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Department for Operations

Claire Booth
Bury Council Planning Department

Dear Claire

Texaco Petrol Station, Bury Old Road, Prestwich, Planning Application: 69164 – Contaminated Land

I write regarding the above planning application. The Environment Section has received copies of the following reports:

- Desk Study Assessment Report for Bury Old Road, Prestwich, Brownfield Solutions Limited, Reference: LC/C2223/3617, March 2013.
- Phase 3 Site Investigation Report, Former Texaco Fuel Station, Bury Old Road, Prestwich, M25 0EY, Redstart, Reference: 649.00.01 Version: 1.1, 31 August 2021

The Environment Section has reviewed the above information in order to assess the following points:

1. The adequacy of the desk study information available for this site.
2. The adequacy of the site investigation.
3. The adequacy of the final risk assessment.
4. The acceptability of the proposed remediation strategy.
5. Whether the information submitted is sufficient to determine that the site presents a low risk to human health and the environment.

The site was historically occupied by a petrol filling station, a car wash, car sales garage and an electricity substation. Adjacent land use includes housing, retail premises and allotments. Previous land uses on and adjacent to the site have included buildings associated with a large residential property known as Egerton Lodge, a garage colony, a possible commercial building, residential and allotment gardens. The site does not lie within 250 metres of any known landfill sites and is not in close proximity to any major surface watercourses. The site lies above fluvioglacial sand and gravel deposits over the Sherwood Sandstone principal aquifer.

The filling station tanks were decommissioned (foam filled) in 2016 and in 2021 the above ground structures were demolished. Three underground petrol tanks were removed in August 2021. The report states that the excavations found no hydrocarbons in the tanks or in the ground around the tanks. The resultant void after tank removal was backfilled with imported granular material (recycled 6F2). Surface

concrete and former foundation have been removed below the footprint of the proposed building.

It is understood that the proposed development comprises the construction of a retail unit and synagogue with associated car parking and landscaping.

1. The adequacy of the desk study information available for this site

The report includes a description of the site including its past historical uses. An appraisal of the site environmental setting is presented including its geology, hydrogeology and hydrological regime, mining activities, waste management issues, and identification of additional environmental sources, pathways and receptors. This information has been used to compile a clear site conceptual model, which identifies potential sources, pathways and receptors and likely pollution linkages.

The consultant concluded that there is a potential risk to human health and the environment, primarily from possible leakages from the underground fuel storage tanks, but also from the former garage colony, the electricity substation and made ground that may exist at the site. Consequently, an intrusive investigation was recommended to fully assess the risks at the site. This assessment appears reasonable.

Additionally, as recommended in the report, an asbestos survey should be carried out prior to the demolition of any buildings on site.

The desk study information provided has previously been found to be sufficient to assess the potential risks at the site.

2. The adequacy of the site investigation

The site investigation report includes a review of the following ground investigation reports:

- GeoAssist Ltd: Phase II Contaminated Land Risk Assessment - Texaco Fuel Station Bury Old Road, Prestwich. Date: January 2014. Report Ref: 5594/FSP-CLRA v1.00.
- GeoAssist Ltd: Ground Investigation - Geotechnical - Texaco Fuel Station, Bury Old Road, Prestwich. Date Jan 2014. Report Ref: 5594/FSP-G.
- Tank Decommission certificate, Texaco Service Station, 4th January 2016.

The above GeoAssist reports are required for submission for our assessment.

A site visit was carried out on 11th August and 17th August 2021 and found that the siteworks were a tidy operation with good control of earthworks, materials for recycling and potential wastes. During the first visit the three below ground petrol tanks had been removed and were on the surface. These were foam filled and there was no visual or olfactory evidence of any hydrocarbons. The void from tank removal was about 90% backfilled on 11th August. Additional 6F2 was being imported, this was inspected and was visually suitable and free of unsuitable materials such as wood,

plastic, ACMs etc. No invasive species were noted. No asbestos containing materials were observed. No areas of potential hydrocarbon spillages were observed.

