

8 Mining and Ground Stability

- 8.1 The Coal Authority advises that the site is located in an area which is known to be affected by coal mining or Brine extraction activities. A Coal Authority Coal and Brine Report, dated 1 May 2012, has therefore been obtained for the purposes of this report and a copy is provided as Appendix F along with Mining and Ground Stability Datasheets and plans.
- 8.2 The report indicates that the records in the possession of the Coal Authority show the site is located within the likely zone of physical influence at the surface from workings in 9 seams of coal at 110 metres to 590 metres depth, last worked in 1980.
- 8.3 The site is not in the likely zone of influence of any present or planned future underground workings. Reserves of coal are, however, known to exist which could be worked at some time in the future.
- 8.4 No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.
- 8.5 The report indicates that there are two known mine entries on or within 20 metres of the subject site. The plan showing their locations indicates that one is within the central yard area of the site and the other is within an adjacent premise. Both mine entries are indicated to have been capped in 1994 and conveyed to Barnsley MBC in 2002.
- 8.6 The mine entry which is within the yard area of the subject site (reference 439404-002) is known to have been filled to a depth of 179.5 metres in 1966 and filled to the surface to British Coal specifications in 1993 before being capped in 1994.
- 8.7 An additional enquiry to the Coal Authority regarding the above mine entry indicates that this is Mitchell Main No 2 Shaft, the diameter of which is 4.1 metres, with 1 metre of drift/made ground at the surface, a departure of 5 metres, a depth of 531.1 metres, which was sold on 25 February 2002 to Barnsley MBC, recorded on abandonment plan NE232 and, since it was capped in 1994, the cap will be twice the diameter of the shaft in accordance with National Coal Board shaft treatment protocols.
- 8.8 The mine entry within the adjacent premises is known to have been filled to a depth of 338 metres in 1966 and filled to the surface to British Coal specifications in 1993 before being capped in 1994.
- 8.9 The Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining.
- 8.10 The property is not within the boundary of any historical opencast coal mine and it is not within 200 metres of any current opencast site or within 800 metres of the boundary of any planned future opencast workings.
- 8.11 In relation to coal mining subsidence, the Coal Authority indicates that no damage notice or claim has been made for the property since 31 October 1994 and that there is no current Stop Notice delaying the start of any remedial works or repairs to the property. Furthermore, the Authority is not aware of any request to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

- 8.12 There is no record of any mine gas emission requiring action by the Coal Authority at the subject site
- 8.13 The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.
- 8.14 The Authority indicate that the property is in an area for which notices of entitlement to withdraw support were published in 1946 and 1983. The property is not in an area for which a notice has been given under section 41 of the Coal Industry Act 1994 revoking the entitlement to withdraw support.
- 8.15 The property is not in an area which an Order has been made under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.
- 8.16 The property is not in an area for which a relevant notice has been published under the Coal Industry Act 1975 or the Coal Industry Act 1994 in relation to payments to owners of former copyhold land.
- 8.17 It should be noted that property owners have the benefit of statutory protection under the Coal Mining Subsidence Act 1991 for the making good of physical damage from disused mine workings.
- 8.18 The Authority confirm that the area is not within the Cheshire Brine Compensation District.
- 8.19 There are three British Geological Survey (BGS) recorded mineral sites within 1 kilometre of the site which can be summarised as follows:

Site Name	Type	Status	Commodity	Location
Mitchell Main Colliery	Underground	Ceased	Coal – Deep	4m NW
New Hall	Opencast	Ceased	Sandstone	819m N
Darfield Main Colliery	Underground	Ceased	Coal – Deep	846m E

- 8.20 No man made mining cavities are identified within a 1 kilometre radius of the subject site.
- 8.21 Records held by Ove Arup & Partners indicate that the site is located in an area which may have been undermined for coal, although the existence and extent of any mining is inconclusive.
- 8.22 British Geological Survey records indicate that the site is highly unlikely to be within a mining area for commodities other than coal.
- 8.23 There are thirteen records of potential mining areas listed within a 1 kilometre radius of the site, four of which are identified as being onsite. The details of the eight potential mining areas within 500 metres of the site are provided in the following table.

