020/5088/REG/jr

30th April 2025

Mr Gary Little
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Dear Gary

Royal Victoria Court, Mendalgief Road, Newport, S. Wales

Further to issue of our Geoenvironmental Appraisal Report (No. 5088/1, dated January 2025), gas monitoring at the above site has now been completed and we are able to issue this supplementary letter report together with copies of the monitoring results. This letter, which should be read in conjunction with Report No 5088/1, reviews soil-gas conditions, assesses risks and details any mitigation measures required to render the site suitable for the proposed development.

Background

The site is located approximately 1km south of Newport town centre at NGR ST 309 869, and comprises a single parcel of land, roughly rectangular in shape, and covering an area of approximately 0.7 hectares (1.7 acres).

In relation to hazardous gas, the above-mentioned report found:

- A former landfill is located 270m south west
- Peat is present c. 5m depth
- Made ground up to c.2m thick exists

Based on the above, it was considered that the site might be at risk from hazardous gas and therefore monitoring wells were installed in 3 boreholes. Details of the individual installations are provided in Appendix E of this report. Due to shallow groundwater resulting in the monitoring well response zones being saturated, a shallow 1m length of monitoring pipe (P3), with the top 0.5m plain and the bottom 0.5m slotted, was installed in close proximity to BH03.

The proposed development comprises a residential care home with associated landscaping, as shown on Drawing 5088/2 presented in Appendix B of this report.

Scope of works

The generation potential of the gas source was initially considered to be Very Low, consequently, in accordance with CIRIA Report C665, given the proposed end use, 6 visits have been completed over a 3-month period, between December 2024 and April 2025.

A standard procedure was followed in accordance with CIRIA guidance; this procedure involved measurement, in the following order of:

- Atmospheric temperature, pressure and ambient oxygen concentration on site immediately prior to and on completion of monitoring
- Methane, oxygen and carbon dioxide concentrations and flow rates using a Gas Data GFM436 infra-red gas analyser
- Standing water level using a dipmeter

Gas monitoring results

The monitoring results are enclosed and summarised below:

Well	Response zone	Range of methane concentrations (% v/v)	Range of carbon dioxide concentrations (% v/v)	Range of steady flow rates (litre/hour)
BH01	1.0m – 3.0m (Granular Made Ground)	N.D	N.D – 0.8	N.D
BH02	3.0m – 6.0m (Cohesive Alluvium & Peat)		N.D – 0.9	
BH03	3.2m – 5.0m (Cohesive Alluvium)		N.D – 0.2	
P3	0.5 -1.0m (Granular Made Ground)		N.D – 0.5	

Note: Atmospheric pressures varied between 992mb and 1032mb.
N.D – Not detected.

During 4 of the 6 monitoring visits (Visits 2, 4, 5 & 6), atmospheric pressure was falling during the 24 to 48hr period prior to the monitoring event. Plots of atmospheric pressure versus time, with the monitoring visits indicated, are presented in Appendix D of this letter report.

In accordance with current best practice, a default value of 0.1 litres/hour has been used in the absence of any recorded flows; i.e. the limit of detection of the flow rate equipment.

Current guidance

Generic Notes (01 Site Characterisation) outlining how monitoring results are interpreted are enclosed.

Current gas regime

The proposed development comprises a residential care home with associated areas of landscaping. Consequently, the gas regime has been characterised in accordance with the Situation A (Wilson & Card) methodology outlined in CIRIA Report C665[1] and BS8485:2015+A1:2019[2].

No methane was recorded during any of the monitoring visits.

Based on the worst-case (peak) gas concentration and steady flow, a Gas Screening Value (GSV)[3] for carbon dioxide of 0.0009 has been calculated. This GSV equates to Characteristic Situation 1 (**CS1**).

All three wells were bailed during all monitoring visits due to the presence of shallow groundwater, the recovery of groundwater levels resulted in significant **peak** flows being recorded at all monitoring locations immediately after bailing. These flows typically dissipated rapidly but occasionally continued beyond 120 seconds. The more prolonged flows are considered to be due to a slower rise (recovery) of groundwater associated with strata of relatively low permeability. Had monitoring continued the flows would have eventually ceased.

[1] *CIRIA C665: Assessing risks posed by hazardous ground gases to buildings (2007).*
[2] *Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.*
[3] *Gas Screening Values (GSVs) are calculated by the equation: GSV = flow x (gas concentration / 100).*

Scope of protection measures

Based on the site characterisation discussed above no gas protection measures are required.

We trust the above is sufficient for your present needs, but should you have any queries please contact the undersigned.

Yours sincerely

Julia Reynolds
Principal Engineer
for and on behalf of
LITHOS CONSULTING LIMITED

Enc.
Appendix A – General notes
Appendix B – Drawings
Appendix C – Gas monitoring results
Appendix D – Atmospheric pressure graphs
Appendix E – Monitoring well installations

APPENDIX A
General notes

05 – Hazardous gas
Generic notes – geoenvironmental investigations

General

Hazardous gas is considered to be any mixture of potentially explosive, toxic or asphyxiating gases, most notably methane, carbon dioxide and oxygen (deficiency). In addition, radon, a naturally occurring radioactive gas is also considered. Further information about radon is included in Notes 01 – Environmental Setting.

Assessment of potential risks associated with hazardous gas are based on a review of data obtained from the Landmark Information Group, the Environment Agency and the Local Authority and the British Geological Survey. Reference is also made to historical OS plans, which are inspected for evidence of backfilled quarries, railway cuttings, colliery spoil tips etc.

Where landfilling has occurred within 250m of the site boundary, the Local Planning Authority may request a landfill gas investigation in accordance with the Town and Country Planning General Development Order, 1988.

Sources

Potential sources of hazardous gas include:

- Landfill sites
- Made ground, especially where significant depths are present
- Shallow mineworkings associated with coal extraction
- Geological strata, including peat, organic silts, coal and limestone (reaction with acidic waters), granite (radon)
- Groundwater can sometimes act as a "carrier" for hazardous gas
- Leakages from pipelines or storage tanks
- Sewers, septic tanks and cess pits

Generation

Wherever biodegradable material is deposited, landfill gas (principally a mixture of methane and carbon dioxide) is likely to be generated by microbial activity. Carbon dioxide is an asphyxiant and toxic; methane is flammable and a mixture containing between 5% and 15% methane by volume in air is explosive. Landfill gas in the ground is unlikely in itself to pose a significant risk, though it may damage vegetation. However, infiltration of landfill gas into confined spaces (e.g. cellars, services, etc) may give rise to considerable risk.

There is no typical figure for the length of time that landfill gas will be evolved, but at many sites significant gas generation continues for at least 15 years after the last deposit of waste.

Migration

Gas migration from a landfill site may occur in several ways. It may migrate through adjacent strata; the distance of migration being dependent on the pressure gradients, volume of gas and permeability of the strata. Where there are faults, cavities and fissures within the strata, gas may move considerable distances. Other migration pathways for gas include man-made features such as mine shafts, roadways and underground services.

Gas migration is influenced by a number of climatic factors, such as atmospheric pressure variations, water table level variations and the influence of a covering of snow or ice over the surface of the site and surrounding area.

