

AGL15060_01

**REPORT
ON THE
GEOPHYSICAL INVESTIGATION
FOR
GREATER DUBLIN DRAINAGE SCHEME,
OFFSHORE PORTMARNOCK, DUBLIN
FOR
IRISH WATER**

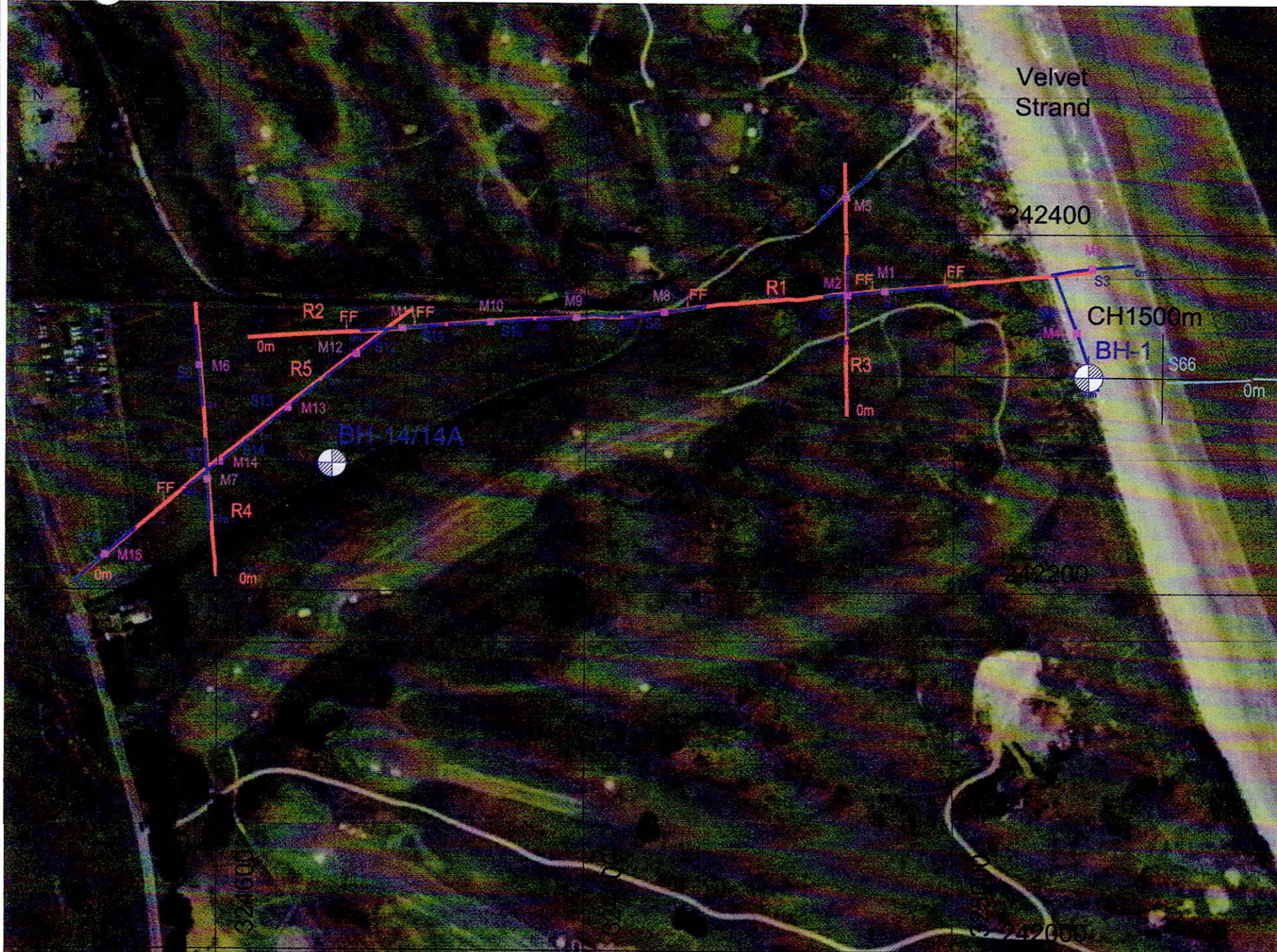
1ST DECEMBER 2015

apex
geoservices

APEX Geoservices Limited
Unit 6 Knockmullen Business Pk.,
Gorey,
Co. Wexford, Ireland

T: 0402 21842
F: 0402 21843
E: info@apexgeoservices.ie
W: www.apexgeoservices.com

FIGURE 1: GEOPHYSICAL INVESTIGATION LOCATION MAP
SCALE 1:2000



INDEX MAP:



LEGEND:

- ERT Profile
- Seismic Refraction Spread
- MASW Location on Seismic Refraction Spread
- Client Borehole Data
- ING Coordinate
- Possible Fault / Fracture
- Possible Fault / Fracture

apex
geoservices

6 Knockmullen Business Park, Regus House, Herald Way
Dorcy, Co. Wexford
Pegasus Business Park
Castle Donington
Derby DE74 2TZ
T +353 (0)402-21842
F +353 (0)402-21843
E info@apexgeoservices.ie
www.apexgeoservices.ie

PROJECT: G.D.P. PORTMARNOCK GOLF COURSE
GEOPHYSICAL INVESTIGATION

CLIENT: TOBIN CONSULTING ENGINEERS

DRAWING NO: AGL15247.01

SCALE: AS INDICATED @ A3

DATE: 27/01/2016

Version: 01 Date: 27/01/2016 Drawn By: T1 Checked: J.P.

