336-009-RP02

Drainage Impact Assessment

New Deer 2 BESS

DOCUMENT STATUS	DATE	BY	CHECKED	APPROVED
Final v2	23.04.2025	James Calvert Director		James Calvert Director
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HAYDN EVANS

Second Floor, Hyde Park House,
Crown Street, Ipswich, IP1 3LG
01473 236550
www.haydnevans.co.uk

Contents

1 Introduction

Haydn Evans Consulting Ltd (HEC) has been commissioned by Field New Deer Ltd (hereafter referred to as the Client) to carry out a Drainage Impact Assessment (DIA) to support a planning application for the construction and operation of a Battery Energy Storage System (BESS) of up to 400 megawatts (MW) with associated infrastructure (including cable route to substation), access and ancillary works (the Proposed Development) on land approximately 1.5 kilometres (km) south of Cuminestown, Turriff, Aberdeenshire, AB53 8JJ (the BESS Site). Although the Planning Boundary for the application comprises approximately 129 ha, this DIA assesses the western land parcel, also known as the 'BESS Site'.

1.1 Limitation

This document has been prepared for the sole use of the Client. The copyright of this report is vested in HEC and the Client. HEC accepts no responsibility whatsoever to other parties to whom this report, or any part thereof, is made known. Any such other parties that rely upon the report do so at their own risk.

The DIA should be read in conjunction with the Flood Risk Assessment (FRA) which has been prepared for this site; HEC document reference 336-011-RP01.

1.2 Site Proposal

The Planning Boundary comprises approximately 129 ha. The BESS Site comprises approximately 33 ha with the BESS Compound comprising 9.4 ha.

The Proposed Development comprises a BESS with a generation capacity of 400 megawatts (MW) of electricity, which will charge and discharge from the adjacent proposed Greens (New Deer 2) substation. The Proposed Development includes:

- Battery storage units / containers arranged into rows.
- Medium-voltage (MV) skids and ancillary low-voltage (LV) equipment.
- High-voltage (HV) grid transformers.
- Air insulated switchgear.
- A substation building comprising welfare facilities, a switch room and control room.
- An underground 400 kV grid connection cable; and
- Site-wide supporting infrastructure including cabling, access tracks, fencing, attenuation basins, and landscaping measures.

Whilst the exact specifications are subject to detailed design, the principal components described form the basis of the planning application to allow environmental assessments and mitigation to be appropriately scoped.

2 Location & Existing Conditions

2.1 Site Location

The BESS Site (herein referred to as 'the Site') is located to the south of Cuminestown and west of New Deer, on approximate Ordnance Survey (OS) grid reference NJ 80816 48145 (see red line boundary on Figure 1).

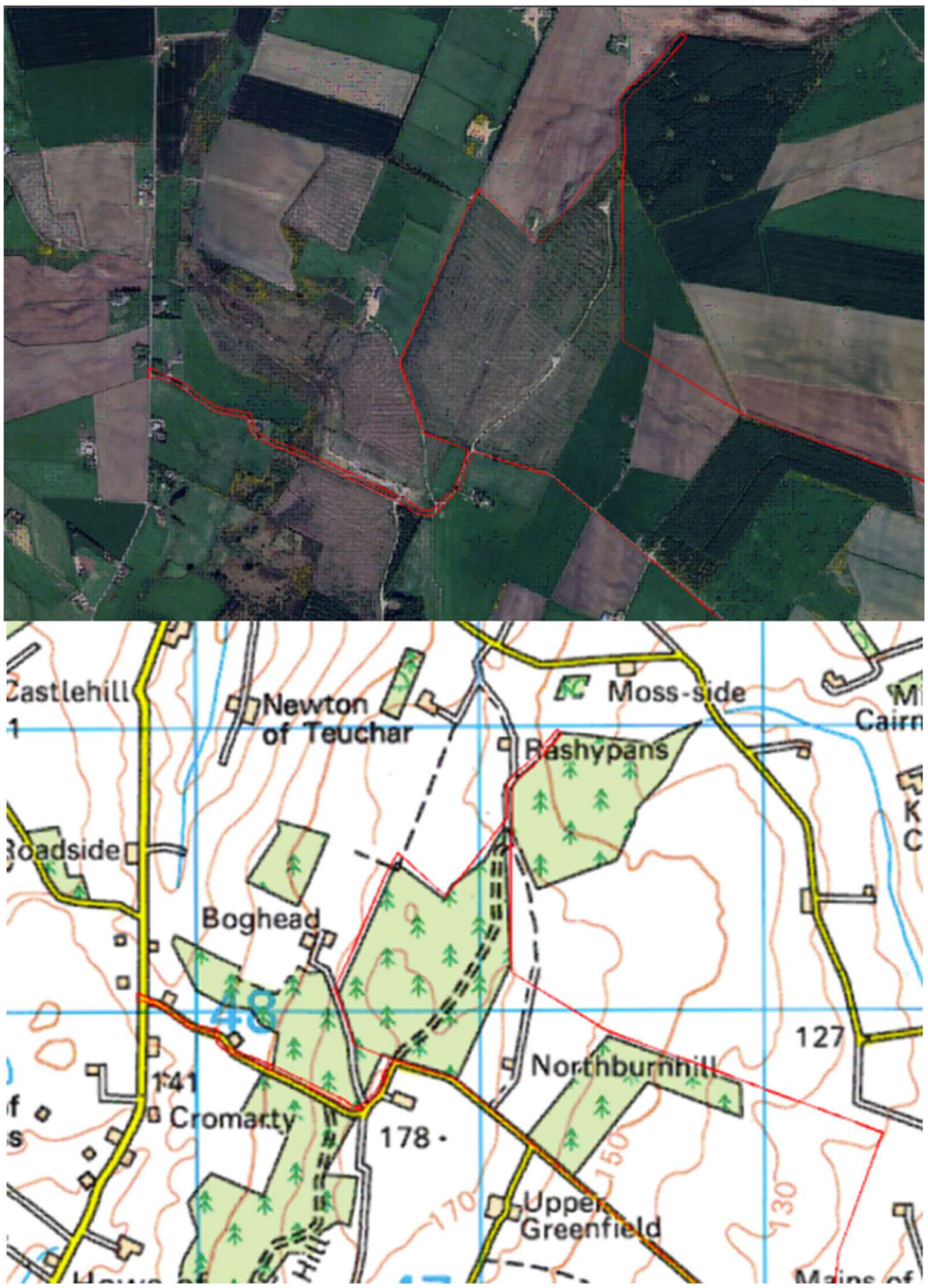


Figure 1: Site location maps

The Site is predominately surrounded by greenfield land.

There is an unclassified road to the southern boundary and a private access road to the south-west boundary. The remainder of the Site borders onto agricultural land either used for forestry, arable crops, or grazing.

The access to the Proposed Development is located on the southern boundary off the unclassified road; there is an existing vehicular access at this location. This access will be used for all construction and maintenance traffic.

2.2 Existing Topography

A topographic survey has been produced for the Site. The survey shows ground levels to generally fall from south, towards the north. Ground levels in the south are circa 175 metres Above Ordnance Datum (mAOD), falling to circa 158 mAOD in the north. There is an existing vehicular access track running through the development site which is raised above surrounding ground levels.

2.3 Existing Sewer Assets

The utilities search report and drawings does not show any Scottish Water (SW) foul or surface sewers within the vicinity of the site (see Appendix B).

2.4 Existing Drainage Regime

There is no formal drainage system located within the BESS Site therefore it is assumed the surface water runs-off would flow overland following the topography to the Burn of Greens or infiltrate into the underlying soils.

2.5 Ground Conditions

British Geological Survey (BGS) mapping confirms the Site to have a bedrock geology of Macduff Formation (Micaceous psammite, Semipelite, and Pelite) (see Figure 2).

The superficial deposits for the Site are shown to comprise of Peat (see Figure 3, shading brown). The remainder of the Site is shown to have no superficial deposits.

Figure 2: BGS Mapping – Bedrock geology

Figure 3: BGS Mapping – Superficial deposits

The Phase 1 Desk Study, prepared by RSK Environment Limited on behalf of the Client (Ref: 340617) provides similar findings regarding the geology. The report recommends that further investigation is required to confirm groundwater depths.

3 Planning Policy Context

3.1 National Planning Framework 4 (NPF4 Adopted 2023)

The National Planning Framework 4 (NPF4, 2023) includes government policy for developments and meeting the challenges of climate change and flood risk.

The Policy 22 guidance states *"Development proposals at risk of flooding or in a flood risk area will only be supported if they are for essential infrastructure, water compatible uses, redevelopment of an existing building or site for an equal or less vulnerable use, or redevelopment of previously used sites in built up areas."*

The protection offered by an existing formal flood protection scheme or one under construction can be considered when determining flood risk. All risks of flooding are understood and addressed; there is no reduction in floodplain capacity, increased risk for others, or a need for future flood protection schemes; the development remains safe and operational during floods; flood resistant and resilient materials and construction methods are used; and future adaptations can be made to accommodate the effects of climate change.

Development proposals will not increase the risk of surface water flooding, manage all rain and surface water through sustainable urban drainage systems (SUDS), and seek to minimise the area of impermeable surface. These proposals will be supported if connecting to public water mains; however, if not feasible the applicant will need to demonstrate that water for consumption is sourced from a sustainable source. Proposals which create, expand or enhance opportunities for natural flood risk management, including blue and green infrastructure, will be supported."

3.2 Scottish Environment Protection Agency (SEPA)

SEPA is an independent advisor on flood risk, providing flood risk advice for certain consultations. SEPA document '*Technical Flood Risk Guidance for Stakeholders'* outlines the information required to be submitted a part of a FRA.

3.3 Aberdeenshire Local Development Plan (LDP)

The Aberdeenshire LDP sets out a vision for helping develop a strong and resilient economy, maintaining a high quality of life and exceptional environment. The LDP seeks to

- Promote sustainable mixed communities with the highest standards of design;
- Take on the challenges of sustainable development and climate change;
- Protect and improve assets and resources;
- Increase and diversify the economy;
- Protect, enhance and promote blue-green networks within and between settlements; and
- Make efficient use of the transport network, reduce the need to travel and promote walking, cycling, wheeling and public transport.

Section 13 of the LDP sets out policies in relation to climate change.

- Policy C2 Renewable Energy – supporting renewable energy developments; and
- Policy C4 Flooding – sets out requirements for Flood Risk Assessments to be undertaken as part of planning application process and sets requirements relating to impact of development on flood risk

4 Surface Water Drainage

4.1 Proposed Surface Water Drainage Strategy

The surface water drainage strategy has been designed based on the requirements of CIRIA 753 (C753) dated March 2015 and the Water Assessment and Drainage Assessment Guide produced by the Sustainable Urban Drainage Scottish Working Party (SUDSWP).

The surface water drainage strategy is focused on the Proposed Development areas only, namely the BESS Compound (see Appendix A). The remainder of the area within the Planning Boundary (see Drawing 002.1 'Site Location Plan' within the application pack) will drain as existing.

4.1.1 SuDS Hierarchy

Surface water drainage should be managed in a way that replicates the natural drainage processes for the site as closely as possible. The proposals should follow the hierarchy outlined in C753 and should be disposed of to a receptor in the order of preference described below:

1. Into the ground;
2. To a surface water body e.g. watercourse;
3. To a surface water, highway drain, or another drainage system; or lastly
4. To a combined sewer.

4.1.2 SuDS Selection

Into the Ground

Geological assessment from the Phase 1 desk study, including data from the BGS geological maps, indicate low soil permeability, resulting in minimal water infiltration into the ground. Soakaway testing may be required at the Site to confirm infiltration is not viable.

RSK Geosciences undertook intrusive site investigations in March 2025, see Appendix B. The window samples shown ground conditions across the site are generally peat overlying fine to coarse sand. The trial pit logs show a mixture of peat and made ground overlying fine to coarse sands and gravels, with cobbles and boulders in places.

Water was encountered in window sample 3 at a depth of 0.5m. Water was not encountered in any other window samples or trial pits.

Soakaway testing was undertaken at 5 locations across the site including 2 in the north where the attenuation basin is shown. SA1 returned at permeability of 8.33×10^{-6} m/s, however SA2 located close to SA 1 failed to achieve an infiltration rate. All other infiltration tests either failed or returned results below a rate suitable for the use of infiltration. Due to this the use of infiltration at the site has been discounted although some infiltration may naturally occur from the attenuation basin due to the positive result from SA1.

To a surface water body

It is proposed to discharge surface water run-off from the BESS compound to a mapped watercourse.

The Burn of Greens is the closest mapped watercourse (on OS mapping) to the BESS Compound. From the northern boundary, it is approximately 400m to the watercourse. The watercourse proceeds to the east before turning south approximately 1.3km from the Site. The proposed strategy therefore mimics the Site's existing drainage regime.

4.2 Greenfield run-off rates

The greenfield run-off discharge rates have been calculated using the HR Wallingford IH124 method and are based on the area comprising of the BESS Compound. The greenfield rates are summarised in Table 1 below (see Greenfield Calculations in Appendix A).

Rainfall Event	Contributing Area - 11.38 ha (l/s)
	Soil classification 3
1:1 year	21.85
Qbar	25.71
1:30 year	50.13
1:100 year	63.75
1:200 year	73.01

4.3 Surface water drainage strategy

The surface water generated by the BESS Compound would be intercepted by filter drains positioned periodically across the contributing area. The filter drains would collect and direct the surface water through a network of pipes to the attenuation pond and the outfall. The drainage system would discharge surface water at a restricted rate to the Burn of Greens located approximately 400m to the north of the BESS Compound. The surface water drainage drawings and supporting calculations are provided in Appendix A.

The discharge of surface water run-off from the BESS Compound would be restricted to the Qbar greenfield rate (25.7 l/s) in line with Aberdeenshire Council guidance. Discharge would be controlled by a flow control device, hydrobrake or similar, which would be installed on the outfall from the attenuation basin.

Attenuation has been sized using FEH data and Causeway Flow software to accommodate the temporary run-off for rainfall events up to and including the 1:200-year event inclusive of 37% climate change. The volume of storage provided in the attenuation basin for the whole of the BESS Compound in a 200-year event plus climate change is 16240m^3 with a maximum water level of 160.675 mAOD. The proposed top of bank level for the basin is 161.000 mAOD allowing for sufficient freeboard. The basin has been designed with 1:3 side slopes.

The attenuation basin drains to less than 50% of its volume within 24 hours, therefore; the attenuation basin meets half drain requirements and has sufficient capacity for the required volume of surface water.

