

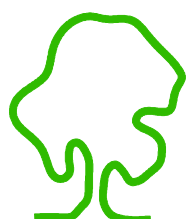
ALAN MCGUINNESS



THE OLD AGGREGATE SITE, BRIGHTON ROAD, SHOREHAM-BY-SEA, WEST
SUSSEX, BN43 6RE

Preliminary Contamination Risk Assessment

November 2025
Revised January 2026)



eas ltd

Environmental Assessment Services Ltd

REPORT DATA SHEET

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1. CAUTION
 - 1.1 This investigation relies largely on a superficial examination of the site plus a review of information from Adur District Council Planning Department, and the Environment Agency (EA). Even where no previous contaminating activity has been identified, it is possible that the site could be contaminated due to fly tipping or other unrecorded events. The age of a building may indicate probability but cannot be treated as proof of the absence or presence of asbestos. This report does not attempt to comment on the commercial value or viability of the site.
2. THE SITE & PROPOSED DEVELOPMENT
 - 2.1 The site comprises a large, secure yard, formerly used for storage and distribution of aggregates, it is part hard-surfacing and part permeable. There is direct access to the quayside of the River Adur on the southern boundary. The site is bordered to the north by Brighton Road with parking for a superstore on the far side. To the east lies a wet fish market (La Poissonnerie) and a covered farmers market, to the west lies the neighbouring commercial warehouse buildings and yard and to the south the River Adur (tidal estuary). The site area is approximately 0.8 ha. The Ordnance Survey (OS) map reference for the centre of the site is TQ 22430 05057. The site elevation is approximately +3.8 m OD. See Appendix A, Figure 1 for the site location plan and Figure 2 for the existing site layout.
 - 2.2 It is proposed to redevelop the site by the construction of six padel courts along the southern boundary, with a changing room with reception and shop directly behind the courts. The areas to the north and west are to be used for parking and a cycle store. Access to the site is via an existing gateway from Brighton Road to the north. See Figure 3 in Appendix A for the proposed site layout.
3. GEOLOGY & HYDROGEOLOGICAL CONSIDERATIONS
 - 3.1 According to the British Geological Survey, the site lies on Cretaceous Tarrant Chalk Member. There is made ground, placed over the chalk to form the quayside.
 - 3.2 The Department for Environment, Food and Rural Affairs (Defra) online mapping (MAGIC) shows the site lies on a principal bedrock aquifer with undifferentiated superficial drift. DEFRA classify the soil type at the site as “*Loamy and clayey soils of coastal flats with naturally high groundwater*”.

3.3 The site lies on an area of 'Medium' groundwater vulnerability and does not lie in a groundwater source protection zone (SPZ). The groundwater may be influenced by water in the harbour.

3.4 According to the EA online Flood Map for Planning, the north of the site lies in Flood Zone 1 (<0.1% chance of flooding in any given year) and the south of the site lies in Flood Zone 3 (>3.3% chance of flooding in any given year from tidal sources). An area to the north of the site, in the location of the proposed car park, is a patch of surface water flood risk. This increases in size in the 1 in 100 and 1 in 1000-year scenarios. Groundwater or reservoir flooding are deemed unlikely in this area.

4. SITE DEVELOPMENT HISTORY

4.1 The site development history is derived from a review of historic maps and other references. Historic maps centred on the site are provided in Appendix B, and a summary of the relevant information provided in these maps is given in Table 4.1 below.

