

Phase I Environmental Assessment

Buxton TRS
Long Hill
Buxton, Derbyshire
(Skyline Code SK0030)

Prepared for:
Telereal Trillium

Prepared by:
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Date:
April 2014

Project or Issue Number:
UK14-19975

ENVIRON

Contract No:	UK14-19975
Issue:	2
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Date:	April 2014

Version Control Record				
Issue	**Description of Status**	**Date**	**Reviewer Initials**	**Author Initials**
2	Final Issue to Client	14/04/2014	AG	TL/SH

Contents

Executive Summary

ENVIRON UK Limited ('ENVIRON') was commissioned by Telereal Trillium Limited ('Telereal Trillium', the 'Client') to update an existing Phase I Environmental Assessment at Buxton Telephone Repeater Station (TRS), Long Hill, Buxton, Derbyshire, Skyline Code SK0030 (the 'site'). The updated assessment was required as part of a planning submission by Telereal Trillium for residential development of the site. The objectives of the review were to assess the potential for soil or groundwater contamination at and in the vicinity of the site and assess its significance in terms of potential risks to future residential occupants.

The site was developed from agricultural land into the Telephone Repeater Station by 1954. Surrounding land has remained in agricultural use.

The site is underlain by the Millstone Grit Group, a 'Secondary A' Aquifer. The site is not located in a SPZ. However, a private groundwater abstraction used for domestic purposes approximately 380m north-west of the site and a licensed groundwater abstraction for drinking water purposes (associated with a hotel) approximately 420m north west of the site increases the environmental sensitivity of groundwater beneath the site. The nearest surface water body is an unnamed river located approximately 95m to the south-east of the site. There is a private surface water abstraction used for domestic purposes approximately 430m north of the site and a public potable surface water abstraction within 2km of the site. On this basis the site is considered to be in an area of moderate sensitivity with respect to surface water.

Two underground storage tanks (USTs) are located on site which formerly stored fuel oil. One UST is foam filled but failed an integrity test prior to it being decommissioned. Fuel oil remains in the second UST. Integrity test records are not available for the second UST. A preliminary investigation of the USTs in 2008 identified the presence of localised oil in shallow soils immediately adjacent to the south west corner of the TRS building.

The site is located in an area designated as Flood Risk Zone 1 (low probability of fluvial flooding). This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1% in any year).

The Council has stated that the site has been identified as potentially contaminated land under the Council's Part 2A inspection strategy. However, it is considered to be low risk and it is unlikely that it will receive a detailed site assessment in the foreseeable future.

On the basis of this Phase I Environmental Assessment recommendations are made with to remove one underground fuel tank (Tank 2) and initially integrity test and decommission Tank 1. The remainder of the site has a low potential for significant contamination based on the activities carried out at the TRS.

Prior to demolition or refurbishment of the building it is recommended that a refurbishment / demolition type asbestos survey is carried out in accordance with HSG 264.

1 Introduction and Methodology

1.1 Background

ENVIRON UK Limited ('ENVIRON') was commissioned by Telereal Trillium Limited ('Telereal Trillium' the 'Client') to update an existing Phase I Environmental Assessment at Buxton Telephone Repeater Station (TRS), Long Hill, Buxton, Derbyshire, Skyline Code SK0030 (the 'site')[1]. The updated assessment was required as part of a planning submission by Telereal Trillium for residential development of the site.

The review was conducted in accordance with the Terms and Conditions of the BT / Telereal Environmental Consultancy Services Contract (Contract Number BS210300).

1.2 Objectives

The objectives of the review were to assess the potential for soil or groundwater contamination at and in the vicinity of the site and assess its significance in terms of potential risks to future residential occupants.

1.3 Scope of Works

The scope of the review comprises a desk study plus site inspection, in accordance with the detailed scope of work agreed with BT. In brief, the scope comprised:

- a site visit to view the current condition of the site;
- examination of historic, recent and current Ordnance Survey plans to identify activities which might have led to contamination of soil or groundwater both on the subject site and on adjacent sites;
- examination of published records and plans on the shallow and deep geology and hydrogeology of the site to assess the vulnerability and sensitivity of groundwater and surface water resources to contamination, if present;
- obtaining and searching a current proprietary database of environmental permits, records and incidents at the site and surrounding area;
- a summary of the preliminary investigation works which have been undertaken at the site to date, with regards to two underground fuel storage tanks;
- enquiries of the Local Authority Planning (via online planning resources) and Environmental Health Departments to obtain information on environmental conditions, incidents and known contamination risks and on the Local Authority's Contaminated Land Strategy.