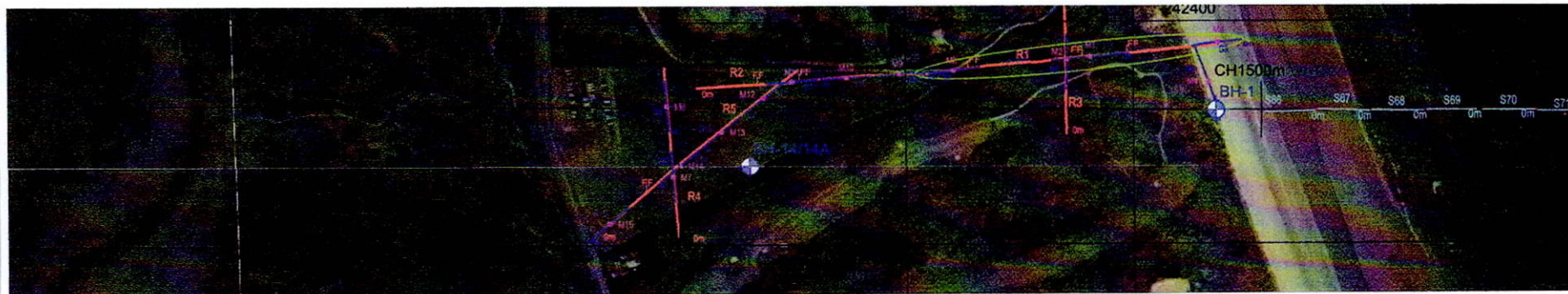
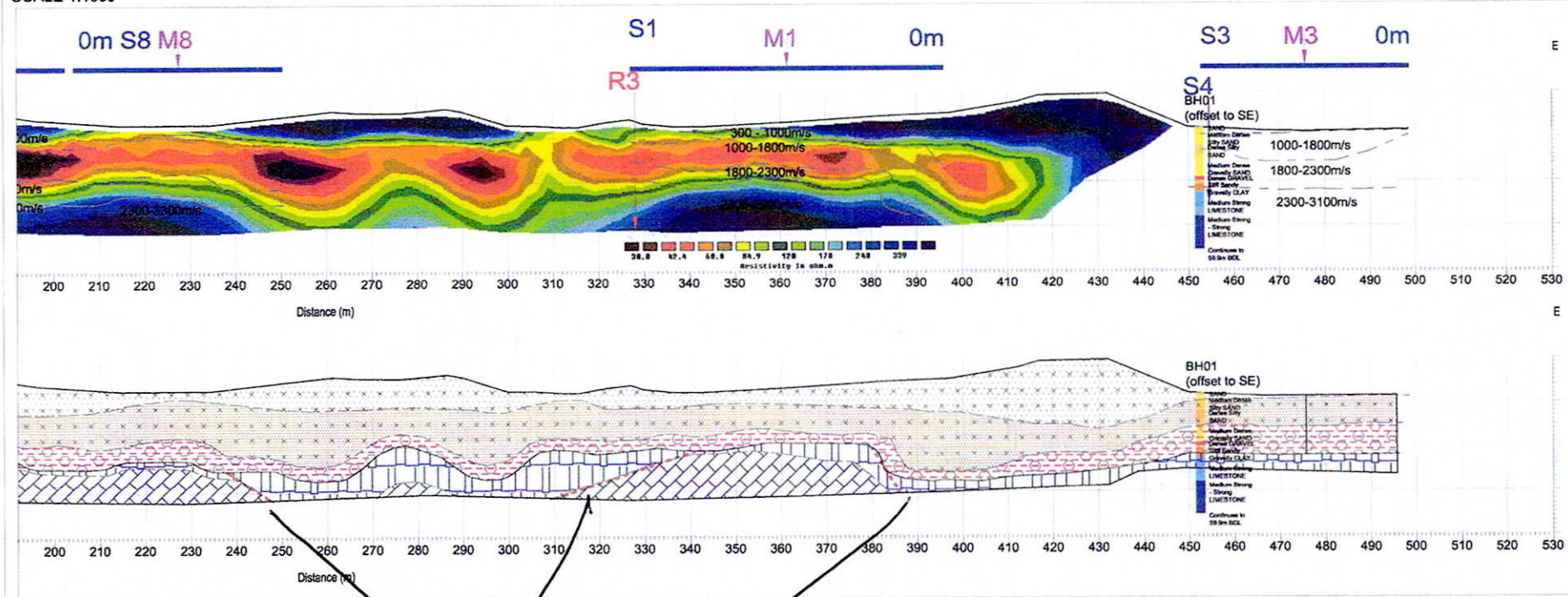


