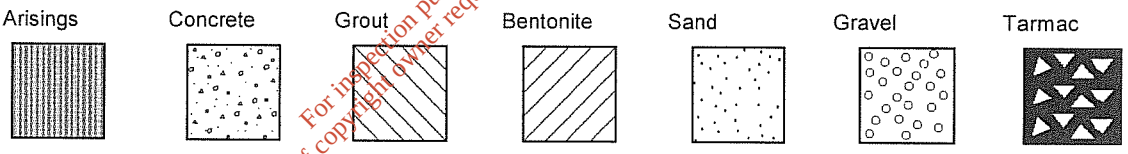
The installation of single point instruments is indicated on the Record. The location of the measuring device is shown in the Legend column.

The type of instrument installed is indicated by a code in the Legend column:

ESET Electronic settlement cell/gauge
ETM Magnetic extensometer settlement point
EPCE Electronic embedment pressure cell
PPCE Electronic push in pressure cell

INSTALLATION LEGENDS

A legend describing the installation is shown in the rightmost column. Legends additional to BS5930 are used to describe the backfill materials as indicated below.



NOTES

1 Strata legends are in accordance with BS 5930 (1999).

2 Water level observations of discernible entries during the advancing of the exploratory hole are given at the foot of the log and in the Legend column. The term "none observed" is used where no discrete entries are identified although this does not necessarily indicate that the hole has not been advanced below groundwater level. Under certain conditions groundwater cannot be observed, for instance, drilling with water flush or overwater, or boring at a rate much faster than water can make its way into the borehole (ref BS5930 : 1999, Clause 47.2.7). In addition, where appropriate, water levels in the hole at the time of recovering individual samples or carrying out in situ tests and at shift changes are given in the Records column.

3 Evidence of the occurrence of very coarse particles (cobbles and boulders) is presented on the logs, however, because of their size in relation to the exploratory hole these records may not be fully representative of their size and frequency in the ground mass.

4 The borehole logs present the results of Standard Penetration Tests recorded in the field without correction or interpretation. However, in certain ground conditions (eg high hydraulic head or where very coarse particles are present) some judgement may be necessary in considering whether the results are representative of in situ mass conditions.

5 The declination of bedding and joints is given with respect to the normal to the core axis. Thus in a vertical borehole this will be the dip.

6 The assessment of SCR, RQD and Fracture Spacing excludes artificial fractures

REFERENCES

BS 1377 : 1990 : British Standard Methods of test for soils for civil engineering purposes. British Standards Institution
BS 5930 : 1999 : Code of Practice for site investigations. British Standards Institution

Updated February 2007

Borehole Log

Drilled	JE	Start	28/04/2008	Equipment, Methods and Remarks	Depth from	to	Diameter	Casing Depth	Ground Level	-
Logged	CO'K	End	28/04/2008	Dando 2000 Cable Percussion 200mm diameter from 0.00m to 10.00m. Backfilled with arisings.	0.00m	10.00m	200mm	10.00m	Coordinates	-
Checked	JL								National Grid	-
									Chainage	

Samples and Tests

Depth	Type & No	Records	Date Casing	Time Water
0.50	B 1			
1.00	B 2			
1.50	D 3			
2.00	B 4			
2.50	D 5			
3.00	B 6			
3.50	D 7			
4.00	B 8			
4.50	D 9			
5.00	B 10			
5.50	D 11			
6.00	B 12			
6.50	D 13			
7.00	B 14			
7.50	D 15			
8.00	B 16			
8.50	D 17			
9.00	B 18			
9.50	D 19			
			28/04/2008 10.00	0800 dry

Strata

Description	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
MADE GROUND: Brown clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies including limestone. Driller reports cobbles of various lithologies including concrete.			
3.00-3.50 m Subangular fine to coarse GRAVEL of various lithologies including asphalt.	(6.00)		
MADE GROUND: Brown mottled orange very clayey sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subroundedfine to coarse of various lithologies including limestone. Driller reports cobbles of various lithologies including concrete.	6.00 (1.80)		
MADE GROUND: Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies including limestone.	7.80 (2.20)		
EXPLORATORY HOLE ENDS AT 10.00 m			

Groundwater Entries

No.	Struck (m)	Post strike behaviour	Depth sealed (m)
None observed (see Key Sheet)			

Depth Related Remarks *

From	to (m)

Chiselling

Depths (m)	Time	Tools used
0.75 -0.80	45 mins	Chisel
7.10 -7.20	45 mins	Chisel

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

Project	Roadstone Brownswood Quarry
Project No.	KD8062
Carried out for	Roadstone

Borehole

BH01

Sheet 1 of 1

Borehole Log

Drilled	Start	Equipment, Methods and Remarks	Depth from	to	Diameter	Casing Depth	Ground Level	-
JE	28/04/2008	Dando 2000	0.00m	10.00m	200mm	10.00m	Coordinates	-
Logged CO'K	End	Cable Percussion 200mm diameter from 0.00m to 10.00m. Backfilled with arisings.					National Grid	-
Checked JL	29/05/2008						Chainage	

Samples and Tests

Depth	Type & No	Records	Date Casing	Time Water
0.50	B 1			
1.00	B 2			
1.50	D 3			
2.00	B 4			
2.50	D 5			
			28/04/2008	1800
3.00	B 6		3.00	
3.50	D 7			
4.00	B 8			
4.50	D 9			
5.00	B 10			
5.50	D 11			
6.00	B 12			
6.50	D 13			
7.00	B 14			
7.50	D 15			
8.00	B 16			
8.50	D 17			
9.00	B 18			
9.50	D 19			
			29/04/2008	1800
			10.00	

Strata

Description	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
MADE GROUND: Brown clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of various lithologies. Driller reports fill with stone / concrete.	(1.50)		
MADE GROUND: Soft to firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies. Driller reports CLAY fill with stone / concrete.	1.50 (7.50)		
MADE GROUND: Firm orange brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies. Driller reports CLAY fill with stone / concrete.	9.00 (1.00)		
EXPLORATORY HOLE ENDS AT 10.00 m			

