

STUART GUY CONSULTING

Report number 13-12-01

Date 14^h January 2014

Environmental Risk Assessment of Land adjacent to Alexine

Malting Lane, Donington, Spalding, Lincolnshire, PE11 4XA

Non - technical Summary

The site (about 0.28 ha) is located to the west of Malting Lane along a short lane leading to the bungalow 'Alexine'. The Sitecheck Data report identified no potentially contaminating processes either on site or near to it that could impact on the site. The development plan is to construct two new bungalows on the parking area for the haulage business and incorporate the grassed area to the west.

Fifteen lorries were parked on the concreted area between 1982 and 1985 and an above ground diesel tank was present to fill the tanks of the vehicles. Those lorries and the diesel tank were removed from the site in 1985 and a single lorry operated out of this site until December 2004. The concrete and silty sand around the concreted area were all very clean with no evidence of used engine oil being spilled.

The ground under the site is almost impermeable and the nearest surface water is a stream that flows away from the western boundary.

The only potential sources of contamination is that of engine oil from lorries parked on the site and diesel from the above ground tank. The concrete slabs had approximately 2 cm gaps between them (probably for drainage purposes) and this would allow large volumes of aerated rainwater to percolate into the soil under the concrete. It is 28 years since diesel tanks and fifteen lorries were parked on site and even moderate spills of diesel or oil would have been reduced to almost nothing over such a long period. Therefore, the risk of harm from oil and fuel to the occupiers of the site and to the environment is not significant and the risk is acceptable, provided that the existing soil in the garden areas is replaced with soil of suitable quality.

No further investigation is necessary.

Stage One Environmental Desktop Study of Land adjacent to Alexine

Malting Lane, Donington, Spalding, Lincolnshire, PE11 4XA

Planning Application No. H04-0967-13 Full

1. Scope of the Risk Assessment

1.1 Under instructions from G R Merchant, Unit 4 Wrights Mews, 12A Park Road, Holbeach, Spalding, Lincolnshire, PE12 7EE, I have prepared this risk assessment based on the following:

A Sitecheck Data Report dated 29th December, reference SCD_51998653_1_1

A visit to the site on 6th January 2014

Information on the site from Mr Sandy Dear, the site owner and resident of Alexine, the bungalow adjacent to the site under investigation

1.2 The purpose of this report is to assess whether this site, or potential contaminants from adjacent sites, could present a significant risk of harm to the occupiers of the site or to the environment.

2 Sitecheck Data Report + Google Satellite Image

2.1 The Sitecheck Data report searches features that are recorded on maps or in trade directories of the surrounding area and points to features that may be of concern. As with all automated systems, this tends to identify many features that are not relevant and therefore interpretation of the results is required.

2.2 The aerial photograph and Google satellite image show the site to be in a mixed rural and commercial setting with fields to the west and south, commercial buildings to the north and further south and residential buildings to the east and northwest.

2.3 Under current land use for the site, nothing is noted.

2.4 Under current land use for the surrounding area a significant pollution incident (to water and in February 2009) is marked at about 140 m to the south, road haulage services are noted at about 60 m to the southeast and at about 130 m to the northeast, inactive fork lift truck sales at about 60 m to the south, inactive car dealers are noted at about 200 m to the north, laundry services are noted at about 220 m to the northeast and waste disposal services are marked at about 240 m to the northwest.

2.5 Under historical land use for the site, unknown filled ground (stream, river, marsh, etc) is noted.

2.6 Under historical land use for the surrounding area an electrical sub station is noted at about 230 m to the northeast, tanks are marked at about 230 m to the west, factories are noted at about 60 m to the south and at about 210 m to the north, railways are noted at about 210 m to the southwest and unknown filled ground is noted at about between 120 and 200 m to the eastern side from north to south.

2.7 Groundwater vulnerability is classified as non aquifer with negligibly permeable formations and the soil leaching potential is not classified. The nearest surface water feature is a stream stream flowing west some 30 m from the western boundary.

2.8 Radon above the action level affects less than 1% of homes and no radon protection measures are recommended. No mining hazards are noted.

2.9 In summary, the site is in a mixed rural, commercial and residential area with few potential sources of contamination near to the site, groundwater vulnerability is classified as non aquifer and the nearest surface water feature is a stream that flows away from the west of the site.

