



GP PLANNING LTD



MINERAL RESOURCE ASSESSMENT

PROPOSED BATTERY ENERGY STORAGE SYSTEM (BESS) FACILITY

LAND TO THE EAST OF SHORE TOP FARM, KEARSLEY ROAD,
RADCLIFFE, M26 1FA

TAIYO POWER & STORAGE LIMITED

APRIL 2025

MINERAL RESOURCE ASSESSMENT		
Radcliffe BESS	Taiyo Power & Storage Ltd.	T016-01

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1 INTRODUCTION

1.1 Context

- 1.1.1 GP Planning Ltd has been commissioned to prepare a Mineral Resource Assessment (MRA) in connection with a 11 MW Battery Energy Storage System (BESS) development on land to the east Shore Top House, Kearsley Road, Radcliffe, M26 1FA. The development is referred to as the Radcliffe BESS.
- 1.1.2 The Site lies within the administrative boundary of Bury Council, a unitary authority.

1.2 Site Features and Constraints

- 1.2.1 The proposed development area is approximately 1.39 hectares (ha) and is located in an area of open countryside approximately 860m south west of Radcliffe and 1.2km to the north east of Kearsley. The location of the site is indicated below in Figure 1 with the red line representing the proposed development area.



Figure 1: Site Location

- 1.2.2 A National Grid substation is located 75m to the north of the site and is surrounded by thick vegetation on all boundaries. Open grazing land lies to the south and west.
- 1.2.3 Immediately east of the site is thick woodland containing footpaths and a disused railway.
- 1.2.4 The nearest property is a farmhouse about 240m to the South of the main site with a row of dwellings on Wood Street beyond.
- 1.2.5 The Site is within Flood Zone 1 (a low overall risk of flooding).
- 1.2.6 The Site is Grade 4 (Poor) agricultural land.

Ecology

- 1.2.7 There are no national ecological designations on or adjacent to the proposed site however, the site lies 20m west of a locally designated Wildlife Corridor which designates the site as a link and buffer area.
- 1.2.8 The nearest designation is Ashclough (SSSI) about 1.1km to the northwest.

Heritage

- 1.2.9 There are no designated heritage assets on or immediately adjacent to the site. The nearest registered assets within the wider area are:
- Water Powered Beam Pump – Grade II, 840m to the north west.
 - Outwood Viaduct – Grade II, 930m to the north east.

Constraints

- 1.2.10 Two low voltage overhead electricity lines cross the northwestern part of the site.
- 1.2.11 The Site falls within a Minerals Safeguarding Area (MSA), the extent and implications of which are discussed below.
- 1.2.12 As a consequence of the Site's location in an MSA, and in line with the Greater Manchester Joint Minerals Plan (JMP), it is necessary to prepare a Minerals Resource Assessment to determine compliance with the requirements of the relevant policy, M8.
- 1.2.13 The purpose of this Mineral Resource Assessment and Strategy is threefold:

- Firstly, the Assessment considers the proposal against national and local policy; and
- Secondly, it considers whether the proposed development itself would sterilise mineral reserves.

2 MINERALS POLICY CONTEXT

2.1 The Development Plan

2.1.1 The current development plan, as far as minerals extraction is concerned, is:

- Greater Manchester Joint Minerals Plan Development Plan Document, adopted April 2013 (JMP)
- Minerals Plans Maps

2.1.2 The first part of Policy 8 of the JMP is reproduced below:

Policy 8**Prior Extraction of Mineral Resources****Within Mineral Safeguarding Areas**

All non-mineral development proposals within the Mineral Safeguarding Area (see maps 4, 5, 6 & 7) 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 ⁽¹⁰⁾ or temporary and would not prevent minerals extraction taking place in the future.

Exemptions

This policy does not apply to the following:

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

2.1.3 The supporting text to the policy at paragraph 4.16 states that:

"The Local Planning Authority will take into account a number of factors when considering whether prior extraction is suitable, including the size, nature and need for the proposed development, the quantity and quality of the mineral, the environmental impacts and practicalities of the extraction. Account will also be taken of whether a partial working of the deposit would be appropriate, together with the potential use of the mineral within the proposed development."

2.2 National Planning Policy Framework, Last Updated February 2025

2.2.1 Section 17 of NPPF relates to facilitating the sustainable use of minerals.

2.2.2 Paragraph 222 states:

“It is essential that there is a sufficient supply of minerals to provide infrastructure, buildings, energy and goods that the country needs. Since minerals are a finite natural resource, and can only be worked where they are found, best use needs to be made of them to secure their long-term conservation.”

2.2.3 In respect of developing appropriate policies, Paragraph 223 advises that planning policies should, *inter alia*:

*“c) safeguard mineral resources by defining Mineral Safeguarding Areas and Mineral Consultation Areas; and adopt appropriate policies so that known locations of specific minerals resources of local and national importance are **not sterilised** by non-mineral development where this should be avoided (whilst not creating a presumption that the resources defined will be worked);*

d) set out policies to encourage the prior extraction of minerals, where practical and environmentally feasible, if it is necessary for non-mineral development to take place;”

Note: **bold** is the Author’s emphasis.

2.2.4 The implications of extant policies are discussed in Section 7 of this MRA.

3 MINERAL SAFEGUARDING

3.1 Introduction

- 3.1.1 This section explains the overarching policy background to mineral safeguarding and the emerging local policy context.

3.2 Minerals Policy Statement 1: Planning and Minerals (November 2006)

- 3.2.1 Prior to the publication of the National Planning Policy Framework in March 2012 (NPPF), Minerals Policy Statement 1: *Planning and minerals* (November 2006) (MPS 1) and the accompanying Planning and Minerals: Practice Guide provided the national planning policy for mineral safeguarding. Paragraph 15 set out national policy on safeguarding mineral reserves with the following intent:
- i. To place an obligation on all Mineral Planning Authorities (MPAs) to define Mineral Safeguarding Areas (MSAs) in Local Development Documents (LDDs) to ensure that ‘proven’ resources are not needlessly sterilised.
 - ii. To encourage the prior extraction of minerals ‘where practicable’ if non-mineral development is necessary in MSAs.
 - iii. In two-tier planning areas, such as in this case, include policies and proposals to safeguard mineral resources within MSAs in county LDDs and MSAs in district LDDs. Counties should define Mineral Consultation Areas (MCAs) based on MSAs. Where a planning application is submitted within an MCA, the District Council should consult the County Council on the application.
 - iv. District Council’s responsible for spatial planning of land defined in MSAs should not normally include policies and proposals in their LDDs for non-minerals development in those areas, or sensitive development around MSAs, where such policies would affect the potential for future extraction of minerals.
- 3.2.2 It was not intended for MSAs to impose a blanket restriction on development within them and there is no presumption that mineral resources will be worked in these areas. Furthermore, the delineation of minerals resources does not involve consideration of the full range of land use constraints that might apply if future extraction was to be considered.
- 3.2.3 The purpose of MSAs is to ensure that the presence of mineral resources is both adequately and effectively considered in land-use planning decision making.

3.3 National Planning Policy Framework, March 2012

- 3.3.1 NPPF 2012 confirmed that the purpose of the planning system was to contribute to the achievement of sustainable development and that the policies in paragraphs 18-219, taken as a whole, constituted the Government's view of what sustainable development in England means in practice for the planning system.
- 3.3.2 Section 13 of NPPF 2012 addressed the sustainable use of minerals.
- 3.3.3 NPPF 2012 confirmed that, in preparing local plans, local planning authorities are required to define Mineral Safeguarding Areas (Paragraph 144) and adopt appropriate policies in order that known locations of specific mineral resources of local and national importance are not *needlessly* sterilised by non-mineral development, whilst not creating a presumption that the resources defined will be worked, and there is a requirement to define Minerals Consultation Areas based on the MSAs.
- 3.3.4 The use of the word *needlessly* does not feature in NPPF 2019.

3.4 National Planning Policy Framework, Last Updated February 2025

- 3.4.1 The updated NPPF confirms that the purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development is summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs. There are three overarching objectives within the planning system to ensure that sustainable development is achieved:
- An economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
 - A social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

- An environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, helping to improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

- 3.4.2 The three objectives should not be undertaken in isolation. This assists in weighing up the balance in the decision-making process. The sustainable credentials of the proposed housing development are an important consideration when determining the planning balance.
- 3.4.3 Section 17 of the NPPF deals with facilitating the sustainable use of minerals and recognises the key role minerals have in supporting growth and the need to plan for sufficient supply. Minerals resources are finite and should be used with that in mind. Consideration needs to be given to whether the extraction of minerals alongside this proposal is sustainable.
- 3.4.4 In preparing local plans, MPAs should safeguard mineral resources by defining Mineral Safeguarding Areas and Mineral Consultation Areas (Paragraph 223 c) and adopt appropriate policies so that known locations of specific mineral resources of local and national importance are not sterilised by non-mineral development, where this should be avoided (whilst not creating a presumption that the resources defined will be worked).
- 3.4.5 Planning policies should also set out policies to encourage the prior extraction of minerals, where this is practical and environmentally feasible, if it is necessary for non-mineral development to take place.
- 3.4.6 NPPF does not require MPAs to include policies that prevent all development in MSAs. There is flexibility if there is a degree of necessity for the non-mineral development.
- 3.4.7 The nature of the delineation of MSAs exercise means that judgement needs to be applied as the reserves are mapped with no consideration of the wider land use planning implications and the acceptability of future extraction. MSAs are a useful tool to allow the existence of mineral resources to be ‘flagged up’ for consideration as part of other potential developments.
- 3.4.8 The MSA is intended to cover the full estimated extent of the reserve. The definition of MSAs on its own will not safeguard reserves and there are normally linked development management policies to afford additional protection.