Gas monitoring procedure

Lithos adopt a standard gas monitoring procedure, in accordance with CIRIA guidance. This procedure involves the measurement, in the following order of:

- Atmospheric temperature, pressure and ambient oxygen concentration
- Gas emission rate
- Methane, oxygen and carbon dioxide concentrations using an infra-red gas analyser
- Standing water level using a dipmeter.

In addition, ground conditions at each sampling location are recorded together with prevailing weather conditions and any other observations such as any vandalism. Where samples of gas are required for laboratory analysis, Gresham Tubes or multi-layer Tedlar / ALTEF sampling bags are used. Gas concentrations in the well are typically recorded immediately before and after retrieval of a sample.

Current guidance

CIRIA Report 151 (1995) identified that there was inadequate guidance on trigger concentrations for ground gases. CIRIA concluded that the most important aspect of a gas regime below or adjacent to a site was the surface emission rate, i.e. how quickly the gas is coming out of the ground. The lower the surface emission rate the lower the risk. CIRIA Report C665 (2007) advocated two methodologies for characterising sites:

A – All developments except low rise housing. The advocated methodology is that proposed by Wilson & Card, 1999

B – Low rise housing. An alternative (traffic light) methodology, derived by Boyle and Witherington, 2006 for NHBC

Both methodologies refer to Gas Screening Values (GSV); previously referred to as limiting borehole gas volume flow. However, the NHBC traffic light guidance will be withdrawn in July 2025, and consequently Lithos typically now only refer to Situation A methodology.

Relevant UK guidance includes:

- BS8485:2015+A1:2019 – Code of Practice for the characterisation & remediation from ground gas in affected developments.
- BS8576:2013 Guidance on investigations for ground gas – permanent gases and volatile organic compounds
- Wilson, Card & Haines (CIEH, 208) The Local Authority Guide to Ground Gas
- CIRIA C665 (2007) Assessing Risks Posed by Hazardous Ground Gases to Buildings
- CIRIA C735 (2014) Good Practice on the Testing and Verification of Protection Systems for Buildings Against Hazardous Ground Gases
- CL:AIRE (October 2021) Good Practice for Risk Assessment for Coal Mine Gas Emissions
- CL:AIRE Research Bulletin RB17 (November 2012) A Pragmatic Approach to Ground Gas Risk Assessment
- CL:AIRE Research Bulletin RB13 (February 2011) The Utility of Continuous Monitoring in Detection & Prediction of 'Worst-Case' Ground Gas Concentration
- BRE\Environment Agency Report BR 414 (2001) – "Protective Measures for housing on gas-contaminated land".
- YALPAG (December 2016) - Verification Requirements for Gas Protection Systems - Technical Guidance for Developers, Landowners and Consultants.
- Environment Agency Report LFTGN 03 - Guidance on the management of landfill gas, June 2014
- NHBC Foundation (April 2023) Hazardous Ground Gas – an Essential Guide for Housebuilders (NF94)

Situation A Methodology (All development)s

(Wilson & Card, 1999) revised Table 28 of CIRIA 149 in terms of borehole gas volume flow rate (now GSV) in order to achieve a more consistent design of protection measures. This was done to reflect the importance of recognising the gas surface emission rate. Wilson & Card then developed a method for classifying gassing sites (Table 1 below), which took into account the combined gas concentration and GSV.

Characteristic Situation	Gas Screening Value, CH_4 or CO_2 (l/hr)	Additional limiting factors	Typical source of generation
1	<0.07	Methane not to exceed 1% v/v and carbon dioxide not to exceed 5% v/v	Natural soils with low organic content
2	<0.7	Borehole air flow rate not to exceed 70 litre/hr otherwise increase to Characteristic Situation 3	Natural soil, high peat/organic content
3	<3.5		Old landfill, inert waste, mineworkings flooded.
4	<15	Quantitative Risk Assessment required to evaluate scope of protection measures.	Mineworkings – susceptible to flooding, completed landfill, inert waste
5	<70		Mineworkings unflooded, inactive
6	>70		Recent landfill site

Notes: Borehole flow rate = volume of gas (regardless of composition) which is escaping from well (l/hr). Gas Screening Value (litre/hour) = gas concentration (%) / 100 x borehole flow rate (l/hr). To facilitate design implementation, the limiting values for both methane and carbon dioxide are identical.

APPENDIX B

Drawings

Reproduced from OS Explorer map 1:25,000 scale by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. Crown copyright. All rights reserved. Licence number 100049696.

LITHOS CONSULTING

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CLIENT	LNT CONSTRUCTION
JOB TITLE	ROYAL VICTORIA COURT, NEWPORT
DRAWING TITLE	SITE LOCATION PLAN
DRAWN	CC
DATE	23 01 2025
CHECKED	AG
DATE	23 01 2025
STATUS	FOR COMMENT ☐ DRAFT ☐ FOR APPROVAL ☐ FINAL ☑
SCALE	1:25,000
SHEET	A4
DRAWING NO.	5088/1
REVISION	

NOTES

APPROXIMATE SITE BOUNDARY

REPRODUCED FROM LNT CONSTRUCTION'S DRAWING REFERENCE NP20-2NW-F-01, DATED MARCH 2024

REV.	DESCRIPTION	DATE

LITHOS CONSULTING

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Tel 01937 545330

CLIENT

LNT CONSTRUCTION

JOB TITLE

ROYAL VICTORIA COURT, NEWPORT

DRAWING TITLE

PROPOSED SITE LAYOUT

DRAWN	DATE	STATUS
CC	23 01 2025	FOR COMMENT ☐
CHECKED	DATE	FOR APPROVAL ☐
AG	23 01 2024	DRAFT ☐
		FINAL ☑

SCALE	SHEET	DRAWING NO.	REVISION
1:500	A3	5088/2	

NOTES

BOREHOLE LOCATION

APPROXIMATE SITE BOUNDARY

EXPLORATORY HOLE LOCATIONS BASED ON DATA FROM A HAND-HELD GPS (+/- 3M ACCURACY)

REV.	DESCRIPTION	DATE

LITHOS CONSULTING

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Tel 01937 545330

CLIENT

LNT CONSTRUCTION

JOB TITLE

ROYAL VICTORIA COURT, NEWPORT

DRAWING TITLE

MONITORING WELL LOCATIONS

DRAWN	DATE	STATUS
CC	16 12 2024	FOR COMMENT ☐
CHECKED	DATE	FOR APPROVAL ☐
AG	16 12 2024	DRAFT ☐
		FINAL ☑

SCALE	SHEET	DRAWING NO.	REVISION
1:500	A3	5088/6A	

APPENDIX C

Gas monitoring results

GAS MONITORING RESULTS

Visit 1

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				1 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
21/12/2024	11:15	12:00	George Costley	

Gas Monitoring Results:						
Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	18.6

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	1.14	-	-	-	-	-	-	-	-	2.79	Bailed 8L 11:37 - 11:40
BH02	1.33	-	-	-	-	-	-	-	-	5.91	Bailed 12L 11:28 - 11:33
BH03	0.93	-	-	-	-	-	-	-	-	4.83	Bailed 12L 11:47 - 11:52
P3	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	7.3 > 8.2		Barometric Pressure Trend:			Falling		
Time:	14:00	14:30	15:00	00:00	12:00	14:00	14:30	15:00	17:00
Pressure (mb):	1004	1004	1004	992	1003	1004	1005	1005	1007
	Weather Conditions:		Sunny, Cool						
	Surface Ground Conditions:		Dry						