The two previous reports carried out by GeoAssist have been summarised and included the following intrusive works:

Technique	No.	Comments
Window sample Boreholes	8	WS1 – WS8 to a max depth of 6.00mbgl. WS1, WS3 and WS5 have gas and groundwater monitoring standpipes installed.
Soil sampling	5	Metals – Cd, CrVI, Cu, Hg, Ni, Pb, V and Zn, Semi and Non-Metals - As, Se, Free CN- and Phenols, Polycyclic aromatic hydrocarbons (PAHs), Petroleum hydrocarbons (TPHs), pH, organic content and total/soluble SO ₄ , Asbestos

Site Ground Conditions: Ground conditions consisted of grass/topsoil and concrete to depths between 0.20m to 0.90m underlain by made ground to depths ranging from 0.90m and 2.80m and overlying sand with silt/clay. The made ground consisted mainly of clay, sand and gravel with brick and concrete fragments and cinders in varying proportions. This sand silt/clay varied from 0.60m to 1.50m in thickness. All the exploratory holes completed to full depth were terminated in silty Sand (Glaciofluvial Deposits) and extended to at least a depth of 6.00m.

During the operation of the site as a petrol filling station, the 3 underground fuel storage tanks were fitted with highly accurate electronic measuring gauges which were monitored from the kiosk. No fuel losses had been recorded. The tanks were located to the rear of the kiosk in the centre of the site and were easily identified by labels on manhole covers.

No contaminants were identified at levels exceeding the GeoAssist Limited GACs or SGVs for a commercial end use from the investigation. Photo Ionisation Detection did not identify any high levels of Volatile Organic Compounds from the ground across the site.

The assessment did not identify any potential risks to end users of the site from elevated levels of anthropogenic contamination within the ground on the site. A watching brief was recommended to be carried out.

Site Water Conditions: Depth to groundwater has varied between 4.20m and 4.50m across the site.

Site Ground Gas Conditions: An interim gas risk assessment was produced for the site and is based on the results of 3 monitoring rounds. The interim data obtained indicated that the proposed area for the new construction is representative of CIRIA C665 Characteristic Situation 1 (CS1 - very low risk) so no special precautions were required for the development. Further gas monitoring was proposed but was not made available.

Redstart carried out further investigation due to the length of time from the GeoAssist investigations and the location of the exploratory holes which did not cover the locations of the main petrol tank farm. Additionally potential off-site sources from the electrical transformers were not addressed, and insufficient gas monitoring was carried out.

The site investigation was carried out on 20th August 2021 and comprised the following:

Technique	No.	Comments
Trial pits	5	TP1 to TP5 to depths of between 1.10mbgl to 4.20mbgl. Gas monitoring standpipes in WS02 – WS04. With response zones in the made ground and clay.
PID testing	5	
Soil sampling	6	Metals – As, Cd, Cr(total), Cu, Hg, Ni, Pb, Se and Zn, Semi and Non-Metals - As, Se, Polycyclic aromatic hydrocarbons (PAHs), Petroleum hydrocarbons (TPHs), pH, organic content and total/soluble SO ₄ , Asbestos.
	7	TPH CWG & VOCs.
	1	TP5 tested for PCBs
Gas monitoring	1	4 locations: WS1, WS3 WS5 and WS8 (from previous investigation).

Site Ground Conditions: Comprised made ground with a thickness ranging from 1.00 to 2.10 m over natural silty fine sand. In TP1 to TP4, there was no surface hard standing because it had previously been removed. In TP5 there was concrete hard standing. The made ground was generally similar to that encountered by GeoAssist. It was generally a gravel clayey very sandy gravel but in places became a gravelly sand. The majority of the Made Ground was composed of brick and concrete but there was ash, clinker, wood, asphalt and other anthropogenic material. TP1 had the largest proportion of wood, metal, plastic etc.

There was no olfactory evidence of any significant contamination noted during the collection of the samples. There was some visual evidence of potential contamination with asphalt/tarmac and ash being present in the made ground.

Site Water Conditions: No ground or perched water was encountered within the trial pits during the works and no chemical assessment of the groundwater/perched water quality was undertaken.

Site Ground Gas Conditions: Gas monitoring was carried out on one occasion on 20th August 2021. Atmospheric pressure was 1015mb.

A maximum concentration of 0.2%v/v methane was found, and concentrations of carbon dioxide ranged from 0.5 to 5.8%v/v. A maximum flow rate of 0.4 l/hr was recorded.

The site investigation appears to be acceptable.

3. The adequacy of the final risk assessment

Ground Assessment: The soil analysis results have been compared to the CLEA Category 4 Screening Levels (C4SLs) and LQM/CIEH S4ULs for 'Industrial / Commercial' assessment criteria land-use scenarios. The Generic Assessment Criteria (GACs) are intended for use as a screening tool for the generic quantitative assessment of risk to human health from contaminated land and represent "trigger values" that, if exceeded, could indicate a possibility of significant harm.