No sampling or analysis of soils, waters or other materials was carried out for the purposes of this review.

[1] The initial assessment was entitled 'Phase I Environmental Assessment, Buxton TRS, Long Hill, Buxton, SK0030', report reference 64-C8696, November 2005, undertaken by ENVIRON UK Ltd.

1.4 Interpretation of Risk and Provision of Recommendations

The law on land contamination in the UK, under Part IIA of the Environmental Protection Act 1990, takes a risk-based approach. Action will only be required where significant harm is being caused or there is a significant possibility of such harm being caused; or where significant pollution of controlled waters is being caused or there is a significant possibility of such pollution being caused.

Within the limitations of the scope of the Phase I Review, ENVIRON's risk assessment takes into account the possible sources of contaminants, the environmental receptors at risk, and the pathways by which contaminants can pass to impact upon identified receptors. An overall conclusion has been given as to the likelihood of the site being designated as Contaminated Land as defined under Part IIA.

An overall risk classification combines the site uses as potential sources of contamination, and environmental sensitivity as potential pathways and targets for impacts by contaminants and deleterious materials, as follows:

- Low Risk — Issue unlikely to present a liability or cost
- Moderate Risk — Issue may present a liability or cost, but these may be limited
- High Risk — Likely that costs and/or liabilities exist.

2 Land Use

2.1 Current Land Use

The following information was derived from a site inspection undertaken by Stephanie Harper of ENVIRON on the 21st March 2014.

The site is located on Long Hill, Buxton at National Grid Reference 404230, 374740, on the A5004 (Long Hill), approximately 1.94 km north-west of Buxton town centre. The site is occupied by a disused Telephone Repeater Station (TRS). The site is set back slightly from the road, with an access track (located off-site) running east-west between the site entrance and the main road.

A site location map is provided in Annex A and an aerial photograph of the site in Figure2. Photographs are provided in Annex B.

2.2 The Site

The site comprises a rectangular shaped plot of land, occupying an area of approximately 0.1 hectares and situated at approximately 390m Above Ordnance Datum (AOD). The site and surrounding topography slopes steeply downwards from the north-east towards the south-west. The site itself lies slightly below the level of the A5004 and the adjacent land to the south drops by approximately 2m from a retaining wall at the southern site boundary.

The building is understood to have been constructed by 1954. The majority of the building is single storey. The building is constructed from stone with a concrete flat roof. There is an access ramp into the south-west corner of the building. The building occupies approximately 25% (240m^2) of the total site area and is set in the central northern part of the site. The remaining site area is covered with grass (65%) and asphalt hardstanding (10%). A site layout plan is provided in Figure 3, Annex A.

The site is currently unoccupied and during the site inspection external areas were accessed. A previous site visit in 2008 included an inspection of the interior of the building (described in section 4) which identified concrete / tile bases surrounded by wood block flooring. The bases were located in a room occupying the south west of the building and were adjacent to ventilation features in the walls, suggesting that the bases were the locations of two former generators. The generators themselves had been removed although visual evidence of localised fuel / oil staining was present at both locations. The approximate location of the generators are shown in Figure 3, Annex A. A battery room is shown on site plans occupying the east of the building. Photographs from the 2008 site visit are presented in the photographic log in Annex B.

No site drainage plans were available for review. A fenced off manhole cover at the eastern corner suggests the presence of a septic tank on-site, and down pipes from the roof appeared to drain to the ground (possible soakaways).

2.2.1 The Surroundings

The site is situated within an area of agricultural land and is surrounded on three sides by pasture. A track / pathway runs east to west on third party land along the northern boundary of the site (i.e. between the site and Long Hill road), with a gate from Long Hill road located 40m east and signposted ‘Camp Site’ (the actual camp site location not determined). Long Hill road is located 8m north; beyond the road is further grass pasture. A farm is located 160m south-east.

2.3 Underground Storage Tanks

There are two underground storage tanks (USTs) on the site (these are discussed further in section 4). The approximate location of the USTs are shown in Figure 3, Annex A.

During ENVIRON's site visit a number of manhole covers were visible around the building. Along the western side of the building these corresponded to the two identified underground storage tanks. Scarring and disturbed asphalt in the locations of the tanks showed where previous investigative excavations have been carried out.

2.4 Above Ground Storage Tanks

No above ground storage tanks associated with fuel or chemical storage were observed during the site visit.