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Remarks:	Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 1 Bailed

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				2 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
21/12/2024	11:15	12:00	George Costley	

Gas Monitoring Results:						
Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	18.6

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	1.67	ND	ND	ND	ND	18.4	ND	ND	120.0	2.79	Bailed 8L 11:37 - 11:40
BH02	3.65	ND	ND	ND	ND	18.4	8.0	1.5	120.0	5.91	Bailed 12L 11:28 - 11:33
BH03	3.75	ND	ND	ND	ND	18.4	4.5	3.2	120.0	4.83	Bailed 12L 11:47 - 11:52
P3	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	7.3 > 8.2		Barometric Pressure Trend:			Falling		
Time:	14:00	14:30	15:00	00:00	12:00	14:00	14:30	15:00	17:00
Pressure (mb):	1004	1004	1004	992	1003	1004	1005	1005	1007

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Weather Conditions:	Sunny, Cool
Surface Ground Conditions:	Dry

Remarks:	Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 2

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				3 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
22/01/2025	16:00	17:00	George Costley	

Gas Monitoring Results:						
Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	16.2

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	1.68	-	-	-	-	-	-	-	-	2.78	Bailed 6L 16:37 - 16:41, GW remonitored 16:53 = 2.11
BH02	1.90	-	-	-	-	-	-	-	-	5.94	Bailed 12L 16:12 - 16:14, GW remonitored 16:22 = 3.70, 16:33 = 3.69
BH03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	Couldn't locate well
P3	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	5.7 > 5.2		Barometric Pressure Trend:	Falling				
Time:	16:00	16:30	17:00	00:00	14:00	16:00	16:30	17:00	19:00
Pressure (mb):	1002	1001	1001	1008	1004	1004	1004	1004	1005

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Weather Conditions:	Overcast, Cold
Surface Ground Conditions:	Wet, Boggy

Remarks:	
	Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 2 Bailed

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				4 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
22/01/2025	16:00	17:00	George Costley	

Gas Monitoring Results:						
Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	16.2

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	2.14	ND	0.2	ND	0.2	16.4	27.6	3.6	120.0	2.78	Bailed 6L 16:37 - 16:41, GW remonitored 16:53 = 2.11
BH02	3.72	ND	ND	ND	ND	16.8	12.9	ND	120.0	5.94	Bailed 12L 16:12 - 16:14, GW remonitored 16:22 = 3.70, 16:33 = 3.69
BH03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	Couldn't locate well
P3	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	5.7 > 5.2		Barometric Pressure Trend:	Falling				
Time:	16:00	16:30	17:00	00:00	14:00	16:00	16:30	17:00	19:00
Pressure (mb):	1002	1001	1001	1008	1004	1004	1004	1004	1005
	Weather Conditions:		Overcast, Cold						
	Surface Ground Conditions:		Wet, Boggy						

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Remarks:	
	Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 3

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				5 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
12/02/2025	14:30	15:30	George Costley	

Gas Monitoring Results:

Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	20.6

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	1.57	-	-	-	-	-	-	-	-	2.51	Bailed 9L 15:15 - 15:18
BH02	0.76	-	-	-	-	-	-	-	-	5.82	Bailed 12L 15:01 - 15:05
BH03	1.02	-	-	-	-	-	-	-	-	4.85	Bailed 12L 14:43 - 14:48, GW remonitored 14:53 = 3.90
P3	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	5.2		Barometric Pressure Trend:	Fluctuating				
Time:	14:30	15:00	15:30	00:00	12:30	14:30	15:00	15:30	17:30
Pressure (mb):	1019	1018	1018	1020	1021	1020	1020	1020	1021
	Weather Conditions:	Overcast, Cold							
	Surface Ground Conditions:	Wet, Boggy							

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Remarks:	
	Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 3 Bailed

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				6 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
12/02/2025	14:30	15:30	George Costley	

Gas Monitoring Results:

Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	20.6

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	2.11	ND	ND	ND	ND	20.2	ND	ND	120.0	2.51	
BH02	3.42	ND	ND	ND	ND	20.5	15.4	ND	120.0	5.82	
BH03	3.97	ND	ND	ND	ND	20.5	11.4	ND	120.0	4.85	
P3	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	5.2		Barometric Pressure Trend:		Fluctuating			
Time:	14:30	15:00	15:30	00:00	12:30	14:30	15:00	15:30	17:30
Pressure (mb):	1019	1018	1018	1020	1021	1020	1020	1020	1021
	Weather Conditions:		Overcast, Cold						
	Surface Ground Conditions:		Wet, Boggy						

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Remarks:	
	Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 4

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				7 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
03/03/2025	11:45	12:45	George Costley	

Gas Monitoring Results:						
Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	29.3

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	0.84	-	-	-	-	-	-	-	-	5.76	Bailed 12L 12:25 - 12:30.
BH02	1.50	-	-	-	-	-	-	-	-	2.78	Bailed 8L 12:10 - 12:14
BH03	0.91	-	-	-	-	-	-	-	-	4.84	Bailed 12L 11:57 - 12:01, Engine oil spilt next to well (see pics), no PID reading
P3	ND	ND	ND	ND	ND	20.3	ND	ND	120.0	0.87	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	8.7 > 10.2		Barometric Pressure Trend:	Falling				
Time:	11:45	12:20	12:45	00:00	09:45	11:45	12:20	12:45	14:45
Pressure (mb):	1031	1031	1031	1032	1032	1032	1031	1031	1029
	Weather Conditions:	Sunny, Warm							
	Surface Ground Conditions:	Wet, Boggy							

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Remarks:

Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 4 Bailed

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				8 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
03/03/2025	11:45	12:45	George Costley	

Gas Monitoring Results:

Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	29.3

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	3.59	ND	0.1	ND	0.1	20.3	1.1	1.1	120.0	5.76	Bailed 12L 12:25 - 12:30
BH02	2.11	ND	ND	ND	ND	20.3	2.4	1.5	120.0	2.78	Bailed 8L 12:10 - 12:14
BH03	3.63	ND	ND	ND	ND	20.4	13.3	ND	120.0	4.84	Bailed 12L 11:57 - 12:01, Engine oil spilt next to well (see pics), no PID reading
P3	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	8.7 > 10.2		Barometric Pressure Trend:	Falling				
Time:	11:45	12:20	12:45	00:00	09:45	11:45	12:20	12:45	14:45
Pressure (mb):	1031	1031	1031	1032	1032	1032	1031	1031	1029
	Weather Conditions:		Sunny, Warm						
	Surface Ground Conditions:		Wet, Boggy						

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Remarks:

Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 5

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				9 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
18/03/2025	14:45	15:00	George Costley	

Gas Monitoring Results:

Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	21.0

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	1.78	-	-	-	-	-	-	-	-	5.79	Bailed 12L 14:53 - 14:57
BH02	1.70	-	-	-	-	-	-	-	-	2.83	Bailed 6L 15:08 - 15:11
BH03	1.08	-	-	-	-	-	-	-	-	4.83	Bailed 12L 15:20 - 15:24
P3	ND	ND	0.5	ND	0.5	20.7	ND	ND	120.0	0.88	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	12.3 > 12.6		Barometric Pressure Trend:	Falling				
Time:	14:45	15:00	15:30	00:00	12:45	14:45	15:00	15:30	17:30
Pressure (mb):	1014	1016	1016	1027	1022	1021	1020	1020	1020

