



GROUNDTECH
CONSULTING

HOLCHEM, PILSWORTH INDUSTRIAL ESTATE

MINERAL RESOURCE ASSESSMENT

HOLCHEM LABORATORIES LIMITED

OCTOBER 2023

Document Control Form	
PROJECT	HOLCHEM, PILSWORTH INDUSTRIAL ESTATE
REPORT NAME	MINERAL RESOURCE ASSESSMENT
REPORT REFERENCE	GRO-22216-4796
STATUS	FINAL
ISSUE DATE	29 th SEPTEMBER 2022
REVISION	
CLIENT	HOLCHEM LABORATORIES LTD
CLIENT CONTACT	-
For and Behalf of Groundtech Consulting	
SIGNATURE	
AUTHOR	Thomas Beach-Bruckner BSc (Hons) FGS
SIGNATURE	
REVIEWED	James Doyle BSc (Hons) CGeol FGS

1.0 Introduction

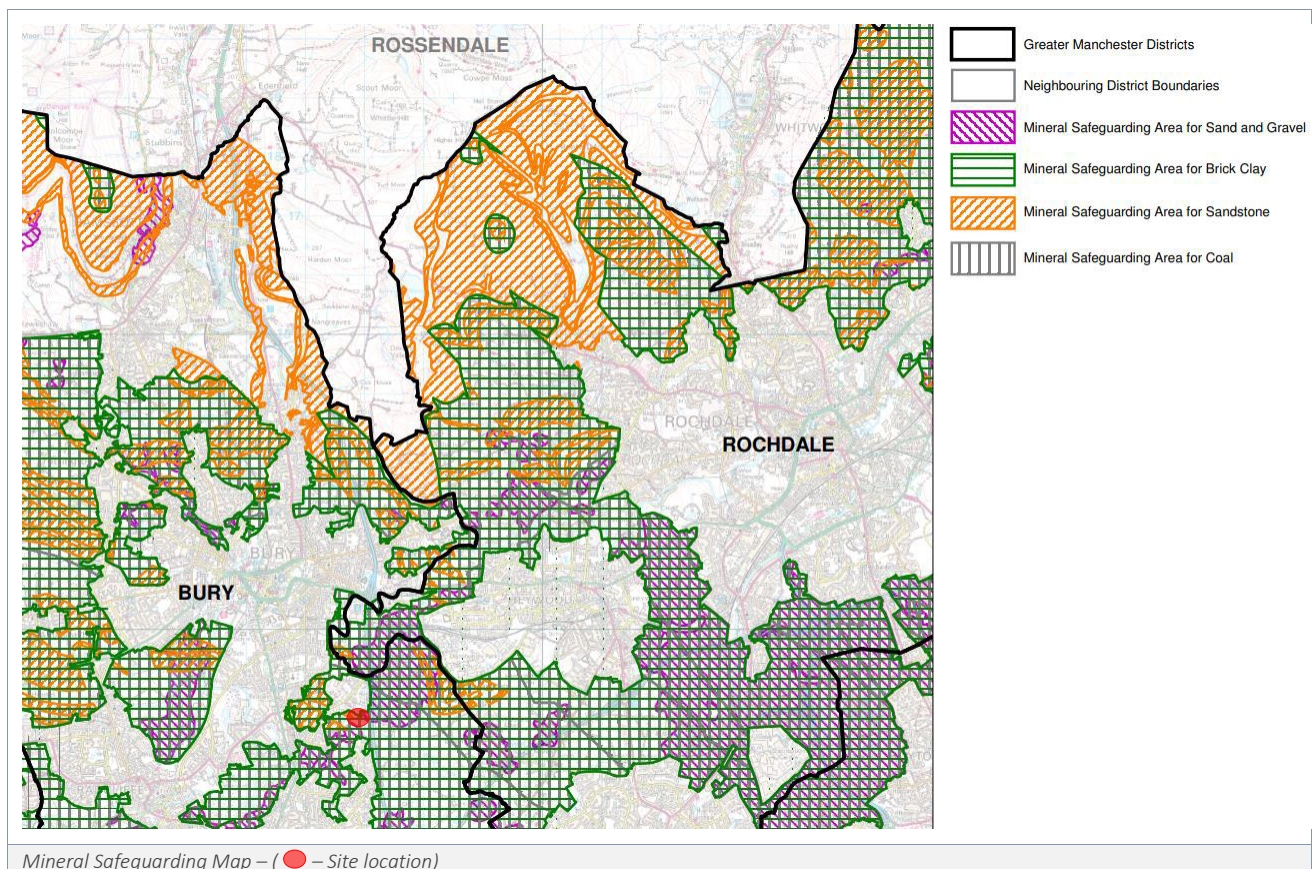
Groundtech Consulting have been appointed by Holchem Laboratories Limited to comment on the suitability of a proposed commercial development at Pilsworth Industrial Estate in Bury. The site is located within a Minerals Safeguarding Area. Online BGS records indicate the site is underlain by bedrock of the Pennine Lower Coal Measures Formation, overlain predominantly with superficial Hummocky (Moundy) Glacial Deposits, with a small outcrop of Head deposits recorded to the south.

The client is proposing to develop the site with a commercial end use comprising a warehouse extension onto the main laboratory. This would render the potential Sand and Gravel deposit reserves beneath the site unavailable.

