

Natural Resources Wales
Waste and Industry Regulation Team
Maes Y Fynnon
Bangor
LL57 2DW

Tuesday, 16 April 2024

Ask for: Connall Darlington
Ref: ECL.10022.R01.001

Dear Mr Roberts,

Penhesgyn Gors Landfill Site – Q1 2024 Monitoring Report

This letter report accompanies the factual monitoring data that was collated during January to March of 2024. The scope of this quarterly monitoring report is as per Schedule 4 Table S4.1 of the site permit (reference EPR/KP3994FG).

Table 1 - Summary of Monitoring and Reporting Q1 2024

Parameter	Monitoring point reference	Reporting frequency	Period begins
Leachate levels As required by condition 3.5.1	Area 2 boreholes as identified on Drawing 5739.SURV.D03.	Every 12 months	1 January
Other leachate monitoring Parameters as required by condition 3.5.1	Area 3 boreholes as identified on Figure 2 of the Hydrogeological Risk Assessment Review fc37224 (June 2020).		
Landfill gas lateral migration Parameters as required by condition 3.5.1	Landfill gas monitoring boreholes as identified on Drawing 5739.SURV.D03.	Every 3 months	1 January, 1 April, 1 July, 1 October
Groundwater levels Parameters as required by condition 3.5.1	<ul style="list-style-type: none"> • BH01 to BH31 • BH50 to BH54 • BH1/88, BH2/88, and BH96B 	Every 12 months	1 January
Groundwater quality Parameters as required by condition 3.5.1	As identified on Figure 2 of the Hydrogeological Risk Assessment Review fc37224 (June 2020).	Every 6 months (for BH2/88, BH 8/88, BH22, BH96B)	

Parameter	Monitoring point reference	Reporting frequency	Period begins
Emissions to water Parameters as required by condition 3.5.1	SW9 and SW10	Every 12 months	1 January
Other surface water monitoring Parameters as required by condition 3.5.1	SW1 to SW10		

During the Q1 monitoring visit, a number of positions were inaccessible or otherwise unable to be monitored. Table 2 below describes those locations not monitored.

Table 2 - Monitoring Issues Encountered Q1 2024

Location	Description of issues encountered	Suggested actions
BH8/88	Boreholes on Marchynys land that are lost permanently.	Egniol to remove from drawings. Confirm with NRW that these positions will not be monitored (they should already be aware).
BH96/A		
BH96/B	Damaged casing, gas stop/gas tap missing, well flooded. Not monitored.	Client to repair ahead of next visit (scheduled for May 2024). If required Egniol and provide a quote and complete necessary repairs.
BH13	Well located in yard area, completely flooded. Not monitored.	Egniol to raise a schedule 5 form to notify NRW of the problems and that this borehole has not been monitored during Q1. Egniol suggests removing this well from the permit or redrilling in a more suitable location, with a raised cover.
BH52	Well headworks damaged, both metal surround and plastic monitoring pipe. No cap on the top of the well so surface water can flow into it. See attached photo.	Client to repair ahead of next monitoring visit in May 2024. Suggest removals of metal head works, cut off damaged part of plastic pipe, place new cap and install a new protective plastic surround.
SW6	Access to surface water sampling location is overgrown.	Client to cut back vegetation to create a safe access point for future sampling.
BH01	Stiff/Corroded gas taps that were difficult to open	Gas taps to be replaced by the client ahead of the next monitoring visit in May 2024.
BH07		
BH20		

Leachate levels, Table S3.1

Leachate dip level measurements are required annually for Area 2, which has no relevant action limits, and quarterly for Area 3, which has a limit of 2m above the cell base for all wells. Leachate levels were below the action limits for all wells except for MH3A, L13, and BHL nr 122. The results are included in full within this letter.

Leachate Quality, Table S3.8

Leachate quality monitoring is required annually for Area 2, and 6-monthly for Area 3. The monitoring requirements are listed in full in Schedule 3 Table S3.8. There are no relevant action limits for leachate quality, this is for monitoring purposes only. The leachate quality laboratory results are included in full within this letter.

Landfill Gas Composition in external monitoring boreholes, Table S3.6

Landfill perimeter gas monitoring is required quarterly. Relevant gas data was collected in all regulated landfill gas monitoring points and is enclosed in full within this letter.

Concentrations of methane were below the compliance limit of 1%v/v in all boreholes apart from BH14, BH17 and BH18, which reported methane concentrations of 11.2%, 15.9% and 3.0%v/v respectively. Concentrations of carbon dioxide were below the relevant action limits in all monitoring points except for boreholes BH6 and BH17, which reported carbon dioxide levels of 5.2%v/v (action limit: 2.8%v/v) and 4.9%v/v (action limit: 4.8%v/v) respectively.

Groundwater Dip Levels, Table S3.10

Groundwater levels are required to be monitored annually and are enclosed within this letter.

Groundwater Quality Tables S3.5 and S3.10

Groundwater quality is to be monitored annually for those boreholes as identified on Figure 2 Monitoring Locations, of the Hydrogeological Risk Assessment Review fc37224, and 6-monthly for the downgradient boreholes. The monitoring requirements are listed in full in Schedule 3 Tables S3.5 and S3.10. The results are enclosed within this letter.

Surface Water, Tables S3.3 and S3.9

The monitoring requirements of surface water quality are outlined in Schedule 3 Table S3.3 (Point source emissions to water) and Table S3.9 (Surface water – Other monitoring requirements). Concentrations of Chloride and Ammoniacal Nitrogen were below the relevant action limits at monitoring points SW9 and SW10. Other analytes have no related action limits and are for monitoring purposes only. The results are enclosed in full within this letter.

If you wish to discuss the submitted monitoring results, please do not hesitate to contact us.

Yours faithfully,



Connall Darlington
Graduate Geoenvironmental Consultant
for Egniol Consulting Ltd

Reviewed by,



Emma Small
Associate Director

Enclosed;

Data

Table S3.1 10022 Penhesgyn Q1 Egniol Leachate Dip Levels
Table S3.6 10022 Penhesgyn Q1 Egniol Raw Perimeter Gas Data
Table S3.9 10022 Penhesgyn Q1 Egniol Surface Water Monitoring
Table S3.10 10022 Penhesgyn Q1 Egniol Groundwater Dip Levels

Tables S3.3, S3.8, S3.9 and S3.10 10022 Penhesgyn Q1 i2Analytical Laboratory Test Data

Drawings

Egniol 5379.SURV.D03.B Monitoring Locations
Firth Consultants fc37224 Figure 2 Monitoring Locations