FIGURE 2: GEOPHYSICAL RESULTS & INTERPRETATION R1/R2

SCALE 1:1000



Possible Fault Zone



LEGEND:

- ERT Profile
- Seismic Refraction Spread
- Seismic Refraction Spread Marine Investigation 2015
- Area of Interpretation Display
- + MASW Location on Seismic Refraction Spread
- + Client Borehole Data
- + ING Coordinate
- Overburden Thickness from Borehole
- Seismic Layer Boundary
- Internal Overburden Layer Boundary
- Top of Bedrock
- Possible Fault / Fracture Zone
- Very Loose - Medium Dense Silty Sand
- Medium Dense - Dense Silty Sand
- Stiff - Very Stiff Silty Gravelly CLAY
- Moderately Weathered Limestone & Shale
- Slightly Weathered - Fresh Limestone & Shale



6 Knockmullen Business Park Regus House, Harold Way
Guray Co. Wexford Pegasus Business Park
Castle Donington Derby DE74 2TZ
UK
T +353 (0)452-21842 T +44 (0)1848 8720 692
E info@apexgeoservices.ie E info@apexgeoservices.co.uk
www.apexgeoservices.ie www.apexgeoservices.co.uk

PROJECT: G.D.P. PORTMARNOCK GOLF COURSE
GEOPHYSICAL INVESTIGATION
CLIENT: TOBIN CONSULTING ENGINEERS
DRAWING NO: AGL15247_04
SCALE: AS INDICATED @ A3
DATE: 27/01/2016

Version	Date	Drawn By	Checked
01	27/01/2016	TL	SOR
02	11/02/2016	TL	SOR

FIGURE 1: GEOPHYSICAL INVESTIGATION LOCATION R1/R2

SCALE 1:4000

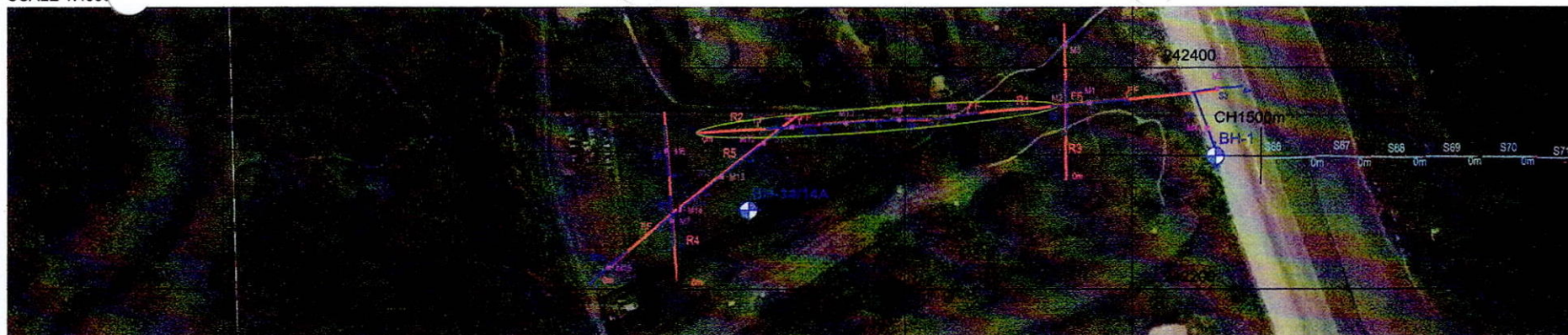
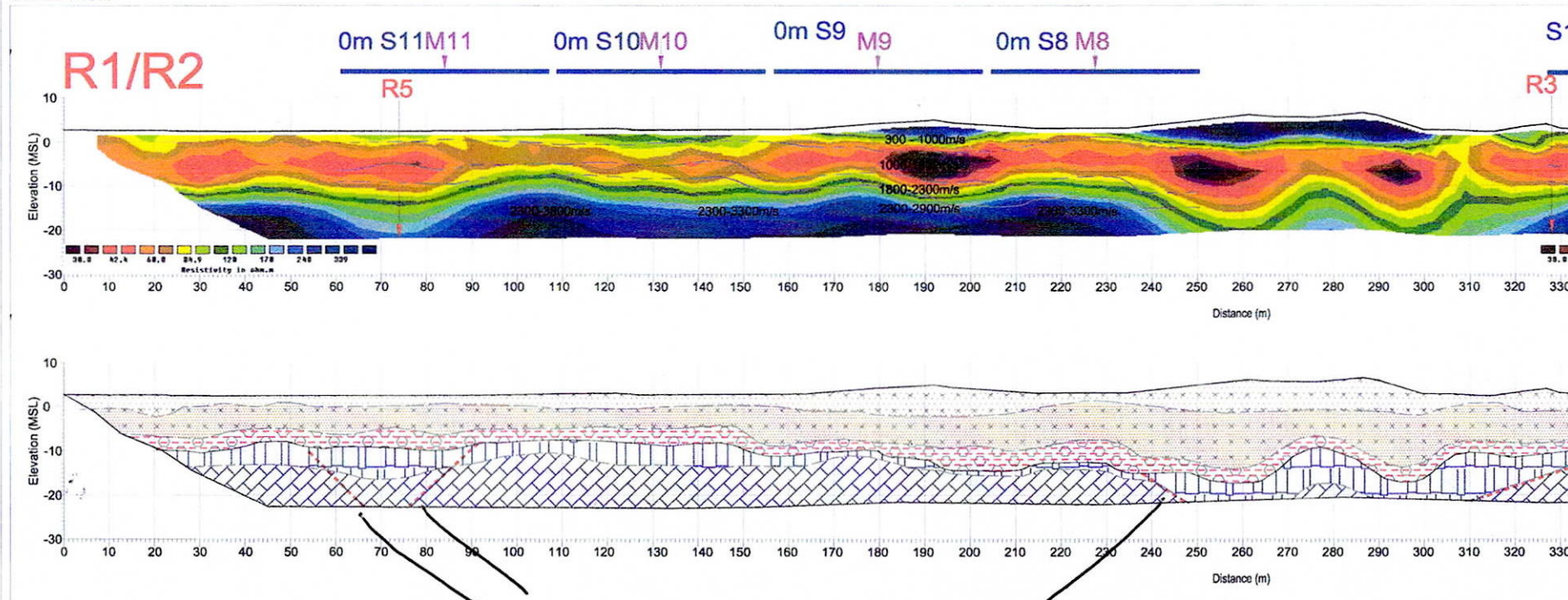