Name	Ceased Operation	Commodity	Location
Mitchell Main	1935	Coal; Fenton	0m W
	1918	Coal; Barnsley	0m W
	1930	Coal; Melton Field	0m W

Name	Ceased Operation	Commodity	Location
Mitchell Main & Darfield Main	1921	Coal; Dunsil	0m W
Swaithe Main	1896	Coal; Barnsley	1m N
Darfield Main	1919	Coal; Barnsley; Swallow Wood	39m E
	1928	Coal; Beamshaw	441m E
Wombwell Main	1909	Coal; Barnsley; Swallow Wood	199m W
	1890	Coal; Barnsley	199m W
Oaks & Oaks New	1909	Coal; Barnsley Thick; Melton Field	403m N

- 8.24 Nineteen records of Extractive Industries or Potential Excavations during various time periods from 1855 to 1980 have been identified within a 250 metre radius of the site. These records are from a review of historical mapping undertaken by Landmark Information Group and include the nearby collieries, canals, railway embankments, pits, coke ovens, gasometers, unspecified deposited material and shafts which are discussed within section 4 of this report.
- 8.25 One record of general quarrying has been identified within a 1 kilometre radius from reference to historical mapping. This relates to a location approximately 830 metres to the north of the site on mapping dating from 1854.
- 8.26 One heap of unknown constituents is identified within a 1 kilometre radius of the site. This is noted to have been at a location approximately 226 metres to the north on mapping dating from 1989.
- 8.27 Four mineral railways have been identified within a 1 kilometre radius at locations approximately 686 metres to the south-east, 808 metres to the east, 836 metres to the east and 870 metres to the west.
- 8.28 One site for the quarrying of sand and clay or operation of sand and gravel pits has been identified within 1 kilometre of the site. The record indicates that this was shown on 1989 mapping at a location approximately 690 metres to the east.
- 8.29 Two incidences of coal/lignite mining have been identified within a 1 kilometre radius of the site one of which is onsite and the other is located approximately 675 metres to the east.
- 8.30 No records of former marshes have been identified within 1 kilometre of the site.
- 8.31 Three areas of potentially infilled land (non water) have been identified within 1 kilometre of the site at locations identified as onsite, 690 metres to the east and 830 metres to the north.
- 8.32 Six areas of potentially infilled land (water) have been identified within 1 kilometre of the site, only one of which is within 500 metres at a location approximately 12 metres to the south-west identified on 1956 mapping.
- 8.33 Records indicate that there is a very low potential for running sand, landslide, shrinking or swelling clay, compressible ground and collapsible ground stability hazards and no potential for ground dissolution stability hazards at the site.

9 Hydrology

- 9.1 The nearest surface water feature to the site is the former Dearne and Dove Canal which is shown to have been partially infilled on historical mapping, is identified as a drain on more recent maps and appears to feed into the surface water drainage network. The channel is located approximately 10 metres to the south-west of the site. This appears to drain in a south-easterly direction to join a surface drain at a location approximately 165 metres to the south of the site. The drain flows in an easterly direction and may join the River Dove at a location approximately 475 metres to the east of the subject site.
- 9.2 Under the European Water Framework Directive there are now two status classifications which are commonly reported for water quality; chemical and ecological. Chemical status is recorded as either 'good' or 'fail' and is assessed from compliance monitoring in water bodies where there are known discharges of priority substances. Ecological status is based on up to 4 assessments of biological quality, physic-chemical conditions, pollution and hydromorphology. The River Dove is currently recorded as having a 'Good' chemical status and a 'Poor' ecological status, both of which are expected to be maintained as such through until 2015.
- 9.3 One former licensed surface water abstraction has been identified within a 1 kilometre radius of the site. The licence was held by British Coal for general industrial use and allowing the yearly abstraction of 395,502 cubic metres at a location approximately 951 metres to the east.
- 9.4 Eight consents for discharges to surface water have been identified within a 1 kilometre radius of the site the details of which are provided in the following table.

Discharge Type	Operator & Address	Operator	Status	Location
Trade Effluent	Mitchells Main Pumping Station	British Coal Corporation	Revoked (Discharge ceased)	15m S
				96m SW
Sewage discharges – final/treated effluent – not water company	96, 98 & 100 Netherwood Road, Wombwell	Mr William and Mrs Janet Wyatt	New consent	410m E
		Mr Barrie and Mrs Jillian Barton		410m E
		Mr David and Mrs Susan Brown		410m E
	Properties at Aldham Water Mill, Aldham Farm	David John Palmer	New Consent	511m W
	New Hall Farm, Ardsley	New Hall Farm	Revoked	958m N
			Modified Version	958m N

- 9.5 Environment Agency records identify three pollution incidents to controlled waters within a 1 kilometre radius of the site as detailed in the following table.