1.1 National Minerals Policy

National Planning Policy requires Mineral Planning Authorities to safeguard mineral resources that are or may become of economic importance by including them in a Mineral Safeguarding Area in order to ensure mineral resources are adequately and effectively considered in land use planning decisions, to ensure that they are not needlessly sterilised by non-mineral development.

The proposed development site is indicated as being located within a Mineral Safeguarding Area, with the main mineral of concern being the Sand and Gravel.



1.2 Local Policy

Holchem Laboratories Limited are seeking to obtain planning permission for a commercial development on the site. The site is identified in The Greater Manchester Joint Minerals Plan (GMJMP) as a mineral safeguarding area for Brick clay, Shallow coal and superficial Sand and Gravel. In line with Greater Manchester Combined Authorities Mineral Plan, a Mineral Assessment is required to qualify the magnitude of mineral sterilisation and consider whether the prior extraction of the minerals is feasible and environmentally acceptable.

2.0 Site Setting

The following sources of information have been used in the assessment:

- 1:50,000 Scale Geological Sheet 85, Manchester - Solid and Drift Edition.
- Brian Clancy Higby Partnership Ground Investigation Report (ref: 1404-4246 31st May 2014)
- Groundtech Consulting Ltd Geo-environmental Appraisal (ref: GRO-22216-3751 16th September 2022)
- BGS Borehole Database.
- Online BGS Mineral Resource Mapping at 1:10,000.

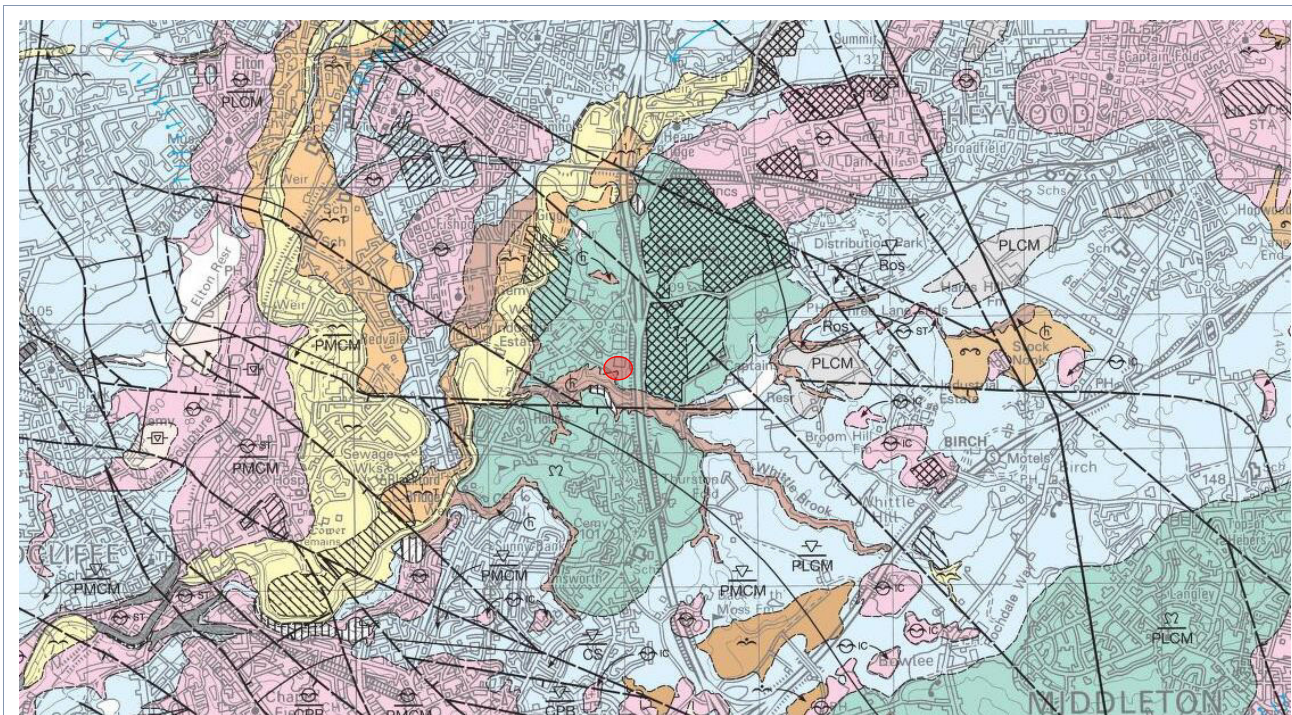
2.1 Geology

Superficial Deposits

The site is indicated to be predominantly underlain by superficial Hummocky (Moundy) Glacial Deposits which characteristically comprise clayey sand and gravel. To the utmost southern portion of the site, superficial Head deposits are also recorded, comprised of poorly sorted clays, silts, sands and gravels.

Solid Geology

The solid geology is the Pennine Lower Coal Measures Formation consisting of Mudstone, Siltstone, Sandstone and seams of Coal.



Geological Map – Solid Geology

Previous investigations undertaken by Brian Clancy Higby Partnership indicate findings to be generally in accordance with BGS records, indicating the site to be underlain by Glacial Clay, comprising firm to stiff brown silty sandy Clay interbedded with medium dense gravelly coarse Sand to depths greater than 12.0m bgl.