- 3.4.9 When determining planning applications Local Planning Authorities (LPAs) should not normally permit other development proposals in MSAs if it might constrain potential future use for mineral working (Paragraph 224, NPPF). The use of the word “normally” is important because it means that the NPPF does not require all development in MSAs to be refused.
- 3.4.10 Minerals are finite and can only be worked where they occur. Sterilisation of minerals can occur as a result of surface development on top of reserves or by development that is close to the boundary of a resource. Where mineral resources exist below a development the prior extraction of those minerals should be considered. NPPF states, in Paragraph 216 d, that the MPA should set out policies to *encourage* the prior extraction of minerals, where *practical and environmentally feasible*. There is no explicit reference to *practical or environmental feasibility* in the MPA’s adopted policies, which are considered below.

3.5 Planning Practice Guidance, Minerals, March 2014

- 3.5.1 Planning Practice Guidance (PPG) includes guidance on planning for mineral extraction in the plan making and application process. Section 2 of the Minerals Guidance addresses mineral safeguarding commencing at Paragraph: 002 Reference ID: 27-002-20140306. Section 3 covers planning for mineral extraction and Section 4 provides guidance on assessing the environmental effects from mineral extraction.

Section 2 Mineral Safeguarding

- 3.5.2 The guidance re-iterates NPPF by stating that mineral safeguarding is the process of ensuring that non-minerals development does not needlessly prevent the future extraction of minerals resources of local and national importance. The use of the word needlessly is important. Needless means without cause or reason. In the same way as the over-arching NPPF, PPG is not imposing a complete restriction on non-minerals development in MSAs that do not provide for prior extraction if there is cause and reason for that decision.
- 3.5.3 MPAs are advised to adopt a systematic approach to safeguarding mineral resources, which:
- Uses best available information on the location of all mineral resources;
 - Involves consultation with stakeholders to define MSAs;
 - Sets out MSAs on the policies map that accompanies the local plan; and
 - Adopts clear development management policies which set out how proposals for non-mineral development in MSAs will be handled, and what action applicants for development should take to address the risk of losing the ability to extract the resource. This may include policies that encourage

the prior extraction of minerals, where practicable, if it is necessary for non-mineral development to take place in MSAs and to prevent the unnecessary sterilisation of minerals.

3.5.4 Councils are advised to:

- Have regard to the local minerals plan when identifying suitable areas for non-mineral development and should show MSAs on their policy maps;
- Consult the MPA and take account of the policies in the local minerals plan before determining applications for non-mineral development; and
- When determining planning applications, doing so in accordance with development policy on mineral safeguarding, and taking account of the views of the MPA on the risk of preventing extraction.

3.5.5 PPG contains a link to Mineral safeguarding in England: good practice advice Open Report OR/11/046, British Geological Survey 2011. This is the second edition of the guide, the first having been produced in 2007. This guide provides clearer guidance and assistance with implementing certain aspect of the mineral safeguarding process.

3.5.6 The British Geological Survey (BGS) Report, while published pre-NPPF, remains relevant. At Paragraph 1.1.2 it states, *'The essence of any safeguarding process is that it should introduce the consideration of minerals into the decision-making balance, so that access to mineral resources for future generations is preserved as far as possible.'* This recognises that it will not be possible to safeguard minerals resources in all cases.

3.5.7 The Guide sets out a 7-stage safeguarding methodology:

- Identify the best geological and resource information;

The definition of up to date MSAs requires up to date, factual information on the physical location of mineral resources and should be based principally on the best available mineral resource information at the time they are prepared. A robust credible starting point is BGS data. Mineral deposits do not necessarily equate to viable mineral resources. Where available other data should also be incorporated e.g., from industry, sand and gravel assessments, Coal Authority data.

- Decide which minerals to safeguard and the physical extent of MSAs;

The best available data gathered from Stage 1 should then be used as a basis for deciding those minerals that are of economic importance and should be safeguarded. Information should be used to compile resource maps best done using GIS. MSAs should usually cover the whole resource and not be curtailed by other planning considerations. Decisions and modifications to the extent of any resources should be fully recorded and justified. It may be appropriate to extend the MSA beyond the resource boundary to take account of the risks associated with sterilisation by incompatible development nearby. In urban areas MPAs should define MSAs to highlight the potential for extracting minerals beneath large

regeneration projects and brownfield sites. In exceptional circumstances the definition of MSAs to exclude urban areas may be justified e.g., where the method of working the mineral may not be acceptable.

- Undertake consultation on Draft MSAs;

The proposed list of minerals to be safeguarded and the justification together with maps of mineral resources and draft MSAs should be the subject of specialist consultations. Key consultees include the Coal Authority, English Heritage, BGs and neighbouring MPAs. Consultation may take many forms.

- Decide on the approach to safeguarding in the Core Strategy;

It is essential that the approach to safeguarding is defined in the Core Strategy.

- Include Mineral Assessments in the local list of information requirements;

The definition of MSAs will not in itself safeguard mineral resources. Effective safeguarding will only be achieved by outlining criteria against which planning applications for land use and development in the MSAs will be considered. A criteria based safeguarding policy is advised, stating the circumstances where non-mineral development would be appropriate. It may also be useful to set out exemption criteria e.g., householder development. MSA boundaries should be presented on proposals map that accompanies the relevant DPD.

- Include safeguarding in district level DPDs;

This stage is only where there are two tier authorities.

- Include Mineral Assessments in local list requirements;

Sufficient information on mineral resources is necessary for local authorities to determine non-mineral planning applications submitted in MSAs. The requirement for a Mineral Assessment could be administered through the Local List.

3.5.8 The information that is required in a Mineral Assessment/MRA should be relevant, necessary and material to the application in question. The Mineral Assessment should include a site specific, desk-based assessment of existing surface and solid geological information and an analysis of that information, its potential for use in forthcoming development and an assessment of whether it is feasible and viable to extract the mineral resources ahead of development to prevent unnecessary sterilisation.

3.5.9 Where an applicant proposes development within an MSA, the planning authority should ensure that the applicant has considered all the options to avoid sterilisation of the minerals.

3.5.10 An assessment of the viability of prior extraction will need to take into account whether the environmental conditions are suitable to support extraction and whether extraction is achievable in an acceptable timeframe. Additional considerations may also include the availability of the market to deal with the supply and the financial outlay required to develop the subsequent excavation.

- 3.5.11 PPG also assists with guidance on assessing environmental impacts of mineral extraction.
- 3.5.12 The introduction of a significant mineral extraction element would most likely give rise to impacts that could be considered significant and more than localised.
- 3.5.13 PPG lists the type of environmental issues that would need to be considered. It also addresses whether separation distances / buffer zones are appropriate, confirming that in specific circumstances they may be necessary. Any proposed distances should be established on a site-specific basis and should be effective, properly justified and reasonable.

3.6 Local Policy & Guidance

- 3.6.1 Section 2 of this Report sets out the extant minerals policy context and Policy 8 is relevant.
- 3.6.2 The Policy postdates NPPF 2012 guidance and while it predates the current NPPF, the principle of safeguarding minerals has not fundamentally altered.
- 3.6.3 Policy M8 provides criteria against which to judge the appropriateness of development within an MSA.
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.*
- 3.6.4 The Policy does not explicitly request a Mineral Resource Assessment. However, it is clear that to demonstrate that any of the criteria apply then it is necessary to submit a detailed MRA in accordance with BGS advice (see paragraph 3.58 above).
- 3.6.5 In short BGS advice is that the MRA should specify whether there are resources present and, if that is the case, whether it is feasible to extract them. Evidence should be presented on geology, acceptability and viability of extraction and the potential for proximal sterilisation.

4 SITE LEVEL MINERAL RESOURCES AND SAFEGUARDING

4.1 Background History, Geology and Ground Conditions

- 4.1.1 Based on geological records it is likely that that all of the proposed development site contains mineral resources.

Site History

- 4.1.2 A search of the Council's Public Access System does not reveal any planning history for the Site or land adjoining.
- 4.1.3 The nearby electricity substation benefits from a Lawful Development Certificate for installation of a replacement grid transformer, granted on 7 May 2024 (Ref: 70611).