TABLE 4.1
SITE DEVELOPMENT HISTORY

Map date (Scale)	Features on site	Features within surrounding area (<500 m & >750 m)
1873- 1824 (1:2,500) 1873 (1:10,560)	The site lies to the north of New Shoreham Harbour on the outskirts of the town of New Shoreham. The southern portion of the site is shown to be in the harbour and labelled as lying on mud flats and the northern portion is part of an area of timber ponds. The site is bordered to the north by Lower Road running east to west, with a brick field on the far side. The high-water mark lies adjacent to the northern boundary of the site.	A well is shown 100 m to the north, a line of residential dwellings (Kingstone Terrace) to the northwest and a brick field to the northeast. A railway line runs from east to west with Kingstone station lying to the northeast of the site and Shoreham station lying to the northwest. To the east within 750 m lies a ship building yard with a steam crane and coke ovens labelled Egypt. To the south of the site lies the channel of the River Adur and an area of salt marsh with a coastguard's station within 750 m to the southwest. To the west the town of New Shoreham.
1898 (1:2,500), 1896 (1:10,560)	The area of the site to the south is now labelled Free Wharf and Windbound Piles and seen on the map.	To the north of the site the railway line is now labelled Portsmouth line and several warehouses have appeared in the area of the brick works. A building labelled Dolphin Soap Works has appeared within 500 m to the northeast. To the east the buildings within the ship building yard have increased in number, including a sawing and planning mill; the area is now labelled Kingstone-by-Sea. To the south of the site within 500 m a cholera hospital and a chemical works have appeared on the far side of the River Adur.

		The town to the west is now labelled Shoreham.
1909 (1:10,560), 1912 (1:2,500)	The site remains largely as previously stated.	A coastguard station now lies directly north of the site and Kingstone Terrace has increased in size. The brick field has enlarged into the area to the north (within 500 m). A nursery has appeared with the fields to the north being used for growing. To the south the cholera hospital is no longer present, and the chemical works has increased in size. A tramway has appeared within 500 m to the southwest of the site. There is increased residential development in the town to the west, which is now labelled Shoreham-By-Sea.
1930-1933 (1:2,500) 1931 (1:10,560)	A line of posts now divides the area of the site to the north (now labelled landing stage), from the area of the site to the south, labelled sand and mud.	Kingston Terrace is now joined by another terrace to the north labelled Coastguards Cottages. The brick fields have been replaced by residential dwellings (Corbyn Crescent), multiple greenhouses are shown in the adjacent nursery.
1939-1945	No recorded war-time incidents or activities affecting the site.	In April 1939 a Hert Special from the elementary flying training school collided with a Tree, in July 1939 a Gipsy Moth ditched off Shoreham Harbour. In 1940 a Hurricane 1 dived into the sea during practice 5 miles east of Shoreham.
1950-1951 (1:1,250) 1947-1948 (1:10,560)	A building has appeared to the northeast of the site and a travelling crane and two hoppers to the west and in the centre. A conveyer is present to the west of the site leading to a coal yard adjacent to the site with warehouses and an electricity substation. A new wharf with mooring rings has been constructed along the southern boundary of the site moving the high-water line to the southern boundary of the site.	The residential development has increased to the north within 500 m of the site, and the nursery is now labelled Mushroom Spawn factory. A school has appeared to the northeast. Shoreham Beach village has appeared to the south within 500 m, on the opposite side of the river. A children's hospital has appeared within 750 m to the west.
1963 (1:2,500) 1963 (1:10,000)	The site remains largely as previously stated.	Lower Road is now labelled Brighton Road and the area to the north of the site is now entirely residential within 750 m.
1969 (1:2,250) 1968 (1:10,560)	No significant changes to the site.	A ready mixed concrete works has appeared to the east and directly adjacent to the site as well as a coal yard. The chemical works to the south is now labelled depot. The children's hospital to the west is now labelled offices.
1979-1980 (1:1,250) 1972 (1:10,000)	No significant changes to the site.	The area directly to the west of the site is now labelled depot.

1985-1987 (1:1,250) 1982 (1:10,000)	No significant changes to the site.	The area to the east, previously a sawing and planning mill, is now labelled railway wharf. The depot to the south is now a timber yard.
1989-1994 (1:1,250)	A new building has appeared in the centre of the site and the building to the northeast is no longer present.	A superstore now lies to the northeast on the opposite side of Brighton Road.
1991-1995 (1:1,250) 2001 (1:10,000)	The building is now labelled water and divided into four tanks. The site is now labelled New Wharf.	The surrounding area remains as previously stated. The neighbouring adjacent site to the east is now labelled Leonards Wharf and to the west Free Wharf (these both contains several warehouse type buildings).
2003, 2010, 2025 (1:1,250)	The water tanks are now no longer shown and in the 2025 map three small buildings are shown to the north of the site, these were no longer present at the time of our site visit.	The buildings to the east in Leonards Wharf have reduced in number.