FIGURE 2: GEOPHYSICAL RESULTS & INTERPRETATION R1/R2

SCALE 1:1000



INDEX MAP



LEGEND:

- ERT Profile
- Seismic Refraction Spread
- Seismic Refraction Spread Marine Investigation 2015
- Area of Interpretation Display
- MASW Location on Seismic Refraction Spread
- Client Borehole Data
- ING Coordinate
- Overburden Thickness from Borehole
- Seismic Layer Boundary
- Internal Overburden Layer Boundary
- Top of Bedrock
- Possible Fault / Fracture Zone
- Very Loose - Medium Dense Silty Sand
- Medium Dense - Dense Silty Sand
- Stiff - Very Stiff Sandy Gravelly CLAY
- Moderately Weathered Limestone & Shale
- Slightly Weathered - Fresh Limestone & Shale

apex
geoservices

8 Knockmalien Business Park, Regus House, Harold Way
Garry, Co. Wickford, Pegasus Business Park
Inland, Castle Donington, Derby DE74 2TZ
T: +44 (0)1452 31840 T: +44 (0)1452 31843
E: info@apexgeoservices.ie E: info@apexgeoservices.co.uk
www.apexgeoservices.ie www.apexgeoservices.co.uk

PROJECT: G.D.P. PORTMARNOCK GOLF COURSE
CLIENT: TOBIN CONSULTING ENGINEERS
DRAWING NO: AGL15247_03
SCALE: AS INDICATED @ A3
DATE: 27/01/2016

Version: Date: Drawn By: Checked:

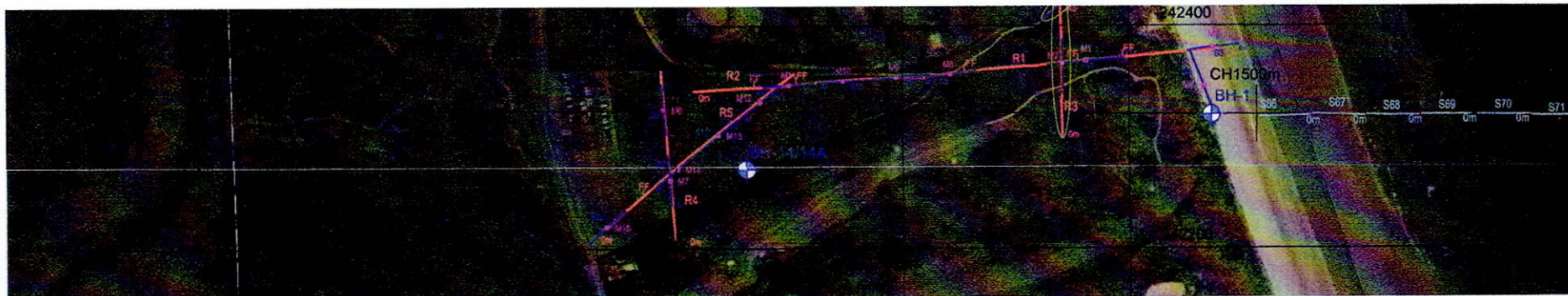


FIGURE 2: GEOPHYSICAL RESULTS & INTERPRETATION R3
SCALE 1:1000

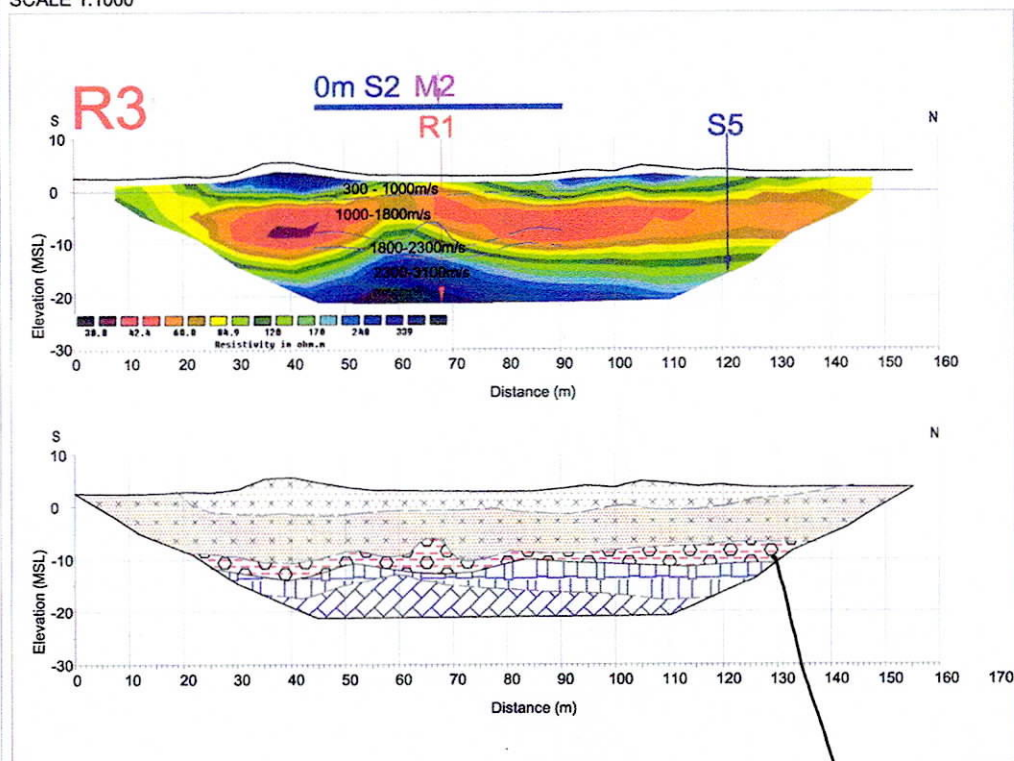
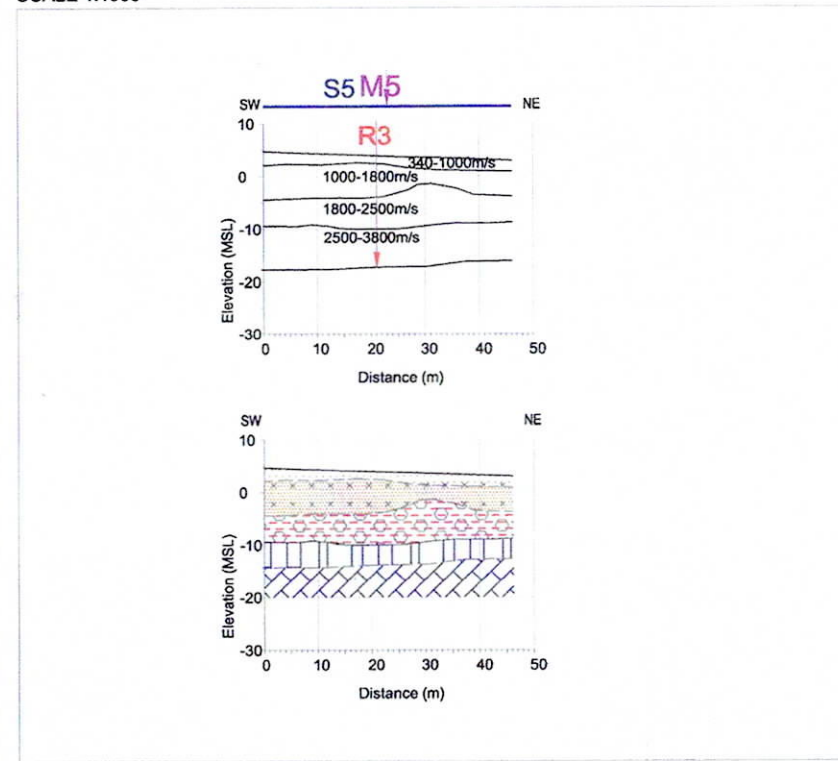


