

Mining Risk Assessment

Sources of information:

Coal Authority Mining Report Ref 51001959649001 dated 29th October 2018
Published British Geological Survey geological mapping
Wardell Armstrong in-house records

Issue	Hazard	Site Affected (Yes/No) (Detail – where appropriate)	Consequences (where appropriate)	Recommended Mitigation Measures (where appropriate)
1. Are there any recorded coal mine entries within the site or within 20m of the site boundary?	- Catastrophic collapse of mine entry leading to ground instability or voids at the ground surface. - Settlement of the ground surface above/adjacent to the mine entry. - Mines gas emissions	Yes, entries on the site boundary.	Zones of potential instability around shafts and adits.	Zones of instability should be reviewed to assess if there is any potential instability on the site. It is recommended that during any construction, monitoring for unrecorded mine shafts is undertaken.
2. Is the proposed development in the likely zone of influence of past deep underground mining?	- Ground subsidence. - Ground instability.	Yes	Ground subsidence associated with recorded or unrecorded deep underground mining may result in ground instability and damage to property, new structures and infrastructure.	Subsidence relating to deep mining contemporaneous with mining. Since mining occurred more than ten years ago. Required mitigation is unlikely.
3. Is the proposed development in the likely zone of influence of any present underground mine workings?	- Ground subsidence. - Ground instability, loss of ground, generation of crown holes.	Yes	Potential surface instability associated with recorded or unrecorded mine workings.	The potential for unrecorded or recorded mine workings impacting the future development can be assessed through site investigation and if needed be treated by stabilisation measures.
4. Is the proposed development within the likely zone of influence of recorded underground workings at shallow depth (depths of less than 30m)?	- Ground subsidence. - Ground instability, loss of ground, generation of crown holes.	Yes	Potential surface instability associated with recorded or unrecorded shallow mine workings (see below).	See issue 5.
5. Is there a possibility of unrecorded shallow mine workings and/or mine entries?	- Ground subsidence. - Ground instability, loss of ground, generation of crown holes. - Catastrophic collapse of mine entry leading to ground instability or voids at the ground surface.	Yes: There remains a potential for unrecorded shallow mine workings to be present in the vicinity. The precise extent of old workings and / or potential working is not well defined.	Ground subsidence associated with recorded or unrecorded shallow underground mining may result in ground instability and damage to property, new structures and infrastructure.	The potential for unrecorded shallow mine workings impacting the future development will be assessed by site investigation. Zones of potential surface instability will be assessed and where necessary stabilisation works recommended.

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	- Settlement of the ground surface above/adjacent to the mine entry. - Mine gas emissions		Harm to human health, injury or death of maintenance operatives or construction workers using the site.	
6. Is there a record of mine gas emissions within the site boundary?	Mixtures of noxious of explosive gases reaching the ground surface via superficial deposits, faulted/broken strata or poorly filled mine entries and entering structures, confined spaces etc, when an explosive or asphyxiating hazard may be generated.	No: There are no records of such gas emissions by the Coal Authority.	Harm to human health, injury or death of construction workers and site maintenance personnel. Damage to property and infrastructure.	In the event of construction activity being proposed on the site, consideration is required to be given by the designer to gas protection precautions being required. This would be following the usual geotechnical and contamination site investigation.
7. Is the proposed development in an area for which the Coal Authority is determining or has granted a licence to remove coal by underground methods?	- Ground subsidence. - Ground instability.	Unlikely: The coal authority report under future mining data note no recorded reserves of coal exist.	None	None
8. Are there known faults or other lines of weakness (eg. fissures) due to mining at the site?	- Mixtures of noxious of explosive gases reaching the ground surface via faulted/broken strata and entering buildings, structures, confined spaces etc, when an explosive or asphyxiating hazard may be generated. - Stepped rockhead profiles where there has been subsidence across faults, impacting settlement of proposed structures.	Yes	None	None

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9. Has the site been subject to remedial works by, or on behalf of, the Coal Authority under its surface hazard call out procedures?	Indication of past and potential future subsidence issues on site.	No	N/A	N/A
10. Is the proposed development within the boundary of a surface mining/opencast site from which minerals have been removed by surface mining/opencast methods?	Ground subsidence and restrictions on proposed development associated with settlement of proposed structures.	Yes, a small area of opencast may encroach on the site in the south east.	There is a risk of surface settlement and depending on the position of the property/development in relation to the opencast highwall then differential settlement could be possible. This will largely depend on the nature of backfill and the quality of backfilling.	The overall design of works will need to account for the opencast.
11. Is the proposed development within 200m of a surface mining/opencast site from which minerals are being removed?	Development constraints associated with environment/noise/dust.	No	None	N/A
Assessment of Cumulative Impact of Mining Issues: The proposals are for re-development of the site (site area as shown on Drawing SH12190/002) from open fields to residential. The site is within an area of extensive past mining activity. As such there may be risks associated with the shallow mining including issues such as settlement and ground gas. It is recommended that further research be carried out to clarify this and if necessary some site investigation may be required. Good engineering practice developed for mining areas shall be applied at all stages of the development. The potential for shallow mineable seams and unrecorded mine workings to exist across the site can only be determined by these investigations, in general accordance with guidance contained in CIRIA SP32. Subject to the results of any such investigations, and if a ground stability hazard is identified, it may be necessary to design and implement a programme of mine working mitigation. This would be carried out in accordance with guidance contained within current CIRIA SP32. Prior to carrying out any works which may intersect, disturb or enter any coal seams, coal mine workings or mine entries (within the ownership of the Coal Authority), the written permission of the Coal Authority shall be obtained (www.coal.gov.uk/services/permissions/index.cfm).				