Site Geology

- 4.1.4 Figure 2 is an extract from the BGS Mineral Resources map for Greater Manchester (2006). Due to the scale of the map, it is not possible to definitively locate the Site, but it appears to be on the boundary of the grey area (shallow coal) and the pink area (glaciofluvial sand and gravel deposits).

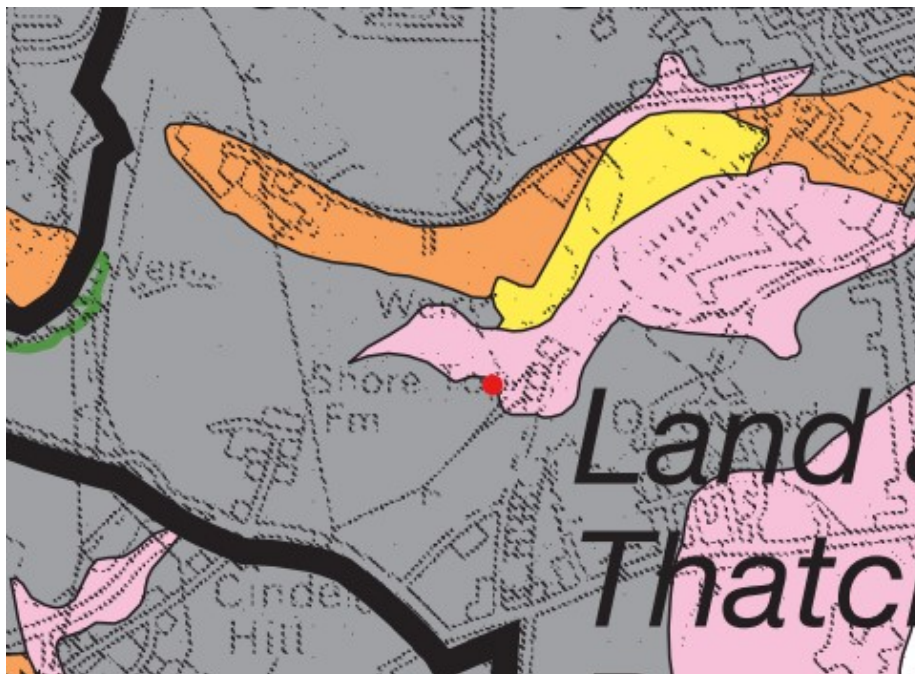


Figure 2: BGS Manchester Map Extract

- 4.1.5 The BGS geology superficial geology shows the presence of Till, Devensian - Diamicton (light blue) under most of the site and glaciofluvial sand and gravel (pink) under the northwestern corner.

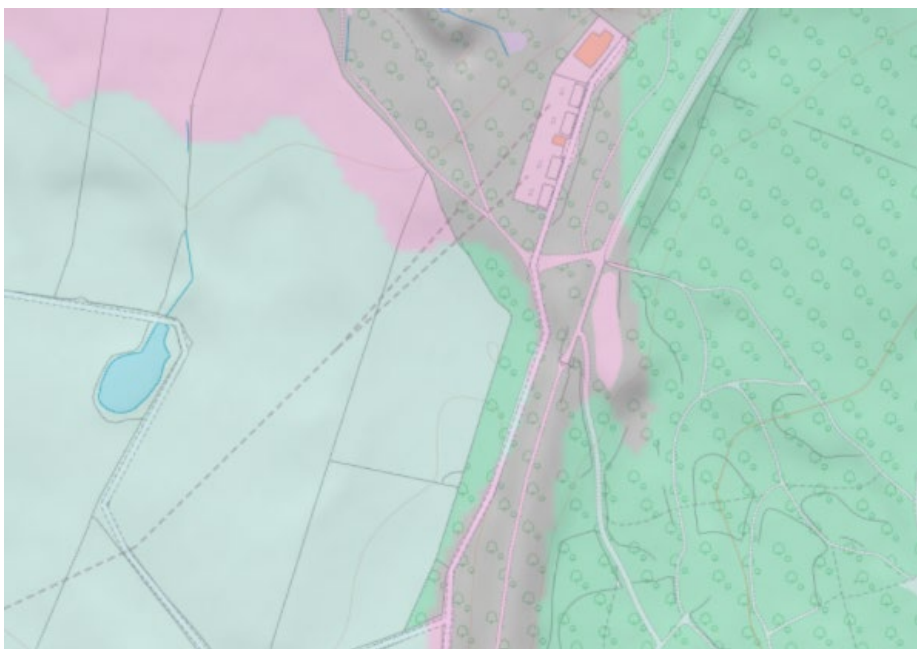


Figure 3: BGS Online Geology Viewer Superficial Deposits

- 4.1.6 Figure 4 shows the bedrock geology. The green area is Newton Heath Sandstone, and the grey area is the Pennine Middle Coal Measures Formation - Mudstone, siltstone and sandstone.

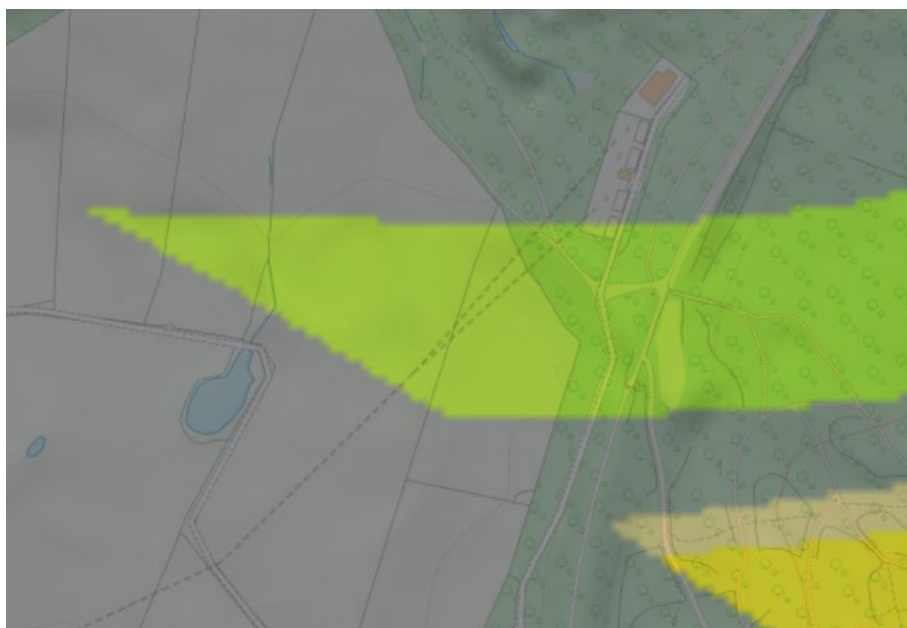


Figure 4: BGS Online Geology Viewer Bedrock Geology

Boreholes

- 4.1.7 The BGS online viewer shows a number of historical boreholes in the vicinity of the Site as shown on Figure 5 below. It should be noted that the black dot boreholes are confidential, and no information is available.

