Report on Background Monitoring Data

NRS Bromsgrove Aggregates Limited

Sandy Lane Quarry
Sandy Lane
Wildmoor,
Bromsgrove,
Worcestershire,
B61 0QT.

WESTBURY ENVIRONMENTAL

PROVIDING SOLUTIONS, ENSURING COMPLIANCE

T 01952 879705 E info@westburyenv.co.uk

A Agriculture House, Southwater Way
Telford, Shropshire, TF3 4NR

W www.westburyenv.co.uk

Document Control Table

Project Reference	20/022e
Project Title	Sandy Lane Quarry: Waste Recovery Permit Application
Document Title	Report on Background Monitoring Data
Document Issue Date	28 May 2025
Client	NRS Bromsgrove Aggregates Limited
Status	Issued

Change log

Version	Changes	Produced by	Checked by	Date
1	Original Background Groundwater Data Review Report	Sian Wilcox	Tracey Westbury	28 May 2025

Contents

Tables

Drawings

Borehole Locations Drawing No. 2208/ESSD/02

Appendices

Appendix 1 Action in Case of Exceedance Procedure

1. Introduction

1.1. Westbury Environmental Limited have prepared this Report on Background Monitoring Data on behalf NRS Bromsgrove Aggregates Limited (Operator).

1.2. This Report on Background Monitoring Data has been prepared to support a new Bespoke Environmental Permit to allow the treatment of non-hazardous wastes and the deposit of waste for recovery, at Sandy Lane Quarry, Sandy Lane, Wildmoor, Bromsgrove, Worcestershire, B61 0QT (Site).

Contents of Report

1.3. This report refers to background monitoring data. In this instance the term background is used to describe the data obtained prior to the deposit of waste on the site.

1.4. This report contains a review of background monitoring data that has been collected for the site from July 2023 to April 2025. Background monitoring data will continue to be obtained until waste is deposited in the Site.

1.5. This report also outlines the setting of Action and Compliance Limits based on data collected at the time of the application being submitted.

2. Monitoring Infrastructure and Schedule

Monitoring Infrastructure

2.1. The groundwater monitoring infrastructure comprises four boreholes, see Drawing No. 2208/ESSD/02.

2.2. The boreholes were constructed in July 2023, and are located to the northwest (BH1), southwest (BH1), south (BH3) and southeast (BH4) of the site.

2.3. The four boreholes have all been constructed to facilitate the monitoring of both groundwater and gas.

2.4. Groundwater monitoring commenced in July 2023, with the latest groundwater monitoring results being obtained for April 2025. At the time of writing this report, ten sets of groundwater monitoring results had been obtained in total.

2.5. Gas monitoring commenced in April 2025 and will continue as per the monitoring schedule outlined in Table 2.1.

Monitoring Schedule

2.6. The following monitoring schedule for groundwater and gas has been proposed:

Table 2.1 Monitoring Schedule

Monitoring	Parameters	Frequency
Groundwater	Level, PH, conductivity, ammoniacal nitrogen, chloride, Chemical Oxygen Demand, Nitrate, Sulphate, Mercury, Nickel, Lead, benzene, arsenic.	Quarterly
	As quarterly suite plus total alkalinity, sodium, magnesium, potassium, copper, zinc, chromium, iron, manganese, cadmium, BTEX total petroleum hydrocarbons, polyaromatic hydrocarbons.	Annually
Gas	Methane, Carbon Dioxide, Oxygen	Quarterly

3. Background Groundwater Data Review

3.1. Groundwater monitoring has been undertaken on all four boreholes from July 2023 to April 2025 at the time of writing this report.

3.2. Monitoring undertaken in 2021 indicates that groundwater flows in a southeasterly direction. The borehole infrastructure at site provides two up gradient (BH1 and BH2), and two downgradient (BH3 and BH4) boreholes based on the recorded groundwater flow direction.

3.3. Recently a new contractor / lab has been used to complete the groundwater and gas monitoring effective April 2025.

3.4. Trends in the monitoring data are predominantly consistent over time and show only low concentrations of potentially polluting substances in the groundwater, with some exceptions of “spikes” in the data being observed.

3.5. There was a spike in the concentration of Nickel observed in BH1 and BH4 in July 2024, whereby Nickel was recorded higher than average at these monitoring points. The highest level was at BH1, with Nickel being recorded at 0.078mg/l. This spike was not observed in BH2 and BH3.

3.6. A higher than typical concentration in Copper was observed in BH3 in October 2023, with the concentration of Copper being recorded higher than average, at a concentration of 0.037mg/l. This spike was not observed in the other three monitoring locations, and the concentration of Copper returned to being consistent with the other three monitoring locations at the next monitoring event in June 2024.

3.7. A higher than typical concentration in Ammoniacal Nitrogen was observed in BH3 in October 2023, with the concentration of Ammoniacal Nitrogen being recorded at 1.32mg/l. This spike was not observed in the other three monitoring locations, and the concentration of Ammoniacal Nitrogen returned to being consistent with the other three monitoring locations at the next monitoring event in June 2024.