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Weather Conditions:	Sunny, Cool
Surface Ground Conditions:	Wet, Boggy

Remarks:	
	Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 5 Bailed

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				10 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
18/03/2025	14:45	15:00	George Costley	

Gas Monitoring Results:

Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	21.0

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	3.94	ND	ND	ND	ND	21.0	4.0	2.6	120.0	5.79	Bailed 12L 14:53 - 14:57
BH02	2.40	ND	ND	ND	ND	20.9	5.7	0.8	120.0	2.83	Bailed 6L 15:08 - 15:11
BH03	3.71	ND	0.2	ND	0.2	21.0	20.4	ND	120.0	4.83	Bailed 12L 15:20 - 15:24
P3	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	12.3 > 12.6		Barometric Pressure Trend:	Falling				
Time:	14:45	15:00	15:30	00:00	12:45	14:45	15:00	15:30	17:30
Pressure (mb):	1014	1016	1016	1027	1022	1021	1020	1020	1020

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Weather Conditions:	Sunny, Cool
Surface Ground Conditions:	Wet, Boggy

Remarks:

Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 6

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				11 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
16/04/2025	14:00	15:00	George Costley	

Gas Monitoring Results:

Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	21.0

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	1.82	ND	0.8	ND	0.8	13.7	ND	ND	120.0	2.80	
BH02	1.77	-	-	-	-	-	-	-	-	5.82	Bailed 8L 14:30 - 14:33
BH03	1.22	-	-	-	-	-	-	-	-	4.83	Bailed 8L 14:41 - 14:44
P3	ND	ND	ND	ND	ND	21.0	ND	ND	120.0	0.83	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	12.2 > 12		Barometric Pressure Trend:		Rising			
Time:	14:00	14:30	15:00	00:00	12:00	14:00	14:30	15:00	17:00
Pressure (mb):	1004	1004	1004	992	1003	1004	1005	1005	1007

Weather Conditions:	Sunny, Cool		
Surface Ground Conditions:	Dry		

	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

Remarks:

Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

GAS MONITORING RESULTS

Visit 6 Bailed

Job Title:				Job No:
Royal Victoria Court, Newport				5088
Client:				Sheet :
LNT				12 of 12
Date:	Arrival Time:	Depart Time:	Operator:	
16/04/2025	14:00	15:00	George Costley	

Gas Monitoring Results:

Ambient Concentration (% Volume):	CH_4:	ND	CO_2:	ND	O_2:	21.0

Monitoring Point	Groundwater level	Concentrations					Gas Flow Rates			Bottom of well	Remarks
		Initial / Peak		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady		
		CH_4	CO_2	CH_4	CO_2	O_2					
	(m) bgl	%					litre/hr	litre/hr	secs	m	
BH01	-	-	-	-	-	-	-	-	-	-	
BH02	4.92	ND	0.9	ND	0.9	21.0	ND	ND	120.0	5.82	Bailed 8L 14:30 - 14:33
BH03	4.27	ND	ND	ND	ND	20.8	ND	ND	120.0	4.83	Bailed 8L 14:41 - 14:44
P3	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	

Equipment Used:	Next Calibration Date
Gas Data GFM436 Infrared Gas Analyser Geotechnical Instruments Dipmeter	04/03/2026

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

	Site Data:			Weather Station Data (Firbank-weather Station)					
	Temp (°C):	12.2 > 12		Barometric Pressure Trend:	Rising				
Time:	14:00	14:30	15:00	00:00	12:00	14:00	14:30	15:00	17:00
Pressure (mb):	1004	1004	1004	992	1003	1004	1005	1005	1007

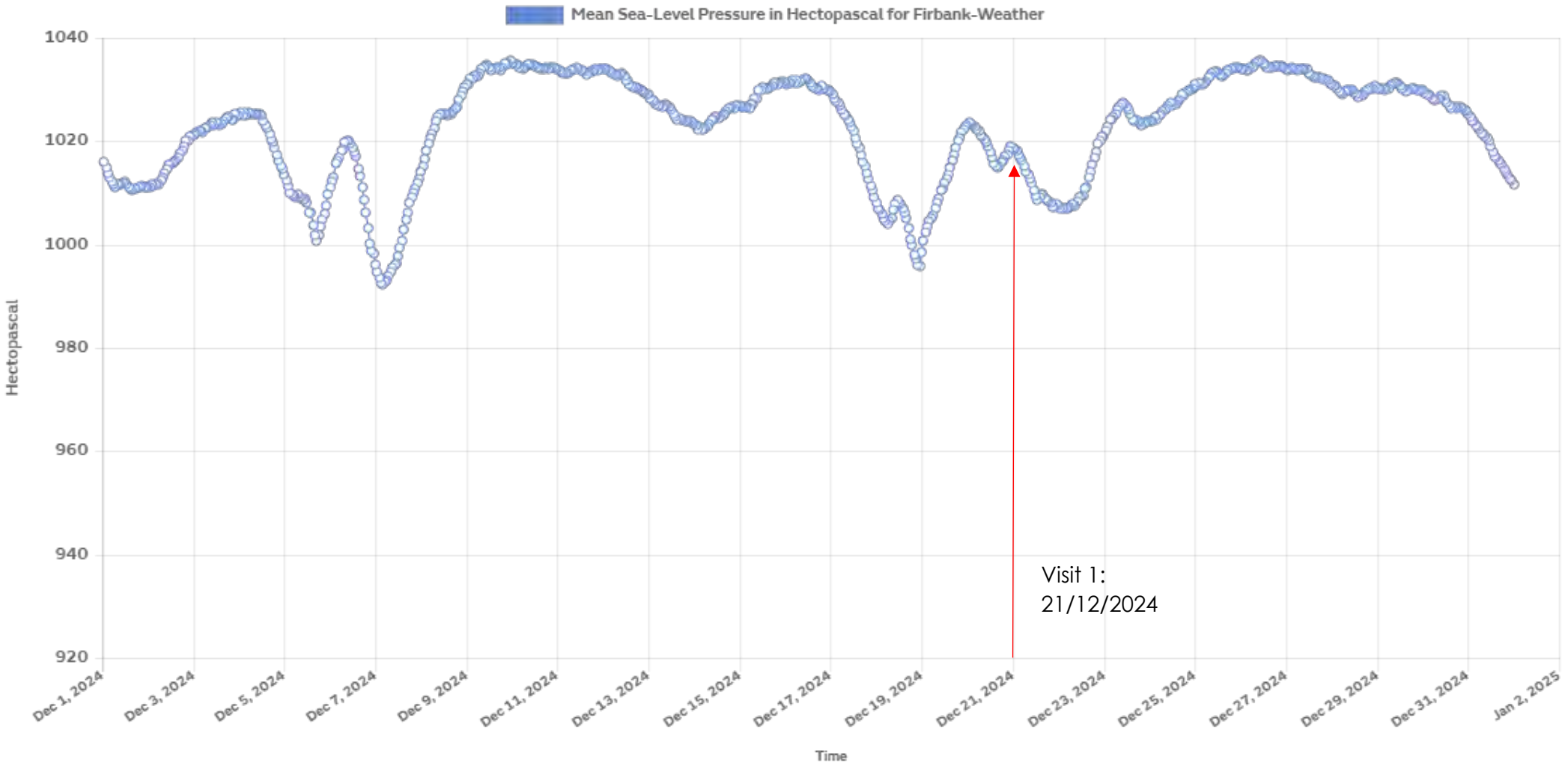
	CH_4	CO_2	O_2
Trigger level 1	1.0	5.0	16.0
Trigger level 2	5.0	10.0	10.0