An above ground single skin steel tank with an open top is situated outside the building along the western side (Photo 5), located on a concrete base. The tank appears to be a water butt, receiving water from a drain pipe above. The tank is overflowing and beneath a tap at the base was evidence of orange staining (likely rust) from within the tank. No evidence of buried or above ground pipework was noted associated with the tank.
Hazardous Materials Storage

No materials are currently stored externally at the site.

2.5 Waste Storage

The site is currently disused and waste is not generated at the site.

2.6 Asbestos Containing Materials (ACMs)

A Type 2 Asbestos Survey, as defined under the HSE Guidance Note MHDS 100, was undertaken at the site in April 2004 by Environmental Evaluation Ltd (report reference MGC/10077/SK0030A1, dated 16th July 2004). The survey included accessible areas of the building. An asbestos register, prepared as part of the report, identified asbestos cement containing chrysotile in a number of wall panels, including within the staff room, apparatus room, engine room and battery room. Chrysotile asbestos cement was also recorded as being present in 'small items' on the wall of the engine room (i.e. the room where the two generators were housed). The condition was recorded as 'low damage, encapsulated asbestos cement'. Thermoplastic floor tiles were also identified in the lobby and staff room which were presumed to contain chrysotile. The recommendations (based on the continued use of the building) was to manage to ACMs.

In April 2012 an asbestos re-inspection was undertaken by WYG Environment Ltd (report reference A071728 V19 issue 1, 10th May 2012). A visual inspection of the ACMs identified in the asbestos register was undertaken. The condition of the ACMs identified in the 2004 survey were identified as being 'low damage' and the recommendations (based on the continued use of the building) were to manage the ACMs. An additional ACM was identified in the engine room, comprising 'small items' located on the wall to the apparatus room. This was recorded as chrysotile asbestos with low damage, with a recommendation to manage the items.

Some areas of the building were unable to be accessed during the surveys, including the external roof. Under the Control of Asbestos Regulations (2012) prior to refurbishment or demolition of the existing building a refurbishment / demolition asbestos survey will be required to locate and identify all ACM before any structural work begins on the building.

2.7 Polychlorinated Biphenyls (PCBs)

No equipment containing suspected PCBs was identified externally at the site during the inspection.

The reported presence of generators onsite and two fuel tanks for the generators suggests that the site produced its own electricity.

2.8 Ozone Depleting Substances

There were no signs of air conditioning units or equipment at the site externally.

2.9 Former Land Uses

Historical Ordnance Survey maps for the site were examined as part of the environmental review. The historical development of the site and surrounding area is summarised in Table 2.1 and Table 2.2 below. Selected historical maps are presented in Appendix C.

Table 2.1: Summary of Historical Mapping – Site Features

Dates	Site Features
1880 - 1922	The site is located on undeveloped agricultural land.
1954 -1973	A small unidentified building occupied approximately 15% of the total site area in the north.
1973 - 2013	The site had been redeveloped into its current configuration with one building in the centre occupying approximately 20% of the total site area, marked as a Post Office Repeater Station.

Table 2.2: Summary of Historical Mapping – Surrounding Area

Dates	Surrounding Features
1880 - 1899	Predominantly undeveloped with scattered residential properties. Quarry located approximately 230m south-east of the site.
1899 - 1977	Old quarries located approximately 500m north and 600m south of the site.
1977 - 2000	Surrounding land resembles the current configuration

2.10 Landmark Envirocheck Database

The following information has been obtained from a search of a publicly available third-party environmental database:

Table 2.3: Environmental Database Information

Regulatory Authorities	0-250m	250-500m	Details
Landmark Envirocheck Records			
Recorded landfill sites and waste management facilities.	0	2	There are no current records of registered landfills within 1km of the site. From 1984 to 1990 Cold Spring Farm, 331m west of the site was licensed for inert waste disposal.