Depth	Type & No	Records	Date Casing	Time Water

Groundwater Entries

No.	Struck (m)	Post strike behaviour	Depth sealed (m)
None observed (see Key Sheet)			

Depth Related Remarks *

From to (m)

Chiselling

Depths (m)	Time	Tools used
2.65 -2.70	45 mins	Chisel
4.50 -4.55	30 mins	Chisel
8.65 -8.70	30 mins	Chisel

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

Project	Roadstone Brownswood Quarry
Project No.	KD8062
Carried out for	Roadstone

Borehole

BH02

Sheet 1 of 1

Borehole Log

Drilled JE **Logged** CO'K **Checked** JL	**Start** 29/04/2008 **End** 29/04/2008	**Equipment, Methods and Remarks** Dando 2000 Cable Percussion 200mm from 0.00m to 3.20m. Backfilled with arisings.	**Depth from** 0.00m	**to** 3.20m	**Diameter** 200mm	**Casing Depth** 3.20m	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**	

Samples and Tests

Depth	Type & No	Records	Date Casing	Time Water
0.50	B 1			
1.00	B 2			
1.50	D 3			
2.00	B 4			
2.50	D 5			
3.00	B 6		29/04/2008 3.20	0800

Strata

Description	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
MADE GROUND: Dark grey black becoming dark brown mottled grey from 2.00m slightly clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of various lithologies. Driller reports fill with concrete.	(3.20)		
EXPLORATORY HOLE ENDS AT 3.20 m	3.20		

Depth	Type & No	Records	Date Casing	Time Water

Groundwater Entries

No.	Struck (m)	Post strike behaviour	Depth sealed (m)

None observed (see Key Sheet)

Depth Related Remarks *

From	to (m)	
3.20		Borehole terminated due to obstruction.

Chiselling

Depths (m)	Time	Tools used
1.75 -1.80	45 mins	Chisel
3.10 -3.20	60 mins	Chisel

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

Project Roadstone Brownswood Quarry
Project No. KD8062
Carried out for Roadstone

Borehole
BH03
Sheet 1 of 1

Borehole Log

Drilled JE **Logged** CO'K **Checked** JL	**Start** 29/05/2008 **End** 29/05/2008	**Equipment, Methods and Remarks** Dando 2000 Cable Percussion 200mm from 0.00m to 3.00m. Backfilled with arisings.	**Depth from** 0.00m	**to** 3.00m	**Diameter** 200mm	**Casing Depth** 3.00m	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests

Depth	Type & No	Records	Date Casing	Time Water
			29/05/2008 3.00	1800

Strata

Description	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
Driller reports sandy gravelly CLAY fill. 1.40 m Large boulder of concrete	(3.00)		
EXPLORATORY HOLE ENDS AT 3.00 m	3.00		

Depth	Type & No	Records	Date Casing	Time Water

Groundwater Entries

No.	Struck (m)	Post strike behaviour	Depth sealed (m)

None observed (see Key Sheet)

Depth Related Remarks *

From	to (m)	
3.00		Borehole terminated due to obstruction.□□

Chiselling

Depths (m)	Time	Tools used
1.45 -1.50	30 mins	Chisel
2.90 -3.00	60 mins	Chisel

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Borehole

BH03A

Sheet 1 of 1

Borehole Log

Drilled JE **Logged** CO'K **Checked** JL	**Start** 30/04/2008 **End** 30/04/2008	**Equipment, Methods and Remarks** Dando 2000 Cable Percussion 200mm diameter from 0.00m to 1.90m. Backfilled with arisings.	**Depth from** 0.00m **to** 1.90m **Diameter** 200mm **Casing Depth** 1.90m	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests

Depth	Type & No	Records	Date Casing	Time Water
0.50	B 1			
1.00	B 2			
1.50	D 3		30/04/2008 1.90	0800

Strata

Description	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
MADE GROUND: Brown grey clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of various lithologies. Driller reports fill with Asphalt, road sub-base.	(1.90)		
EXPLORATORY HOLE ENDS AT 1.90 m	1.90		

Depth	Type & No	Records	Date Casing	Time Water

Groundwater Entries

No.	Struck (m)	Post strike behaviour	Depth sealed (m)
None observed (see Key Sheet)			

Depth Related Remarks *

From	to (m)	
1.90		Borehole terminated due to obstruction.

Chiselling

Depths (m)	Time	Tools used
1.80 -1.90	60 mins	Chisel

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Borehole BH04

Sheet 1 of 1

Borehole Log

Drilled JE **Logged** CO'K **Checked** JL	**Start** 30/04/2008 **End** 30/04/2008	**Equipment, Methods and Remarks** Dando 2000 Cable Percussion 200mm diameter from 0.00m to 10.00m. Backfilled with arisings.	**Depth from** 0.00m **to** 10.00m **Diameter** 200mm **Casing Depth** 10.00m	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests

Depth	Type & No	Records	Date Casing	Time Water
2.00	B 1			
2.50	D 2			
3.00	B 3			
3.50	D 4			
4.00	B 5			
4.50	D 6			
5.00	B 7			
5.50	D 8			
6.00	B 9			
6.50	D 10			
7.00	B 11			
7.50	D 12			
8.00	B 13			
8.50	D 14			
9.00	B 15			
9.50	D 16			
			30/04/2008 10.00	1800

Strata

Description	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
Driller reports stone / clay / cobbles / road sub-base.	(1.90)		
MADE GROUND: Firm becoming soft to firm from 4.00m orange brown mottled cream slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to subangular fine to medium of various lithologies. Driller reports CLAY fill with cobbles.	1.90		
	(8.10)		
EXPLORATORY HOLE ENDS AT 10.00 m			

Groundwater Entries

No.	Struck (m)	Post strike behaviour	Depth sealed (m)
None observed (see Key Sheet)			

Depth Related Remarks *

From to (m)

Chiselling

Depths (m)	Time	Tools used
1.10 -1.15	45 mins	Chisel
1.80 -1.85	30 mins	Chisel
7.70 -7.75	30 mins	Chisel