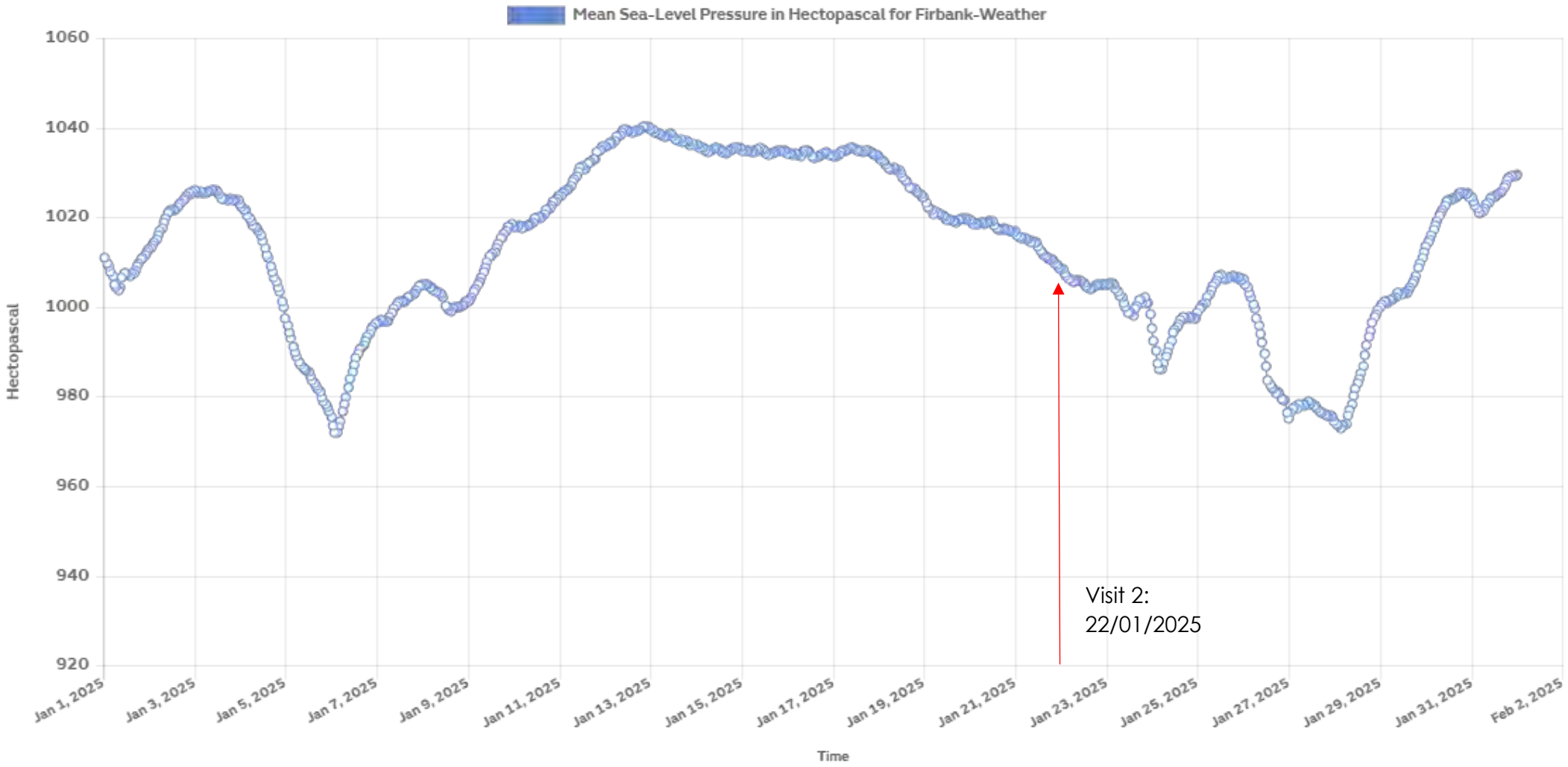
Weather Conditions:	Sunny, Cool
Surface Ground Conditions:	Dry

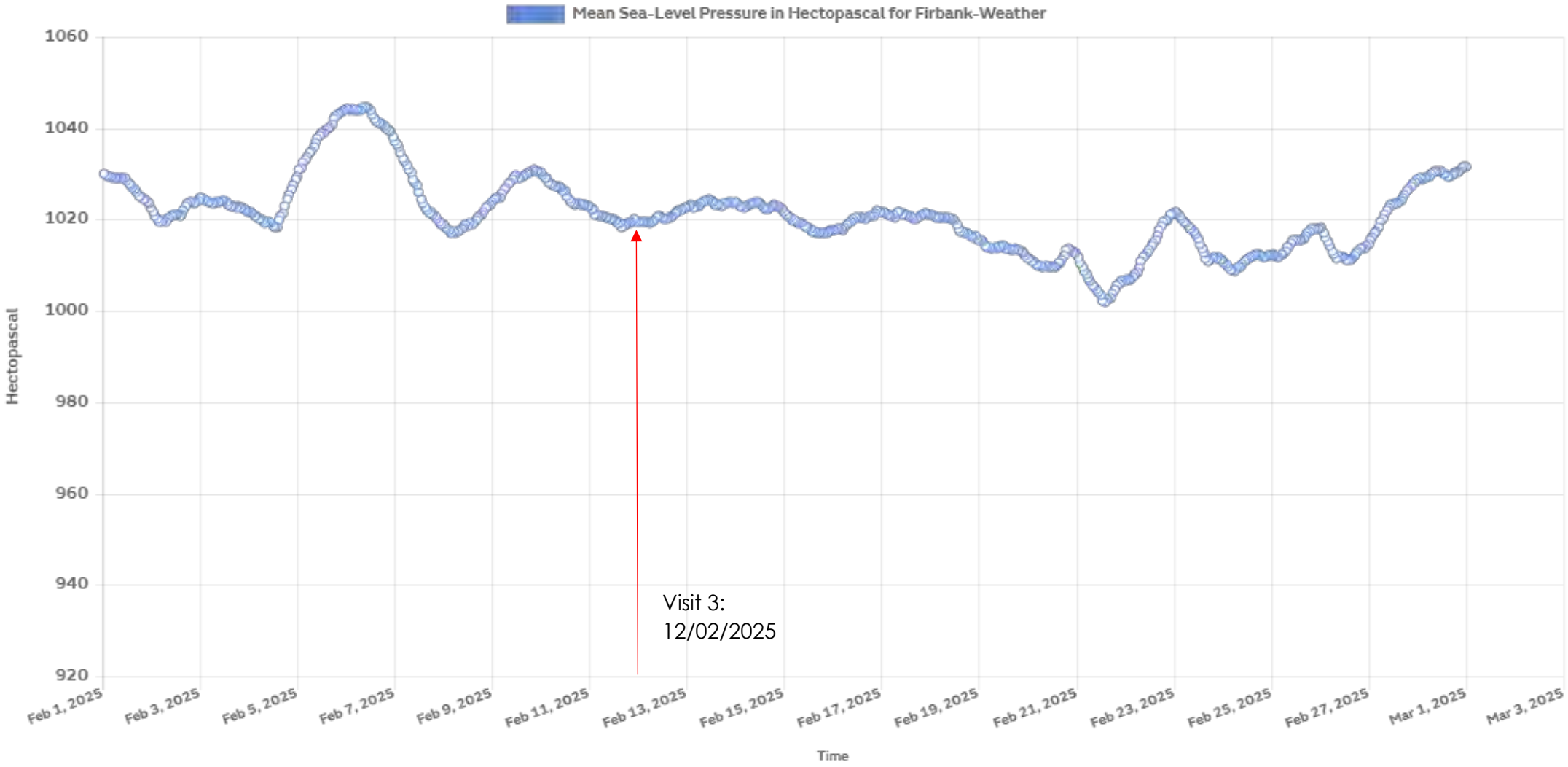
Remarks:	
	Firbank weather station is located approximately 2 miles north-east from the site (Royal Victoria Court, Newport)