Date	Incident	Severity	Location
21/01/1994	Highway/car park with the pollutant being petrol. No pollution was recorded in surface water.	Category 3 (minor)	172m W
10/09/1996	Water company sewage: rising main. Pollutant comprised surcharged sewage. Pollution found but no fish killed.	Category 2 (significant)	735m W
25/07/1997	Fire water with the pollutant being vegetable oil. Fish were killed.	Category 3 (minor)	865m SE

- 9.6 No records are identified on the Environment Agency's Substantiated Pollution Incident Register with an impact on water within 1 kilometre of the site.
- 9.7 No records of Water Industry Act Referrals, where processes resulting in the discharge of Special Category effluents are undertaken, have been identified within 1 kilometre of the site.
- 9.8 The Environment Agency flood map, a copy of which is provided as Appendix G, indicates that the subject site is outside the floodplain. The site is seen to be located within flood zone 1, where the annual probability of flooding caused by rivers or the sea is less than 0.1% (1 in 1000 year return).

10 Hydrogeology

- 10.1 Groundwater maps are presented at Appendix H.
- 10.2 The bedrock aquifer designation for the underlying Coal Measures is a secondary A aquifer. Secondary aquifers include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. Secondary A aquifers have permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. The former classification of this aquifer designation was as a minor aquifer of high permeability which was generally regarded as seldom producing large amounts of water for abstraction although potentially important for local supplies and in supplying base flow to rivers.
- 10.3 The groundwater vulnerability map indicates that the site is underlain by soils of high leaching potential, which have the ability for rapid pollutant movement.
- 10.4 The site is not located within or near to a Source Protection Zone (SPZ) or a Zone of Special Interest (ZSI) and there are no Source Protection Zone boreholes in the vicinity.
- 10.5 One groundwater abstraction is recorded within a 1 kilometre radius of the site. This relates to an abstraction for general farming and domestic purposes by Low Laithes Dairy Farm Ltd at Spring No 2 approximately 849 metres to the north-west.
- 10.6 Environment Agency records indicate that under the European Water Framework Directive (2000/118/EC) and Groundwater Directive (2006/60/EC) the Current Quantitative Quality of the groundwater in the area is Good and the Current Chemical Quality of the groundwater is Poor.

11 Other Environmental Information

Radon

- 11.1 British Geological Survey records indicate that the site is located in a radon affected area where between 1% and 3% of homes tested are above the action level of 200 Bq/m³. However, it should be noted that the action level for radon in the workplace is 400 Bq/m³.
- 11.2 The above data has been checked by reference to the HPA-RPB-033 Indicative Atlas of Radon in England and Wales dated November 2007 and by obtaining a Radon Risk Report from UK Radon, a copy of which is presented as Appendix I.

Prosecutions

- 11.3 No records of prosecutions relating to authorised processes have been identified within a 1 kilometre radius of the site.

Pollution Prevention and Control

- 11.4 There are no records of Integrated Pollution Prevention and Control (IPPC) Authorisations within 1 kilometre of the site.
- 11.5 There are seven recorded Local Authority Pollution Prevention and Control (PPC) Authorisations within 1 kilometre of the site. Three of the records relate to activities within 500 metres of the site and a summary of the detail of these is given in the following table.

Applicant	Details	Status	Location
Billington Structures	PG6/23 Coating of metal and plastic	Permitted	85m S
Perfecta Bedding	PG6/2 Manufacture of timber and wood-based products	Revoked	421m W
P & L Beds Barnsley	PG6/2 Manufacture of timber and wood-based products	Revoked	481m S

Waste

- 11.6 No BGS Recorded Landfill Sites have been identified within a 1 kilometre radius of the site.
- 11.7 Two Local Authority Recorded Landfill Sites have been identified within a 1 kilometre radius of the site although neither are within 500 metres of the site and no details other than the location are provided.
- 11.8 There are no Registered Landfill Sites within a 1 kilometre radius of the subject site.
- 11.9 There are three Historical Landfill Sites identified within a 1 kilometre radius of the site, none of which are within 500 metres of the subject site.
- 11.10 No Licensed Waste Management Facilities, where a boundary has been provided, have been identified within a 1 kilometre radius of the site.