FIGURE 3: GEOPHYSICAL RESULTS & INTERPRETATION S5
SCALE 1:1000



- LEGEND:**
- ERT Profile
 - Seismic Refraction Spread
 - Seismic Refraction Spread Marine Investigation 2015
 - Area of Interpretation Display
 - MASW Location on Seismic Refraction Spread
 - Client Borehole Data
 - ING Coordinate
 - Overburden Thickness from Borehole
 - Seismic Layer Boundary
 - Internal Overburden Layer Boundary
 - Top of Bedrock
 - Possible Fault / Fracture Zone
 - Very Loose - Medium Dense Silty Sand
 - Medium Dense - Dense Silty Sand
 - Stiff - Very Stiff Sandy Gravelly CLAY
 - Moderately Weathered Limestone & Shale
 - Slightly Weathered - Fresh Limestone & Shale

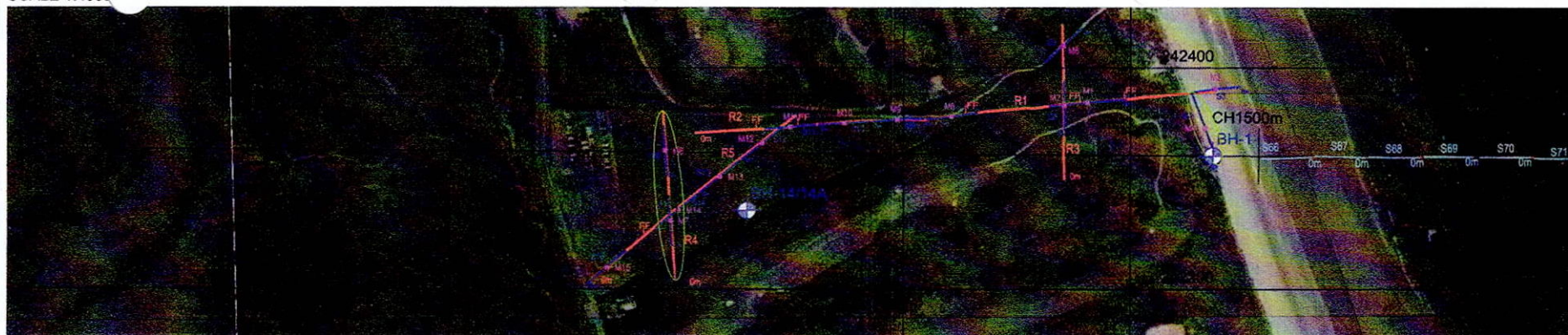
apex
geoservices

8 Knockmullen Business Park Ragus House, Harold Way
Garry Co. Wexford Pegasus Business Park
Castle Derwin Derby DE74 7TZ
Ireland. UK
T +353 (0)402-21842 T +44 (0)1544 8700 692
E info@apexgeoservices.ie E info@apexgeoservices.co.uk
www.apexgeoservices.ie www.apexgeoservices.co.uk

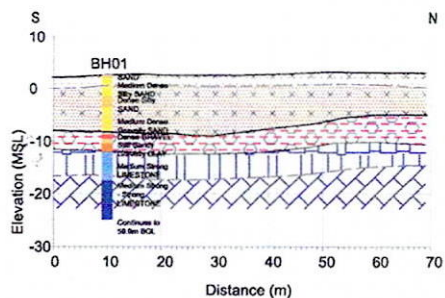
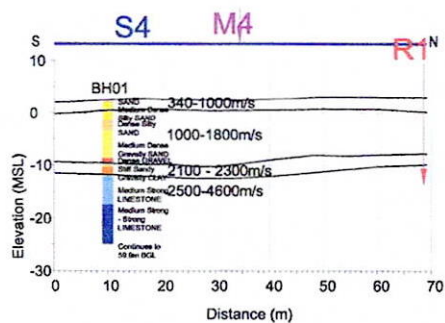
PROJECT: G.D.P. PORTMARNOCK GOLF COURSE
GEOPHYSICAL INVESTIGATION
CLIENT: TOBIN CONSULTING ENGINEERS
DRAWING NO: AGL15247_06
SCALE: AS INDICATED @ A3
DATE: 27/01/2016