Geological Faults

The nearest recorded geological fault is situated circa 195m to the south, with the downthrow to the north.

BGS Records

There are no public BGS records within 250m of the site.

2.2 *Hydrogeology*

The superficial Glacial and Head deposits are classified by the Environment Agency as a Secondary A Aquifer.

The site is indicated to not lie within a Source Protection Zone.

3.0 Ground Model

Made Ground

Made Ground was encountered beneath the site to depths of between 2.50m and 6.50m bgl during the Groundtech Consulting Investigation carried out in June 2022. The Made Ground recorded was variable in composition, but generally was comprised of dark brown gravelly clayey sand with low cobble content and firm brown sandy silty clay with gravel of mixed lithology including sandstone, siltstone and brick.

Superficial Deposits

The natural strata encountered generally confirmed the published geological records. Two main natural stratification were encountered during the investigation, and are described below:

- *Firm to stiff brown sandy gravelly CLAY was encountered between depths of 4.00m to 20.00m bgl in all of the borehole locations across the site.*
- *Loose to medium dense clayey gravelly SAND was encountered to maximum depths of between 10.50m to 15.70m bgl in BH4, BH5 and BH7.*

Bedrock

Bedrock as not encountered in any of the exploratory holes.

Groundwater

Groundwater was encountered in all exploratory holes during the Ground Investigation, ranging from depths of 7.0 to 10.0m bgl.

Contamination

No visual or olfactory evidence of contamination was noted during the investigation.

Exploratory hole logs are presented at the rear of the document.

4.0 Assessment

4.1 Economic Importance of the Resource

Whilst not suitable for the extraction of Brick Clay and Coal, the superficial strata underlying the site is potentially suitable for extraction of deposits of Sand and Gravel.

The recorded gravelly Sand is relatively consistent with thicknesses of between 10.50m and 15.70m being recorded in the boreholes. However, bands of sandy gravelly Clay are recorded interbedded with the Sand, with no definitive base encountered.

The site covers an area of 0.5 hectares and with an assumed extraction depth of 15.70m this equates to a possible extraction volume of 78,500m³ of sand and gravel. This assumes all the sand and gravel deposits in the upper 15.70m is of a suitable grading and composition which, given the interbedded clay and limited sand presence in this stratum, locally appears to be unlikely. The Sand and Gravel could extend to a depth of greater than 15.70m as the bedrock was not encountered, however as recorded on the logs, this seems to grade into a gravelly clay, more representative of a glacial till deposit, unsuitable for mineral extraction.

Due to not encountering any recorded Brick Clay and Coal during the site investigations, we can safely discount the extraction of those minerals.

4.2 Surrounding Area

The site lies just within the inside of the southern boundary of the Minerals Safeguarding Area, which extends to the north, west and east and follows the deposition areas of the Hummocky Glacial Deposits. Significant glacial deposits exist beyond this immediate area to the north and the mineral resource is not therefore restricted to this site or its immediate environs.

4.3 Greater Manchester Joint Minerals Plan 2013-28, 2013

At the heart of the National Planning Policy Framework (NPPF) is a presumption in favour of sustainable development. This therefore requires that policies in local plans should follow this approach. The GMJMP is therefore based on the principle of sustainable development and this is reflected in the Strategic Objectives, and the policies that seek sustainable solutions.

The strategic objectives set out in the GMJMP are underpinned by a desire to manage mineral extraction and supply according to the principles of sustainable development and as far as mineral extraction is concerned some of those general main minerals strategic objectives are set out below:

1. *To protect local communities and the natural and built environment including landscape from the impacts of minerals development. To enhance these assets and ensure the achievement of effective restoration (reclamation) recognising the potential positive impacts on biodiversity (6) once operations have ceased.*
2. *To safeguard potentially economically viable mineral resources and infrastructure from sterilisation, protect minerals related infrastructure and encourage the appropriate use of high quality materials.*
3. *To promote, where practicable, the sustainable transport of minerals.*
4. *To seek to provide a steady and adequate supply of minerals to meet Greater Manchester's needs through:*

- *Contributing to the sub-regional apportionment of aggregates, including maintenance of appropriate landbanks;*
 - *Identifying and protecting existing non-aggregate minerals; and*
 - *Facilitating the re-use of secondary and recycled aggregates.*
5. *To support the development of local energy minerals(excluding peat) where required to supplement the energy mix nationally and regionally.*

4.4 Policy 8 – Prior extraction of Mineral Resources

Policy 8 of the GMJMP states:

All non-mineral development proposals within the Mineral Safeguarding Area should extract any viable mineral resources present in advance of construction. Proposals for prior extraction of minerals will be permitted provided the proposal is in accordance with Policy 2 Key Planning and Environmental Criteria.