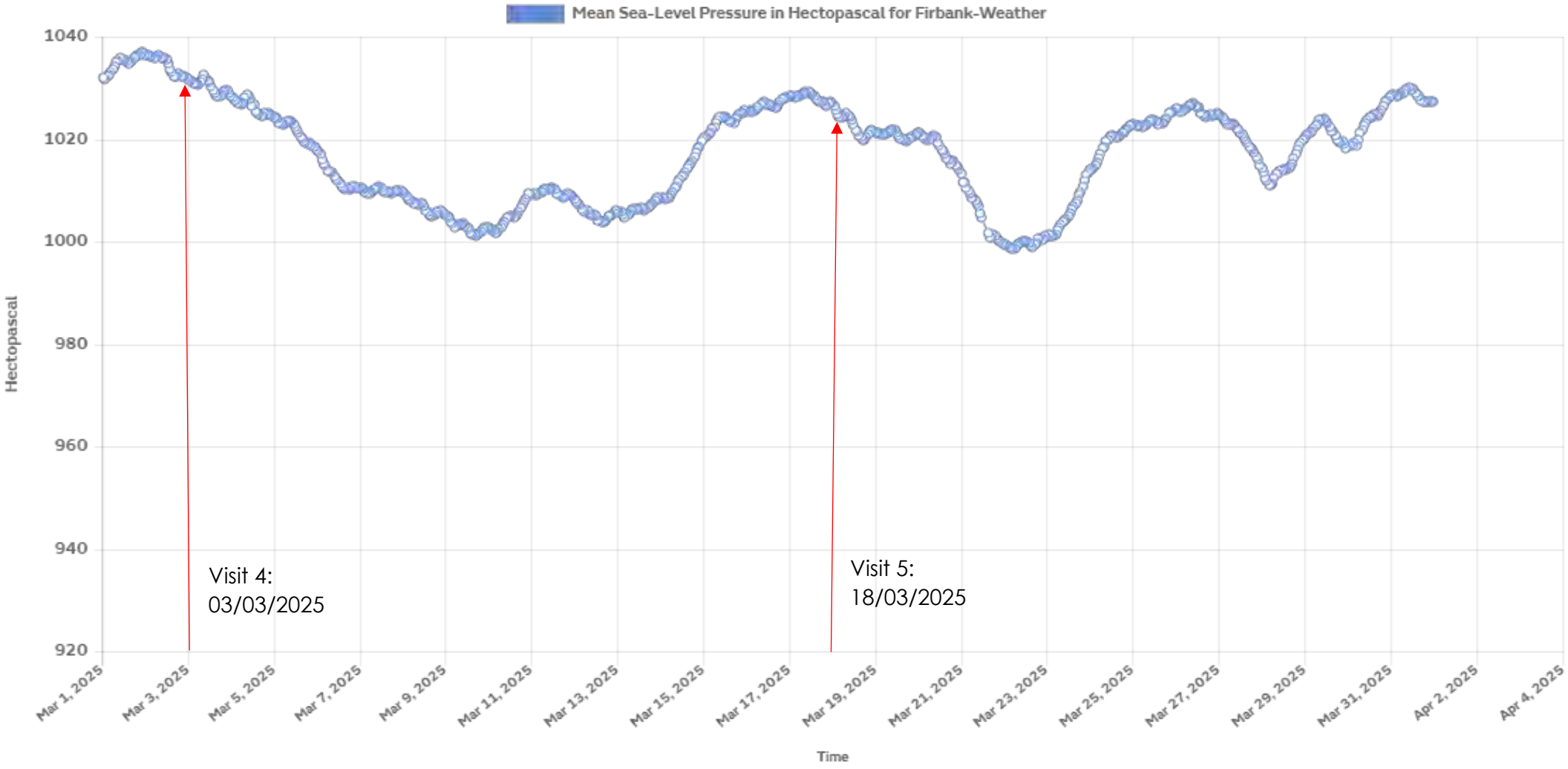
APPENDIX D

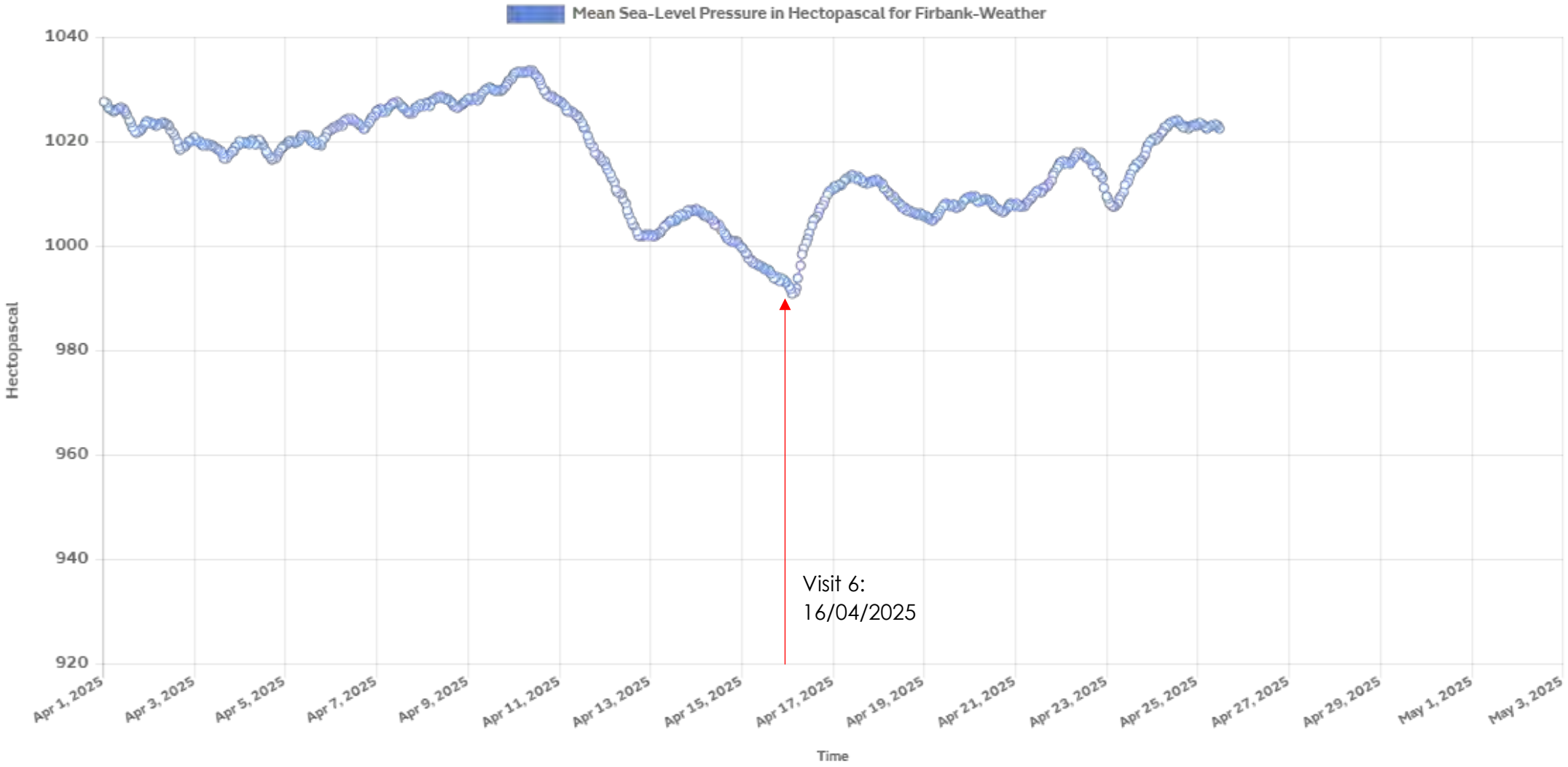
Atmospheric Pressure Graphs


Mean Sea-Level Pressure in Hectopascal for Firbank-Weather
1040
1020
1000
980
960
940
920
Hectopascal
Dec 1, 2024
Dec 3, 2024
Dec 5, 2024
Dec 7, 2024
Dec 9, 2024
Dec 11, 2024
Dec 13, 2024
Dec 15, 2024
Dec 17, 2024
Dec 19, 2024
Dec 21, 2024
Dec 23, 2024
Dec 25, 2024
Dec 27, 2024
Dec 29, 2024
Dec 31, 2024
Jan 2, 2025
Time
Visit 1:
21/12/2024


Mean Sea-Level Pressure in Hectopascal for Firbank-Weather
1060
1040
1020
1000
980
960
940
920
Hectopascal
Jan 1, 2025
Jan 3, 2025
Jan 5, 2025
Jan 7, 2025
Jan 9, 2025
Jan 11, 2025
Jan 13, 2025
Jan 15, 2025
Jan 17, 2025
Jan 19, 2025
Jan 21, 2025
Jan 23, 2025
Jan 25, 2025
Jan 27, 2025
Jan 29, 2025
Jan 31, 2025
Feb 2, 2025
Time
Visit 2:
22/01/2025


Mean Sea-Level Pressure in Hectopascal for Firbank-Weather
1060
1040
1020
1000
980
960
940
920
Hectopascal
Visit 3:
12/02/2025
Feb 1, 2025
Feb 3, 2025
Feb 5, 2025
Feb 7, 2025
Feb 9, 2025
Feb 11, 2025
Feb 13, 2025
Feb 15, 2025
Feb 17, 2025
Feb 19, 2025
Feb 21, 2025
Feb 23, 2025
Feb 25, 2025
Feb 27, 2025
Mar 1, 2025
Mar 3, 2025
Time


Mean Sea-Level Pressure in Hectopascal for Firbank-Weather
1040
1020
1000
980
960
940
920
Hectopascal
Visit 4:
03/03/2025
Visit 5:
18/03/2025
Mar 1, 2025
Mar 3, 2025
Mar 5, 2025
Mar 7, 2025
Mar 9, 2025
Mar 11, 2025
Mar 13, 2025
Mar 15, 2025
Mar 17, 2025
Mar 19, 2025
Mar 21, 2025
Mar 23, 2025
Mar 25, 2025
Mar 27, 2025
Mar 29, 2025
Mar 31, 2025
Apr 2, 2025
Apr 4, 2025
Time


Mean Sea-Level Pressure in Hectopascal for Firbank-Weather
1040
1020
1000
980
960
940
920
Hectopascal
Visit 6:
16/04/2025
Apr 1, 2025
Apr 3, 2025
Apr 5, 2025
Apr 7, 2025
Apr 9, 2025
Apr 11, 2025
Apr 13, 2025
Apr 15, 2025
Apr 17, 2025
Apr 19, 2025
Apr 21, 2025