- 11.11 There are no Licensed Waste Management Facilities, where there is only a single grid reference provided as a location, within 1 kilometre of the site .
- 11.12 No Registered Waste Transfer Sites or Registered Waste Treatment or Disposal Sites are identified within a 500 metre radius of the site.

Hazardous Substances

- 11.13 There are no records of Control of Major Accident Hazards (COMAH) Sites, Explosive Sites, Notifications of Installations Handling Hazardous Substances (NIHHS), Planning Hazardous Substance Consents (or enforcements) within a 1 kilometre radius.

Commercial and Industrial Land Uses

- 11.14 There are 64 records of Contemporary Trade Directory Entries within a 1 kilometre radius of the site. The records identify two records as being onsite and relate to the former occupation of D&G House by JGP Engineering and JGP Fixings.
- 11.15 Records identify two obsolete fuel stations within 1 kilometre of the subject site with the nearest being identified as Dixon on Barnsley Road approximately 153 metres to the south-west.

Sensitive Land Uses

- 11.16 There are no Local Nature Reserves, Nitrate Sensitive Areas, Special Areas of Conservation, Ramsar Sites, Sites of Special Scientific Interest (SSSIs), Special Protection Areas, Areas of Outstanding Natural Beauty, Areas of Unadopted Green Belt, Environmentally Sensitive Areas, Forest Parks, National Nature Reserves, Marine Nature Reserves, or National Parks located within 1 kilometre of the site. However, the area is identified as a Nitrate Vulnerable Zone and Adopted Green Belt exists at a location approximately 32 metres to the north-east.

Consideration of Industry Profile

- 11.17 The DoE Industry Profile for gas works, coke works and other coal carbonisation plants has been consulted. Information appropriate to the site's historical use as part of a colliery with coke and coal gas production is considered below:
- Coal gas was widely used as a means of illumination for street lighting and it would appear possible that Wombwell was lit using town gas produced at Mitchell Main Colliery.
 - The infrastructure for the production of gas and coke within the colliery appear to have been located outside the area of the site although coal processing may have taken place within the site and the made ground in the area may also contain wastes from the coke ovens. It is therefore considered that the most likely contaminants within the area of the subject site associated with this historical use are spent oxide, foul lime, metals and coal dust.

12 Local Authority Enquiries

Planning

- 12.1 Barnsley Council Online identifies a number of planning applications relating to the Mitchells Main Colliery site and more recent industrial development within the area of the former colliery. The following list of applications is considered those most likely to relate to the subject site although no plans or other supporting documents are provided on the Barnsley Planning website.

Application Reference	Applicant & Proposal	Status	Decision Issued
B/92/0473/WW	Reclamation of former colliery site for industrial development and open space use.	Not given	11/06/1992
2006/0047	Acorn Concrete Products Erection of single storey workshop/store at Land adjacent to Acorn House.	Approved with conditions	08/02/2006
2008/0104	Gary Hopkins Change of use from storage of concrete products to storage, sorting and transfer of waste glass products at Acorn House	Approved with conditions	30/04/2008

- 12.2 Three further planning applications were identified during the search although Mr Gary Hopkins of GB Cullet Ltd has indicated that the applicants, Onyx Conversions and Norvik Conservatories, were not in occupation of any part of the subject site at the time the applications were made.
- 12.3 A visit has been made to Barnsley MBC's offices to view the files for B/92/0473/WW and 2006/0047 and it has become apparent that 2006/0047 relates to the construction of the building to the rear of the main site building accessed through the subject site's access to the northern yard.
- 12.4 Documentation relating to B/92/0473/WW has been obtained which indicates that:
- the application was made by Barnsley MBC;
 - surface water was to be directed to surface water sewer with outfall to watercourse;
 - foul drainage was to be provided via an existing combined sewer;
 - mains water was to be provided;
 - a site investigation had been carried out that identified surplus materials left on the colliery site were unsuitable. The statement of intent indicates that this material was to be moved into the areas for public open space and suitable fill materials would be imported to construct the areas for industrial development;
 - the area of the British Coal Compound containing the shafts did not form part of the reclamation work;
 - the area of the site building and southern yard are within the area reclaimed for industrial development; and
 - the northern yard access crosses the British Coal Compound and the yard itself is shown to comprise part of the area used for the deposition of the unsuitable surplus materials from the colliery.