Version	Date	Drawn By	Checked
01	27/01/2016	TL	SOR
02	11/02/2016	TL	SOR

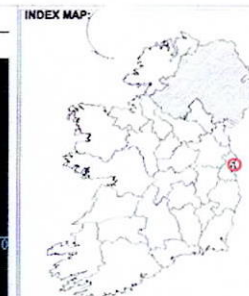
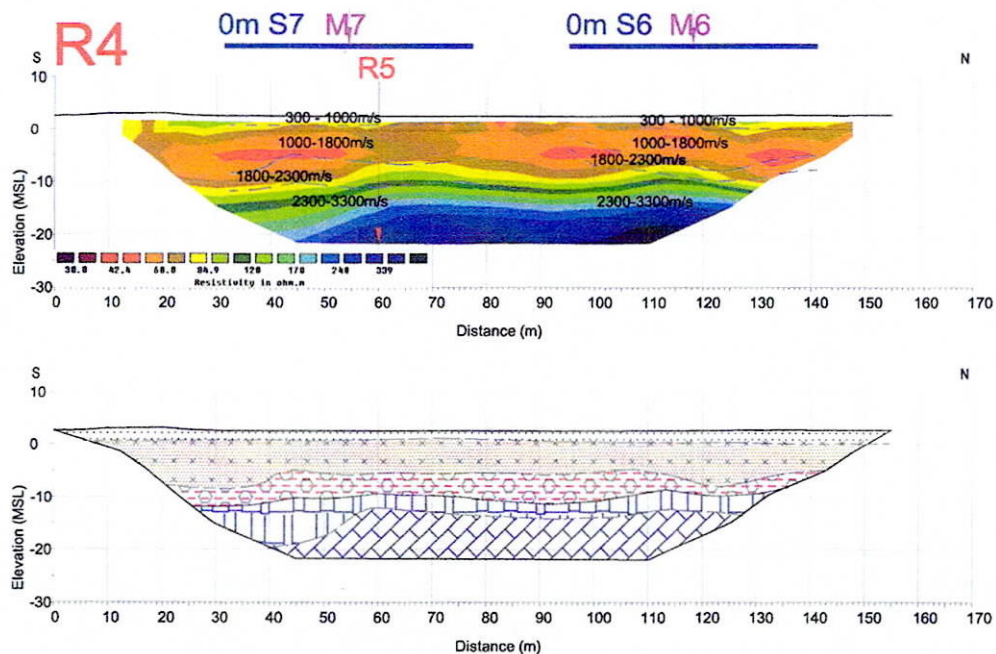
SCALE 1:4000



SCALE 1:1000



SCALE 1:1000



LEGEND:

ERT Profile

Seismic Refraction Spread

Seismic Refraction Sound

Area of Interpretation Display

[illegible]