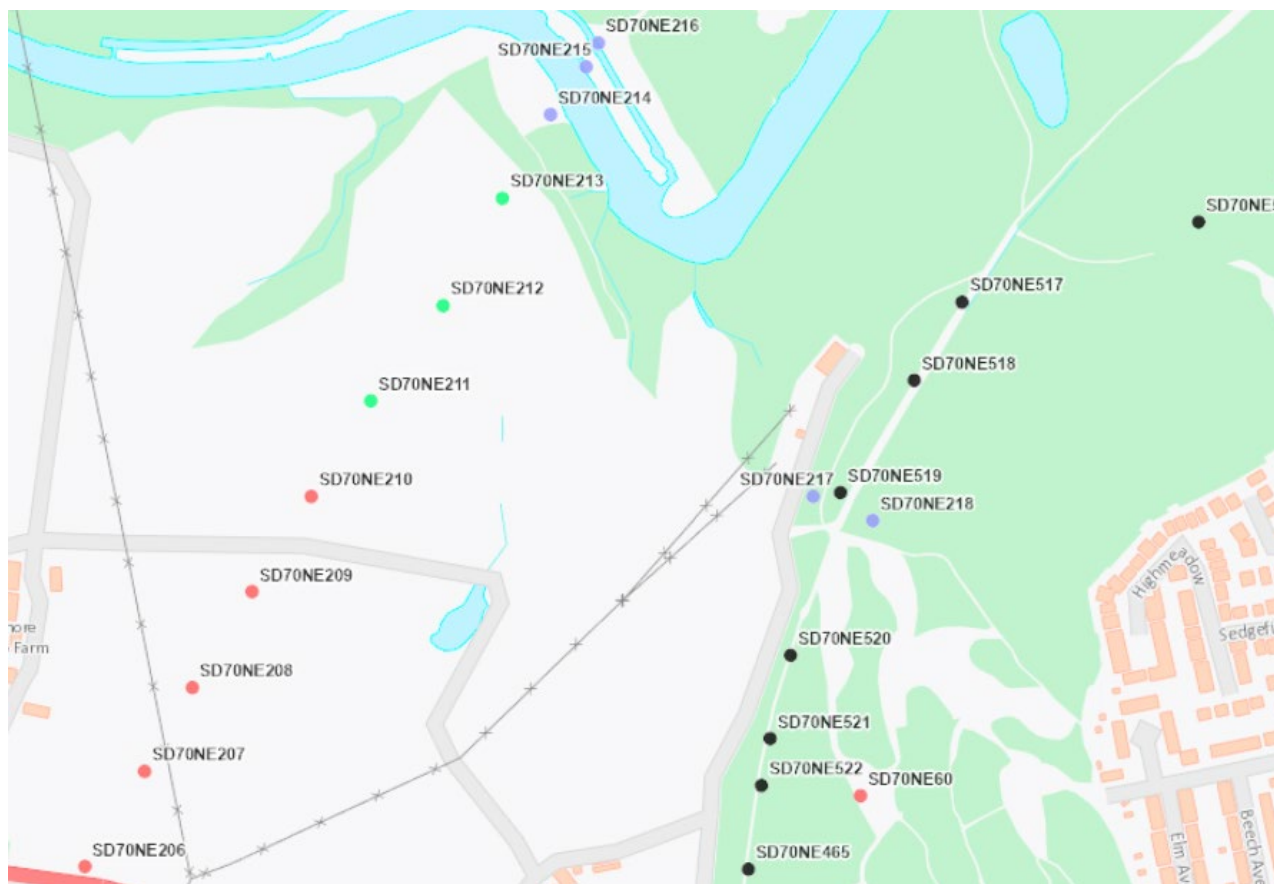


Figure 5: Boreholes in the Vicinity of the Site

BGS Boreholes Analysis

- 4.1.1 Table 1 summarises the borehole logs. All of the boreholes were drilled in 1965 on behalf of Bolton Sewerage Board.

Table 1: Borehole Logs				
Reference	Strata	Depth (m)	Thickness (m)	Superficial Geology (BGS)
SD70NE217	Soft brown sandy clay	0.6 - 1.8	1.2	sand & gravel
	Soft brown wet sand with slight clay	1.8 - 2.4	0.6	
	Soft brown stoney clay	2.4 - 6.0	3.6	
SD70NE218	Soft brown sandy clay	0.3 - 1.2	0.9	sand & gravel
	Soft brown mottled sandy stoney clay	1.2 - 1.8	0.6	
	Firm brown stoney clay	1.8 - 2.6	0.8	
	Soft brown stoney clay with traces of sand	2.6 - 3.0	0.4	
	Firm brown boulder clay	3.6 - 4.4	0.8	
	Firm brown laminated clay with layers of sand	4.4 - 9.1	4.7	
SD70NE216	Soft brown sandy clay	2.1 - 4.1	2.0	None
	Shaley Clay	4.1 - 4.6	0.5	
SD70NE215	Soft brown sandy clay	0.2 - 2.4	2.2	None
	Soft grey sand	2.4 - 3.0	0.6	
SD70NE214	Soft brown sandy clay	0.0 - 1.1	1.1	None
SD70NE213	Sand	0.3 - 1.2	0.9	sand & gravel
	Boulder Clay	1.2 - 2.1	0.9	
	Mudstone	2.1 - 3.6	1.5	
	Soft grey mudstone	3.6 - 6.0	2.4	
	Sandy mudstone	6.0 - 7.0	1.0	
	Hard light grey fine grained sandstone	7.0 - 10.00	3.0	
SD70NE212	Soft brown mottled clay and stones	0.5 - 2.7	2.2	sand & gavel
	Soft wet brown sand with slight clay	2.7 - 4.9	2.2	
	Grey mudstone	4.9 - 18.3	13.4	
SD70NE211	Soft brown wet sandy clay	0.3 - 5.5	5.2	Till
	Soft brown wet sand with stones	5.5 - 6.4	0.9	
	Firm brown boulder clay	6.4 - 7.0	0.6	
	Shaley mudstone	7.0 - 14.6	7.6	
	Hard brown and grey red sandstone	14.6 - 27.4	12.8	
SD70NE210	Soft brown mottled sandy clay with stones	0.5 - 2.7	2.2	Till
	Firm dry brown sand	2.7 - 6.1	3.4	
	Soft brown laminated sandy clay	6.1 - 7.0	0.9	
	Soft brown wet sand	7.0 - 10.7	3.7	
	Soft brown laminated sandy clay	10.7 - 16.8	6.1	
	Grey clay with traces of coal	16.8 - 18.3	1.5	
	Soft brown and grey red sandstone	18.3 - 31.9	12.6	
SD70NE209	Firm mottled sandy clay	0.5 - 2.4	1.9	Till
	Dry brown sand	2.4 - 4.6	2.2	

	Soft brown wet sand	4.6 - 15.2	10.6	
	Clay with traces of coal	15.2 - 18.3	3.1	
	Shaley mudstone	18.3 - 24.4	6.1	
	Brown sandstone	24.4 - 29.2	4.8	
	Soft light grey mudstone	29.2 - 33.5	4.3	
SD70NE208	Soft brown sandy clay	0.5 - 1.2	0.7	Till
	Firm brown mottled clay	1.2 - 2.4	1.2	
	Firm brown laminated clay with layers of sand	2.4 - 4.9	2.5	
	Soft brown sand	4.9 - 6.1	1.2	
	Firm boulder clay	6.1 - 7.9	1.8	
	Soft brown sand	7.9 - 11.0	3.1	
	Soft brown wet blown sand	11.0 - 13.7	2.7	
	Firm brown laminated clay with layers of wet sand	13.7 - 16.8	3.1	
	Clay with traces of coal	16.8 - 21.3	4.5	
	Brown and grey sandstone with bands of soft clay	21.3 - 30.5	9.2	
SD70NE207	Soft brown sandy clay	0.5 - 1.8	1.3	Till
	Firm brown clay with layers of sand	1.8 - 10.0	8.2	
	Soft brown wet blowing sand with slight clay	10.0 - 17.1	7.1	
	Soft brown laminated sandy clay	17.1 - 21.3	4.2	
	Grey clay with traces of coal	21.3 - 25.3	4.2	
	Mudstone	25.3 - 26.5	1.2	
	Soft mudstone	26.5 - 27.4	0.9	
	Brown sandstone	27.4 - 29.2	1.8	
	Shaley sandstone	29.2 - 31.9	2.7	
	Coal	31.9 - 34.1	2.2	
	Shaley sandstone	34.1 - 38.1	4.0	
SD70NE206	Soft brown mottled clay	0.3 - 1.8	1.5	Till
	Soft brown wet sand	1.8 - 3.7	1.9	
	Soft brown sandy clay	3.7 - 5.5	1.8	
	Firm brown clay with traces of sand	5.5 - 9.8	4.4	
	Firm brown boulder clay	9.8 - 11.6	1.8	
	Soft brown wet blowing sand with slight clay	11.6 - 18.6	7.0	
	Soft brown sandy clay	18.6 - 21.0	2.4	
	Firm brown laminated clay with layers of sand	21.0 - 27.7	6.7	
	Grey clay with traces of coal	27.7 - 32.3	4.5	
	Brown and grey mudstone	32.3 - 36.6	4.3	
	Soft grey mudstone	36.6 - 39.9	3.3	
	Grey mudstone with occasional ironstone bands	39.9 - 43.0	3.1	

4.1.2 The two boreholes to the east of the Site (217/216) logged mainly soft sandy/stoney clay with some sand, but no gravel but no gravel.

4.1.3 The green “dot” boreholes to the south of the river and west of the Site (213-211) logged a range of deposits including boulder clay, mudstone, soft sand, soft clay and sandstone. The superficial deposits

under these boreholes is river terrace sand and gravel (213) glaciofluvial sand and gravel (212) and Till (211).

- 4.1.4 The 3 most northerly boreholes (216, 215 and 214) logged mainly soft brown sandy clay. The BGS viewer has no superficial deposits recorded in this area. The bedrock for these and the remaining boreholes is Pennine Middle Coal Measures Formation - Mudstone, siltstone and sandstone.
- 4.1.5 The remaining boreholes 210-206 again show a variety of deposits including sand, sandy clay, mudstone, boulder clay and sandstone. Borehole 207 also recorded a thin layer of coal at a depth of 31.9m bgl.
- 4.1.6 The borehole analysis indicates that there are deposits of sand, sandstone and clay in the area but there is no evidence of sand *and* gravel. The range of deposits logged shows no continuity or conformity in terms which tends to suggest that there is unlikely to be any viable minerals in this locality. This reflected by the absence of any planning applications/permissions for mineral working in this area.