4.4 Pollution Mitigation

The above proposals ensures that surface water is managed 'at source'. To mitigate against pollution all surface water from the Proposed Development would pass through filter drains and an attenuation basin. This type of development has 'Low' pollution hazard level, as shown in table 26.2 of C753. The relevant land use is tabled below, with the SuDS pollution indices tabled (as per table 26.3 of C753).

Pollution hazard indices for different land use classifications				
Land Use	**Pollution Hazard Level**	**Total suspended solids pollution index**	**Metals**	**Hydrocarbons (HC)**
Individual property driveways, residential car parks, low traffic roads (e.g. cul de sacs, home zones and general access roads) and non-residential car parking with infrequent change (e.g. schools, offices) i.e., 300 traffic movements/day	Low	0.5	0.4	0.4
Indicative SuDS mitigation indices for discharges to surface waters				
Filter Drain		0.4	0.4	0.4
Detention Basin (secondary indices halved)		0.5 (0.25)	0.5 (0.25)	0.6 (0.3)
Total		**0.65**	**0.65**	**0.7**

Table 2: SuDS Pollution Assessment

The required indices for pollutants at a low hazard level (TSS 0.5, Metals 0.4 & HC 0.4) are exceeded by the mitigation indices provided by the filter drain and detention basin (TSS 0.65, Metals 0.65 & HC 0.7). Therefore, the mitigation techniques provided exceed the required level of treatment for surface water run-off.

Consideration has been given to the risk of a fire and need to attenuate fire water run-off. A penstock valve will be provided downstream of the attenuation basin, which can be manually shut off in case of a fire or pollution incident. This will prevent any contaminated water from entering the wider environment.

4.5 Management and Maintenance

The surface water drainage system should be maintained to ensure the system operates at its maximum capacity for the lifetime of development. A management and maintenance plan are provided in Appendix C.

5 Summary and Conclusion

5.1 Summary

HEC has been commissioned by the Client to carry out a Drainage Impact Assessment to support a planning application for the construction and operation of a 400 MW BESS with associated infrastructure, access and ancillary works on land south of Cuminestown, Turriff, Aberdeenshire.

Infiltration drainage is assumed not to be feasible due to the impermeable soils present. It is therefore proposed to discharge surface water to the Burn of Greens, mimicking the BESS Site's existing drainage regime.

Attenuation has been provided for the 1 in 200-year event inclusive of 37% climate change with a restricted discharge matching the Qbar greenfield run-off rate.

The use of filter drains, and an attenuation basins provide the appropriate mitigation for the pollutants likely for this type of development. A penstock valve would be provided on the attenuation basin outfall to allow closure of the system in the event of fire water being collected within the basin.

The surface water drainage system should be maintained to ensure the system operates at its maximum capacity for the lifetime of development in line with the management and maintenance plan provided.

5.2 Conclusion

The drainage strategy complies with the relevant guidance; surface water generated by the Proposed Development can be attenuated within the BESS Site, even during extreme events, and discharged at a greenfield rate to a watercourse. The Proposed Development does not increase on or off-site flood risk and are therefore considered acceptable.

Appendix A Site Overview Plan

Field Drawing BTGBNDE02 001.1 03 – Site Overview Plan

Teuchar Road

Thornhill Road

B9170 Road

Indicative point of connection proposed to SSE's Greens (New Deer 2) substation (APP/2024/1927).

Road C1S

1 Site Overview Plan
Scale 1:5,000 @ A1

Drawing Notes:

1. All dimensions are shown in metres unless noted otherwise.
2. Do not scale from this drawing.
3. Refer to drawing 001.1.1 - Detailed Site Layout Plan for further information on the BESS site.

Legend:

- Planning Boundary
- SSE's Proposed Greens (New Deer 2) Substation Boundary (APP/2024/1927).
- Cable Route
- Palisade Fencing
- 4.5m Acoustic Fencing
- Stock Proof Fencing
- Attenuation Basin
- Access Road - Unbound Finish
- Access Road - Bound Finish
- Landscaping Bunds
- Landscaping - refer to Landscape Mitigation Plan (1005-SHRSK-XX-XX-DR-L-1000)
- Existing Forestry (to be retained)

03	01.04.2025	Access bellmouth amended for AIL's.	JH	AP
02	27.03.2025	Point of connection, Greens Substation boundary and stock proof fence added.	JH	AP
01	21.03.2025	Amendments to planning boundary, drainage, cable route, landscaping and fencing.	JH	AP
00	25.02.2025	Site Layout Plan - Original	JH	AP
REV	DATE	DESCRIPTION	BY	CHK'D

FIELD

Field
Fora Montacute Yards
186 Shoreditch High Street
London
E1 6HU

PROJECT
New Deer

TITLE
Site Overview Plan

DISCIPLINE
PLANNING

DRAWING STATUS
FOR PLANNING

SCALE	DATE	DRAWN BY	CHECKED BY	APPROVED BY
1:5,000 @A1	25.02.2025	JH	AP	RS

PROJECT NO.	DRAWING NO.	REV.
BTGBNDE02	001.1	03

1:100	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
1:200	5m				10m			15m		20m
1:250	5m			10m			15m		20m	25m
1:500	10m			20m			30m		40m	50m
1:1000	10m	20m	30m	40m	50m	60m	70m	80m	90m	100m
1:2000	50m				100m			150m		200m
1:2500	50m			100m			150m		200m	250m
1:5000	100m			200m			300m		400m	500m

Appendix B Surface Water Drainage

Haydn Evans calculations ref: 336-011-CA01 – Greenfield Calculation

Haydn Evans calculations ref: 336-011-CA03 – SWDS Calculations

Haydn Evans drawing ref: 336-011-D010 – Surface Water Drainage Strategy

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Tayler Evans
Site name:	New Deer
Site location:	

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	57.52186° N
Longitude:	2.32088° W
Reference:	2270012939
Date:	Mar 11 2025 14:29

Runoff estimation approach

IH124

Site characteristics

Total site area (ha):	11.380

Methodology

Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	2	2
HOST class:	N/A	N/A
SPR/SPRHOST:	0.3	0.3

Hydrological characteristics

	Default	Edited
SAAR (mm):	841	841
Hydrological region:	1	1
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	1.95	1.95
Growth curve factor 100 years:	2.48	2.48
Growth curve factor 200 years:	2.84	2.84

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited

Q_{BAR} (l/s):	25.71	25.71
1 in 1 year (l/s):	21.85	21.85
1 in 30 years (l/s):	50.13	50.13
1 in 100 year (l/s):	63.75	63.75
1 in 200 years (l/s):	73.01	73.01

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
MH1	0.491	5.00	169.400	1200	380947.304	847948.654	0.700
MH2	0.491	5.00	169.400	1200	380839.587	848002.796	1.500
MH3	0.278	5.00	169.300	1200	380955.710	847969.684	0.900
MH4	0.278	5.00	169.300	1200	380709.350	848093.362	0.900
MH5	0.279	5.00	169.300	1200	380832.538	848031.519	1.750
MH6	1.309	5.00	167.700	1200	381017.589	848092.904	0.950
MH7	1.309	5.00	167.700	1200	380771.273	848216.709	0.950
MH8	1.309	5.00	167.700	1200	380894.431	848154.806	1.950
MH9	1.314	5.00	166.100	1200	381065.781	848224.208	1.100
MH10	1.314	5.00	166.100	1200	380843.498	848335.800	1.100
MH11	1.315	5.00	166.100	1200	380956.751	848278.944	1.850
Basin	1.590	5.00	161.000	1800	380958.639	848443.110	1.500
Outfall	0.000		148.000	2100	381278.643	848964.562	1.500

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	MH1	MH2	120.558	0.600	168.700	168.350	0.350	344.5	450	6.84	50.0
1.001	MH2	MH5	29.575	0.600	167.900	167.550	0.350	84.5	900	6.99	50.0
3.000	MH3	MH5	137.822	0.600	168.400	168.000	0.400	344.6	450	7.11	50.0
2.000	MH4	MH5	137.840	0.600	168.400	168.000	0.400	344.6	450	7.11	50.0
1.002	MH5	MH8	137.951	0.600	167.550	166.050	1.500	92.0	900	7.81	50.0
5.000	MH6	MH8	137.840	0.600	166.750	166.050	0.700	196.9	900	6.03	50.0
4.000	MH7	MH8	137.840	0.600	166.750	166.050	0.700	196.9	900	6.03	50.0
1.003	MH8	MH11	138.903	0.600	165.750	164.250	1.500	92.6	1200	8.41	50.0
7.000	MH9	MH11	121.998	0.600	165.000	164.550	0.450	271.1	900	6.07	50.0
6.000	MH10	MH11	126.724	0.600	165.000	164.550	0.450	281.6	900	6.13	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.089	173.3	88.7	0.250	0.600	0.491	0.0	228	1.095
1.001	3.409	2169.0	177.4	0.600	0.850	0.982	0.0	171	2.101
3.000	1.089	173.2	50.2	0.450	0.850	0.278	0.0	166	0.949
2.000	1.089	173.2	50.2	0.450	0.850	0.278	0.0	166	0.949
1.002	3.268	2078.7	328.3	0.850	0.750	1.817	0.0	240	2.423
5.000	2.229	1418.0	236.5	0.050	0.750	1.309	0.0	247	1.678
4.000	2.229	1418.0	236.5	0.050	0.750	1.309	0.0	247	1.678
1.003	3.888	4397.2	1037.9	0.750	0.650	5.744	0.0	393	3.216
7.000	1.898	1207.3	237.4	0.200	0.650	1.314	0.0	269	1.493
6.000	1.862	1184.4	237.4	0.200	0.650	1.314	0.0	271	1.472

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.004	MH11	Basin	131.483	0.600	164.250	159.500	4.750	27.7	1200	8.72	50.0
1.005	Basin	Outfall	482.845	0.600	159.500	146.500	13.000	37.1	1200	10.03	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.004	7.122	8055.1	1750.4	0.650	0.300	9.687	0.0	376	5.764
1.005	6.147	6951.8	2037.8	0.300	0.300	11.277	0.0	443	5.384

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	20.0		

Storm Durations

60	180	360	600	960	2160	4320	7200	10080
120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
30	0	0	0
200	0	0	0
200	37	0	0

Node Basin Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	159.500	Product Number	CTL-SHE-0219-2570-1200-2570
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.300
Design Flow (l/s)	25.7	Min Node Diameter (mm)	1500

Node Basin Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	159.500
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	13634.0	0.0	1.500	15897.0	0.0	1.501	15897.0	0.0

Node MH1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	168.700	Slope (1:X)	344.5
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	7	Depth (m)	
Safety Factor	2.0	Width (m)	0.750	Inf Depth (m)	
Porosity	0.30	Length (m)	120.600		

Node MH3 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	168.400	Slope (1:X)	344.6
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	0.750	Inf Depth (m)	
Porosity	0.30	Length (m)	137.800		

Node MH4 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	168.400	Slope (1:X)	344.6
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	0.750	Inf Depth (m)	
Porosity	0.30	Length (m)	137.800		

Node MH6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	166.750	Slope (1:X)	344.6
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	3	Depth (m)	
Safety Factor	2.0	Width (m)	0.900	Inf Depth (m)	
Porosity	0.30	Length (m)	137.800		

Node MH7 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	166.750	Slope (1:X)	344.6
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	3	Depth (m)	
Safety Factor	2.0	Width (m)	0.900	Inf Depth (m)	
Porosity	0.30	Length (m)	137.800		

Node MH9 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	165.000	Slope (1:X)	406.7
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	3	Depth (m)	
Safety Factor	2.0	Width (m)	1.050	Inf Depth (m)	
Porosity	0.30	Length (m)	122.000		

Node MH10 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	165.000	Slope (1:X)	422.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	3	Depth (m)	
Safety Factor	2.0	Width (m)	1.050	Inf Depth (m)	
Porosity	0.30	Length (m)	127.000		

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.91%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	MH1	34	168.973	0.273	123.6	7.0526	0.0000	OK
60 minute summer	MH2	33	168.112	0.212	232.6	1.6303	0.0000	OK
60 minute summer	MH3	34	168.593	0.192	70.0	2.8574	0.0000	OK
60 minute summer	MH4	34	168.593	0.192	70.0	2.8575	0.0000	OK
60 minute summer	MH5	34	167.828	0.278	426.8	1.1996	0.0000	OK
60 minute summer	MH6	34	167.042	0.292	329.4	12.3625	0.0000	OK
60 minute summer	MH7	34	167.042	0.292	329.4	12.3625	0.0000	OK
60 minute summer	MH8	34	166.208	0.458	1379.3	6.6604	0.0000	OK
60 minute summer	MH9	33	165.323	0.323	330.6	14.7715	0.0000	OK
60 minute summer	MH10	33	165.326	0.326	330.6	15.1802	0.0000	OK
60 minute summer	MH11	33	164.879	0.628	2351.5	9.6454	0.0000	OK
10080 minute summer	Basin	6480	160.049	0.549	96.0	7340.3550	0.0000	OK
60 minute summer	Outfall	1	146.500	0.000	24.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	MH1	1.000	MH2	114.1	1.242	0.659	11.1340	
60 minute summer	MH2	1.001	MH5	231.7	1.680	0.107	4.1339	
60 minute summer	MH3	3.000	MH5	64.5	1.065	0.372	8.3729	
60 minute summer	MH4	2.000	MH5	64.5	1.065	0.372	8.3741	
60 minute summer	MH5	1.002	MH8	423.9	2.630	0.204	22.3123	
60 minute summer	MH6	5.000	MH8	321.5	1.849	0.227	23.9695	
60 minute summer	MH7	4.000	MH8	321.5	1.849	0.227	23.9695	
60 minute summer	MH8	1.003	MH11	1384.2	2.915	0.315	68.8113	
60 minute summer	MH9	7.000	MH11	326.9	1.642	0.271	25.2591	
60 minute summer	MH10	6.000	MH11	326.6	1.624	0.276	26.3683	
60 minute summer	MH11	1.004	Basin	2397.8	8.406	0.298	42.4348	
10080 minute summer	Basin	Hydro-Brake®	Outfall	25.6				10605.5