- 12.5 The visit to Barnsley MBC's offices identified a further relevant application, reference B/95/0790/WW. The archived file for this application has also been observed at the Council offices and is noted to relate to the original construction of the main site building and associated yard and the adjacent unit to the south-east, now occupied by Onyx Conversions.
- 12.6 The documentation within the file relating to application B/95/0790/WW indicates that:
- the application was made by PW Shaw & Co for the erection of *'two industrial units and associated car parking etc'*;
 - the two inspection covers observed at a location adjacent to the vehicular entrance of the southern part of the site relate to a 'Condor Tanks' petrol interceptor which was required by the National Rivers Authority to prevent hydrocarbon contamination of local surface water;
 - drainage plans indicate that a drainage channel was proposed at a location through the centre of the car park parallel to the south-eastern site facade;
 - 12 parking spaces on an area of tarmac hardstanding were detailed on the plans, with 10 along the south-eastern site boundary and a further 2 immediately adjacent to the site building;
 - the area was known as Plot 2 Mitchells Industrial Estate; and
 - a condition relating to the storage of oils, fuels or other chemicals required a bunded compound with impervious bases and bund walls.
- 12.7 The Barnsley Unitary Development Plan, adopted December 2000, indicates that Mitchell Main Colliery was redeveloped under Policies WW4 and WW4/1 and in accordance with Policies ED1 and ED2.
- 12.8 Under Policies WW4 and WW4/1 the former colliery site was identified as a Proposed Employment Site where proposals should be made for development for employment uses. The area is referred to as Mitchells Industrial Park, was noted to be 5.2 Hectares in extent and is described as *'a reclaimed colliery site adjoining an Industrial Estate and the route of the Trans Pennine Trail'* with access from Bradberry Balk Lane.
- 12.9 Policies ED1 and ED2 provided for development sites for employment purposes. The uses normally permitted are identified as business, industry, and storage and distribution with other employment generating uses permitted if they were compatible with adjoining uses.

Environmental Health

- 12.10 An enquiry has been made to the Contaminated Land Team at Barnsley Metropolitan Borough Council. Based on the current information held by the department it is apparent that:
- the department does not hold any relevant reports relating to site investigations or remedial works that may have been carried out.
 - there are currently no Part IIA Contaminated Land designations or notices within 250 metres.
 - the subject site is on the list of properties due for investigation under Part IIA.
 - the department has no records of landfilling within 250 metres of the site.
 - the Council is aware of the historical use of the site as part of a colliery and industrial estate.

13 Preliminary Conceptual Site Model

13.1 The following preliminary conceptual site model has been compiled to consider each of the potential source-pathway-receptor linkages associated with the subject site and identify the need for any further investigation.

	Potential Sources	Potential Pathway	Potential Receptor	Perceived Risk	Observations and Proposed Action
Presence of contamination from historical uses of the site: as part of Mitchell's Main Colliery, for the storage of concrete products and glass recycling activities and surrounding industry (including railway land, the tipping of colliery waste on land and general industrial uses in the area).	Heavy Metals (Industrial processes). Fuels/ Hydrocarbons (Leaks/spills from site vehicles, maintenance and refuelling). Other Contaminants (Spent oxide, fowl lime and coal dust)	Direct or indirect contact of contamination with the underlying strata as a result of past uses of the site.	Underlying strata	High	Site entirely covered in hardstanding or buildings and considered suitable for current and proposed change of use. If intrusive redevelopment of the site was to be considered site investigation work would be recommended to assess the risks associated with the redevelopment process and inform design proposals.
		Contaminated runoff, direct contaminant migration or leaching of contaminants.	Surface Water Surface water features in close proximity to the site. Nearest receptor – Former Dearne and Dove Canal which forms part of the surface water drainage network in the area.	Low	Site partially surfaced in buildings and impermeable hardstanding although areas of permeable ground also exist. The existing and proposed operations at the site involve the sorting and storage of non hazardous waste types externally. The refuelling of site plant and machinery is known to have previously been undertaken within the yard although its storage has been moved to within the site building at the southern end of the site. The only surface water drain in this area has the benefit of a petrol/oil interceptor.
		Direct contaminant migration or leaching of contaminants.	Groundwater Groundwater in rocks beneath the site. Underlying strata comprises a secondary A aquifer (Coal Measures).	Low to Medium	Receptor not considered overly sensitive as it is not within or near to SPZs or ZSIs. A groundwater abstraction for farming and domestic purposes is recorded 849m NW which is anticipated to be up hydraulic gradient from the site. Property is part of reclaimed colliery site with the northern yard having been part of the area used for the deposition of unsuitable surplus materials from the reclamation. Large spoil tips remain beyond the site to the east and the immediate vicinity has a long history of industrial use.
		Contaminated materials present providing potential for attack of concrete foundations.	Structures and Services Materials which may be needed for any drainage engineering and resurfacing of yard.	Moderate	Basic investigation of soil profile – trial pits/boreholes and soils analysis for sulphates / sulphides and pH. BRE 2005 – BRE Special Digest: Concrete in Aggressive Ground, Third Edition.