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Sources of information:

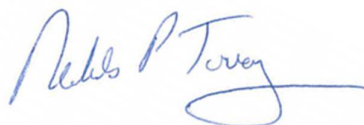
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We would expect that this circumstance could be conditioned at this stage so that undue disturbance of the land is not carried out and should other issues prevail there is not abortive work. The work that will be carried out can be completed and designed for virtually any circumstance in terms of construction.

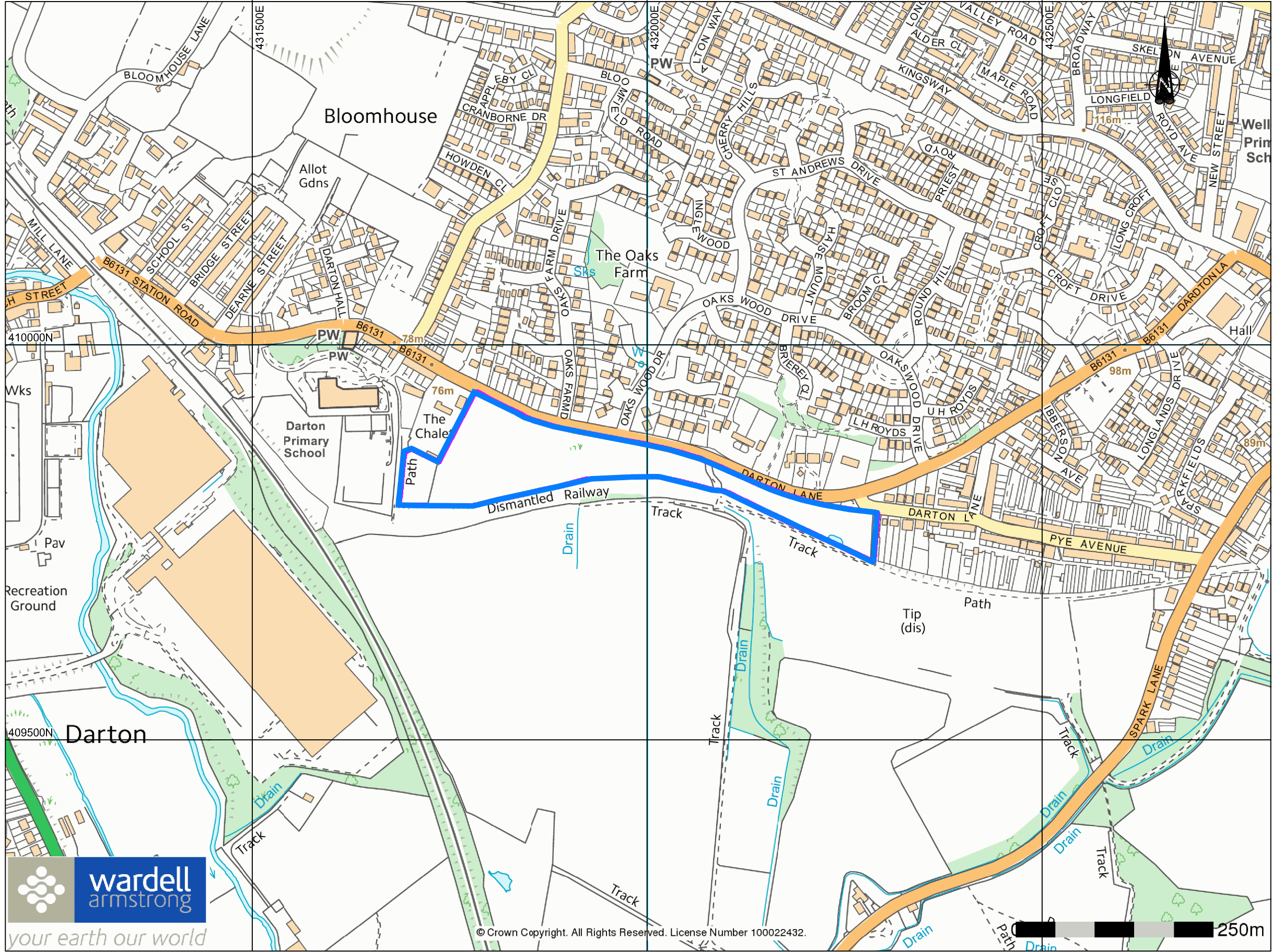
N/A = Not Applicable

Signed by



N. P Tovey
Senior Consultant

Wardell Armstrong LLP



DO NOT SCALE FROM THIS DRAWING

REFERENCE

SITE BOUNDARY

A	First Issue	06/02/19	DP	RO	JS
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REVISION	DETAILS	DATE	DRN	CHKD	APPD
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CLIENT
THE CHURCH COMMISSIONERS
FOR ENGLAND

PROJECT
LAND SOUTH OF DARTON
BARNSELY

DRAWING TITLE
SITE PLAN

DRG No.	SH12190-002	REV	A
DRG SIZE	A3	SCALE	1:5,000
DATE	29/10/18	APPROVED BY	JS
DRAWN BY	DP	CHECKED BY	RO



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