- 4.2 The post war development history may also be traced from the planning history of the site. There are no relevant planning applications directly associated with the site or the adjacent plots/land on the Adur District Council Planning Application website and Planning Statement for the development.
- 4.3 More recent development history and land use can also be observed from aerial photographs. Aerial photographs centred on the site are provided in Appendix B, and a summary of the relevant information provided in these photographs is given in Table 4.3 below.

TABLE 4.3
A SUMMARY OF RECENT AERIAL PHOTOGRAPHS

Photo date	Features on site	Features adjacent to the site
04/09/1999	There are several vehicles around the site, and a tank can be seen in the centre. Containers are lined up on the quayside, and several boats are moored alongside.	Adjacent to the site, to the north, lies Brighton Road. There is a parking area for the adjacent superstore on the far side of the road. To the east of the site and directly adjacent lies a site with four warehouses and boats moored on the quayside. To the south of the site lies the River Adur with the Shoreham Beach development on the far side.

		To the west of the site is a site with a large warehouse and associated car parking area.
27/09/2009	The tank in the centre of the site is now removed. Piles of sand can be seen to the south and east and several vehicles to the west and north.	The adjacent land appears as previously stated.
13/09/2012	The site appears as previously stated.	The adjacent land appears as previously stated.

5. THE EXISTING SITE

- 5.1 The site was visited on 21 November 2025. Photographs of the site are provided in Appendix C.
- 5.2 The site is approximately 0.8 ha and comprises an area of mixed permeable and non-permeable hardstanding with a waterfront access to the south onto the River Adur/Shoreham Harbour.
- 5.3 The site is bordered to the north by Brighton Road with parking for a superstore on the far side. To the east lies a wet fish market (La Poissonnerie) and farmers market, to the west by the neighbouring commercial warehouse buildings and yard and to the south by the River Adur (tidal estuary).
- 5.4 The site consists of an area of open hardstanding previously used as an aggregate site for the storage and shipping of dredged aggregate. At the time of our visit there was some vegetation growing through the hardstanding in places and evidence of tracks for a crane. There was no evidence of any contamination at the time of our visit. See Appendix C for photographs of the site as existing.

6. RECORD DATA SEARCH RESULTS

- 6.1 An environmental records search (Enviro-Insight Report) has been prepared for the site. The GroundSure Enviro-Insight Report is provided in Appendix D and any items of potential contamination significance highlighted below.

6.1.1 *Historical Land Use*

There are a total of 119 records of grouped potentially contaminative land uses recorded from standard 1:10,560 and 1:10,000 scale historic mapping within 500 m of the site. The closest of these are nine records onsite for unspecified warehouse, timber pond, unspecified depot and unspecified wharf between 1969 and 1982. There was also a brick field 15 m east of the site in 1873 and railway sidings 58 m to the north.

There are 155 records of historical tanks within 500 m of the site, the closest being 11 m, 40 m and 41 m west.

There are thirty-nine records of historical energy features, all electricity substations between 36 m and 463 m from the site.

There are no records of historical petrol stations or military land from 1:1,250 and 1:2,500 scale historic maps within 500 m of the site and eight historical garages, the closest being 230 m west of the site.

6.1.2 *Landfill and other Waste Sites*

There are no records of active, recent or historic waste disposal landfill within 500 m of the site.

There are six records of historical waste sites within 500 m of the site, the closest being 139 m east of the site for the Civic Amenity Tip, and eight records of licenced waste sites, the closest of these being 154 m east for the household waste amenity tip.

There are nine records of waste exemptions within 500 m of the site: the closest four being 74 m northwest for use of waste in construction, 136 m northwest for storage of waste in a secure place, 139 m east for the use of waste in construction and 167 m northeast for the storage of waste in containers.

6.1.3 *Current Land Uses*

There are 31 current records of recent land uses thought to be of contamination risk to the site within 250 m: the closest three being onsite for industrial products (concrete), water (mooring and unloading facilities), transport storage and delivery (container storage).

There is one record of current or recent tanks, a roofed storage tank 162 m east and two records of current or recent petrol stations, 40 m east and 370 m west.