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Borehole

BH04A

Sheet 1 of 1

Borehole Log

Drilled JE **Logged** CO'K **Checked** JL	**Start** 01/05/2008 **End** 01/05/2008	**Equipment, Methods and Remarks** Dando 2000 Cable Percussion 200mm from 0.00m to 3.30m. Backfilled with arisings	**Depth from** 0.00m **to** 3.30m **Diameter** 200mm **Casing Depth** 3.20m	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests

Depth	Type & No	Records	Date Casing	Time Water
0.50	B 1			
1.00	B 2			
1.50	D 3			
2.00	B 4			
2.50	D 5			
3.00	B 6		01/05/2008 3.30	0800

Strata

Description	Depth, Level (Thickness)	Legend	Backfill/ Instruments
MADE GROUND: Soft to firm brown very sandy very gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies. Driller reports gravelly CLAY fill with cobbles.	(1.50)		
MADE GROUND: Brown very clayey sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies. Driller reports gravelly CLAY fill with cobbles.	1.50 (1.80)		
EXPLORATORY HOLE ENDS AT 3.30 m	3.30		

Depth	Type & No	Records	Date Casing	Time Water

Groundwater Entries

No.	Struck (m)	Post strike behaviour	Depth sealed (m)

None observed (see Key Sheet)

Depth Related Remarks *

From	to (m)	
3.30		Borehole terminated due to obstruction.

Chiselling

Depths (m)	Time	Tools used
1.20 -1.30	60 mins	Chisel
3.20 -3.30	60 mins	Chisel

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Borehole

BH05

Sheet 1 of 1

Borehole Log

Drilled JE **Logged** CO'K **Checked** JL	**Start** 01/05/2008 **End** 06/05/2008	**Equipment, Methods and Remarks** Dando 2000 Cable Percussion 200mm from 0.00m to 23.30m. Backfilled with arisings.	**Depth from** 0.00m	**to** 23.30m	**Diameter** 200mm	**Casing Depth** 23.30m	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**		

Samples and Tests

Depth	Type & No	Records	Date Casing	Time Water
0.50	B 1			
1.00	B 2		1.00	
1.50	D 3			
2.00	B 4		2.00	
2.50	D 5			
3.00	B 6			
3.50	D 7			
4.00	B 8		4.00	
4.50	D 9			
5.00	B 10		5.00	
5.50	D 11			
6.00	B 12		01/05/2008 1600 02/05/2008 1800 6.00	
6.50	B 13			
7.00	B 14			
7.50	D 15			
8.00	B 16			
8.50	D 17			
9.00	B 18			
9.50	D 19			

Strata

Description	Depth, Level (Thickness)	Legend	Backfill/ Instruments
MADE GROUND: Soft to firm brown mottled grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies. Driller reports gravelly CLAY fill with cobbles.	(5.00)		
MADE GROUND: Soft to firm brown mottled grey and orange sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies. Driller reports gravelly CLAY fill with cobbles.	5.00 (3.50)		
MADE GROUND: Firm becoming soft at 11.0m orange brown sandy becoming very sandy at 11.0m gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies. Driller reports gravelly CLAY fill with cobbles.	8.50		
Stratum continues to 12.50 m			

Groundwater Entries

No.	Struck (m)	Post strike behaviour	Depth sealed (m)
None observed (see Key Sheet)			

Depth Related Remarks *

From	to (m)

Chiselling

Depths (m)	Time	Tools used
4.10 -4.15	30 mins	Chisel
5.85 -5.90	30 mins	Chisel
8.20 -8.25	30 mins	Chisel
9.65 -9.70	30 mins	Chisel

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Borehole BH06

Borehole Log

Drilled	Start	Equipment, Methods and Remarks	Depth from	to	Diameter	Casing Depth	Ground Level	-
JE	01/05/2008	Dando 2000	0.00m	23.30m	200mm	23.30m	Coordinates	-
Logged CO'K	End	Cable Percussion 200mm from 0.00m to 23.30m. Backfilled with arisings.					National Grid	-
Checked JL	06/05/2008						Chainage	

Samples and Tests

Depth	Type & No	Records	Date Casing	Time Water
10.00	B 20			
10.50	D 21			
11.00	B 22			
11.50	D 23			
12.00	B 24			
12.50	D 25			
13.00	B 26			
13.50	D 27			
14.00	B 28			
14.50	D 29			
15.00	B 30			
15.50	D 31			
16.00	B 32			
16.50	D 33			
17.00	B 34			
17.50	D 35			
18.00	B 36		18.00	
18.50	D 37			
19.00	B 38		19.00	
19.50	D 39			

Strata

Description (Continued from Sheet 1)	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
MADE GROUND: Firm becoming soft at 11.0m orange brown sandy becoming very sandy at 11.0m gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies. Driller reports gravelly CLAY fill with cobbles.	(4.00)		
MADE GROUND: Firm orange brown mottled grey from 13.50m very sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies. Driller reports gravelly CLAY fill with cobbles.	12.50 (2.50)		
MADE GROUND: Soft to firm mottled black sandy gravelly CLAY with some wood / tree remains. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies. Driller reports gravelly CLAY fill with cobbles.	15.00 (3.50)		
MADE GROUND: Firm orange brown very sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of various lithologies. Driller reports gravelly CLAY fill with cobbles.	18.50		
Stratum continues to 23.30 m			

Groundwater Entries

No.	Struck (m)	Post strike behaviour	Depth sealed (m)
None observed (see Key Sheet)			

Depth Related Remarks *

From to (m)

Chiselling

Depths (m)	Time	Tools used
11.10 -11.20	45 mins	Chisel
14.20 -14.30	45 mins	Chisel
14.75 -14.80	30 mins	Chisel
15.60 -15.65	45 mins	Chisel
18.30 -18.40	30 mins	Chisel

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

Project	Roadstone Brownswood Quarry
Project No.	KD8062
Carried out for	Roadstone

Borehole

BH06

Borehole Log

Drilled JE **Logged** CO'K **Checked** JL	**Start** 01/05/2008 **End** 06/05/2008	**Equipment, Methods and Remarks** Dando 2000 Cable Percussion 200mm from 0.00m to 23.30m. Backfilled with arisings.	**Depth from** 0.00m **to** 23.30m **Diameter** 200mm **Casing Depth** 23.30m	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests

Depth	Type & No	Records	Date Casing	Time Water
20.00	B 40		20.00	
20.50	D 41			
21.00	B 42		21.00	
21.50	D 43			
22.00	B 44		22.00	
22.50	D 45			
23.00	B 46		23.00 06/05/2008	1800 23.30

Strata

Description (Continued from Sheet 2)	Depth, Level (Thickness)	Legend	Backfill/ Instruments
MADE GROUND: Firm orange brown very sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of various lithologies. Driller reports gravelly CLAY fill with cobbles.	(4.80)		
EXPLORATORY HOLE ENDS AT 23.30 m	23.30		

Depth	Type & No	Records	Date Casing	Time Water

Groundwater Entries

No.	Struck (m)	Post strike behaviour	Depth sealed (m)

None observed (see Key Sheet)

Depth Related Remarks *

From	to (m)

Chiselling

Depths (m)	Time	Tools used
20.60 -20.70	45 mins	Chisel
21.95 -22.00	45 mins	Chisel
23.20 -23.30	60 mins	Chisel

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

Project Roadstone Brownswood Quarry
Project No. KD8062
Carried out for Roadstone

Borehole BH06

Trial Pit Log

Logged CH **Checked** CO'K	**Start** 28/04/2008 **End** 28/04/2008	**Equipment, Methods and Remarks** Excavated pit using Komatsu PC340 LC. Backfilled with arisings.	**Dimensions and Orientation** Width 1.50 m Length 5.00 m A B C D → 210 (Deg)	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests

Depth	Type & No.	Date Records
0.40-0.70	B 1	
0.40-0.70	D 2	
1.10	ES 1	
1.20-1.30	B 3	
1.20-1.30	D 4	
2.20-2.30	B 5	
2.20-2.30	D 6	
4.70-5.00	B 7	
4.70-5.00	D 8	

Strata

Description	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
1 MADE GROUND: Blue grey sandy clayey GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies including asphalt.	(0.40)		
2 MADE GROUND: Firm brown yellow sandy gravelly CLAY with many cobbles. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies. Cobbles are subrounded of various lithologies predominantly rhyolite and greywacke.	0.40 (0.70)		
3 MADE GROUND: Blue grey clayey sandy GRAVEL with occasional plastic, wood and asphalt. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies.	1.10 (0.80)		
4 MADE GROUND: Soft yellow brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies.	1.90		
3.00-5.00 m Many Cobbles. Cobbles are subangular to subrounded of various lithologies predominantly rhyolite and greywacke.	(3.10)		
EXPLORATORY HOLE ENDS AT 5.00 m			

Groundwater Entries

No.	Struck (m)	Post Strike Behaviour
None observed (see Key Sheet)		

Depth Related Remarks *

From	to (m)	
5.00		Pit terminated as instructed by client.

Stability Very Good

Shoring None

Weather Cloudy

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Trial Pit

TP01

Sheet 1 of 1

Trial Pit Log

Logged CH **Checked** CO'K	**Start** 28/04/2008 **End** 28/04/2008	**Equipment, Methods and Remarks** Excavated pit using Komatsu PC340 LC. Backfilled with arisings.	**Dimensions and Orientation** Width 1.50 m Length 3.50 m A, B, C, D; 150 (Deg)	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests			Strata			
Depth	**Type & No.**	**Date Records**	**Description**	**Depth, *Level* (Thickness)**	**Legend**	**Backfill/ Instruments**
			1 MADE GROUND: Asphalt over gravel. Gravel is subangular to subrounded fine to coarse of various lithologies.	(0.35)		
				0.35		
0.50-0.80 0.50-0.80	B 1 D 2		2 MADE GROUND: Brown slightly gravelly SAND. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies.	(2.65)		
3.00-3.30 3.00-3.30	B 3 D 4		3 MADE GROUND: Brown clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies.	3.00 (0.50)		
3.50 3.50-3.80 3.50-3.80	ES 1 B 5 D 6		4 MADE GROUND: Brown clayey SAND AND GRAVEL. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies including asphalt. 3.50 m Some asphalt, plastic and metal present.	3.50 (1.00)		
			EXPLORATORY HOLE ENDS AT 4.50 m	4.50		
Depth	**Type & No.**	**Records Date**				

Groundwater Entries

No.	Struck (m)	Post Strike Behaviour
None observed (see Key Sheet)		

Depth Related Remarks *

From	to (m)	
4.50		Pit terminated as instructed by client.

Stability Good

Shoring None

Weather Cloudy

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Trial Pit

TP02

Sheet 1 of 1

Trial Pit Log

Logged CH **Checked** CO'K	**Start** 28/04/2008 **End** 28/04/2008	**Equipment, Methods and Remarks** Excavated pit using Komatsu PC340 LC. Backfilled with arisings.	**Dimensions and Orientation** Width 1.50 m Length 3.50 m A / D / B / C → 280 (Deg)	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests			Strata			
Depth	**Type & No.**	**Date Records**	**Description**	**Depth, *Level* (Thickness)**	**Legend**	**Backfill/ Instruments**
0.00 0.00 0.10-0.30 0.10-0.30	ES 3 ES 4 B 1 D 2		1 MADE GROUND: Grey Blue clayey sandy GRAVEL. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies. Hydrocarbon odour noted.	(0.40)		1
			2 MADE GROUND: Orange brown sandy gravelly CLAY with some cobbles. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies. Cobbles are subangular to subrounded of various lithologies.	0.40 (1.40)		
1.20-1.30 1.20-1.30	B 3 D 4					
			EXPLORATORY HOLE ENDS AT 1.80 m	1.80		
Depth	**Type & No.**	**Records Date**				

Groundwater Entries

No.	Struck (m)	Post Strike Behaviour
1	0.35	Water strike light inflow.