The following one elevated concentration of contaminant was found in the made ground:

- Dibenzo(a,h)anthracene – Samples TP3 0.90mbgl (6.7mg/kg), assessment criteria of 3.6mg/kg.

Almost all VOC results were less than the detection limits for all compounds apart from:

- Toluene – TP4 1.80mbgl (0.0371mg/kg)
- M+P-xylene – TP4 1.80mbgl (0.0218 mg/kg)
- O-xylene – TP4 1.80mbgl (0.0144mg/kg)

These concentrations are less than the commercial land use assessment criteria for these compounds. The concentrations of PCBs in the sample adjacent to the sub-station were less than the detection limit so no mitigation works are required due to PCBs.

No asbestos was encountered.

The results of the analysis on the samples tested were assessed to contain contaminants at concentrations below the standard generic assessment criteria for a 'Commercial / Industrial' end-use scenario. A single sample at a depth of 0.90 m has a single PAH compound higher than the assessment criteria. It is assessed that this does not pose a risk to human health because it has a very low volatility and the principal pathway would be inhalation of dust. Because this development will have all the made ground covered with hard standing there will be no pathway for inhalation of dust or pathways such as through skin contact. Therefore, no remediation is required.

There is no evidence of significant presence of petroleum or diesel range hydrocarbons. Note that the highest TPH (C5 to C40) concentration was 412 mg/kg and most of the hydrocarbons are >C21. There are no C5 to C10 hydrocarbons present in the 13 samples tested. Therefore, this confirms that there is no significant risk for the development from ground contamination.

Controlled Waters Assessment: A groundwater risk assessment has not been carried out. No significant source of contamination, potential pathway or viable controlled waters receptor has been identified at the site. It is considered that there is a negligible risk with regards to controlled waters.

Ground Gas Assessment: GeoAssist concluded that the site is representative of Characteristic Situation 1 in accordance with CIRIA C665 as significant quantities of ground gases and or flows have not been identified during the monitoring period. The results of the additional round of ground gas monitoring by Redstart confirms this and no specific precautions are required due to ground gases.

The final risk assessment appears to be acceptable.

4. The acceptability of the proposed remediation strategy

The following measures are proposed so that the contamination identified on site no longer presents a risk:

- During further groundworks, if previously unrecorded areas of contamination are identified during the re-development works Redstart should be contacted to assess the impact and determine, along with the local authority, the required mitigation requirements

The proposed outline remediation strategy is acceptable to this Section, however, the following items are also required for submission:

- Any imported materials will require testing to ensure it is suitable for use and source details provided.
- If the CL:Aire Definition of Waste Protocol is to be used, a copy of the Materials Management Plan will be required.
- If any material is taken off, site waste transfer documentation will be required for submission.
- Verification report to demonstrate that the remedial works have been sufficiently carried out.

All parties involved with waste and soil movement at the site should be aware that materials illegally deposited or deposited at inappropriate sites may be subject to relevant landfill taxes, payable by all parties. Only robust due diligence is a defence against joint liability. Illegal deposits can include moving waste soil material on sites, or between sites, without the appropriate permits, exemptions or duty of care.

5. Whether the information submitted is sufficient to determine that the site presents a low risk to human health and the environment

In order for this Section to be satisfied that this development does not pose a risk to human health or the environment, the following information needs to be submitted to the Council for approval:

- (i) Confirmation of the pre-demolition asbestos survey and that any asbestos containing material were disposed of to a suitable facility.
- (ii) Copies of the 2 GeoAssist Reports summarised in the Redstart report.
- (ii) After completion of site works, a verification report is required to validate that the work undertaken conforms to the remediation proposals received and agreed by this Section. The report would be expected to include the following:
 - Summary of desk study, site investigation report and remediation strategy.
 - Confirmation of the watching brief carried out during works to include photographic evidence.

The above information will be required for submission by planning conditions of planning permission is granted.

Please do not hesitate to contact me if you require any clarification of the above.

Yours sincerely



Judith Scott
Environmental Protection Officer

Please Note: The Environment Section has used all reasonable endeavours to determine the risk from contaminated land and ground gas based upon the information available to it. However, the comments made above should not be taken to imply that the land is safe or otherwise suitable for this or any other development. The responsibility for safe development rests with the developer.

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