Table 2.3: Environmental Database Information			
Regulatory Authorities	**0-250m**	**250-500m**	**Details**
			In 1984 Cold Spring Farm, 427m west of the site was licensed for landfilling using excavated natural materials.
Registered waste transfer sites	0	0	There are no records of waste transfer sites registered within 1km of the site.
Part A(1) Environmental Permits	0	0	There are no records of sites holding a Part A(1) Environmental Permit within 1km of the subject site.
Part A(2) Environmental Permits	0	0	There are no records of any sites holding a Part A(2) Environmental Permit within 1km of the subject site.
Part B Environmental Permits	0	0	There are no records of any sites holding a Part B Environmental Permit within 1km of the subject site.
Radioactive substances licenses	0	0	There are no records of any registered radioactive substances within 1km of the site.
Enforcements, prohibitions or prosecutions	0	0	There are no records of enforcements, prohibitions or prosecutions within 1km of the site.
Pollution Incidents	0	0	There are no records of pollution incidents within 1km of the site.
Is the site in a radon-affected area?	Yes		The property is in an intermediate probability radon area, as between 1 and 3% of homes are above the action level. Radon protection measures are not typically required in the construction of new dwellings or extensions.
Miscellaneous			
Is the site in an area where there is a known risk of flooding?	No		According to the EA, the site is located in a Flood Risk Zone 1 (low probability of fluvial flooding). This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%).

2.11 Regulatory Enquiries

2.11.1 Environmental Health

The following information has been received from High Peak Borough Council Environmental Health Department regarding the site and surroundings:

- The site has been identified as potentially contaminated land under the Council's Part 2A inspection strategy. However, it is considered to be low risk and it is unlikely that it will receive a detailed site assessment in the foreseeable future.
- The Council is aware of an oil storage tank on site which was decommissioned in 2004. ENVIRON notes that this relates to the UST identified on the BT Tank Management database. The Council also states that '*it is believed that there was a leak to the oil storage tank*'.

- The Council holds no other information relating to past industrial use, pollution incidents or records of contamination and site investigation for the site.
- There are no records of current or former landfills located within 250m of the site.
- The site is located within a Class 2 Radon Area meaning 1 to 3% of properties measures exceed the action level. The Council state that radon protection measures are not required.
- There are no records of current or former nuisance issues, prosecutions or enforcements associated with the site and no environmental permits, LAAPC or LAPPC licensed to the site or adjoining properties.

2.11.2 Online Planning Records

ENVIRON has searched the High Peak Borough Council online planning records for information relating to the site (online records date back to 2001). There are no on-line planning records relating to the site.

2.12 Underground Pipelines

The Linesearch database lists pipelines owned and/or operated by the a number of pipeline operators including: Esso Petroleum Co Ltd, Mainline Pipelines Ltd, Government Pipelines and Storage System, Manchester Jetline Ltd, BPA, ConocoPhillips (UK) Ltd, Total UK, Ineos TSEP, Shell UK Ltd, Sabic UK Petrochemicals, BT GEO Network, E-on UK Plc, BP Exploration PSP, Scottish Power Generation Ltd, ConocoPhillips Ltd Humber Refinery, NPower CHP Pipelines, Centrica Energy, Coryton Energy Co Ltd, Marchwood Power Ltd, National Grid, Premier Transmission Ltd and Wingas Storage UK Ltd.

According to the database, there are no records of underground oil or refined hydrocarbon products pipelines on the site or within 250m.

2.13 Land Use Summary

2.13.1 The Site

The site was developed from agricultural land by 1954. Since this date the site has been used as a Telephone Repeater Station, although it is understood the site has been disused since 2005. The potential for widespread contamination to be present from the sites use as a TRS is considered to be low and the potential for contamination to be present is principally associated with the storage of fuel within two underground storage tanks (USTs). Further information on the USTs is provided in section 4.

2.13.2 The Surroundings

No significant potentially contaminative activities have been identified as currently taking place in the immediate area. Prior to 1899 quarries were located in the wider surroundings, 230m to the south-east, 500m to the north and 600m to the south of the site. However, the surrounding land uses are not considered to be historic or current sources of contaminants which could impact the site.

The potential for off-site contamination (if present) to migrate beneath the site would be dependent on the underlying geological conditions, which are discussed in Section 3.

3 Environmental Setting

Desk-based research of the local geology, hydrogeology and hydrology was carried out in order to establish the potential for migration of contamination onto or away from the site, and to assess the surface water and groundwater sensitivity of the site area.

3.1 Geology and Hydrogeology

According to the British Geological Society (BGS) online geology map viewer (www.bgs.ac.uk, accessed on the 1st April 2014) the site is directly underlain by the Roaches Grit. This is described by the BGS as a medium to coarse-grained or fine-grained, sandstone, which forms part of the Millstone Grit Group. Several geological faults in the surrounding area juxtapose the Roaches Grit with other units of the Millstone Grit Group (typically sandstones interbedded with grey siltstones and mudstones).

According to Environment Agency (EA) online mapping of the area, the Millstone Grit Group (including the Roaches Grit) is classified as a Secondary A Aquifer (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). Groundwater is likely to be present within the bedrock excess of 25m beneath the site.