3 Site Visit on 6th January 2014 and information from Site Owner

3.1 The site was visited when the weather was dry and sunny. It was located along a short lane to the west of Malting Lane (photo 1), the whole area being very flat. The bungalow, Alexine, is located on the western edge of the site (photo 2). The site owner, Sandy Dear, explained the history of the site. The bungalow was constructed in 1977 and in 1978 Sandy started a road haulage business with two lorries (flatbed with curtain sides) moving farm produce. In 1982, Sandy acquired more land to the south of his drive and that was concreted over (photos 3 and 4) together with the land to the east of the bungalow (photo 2) for use as a lorry park for 15 lorries. The concrete had about 2 cm gaps between each slab, presumably to act as drainage. Sandy was in business with his brother and the expansion was mainly his brother's idea. The lorries were only on site until 1985 when Sandy transferred the business to his brother (late night noise annoyed neighbours) who removed the lorries from the site.

3.2 Sandy continued his haulage business with a single lorry until December 2004, from whence no lorries have been on site. In 1978 a 1,000 gallon above ground diesel tank was installed on the right of the drive looking towards Malting Lane just where the additional land started (photo 3). This was removed and a 5,000 gallon tank installed on the other side of the entry lane (photo 5) when the number of lorries on site increased to 15. When the 15 lorries were removed from the site in 1985, the diesel tank went with them and Sandy used clients diesel to fill his single lorry. No diesel tank has been on site since 1985. On the southern boundary, there was a plastic sheet that sat on the soil (it had gravel on it originally, but most had been removed) and on lifting it the soil under it was fine silty sand.

3.3 The lorries were washed down on site, but they were steam cleaned and maintained at a garage (Birdells?) in the High Street in Donington. Oil changes were made on site in the barn that has been partially dismantled (photo 6), but great care was taken to ensure that no oil or diesel was spilled on the concrete or anywhere else in front of the bungalow. Mr and Mrs Dear lived next to the lorry facility and did not want any oil contaminated area so close to it.

Examination of the concrete slabs did not show any signs of oil staining and the soil around the sides, especially that near the oil tank locations, also did not show signs of oil staining.

3.4 Sandy confirmed that the business to the south of the site (Concrete Products then and later forklift sales) caused a pollution incident in 2009, but that was noted in the Sitecheck Data report. Sandy explained that the buildings to the north of the site are part of a farm facility and that it has a large diesel tank located some 100 m to the north of the site boundary. Apparently it is not visible from the road, which I confirmed by walking along Malting Lane. However, Sandy explained that it was a modern two compartment double skinned tank that is very unlikely to leak. Also, there is a large house between the site and the tank surrounded by immaculate large lawns and if any large leak had occurred, then those lawn would have been contaminated first.

3.5 A walk along Malting Lane did not reveal any other potentially contaminating processes, other than the former concrete products site that is now abandoned (photo 7).

4. Conceptual Model

4.1 The site (~0.28 ha) is located off Malting Lane and next to the bungalow 'Alexine'. The site was used as a lorry park for the haulage business, that being the transport of farm produce. For less than 3 years, the site was used to park up to 15 lorries, but for the last 19 years, only one lorry was on site. A diesel tank was present on the site from 1978 to 1985 when it was removed. A hydrocarbon pollution incident within 100 m of the site is in the EA register, but it only impacted on water with no impact on land. No other sources of potential pollution were found near to the site.

4.2 The whole area is flat with only very slight variations in levels. The concrete slabs in the lorry parking area had gaps of about 2 cm between them, allowing rainwater to penetrate the ground under them. The ground under the site is largely impermeable and the nearest surface water feature is a stream that flows away from the western boundary.

4.3 The suggested model of 'source, pathway, target' in which all three components have to be present will be considered for this site. In this context, the source will be a potential contaminant, the receptor will be human or environmental and the pathway will be some process whereby mass transfer from source to receptor occurs.