Apr 23, 2025
Apr 25, 2025
Apr 27, 2025
Apr 29, 2025
May 1, 2025
May 3, 2025
Time

APPENDIX E
Monitoring Well Installations

LITHOS CONSULTING

Borehole Log

Borehole No. **BH01**

Sheet 1 of 2

Project Name: Royal Victoria Court	Project No. 5088	Co-ords: -	Hole Type CP
Location: Newport		Level:	Scale 1:50
Client: LNT Construction		Dates: 09/12/2024 - 09/12/2024	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Dark brownish grey sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of mixed lithologies including brick, concrete, clinker and plastic. (COHESIVE MADE GROUND)
								Water at 0.8m in morning of 10/12/2024.
		1.00		N=23 (9,5/3,4,6,10)				
	▼	1.50	J,K&T					
		2.00		N=10 (4,3/3,1,3,3)				
					2.80			
		3.00		N=8 (2,2/1,2,2,3)				Firm light brown mottled grey slightly gravelly CLAY. Gravel is angular to subangular fine to medium of mudstone. (COHESIVE TIDAL FLAT DEPOSITS)
		3.00 - 3.45	D					*Becoming softer with depth from 2.8m.*
		4.00	D					
		4.00		N=0 (0,0/0,0,0,0)				*At 4.0m, self weight SPT with no recovery.*
		5.00		N=3 (0,1/0,1,1,1)				
		5.00 - 5.20	D					
		5.20 - 5.45	D		5.20			Spongy brown amorphous PEAT. (COHESIVE TIDAL FLAT DEPOSITS)
					5.80			
		6.00		N=15 (1,2/3,4,4,4) HVP=54				Soft light reddish brown sandy CLAY with occasional plant remains. (COHESIVE TIDAL FLAT DEPOSITS)
		6.50 - 6.95	D					
								Firm from 6.7m.
		8.00 - 8.45	U					*At 8.0m, UT100 33 blows 100% recovery.*
		8.45 - 8.60	D	HVP=42				
		9.50		N=7 (0,1/1,2,2,2)				
		9.50 - 9.95	D		9.60			Soft reddish brown sandy silty CLAY. (COHESIVE TIDAL FLAT DEPOSITS)
								Continued on next sheet

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was encountered at 1.5m depth during drilling. 3. Exploratory hole surveyed in (level and co-ordinates) on completion.