	Potential Sources	Potential Pathway	Potential Receptor	Perceived Risk	Observations and Proposed Action
Presence of contamination from historical uses of the site:	Heavy Metals (Industrial processes).	Ingestion of soil. Inhalation of dust. Dermal and eye contact.	Civil Engineering Contractors Groundworks associated with drainage engineering and resurfacing.	Moderate	Reclamation of the colliery appears to have been undertaken in the early 1990s. Workers to undertake risk assessment prior to any groundworks and adopt work procedures including use of suitable PPE, good hygiene practices and dust suppression measures if necessary to reduce risk.
	Fuels/ Hydrocarbons (Leaks/spills from site vehicles, maintenance and refuelling).				
	Other Contaminants (Spent oxide, fowl lime and coal dust)	Inhalation of dust. Dermal and eye contact.	Site Occupants and their Employees, Visitors and Local Residents. End users of the redeveloped site and neighbours.	Low	Site is entirely surfaced in site building, concrete/tarmac hardstanding and, what appear to be, compacted tarmac road shavings.
	Asbestos Containing Materials (ACMs)	Inhalation of loose fibres	Site Occupants, their Employees and maintenance contractors	Low	Potential for ACMs given building constructed before 1999. Asbestos management plan should be developed.
Presence and migration of gases from natural sources, landfill and historical uses	Radon (Naturally emitted from underlying strata)	Ingress into building through cracks in flooring, service ducts or other gaps and may build up in confined spaces.	Site Occupants and their Employees	Low	No action required. Research indicates low likelihood of radon at this location. Between 1% and 3% of homes in the area are above the action level of 200 Bq/m ³ although it should be noted that the action level for radon in the workplace is 400 Bq/m ³ .
	Landfill Gas (Methane & Carbon Dioxide) (From nearby filled ground). No landfills located within within 250 metre consultation zone. However, it is noted that part of the former Dearne & Dove Canal has been infilled with unknown materials for industrial development at a location approximately 110 metres to the north-west of the site building.	Migration of gases through cracks, faulting and pore spaces in the underlying strata. Ingress into buildings through cracks in flooring, service ducts or other gaps and accumulation in enclosed spaces.	Site Occupants, their Employees and Visitors	Low	Potential for ground gas ingress should have been considered during the design of the site building in 1995. As a precaution the client may wish to seal any gaps in floor joints and around service entry points and ensure adequate ventilation of confined spaces.
	VOCs (Potentially present incidental to historical and current use of hydrocarbons)	Migration of VOC vapours from hydrocarbon contamination into site buildings.	Future Site Workers and Visitors End users of the redeveloped site. Indoor exposure as a result of enclosed space accumulation of volatile vapours.	Low	As a precaution the client may wish to seal any gaps in floor joints and around service entry points and ensure adequate ventilation of confined spaces.

