Technical design note

Project name	Land Adjacent Haldens Parkway, Thrapston, Northamptonshire		
Design note title	Site Odour Management Plan		
Document reference	Report Reference 23880-HYD-XX-XX-RP-GE-5005-S1-P01		
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Revision	02		
Date	8 August 2023	Approved	✓

1. Context and Purpose

This document concerns the issue of odour nuisance associated with activities covered by a Deposit for Recovery (DfR) activity and MPP Deployment on land at Thrapston, Northamptonshire. The document has been prepared to support a DfR permit application by Mick George Limited as earthworks contractor for a 75ha development located to the north of the A14. More specifically it is presented in response to Question 3b of Application Form B4.

The project comprises the development of a logistical warehousing facility on a site that includes the Rectory Farm Landfill, which was a sand gravel quarry restored to agriculture by landfilling with inert waste.

The project will include creating development plateau along with landscaped screening bunds, all in accordance with planning conditions imposed by the Local Planning Authority (LPA).

It is the re-use of the waste materials from the landfill to construct the landscape bunds that constitutes Deposit for Recovery aspects of the proposed earthworks

This document presents an assessment of the risk and specifies mitigation measures to reduce potential the effects to acceptably low levels.

2. Site Operations

As noted, the project will include the construction of landscaped bunds, mainly using site-won material from the inert waste Rectory Farm landfill. The waste materials will be excavated, screened and treated under a Mobile Plant Permit. Material not suitable for re-use will be disposed of to landfill.

The material will be assessed for suitability either treated or untreated e.g., with the addition of lime or as it is. To construct the bunds, the recovered waste will be placed in layers once and engineered to form a homogenous material to construct the core of the bund. .

Despite its inert nature, excavation of the waste potentially gives rise to malodorous emissions which is the issue addressed by this Odour Management Plan.

3. Materials Transfer and Reception

Incoming vehicles to the treatment area will be met by operatives who direct the vehicle to a depositing area to offload the material upon which it will be inspected. All site staff will be briefed

regards visual and olfactory indicators for acceptable and non-acceptable waste. The initial deposition area will be separate to the final one to enable segregating of non-suitable materials. Prior to excavation extensive intrusive investigation with chemical analysis will have been conducted to classify wastes for re-use compliance. There will also be a regular confirmatory testing once placed along with ongoing monitoring as per the Remediation Strategy and Monitoring Plan.

4. Materials Placement

The construction derived materials (CDM) will be mixed with non-construction derived material (NCDM) material and placed in accordance with the Earthworks Specification and the Geotechnical Design Report.

5. Odour Emissions

5.1 Sources

The nature of the materials being used are such that some odour is inevitable, therefore, the mitigation and minimisation and monitoring will be of critical importance. The risk of odours at the point of deposition is considered reduced because the initial excavation and stabilisation of the materials will be conducted in another area under a separate permit with its own mitigation for odour.

5.2 Other influences

The main factor is wind direction and the prevailing winds am velocity will carry odours toward receptors with the potential to cause nuisance. Both will be taken into account during monitoring.

Hot weather as well as the stabilisation process may increase evaporation rate of the moisture within materials giving rise to produce malodorous emissions, whilst minor amounts of 'unsuitable materials' that contain more volatile compounds that emit unexpected odours may be encountered.

These risks and mitigation measures are evaluated in Table 5.1 below.