AGS

LITHOS CONSULTING

Borehole Log

Borehole No. **BH01** Sheet 2 of 2

Project Name: Royal Victoria Court	Project No. 5088	Co-ords: -	Hole Type CP
Location: Newport		Level:	Scale 1:50
Client: LNT Construction		Dates: 09/12/2024 - 09/12/2024	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		11.00 11.00 - 11.45	D	N=12 (1,1/2,3,3,4)	11.00			Firm reddish brown sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of mixed lithologies. (COHESIVE TIDAL FLAT DEPOSITS)	11
		12.00	D						12
		12.50		50 (8,8/50 for 225mm)	12.70			Weak reddish brown MUDSTONE. (ST MAUGHANS FORMATION) *Can break with hands from 12.7m.*	13
		13.50	D						
		14.00 14.00 - 14.28	D	50 (11,14/50 for 135mm)	14.28			End of borehole at 14.28 m	14
									15
									16
									17
									18
									19
									20

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was encountered at 1.5m depth during drilling. 3. Exploratory hole surveyed in (level and co-ordinates) on completion.

AGS

LITHOS CONSULTING

Borehole Log

Borehole No. **BH02**

Sheet 1 of 2

Project Name: Royal Victoria Court	Project No. 5088	Co-ords: -	Hole Type CP
Location: Newport		Level:	Scale 1:50
Client: LNT Construction		Dates: 11/12/2024 - 11/12/2024	Logged By CC

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		1.00		N=43 (9,10/12,11,10,10)				MADE GROUND: Dark grey sandy slightly clayey angular to subrounded fine to coarse GRAVEL of mixed lithologies including brick, concrete, clinker and mudstone. (GRANULAR MADE GROUND)
		2.00		N=11 (3,1/2,3,3,3)				
		2.40	J,K&T		2.30			
		2.40	J,K&T					Firm dark grey gleyed brown slightly sandy CLAY. (COHESIVE TIDAL FLAT DEPOSITS)
				HVP=42				
		3.00 - 3.45	U					*UT100 at 3.0m, 30 blows 100% recovery.*
		3.00 - 4.00	B					
		3.60	D					
		4.00		N=4 (1,1/1,1,1,1)				
		4.00 - 4.45	D					
		4.30 - 5.00	B		4.30			Spongy dark brown pseudo-fibrous PEAT. (COHESIVE TIDAL FLAT DEPOSITS)
		5.00	D		5.00			
				HVP=35				Firm light grey slightly sandy CLAY with pockets of plant material. (COHESIVE TIDAL FLAT DEPOSITS)
		5.00 - 5.45	U					*UT100 at 5.0m, 21 blows 100% recovery.*
	▼							
		6.50		N=9 (0,1/1,2,3,3)	6.40			Firm reddish brown slightly sandy CLAY. (COHESIVE TIDAL FLAT DEPOSITS)
		6.50 - 6.95	D					
		8.00	D					
		8.00 - 8.45	U					*UT100 at 8.0m, 25 blows 100% recovery.*
		8.60	D					
		9.50		N=11 (2,2/2,3,3,3)				
		9.50 - 9.95	D		9.70			Firm reddish brown sandy CLAY.
								Continued on next sheet

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was encountered at 6m depth during drilling. 3. Exploratory hole surveyed in (level and co-ordinates) on completion.

AGS

Borehole Log

Borehole No. **BH02**

Sheet 2 of 2

Project Name: Royal Victoria Court	Project No. 5088	Co-ords: -	Hole Type CP
Location: Newport		Level:	Scale 1:50
Client: LNT Construction		Dates: 11/12/2024 - 11/12/2024	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								(COHESIVE TIDAL FLAT DEPOSITS)
					10.80			
		11.00 11.00 - 11.45	D	N=16 (2,1/3,4,4,5)				Firm reddish brown very sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of mixed lithologies. (COHESIVE TIDAL FLAT DEPOSITS)
					12.40			
		12.50 12.50 - 12.83	D	50 (9,11/50 for 180mm)				Weak reddish brown MUDSTONE. (ST MAUGHANS FORMATION)
		13.50		50 (11,14/50 for 170mm)				
					13.82			End of borehole at 13.82 m

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was encountered at 6m depth during drilling. 3. Exploratory hole surveyed in (level and co-ordinates) on completion.

Borehole Log

LITHOS CONSULTING			Borehole No. **BH03** Sheet 1 of 2
Project Name: Royal Victoria Court	Project No. 5088	Co-ords: -	Hole Type CP
Location: Newport		Level:	Scale 1:50
Client: LNT Construction		Dates: 12/12/2024 - 12/12/2024	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
	▼	1.00		N=24 (5,9/6,6,6,6)				MADE GROUND: Dark grey sandy slightly clayey angular to subrounded fine to coarse GRAVEL of mixed lithologies including brown, concrete, glass, clinker and wood. (GRANULAR MADE GROUND)
		2.00		N=19 (5,4/4,4,7,4)				
		2.60	J,K&T		2.50			
		2.60	J,K&T	HVP=34				Firm dark grey gleyed brown slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to medium of mudstone. (COHESIVE TIDAL FLAT DEPOSITS)
		3.00 - 3.45	U					
		3.40 - 4.00	B		3.40			
		3.45 - 3.60	D					Soft light grey slightly sandy CLAY with frequent plant remains. (COHESIVE TIDAL FLAT DEPOSITS)
		4.00		N=2 (0,0/0,0,1,1)				
					4.60			Soft reddish brown sandy slightly gravelly CLAY. (COHESIVE TIDAL FLAT DEPOSITS)
		5.00 - 5.45	U					
		5.45 - 5.60	D					
		5.50 - 6.50	B					
		6.50		N=13 (2,1/3,2,4,4)				
		8.00 - 8.45	U					*At 8.0m, clay is silty.*
		8.45 - 8.60	D					
		9.50		N=18 (1,2/2,3,5,8)	9.50			
		9.50 - 9.95	D					Reddish brown slightly clayey SAND. (GRANULAR TIDAL FLAT DEPOSITS)
		10.00 - 11.00	B					

Continued on next sheet

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was encountered at 1.0m depth during drilling. 3. Exploratory hole surveyed in (level and co-ordinates) on completion.

AGS

LITHOS CONSULTING

Borehole Log

Borehole No. **BH03**

Sheet 2 of 2

Project Name: Royal Victoria Court	Project No. 5088	Co-ords: -	Hole Type CP
Location: Newport		Level:	Scale 1:50
Client: LNT Construction		Dates: 12/12/2024 - 12/12/2024	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		11.00 11.00 - 11.45	D	N=13 (2,3/3,4,3,3)				
					11.80			Reddish brown sandy rounded to subrounded fine to coarse GRAVEL of mixed lithologies. (GRANULAR TIDAL FLAT DEPOSITS)
					12.20			Weak reddish brown MUDSTONE. (ST MAUGHANS FORMATION)
		12.50 12.50 - 12.80	D	50 (11,14/50 for 145mm)				
		13.40 13.40 - 13.69	D	50 (25 for 145mm/50 for 150mm)	13.69			End of borehole at 13.69 m

11 12 13 14 15 16 17 18 19 20

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was encountered at 1.0m depth during drilling. 3. Exploratory hole surveyed in (level and co-ordinates) on completion.

AGS