5 MINERAL SAFEGUARDING AREA

5.1 Extent

- 5.1.1 Figure 6 below is an extract from the brickclay MSA. The approximate location of the Site is marked with a red dot. However, part of the Site appears also to be within the MSA for sand and gravel, which is shown in Figure 7. The approximate location of the Site is marked with a yellow dot.

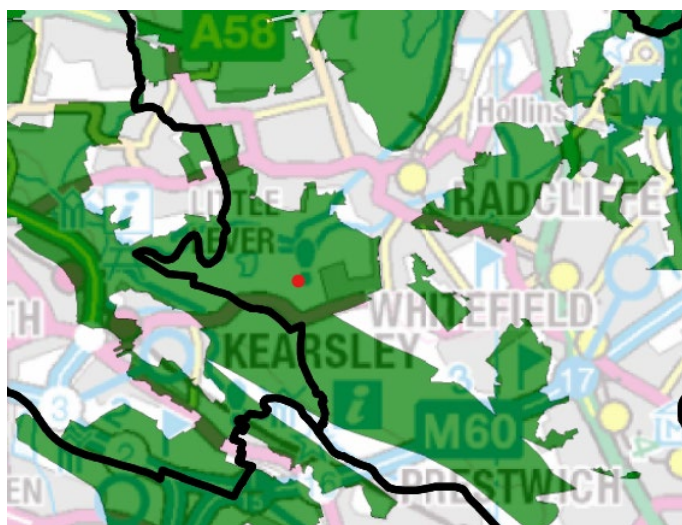


Figure 6: Brick Clay MSA

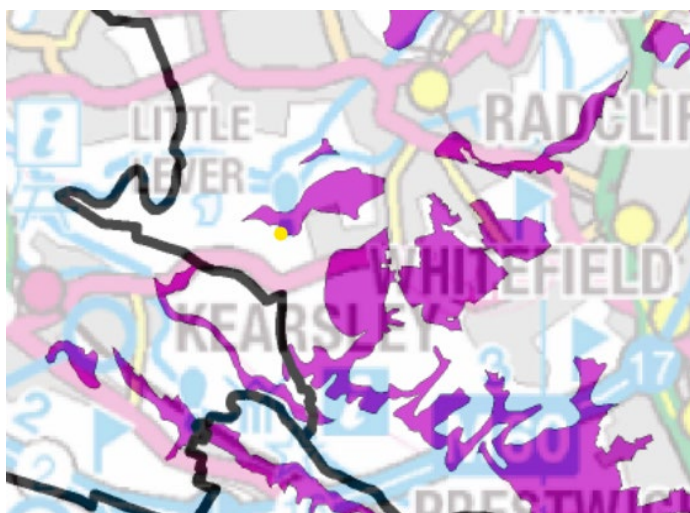


Figure 7: Sand and Gravel MSA

5.1.2 Bury Council's online interactive policies and constraints map shows the boundary of the sand and gravel MSA, which is delineated by the purple line in Figure 8, with the approximate development area boundary overlain. From this it is evident that the northern part of the Site is within the sand and gravel MSA. This is consistent with the BGS Manchester Map, which shows the Site probably overlapping the sand and gravel/brickclay resource (see Figure 2).

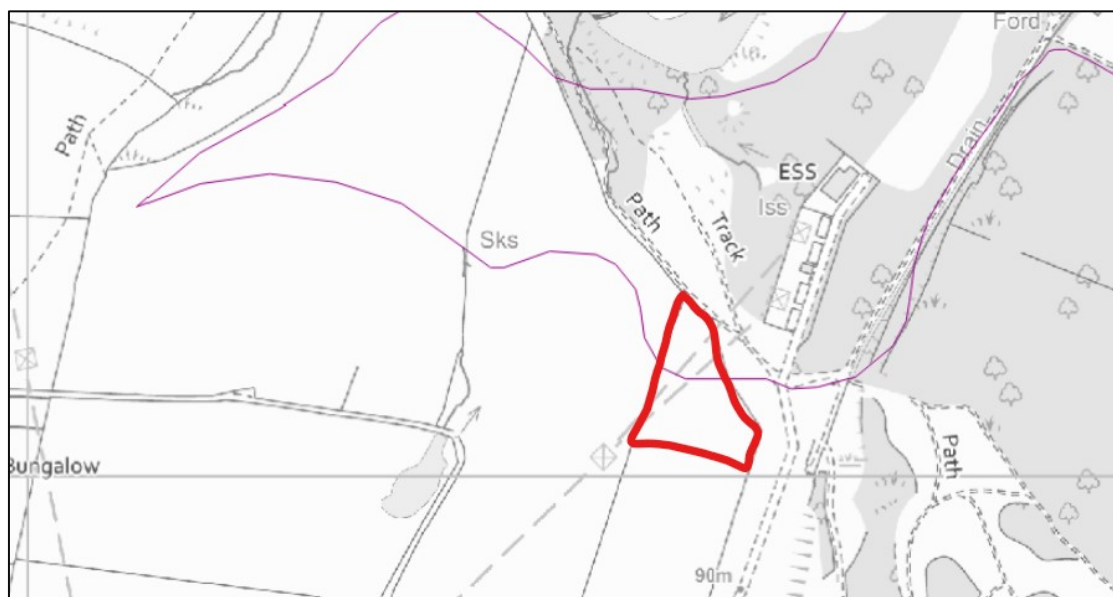


Figure 8: Bury On-line Policies Map Extract

6 ENVIRONMENTAL EFFECTS OF MINERAL WORKINGS

6.1 Introduction

- 6.1.1 The extraction of minerals can give rise to certain environmental effects. NPPF recognises this at Paragraph 223 and requires environmental criteria to be set out in Local Plans, in line with the other policies in NPPF, against which planning applications will be assessed to ensure that permitted and proposed operations do not have unacceptable adverse impacts on the natural and historic environment or human health.
- 6.1.2 When determining planning applications, mineral planning authorities (MPAs) should ensure that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety.
- 6.1.3 Policy 2 of the JMP sets out the key planning and environmental criteria for determination of mineral proposals. The policy states that all proposals for minerals working will be permitted where any adverse impacts on certain criteria are avoided or can be appropriately mitigated. The criteria includes:
- *Controlled waters and flood risk management;*
 - *Landscape and visual intrusion;*
 - *Traffic and access;*
 - *Amenity e.g. noise, dust, vibration, and odours;*
- 6.1.4 Planning Practice Guidance (PPG) addresses these potential effects in more detail.
- 6.1.5 All of the matters are relevant when considering the impact of mineral working prior to the development and the impact of the development on potential future mineral workings beyond the site in the MSA.

Proximity of Mineral Workings to Communities

- 6.1.6 PPG provides for a programme of work to be agreed with the MPA, which takes into account, as far as is practicable, the potential impacts on the local community over the life of the development. PPG advises that separation distances/buffer zones may be appropriate in specific circumstances where it is clear that, based on site specific assessments and other forms of mitigation measures (such as working scheme design and landscaping) a certain distance is required between the boundary of the minerals extraction area and occupied residential property. Any proposed separation distance should be established on a site-specific basis and should be effective, properly justified, and reasonable. There is no suggested distance in PPG, but the distance should be effective but reasonable taking into account:

- The nature of mineral extraction activity;
- The need to avoid undue sterilisation of mineral resources,
- Location and topography;
- The characteristics of the various environmental effects; and
- The various mitigation measures that can be applied.

Dust Emissions

- 6.1.7 The NPPF makes it clear that unavoidable dust emissions are controlled, mitigated or removed at source and that a dust assessment study should be undertaken. Guidance is provided on the key stages of assessment and the potential health effects of dust. Residential properties are deemed to be of medium sensitivity.

Noise Emissions

- 6.1.8 The NPPF makes it clear that MPAs should ensure that unavoidable noise emissions are controlled, mitigated or removed at source and that appropriate noise limits should be established for extraction in proximity to noise sensitive properties.
- 6.1.9 A noise emissions assessment should be carried out and should identify all potential sources of noise in the context of the existing noise climate and background noise at noise sensitive properties.
- 6.1.10 The proposed noise standards carry forward previous guidance in MPS 2. Subject to a maximum of 55dB (A)LAeq, 1h (free field) MPAs should aim to establish a noise limit at noise sensitive properties that does not exceed the background level by more than 10dB (A). In some cases, that may be difficult and in those cases the limit set should be as near that level as practicable during normal working hours and should not exceed 55dB(A)LAeq, 1h (free field). Evening limits should not exceed the background level by more than 10dB(A) and night-time limits should not exceed 42dB(A)LAeq, 1h (free field) at noise sensitive properties.
- 6.1.11 The Guidance acknowledges that some temporary operations are inherently noisy and cannot meet the limits e.g., soil stripping. Increased temporary daytime noise limits of up to 70dB(A)LAeq, 1h (free field) for periods of up to 8 weeks in a year at noise sensitive properties should be considered to facilitate site operations.
- 6.1.12 The potential environmental impacts of any future extraction are contained in Section 7 of this Report.