Table 5.1: Odour risks and mitigation

Source	Exacerbation factor	Mitigation
Inert Wastes (including minor amounts of non-compliant, unsuitable materials	Proximity to receptors	» The materials will have been assessed or treated under the producing site's Mobile Plant Permit activities for suitability prior to dispatch. » Continual review standoff of spreading in proximity to potentially sensitive receptors. » Prompt placement including stabilisation/ solidification » Provision will be made for odour suppressant rotary atomiser system (rotary fan and adjustable dosing system to cover a greater area) these will be mobile to enable a steady mist of odour suppression product to flow over the active operational areas as required. » There will be a "Stop review" approach to complaints where by, verified complaints of nuisance odours will trigger a suspension of the works to investigate and assess the best way to stop odours and prevent re-occurrence
	Hot Weather	» Prompt placement which covers the material. » Minimal storage of untreated materials. » In the event of unsuitable weather conditions (prolonged heavy rain) or any detection of odours offsite, the stop review will be triggered. » Minimise the size of the stockpiles near to the deposition area. » Utilisation of odour neutraliser sprays as required.
	Wind	» Weather monitoring forecasting will allow where necessary scaling down of works when the wind is blowing in the direction of receptors. » Utilisation of odour neutraliser sprays as required
Odours emitted from on-site transport	Duration of on-site waste handling	» Site vehicle and plant to be well service and maintained with daily inspections to keep breakdowns to a minimum and avoid any potentially malodourous materials standing for too long. » Material transported in suitable vehicles and not overloaded. » Site roads will be maintained, and vehicle loaded, and speed limits set to avoid spillage » Material will not be stored in dumpers. » Materials entering the permitted area will be treated and placed in the shortest practicable timeframe.
Odours emitted from placement area.	Working area.	» Works will be scheduled to avoid where possible double handling. » Materials to be placed in 'daily' allotted recovery areas and treated as far as practicable the same day. » Minimise the size of the active restoration area. » Provision will be made for a live head odour system (fan and adjustable dosing system which covers a greater area) will be employed upwind of the active incorporation areas to enable a steady mist of odour suppression product to flow over the active incorporation area as required

6. Receptors

Potential receptors for odour are listed in Table 6.1 below and shown on Drawing 23880-HYD-XX-ZZ-DR-GE-1022 attached at 8.

Ref	Receptor	Shortest distance to installation boundary[1]	Direction	Receptor Type
1	The Bungalow	50	W	Residential property
2	Holdens Parkway	75	W	Commercial units
3	Castle Manor Farm	100	S	Residential property
4	Rectory Farmhouse	100	S	Residential property

[1] *From landfill excavation area*

7. Monitoring

7.1 On site and Boundary Monitoring

Daily monitoring will be carried out and recorded on an inspection sheet to include records of time weather, wind direction etc. In addition, regular points will be monitored near, and downwind of the operation and at the site boundary using pre-agreed olfactory indicators. Operatives will stand at each predetermined point and record presence or absence of observable odour.

Mobile windsocks or weather vanes will be located at the operational areas and moved as works progress.