4.4 Possible pollutant linkages:

Contaminant	Pathway	Receptor
Oil and diesel from lorries parked on site and from aboveground diesel tank	Ingestion of dust Ingestion in home grown produce Migration into groundwater and aquifer	Occupiers of new development Groundwater Aquifer

5 Conclusions and Recommendations

5.1 The site owner, Sandy, and his wife lived practically on the site and Sandy claimed that no significant spills of diesel occurred. The diesel tank was removed in 1985 and only one lorry was then present until December 2004 when it was removed. The concrete slabs have gaps which will allow significant volumes of aerated rainwater to percolate into the soil under the slabs. The soil beside the slabs was fine silty sand that Sandy suggested was also under the concrete slabs. When the diesel tanks were present, it was possible that significant volumes of diesel could have been spilled, but any such spills have had 28 years to be metabolized by micro-organisms in the soil. It is also possible that used engine oil could have been spilled on site, but again the amounts would be very small as the concrete is very clean. The single lorry was not filled with diesel on site and only very small volumes of engine oil could have been spilled from 1985 to 2004.

5.2 Sandy Dear has stated that no significant spills of diesel or oil occurred on the site and all the visual signs point to that being the case. The concrete will be removed from the site, together with the hardcore sub base. If small quantities of the remnants of diesel or lubricating oil are present, then they will be non-volatile as oxidation through metabolism of the lighter fractions will have occurred over the last 10 to 25 years.

5.3 Groundwater vulnerability is classified as non aquifer so the risk of harm to the environment is not significant and the risk is acceptable. The very minor risk of harm to the occupiers of the site can be mitigated by removing soil from garden areas down to 600 mm and replacing with soil of suitable quality. Once the soil has been replaced the risk of harm to the environment is not significant and the risk is acceptable.

5.4 No other potential sources of contamination were identified in the near vicinity of the site.

5.35 No further site investigation is necessary.

6 Summary

6.1 The site (about 0.28 ha) is located to the west of Malting Lane along a short lane leading to the bungalow 'Alexine'. The Sitecheck Data report identified no potentially contaminating processes either on site or near to it that could impact on the site. The development plan is to construct two new dwellings on the parking area for the haulage business and incorporate the grassed area to the west.

6.2 Fifteen lorries were parked on the concreted area between 1982 and 1985 and an above ground diesel tank was present to fill the tanks of the vehicles. Those lorries and the diesel tank were removed from the site in 1985 and a single lorry operated out of this site until December 2004. The concrete and silty sand around the concreted area were all very clean with no evidence of used engine oil being spilled.

6.3 The ground under the site is almost impermeable and the nearest surface water is a stream that flows away from the western boundary. Therefore the risk of harm to the environment from any minor diesel or oil spills on the site is not significant and the risk is acceptable.

6.4 The only potential source of contamination is that of engine oil and diesel from lorries parked on the site and from diesel in the above ground tank. The concrete slabs had approximately 2 cm gaps between them (probably for drainage purposes) and this would allow large volumes of aerated rainwater to percolate into the soil under the concrete. It is 28 years since diesel tanks and fifteen lorries were parked on site and even moderate spills of diesel or oil would have been attenuated over such a long period. Therefore, the risk of harm from oil and fuel to the occupiers of the site and to the environment is not significant and the risk is acceptable, provided the soil in the garden areas is replaced with soil of suitable quality.

6.3 Those workers whose main job it is to grade sites or excavate significant quantities of soil could be subject to cumulative exposure to various substances on many sites and they should wear overalls and gloves, even if the soils do not present a significant risk to the health of the workforce. For example, the presence of water contaminated with Weil's disease is a small probability and working on many sites increases the risk of infection to a worker. Localised contamination from small amounts of chemicals that could have been discarded is an unlikely event, but if heavily discoloured or highly odorous materials are encountered, then appropriate advice should be sought

Stuart Guy, BSc, PhD, C Chem, MRSC, C Eng, MIMMM

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Photo 1 Short lane from Malting Lane to site



Photo 2 Bungalow 'Alexine' at north western edge of site



Photo 3 Land to the south of original site, with diesel tank located to left in front of hedge



Photo 4 Land to the south of original site, looking west, used as lorry park



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Photo 5 Location of 5,000 gallon diesel tank where brazier is now



Photo 6 Remains of barn in which oil changes were done on lorries



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Photo 7 Former concrete products where hydrocarbon pollution incident occurred in 2009