According to the EA, the site is not located within a Groundwater Source Protection Zone (SPZ). The closest SPZ is a Zone I (Inner SPZ), located approximately 1.4km south of the site at its closest point. This Zone I SPZ appears to be protective of a number of licensed groundwater abstractions within, to the south and to the east of the town of Buxton, all of which lie in excess of 2km from the site.

According to the Envirocheck environmental database there are two licensed groundwater abstractions within a 1km radius of the site, both licenced to Brookfield Country House Hotel located 421m to the north-west of the site for drinking, cooking, sanitary and washing purposes. There are six further groundwater abstractions between 1km and 2km of the site. Two of these are recorded as being used for drinking water / domestic purposes, and a further two for water bottling abstractions.

Licensed abstractions within 2km of the site are summarised in the table below:

Table 3.1: Summary of Current Licensed Groundwater Abstractions within 2km of the Site

Operator	Distance	Source	Use
Brookfield Country House Hotel, Long Hill	**421m NW**	**Borehole at Long Hill, Buxton.**	**Hotels; public houses and conference centres: drinking, cooking, sanitary, washing (small garden)**
Nestle Waters UK Limited	**1165m E**	**Borehole At Lightwood, Buxton**	**Food And Drink: Water Bottling**
Buxton Mineral Water Company Ltd	**1165m E**	**Borehole At Lightwood, Buxton**	**Food And Drink: Water Bottling**
R A & L B Lomas and Mr & Mrs P I Hockenhull	1578m SW	Tunnel Farm, Edgmoor – Spring, Borehole	Schools and Colleges: General Use (Medium Loss)

Table 3.1: Summary of Current Licensed Groundwater Abstractions within 2km of the Site			
Operator	**Distance**	**Source**	**Use**
Earl Of Derby Estate Office	**1586m SW**	**Tunnel Farm - Spring**	**General Farming And Domestic**
Derbyshire County Council	1872m NW	Borehole At Whitehall Outdoor Pursuits Centre	**Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden)**
High Peak Borough Council	1942m SE	The Crescent, Buxton - Borehole	Other Industrial/Commercial/Public Services: Process Water Private Water Supply: General Use (Medium Loss)
Note: Entries in **bold** denote abstractions with the potential to be used for potable water.			

High Peak Borough Council holds records of 11 private water supplies within 2km of the site, nine of which are from groundwater fed springs and two from abstraction boreholes. The closest record is located approximately 380m north-west of the site and is for domestic use. The private abstractions are listed in the table below.

Table 3.2: Summary of Current Private Water Abstractions within 2km of the Site			
Source Type	**Co-ordinates**	**Approximate Distance from site**	**Use**
Groundwater Borehole	404012, 375048	380m NW	Domestic
Surface Water	404115, 375150	430m N	Domestic
Groundwater Spring	404653, 374968	500m NE	Domestic
Groundwater Spring	403718, 374227	725m SW	Domestic
Groundwater Spring	403450, 375011	800m NW	Domestic
Groundwater Spring	403570, 373845	1100m SW	Domestic
Groundwater Spring	403544, 373566	1350m SW	Domestic
Groundwater Spring	403659, 373382	1400m SW	Domestic
Groundwater Spring	403275, 373617	1500m SW	Domestic
Groundwater borehole	403230, 376399	1900m NW	Commercial- Outdoor Education Centre
Groundwater Spring	405804, 373512	2000m SE	Public Drinking Fountain

3.2 Surface Water

The closest surface water feature to the site is an unnamed river located approximately 95m south-east of the site at its closest point. This flows in a south easterly direction towards Buxton.

According to the Envirocheck environmental database there are no records of licensed surface water abstractions within 1km of the site, and four within 2km of the site as detailed below:

Table 3.3: Summary of Current Licensed Surface Water Abstractions within 2km of the Site

Operator	Distance	Source	Use
Severn Trent Water Limited	**1301m E**	**Lightwood Reservoir. SW**	**Public Potable Water Supply**
High Peak Borough Council	1953m - 1955m SE	The Crescent, Buxton - Point A	Hotels; Public Houses And Conference Centres: General Use (Medium Loss)
High Peak Borough Council	1956m - 1979m SE	The Crescent, Buxton - Point B	Hotels; Public Houses And Conference Centres: General Use (Medium Loss)
High Peak Borough Council	1978m - 1992m SE	The Crescent, Buxton - Point C	Hotels; Public Houses And Conference Centres: General Use (Medium Loss)

3.3 Flood Risk

According to an EA data source, the site is located in an area designated as Flood Risk Zone 1 (low probability of fluvial flooding). This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1% in any year).