7.2 At Off-Site Receptors

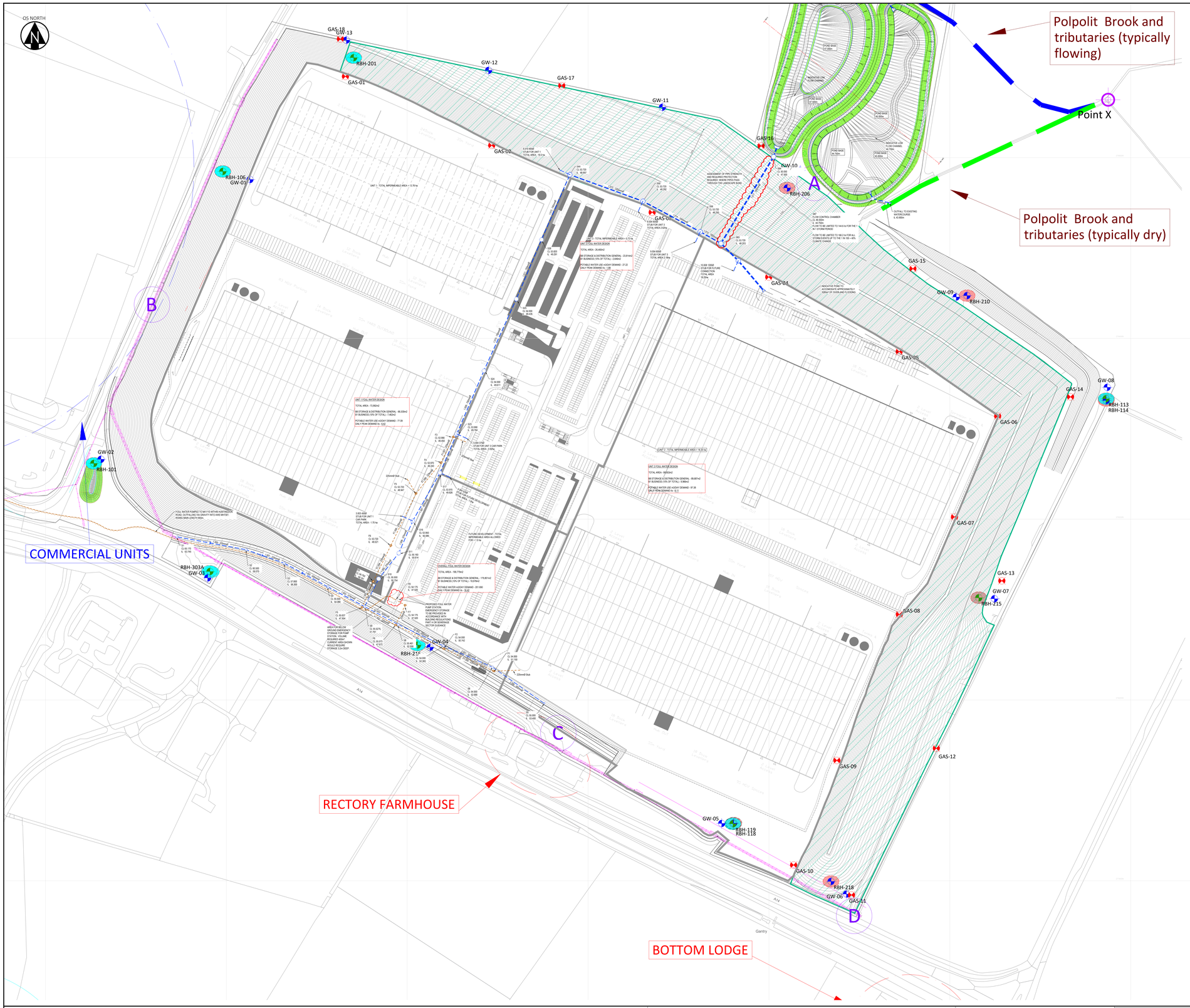
Offsite receptor monitoring points will be monitored and findings recorded. Monitoring will be carried out daily, when the wind changes direction and as far as practicable immediately following a complaint. Monitoring locations are shown on Drawing 23880-HYD-XX-ZZ-DR-GE-1022 and are discussed in Section 2.1 of Technical Design Note 23880-HYD-XX-XX-RP-GE-5007 (Monitoring Plan).

Periodically, monitoring will be carried out by an individual who isn't constantly on site and exposed to the odours generated by these operations and as such will not be desensitized by regular exposure.

8. Dealing with complaints

Provision for complaints processing will be in the form a contact numbers on signage and liaison with the public and local authorities. All complaints relating to odour will be recorded in the site diary together with a record of action taken to investigate and mitigate odour release at source and actions to prevent re-occurrence.

Appendix A Monitoring Plan



Surface Water Monitoring Point			
Location	X	Y	Zone
Point X	502375	278664	Polpolit Brook

Nuisance Receptors Monioring Point			
Location	Provisional x	Provisional y	Receptor
A	502050	278570	General receptor
B	501320	278435	Haldens Parkway Industrial Estate
C	501765	277965	Rectory Farmhouse
D	502095	277760	Bottom Lodge