Proposals for non-mineral development within the Mineral Safeguarding Areas that do not allow for the prior extraction of minerals will only be permitted where:

1. *The need for the development outweighs the need to extract the mineral; or*
2. *It can be clearly demonstrated that it is not environmentally acceptable or economically viable to extract the mineral prior to non-mineral development taking place; or*
3. *It can be clearly demonstrated that the mineral is either not present or of no economic value or too deep to extract in relation to the proposed development; or*
4. *The development is limited or temporary and would not prevent minerals extraction taking place in the future.*

Exemptions to this policy apply to the following:

- *Applications for Householder development*
- *Applications for extension to commercial developments similar in scale to householder developments*
- *Applications for Conservation Area Consent*
- *Applications for Listed Buildings Consent*
- *Applications for Advertisement Consent*
- *Applications for Tree Works*
- *Prior notifications (telecommunications; forestry' agriculture; demolition); or*
- *Certificates of Lawfulness of Existing or Proposed Use or Development (CLEUDs and CLOPUDs)*

5.0 Conclusion

When assessed against Policy 8 of the GMJMP, the small tonnage of Sand identified, which is mixed in with bands of clay, does not constitute an economically viable deposit. Additionally, the depth to any viable Sand and Gravel deposits recorded underlying the proposed development might be considered too deep to extract particularly adjacent to an existing laboratory which uses equipment with low tolerances.

Policy 8 also states that exemptions to the prior extraction of any viable mineral resources include the extension onto existing commercial developments, which is what the proposed development falls into.

Separately, the costs associated with obtaining permission and the relevant permits to allow extraction of the deposits are such that in each case, a threshold value of the deposit must be achieved to offset the initial costs.

When viewed outside of the isolation of the site boundary for this proposal, the inclusion of this resource in a potential larger minerals site is also not viable, for the following reasons:

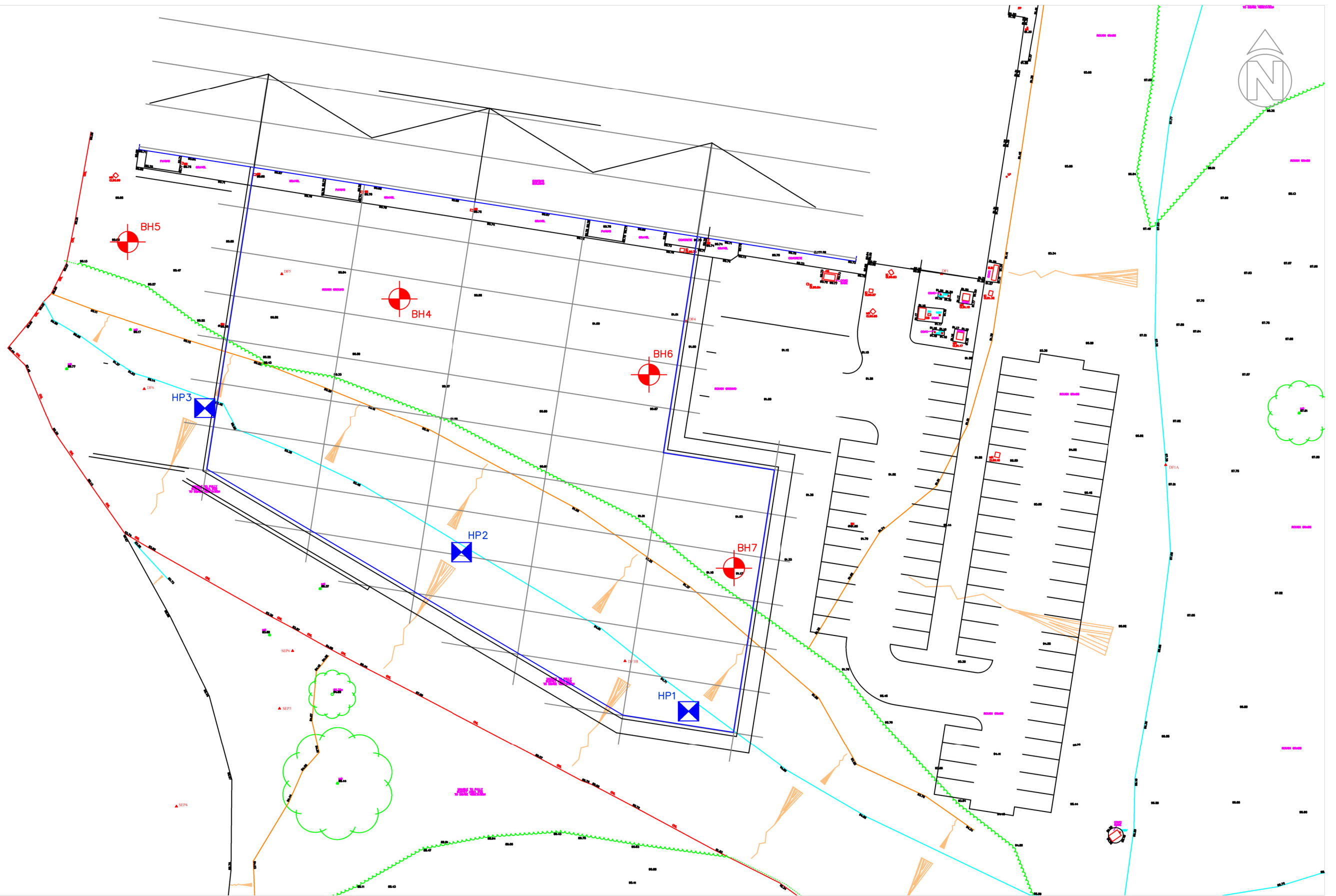
- *It is considered that the use of the site for large scale mineral extraction would have a significant impact on the local area which must be taken into account when an assessment is made to see if the site is practically suitable for mineral extraction. The immediate retail park will be affected and present access routes not suitable*
- *Environmental impacts (noise, dust and increased traffic) must be accounted for when considering any proposed mineral extraction and assessing whether other sites existing or new would be more suitable.*
- *The nature of the clayey sand deposits, along with frequent clay bands recorded, require a washing plant to remove the 'fines' fraction of the sand (<0.063mm) in order to meet national specifications for building materials. Construction of a separate silt lagoon or silting into a flooded quarry void results in very long term liabilities for restoration and after use, and is not conducive to follow-on build development, as would be the case here. Additionally, the space required for a designated washing area and/or silt lagoon is not feasible on site.*
- *The investment required to purchase or hire a washing plant, the associated infrastructure costs, and, when assessed against Policy 8 of the GRJMP, the environmental impacts in terms of noise, traffic movements etc., also serve to make minerals development for a small resource in a commercial location both unviable and likely to cause an unacceptable adverse impact to the environment and local amenity.*
- *Lastly, due to the adjacent watercourse (Hollins Brook) lying approximately c.130m to the south of the site, the brook will most likely be negatively affected by any potential mineral extraction activities that could take place.*