There are no records of electricity cables or gas pipelines, one record of contaminated land (165 m southeast at a former tar distillery), one record for control of major hazards (3 m east for Calor Gas at Leonards Wharf), no records for regulated explosive sites, five records of hazardous substance storage (two 182 m east - liquified petroleum gas, two 248 m east - liquified petroleum gas, 403 m east - wholesale gas storage), no records of licenced industrial activities or radioactive authorisations, eight records of licenced pollutant release, the closest being: onsite - bulk cement (211 m west - mineral processes, 363 m west - quarry processes and petrol vapor recovery and 455 m east - respraying of road vehicles) within 500 m of the site.

6.1.4 *Environmental Permits, Incidents and Registers*

There are no sites registered for explosives, hazardous substances, historical industrial activities, pollutant release or radioactive substances within 500 m of the site.

There are 17 records of discharge of treated effluent to controlled waters the closest five being 26 m east - unspecified trade discharge, 72 m west - miscellaneous discharge to surface waters, 76 m east - trade discharge treated effluent, 80 m east - sewage treated effluent and 92 m west - miscellaneous discharge to surface waters. There have been seven recorded pollution incidents within 500 m of the site, all for water impact category 4.

6.1.5 *Hydrology and Flood Risk*

The records show that the site lies to the north of a Superficial Secondary A aquifer and south of a Secondary B aquifer. The bedrock onsite is a Principal aquifer. The site lies on Tarrant Chalk Member, groundwater vulnerability within the site is rated as 'Medium'. The site does not lie within a Source Protection Zone (SPZ).

There are five records of licenced groundwater, surface water or potable abstractions within 2000 m of the site, the closest four being onsite.

The northern portion of the site lies in Flood Zone 1 (<0.1% chance of flooding in any year) and the southern portion of the site lies in Flood Zone 3 (>3.3% chance of flooding in any year). However, as can be seen from the flood risk map, the site itself is shown to be at low risk. The majority of the site is not at risk of surface water flooding, except for a small area of surface water flood risk in the location of the proposed car parking area. Groundwater flooding is rated as Moderate-High in the northern portion of the site. Reservoir flooding is deemed unlikely. There are no historic records of flooding onsite.

The Upper River Adur (coastal catchment) is present onsite and to the south.

6.1.6 *Designated Environmentally Sensitive Sites*

There is one recorded Site of Special Scientific Interest (SSSI) – The Adur Estuary, no Conserved Wetlands (Ramsar), Special Areas of Conservation (SAC), Special Protection Areas (SPA) or National Nature Reserves (NNR) and two Local Nature Reserves (LNR) – Shoreham Beach and Widewater Lagoon within 2000 m of the site.

There are no areas of designated ancient woodland, one biosphere reserve - Brighton and Lewes Downs within 2000 m of the site.

There are no other designated environmentally sensitive sites within 2000 m of the site.

There are four records of Nitrate Vulnerable Zone within 2000 m of the site, onsite - 1858 m east for Sussex Chalk.

The site and the surrounding area do not lie within an SSSI Impact Risk Zone. This type of development does not require consultation with regards to the SSSI. The proposed development is not thought likely to impact any statutory or non-statutory sites.

There are no world heritage sites, areas of outstanding natural beauty, national parks, listed buildings, conservation areas, ancient monuments or registered parks and gardens within 250 m of the site.

6.1.7 *Agricultural Designations*

There are two agricultural designations within 250 m of the site, onsite and 127 m south for non-agricultural good quality urban land.

6.1.8 *Priority Habitat Inventory*

Within 250 m of the site, there are 47 records of priority habitats: 72 m south for mudflats and the rest for good quality semi-improved grassland.

6.1.9 *Geology*

The geology of the site is registered as Tarrant Chalk Member - Chalk Sedimentary bedrock, however the site itself lies on an area of made ground. There is mixed very-high permeability onsite.

There are four records of shrink swell clay: onsite - negligible to very low risk, 27 m south - negligible risk and 31 m south low risk with ground conditions being predominantly medium- low plasticity. The ground is not thought to be susceptible to subsidence.