Shallow Gas Monitoring Wells			
Location	Provisional x	Provisional y	Zone
GAS01	501532	278690	DfR Bund - Development Side
GAS02	501693	278614	DfR Bund - Development Side
GAS03	501871	278540	DfR Bund - Development Side
GAS04	502000	278468	DfR Bund - Development Side
GAS05	502144	278385	DfR Bund - Development Side
GAS06	502253	278314	DfR Bund - Development Side
GAS07	502205	278203	DfR Bund - Development Side
GAS08	502144	278095	DfR Bund - Development Side
GAS09	502075	277933	DfR Bund - Development Side
GAS10	502027	277817	DfR Bund - Development Side
GAS11	502091	277784	DfR Bund - Field Side
GAS12	502185	277947	DfR Bund - Field Side
GAS13	502258	278132	DfR Bund - Field Side
GAS14	502333	278335	DfR Bund - Field Side
GAS15	502159	278477	DfR Bund - Field Side
GAS16	501991	278613	DfR Bund - Field Side
GAS17	501771	278680	DfR Bund - Field Side
GAS18	501526	278731	DfR Bund - Field Side

Groundwater Monitoring Wells				
Location	Provisional x	Provisional y	Orientation	Anticipated Strata
GW01	501426	278576	Up-gradient	Cornbrash Formation
GW02	501261	278266	Up-gradient	Cornbrash Formation
GW03	501379	278135	Up-gradient	Cornbrash Formation
GW04	501625	278058	Up-gradient	Cornbrash Formation
GW05	501948	277863	Up-gradient	Cornbrash Formation
GW06	502086	277785	Up-gradient	Cornbrash Formation
GW07	502249	278112	Cross-gradient	Blisworth Limestone
GW08	502374	278346	Up-gradient	Cornbrash Formation
GW09	502207	278446	Down-gradient	Blisworth Limestone
GW10	502035	278586	Down-gradient	Blisworth Limestone
GW11	501882	278656	Down-gradient	Cornbrash Formation
GW12	501690	278697	Down-gradient	Cornbrash Formation
GW13	501533	278730	Cross-gradient	Cornbrash Formation

The current development plan indicates that the following existing groundwater monitoring points may potentially serviceable thoughout the development process. Preference is to be given to retaining these locations instead of constructing the associated new monitoring point.

Location		
Existing	Proposed	Screened Strata
RBH-113	GW08	Cornbrash Formation
RBH-119	GW05	Cornbrash Formation
RBH-303A	GW03	Cornbrash Formation
RBH-101	GW02	Cornbrash Formation

KEY

Existing Installation (for historical trends at equivalent locations to post DfR monitoring plan)

Cornbrash Limestone Formation

Blisworth Limestone Formation

Proposed Monitoring Plan

GAS-17 Shallow gas monitoring well (installed above groundwater level)

GW-13 Groundwater Monitoring Well (installed in either Blisworth Limestone or Cornbrash Formation as appropriate)

Point X Surface water monitoring point (Polopit Brook, most up-stream location where flows are observed)

A Nuisance Receptor Monitoring Point

DfR Area

KEY:
- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED FOUL WATER DRAINAGE
- PROPOSED FOUL RISING MAIN
- PROPOSED HEADWALL - SIZE T.B.C
- EXISTING ANGLIAN WATER FOUL WATER SEWER

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

3. This drawing has been based on the following drawings and information:
HRT-php-01-XX-DR-A-4432-012-P18
ACAD-LTP-BWB-DGT-XX-M3-C-0601-S1-P1_Basins Proposed Levels-Model
x-332210963-STN-HDG-SW-M2-CD-0501_On-Site FW-SW

REV						
P03	Key amended					
	LW	09/08/23	EC	09/08/23	EC	09/08/23
P02	22/06/23					
	LW	22/06/23	AB	22/06/23	AB	22/06/23
P01	FIRST ISSUE					
	LH	22/06/23	LW	22/06/23	EC	22/06/23
REV	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT
MICK GEORGE LIMITED

PROJECT
LAND ADJACENT HALDEN PARKWAY THRAPSTON

TITLE
DfR Proposed
Environmental Monitoring Plan

HYDROCK PROJECT NO. 23880

SCALE @ A0 1:1500

PURPOSE OF ISSUE SUITABLE FOR INFORMATION

STATUS S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 23880-HYD-XX-ZZ-DR-GE-1022

REVISION P03