Results for 200 year Critical Storm Duration. Lowest mass balance: 99.91%

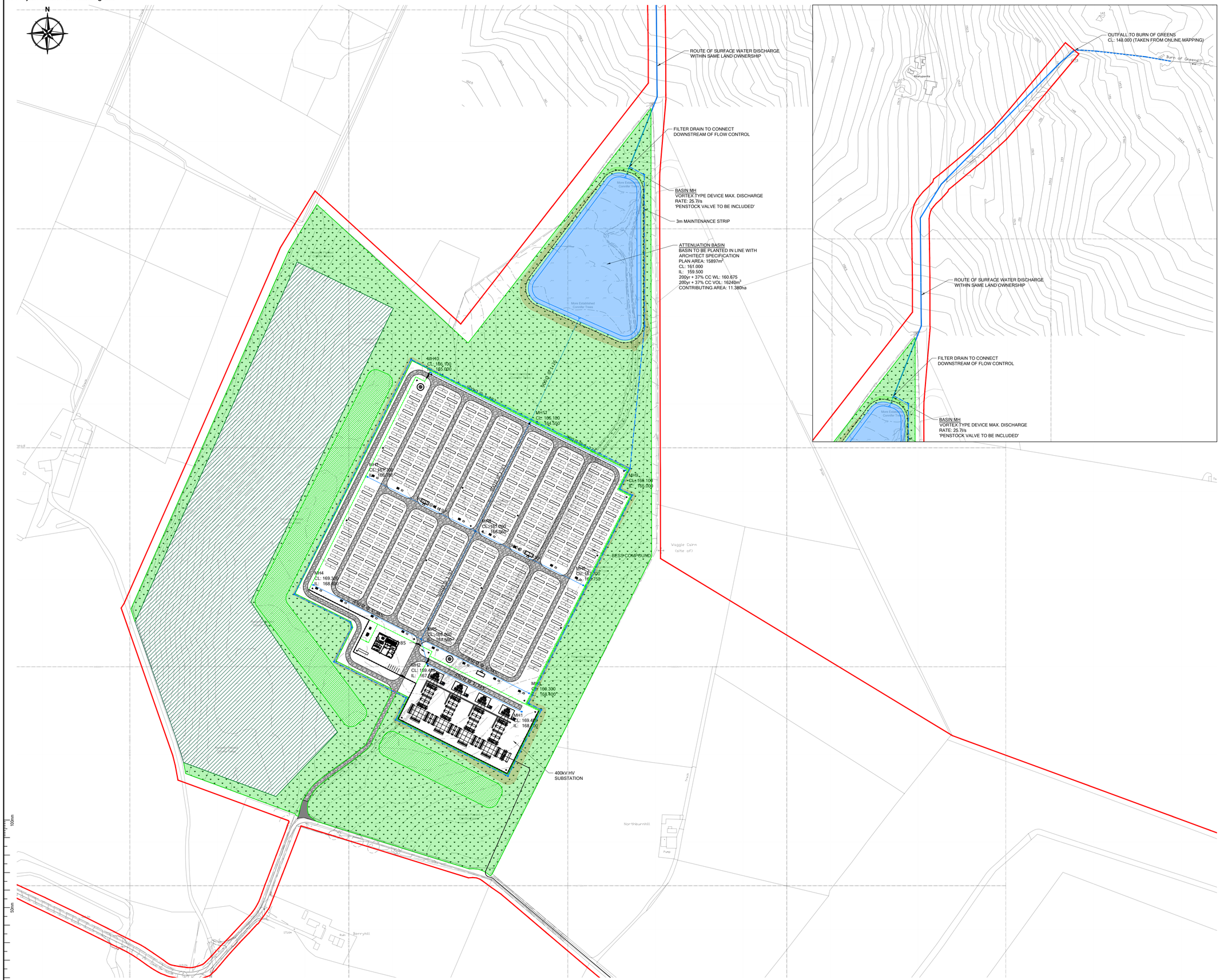
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	MH1	34	169.085	0.385	195.1	11.5499	0.0000	OK
60 minute summer	MH2	33	168.178	0.278	363.0	2.1338	0.0000	OK
60 minute summer	MH3	34	168.654	0.254	110.5	4.3724	0.0000	OK
60 minute summer	MH4	34	168.654	0.254	110.5	4.3726	0.0000	OK
60 minute summer	MH5	34	167.907	0.357	670.1	1.5410	0.0000	OK
60 minute summer	MH6	33	167.128	0.377	520.2	17.4772	0.0000	OK
60 minute summer	MH7	33	167.128	0.377	520.2	17.4772	0.0000	OK
60 minute summer	MH8	34	166.363	0.613	2184.1	8.9271	0.0000	OK
60 minute summer	MH9	33	165.420	0.420	522.2	20.8700	0.0000	OK
60 minute summer	MH10	33	165.423	0.423	522.2	21.4938	0.0000	OK
60 minute summer	MH11	33	165.055	0.805	3726.2	12.3553	0.0000	OK
10080 minute summer	Basin	7020	160.297	0.797	126.7	10803.2100	0.0000	OK
60 minute summer	Outfall	1	146.500	0.000	25.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	MH1	1.000	MH2	176.0	1.370	1.016	15.3546	
60 minute summer	MH2	1.001	MH5	361.1	1.832	0.166	5.9036	
60 minute summer	MH3	3.000	MH5	102.2	1.207	0.590	11.7295	
60 minute summer	MH4	2.000	MH5	102.2	1.207	0.590	11.7312	
60 minute summer	MH5	1.002	MH8	669.2	2.965	0.322	31.2160	
60 minute summer	MH6	5.000	MH8	510.7	2.090	0.360	33.6872	
60 minute summer	MH7	4.000	MH8	510.7	2.090	0.360	33.6872	
60 minute summer	MH8	1.003	MH11	2196.2	3.328	0.499	95.9906	
60 minute summer	MH9	7.000	MH11	521.4	1.752	0.432	40.0033	
60 minute summer	MH10	6.000	MH11	520.3	1.732	0.439	41.7444	
60 minute summer	MH11	1.004	Basin	3816.2	9.004	0.474	59.3138	
10080 minute summer	Basin	Hydro-Brake®	Outfall	25.6				10747.8

Results for 200 year +37% CC Critical Storm Duration. Lowest mass balance: 99.91%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	MH1	35	169.292	0.592	267.3	20.3033	0.0000	FLOOD RISK
60 minute summer	MH2	33	168.233	0.333	481.7	2.5560	0.0000	OK
60 minute summer	MH3	34	168.714	0.314	151.3	6.1491	0.0000	OK
60 minute summer	MH4	34	168.714	0.314	151.3	6.1494	0.0000	OK
60 minute summer	MH5	33	167.966	0.416	899.9	1.7962	0.0000	OK
60 minute summer	MH6	33	167.212	0.462	712.6	22.9951	0.0000	OK
60 minute summer	MH7	33	167.212	0.462	712.6	22.9951	0.0000	OK
60 minute summer	MH8	34	166.528	0.778	3023.1	11.3256	0.0000	OK
60 minute summer	MH9	33	165.507	0.507	715.3	26.4448	0.0000	OK
60 minute summer	MH10	33	165.512	0.512	715.3	27.2709	0.0000	OK
60 minute summer	MH11	34	165.235	0.985	5127.5	15.1157	0.0000	OK
10080 minute summer	Basin	7380	160.675	1.175	173.9	16240.6500	0.0000	OK
60 minute summer	Outfall	1	146.500	0.000	25.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	MH1	1.000	MH2	227.7	1.488	1.314	17.2228	
60 minute summer	MH2	1.001	MH5	480.0	1.929	0.221	7.3828	
60 minute summer	MH3	3.000	MH5	139.3	1.306	0.804	14.7271	
60 minute summer	MH4	2.000	MH5	139.3	1.306	0.804	14.7292	
60 minute summer	MH5	1.002	MH8	904.6	3.083	0.435	43.2640	
60 minute summer	MH6	5.000	MH8	708.6	2.179	0.500	45.6556	
60 minute summer	MH7	4.000	MH8	708.6	2.179	0.500	45.6556	
60 minute summer	MH8	1.003	MH11	3038.2	3.597	0.691	122.4673	
60 minute summer	MH9	7.000	MH11	711.3	1.826	0.589	53.6531	
60 minute summer	MH10	6.000	MH11	709.7	1.807	0.599	56.0173	
60 minute summer	MH11	1.004	Basin	5194.5	9.232	0.645	75.4550	
10080 minute summer	Basin	Hydro-Brake®	Outfall	25.6				11903.7



NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS, ARCHITECTS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION.
2. THIS DRAINAGE STRATEGY DRAWING SHOWS HOW SURFACE WATER RUN-OFF COULD BE MANAGED ON SITE WITH A RESTRICTED OFF-SITE DISCHARGE, FOR ALL RAINFALL EVENTS UP TO AND INCLUDING THE 200 YEAR RETURN PERIOD PLUS 37% CLIMATE CHANGE EVENT TO ENSURE NO INCREASED FLOOD RISK TO OTHERS AS A RESULT OF THE PROPOSED DEVELOPMENT.

   THIS IS NOT INTENDED TO BE A DETAILED DESIGN AT THIS STAGE. PLEASE NOTE THAT THE FINAL LAYOUT MAY BE SUBJECT TO REFINEMENT TO MEET CERTAIN TECHNICAL CRITERIA.
3. SITE LAYOUT BASED ON FIELD ENERGY SITE LAYOUT PLAN, DRAWING REF. BTGBNDE02-005.1 REV. 7, DATED 21/02/2024 . TOPOGRAPHICAL SURVEY FROM HIGHLAND SURVEYORS LTD, DRAWING REF. 24074, UNDERTAKEN 14/02/2025.
4. DRAINAGE LEVELS ARE BASED ON COMPOUND LEVELS PROVIDED BY FIELD.

KEY

- PROPOSED ATTENUATION BASIN
- CUT GRADING
- FILL GRADING
- SURFACE WATER MANHOLE
- SURFACE WATER DRAIN
- PROPOSED DISCHARGE WATERCOURSE
- EXISTING WATERCOURSE
- FILTER DRAIN
- PLANNING BOUNDARY
- OVERLAND FLOW ARROWS
- IMPERMEABLE CATCHMENT AREAS

Rev'n	Date	Description	Drawn	Chk'd	App'd
P04	22.04.2025	PLANNING BOUNDARY UPDATED	BP	JC	JC
P03	27.03.2025	UPDATES TO CLIENT COMMENTS	JC	.	JC
P02	24.03.2025	LAYOUT UPDATED	JC	.	JC
P01	14.03.2025	PRELIMINARY ISSUE	TE	JC	JC

Status

PRELIMINARY

HAYDN EVANS
Second Floor, Hyde Park House
Crown Street, Ipswich, IP1 3LG
01473 236550
www.haydnevans.co.uk
mail@haydnevans.co.uk

Client

FIELD NEW DEER LTD

Project

NEW DEER 2 BESS

Drawing title

SURFACE WATER DRAINAGE STRATEGY

Scale	Drawn	Checked	Approved	Date
1:1000 @ A1	TE	JC	JC	MARCH 2025

Drawing no.

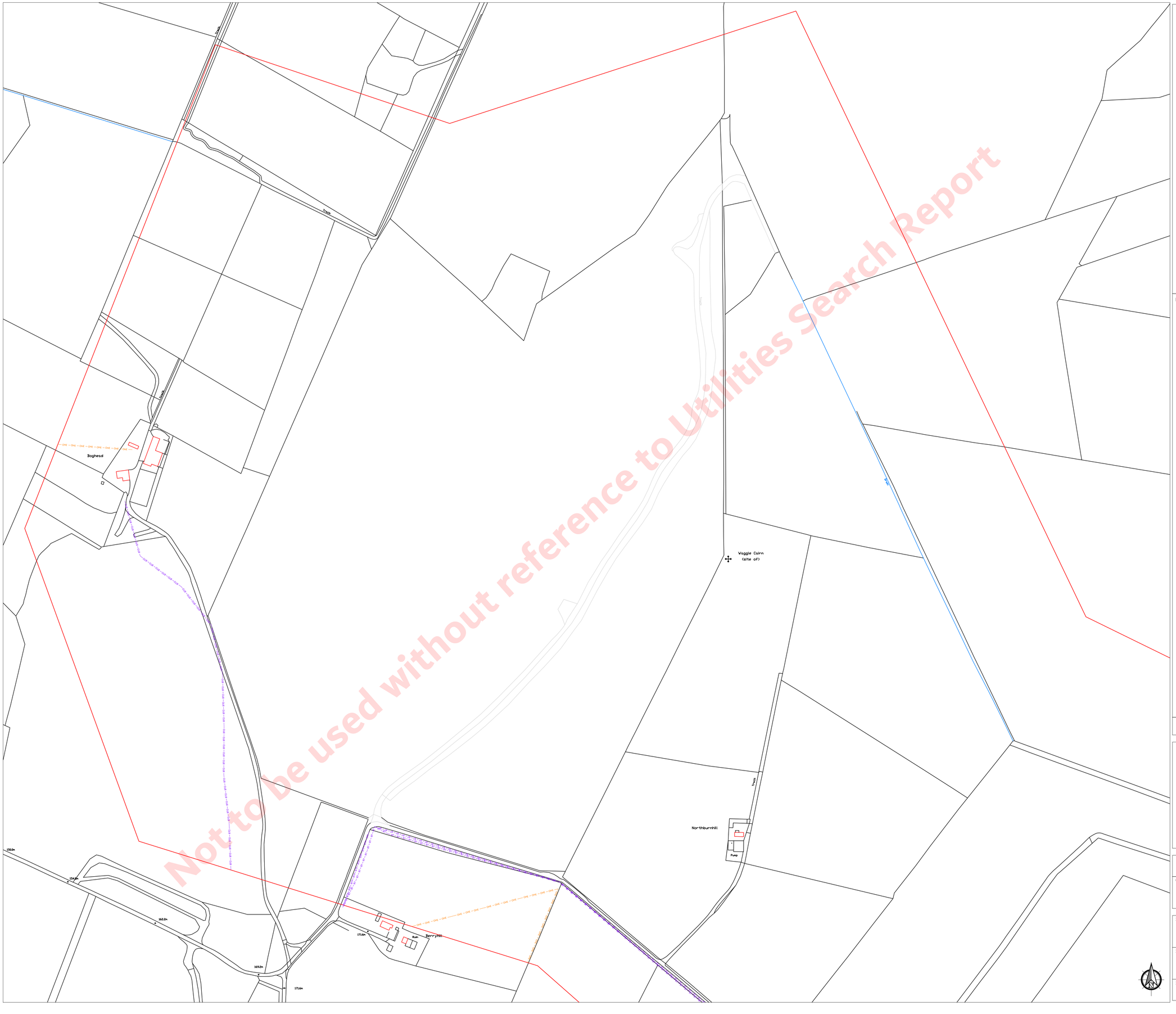
336-011-D010

Revision

P04

Appendix C Utilities Search

Underground Utilities Search Page 1 of 2 - Site ref: BTGBNDE02 - Cornerstone Projects Ltd



NOTES:

1. Do not scale from this drawing.
2. Utility connections to individual properties / buildings are often not shown on the utility plans but it should be assumed that such live utility connections exist. Connections to street lighting and other road furniture / signage may also not be shown but should be considered to exist until proven otherwise.
3. Any utility apparatus shown outside the search boundary may be incomplete.
4. The location of all underground utility plant and apparatus shown on this AutoCAD drawing (and any pdf prints of the same) is based on the original utility plans contained within the Utility Search Report (USR) which must be referred to prior to any work. This drawing is intended to be indicative only and must not be relied on to provide confirmation of the type, location, status, presence or absence of any utility apparatus. This CAD drawing should not be used in isolation but in conjunction with the USR. Further guidance notes and individual utility information not shown on this drawing will also be contained within the USR.
5. The actual type, location, status, presence or absence of all utility apparatus must be determined and confirmed on site using the procedure detailed in HSE HS(G) 47 and BSI PAS 128:2014. For example, on site surveys such as GPR and EML surveys, trial holes and hand digging should be used as appropriate.
6. The size and type of each utility is not denoted on this drawing and the line colours may not reflect the colours used on the original utility plans. Please refer to the USR for these details.
7. The utility plans this drawing is based on are only valid for three months from the date of issue of the USR unless otherwise noted in the USR.
8. If Cornerstone Projects purchased the (Ordnance Survey OS) mapping then it is licensed for one year from the date of this drawing and should be destroyed after this date. We are not liable for any errors or lack of accuracy in the OS mapping.
9. Cornerstone Projects Ltd will not accept any liability for errors, omission or inaccuracies in the information shown on this drawing.
10. Please refer to the Terms & Conditions on our website for further information regarding this drawing and the USR.