Plans



GROUNDTECH CONSULTING	CLIENT HOLCHEM LABORATORIES LTD	DATE SEPTEMBER 2022				Status		Notes SITE LOCATION
	PROJECT TITLE HOLCHEM, PILSWORTH IND ESTATE	SCALE NTS				Preliminary		
	PLAN TITLE PROJECT LOCATION PLAN	PLAN NUMBER GRO-22216-P01				Draft		
						Issued		
						For Comment		
				Rev.	Details	Date	Approved	



Exploratory Hole Logs



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Borehole Log

Borehole No.

BH4

Sheet 1 of 2

Project Name: HOLCHEM, PILSWORTH IND
ESTATE

Project No.
GRO-22216

Co-ords: -

Hole Type
CP

Location: BURY

Level:

Scale
1:50

Client: BRIAN CLANCY HIGBY PARTNERSHIP

Dates: 15/06/2022 - 16/06/2022

Logged By
JOD

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.50	D		0.50			MADE GROUND: Sandy cobbles of sandstone. Sand is fine to coarse.	
		0.50	ES		0.70			MADE GROUND: Firm brown sandy silty clay. Sand is fine to coarse.	
		1.00	D					MADE GROUND: Dark brown clayey slightly gravelly coarse sand. Gravel is rounded to subrounded coarse of mudstone.	1
		1.20		N=23 (1,2/5,7,4,7)					
		1.50	ES						
		2.00		N=11 (1,2/2,3,2,4)					2
		2.60	D		2.50			Medium dense brown clayey gravelly fine to coarse SAND. Gravel is subrounded to rounded fine of mudstone.	
		3.00	ES						3
		3.00		N=11 (1,1/2,2,3,4)					
		3.00 - 3.45	B						
		4.00		N=13 (1,2/3,3,3,4)					4
		5.00		N=17 (2,3/4,4,4,5)	5.10			Firm to medium strength grey brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is rounded to subrounded fine of mudstone.	5
		5.00 - 5.45	B						
		6.00 - 6.45	U						6
		6.50	D		6.40			Medium dense grey silty gravelly fine to coarse SAND. Sand is fine to coarse. Gravel is rounded to subrounded fine of mudstone and siltstone.	7
		7.00		N=18 (1,3/4,4,4,6)				Firm high strength dark brown gravelly sandy CLAY. Sand is fine. Gravel is subrounded to rounded fine mudstone and siltstone.	8
		7.00 - 7.45	B						
		8.50 - 8.95	U		7.80				
		9.00	D		9.00			Firm dark brown sandy slightly gravelly silty CLAY. Sand is fine. Gravel is subrounded to rounded fine of mudstone.	9
		10.00 - 10.45	B		10.00				10

Continued on next sheet

Remarks

1. Location scanned for utilities. 2. Hand dug inspection pit to 1.2m bgl. 3. Groundwater encountered at 7.0m bgl. 4. Standpipe installed to 3.0m bgl: 1.0m plain, 2.0m slotted.





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Borehole Log

Borehole No.

BH4

Sheet 2 of 2

Project Name: HOLCHEM, PILSWORTH IND
ESTATE

Project No.
GRO-22216

Co-ords: -

Hole Type
CP

Location: BURY

Level:

Scale
1:50

Client: BRIAN CLANCY HIGBY PARTNERSHIP

Dates: 15/06/2022 - 16/06/2022

Logged By
JOD

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		11.50 - 11.95	U					Firm brown silty CLAY.	11
								<u>High strength at 11.5m bgl</u>	12
		13.00 13.00 - 13.45	B	N=17 (2,3/3,4,4,6)	13.00			Medium dense fine brown clayey silty SAND.	13
		14.50		N=26 (3,3/4,5,7,10)					14
		15.50 - 15.95	B		15.70				15
		17.00 17.00 - 17.45	B	N=36 (4,5/5,7,10,14)	17.00			Firm brown sandy gravelly CLAY. Sand is fine. Gravel is rounded to subrounded fine of mixed lithologies including siltstone and sandstone.	16
		18.50		N=50 (4,5/10,14,16,10)	18.50			Firm to stiff brown sandy gravelly CLAY. Sand is fine. Gravel is rounded to subrounded fine to coarse of mixed lithologies including siltstone and sandstone.	17
		19.50		N=43 (5,4/6,10,10,17)				Firm to stiff brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to rounded coarse of mixed lithologies including siltstone and sandstone.	18
					20.00			End of borehole at 20.00 m	19
									20

Remarks

1. Location scanned for utilities. 2. Hand dug inspection pit to 1.2m bgl. 3. Groundwater encountered at 7.0m bgl. 4. Standpipe installed to 3.0m bgl: 1.0m plain, 2.0m slotted.