Depth Related Remarks *

From	to (m)	
1.80		Pit terminated due to services.

Stability Good

Shoring None

Weather Sunny

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Trial Pit

TP03

Sheet 1 of 1

Trial Pit Log

Logged CH **Checked** CO'K	**Start** 28/04/2008 **End** 28/04/2008	**Equipment, Methods and Remarks** Excavated pit using Komoatsu PC 340 LC. Backfilled with arisings.	**Dimensions and Orientation** Width 1.50 m Length 3.50 m A B C D → 300 (Deg)	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests			Strata			
Depth	**Type & No.**	**Date Records**	**Description**	**Depth, *Level* (Thickness)**	**Legend**	**Backfill/ Instruments**
0.10-0.30 0.10-0.30	B 1 D 2		1 MADE GROUND: Brown mottled orange sandy clayey GRAVEL with occasional cobbles. Sand is fine to coarse. Gravel is subangular fine to coarse of various lithologies including asphalt. Cobbles are subangular to subrounded of various lithologies. Strong Hydrocarbon odour noted.	(0.40)		
0.50-0.80 0.50-0.80	B 3 D 4		0.40 2 MADE GROUND: Green grey very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies.	(0.50)		
			0.90 EXPLORATORY HOLE ENDS AT 0.90 m			
Depth	**Type & No.**	**Records Date**				

Groundwater Entries

No.	Struck (m)	Post Strike Behaviour
None observed (see Key Sheet)		

Depth Related Remarks *

From	to (m)	
0.90		Pit terminated due to obstruction, possible bedrock.

Stability Good

Shoring None

Weather Cloudy.

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Trial Pit

TP04

Sheet 1 of 1

Trial Pit Log

Logged CH **Checked** CO'K	**Start** 28/04/2008 **End** 28/04/2008	**Equipment, Methods and Remarks** Excavated pit using Komatsu PC340 LC. Backfilled with arisings	**Dimensions and Orientation** Width 1.50 m Length 3.50 m A B C D → 040 (Deg)	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests

Depth	Type & No.	Date Records
0.10-0.30 0.10-0.30	B 1 D 2	*

Strata

Description	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
1 Brown sandy clayey GRAVEL with many cobbles. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies. Cobbles are angular to subrounded of limestone and rhyolite.	(0.60)		
EXPLORATORY HOLE ENDS AT 0.60 m	0.60		

Depth	Type & No.	Records Date

Groundwater Entries

No.	Struck (m)	Post Strike Behaviour
None observed (see Key Sheet)		

Depth Related Remarks *

From	to (m)	
0.00	0.60	Pit terminated due to possible obstruction, possible bedrock.

Stability Moderate

Shoring None

Weather Cloudy

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Trial Pit

TP05

Sheet 1 of 1

Trial Pit Log

Logged CH **Checked** CO'K	**Start** 28/04/2008 **End** 28/04/2008	**Equipment, Methods and Remarks** Excavated pit using Komatsu PL340 LC. Backfilled with arisings.	**Dimensions and Orientation** Width 1.50 m Length 3.50 m A B C D 280 (Deg)	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests

Strata

Depth	Type & No.	Date Records	Description	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
0.50-0.80 0.50-0.80	B 1 D 2		1 MADE GROUND: Firm brown yellow sandy gravelly CLAY with some cobbles, plastics and general waste (rags and plastic wrapping). Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies. Cobbles are subangular to subrounded predominantly of sandstone and siltstone. Strong hydrocarbon odour noted.	(0.40) 0.40		
			2 MADE GROUND: Compact grey green sandy gravelly SILT with some cobbles. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies including asphalt. Cobbles are subangular to subrounded predominantly of sandstone.	(0.70)		
			EXPLORATORY HOLE ENDS AT 1.10 m	1.10		
Depth	**Type & No.**	**Records Date**				

Groundwater Entries

No.	Struck (m)	Post Strike Behaviour
1	0.00	light inflow

Depth Related Remarks *

From	to (m)	
1.10		Pit terminated due to obstruction, possible bedrock.

Stability Poor

Shoring None

Weather Sunny

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Trial Pit

TP06

Sheet 1 of 1

Trial Pit Log

Logged CH **Checked** CO'K	**Start** 28/04/2008 **End** 28/04/2008	**Equipment, Methods and Remarks** Excavated pit using Komatsu PC340 LC. Backfilled with arisings.	**Dimensions and Orientation** Width 1.50 m Length 3.50 m A B C D 180 (Deg)	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests

Strata

Depth	Type & No.	Date Records	Description	Depth, *Level* (Thickness)	Legend	Backfill/ Instruments
0.50-0.80 0.50-0.80	B 1 D 2		1 Brown grey sandy clayey GRAVEL with many cobbles. Sand is fine to coarse. Gravel is subrounded to subangular fine to coarse of various lithologies. Cobbles are angular to subrounded of various lithologies.	(1.00)		
			EXPLORATORY HOLE ENDS AT 1.00 m	1.00		

Depth	Type & No.	Records Date

Groundwater Entries

No.	Struck (m)	Post Strike Behaviour
1	0.00	Surface water present

Depth Related Remarks *

From	to (m)	
1.00		Pit terminated on instruction of client.

Stability Poor

Shoring None

Weather Dry

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Trial Pit

TP07

Sheet 1 of 1

Trial Pit Log

Logged CH **Checked** CO'K	**Start** 28/04/2008 **End** 28/04/2008	**Equipment, Methods and Remarks** Excavated pit using Komatsu PC340 LC. Backfilled with arisings.	**Dimensions and Orientation** Width 1.50 m Length 3.50 m A B C D 110 (Deg)	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests			Strata			
Depth	**Type & No.**	**Date Records**	**Description**	**Depth, *Level* (Thickness)**	**Legend**	**Backfill/ Instruments**
0.30-0.50 0.30-0.50	B 1 D 2		1 MADE GROUND: Asphalt over black grey GRAVEL. Gravel is subangular to subrounded fine to coarse of various lithologies.	0.20		
			2 Brown sandy clayey GRAVEL with occasional cobbles. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies.	(0.90)		
1.20-1.50 1.20-1.50	B 3 D 4		3 Uncompact fibrous grey slightly sandy SILT with some rootlets and roots up to 20cm. Sulphurous odour noted.	1.10		
				(0.40)		
			4 Grey green silty sandy GRAVEL. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies.	1.50		
				(1.00)		
2.20-2.50 2.20-2.50	B 5 D 6					
			EXPLORATORY HOLE ENDS AT 2.50 m	2.50		
Depth	**Type & No.**	**Records Date**				

Groundwater Entries

No.	Struck (m)	Post Strike Behaviour
1	1.10	Moderate to heavy flow.