LEGEND:

BT

BT OVERHEAD

BT PLANNED

ELECTRICITY OVERHEAD

SEARCH BOUNDARY

REV:	DESCRIPTION:	BY:	DATE:

CORNERSTONE PROJECTS LTD
91 Market Street, Hoylake, Wirral, CH47 5AA
0151 632 5142
enquiries@cornerstoneprojects.co.uk
www.cornerstoneprojects.co.uk
VAT REG NO. 8514941 19
COMPANY NO. 5132353

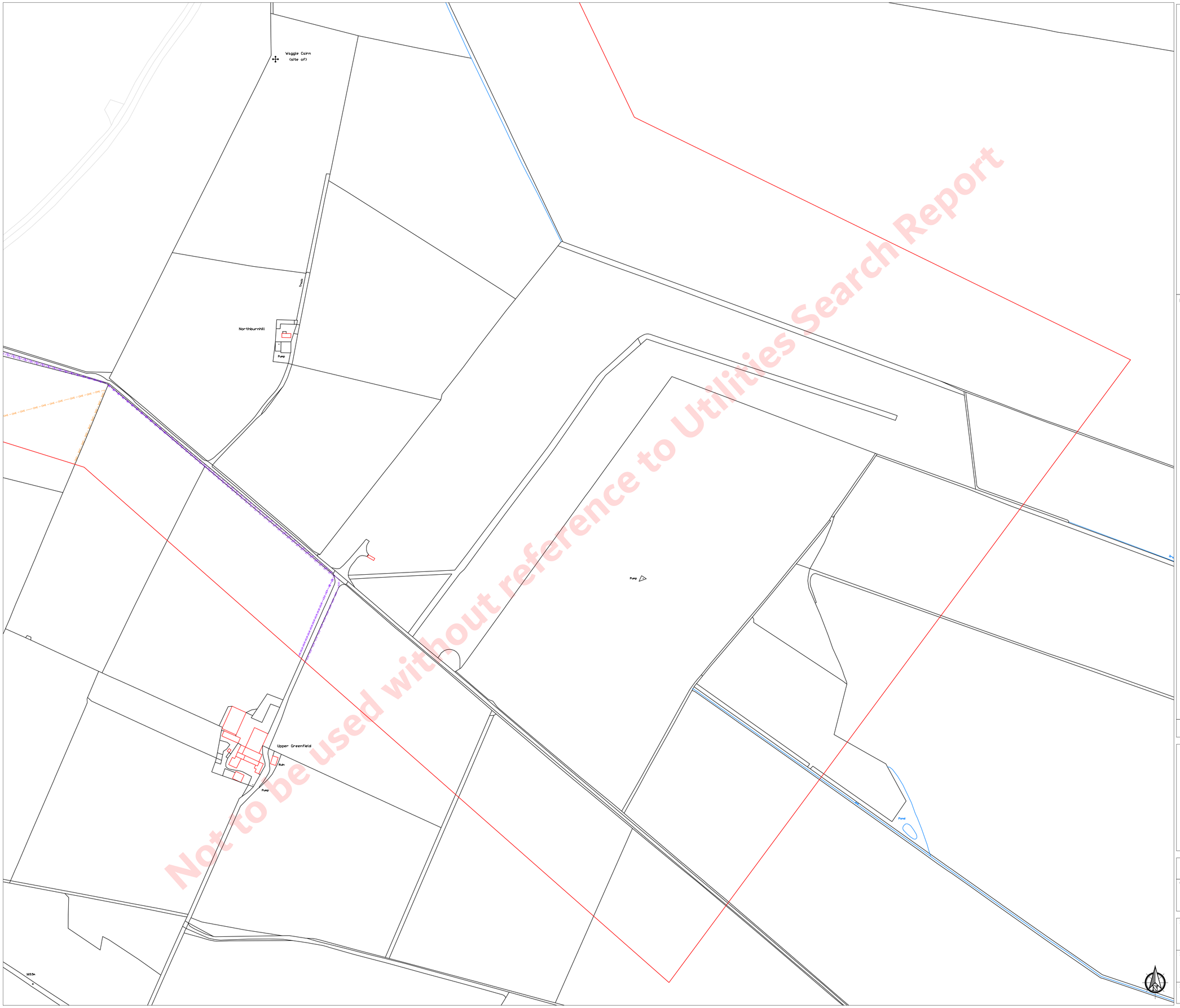
UNDERGROUND UTILITIES SEARCH

CLIENT NAME: Virmati Energy

SITE NAME: New Deer

SITE REFERENCE:	SHEET NO:
BTGBNDE02	1 OF 2

SCALE:	DATE:	DRAWN:	CHECKED:
1:2000	11/02/2025	HE	FC



NOTES:

1. Do not scale from this drawing.
2. Utility connections to individual properties / buildings are often not shown on the utility plans but it should be assumed that such live utility connections exist. Connections to street lighting and other road furniture / signage may also not be shown but should be considered to exist until proven otherwise.
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10. Please refer to the Terms & Conditions on our website for further information regarding this drawing and the USR.

LEGEND:

BT

BT OVERHEAD

BT PLANNED

ELECTRICITY OVERHEAD

SEARCH BOUNDARY

REV:	DESCRIPTION:	BY:	DATE:

CORNERSTONE PROJECTS LTD
91 Market Street, Hoylake, Wirral, CH47 5AA
0151 632 5142
enquiries@cornerstoneprojects.co.uk
www.cornerstoneprojects.co.uk
VAT REG NO. 8514941 19
COMPANY NO. 5132353

UNDERGROUND UTILITIES SEARCH

CLIENT NAME: Virmati Energy

SITE NAME: New Deer

SITE REFERENCE: BTGBNDE02

SHEET NO: 2 OF 2

SCALE:	DATE:	DRAWN:	CHECKED:
1:2000	11/02/2025	HE	FC

Appendix D Management and Maintenance Plan

Haydn Evans document ref : 336-011-RP3 – SuDS Management & Maintenance Plan

400 MW BESS, New Deer
SuDS Management & Maintenance Plan

1 Introduction

Sustainable Drainage Systems (SuDS) features are utilised to manage rainfall and use landscape features to deal with surface water. SuDS control the flow rate and volume of water leaving the development area and reduce pollution by intercepting silt and cleaning run-off from hard surfaces.

Like all aspects of drainage systems, SuDS components should be regularly inspected and maintained. This ensures efficient operation and reduces the likelihood of failure. The level of inspection and maintenance will vary depending on the type of SuDS component. Further information on maintenance can be found in The SuDS Manual (CIRIA publication C753).

The SuDS and drainage features for the Proposed Development are to be maintained by the site owner/occupant.

This Plan should be updated following any changes to the proposed drainage design at detailed design stage.

2 Managing SuDS

The SuDS features have been designed for easy maintenance and comprise:

- Regular maintenance – litter collection and checking the inlets and outlets where water enters or leaves the SuDS feature.
- Occasional tasks – removing any silt that builds up, cutting back and clearing excessive vegetation growth, inspection of outlets, manholes and flow controls.
- Remedial work – repairing damage where necessary.

3 Contact

In the event of concern over any matter to do with the SuDS, please contact the site owner/occupant.

4 SuDS Maintenance

The surface water drainage system includes filter drains, an attenuation basin, flow control, pipes and manholes.

Surface water is collected by filter drains and directed to the attenuation basin via a piped network. Surface water is then directed to the outfall ditch via a flow control.

Table 1 below provides a breakdown of general maintenance requirements to be undertaken, appropriate to the types of SuDS and surface water drainage systems proposed at this site.

Regular Maintenance		Frequency
1	**Litter Management** Check for and pick up litter around the entire site.	Monthly
2	**Inlets and Outlets** Remove silt and debris from inlets and outlets.	Quarterly
3	**Respond to reported blockages, etc.**	As required
Occasional Maintenance		**Frequency**
4	**Inspection of Control Chamber** Inspection of chambers for silt build up and visually check pipes appear clear and free flowing. Remove silt as required. Jetting as required.	Annually
5	**Inspection of Attenuation** Check for blockages within the connecting pipes.	Quarterly and following heavy storms
Remedial Work		**Frequency**
6	**Inspect SuDS systems to check for damage or failure** Undertake remedial work as required.	Annually
7	**Silt control and removal** Wash or replace filter medium when required.	As required

Table 1: SuDS General Maintenance Requirements

Tables 2 to 6 below provides a breakdown of typical maintenance requirements appropriate to the types of SuDS proposed at this site.

Operation and Maintenance Requirements for Attenuation Basin		
Responsible for Maintenance	**Site Owner/Occupier**	
Maintenance Schedule	**Required Action**	**Typical Frequency**
Regular maintenance	Remove litter and debris.	Monthly
	Cut grass - for spillways and access routes.	Monthly (during growing season)
	Cut grass - meadow grass in and around basins.	Half yearly (spring – before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants.	Monthly (at start), then as required
	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly
	Inspect banksides, structures, pipework etc for evidence of physical damage.	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year), then annually
	Check any penstocks and other mechanical devices.	Annually
	Tidy all dead growth before start of growing season.	Annually
	Remove sediment from inlets, outlets and forebay.	Annually
	Manage wetland plants in outlet pool, where provided.	Annually
Occasional maintenance	Reseed areas of poor vegetation growth	To be reviewed every 2 years
	Prune and trim any trees and remove cuttings	Every 2 years
	Remove sediment from inlets, outlets, forebay and main basins when required	Every 5 years (likely to be minimal requirements where effective upstream source control is provided)
Remedial actions	Repair erosion or other damage by reseeding or re-turfing.	As required
	Realignment of rip-rap.	As required
	Repair/rehabilitation of inlets, outlets and overflows.	As required
	Relevel uneven surfaces and reinstate design levels.	As required

Table 2: Site specific maintenance requirements – Attenuation Basin

Operation and Maintenance Requirements for Pipes, Manholes and Gullies		
Responsible for Maintenance	**Site Owner/Occupier**	
Maintenance Schedule	**Required Action**	**Typical Frequency**
Regular inspections	Remove cover and inspect, ensuring that water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt.	Annually and after leaf fall in autumn
Remedial action	Repair physical damage if necessary.	As required
Monitoring	Inspect for evidence of poor performance. CCTV survey to investigate poor performance.	As required

Table 3: Site specific maintenance requirements – Pipes, manholes and gullies

Operation and Maintenance Requirements for Flow Control		
Responsible for Maintenance	**Site Owner/Occupier**	
Maintenance Schedule	**Required Action**	**Typical Frequency**
Routine maintenance	Remove litter and debris and inspect for sediment, oil and grease accumulation	Six monthly
	Remove sediment, oil, grease and floatables	As necessary – indicated by system inspections or immediately following significant spill
Remedial actions	Replace malfunctioning parts or structures	As required
Monitoring	Inspect for evidence of poor operation	Six monthly
	Inspect sediment accumulation rates and establish appropriate removal frequencies	Monthly during first half year of operation, then every six months

Table 4: Site specific maintenance requirements – Flow control

Operation and Maintenance Requirements for Filter Drains		
Responsible for Maintenance	**Site Owner/Occupier**	
Maintenance Schedule	**Required Action**	**Typical Frequency**
Regular maintenance	Remove litter (including leaf litter) and debris from filter drain surface, access chambers and pre-treatment devices	Monthly, or as required
	Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage	Monthly
	Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies	Six monthly
	Remove sediment from pre-treatment	Six monthly, or as required
Occasional maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (eg NJUG, 2007 or BS 3998:2010)	As required
	At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	Five yearly, or as required
	Clear perforated pipework of blockages	As required

Table 5: Site specific maintenance requirements – Filter drain

Operation and Maintenance requirements for Pipes & Manholes		
Responsible for Maintenance	Management & Maintenance Company	
Maintenance Schedule	Required Action	Typical Frequency
Regular inspections	Remove cover and inspect, ensuring that water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt.	Annually and after leaf fall in autumn
	Jetting pipes or poor performance to assess requirements for CCTV survey and potential replacement pipes.	Annually or as required
Remedial action	Repair physical damage if necessary.	As required

Table 6: Site specific maintenance requirements – Pipes and Manholes

Appendix E Site Investigation

RSK Window Sample and Trial Pit Logs

RSK Soakaway Test Logs


New Deer
Updated plan following SI
Legend
Window Samples
Soakaways
Trial Pits
TP18 (WS8)
WS1
SA1
TP6
WS2
SA2
TP17 (WS9)
WS5
TP2
WS7
SA3
TP9
TP11
SA4
TP10
WS3
WS4
TP16 (WS10)
TP4
TP12
TP13
TP5
WS6
TP15
TP14
SA5
Google Earth
Image © 2025 Airbus
N
200 m

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
New Deer	**Virmati Energy Ltd (Field Energy)**	**WS1**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**04.03.25** End: **04.03.25**	**162.13**	**E:381038.1 N:848488.4**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.30	1	ES				Spongy dark brown organic rich slightly gravelly slightly sandy clayey fibrous PEAT. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse sandstone and chert. (TOPSOIL)	(0.35) 0.35	
	1.10-1.55 1.10-1.55	1 1	SPT D	N=10			Yellowish brown gravelly fine to coarse SAND with high cobble content. Gravel is angular to subangular fine to coarse sandstone. Cobbles are angular to subangular sandstone. (TILL) . . . From 0.90 m depth - Becomes slightly clayey.	(0.85) 1.20	
1.00 - 2.00 (101mm dia) 100% rec									
	2.00-2.45 2.00-2.45	2 2	SPT D	N=13			Greenish yellow locally mottled orangish red slightly sandy gravelly SILT. Sand is fine to medium. Gravel is angular to rounded fine to medium quartz and flint. (TILL) . . . From 2.50 m depth - Becomes bluish and slightly gravelly.		
2.00 - 3.00 (101mm dia) 100% rec									
	3.00-3.45 3.00-3.45	3 3	SPT D	N=20				(4.25)	
3.00 - 4.00 (101mm dia) 100% rec									
	3.80	2	ES						
	4.00-4.45 4.00-4.45	4 4	SPT D	N=21					
4.00 - 5.00 (101mm dia) 100% rec									
	5.00-5.43 5.00-5.45	5 5	SPT D	N:50 for 280mm				5.45	
							Window sample hole terminated at 5.45 m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.10 m depth.
3. No groundwater encountered.
4. 50 mm diameter gas/groundwater monitoring well complete with flush protective cover installed to 5.00 m depth on completion. Response zone 1.00 m to 5.00 m depth.