There are four records of shrink-swell, running sands: two onsite for very low to moderate risk and four records for compressible deposits: three onsite for negligible - moderate risk, four records for collapsable deposits: two onsite for negligible - very low risk. There is a very low onsite risk for landslides and a negligible onsite risk for soluble rocks as identified from BGS GeoSure Data.

6.1.10 *Natural Hazards Findings and Mining*

There are four records of britpits (21 m west - mineral commodities unloading, 167 m east - surface mineral workings, 204 m west - mineral commodities unloaded and stored and 336 m north - surface mineral workings. 22 records of surface ground workings (six onsite - four for timber ponds and two for unspecified wharfs), no underground workings and two historical mineral workings (both for marine dredged sand and gravel) within 500 m of the site.

There are two records for non-coal mining (both for chalk) within 500 m of the site.

There are no other mining related activities recorded within 2000 m of the site and there are no natural cavities and sink holes.

The site lies in an area where between 3% and 5% of properties are affected by radon. This indicated the need for a sealed air-tight damp-proof membrane that acts as a gas barrier to be included in any new building design.

7. POTENTIAL SOURCES OF CONTAMINATION

7.1 Land use history at the site has comprised:

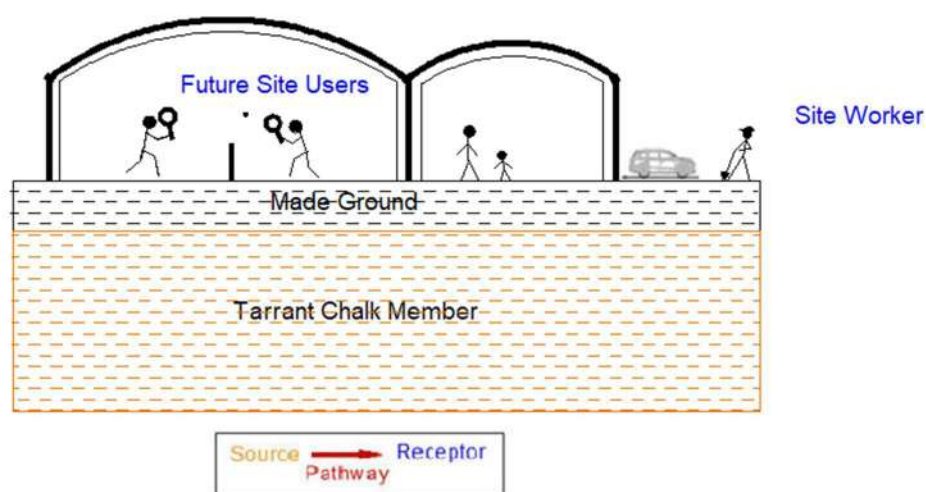
- Natural sand and mud flats up to 1947.
- Aggregate site for the storage and distribution of dredged aggregates for use in construction up to the present day.

7.2 Recent land use at the site has comprised use as an aggregate site for the storage and distribution of aggregate. The site is now vacant; no machinery associated with past uses was seen at the time of our visit.

8. RISK ASSESSMENT

8.1 The risk to future site users can be assessed using the Conceptual Model. This comprises three elements, all of which must be present for there to be a risk. The three elements of the model are a *source* of a potentially hazardous contaminant, a *pathway* by which the contaminant can be transmitted and a *receptor* on which the contaminant may have a harmful effect. A conceptual model for the site is given in Diagram 8.1 below:

DIAGRAM 8.1
CONCEPTUAL MODEL



- 8.2 Potential contaminant linkages between source, pathway and receptor for the site are shown in Table 8.1 below.