Depth Related Remarks *

From	to (m)	
2.50		Pit terminated as instructed by client.

Stability Moderate/Poor

Shoring None

Weather Dry

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Trial Pit

TP08

Sheet 1 of 1

Trial Pit Log

Logged CH **Checked** CO'K	**Start** 28/04/2008 **End** 28/04/2008	**Equipment, Methods and Remarks** Excavated pit using Komatsu PC340 LC. Backfilled with arisings.	**Dimensions and Orientation** Width 1.50 m Length 3.50 m A B C D → 250 (Deg)	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests			Strata			
Depth	**Type & No.**	**Date Records**	**Description**	**Depth, *Level* (Thickness)**	**Legend**	**Backfill/ Instruments**
			1 Brown yellow sandy gravelly CLAY with occasional cobbles. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies. Cobbles are subangular to subrounded predominantly of sandstone.	(0.60)		
			2 Blue grey sandy clayey GRAVEL with occasional cobbles, tree roots and remains. Sand is fine to coarse. Gravel is subrounded fine to coarse of various lithologies. Cobbles are subangular to subrounded predominantly of sandstone.	0.60 (1.90)		
1.50-1.80 1.50-1.80	B 1 D 2					
2.50-2.80 2.50-2.80	B 3 D 4		3 Uncompact grey green sandy SILT. Sand is fine to coarse.	2.50 (2.00)		
			EXPLORATORY HOLE ENDS AT 4.50 m	4.50		
Depth	**Type & No.**	**Records Date**				

Groundwater Entries

No.	Struck (m)	Post Strike Behaviour
None observed (see Key Sheet)		

Depth Related Remarks *

From	to (m)	
4.50		Pit terminated as instructed by client.

Stability Very good

Shoring None

Weather Cloudy

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Trial Pit

TP09

Sheet 1 of 1

Trial Pit Log

Logged CH **Checked** CO'K	**Start** 28/04/2008 **End** 28/04/2008	**Equipment, Methods and Remarks** Excavated pit using Komatsu PC340 LC. Backfilled with arisings.	**Dimensions and Orientation** Width 1.50 m Length 3.50 m A B C D → 290 (Deg)	**Ground Level** - **Coordinates** - **National Grid** - **Chainage**

Samples and Tests			Strata			
Depth	**Type & No.**	**Date Records**	**Description**	**Depth, *Level* (Thickness)**	**Legend**	**Backfill/ Instruments**
0.50-0.80 0.50-0.80	B 1 D 2		1 MADE GROUND: Compact green grey slightly sandy SILT. Sand is fine to coarse.	(1.50)		
1.70-2.00 1.70-2.00	B 3 D 4		2 MADE GROUND: Yellow brown sandy clayey GRAVEL with some cobbles. Sand is fine to coarse. Gravel is subrounded fine to corse of various lithologies including asphalt. Cobbles are subangular to subrounded predominantly of sandstone.	1.50 (1.50)		
			EXPLORATORY HOLE ENDS AT 3.00 m	3.00		
Depth	**Type & No.**	**Records Date**				

Groundwater Entries

No. Struck (m)	Post Strike Behaviour
None observed (see Key Sheet)	

Depth Related Remarks *

From	to (m)	
3.00		Pit terminated as instructed by client,

Stability Good

Shoring None

Weather Cloudy

Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

Project Roadstone Brownswood Quarry

Project No. KD8062

Carried out for Roadstone

Trial Pit

TP10

Sheet 1 of 1

ENCLOSURE B

GEOENVIRONMENTAL LABORATORY TEST RESULTS

ALcontrol Report 08-B02686/01

ALcontrol Laboratories (Dublin)

18a Rosemount Business Park,
Ballycoolin,
Dublin 11
Ireland
Tel: +353 (0) 1 8829893
Fax: +353 (0) 1 8829895

CERTIFICATE OF ANALYSIS

Client: Geotech Specialists Ltd

Carewswood
Castlemartyr
Co.Cork

Attention: Ciaran Huges

Date: 26 May, 2008

Our Reference: 08-B02686/01

Your Reference: KD8062

Location: Brownswood

A total of 3 samples was received for analysis on Wednesday, 30 April 2008 and authorised on Monday, 26 May 2008. Accredited laboratory tests are defined in the log sheet, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our final report, it was a pleasure to be of service to you, and we look forward to our continuing association.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Signed

Lorraine McNamara
Laboratory Technical Manager

Compiled By

Caoimhe McLoughlin
Caoimhe McLoughlin

UKAS TESTING
1291
GROUP

ALcontrol Laboratories Ireland

Test Schedule

Ref Number: 08-B02686/01

Client: Geotech Specialists Ltd

Date of Receipt: 30/04/2008

Sample Type: SOIL

Location: Brownswood

Client Contact: Ciaran Huges

Client Ref: KD8062

Detection Method				GCMS	GCMS	GCMS	GRAVIMETRIC												
UKAS Accredited [Testing Laboratory] No. 1291					✓														
ALcontrol Reference	Sample Identity	Other ID	P / V	Coronene	PAH EPA (16)	PAH Total (17) GCMS (Solid)	Natural Moisture Content												
08-B02686-S0003-A01	TP01 ES1	1.70M	Amber Jar	X	X	X	X												
08-B02686-S0004-A01	TP02 ES2	3.50M	Amber Jar	X	X	X	X												
08-B02686-S0005-A01	TP03 ES3	0M	Amber Jar	X	X	X	X												