7 THE IMPACT OF MINERAL SAFEGUARDING AREAS

7.1 Introduction

7.1.1 In order to determine the impact of the proposed development on the MSA it is necessary to examine a number of topics, before reaching a conclusion.

7.1.2 This section addresses:

- Site topography, geology and context
- Identified environmental considerations
- The location and boundaries of the MSA
- The likely environmental effects of mineral extraction
- The need for and likelihood of future mineral extraction in the adjacent MSA
- The prospect of being able to extract minerals prior to extraction
- The need for the BESS development

7.2 Site Topography and Context

7.2.1 The proposed development area (minus access route & potential BNG) measures circa 0.21 hectares (ha) and is located in an area of open countryside circa 860m south west of Radcliffe and circa 1.17km to the north east of Kearsley.

7.2.2 The north east of the Site is bound by mature trees and hedgerows. The south eastern edge of the site is likewise bound by mature trees. The southern and western field boundaries are open with a pylon located just west of the northern field parcel.

7.2.3 The Site (excluding access track) measures 130m, at its longest point, by about 90m and slopes south to north by about 6m. The ground level at the northern “tip” is about 83m AOD, whilst the southern boundary lies at around 89m.

7.3 Local Environmental Considerations

7.3.1 A National Grid substation is located circa 75m to the north of the site surrounded by thick vegetation on all boundaries. To the west is open fields and a farmstead about 490m from the Site.

- 7.3.2 The nearest property is a farmhouse some 240m south of the main site boundary. The nearest residential settlement is Outwood, which lies about 320m to the east beyond Outwood Country Park.
- 7.3.3 Further to the south of the Site is a row of dwellings on Wood Steet about 320m distant.
- 7.3.4 The Site is not subject to any nature conservation or landscape designations. However, the site lies 20m east of a locally designated Wildlife Corridor, which designates the site as a link and buffer area.
- 7.3.5 The main constraint on the Site is presence of two overhead electricity lines cutting across the north western part of the Site.
- 7.3.6 The Site's local context is shown on the aerial photo below.



Figure 9: Site Context

7.4 The Likely Environmental Effects of Minerals Extraction in the MSA

- 7.4.1 There are two approaches to considering the impact of MSA's. The first is consideration of the impacts arising from prior extraction at the development site on existing residents. In this case those are the receptor locations described above.
- 7.4.2 The second is the impact of working minerals in the MSA beyond the development site and the impact that would have on the living conditions of future residents associated with the proposed development site, referred to in the Guidance Note as proximal impact.
- 7.4.3 The "impacts" that may be experienced are considered to be amenity impacts arising from noise, dust and plant associated with quarrying activities.

7.5 Policy Requirements

- 7.5.1 Policy M8 states that 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.*

- 7.5.2 The supporting text for the Policy at paragraph 4.13 states that:

"Proposals for non-minerals development within an MSA are only required to meet one of the 4 criteria identified in Mineral Safeguarding Areas".

The need for the development outweighs the need to extract the mineral

- 7.5.3 NPPF outlines policy support for the delivery of renewable and low carbon energy and associated infrastructure to mitigate climate change. Nationally, there is a critical need for energy storage facilities

which contribute to energy reliability, security and actively supports the United Kingdom in achieving the Government 2050 net zero target.

- 7.5.4 The overarching National Policy Statement (NPS) for Energy (NPS EN-1) is part of a suite of NPSs issued by the Secretary of State for Energy and Climate Change. It sets out the government's policy for delivery of major energy infrastructure. Paragraph 3.3.25 recognises that:

"Storage has a key role to play in achieving net zero and providing flexibility to the energy system, so that high volumes of low carbon power, heat and transport can be integrated."

- 7.5.5 Paragraph 3.3.26 adds that:

"Storage is needed to reduce the costs of the electricity system and increase reliability by storing surplus electricity in times of low demand to provide electricity when demand is higher."

- 7.5.6 The UK has a strategic objective to transform itself into a low carbon economy, in large part via the growth of renewable energy generation such as wind and solar. As renewable energy generation grows, the national transmission network run by National Grid has to cope with greater fluctuation in power generation often at very short notice. This can leave the UK's power supply unstable and therefore customers are at risk of losing power and the overall stability and safety of the transmission grid network will be at risk.

- 7.5.7 In addition to the growth in renewable energy generation, the UK is witnessing a structural reduction in its conventional power generation fleet typically fuelled by coal and gas. The closure of coal fired power stations also places stress on the stability of the UK's transmission network.

- 7.5.8 Energy storage provides the fast response capability to adapt to these fluctuations in power generation, arising as a consequence of the types of issues referred to above whilst at the same time offering a cost effective, secure and green solution. It can manage the amount of power required to supply customers at times when need is greatest. It can also provide frequency regulation to maintain the balance between the network's load and power generated, and it can achieve a more stable and reliable power supply for high tech industrial facilities. Thus, facilities of this kind can act as a catalyst for the transformation of the UK power industry thereby bringing benefits to its customers.

- 7.5.9 As well as national benefits, the proposed battery storage can assist the local transition to a low carbon economy. The associated energy strategy is likely to encompass a number of low carbon alternatives.

Battery storage in close proximity has significant potential to form part of that sustainable solution and address the intermittency issues afforded by renewables and provide a back-up.

7.5.10 The proposed battery storage would offer a rapid response electricity back up to the National Grid and add to growing deployment of such facilities in the UK.

7.5.11 In summary there is strong national policy support for proposed development.

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

7.5.12 Local policy, and NPPF require consideration to be given to prior extraction.

7.5.13 Turning to NPPF, it is expected that planning policies should safeguard and not sterilise known mineral resources of local importance. Policies should encourage the prior extraction of minerals, where practical and environmentally feasible, if non-minerals development is necessary.

7.5.14 In order to justify the sterilisation of minerals there are several strands to be explored:

- Determine whether the proposal could be modified to avoid sterilisation;
- Determine the potential for the use of the mineral in the development and whether it is feasible or viable, and
- Determine the commercial and practical considerations of prior extraction.

Can the proposal be modified to avoid sterilisation?

7.5.15 The development could not accommodate an element of extraction from the mineral safeguarding land. It is considered that the Site is too small on its own to be viable for mineral extraction. After allowing for stand-offs from the overhead lines only 0.35 ha would remain. There would also need to be batters in place, which would further reduce the available extraction area to a pint where it would just not be possible to extract any mineral resource safely. If some of the mineral where to be extracted this would have the disbenefit of lowering the land levels, that would then in turn require additional in-fill material to raise the levels back.

Is there potential for the mineral to be used in the development? Is that feasible or viable?

7.5.16 There is no potential for the minerals to be used in the development.

Is the non-mineral development temporary in nature?

7.5.17 The proposed development is not temporary.

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

7.5.18 The underlying superficial deposits show sand and gravel in the northern part of the Site and Till beneath the remainder.

7.5.19 The pink area in Figure 10 below denotes the sand and gravel resource as shown on the BGS online geology viewer. The overhead electricity lines are evident and cross the northwestern part of the Site. A 20m stand-off from the lines as shown by the yellow circles in Figure 11 rules out the working of any sand and gravel in this area.