14 Risk Assessment and Recommendations

- 14.1 The historical use of the site as part of a colliery with coal gas production, for occupation by a concrete products company and for the storage, sorting and transfer of waste glass products would indicate potential for contamination, the perceived significance of which is considered to range from slight to high.
- 14.2 Although the site is considered suitable for the planned use, as a specialised waste transfer station with treatment, based on the requirements of the nearest Standard Rules Permit (SR2008No3_75kte) it is considered that the Environment Agency will require the storage and treatment of the waste to take place on an impermeable surface with sealed drainage. The need for resurfacing any permeable areas within the yard and providing an appropriate sealed drainage system must therefore be considered.
- 14.3 Regular maintenance of any existing and future drainage systems must be undertaken to prevent blockages and protect the surface water drainage channels into which the site's surface water drainage feeds.
- 14.4 Having established a preliminary conceptual site model for the site it is considered that any resurfacing and drainage works should be designed with the benefit of a basic site investigation to identify the presence of contaminants that may attack pipework and or concrete foundations. Appropriate risk assessments should be undertaken by civil engineering contractors involved and work procedures including use of suitable PPE, good hygiene practices and dust suppression measures should be implemented as necessary.
- 14.5 Appropriate storage facilities for LPG canisters and diesel must be established for the site operations.
- 14.6 The potential for Asbestos Containing Materials (ACMs) within the fabric of the site *building cannot be entirely discounted given that it was constructed before the complete ban on the commercial use of asbestos came into effect on 24 November 1999.* Although any such ACMs may not present an immediate risk to occupants whilst it remains undisturbed, demolition or other contractors engaged in any maintenance or repair work affecting the building structure should be informed of the potential existence of asbestos material so that appropriate health and safety precautions can be set in place.
- 14.7 Under Regulation 6 of the Control of Asbestos Regulations 2012 employers should not allow work which is liable to expose their employees (or any other person that may be affected by the activity) unless a suitable and sufficient assessment of the risk to human health has been undertaken and, where necessary, steps have been taken to mitigate any risk.
- 14.8 Regulation 4 of the 2006 Regulations requires the Dutyholder for any non-domestic building to assess where asbestos is or is liable to be present and develop an asbestos management plan. The 'Dutyholder' is the party who has, by virtue of contract or tenancy, an obligation for the report and maintenance of the building.

- 14.9 The asbestos management plan should include an asbestos survey of the building with a register of any identified or suspected ACMs, should assess the risk associated with each identified item and outline measures taken to manage the risk. Management measures may include monitoring the condition of any such materials, arrangements made for its removal and the provision of information to any persons likely to disturb them. A Type II (sampling survey) would be recommended for the basis of the management plan.
- 14.10 A potential for gas ingress into confined spaces within the building has been identified. The client may therefore wish to seal any gaps in floor joints and around service entry points and ensure adequate ventilation of confined spaces.
- 14.11 Having considered the information detailed within this report it is perceived that the site currently presents a **Low to Medium** overall level of environmental risk in relation to its existing use and the proposed use of the site as a specialised Waste Transfer Station with Treatment.

Authored by:

**P Scutt MEng DipNDEA BSc
Environmental Surveyor**

Authored and QA Checked by:

**A Chitoriski BEng (Hons) CEnv MCIWM
Minerals, Waste and Contaminated Land Surveyor**

Date: July 2012

15 Report Limitations

- 15.1 This report has been produced by AC Environment Solutions Ltd for the site known as Land and Buildings at Mitchell's Enterprise Park, Wombwell, Barnsley on behalf of GB Cullet Ltd, solely for the use of the client and his professional advisors with whom the assignment has been agreed.
- 15.2 AC Environmental Solutions Ltd accepts no responsibility or liability for the consequences of the document being used for any project or purpose other than that for which it was commissioned, or by any third party with whom an agreement has not been executed. Written approval must be sought from AC Environment Solutions Ltd should any third party wish to use or rely upon its contents and a charge may be levied against such approval.
- 15.3 The opinions expressed in the report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information which has been reviewed should not be considered exhaustive and has been accepted as providing true and representative data pertaining to site conditions in good faith.
- 15.4 Should additional information become available which may affect the opinions expressed in this report, AC Environmental Solutions Ltd retains the right to review such information, and, if warranted, to modify the opinions accordingly. It should be noted that the risks identified in this report are 'perceived risks' based upon the information reviewed.