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Borehole Log

Borehole No.

BH5

Sheet 1 of 2

Project Name: HOLCHEM, PILSWORTH IND ESTATE

Project No.
GRO-22216

Co-ords: -

Hole Type
CP

Location: BURY

Level:

Scale
1:50

Client: BRIAN CLANCY HIGBY PARTNERSHIP

Dates: 14/06/2022 - 15/06/2022

Logged By
JOD

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.70	B		0.30			MADE GROUND: Brown clayey sandy topsoil. Sand is fine.	
		0.50	ES		0.70			MADE GROUND: Brown clayey gravelly fine to coarse sand with low cobble content. Gravel is rounded to subrounded fine to coarse of mixed lithologies including sandstone and brick.	
		1.20	D					MADE GROUND: Firm brown silty sandy clay. Sand is fine.	1
		1.20		N=12 (2,1/3,2,3,4)					
		1.20 - 1.65	B						
		2.00	ES						2
		2.00		N=6 (1,1/2,1,2,1)					
		2.00 - 2.45	B						
		3.00	ES		3.10			Firm to stiff high strength brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of siltstone.	3
		3.00		N=15 (2,2/3,4,4,4)					
		3.00 - 3.45	B						
		4.00	ES					Firm brown silty CLAY.	4
		4.00 - 4.45	U						
		4.50	D						
		5.00		N=14 (2,3/3,3,4,4)					5
		5.00 - 5.45	B						
		6.00		N=10 (1,2/2,2,3,3)	5.70				6
		6.00 - 6.45	B						
		7.00		N=10 (1,1/1,2,3,4)					7
		7.50 - 7.95	B		7.50			Firm brown silty slightly gravelly CLAY. Gravel is angular to subangular coarse of mixed lithologies including siltstone and sandstone.	8
		9.00		N=17 (3,3/3,4,4,6)	8.70			Firm to stiff brown sandy CLAY. Sand is fine.	9
		9.00 - 9.45	B		9.45			Firm brown gravelly CLAY with sand bands. Sand is fine. Gravel is rounded to subrounded fine to coarse of mixed lithologies including	10

Continued on next sheet

Remarks

1. Location scanned for utilities. 2. Hand dug inspection pit to 1.2m bgl. 3. Groundwater encountered at 8.0m bgl. 4. Standpipe installed to 7.0m bgl: 3.0m plain, 4.0m slotted.





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Borehole Log

Borehole No.

BH5

Sheet 2 of 2

Project Name: HOLCHEM, PILSWORTH IND
ESTATE

Project No.
GRO-22216

Co-ords: -

Hole Type
CP

Location: BURY

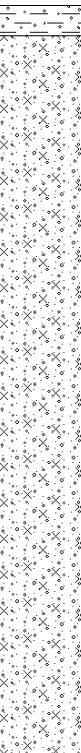
Level:

Scale
1:50

Client: BRIAN CLANCY HIGBY PARTNERSHIP

Dates: 14/06/2022 - 15/06/2022

Logged By
JOD

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 10.50 - 10.95	B	N=17 (3,3/4,4,4,5)	10.20			siltstone and sandstone. Medium dense grey silty gravelly fine to coarse SAND. Sand is fine to coarse. Gravel is rounded to subrounded fine of mudstone and siltstone.	
		12.00 12.00 - 12.45	B	N=22 (2,2/3,4,5,10)					11
		13.50 13.50 - 13.95	B	N=25 (4,4/5,5,7,8)					12
		15.00		N=28 (4,4/5,7,8,8)	15.00				13
								End of borehole at 15.00 m	14
									15
									16
									17
									18
									19
									20

Remarks

1. Location scanned for utilities. 2. Hand dug inspection pit to 1.2m bgl. 3. Groundwater encountered at 8.0m bgl. 4. Standpipe installed to 7.0m bgl: 3.0m plain, 4.0m slotted.





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Borehole Log

Borehole No.

BH6

Sheet 1 of 2

Project Name: HOLCHEM, PILSWORTH IND
ESTATE

Project No.
GRO-22216

Co-ords: -

Hole Type
CP

Location: BURY

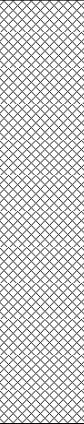
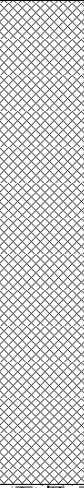
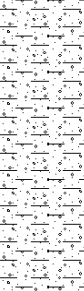
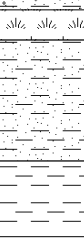
Level:

Scale
1:50

Client: BRIAN CLANCY HIGBY PARTNERSHIP

Dates: 17/06/2022 - 20/06/2022

Logged By
JOD

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.50	D	N=10 (1,2/3,2,2,3)	0.50			MADE GROUND: Dark brown slightly sandy topsoil. Sand is fine.	1	
		0.50	ES		MADE GROUND: Brown clayey gravelly fine to coarse sand with low cobble content. Gravel is rounded to subrounded fine to coarse of mixed lithologies including sandstone and brick.					
		1.00	D		N=9 (1,1/2,1,3,3)		3.30		MADE GROUND: Firm dark brown sandy gravelly clay. Sand is fine to coarse. Gravel is subrounded to subangular fine to coarse of sandstone, siltstone and brick.	4
		1.20								
		1.50	ES	N=15 (2,2/2,4,4,5)	6.50			Firm dark brown sandy gravelly CLAY. Sand is coarse. Gravel is subangular to subrounded fine to coarse of mixed lithologies including sandstone and siltstone.	7	
		2.00								
		2.20	ES	N=13 (2,3/2,3,4,4)	8.50			Brown plastic pseudo-fibrous PEAT.	9	
		3.00		N=16 (2,2/3,4,4,5)	9.50			Stiff brown mottled grey CLAY.	10	
		3.00 - 3.45	B							
		4.00		N=13 (2,3/2,4,3,4)	8.70			Continued on next sheet		
		4.00 - 4.45	B							
		5.00		N=9 (1,2/1,3,2,3)						
		5.00 - 5.45	B							
6.50										
8.00										
8.00 - 8.45	B									
8.50 - 8.70	B									
9.00 - 9.45	U									
9.50	D									



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Borehole Log

Borehole No.

BH6

Sheet 2 of 2

Project Name: HOLCHEM, PILSWORTH IND
ESTATE

Project No.
GRO-22216

Co-ords: -

Hole Type
CP

Location: BURY

Level:

Scale
1:50

Client: BRIAN CLANCY HIGBY PARTNERSHIP

Dates: 17/06/2022 - 20/06/2022

Logged By
JOD

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 10.50 - 10.95	B	N=21 (3,5/4,4,5,8)	10.50			Stiff brown gravelly sandy silty CLAY. Sand is fine to coarse. Gravel is rounded to subrounded fine to coarse of siltstone and sandstone.	11
		12.00 - 12.45	U						12
		12.50	D		12.50			Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to subangular and coarse of mixed lithologies including siltstone and sandstone.	13
		13.50 13.50 - 13.95	B	N=17 (3,4/4,4,4,5)					14
		14.50		N=21 (3,4/4,5,6,6)					15
					15.00			End of borehole at 15.00 m	15
									16
									17
									18
									19
									20

Remarks

1. Location scanned for utilities. 2. Hand dug inspection pit to 1.2m bgl. 3. Groundwater encountered at 9.0m bgl. 4. Backfilled with arisings.





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Borehole Log

Borehole No.

BH7

Sheet 1 of 2

Project Name: HOLCHEM, PILSWORTH IND ESTATE

Project No.
GRO-22216

Co-ords: -

Hole Type
CP

Location: BURY

Level:

Scale
1:50

Client: BRIAN CLANCY HIGBY PARTNERSHIP

Dates: 13/06/2022 - 14/06/2022

Logged By
JOD

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.25			0.25			MADE GROUND: Dark brown slightly sandy topsoil.	
		0.50	D					MADE GROUND: Firm dark brown sandy gravelly clay. Sand is fine to coarse. Gravel is subangular to subrounded coarse of mixed lithologies including sandstone, siltstone and brick.	1
		0.50	ES						
		1.00	D						
		1.20		N=6 (1,2/1,2,1,2)					
		1.50	ES						
		2.00		N=9 (1,2/2,1,2,4)					2
		3.00	D						3
		3.00		N=11 (2,2/2,3,3,3)					
		4.00		N=7 (1,1/1,2,2,2)					4
		4.50	D						
		5.00		N=15 (2,3/3,4,4,4)	4.90				5
		5.30	ES					Medium dense clayey gravelly coarse SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies including siltstone and sandstone.	
		6.50		N=4 (1,0/0,1,1,2)					6
		7.30			7.30				7
		8.00		N=17 (2,3/4,4,4,5)	8.00			Soft brown sandy CLAY. Sand is fine.	
								Medium dense brown silty gravelly fine SAND. Gravel is subrounded fine of mixed lithologies.	8
									9
		10.00	D						10

Continued on next sheet

Remarks

1. Location scanned for utilities. 2. Hand dug inspection pit to 1.2m bgl. 3. Groundwater encountered at 10m bgl. 4. Standpipe installed to 3.0m bgl: 1.0m plain, 2.0m slotted.





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Borehole Log

Borehole No.

BH7

Sheet 2 of 2

Project Name: HOLCHEM, PILSWORTH IND
ESTATE

Project No.
GRO-22216

Co-ords: -

Hole Type
CP

Location: BURY

Level:

Scale
1:50

Client: BRIAN CLANCY HIGBY PARTNERSHIP

Dates: 13/06/2022 - 14/06/2022

Logged By
JOD

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		11.00		N=15 (2,2/4,3,3,5)	10.50			Firm to stiff brown sandy gravelly CLAY. Sand is fine. Gravel is subrounded to subangular fine to coarse of mixed lithologies including siltstone and sandstone.	11
		12.50 - 12.95	U		12.50				12
		13.00	D					Firm to stiff grey mottled brown silty CLAY.	13
		14.00		N=16 (2,3/3,4,4,5)					14
		14.50		N=18 (2,3/4,4,5,5)	15.00				15
								End of borehole at 15.00 m	15
									16
									17
									18
									19
									20

Remarks

1. Location scanned for utilities. 2. Hand dug inspection pit to 1.2m bgl. 3. Groundwater encountered at 10m bgl. 4. Standpipe installed to 3.0m bgl: 1.0m plain, 2.0m slotted.