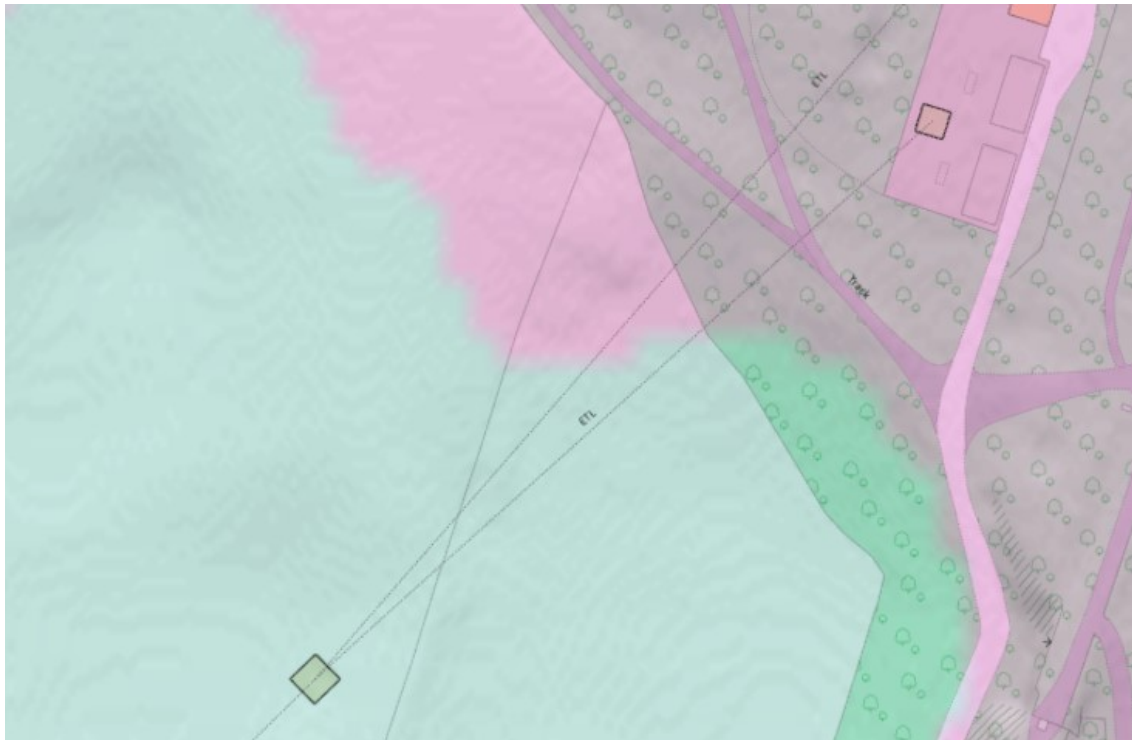


Figure 10: Sand and Gravel Deposits

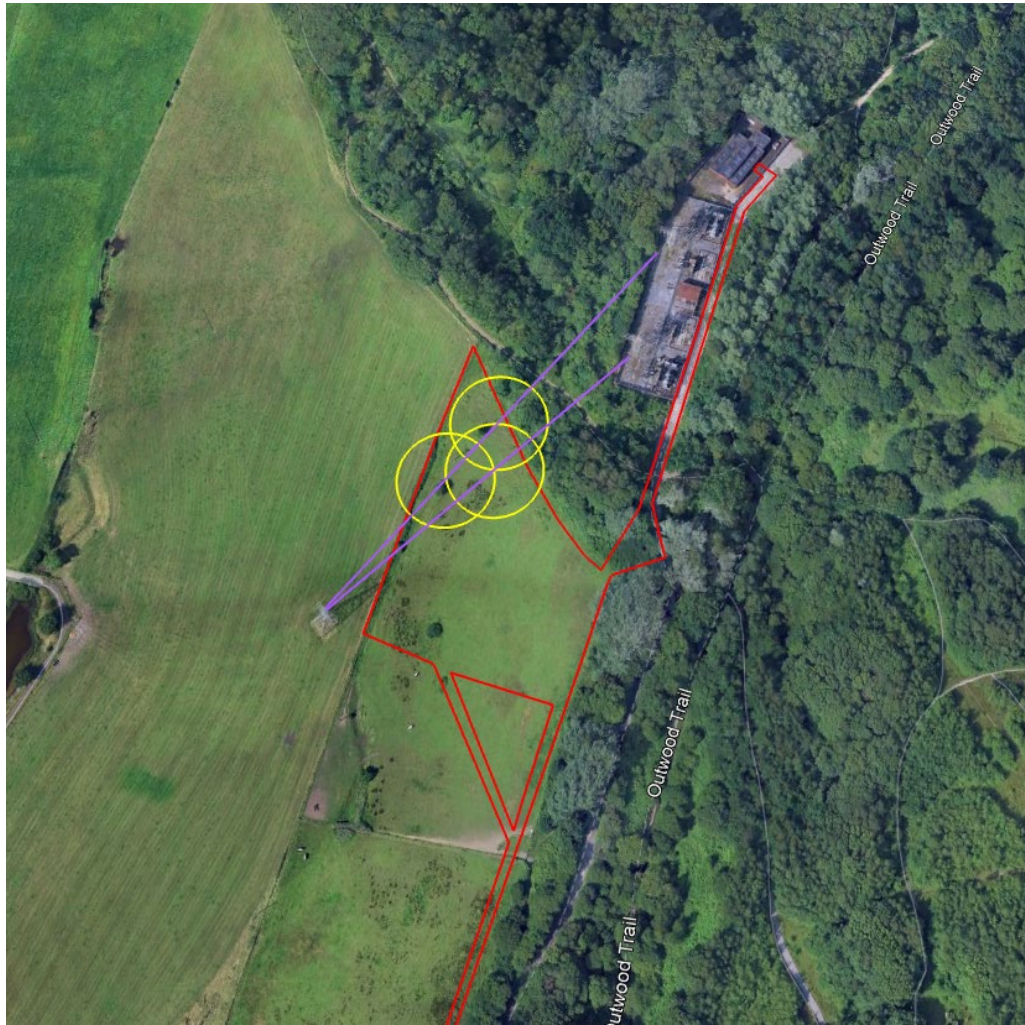


Figure 11: Overhead Lines and Stand-offs

- 7.5.20 Till, which is the superficial deposit below the rest of the Site, consists predominantly of clay, silt, and sand, but with pebbles, cobbles, and boulders scattered through the till. Brick clays are essentially mudstones of different geological ages and compositions and can be found in till deposits. However, their mineralogy, chemistry and physical properties are critical to determining their suitability for the manufacture of structural clay products.
- 7.5.21 Figure 12 shows the additional stand-offs in the rest of the Site. The blue shaded area represents the area which could potentially be worked for minerals, which amounts to 0.36ha which is not nearly large enough for a clay quarry.
- 7.5.22 Notwithstanding the above, there is little evidence from the available borehole data that there is likely to be any viable clay deposit under the Site. Boulder clay is logged in boreholes 218, 213 208 and 206 with

thicknesses, ranging from 0.8m 1.8m. Firm brown laminated clay was also logged in Boreholes 218, 208 and 206 but, in each case, included layers of sand. The inconsistency of the clay deposits and relatively limited amounts would suggest there are no viable brick clay deposits either under, or in the vicinity of, the Site.



Figure 12: Area Available for Mineral Extraction

7.5.23 In conclusion on this issue, the mineral if present under the Site, would be of no economic value.

7.6 The Need for and Likelihood of Future Extraction in the adjacent MSA

7.6.1 Once the development is completed, the whole of the Site would be utilised. The wider brickclay MSA extends for some distance in all directions as shown in Figure 13 below. The sand and gravel MSA is less concentrated, and the main deposit lies to the east as shown in Figure 14.

7.6.2 It is acknowledged that the purpose and role of MSAs is not just about dealing with extraction in the plan period but is also about ensuring that reserves are available for future generations. The delineation of the MSA boundaries is led by the geology and the potential for minerals. Environmental factors arising from extraction are not taken into account.