TABLE 8.1
POTENTIAL CONTAMINANT LINKAGES

Source		Pathway	Receptor	Risk
Contaminated soil	Contaminated groundwater			
Negligible contamination risk associated with historic or present land use	No significant risk	Contact with contaminated soil, groundwater or soil gas	Maintenance or construction workers engaged in groundworks on the site	✖
		Ingestion of or skin contact with contaminated soil, dust or groundwater	Maintenance or construction workers engaged in groundworks on the site	?
		Contact with contaminated soil or ground water	Building & services	✖
		Leeching of site contaminants into groundwater	Wider environment	✖

Key: ✓ Significant risk ✖ No significant risk ? Uncertain risk

- 8.3 From a review of available information, it is considered that there is minimal potential for contamination associated with historic land use.
- 8.4 It is proposed to redevelop the site by the construction of an area of hardstanding to be used as padel courts on top of the existing hardstanding to comprise a total of six courts to the south of the plot. Also, a changing room and reception building directly behind the courts and a new carparking area to the north of the site. The soft landscaping surrounding the parking areas on the site is to be in containers and as such is not considered to be a potential source of contact with any historical contamination. In this case, potential *receptors* may include site workers (during the construction phase and future maintenance of the site including underground water mains), future site users (considered to include adults and children) are unlikely to be in contact with any sources of contamination due to the nature of the site being a sporting facility and with no uncontained areas of soft landscaping. With regards to the wider environment, the use of the site is not considered to generate any significant impact on the level of contamination to the wider environment.
- 8.5 Source – Receptor Pathways.
- 8.5.1 Site workers (notably construction and ground workers) may come into contact with contaminated made-ground, groundwater and/or soil and gas during the development of the site. See recommendations in Section 10 below.

8.5.2 Future site users are unlikely to come into direct contact with soils as the soft landscaped areas are to be in containers. Exposure to contamination in the soil is deemed unlikely in this case. See recommendations in Section 10.

8.6 The site lies in an area where Radon gas is present in 3% - 5% of properties. It is recommended that any areas new surfacing under the padel courts and changing room building should have a sealed gas-tight damp-proof membrane between the made-ground and the new building; to prevent the accumulation of radon gas in the enclosed areas. However, it should be noted that radon is heavier than air and is primarily an accumulation risk in basements and sub-ground spaces. In this case, it would most likely vent out through the adjacent quay wall.

9. CONCLUSIONS

9.1 The National Planning Policy Framework December 2024 (paragraph 187f) states:

“Planning policies and decisions should contribute to and enhance the natural and local environment by remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.”

9.2 The site lies on made ground over Tarrant Chalk Member with ‘Medium’ groundwater vulnerability. The site does not lie within a groundwater Source Protection Zone (SPZ).

9.3 The site is not considered to be at significant risk of ground gas migration. The site does not lie within 250 m of waste disposal landfill. The site lies within an area where between 3% and 5% of properties are affected by radon, protection measures are required in the form of a gas-proof damp-proof membrane under any new bases/surfaces of the courts and changing room building to minimise the risk of accumulation of gas. Existing concrete surfacing may remain in-situ.

9.4 The land use history at the site has comprised of historic river sand and mud flats with timber ponds and later as part of a wharf used for the storage and distribution of aggregate. It does not appear to include activities with a significant contamination risk. There was no evidence of the current or past storage of significant quantities of liquid fuels or other potentially contaminating fluids at the site.

9.5 It is proposed to redevelop the site by the construction of six padel courts and a changing room/reception building to the south of the site, with an area of associated parking and cycle store to the north and west of the site.

9.6 The overall environmental risk for the site is rated according to the risk assessment matrix in Table 9.1 below:

TABLE 9.1
RISK ASSESSMENT MATRIX

PROBABILITY OF IMPACT	CONTAMINATION POTENTIAL		
	SEVERE	MODERATE OR UNCERTAIN	MINIMAL
High	4	3	1
Medium	3	2	1
Low	2	1	1

1 = low risk, 2 = low to moderate risk, 3 = moderate to high risk, 4 = high risk.

- 9.7 In this case, no significant contamination has been identified. The probability of impact for the proposed land use is low. The contamination potential appears to be minimal. The overall risk rating for the site is low (1).

10. RECOMMENDATIONS

- 10.1 In this case, no further intrusive site investigation is indicated.
- 10.2 Should any unexpected contamination be identified during the development phase, the Council is to be notified, and any necessary remediation work carried out as required.
- 10.3 It is recommended that the gas-proof, damp-proof membrane be laid under any new surfacing in the padel courts and changing room building to prevent the accumulation of radon gas in the buildings. Existing surfacing suitable for re-use may be left in situ.

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