Trial Pit Log

Trialpit No

TP1

Sheet 1 of 1

Project Name: HOLCHEM, PILSWORTH IND ESTATE

Project No.	GRO-22216
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Co-ords:	-
Level:	

Date
17/06/2022

Location: BURY

Dimensions
(m):

Scale
1:25

Client: BRIAN CLANCY HIGBY PARTNERSHIP

Depth
0.50

1.25
Logged
JOD

[illegible]

Remarks:	1. Location scanned for utilities. 2. No groundwater encountered.
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Stability:



				Trial Pit Log			Trialpit No TP2 Sheet 1 of 1		
Project Name: HOLCHEM, PILSWORTH IND ESTATE				Project No. GRO-22216		Co-ords: - Level:		Date 17/06/2022	
Location: BURY				Dimensions (m): Depth 0.50				Scale 1:25 Logged JOD	
Client: BRIAN CLANCY HIGBY PARTNERSHIP									
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10	ES		0.10			MADE GROUND: Brown silty sandy gravelly topsoil. Sand is fine. Gravel is rounded to subrounded fine to coarse of mixed lithologies including sandstone, siltstone and quartzite. MADE GROUND: Brown silty sandy gravel with moderate cobble content. Sand is fine. Gravel is subrounded to rounded fine to coarse of mixed lithologies including siltstone, sandstone and granite. Roots present. End of pit at 0.50 m		
	0.50 0.50	B ES		0.50					
							1		
							2		
							3		
							4		
							5		
Remarks: 1. Location scanned for utilities. 2. No groundwater encountered.									
Stability:									



Limitations

Limitations

This report (Report) forms part of the Services and if applicable Additional Services undertaken by Groundtech Consulting Ltd pursuant to a written contract (Agreement) which contains detailed provisions including express limitations of the liability of Groundtech Consulting Ltd.

This Report was prepared using reasonable skill and care as stated in the Agreement for the purpose including intended end use stated by the Client (Purpose) and the liability of Groundtech Consulting Ltd in respect of the form and content of this Report is no greater than its liability under the Agreement. All records, measurements notes, or any other data (Data) obtained by or for the benefit of the Consultant were obtained at a specific point in time and it may not be assumed by the Client or any person relying on this Report that the Data will remain unaffected by the passage of time, the seasons, weather conditions, changes in the water table or the carrying out and completion of works at the Site.

Unless otherwise agreed this Report has been prepared exclusively for the use and reliance of the Client and may not be relied upon, by any other party except as provided for in the Agreement. A third party who relies on this Report, does so at their own and sole risk and Groundtech Consulting Ltd has no liability to such parties.

Groundtech Consulting Ltd that this Report is to be used for the Purpose. The Purpose was instrumental in determining the scope and of the Services provided. If the Purpose should change, the Client may not be able to rely on the Report without the separate agreement of Groundtech Consulting Ltd.

Since the Report was written, later changes in legislation, statutory requirements and industry best practices have not been considered and this should be allowed for. Ground conditions can also change (see below) and should be investigated if there is any significant delay in acting on the findings of this Report. The period of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions in this Report should not be relied upon in the future without written confirmation from Groundtech Consulting Ltd that it is safe to do so.

The observations and conclusions outlined in this Report are based exclusively on the services that were provided as set out in the agreement between the client and Groundtech Consulting Ltd.

Groundtech Consulting Ltd is not liable for the existence of any condition, the discovery of which would require additional investigation outside the agreed scope of works or core competency. The Report is based upon Groundtech Consulting Ltd's observations of existing physical conditions at the Site gained from site reconnaissance together with interpretation of information including documentation, obtained from third parties and from the Client on the history and usage of the Site. The findings and recommendations contained in this Report are based in part upon information provided by third parties, and Groundtech Consulting Ltd have relied upon such information assuming it to be correct.

Groundtech Consulting Ltd accepts no responsibility for errors or inaccuracies in third party information presented in this Report. Groundtech Consulting Ltd was not authorised to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services or Additional Services. Groundtech Consulting Ltd is not liable for any inaccurate information, misrepresentation of data or conclusions, which may inform the scope of investigation undertaken by Groundtech Consulting Ltd and forms the contract with the client.

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions may also vary due to the ground's heterogeneous properties and because investigation exploratory locations only allow examination of the ground at discrete

locations. The potential exists for ground conditions to be encountered which are different to those considered in this Report, particularly between exploratory holes. The extent of the limited area depends on the soil and groundwater conditions, together with other constraints such as the position of any existing structures and underground utilities. If so stipulated in the Agreement, geo-environmental testing was carried out for a limited number of parameters based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

Any groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The groundwater level often has not had time to reach equilibrium and a monitoring period is required. Furthermore, groundwater levels are subject to seasonal variation or changes in local drainage conditions and groundwater levels may occur at other times of the year which are higher than were recorded during this investigation.

Any site drawings provided in this Report are preliminary and used to present the general relative locations of features on, and surrounding, the Site.