All dimensions in metres | Scale: **1:33**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Central Alliance**	**HGildersleeves**	

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
New Deer	**Virmati Energy Ltd (Field Energy)**	**WS2**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**162.57**	**E:381066.7 N:848417.7**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							Spongy dark brown organic rich slightly gravelly sandy clayey fibrous PEAT. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse quartzite, sandstone and chert. (TOPSOIL)	(0.30) 0.30	
	0.50-0.80	1	ES				Yellowish brown gravelly fine to coarse SAND with high cobble content. Gravel is angular to subangular fine to coarse sandstone. Cobbles are angular to subangular sandstone (up to 250 mm). (TILL)		
	1.20-1.65	1	SPT	N=12					
	1.20-1.65	1	D						
1.20 - 2.00 (87mm dia) 100% rec	1.65-2.00	1	B					(2.50)	
	2.00-2.45	2	SPT	N=20					
	2.00-2.45	2	D						
2.00 - 3.00 (77mm dia) 100% rec							. . . From 2.20 m depth - becomes slightly clayey.		
	2.70	2	ES					2.80	
	3.00-3.45	3	SPT	N=14			Cream slightly sandy clayey SILT. Sand is fine to coarse. (TILL)		
	3.00-3.45	3	D					(0.75)	
3.00 - 4.00 (77mm dia) 100% rec							. . . From 3.20 m depth - becomes light grey.		
	3.55-4.00	2	B					3.55	
							Yellowish brown slightly gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse sandstone. (TILL)	(0.75)	
	4.00-4.30	4	SPT	N:50 for 170mm				4.30	
	4.00-4.30	4	D						
							Window sample hole terminated at 4.30 m depth.		

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20 m depth.
3. No groundwater encountered.
4. 50 mm diameter gas/groundwater monitoring well complete with flush protective cover installed to 4.00 m depth on completion. Response zone 1.00 m to 4.00 m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Central Alliance**	**HGildersleeves**	

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
New Deer	**Virmati Energy Ltd (Field Energy)**	**WS3**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25** End: **06.03.25**	**167.90**	**E:380940.8 N:848064.1**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.30	1	ES				Spongy dark brown organic rich slightly gravelly clayey fibrous PEAT with low cobble content. Gravel is angular to subrounded fine to medium quartzite. Cobbles are subangular to subrounded quartzite up to 155 mm. (PEAT)	(0.40)	
								0.40	
0.60 - 1.00 (87mm dia) 100% rec	0.60-1.00	1	B				Yellowish light brown gravelly clayey fine to coarse SAND. Gravel is angular to subangular fine to medium sandstone. (TILL)		
	1.00-1.45	1	SPT	N=16					
	1.00-1.45	1	D				. . . From 1.20 m depth - Becomes fine SAND.		
1.00 - 2.00 (87mm dia) 100% rec	1.45-2.00	2	B						
	2.00-2.45	2	SPT	N=14					
	2.00-2.45	2	D						
2.00 - 3.00 (77mm dia) 80% rec	2.45-3.00	3	B				. . . From 2.30 m depth - Becomes cream to light brown streaked orange.		
								(5.05)	
	3.00-3.45	3	SPT	N=18					
	3.00-3.45	3	D						
3.00 - 4.00 (77mm dia) 90% rec	3.45-4.00	4	B						
	4.00-4.45	4	SPT	N=32					
	4.00-4.45	4	D						
4.00 - 5.00 (67mm dia) 90% rec	4.70	2	ES						
	5.00-5.45	5	SPT	N=31					
	5.00-5.45	5	D					5.45	
							Window sample hole terminated at 5.45 m depth.		

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
06/03/25		5.45	-		0.50

General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Inspection pit hand dug to 0.60 m depth.
3. Groundwater seepage at 0.50 m depth in inspection pit.
4. 50 mm diameter gas/groundwater monitoring well complete with flush protective cover installed to 5.00 m depth on completion. Response zone 1.00 m to 5.00 m depth.

All dimensions in metres | Scale: **1:33**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Central Alliance**	**HGildersleeves**	

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
New Deer	**Virmati Energy Ltd (Field Energy)**	**WS4**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**167.82**	**E:380904.7 N:848076.3**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.50-0.80	1	ES				Spongy dark brown slightly gravelly slightly sandy fibrous PEAT. Sand is fine to coarse. Gravel is angular to subangular fine to coarse quartzite. (TOPSOIL)	(0.40) 0.40	
	0.50-0.80	1	ES				Light brown locally mottled orange sandy clayey SILT. Sand is fine to medium. (TILL)		
1.20 - 2.00 (101mm dia) 100% rec	1.20-1.58 1.20-1.65	1 1	SPT D	N=11					
2.00 - 3.00 (101mm dia) 100% rec	2.00-2.45 2.00-2.45	2 2	SPT D	N=19			. . . From 2.20 m depth - Becomes greenish mottled light brown and orange.	(5.05)	
3.00 - 4.00 (101mm dia) 100% rec	3.00-3.45 3.50-4.00	3 2	SPT ES	N=19					
4.00 - 5.00 (101mm dia) 100% rec	4.00-4.45 4.00-4.45	3 4	D SPT	N=25			. . . At 4.30 m depth - Band of light orangish brown fine to coarse SAND.		
	5.00-5.45 5.00-5.45	4 5	D SPT	N=45				5.45	
							Window sample hole terminated at 5.45 m depth.		

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20 m depth.
3. No groundwater encountered.
4. 50 mm diameter gas/groundwater monitoring well complete with flush protective cover installed to 5.00 m depth on completion. Response zone 1.00 m to 5.00 m depth.

All dimensions in metres | Scale: **1:33**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Central Alliance**	**HGildersleeves**	

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
New Deer	**Virmati Energy Ltd (Field Energy)**	**WS5**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25** End: **06.03.25**	**168.41**	**E:380767.9 N:848266.4**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.30	1	ES				Spongy dark brown slightly gravelly slightly sandy clayey fibrous PEAT. Sand is fine to coarse. Gravel is angular to subangular fine to coarse quartzite. (TOPSOIL)	(0.40) 0.40	
0.60 - 1.00 (87mm dia) 100% rec	0.60-1.05 0.60-1.05	1 1	SPT D	N=22			Cream slightly gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse sandstone. (TILL)	(1.20) 1.60	
	1.05-1.60	1	B						
1.60 - 2.60 (87mm dia) 100% rec	1.60-2.05 1.60-2.05	2 2	SPT D	N=18			Cream slightly sandy SILT. Sand is fine to medium. (TILL)		
	2.20	2	ES						
2.60 - 3.60 (77mm dia) 90% rec	2.60-3.05 2.60-3.05	3 3	SPT D	N=14			. . . From 3.20 m depth - Becomes light brown.	(3.05)	
	3.05-3.60	2	B						
3.60 - 4.20 (67mm dia) 100% rec	3.60-4.05 3.60-4.05	4 4	SPT D	N=37					
	4.20-4.65	5	SPT	N=37				4.65	
							Window sample hole terminated at 4.65 m depth due to refusal.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Inspection pit hand dug to 0.60 m depth.
3. No groundwater encountered.
4. 50 mm diameter gas/groundwater monitoring well complete with flush protective cover installed to 4.20 m depth on completion. Response zone 1.00 m to 4.20 m depth.

All dimensions in metres | Scale: **1:28**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Central Alliance**	**HGildersleeves**	

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
New Deer	**Virmati Energy Ltd (Field Energy)**	**WS6**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25** End: **06.03.25**	**169.79**	**E:380676.7 N:847939.4**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							Firm dark brown slightly gravelly slightly sandy clayey fibrous PEAT. Sand is fine to coarse. Gravel is angular to subangular fine to medium quartzite and sandstone. (TOPSOIL)	0.25	
	0.50-0.80	1	ES				Light brown slightly gravelly slightly clayey fine to coarse SAND. Gravel is angular to subangular fine to medium sandstone.	(0.55)	
							Window sample hole terminated at 0.80 m depth due to access issues.	0.80	

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Inspection pit hand dug to 0.80 m depth.
3. No groundwater encountered.
4. 50 mm diameter gas/groundwater monitoring well complete with flush protective cover installed to 0.80 m depth on completion. Response zone 0.40 m to 0.80 m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Premier 110**	**Central Alliance**	**HGildersleeves**	

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
New Deer	**Virmati Energy Ltd (Field Energy)**	**WS7**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25** End: **06.03.25**	**167.60**	**E:380846.7 N:848216.2**	**1** of **1**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.20-0.40	1	ES				Spongy dark brown slightly gravelly slightly sandy clayey fibrous PEAT. Sand is fine to coarse. Gravel is angular to subrounded medium to coarse quartzite. (TOPSOIL)	0.15	
0.40 - 1.00 (87mm dia) 100% rec	0.40-1.00	1	B				Yellowish brown slightly gravelly slightly clayey fine to coarse SAND. Gravel is angular to subangular fine to medium sandstone. (TILL)	(0.85)	
	1.00-1.45 1.00-1.45	1 1	SPT D	N=18				1.00	
1.00 - 2.00 (87mm dia) 100% rec	1.45-2.00	2	B				Slightly orangish yellowish brown sandy angular to subangular fine to coarse sandstone GRAVEL. Sand is fine to coarse. (TILL)	(1.35)	
	2.00-2.35 2.00-2.35	2 2	SPT D	N:50 for 200mm				2.35	
							Window sample hole terminated at 2.35 m depth due to refusal.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Inspection pit hand dug to 0.40 m depth.
3. No groundwater encountered.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Central Alliance**	**HGildersleeves**	

FINAL

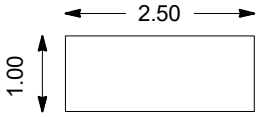
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	Virmati Energy Ltd (Field Energy)	TP2

Contract Ref:	Start: 06.03.25	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	End: 06.03.25	169.02	E:380720.2 N:848220.3	1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.20	1	ES				MADE GROUND: Black sandy silty GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subrounded medium to coarse quartzite and granite/psammite. Cobbles are angular to subrounded quartzite and granite/psammite up to 150 mm.	0.10	
						MADE GROUND: Black COBBLES with a little silt matrix. Cobbles are angular to subangular quartzite.	0.20	
						MADE GROUND: Brown fine to coarse SAND.	0.25	
0.50-1.00	1	D				Yellowish brown COBBLES with moderate boulder content and some matrix of silty gravel. Gravel is angular to subangular medium to coarse quartzite and metapelite. Cobbles and boulders are angular to subangular quartzite and metapelite up to 300 mm. (TILL)	(0.75)	
						Trial pit terminated at 1.00 m depth due to hard ground conditions: excavator could not progress. Probable bedrock.	1.00	

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry during excavation.
3. Trial pit was unstable during excavation.
4. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: 1:8

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	5 Ton Tracked Excavator	HGildersleeves	

FINAL

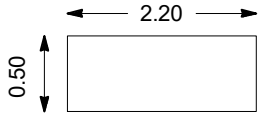
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP4**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25**	**170.01**	**E:380668.7 N:848047.4**	**1** of **1**
	End: **06.03.25**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown silty CLAY with high fibrous content, roots and rootlets. Occasional cobbles are angular to subangular quartzite up to 200 mm. (TOPSOIL)	0.10	
0.80-1.00	1	ES				Light brown COBBLES with low boulder content and some matrix of slightly gravelly silt. Gravel is angular to rounded medium to coarse white quartzite. Cobbles are angular to subangular quartzite typically 100-180 mm. Boulders are angular to subangular quartzite up to 300 mm. Occasional gravel of very weak siltstone lithorelicts in the matrix. (TILL)	(1.50)	
						Trial pit terminated at 1.60 m depth due to hard ground conditions: excavator could not progress.	1.60	

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:11**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	[redacted]

FINAL

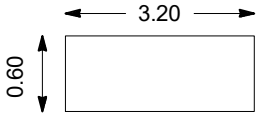
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP5**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25**	**167.82**	**E:380580.0 N:847968.0**	**1** of **1**
	End: **06.03.25**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown silty CLAY with high fibrous content, abundant roots and rootlets. Roots up to 50 mm diameter. (TOPSOIL)	0.10	
0.10-0.50	1	ES				Light brown COBBLES and BOULDERS with some matrix of gravelly silt. Gravel is angular to subangular medium to coarse quartzite. Cobbles and boulders are angular to subangular quartzite up to 350 mm with frequent reddish brown surface staining. (TILL)	(1.10)	
						Trial pit terminated at 1.20 m depth due to hard ground conditions: excavator could not progress.	1.20	

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:8**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	

FINAL

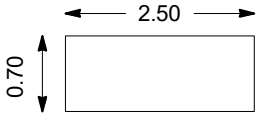
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP6**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25**	**166.37**	**E:380864.4 N:848385.2**	**1** of **1**
	End: **06.03.25**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.30	1	ES				MADE GROUND: Dark grey and black COBBLES and BOULDERS with a little matrix of gravelly silt. Cobbles and boulders are angular to subangular quartzite, psammite and metapelite up to 350 mm wide by 200 mm square.	(0.50) 0.50	
0.50-0.60	2	ES				MADE GROUND: Grey sandy silty GRAVEL with high cobble content. Sand is fine to coarse, appears ashy. Gravel is angular to subangular quartzite with minor medium to coarse charcoal. Cobbles are angular to subangular quartzite up to 200 mm.	(0.10) 0.60	
						Light brown COBBLES and BOULDERS with some matrix of gravelly silt. Cobbles and boulders are angular to subangular quartzite and psammite. (TILL)	(0.10) 0.70	
						Trial pit terminated at 0.70 m depth due to hard ground conditions: excavator could not progress.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry during excavation.
3. Trial pit was unstable during excavation.
4. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:6**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	