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

ALcontrol Laboratories Ireland

Test Schedule Summary

Ref Number: 08-B02686/01
Client: Geotech Specialists Ltd
Date of Receipt: 30/04/2008

Sample Type: SOIL
Location: Brownswood
Client Contact: Ciaran Huges
Client Ref: KD8062

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

SCHEDULE	METHOD	TEST NAME	TOTAL
X	GCMS	Coronene	3
X	GCMS	PAH EPA (16)	3
X	GCMS	PAH Total (17) GCMS (Solid)	3
X	GRAVIMETRIC	Natural Moisture Content	3

☐ Interim
☑ Validated

ALcontrol Laboratories Ireland

Table Of Results

Ref Number: 08-B02686/01
Client: Geotech Specialists Ltd
Date of Receipt: 30/04/2008
(of first sample)

Sample Type: SOIL
Location: Brownswood
Client Contact: Ciaran Huges
Client Ref: KD8062

	Detection Method	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS
	Method Detection Limit	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg	<1ug/kg
UKAS Accredited [Testing Laboratory] No. 1291		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ALcontrol Reference	Sample Identity	Other ID	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)+Benzo(k) fluoranthene	Benzo(a)pyrene	Indeno(123cd)pyrene	Dibenzo(ah)anthracene	Benzo(ghi)perylene
			ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
08-B02686-S0003	TP01 ES1	1.70M	28	57	75	35	152	20	48	161	479	243	277	94	<1	<1	<1
08-B02686-S0004	TP02 ES2	3.50M	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
08-B02686-S0005	TP03 ES3	0M	8634	1438	177	2774	4241	2220	3377	3006	998	1839	1247	567	304	312	375

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

NDP = NO DETERMINATION POSSIBLE

Checked By : Caoimhe McLoughlin

Printed at 12:01 on 27/05/2008

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

☐ Interim
☑ Validated

ALcontrol Laboratories Ireland

Table Of Results

Ref Number: 08-B02686/01

Client: Geotech Specialists Ltd

Date of Receipt: 30/04/2008
(of first sample)

Sample Type: SOIL

Location: Brownswood

Client Contact: Ciaran Huges

Client Ref: KD8062

	Detection Method		GCMS	GCMS	GCMS	GRAVIMETRIC
	Method Detection Limit		<1ug/kg	<1ug/kg	<1ug/kg	<0.1%
UKAS Accredited [Testing Laboratory] No. 1291				✓		
ALcontrol Reference	Sample Identity	Other ID	Coronene	Total 16 EPA PAHs	Total 17 PAHs	Natural Moisture Content
			ug/kg	ug/kg	ug/kg	%
08-B02686-S0003	TP01 ES1	1.70M	<1	1669	1669	2.2
08-B02686-S0004	TP02 ES2	3.50M	<1	<1	<1	1.0
08-B02686-S0005	TP03 ES3	0M	87	315112	31596	2.7

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

NDP = NO DETERMINATION POSSIBLE

Checked By : Caoimhe McLoughlin

Printed at 12:01 on 27/05/2008

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

APPENDIX

APPENDIX

1. Results are expressed as mg/kg dry weight (dried at 30°C) on all soil analyses except for the following: NRA Leach tests, flash point, and ammoniacal N_2 by the BRE method, VOC, PRO, Cyanide, Acid Soluble Sulphide, SVOC, DRO, PAH, PCB, TPH CWG ,TPH by IR, OFGs and SEM.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. A sub sample of all samples received will be retained free of charge for one month for soils and one month for waters (sample size permitting), but may then be discarded unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, an asbestos screen is done in-house on soils and if no fibres are found will be reported as NFD – no fibres detected. If fibres are detected, then identification and quantification is carried out by ALcontrol Technichem or Alcontrol Shutlers in the UK. If a sample is suspected of containing asbestos, then drying and crushing will be suspended on that sample until the asbestos results are known. If asbestos is present, then no analysis requiring dry sample are undertaken.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace is present in the volatile sample.

8. NDP – No Determination Possible due to insufficient/unsuitable sample.

9. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.

10. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

Last updated February 2005

ENCLOSURE C
PHOTOGRAPHS

Trial Pits

Digital on CD

ENCLOSURE D

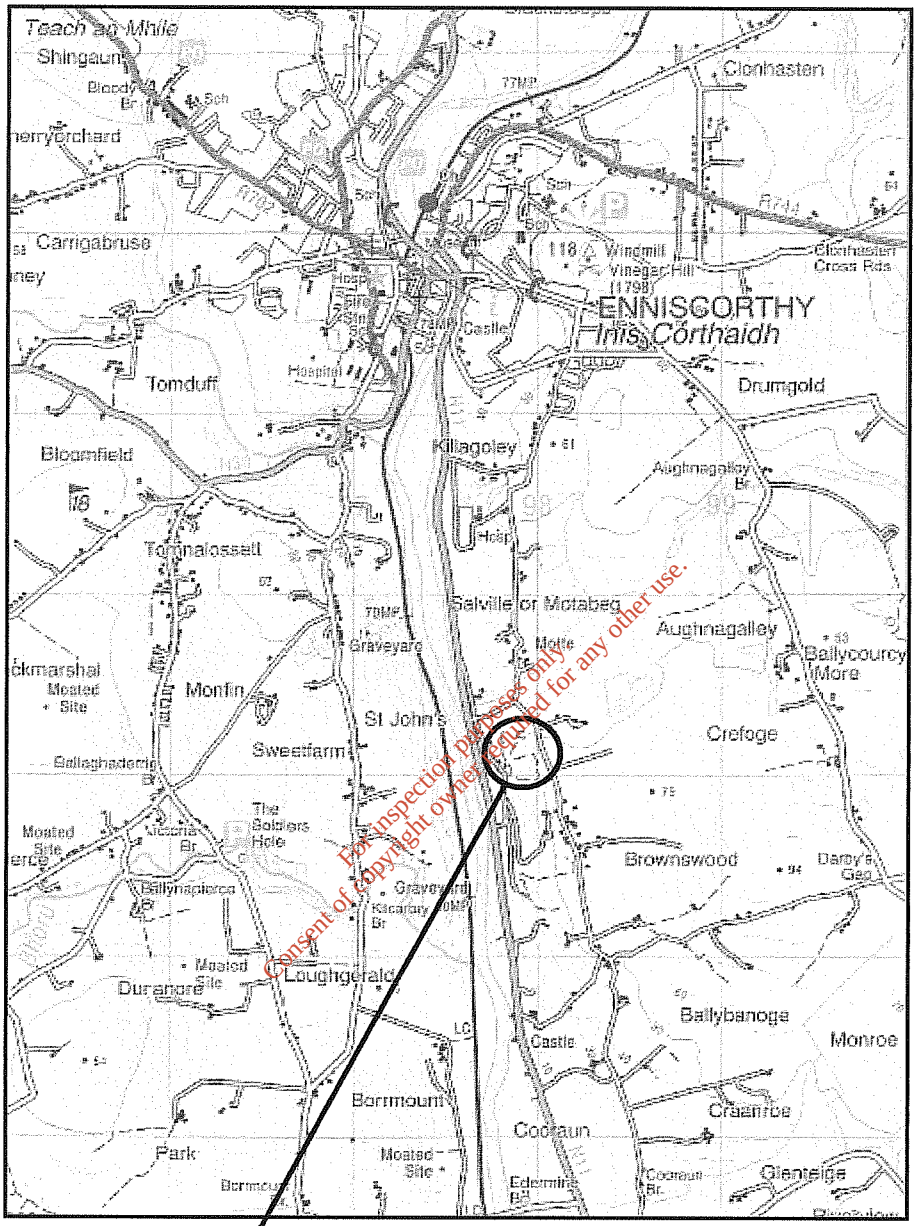
DRAWINGS

Site Location Plan	D1
Exploratory Hole Location Plan	D2

Site Location Plan

GEOTECH

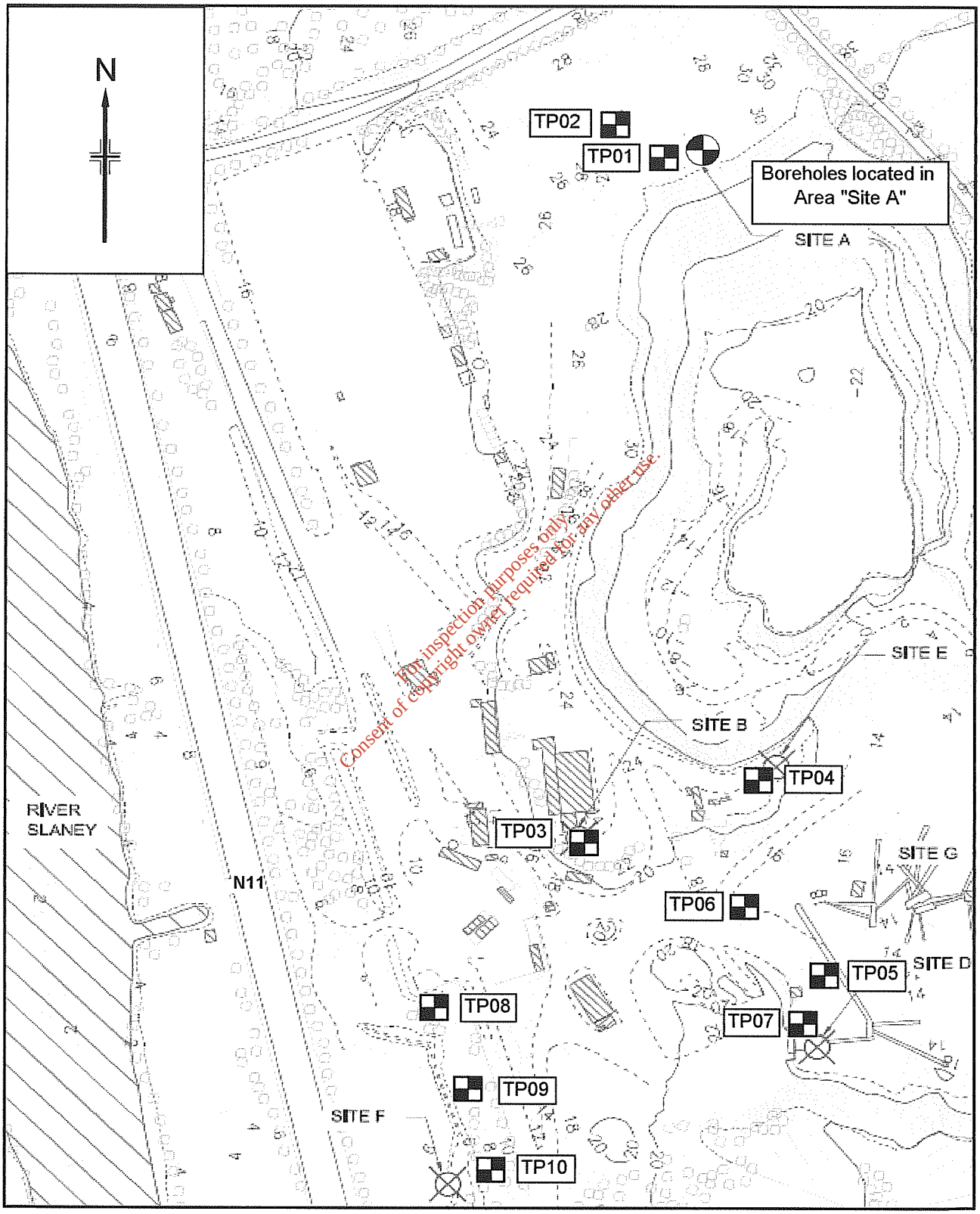
N



Project	Roadstone Brownswood Quarry	**Drawing**
Project No	KD8062	**D1**
Carried out for	Roadstone	Sheet 1 of 1

Exploratory Hole Location Plan

GEOTECH



	Project	Roadstone Brownswood Quarry	Drawing No.
	Project No	KD8062	D2
	Carried out for	Roadstone	Sheet 1 of 1