Appendix A
Location Plan



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Site Address: Land and Buildings at Mitchell's Enterprise Park, Wombwell, Barnsley, South Yorkshire S73 8HR

Title: Appendix A – Location Plan

Client: GB Cullet Ltd

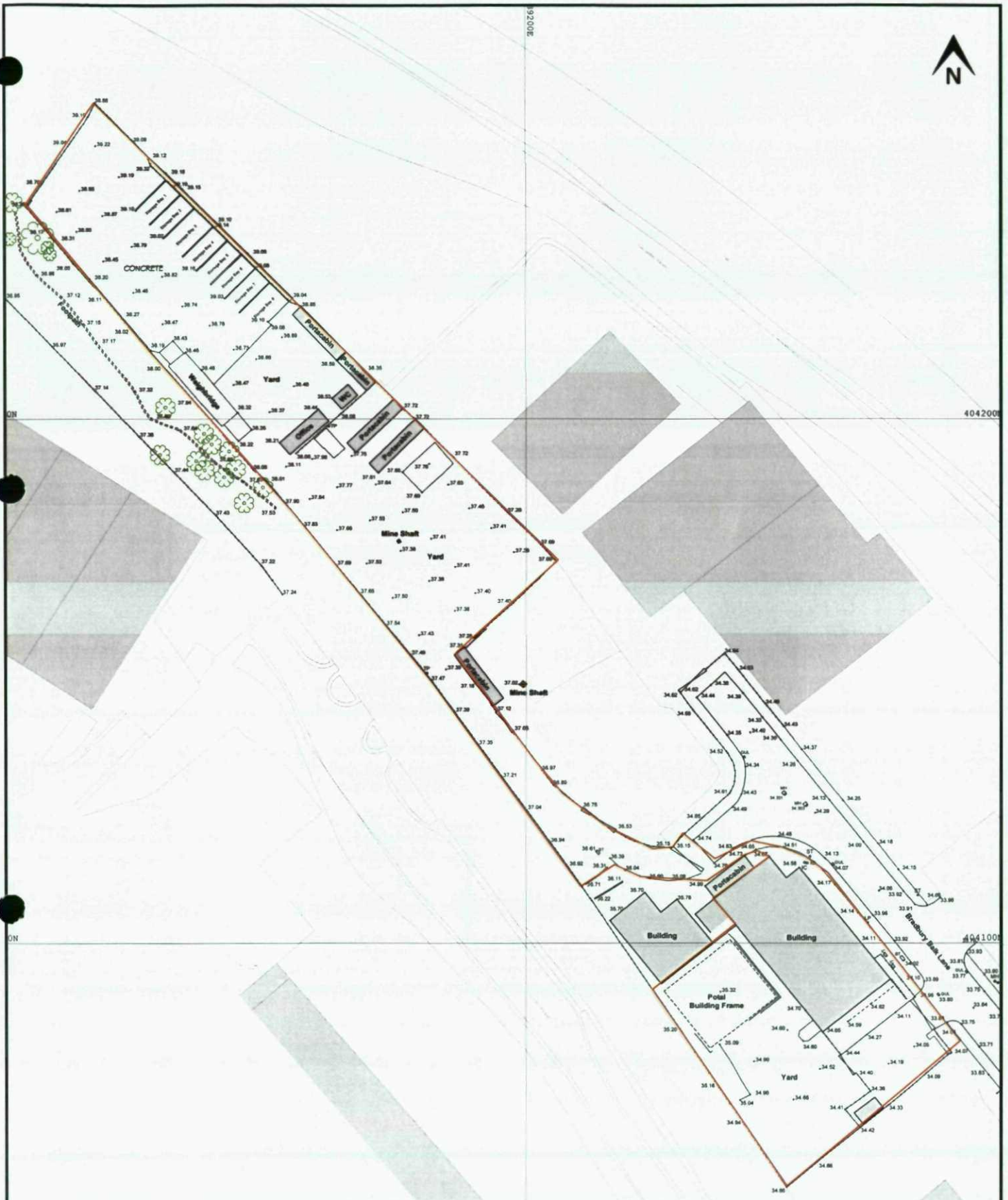
Printed Scale: 1:50,000

Grid Reference: SE 391 041



Unit 5A Enterprise Court, Farfield Park, Manvers,
Rotherham, South Yorkshire S63 5DB

Appendix B
Site Plan



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Site Address: Land and Buildings at Mitchell's Enterprise Park, Wombwell, Barnsley, South Yorkshire S73 8HR

Title: Appendix B - Site Plan

Client: GB Cullet Ltd

Printed Scale: NTS

Grid Reference: SE 391 041



Unit 5A Enterprise Court, Fairfield Park, Manvers,
Rotherham, South Yorkshire S63 5DB

Appendix C
Historical Maps