FINAL

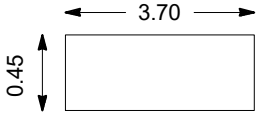
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	Virmati Energy Ltd (Field Energy)	TP9

Contract Ref:	Start: 05.03.25	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	End: 05.03.25	166.04	E:380935.0 N:848143.0	1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.10	1	ES				Firm dark brown silty clayey fibrous PEAT with medium cobble content. Cobbles are relict branches, wood and roots up to 20-30 mm diameter. (PEAT)	0.20	
						Dark greyish brown slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is grey angular fine to coarse chert and metapelite. (TILL)	0.30	
0.50	1	D				Light brown friable SILT. Occasional cobbles are grey angular to subangular quartzite and psammite, 120 mm. (TILL)	(0.70)	
							1.00	
1.50	2	ES				Light yellowish brown SILT with frequent reddish brown planar staining. (TILL)	(1.20)	
1.80	2	D					2.20	
2.50-2.60	1	B				Brown and yellowish brown mottled SILT with occasional reddish brown planar staining, <1 mm wide. (TILL)	(0.60)	
							2.80	
						Trial pit terminated at 2.80 m depth.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: 1:19

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	5 Ton Tracked Excavator	HGildersleeves	[redacted]

FINAL

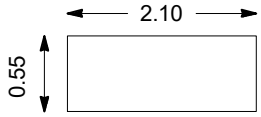
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**167.11**	**E:380965.1 N:848090.9**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Plastic dark brown silty clayey fibrous PEAT with high cobble content. Cobbles are angular grey metapelite and white quartzite, 150-200 mm. Relict roots and branches up to 30 mm diameter. (PEAT)	(0.25) 0.25	
0.30-0.50	1	ES				Light grey and light yellowish brown mottled dry friable SILT. Reddish brown staining on 1 mm planar surfaces. (TILL)	(0.75) 1.00	
0.50-0.80	1	D						
1.20-1.50	2	D				Slightly light grey mottled yellowish brown SILT. (TILL)	(1.00) 2.00	
1.90-2.00	1	B						
						Trial pit terminated at 2.00 m depth.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	[redacted]

FINAL

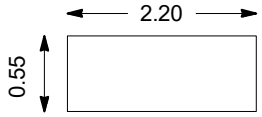
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP11**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**166.99**	**E:380918.8 N:848095.5**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Plastic dark brown silty clayey fibrous PEAT with medium cobble content. Cobbles are relict branches, roots and wood up to 100 mm diameter. (PEAT)	(0.20) 0.20	
						Firm datk greyish brown silty clayey fibrous PEAT. (PEAT)	0.30	
0.40-0.60	1	ES				Light greyish brown SILT with occasional <1 mm wide reddish brown planar staining. (TILL)	(0.90) 1.20	
0.60-1.00	1	D						
1.30-1.50	1	B				Light grey SILT with frequent reddish brown planar staining. (TILL) . . . At 1.60 - 1.70 m depth - 100 mm pocket of pinkish cream coloured SILT.	(0.80) 2.00	
						Trial pit terminated at 2.00 m depth.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	

FINAL

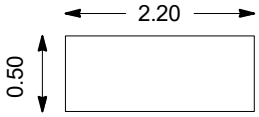
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP12**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**168.42**	**E:380980.6 N:848041.6**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.25	1	ES				Plastic dark brown silty clayey fibrous PEAT. Fresh roots up to 20 mm diameter. Relict roots and branches up to 30 mm diameter. (PEAT)	(0.25) 0.25	
0.60-0.80	1	B				Light yellowish brown slightly silty sandy GRAVEL. Sand is fine. Gravel is angular to subrounded coarse hard crystalline quartzite and metapelite. (TILL)	(0.75) 1.00	
1.40	1	D				Brown friable slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is angular to subrounded medium to coarse quartzite, chert and metapelite. (TILL)	(0.50) 1.50	
						White and grey angular to rounded COBBLES with minor silt matrix. Cobbles are high density quartzite and metapelite, up to 180-200 mm size. (TILL)	(0.40) 1.90	
						Trial pit terminated at 1.90 m depth due to hard ground conditions.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	

FINAL

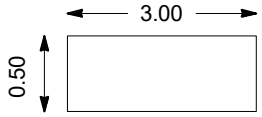
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP13**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**170.07**	**E:380917.6 N:847969.6**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown slightly gravelly slightly sandy silty CLAY with abundant rootlets. Sand is fine to coarse. Gravel is subrounded to rounded medium chert and coarse angular granite, quartzite and sandstone. (TOPSOIL)	0.10	
						Plastic dark brown to black silty clayey fibrous PEAT. (PEAT)	(0.35)	
							0.45	
0.50-0.60	1	ES				Light brown very gravelly SILT. Gravel is angular to subangular fine to coarse white quartzite, psammite and sandstone. (TILL)	(0.25)	
0.50-0.60	1	D					0.70	
						Brown very gravelly SILT with high cobble content. Gravel is angular to subangular fine to coarse white quartzite and psammite. Cobbles are angular to subangular white quartzite and psammite up to 200 mm. (TILL)	(0.50)	
							1.20	
1.20-1.40	1	B				Grey silty GRAVEL with high cobble content and low boulder content. Gravel is angular to subangular medium to coarse very weak grey siltstone lithorelicts and angular to subangular coarse white quartzite and psammite. (TILL)	(0.20)	
							1.40	
						Grey SILT with abundant very weak angular to subangular medium to coarse siltstone lithorelicts. (TILL)	(0.60)	
							2.00	
						Trial pit terminated at 2.00 m depth.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	[redacted]

FINAL

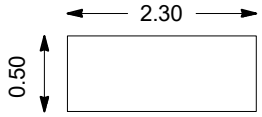
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP14**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**171.03**	**E:380756.2 N:847852.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse quartzite, chert and metapelite. (TOPSOIL)	(0.20) 0.20	
						Light brown and yellowish brown slightly sandy SILT. Sand is fine to coarse. (TILL)	(1.20) 1.40	
0.40-0.60	1	ES						
0.50-0.80	1	D						
1.50-1.60	1	B				Yellowish brown and grey slightly silty sandy GRAVEL. Sand is fine. Gravel is angular to subangular medium to coarse siltstone lithorelicts with reddish brown stained faces. (TILL)	(0.60) 2.00	
						Trial pit terminated at 2.00 m depth.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	[redacted]

FINAL

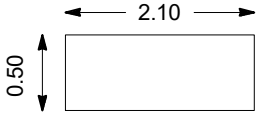
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP15**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25** End: **06.03.25**	**168.87**	**E:380634.6 N:847899.3**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown organic rich slightly sandy silty CLAY with high fibrous content and abundant roots and rootlets. Tree roots up to 50 mm diameter. (TOPSOIL)	0.10	
0.20-0.30	1	ES				Grey sandy SILT. Sand is fine. Occasional 10 mm diameter roots. (TILL)	(0.30)	
0.20-0.30	1	D					0.40	
						Grey very silty GRAVEL with medium cobble content. Gravel is angular to rounded medium to coarse quartzite. Cobbles are angular to rounded quartzite up to 100 mm. (TILL)	(0.80)	
0.80-1.20	1	B					1.20	
						Grey COBBLES with medium gravel content with much silt matrix and occasional boulders. Silt matrix is grey with orangish brown planar staining and mottling. Gravel is angular to rounded medium to coarse quartzite. Cobbles are angular to subrounded quartzite 60-200 mm but typically 100-180 mm. Boulders are angular to subangular quartzite up to 300 mm with reddish brown stained surfaces. (TILL)	(0.70)	
1.70	2	D					1.90	
						Trial pit terminated at 1.90 m depth due to hard ground conditions.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	

FINAL

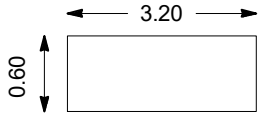
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP16**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25** End: **06.03.25**	**163.40**	**E:380528.1 N:848061.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.10	1	ES				Dark brown slightly gravelly slightly sandy silty CLAY with low cobble content, high fibrous content and abundant roots and rootlets. Sand is fine to coarse. Gravel is angular to subrounded medium to coarse quartzite. Cobbles are angular to subangular quartzite up to 200 mm. Tree stumps up to 300 mm trunk width, 2.00 m root zone. (TOPSOIL)	0.10	
						Light brown COBBLES and BOULDERS with a little matrix of slightly sandy silty gravel. Sand is fine to medium. Gravel is angular to subrounded medium to coarse quartzite. Cobbles are angular to subrounded quartzite up to 200 mm. Boulders are angular to subrounded quartzite up to 200 mm, recovered up to 380 mm. (TILL)	(0.90)	
						Trial pit terminated at 1.00 m depth due to hard ground conditions.	1.00	

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:8**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	

FINAL

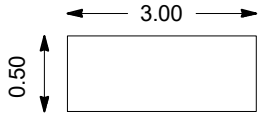
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP17**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25** End: **06.03.25**	**162.78**	**E:380614.8 N:848276.7**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown organic rich silty CLAY with high fibrous content and abundant roots and rootlets. Roots up to 30 mm diameter. Tree stumps with up to 2.00 m wide root zone. (TOPSOIL)	(0.20) 0.20	
0.50-1.00 0.50	1 1	ES D				Light brown slightly sandy very silty gravelly COBBLES with low boulder content. Sand is fine. Gravel is angular to subrounded medium to coarse quartzite. Cobbles are angular to subrounded quartzite up to 200 mm. Boulders are angular to rounded quartzite up to 300 mm. (TILL)	(0.80) 1.00	
1.50	2	D				Pinkish brown SILT. (TILL)	(1.60) 2.60	
2.00-2.50	1	B						
						Trial pit terminated at 2.60 m depth.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	

FINAL

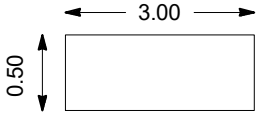
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**TP18**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**06.03.25** End: **06.03.25**	**165.91**	**E:380719.2 N:848491.9**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown silty CLAY with high fibrous content, abundant roots and rootlets. Roots are up to 20 mm diameter. (TOPSOIL)	0.10	
						Yellowish brown sandy gravelly SILT. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse quartzite. (TILL)	(0.20) 0.30	
0.40-0.60	1	D				Light brown sandy gravelly SILT. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse quartzite. (TILL)	(0.30) 0.60	
0.50	1	ES						
1.00-1.50	1	B				Light grey gravelly SILT with medium cobble content and occasional boulders. Gravel is angular to subrounded fine to coarse quartzite, sandstone and psammite. Cobbles are angular to subangular quartzite, sandstone and psammite, up to 120 mm. Boulders are subangular quartzite, up to 450 mm. (TILL)	(1.90) 2.50	
						Trial pit terminated at 2.50 m depth.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	

FINAL

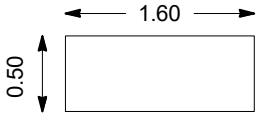
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**SA1**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**04.03.25**	**161.63**	**E:381078.4 N:848504.7**	**1** of **1**
	End: **04.03.25**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm dark brown slightly gravelly slightly sandy clayey fibrous PEAT. Sand is fine to coarse. Gravel is angular to rounded fine to coarse sandstone and chert. (TOPSOIL)	(0.20) 0.20	
0.30-0.60	1	ES				Greenish yellow locally mottled orangish red slightly gravelly slightly sandy clayey SILT. Sand is fine to medium. Gravel is angular to subrounded fine to medium quartz and flint. (TILL)		
1.00	1	D					(1.80)	
1.50-2.00	1	B				. . . From 1.50 m depth - becomes sandy.		
						Trial pit terminated at 2.00 m depth.	2.00	

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with gravel then arisings upon completion.
4. Infiltration testing conducted within trial pit following backfill.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled backhoe excavator**	**HGildersleeves**	

FINAL

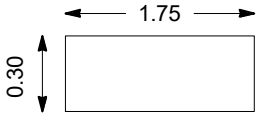
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**SA2**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**162.59**	**E:381062.5 N:848414.8**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.40	1	ES				Spongy dark brown slightly gravelly slightly sandy clayey fibrous PEAT with frequent wood fragments up to 370 mm diameter. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse quartz and sandstone. (TOPSOIL)	(0.40) 0.40	
0.70-1.20	1	B				Dark yellow locally mottled orange slightly gravelly sandy clayey SILT. Sand is fine to medium. Gravel is angular to subangular fine to medium quartz and sandstone. (TILL)	(1.60)	
1.90	1	D					2.00	
						Trial pit terminated at 2.00 m depth.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with gravel then arisings upon completion.
4. Infiltration testing conducted within trial pit following backfill.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled backhoe excavator**	**HGildersleeves**	

FINAL

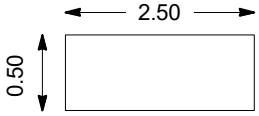
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**SA3**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**167.76**	**E:380839.7 N:848227.5**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Spongy dark brown silty clayey fibrous PEAT with medium cobble content. Cobbles are relict roots up to 100 mm diameter with stumps up to 300 mm diameter. (PEAT)	(0.20) 0.20	
0.30-0.60	1	ES				Light brown gravelly SILT with medium cobble content and low boulder content. Gravel is angular to subangular medium to coarse light brown and light grey crystalline rock. Cobbles and boulders are light grey angular quartzite and metapelite up to 300 mm. Frequent reddish brown staining on clast surfaces. (TILL)	(0.60) 0.80	
						Light grey silty GRAVEL with medium to high cobble content. Gravel is grey angular to subangular medium to coarse crystalline rock. Cobbles are angular to subangular crystalline rock up to 150 mm. (TILL)	(1.10) 1.90	
						Trial pit terminated at 1.90 m depth due to soft and uneven surface conditions.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with gravel then arisings upon completion.
4. Infiltration testing conducted within trial pit following backfill.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	[redacted]

AGS

FINAL

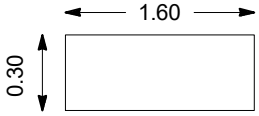
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**SA4**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**167.37**	**E:380903.3 N:848091.5**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Spongy dark brown organic rich slightly gravelly slightly sandy clayey slightly fibrous PEAT with frequent wood fragments up to 450 mm. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse quartzite. (TOPSOIL)	(0.20) 0.20	
						Yellowish brown slightly sandy clayey SILT. Sand is fine to medium. (TILL)		
0.80-1.00	1	ES					(1.30)	
1.30	1	D						
							1.50	
1.50-2.00	1	B				Yellowish brown slightly gravelly fine to medium SAND. Gravel is subangular fine quartz. (TILL)	(0.60)	
							2.10	
						Trial pit terminated at 2.10 m depth.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with gravel then arisings upon completion.
4. Infiltration testing conducted within trial pit following backfill.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Wheeled backhoe excavator**	**HGildersleeves**	

FINAL

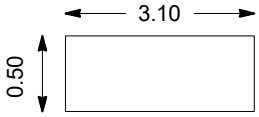
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
New Deer	**Virmati Energy Ltd (Field Energy)**	**SA5**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
340617	**05.03.25** End: **05.03.25**	**171.70**	**E:380813.4 N:847853.6**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.20	1	ES				Plastic dark brown silty clayey slightly fibrous PEAT with frequent roots up to 20 mm diameter. Occasional fine to coarse sand and gravel of subrounded to rounded medium chert and metapelite. (PEAT)	(0.24)	
							0.24	
						Grey and light brown friable SILT. (TILL)		
0.50-1.00	1	D					(1.66)	
						. . . From 1.50 m - frequent angular to subangular coarse gravel sized very weak siltstone lithorelicts.		
							1.90	
1.90-2.00	1	B				Very weak light brown SILTSTONE. (TILL)	2.00	
						Trial pit terminated at 2.00 m depth.		