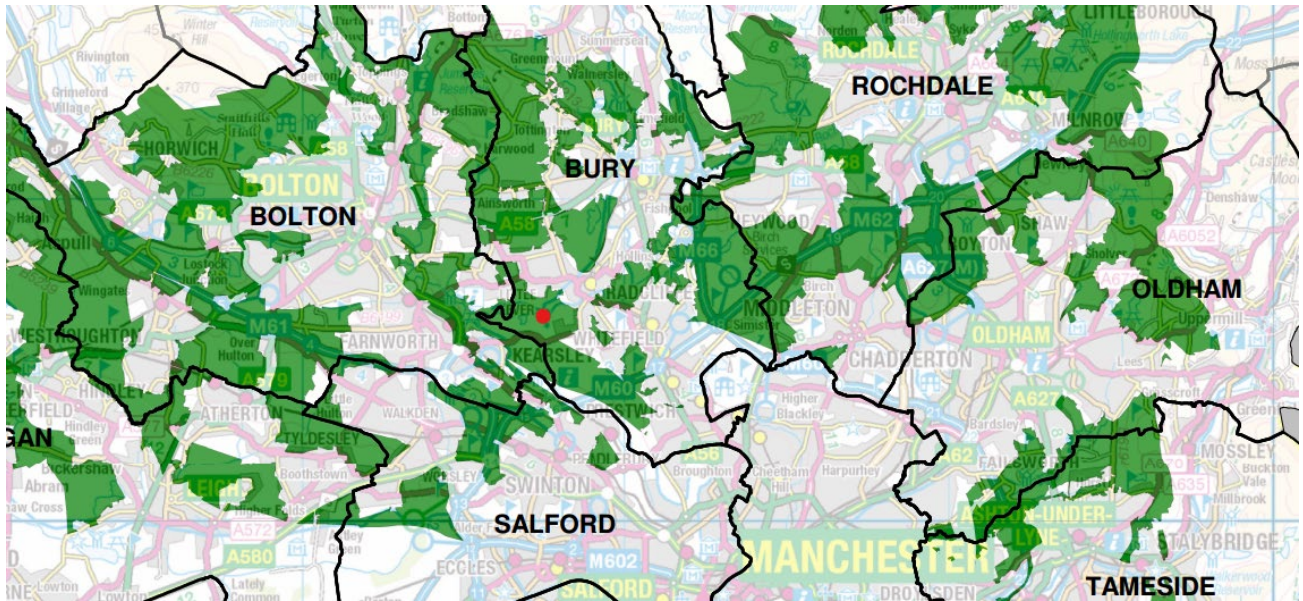


Figure 13: Brick Clay MSA

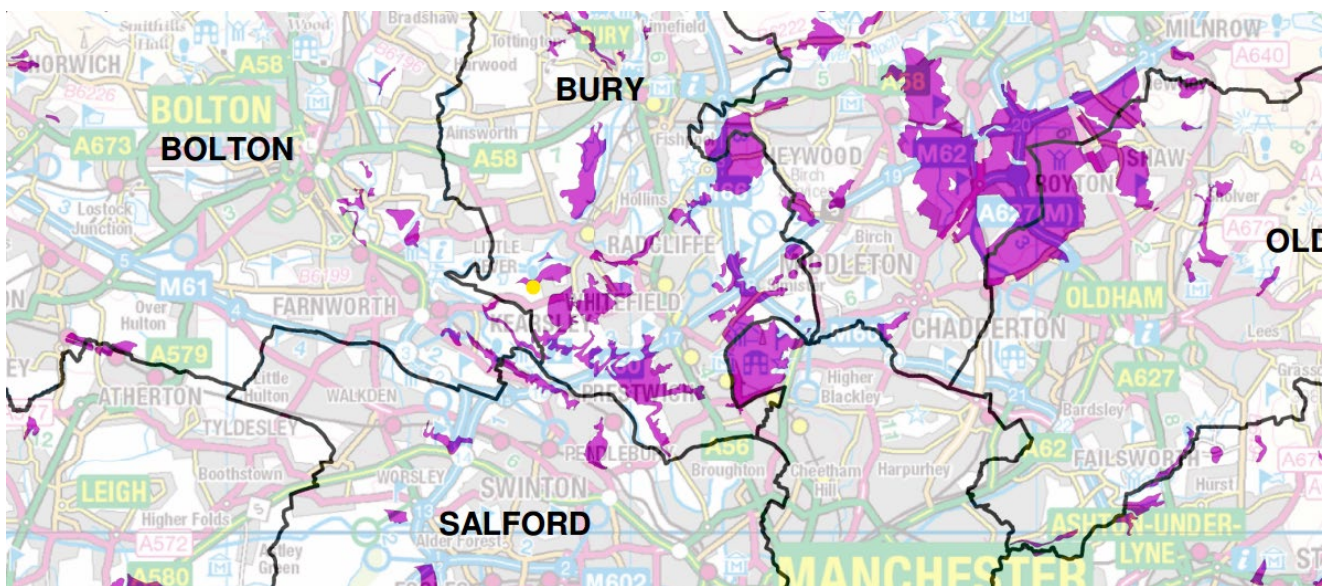


Figure 14: Sand and Gravel MSA

- 7.6.3 Unfortunately, the MSA maps are at too small scale to establish the existence of any workable mineral adjacent to the Site.
- 7.6.4 The BGS geology viewer shows the superficial deposit in more detail as shown in Figure 15 below. The pink area is the superficial sand and gravel, which extends beyond the Site to the northwest and to the northeast.

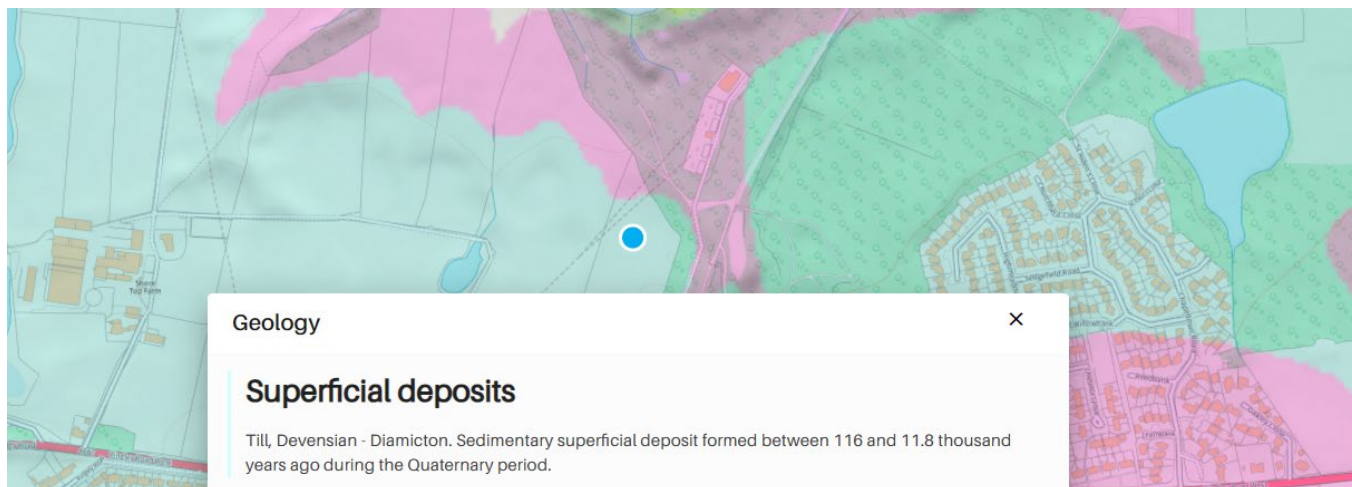


Figure 15: Superficial Deposits

- 7.6.5 As noted above, the overhead lines prevent the mineral from being worked *within* the Site, but the BESS development would not necessarily prevent any working to the west/north west. The electricity substation, public footpaths, nearby dwellings and the proximity of the Country Park would mean that mineral extraction is unlikely to be acceptable in this area. Therefore, in terms of sand and gravel it is not considered that any viable mineral reserves would be sterilised by the BESS development.
- 7.6.6 The light blue area in Figure 15 is the superficial Till which can contain clay. This extends mainly to the south and west of the Site. Apart from the overhead lines which continue southwest to the A667 there is also a farmstead and rights of way to the south and rights of way. These factors would effectively rule out any mineral extraction immediately to the south and southwest of the Site.
- 7.6.7 To the west there is an access track leading to another farmstead approximately 400m distant. There is also another overhead line running from just south of the river and east of the farmstead to the A667. The area is also criss-crossed with public rights of way. These constraints are shown below in Figure 16. The green lines are rights of way, and the purple lines are overhead electricity lines. It is therefore evident that there are significant constraints to winning and working minerals in this area. However, as stated the presence of the BESS itself would not prevent any working of the minerals to the west.
- 7.6.8 Notwithstanding the above the presence of any workable clay is doubtful. There is clay logged in some of the boreholes in the vicinity, but this tend to be clay with traces of coal, or sandy/shaly clay. None of these deposits would be suitable for brickmaking.



Figure 16: Constraints Near to the Site

- 7.6.9 It is considered, therefore, that development of the Site for a BESS would not sterilise any workable minerals adjacent to the Site.

7.7 Compliance with other Policies

- 7.7.1 Paragraph 223 of the NPPF states that local planning authorities should not *normally* permit other development proposals in MSAs where they might constrain potential future use for these purposes. The policy does not impose a blanket restriction on other development. The test is whether the development proposals might constrain future extraction.
- 7.7.2 It would not be possible to extract the full extent of the potential mineral resources within the application site due to site constraints and the requirement for mitigation.
- 7.7.3 The overhead lines prevent the sand and gravel from being worked within the Site.

- 7.7.4 The remainder of the Site, which would be available for extraction, amounts to only 0.36ha which is not nearly large enough for clay quarry.
- 7.7.5 There is therefore no prospect of minerals being extracted from the Site.
- 7.7.6 The prior extraction of minerals from the wider MSA is not feasible due to constraints and the need to provide mitigation.
- 7.7.7 Under these circumstances, it is considered that developing the site for a BESS would not conflict with the intentions of policy in the NPPF or the extant or minerals policies.
- 7.7.8 There is an overriding need for the BESS development.

8 CONCLUSIONS

8.1 Conclusions from this Report

- 8.1.1 The proposal Site lies within Mineral Safeguarding Areas for sand gravel and brickclay.
- 8.1.2 In this instance the environmental considerations include the impact on the adjacent Country Park, public rights of way and the importation of waste/infill materials to restore the site.
- 8.1.3 There are also constraints on part of the Site in the form of overhead electricity lines.
- 8.1.4 There is no conflict with Policy M8 as:
- There is no potential value in extracting the minerals, the extent and nature of which would not be commercially viable;
 - There is no prospect of prior extraction;
 - The introduction of a BESS would not result in proximal sterilisation of the wider MSA;
 - There is an overriding need for the development.
- 8.1.5 There is no prospect of minerals ever being worked in the future, so there is no conflict with paragraphs 223 and 224 in NPPF.
- 8.1.6 There is strong national policy support for proposed development.
- 8.1.7 Overall, the proposed development is consistent with policies in NPPF, and the Greater Manchester Joint Minerals Plan.

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