Client Borehole Data

Overburden Thickness

 Seismic Layer Bound

Internal Organization

Care Coordination

☐ Very Loose - Medium Dense Medium Dense - Dense
Silty Sand

Stiff - Very Stiff Sandy Gravel
CLAY

moderately weathered
Limestone & Shale

Limestone & Shale

grove



8 Knockmuir Business Park Regus House, Her
Garry Pegasus Business

Co. Wexford
Ireland.
T +353 (0)452 31643

F +353 (0)402-21843
E info@apergeservices.ie

PROJECT: G.D.D.P PORTMARNOCK GOLF CC

CLIENT: GEOPHYSICAL INVESTIGATION
TOBIN CONSULTING ENGINEERS

AGL15247_05

DATE: 17 JUL 1968

FIGURE 1: GEOPHYSICAL INVESTIGATION LOCATION R5
SCALE 1:4000

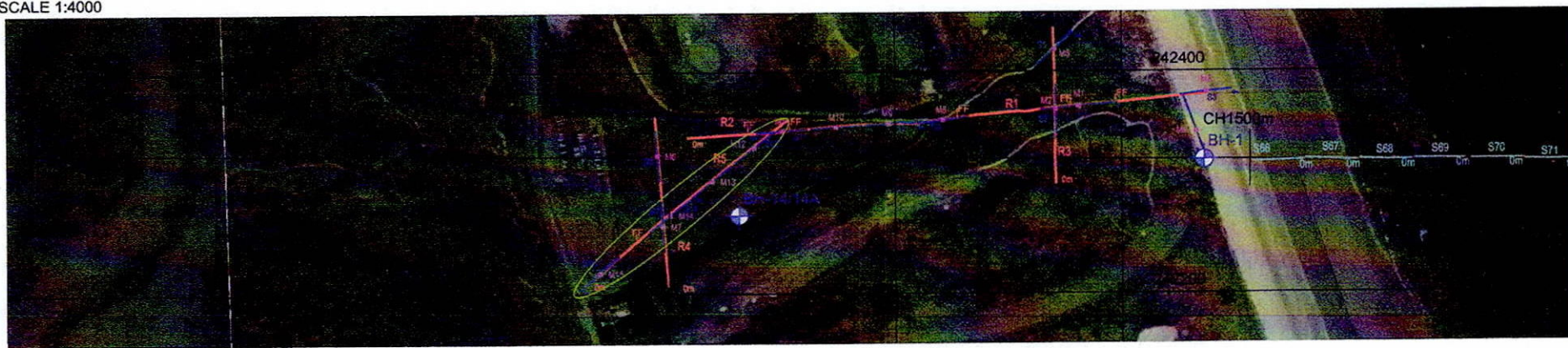
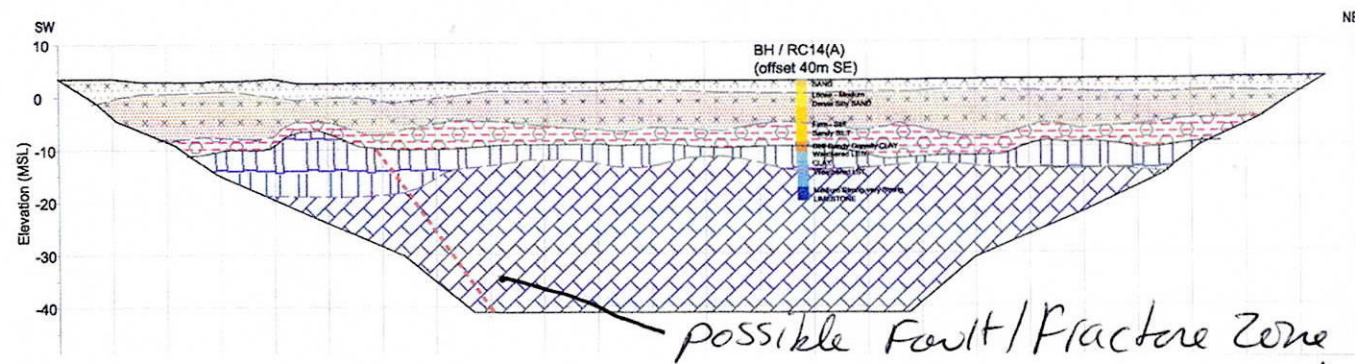
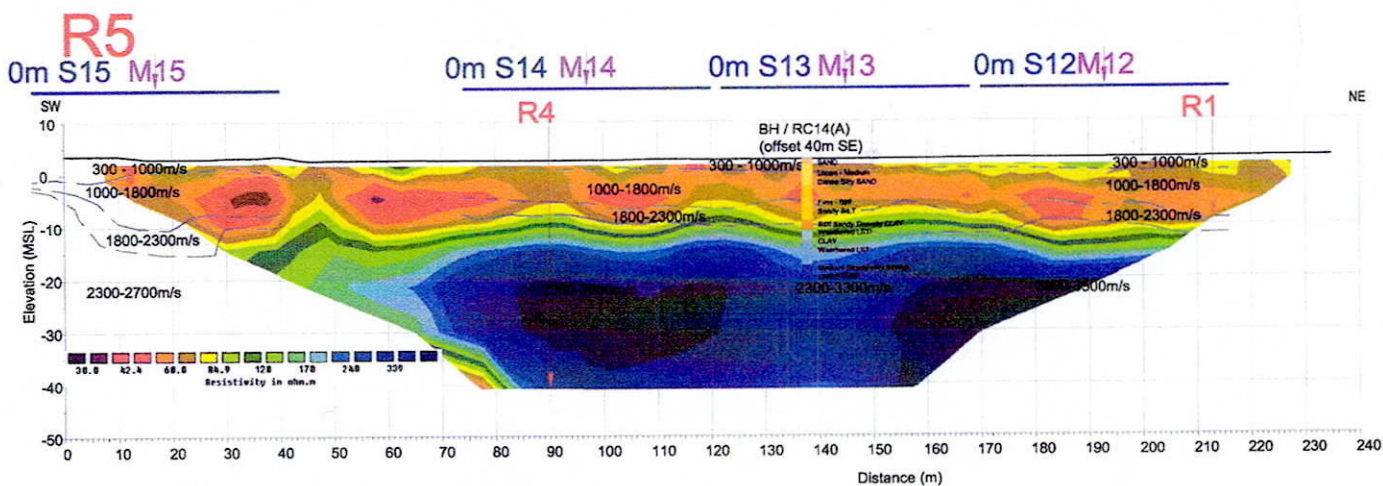


FIGURE 2: GEOPHYSICAL RESULTS & INTERPRETATION R5
SCALE 1:1000



INDEX MAP:



LEGEND:

- ERT Profile
- Seismic Refraction Spread
- Seismic Refraction Spread Marine Investigation 2015
- Area of Interpretation Display
- MASW Location on Seismic Refraction Spread
- Client Borehole Data
- ING Coordinate
- Overburden Thickness from Borehole
- Seismic Layer Boundary
- Internal Overburden Layer Boundary
- Top of Bedrock
- Possible Fault / Fracture Zone
- Very Loose - Medium Dense Silty Sand
- Medium Dense - Dense Silty Sand
- Stiff - Very Stiff Sandy Gravelly CLAY
- Moderately Weathered Limestone & Shale
- Slightly Weathered - Fresh Limestone & Shale

apex
geoservices

6 Knockastallen Business Park
Ragun House, Harold Way
Garry
On. Wexford
Ireland
T +353 (0)402-21942
F +353 (0)402-21943
E info@apexgeoservices.ie
www.apexgeoservices.co.uk

PROJECT: G.D.P. PORTMARNOCK GOLF COURSE
GEOPHYSICAL INVESTIGATION
CLIENT: TOBIN CONSULTING ENGINEERS
DRAWING NO: AGL15247_02
SCALE: AS INDICATED @ A3
DATE: 27/01/2016