Plan (Not to Scale)



General Remarks

1. Position scanned with a CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit backfilled with gravel then arisings upon completion.
4. Infiltration testing conducted within trial pit following backfill.

All dimensions in metres | Scale: **1:17**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**5 Ton Tracked Excavator**	**HGildersleeves**	

KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF ABBREVIATIONS

SAMPLING

Sample type codes:

B	=	Bulk disturbed sample.
D	=	Small disturbed sample.
ES	=	Soil sample for environmental testing.

IN-SITU TESTING

SPT = Standard Penetration Test using split spoon sampler. $_{(NR)}$ indicates 'No Sample Recovery').

ADDITIONAL NOTES

1. All soil and rock descriptions and legends in general accordance with BS EN ISO 14688-1:2018, 14688-2:2018, 14689:2018, and BS5930:2015+A1:2020.
2. Material types divided by a broken line (- - -) indicates an unclear boundary.
3. Fracture spacings (If) quoted in the Description of Strata for specific strata or specific fracture sets are also quoted in mm, e.g. (25/80/230) referring to (Min/Avg/Max).
4. The data on any sheet within the report showing the AGS icon is available in the AGS format.
5. Weathering desciptions in accordance with CIRIA Report C570 Engineering in Mercia Mudstone, CIRIA Report C574 Engineering in Chalk (2002), London Clay (King 1981), BS 5930:2015+A1:2020 Code of practice for ground investigations - Figure 9 - Approach 2, BS 5930:2015+A1:2020 Code of practice for ground investigations - Figure 9 - Approach 4, BS EN ISO 14689:2018 Geotechnical Investigation and testing - Identification, Description and Classification of Rock - Table 13.

KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF GRAPHIC SYMBOLS

WATER COLUMN SYMBOLS

First water strike, second water strike etc.

Standing water level following first strike, standing water level following second strike etc.

Seepage.

Standing water level recorded at documented date.

MATERIAL GRAPHIC LEGENDS

BOULDERS & COBBLES

Gravelly clayey SAND

COBBLES

Gravelly SAND

Gravelly SAND with COBBLES

Gravelly SILT

Gravelly SILT with COBBLES

Gravelly SILT with COBBLES and BOULDERS

MADE GROUND

PEAT

PEAT with COBBLES

Sandy GRAVEL

Gravelly sandy CLAY

Sandy gravelly SILT

Siltstone

Sandy clayey SILT

Sandy SILT

Topsoil

SILT

Silty GRAVEL with COBBLES

INSTRUMENTATION SYMBOLS

Backfill

Bentonite seal

Concrete

Gravel filter

Flush cover

Plain pipe

Slotted pipe

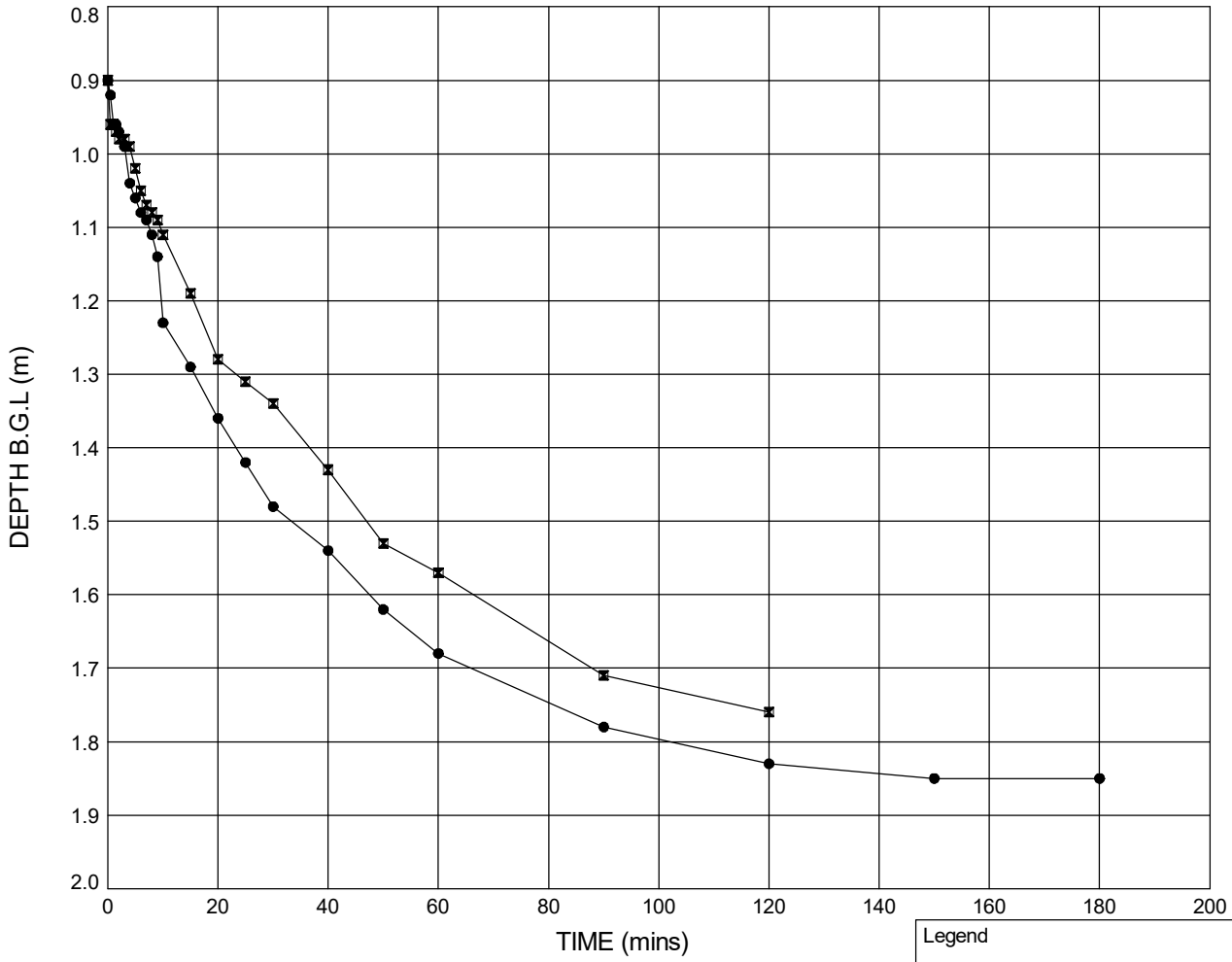
FULL SCALE SOAKAWAY TEST

In accordance with BRE Digest 365

Soakaway Test - Position ID : **SA1**

Ground Level (m AOD): **161.63** National Grid Co-ordinates: **E:381078.4 N:848504.7**

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



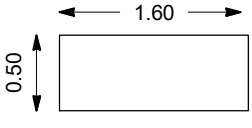
		Test 1	Test 2	
Pit start depth:	=	*2.00*	*2.00*	m
Pit final depth:	=	*2.00*	*2.00*	m
Effective depth, De	=	*1.10*	*1.10*	m
Fill Porosity	=	*30*	*30*	%
Effective storage volume, V_{p75-25}	=	*0.1320*	*0.1320*	m^3
Surface area, a_{s50}	=	*3.1100*	*3.1100*	m^2
Time, t_{p75-25}	=	*3847.0*	*5096.0*	secs
Infiltration rate, *f*	=	$1.10x10^{-5}$	$8.33x10^{-6}$	m/s

Legend

● Test 1 (05.03.25)

⊠ Test 2 (06.03.25)

Plan (Not to scale)



No Bearing Taken

RSK GEOSCIENCES

Compiled By	Date	Checked By	Date
[redacted]	25/03/25		

Contract: **New Deer**

Contract Ref: **340617**

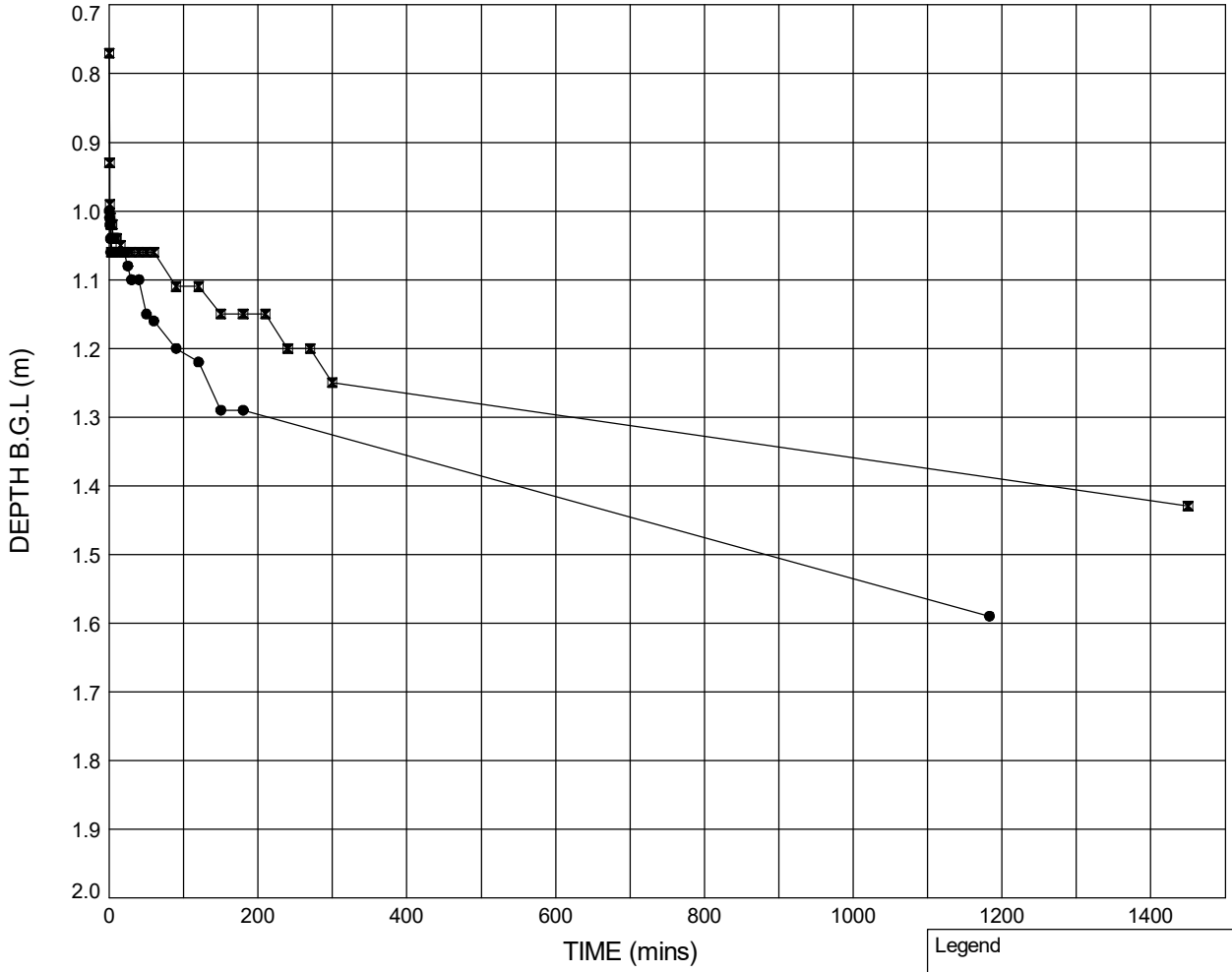
FULL SCALE SOAKAWAY TEST

In accordance with BRE Digest 365

Soakaway Test - Position ID : **SA2**

Ground Level (m AOD): **162.59** National Grid Co-ordinates: **E:381062.5 N:848414.8**

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



		Test 1	Test 2	
Pit start depth:	=	*2.00*	*2.00*	m
Pit final depth:	=	*2.00*	*2.00*	m
Effective depth, De	=	*1.00*	*1.23*	m
Fill Porosity	=	*30*	*30*	%
Effective storage volume, V_{p75-25}	=	*0.0788*	*0.0969*	m^3
Surface area, a_{s50}	=	*2.5750*	*3.0465*	m^2
Time, t_{p75-25}	=	*NA*	*NA*	secs
Infiltration rate, f	=	*NA*	*NA*	m/s

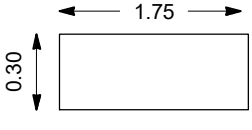
Please note test data was extrapolated to obtain tp75-tp25. Notes: Test 1 - Unable to calculate infiltration rate due to insufficient drop in water level, Test 2 - Unable to calculate infiltration rate due to insufficient drop in water level

Legend

Test 1 (05.03.25)

Test 2 (06.03.25)

Plan (Not to scale)