3.8. There does not appear to be any seasonal variation in the data trends, with concentrations of all parameters tested remaining consistent throughout the year.

3.9. Groundwater is being sampled successfully from all four monitoring locations at each monitoring event. There have been no recorded instances to date of a groundwater monitoring borehole being dry or inaccessible.

3.10. There has been a small increase in the concentrations of a majority of the parameters tested in the latest April 2025 monitoring results. It is considered that this may be as a result of a new lab. being employed to complete the groundwater testing.

3.11. The new lab. is reporting data to different limits of detection implements different limits of detection than the previous Lab. This will be resolved with them to ensure appropriate limits of detection are used.

4. Groundwater Quality Action and Compliance Limits

4.1. Groundwater Quality Compliance Limits were calculated for this Site within the Hydrogeological Risk Assessment (HRA), see Table 4.1 Groundwater Quality Action and Compliance Limits.

4.2. It is proposed that the Compliance Limits for Groundwater Quality will be re-calculated before the operator begins depositing waste on Site.

4.3. The Action Level for each parameter has been calculated at 70% of the total Compliance Limit.

Table 4.1 Groundwater Quality Action and Compliance Limits

Parameter	Action Limit	Compliance Limit (µg/l)
Mercury	0.007	0.01
Lead	0.14	0.2
Benzene	0.7	1
Benzo-a-pyrene	0.000035	0.00005

5. Gas Action and Compliance Limits

5.1. At the time of writing this report, there is not a sufficient quantity of background data for gas monitoring. As such, gas Compliance Limits cannot be calculated. Gas compliance limits will be proposed once additional data has been obtained.

6. Action to be taken in case of exceedance of limits

6.1. The Site will be operated in accordance with an Environmental Management System (EMS). The EMS includes a number of procedures including a monitoring procedure that outlines the Groundwater and Gas monitoring requirements for the Site and an Action in Case of Exceedance Procedure.

6.2. It is proposed that an exceedance of a compliance limit at one location and one monitoring event does not constitute a breach of compliance limit. Therefore, the following terms are applied to describe exceedances and breaches:

- Exceedance
    - A single instance of a parameter exceeding the Compliance Limit in one monitoring event. The exceedance is not observed at any other monitoring locations and is not repeated in consecutive monitoring events.
- Breach
    - A parameter is observed at a concentration above the set Compliance Limit at three monitoring locations and/or at one monitoring location for three consecutive monitoring events.

6.3. The action that will be taken following a Breach is outlined in the EMS, see Appendix 1 Action in Case of Exceedance Procedure.

Appendix 1

Action in Case of Exceedance Procedure

Procedure No. Action in Case of Exceedance Procedure **V.1, May 2025**

Purpose: To ensure that appropriate actions are taken in the event of a compliance limit exceedance or breach.

		RESPONSIBLE PERSON	RECORD
1.	This procedure outlines the actions to be taken in the event of the exceedance or breach of a Compliance Limit.		
2.	Compliance limits have been determined for the Site and are outlined in the Permit.	Site Manager	Environmental Permit
3.	Groundwater Level, Groundwater Quality and Gas monitoring data will be obtained on a Quarterly basis.	Site Manager	
4.	Groundwater and Gas monitoring data is recorded on a monitoring spreadsheet whereby exceedances and breaches of Compliance Limits can be observed and monitored.		
5.	Should monitoring data show a exceedance of a compliance limit then the first action to be taken will be that the transcription of the data from the lab report to the spreadsheet will be checked to ensure that the exceedance/breach is not appearing as a result of a data input error.		
6.	Should the data have been transcribed correctly, the lab. will be contacted to query the accuracy of the reported data.		
	Exceedance of Compliance Limit		
7.	An exceedance of a compliance limit is defined as a single instance of a testing parameter extending the compliance limit in one monitoring event under the following conditions: • The exceedance is not observed at any other monitoring locations. • The exceedance is not observed in consecutive monitoring events.	Site Manager	
8.	Any exceedance that meets these conditions is not considered a compliance breach and does not require the implementation of the Breach of Compliance Action Process Flow.	Site Manager	
	Breach of Compliance Limit		
9.	A breach of a compliance limit is defined as a parameter being observed at a concentration above that of the set Compliance Limit under the following conditions: • The compliance limit exceedance is observed at three monitoring locations *and/or* • The compliance limit breach is observed at one monitoring location for three consecutive monitoring events.	Site Manager	
10.	Should an event be observed that meets these conditions, it is considered that there is a Compliance Limit breach.		
	Breach of Compliance Action Process		
11.	If there is a Breach of a Compliance Limit, the following actions may be taken in accordance with the Compliance Action process Flow below: • Notify the EA within 24 hours. • Repeat monitoring within ASAP or at least within five working days when possible. • Implement a more frequent monitoring schedule.	Site Manager	Breach of Compliance Action Process Flow

- Investigate the Situation at Site.
- Implement actions based on Site investigation

Breach of Compliance Action Process Flow