No Bearing Taken

Compiled By	Date	Checked By	Date
[redacted]	25/03/25		

RSK GEOSCIENCES

Contract: **New Deer**

Contract Ref: **340617**

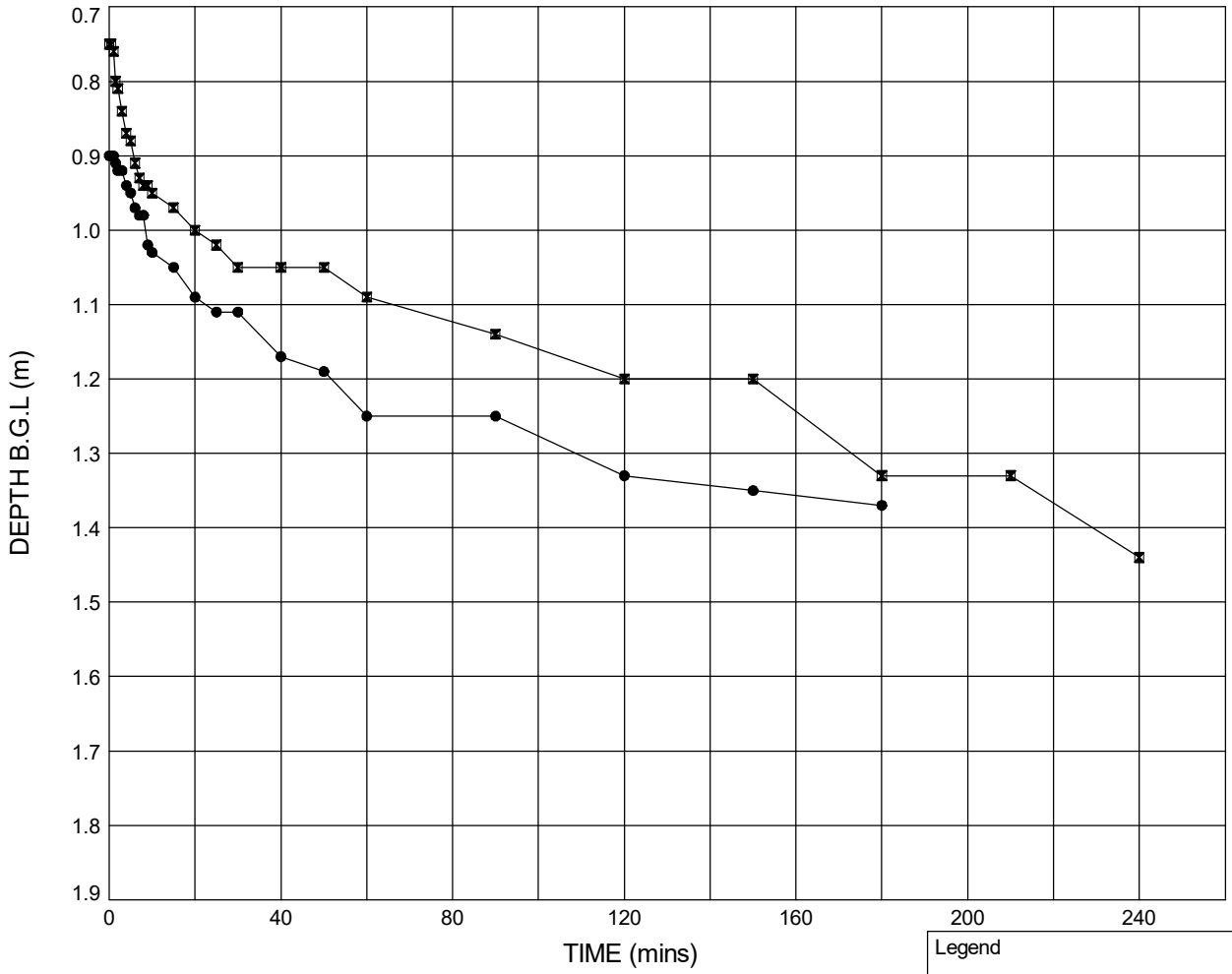
FULL SCALE SOAKAWAY TEST

In accordance with BRE Digest 365

Soakaway Test - Position ID : **SA3**

Ground Level (m AOD): **167.76** National Grid Co-ordinates: **E:380839.7 N:848227.5**

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



		Test 1	Test 2	
Pit start depth:	=	*2.00*	*2.00*	m
Pit final depth:	=	*2.00*	*2.00*	m
Effective depth, De	=	*1.10*	*1.25*	m
Fill Porosity	=	*30*	*30*	%
Effective storage volume, V_{p75-25}	=	*0.1568*	*0.1781*	m^3
Surface area, a_{s50}	=	*3.5900*	*3.9500*	m^2
Time, t_{p75-25}	=	*NA*	*NA*	secs
Infiltration rate, *f*	=	*NA*	*NA*	m/s

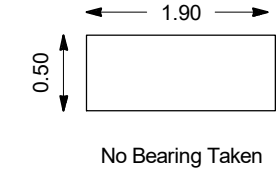
Notes: Test 1 - Unable to calculate infiltration rate due to insufficient drop in water level, Test 2 - Unable to calculate infiltration rate due to insufficient drop in water level

Legend

● Test 1 (06.03.25)

⊠ Test 2 (06.03.25)

Plan (Not to scale)



No Bearing Taken

RSK GEOSCIENCES

Compiled By	Date	Checked By	Date
[redacted]	25/03/25		

Contract: **New Deer**

Contract Ref: **340617**

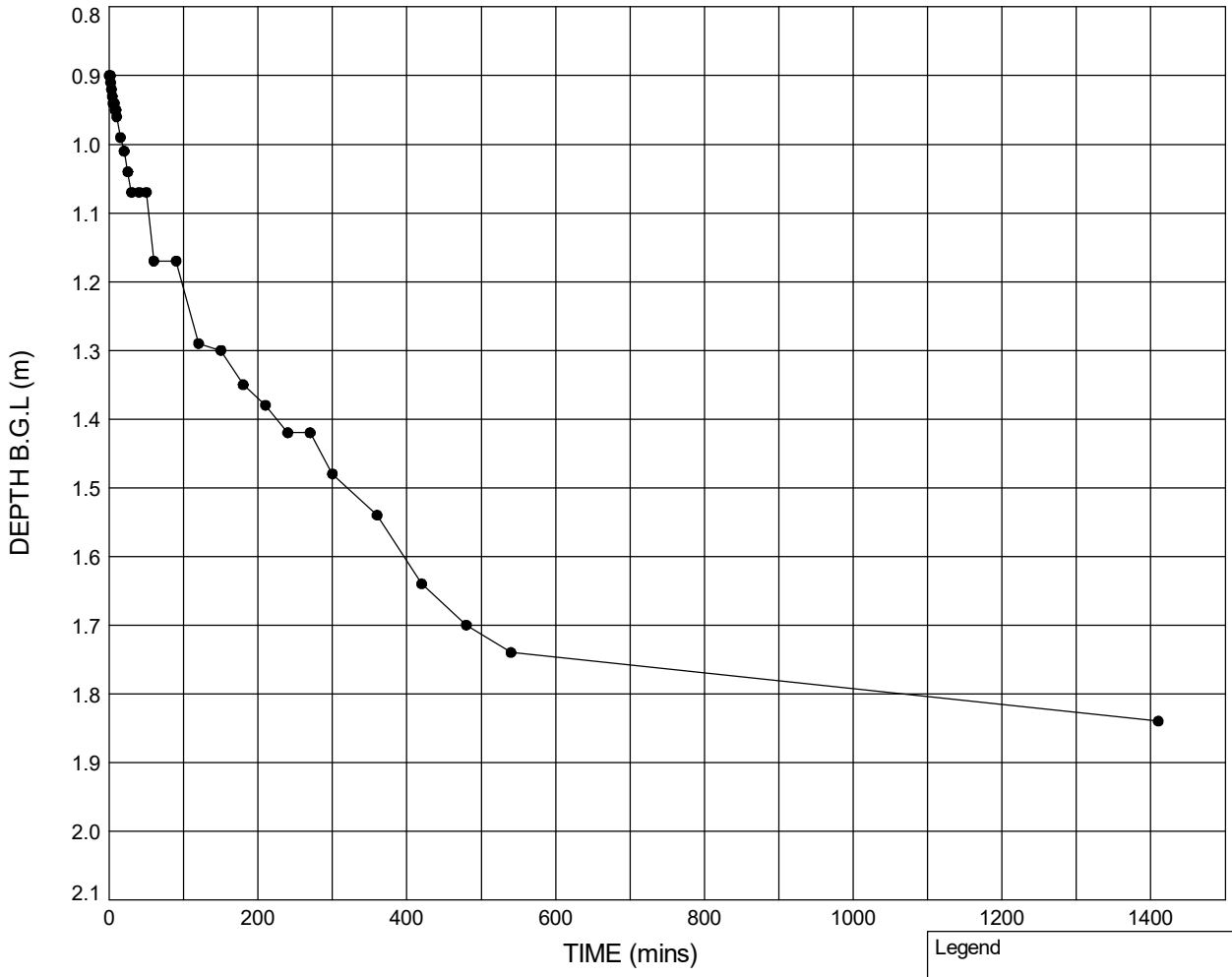
FULL SCALE SOAKAWAY TEST

In accordance with BRE Digest 365

Soakaway Test - Position ID : **SA4**

Ground Level (m AOD): **167.37** National Grid Co-ordinates: **E:380903.3 N:848091.5**

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



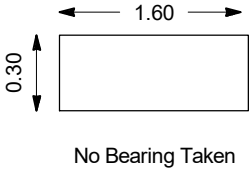
Test 1

Pit start depth:	=	*2.10*	m
Pit final depth:	=	*2.10*	m
Effective depth, De	=	*1.20*	m
Fill Porosity	=	*30*	%
Effective storage volume, V_{p75-25}	=	*0.0864*	m^3
Surface area, a_{s50}	=	*2.7600*	m^2
Time, t_{p75-25}	=	*57870.0*	secs
Infiltration rate, f	=	$5.41x10^{-7}$	m/s

Legend

● Test 1 (06.03.25)

Plan (Not to scale)



No Bearing Taken

RSK GEOSCIENCES

Compiled By	Date	Checked By	Date
[redacted]	25/03/25		

Contract: **New Deer**

Contract Ref: **340617**

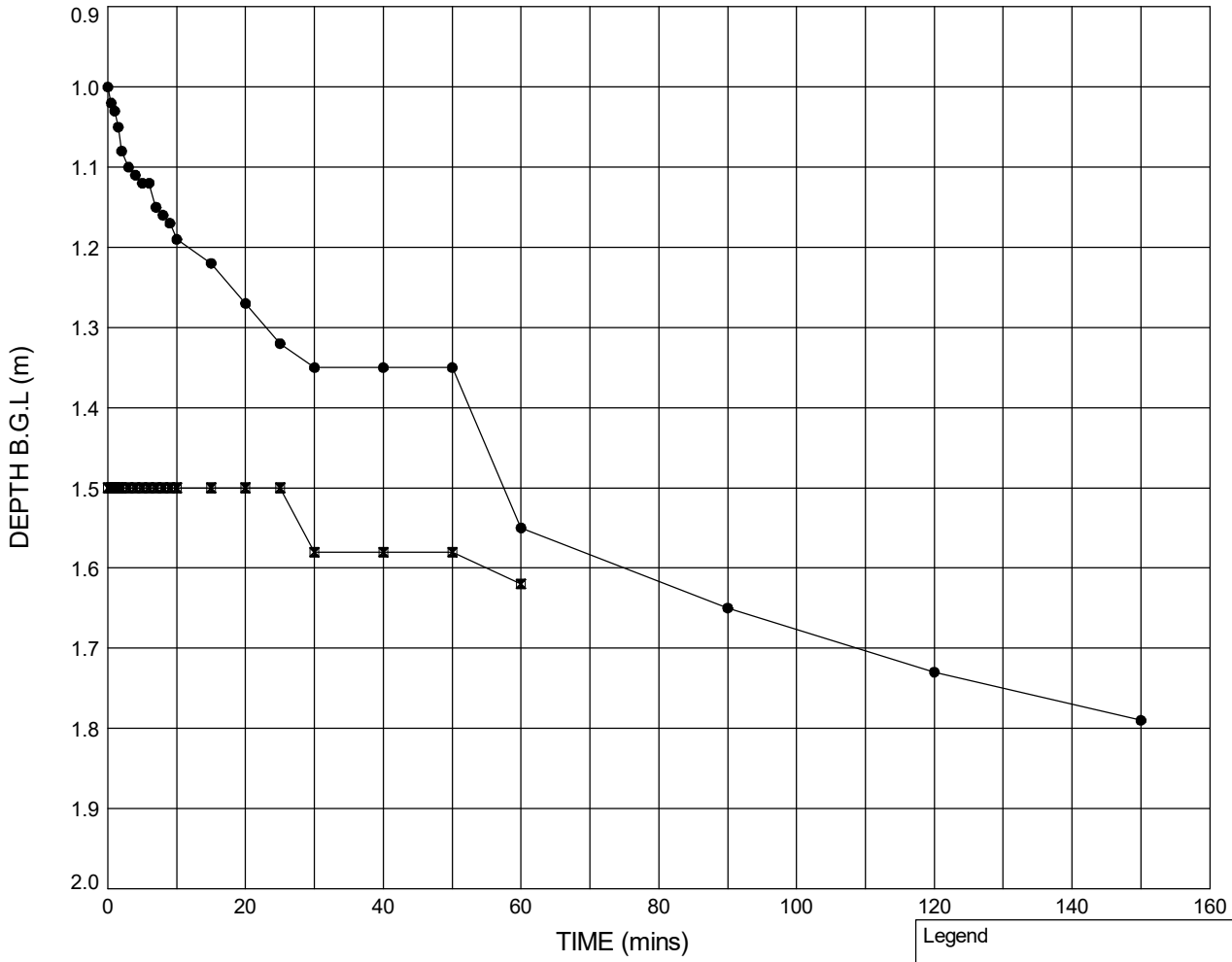
FULL SCALE SOAKAWAY TEST

In accordance with BRE Digest 365

Soakaway Test - Position ID : **SA5**

Ground Level (m AOD): **171.70** National Grid Co-ordinates: **E:380813.4 N:847853.6**

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME

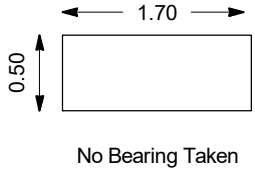


Legend

● Test 1 (06.03.25)

⊠ Test 2 (06.03.25)

Plan (Not to scale)



No Bearing Taken

		Test 1	Test 2	
Pit start depth:	=	*2.00*	*2.00*	m
Pit final depth:	=	*2.00*	*2.00*	m
Effective depth, De	=	*1.00*	*0.50*	m
Fill Porosity	=	*30*	*30*	%
Effective storage volume, V_{p75-25}	=	*0.1275*	*0.0638*	m^3
Surface area, a_{s50}	=	*3.0500*	*1.9500*	m^2
Time, t_{p75-25}	=	*6720.0*	*NA*	secs
Infiltration rate, *f*	=	$6.22x10^{-6}$	*NA*	m/s

Notes: Test 2 - Unable to calculate infiltration rate due to insufficient drop in water level

RSK GEOSCIENCES

Compiled By	Date	Checked By	Date
[redacted]	**25/03/25**		

Contract	Contract Ref:
New Deer	**340617**

HAYDN
EVANS