3.4 Environmental Site Sensitivity

The site is underlain by the Millstone Grit Group Secondary A Aquifer. The site is not located in a SPZ; however, there are three licensed groundwater abstractions used for domestic and public drinking water purposes within 500m of the site; this increases the environmental sensitivity of groundwater beneath the site.

The nearest water body is an unnamed river located approximately 95m to the south-east of the site and there is a private surface water abstraction used for domestic use approximately 430m north of the site. A public potable surface water abstraction is located within 2km of the site. The site is considered to be in an area of moderate sensitivity with respect to surface water.

4 Summary of UST Investigation Works to Date

There are two underground storage tanks (USTs) on site. Both are located externally between the building and the western site boundary and stored fuel associated with generators located within the building (the generators are no longer present). The approximate location of the USTs are shown in Figure 3 and Figure 4, Annex A.

One UST was initially identified though examination of the BT Tanks Database during ENVIRON's 2005 Phase I Environment Assessment[2]. The database indicated that a 2,250 litre capacity UST had been decommissioned by foam filling in September 2004, following the failure of an integrity test in August 2004.

A preliminary investigation was undertaken by MEL Environmental Solutions Ltd (August 2008)[3] to determine the location of the decommissioned UST. The preliminary investigation identified the following:

- One UST which was foam filled (the location of this UST is labelled as Tank 2 on Figure 2, Annex A). Signage was identified on the cover of the UST which confirmed that it had been foam filled in September 2004. A trial pit excavated adjacent to the UST identified that the tank is contained within a concrete surround to a depth in excess of 2m below ground level.
- A second UST was identified located to the north of the decommissioned UST. The second UST contained fuel oil (labelled as Tank 1 on Figure 2).
- A valve pit was identified between the two USTs and pipework was identified within the building (close to the location of the former generators) that was traced back to both USTs.
- During the excavation of one trial pit on the south western corner of the TRS building (approximately 1m from the decommissioned UST) a localised seepage of oil was observed in shallow soils (sandy clay) adjacent to the TRS building.
- No visible oils were noted during the excavation of the remaining three trial pits. Trial pit locations and logs are shown on Figure 4 in Annex A.

[2] Phase I Environmental Assessment, Buxton TRS, Long Hill, Buxton, SK0030, report reference 64-C8696, November 2005.

[3] Preliminary Investigation of Underground Storage Tanks, MEL Environmental Solution Ltd, 4th August 2008

5 Summary Environmental Risk Assessment

Table 5.1: Environmental Risk Assessment

Issue	Risk Category	Reason
Contamination Potential		
Potential for widespread significant on-site contamination	Low	The site was a Telephone Office Repeater Station from at least 1954. Prior to this it was agricultural land. Two fuel oil underground storage tanks (USTs) are located on site. One UST is foam filled but failed an integrity test prior to it being decommissioned. Fuel oil remains in the second UST. Localised oil contamination has been visually identified in shallow soils adjacent to the south west corner of the TRS building.
Potential for contaminants migrating off the site (if present)	Moderate	The site is situated on Millstone Grit which is classed as a Secondary A Aquifer. However, groundwater is anticipated to be at least 25m below ground level which increases the unsaturated zone through which hydrocarbons would need to migrate to reach groundwater.
Potential for contaminants migrating onto the site	Low	No significant off-site sources of potential contamination have been identified.
Environmental Consequences		
Risk of pollution to Controlled Waters	Moderate to high	The site is underlain by the Millstone Grit Group Secondary A Aquifer. Groundwater is anticipated to be present in excess of 25m bgl. Localised oil contamination has been identified in shallow soils adjacent to the south west corner of the TRS building. The thickness of the unsaturated zone will reduce the potential for hydrocarbons to reach groundwater. However, the potential for impact on groundwater cannot be fully discounted.
Risk of harm to human health under the current site use	Low	The site is currently unused and therefore does not present a risk to human health in its current use.
Risk of harm to human health under the future site use	Moderate to high	The potential for widespread contamination to be present on site is low. However, two former underground storage tanks are present at the site; one of which failed an integrity test and one which contains residual fuel oil and localised oil contamination has been identified in shallow soils adjacent to the south west corner of the TRS.
Risk of damage to property in the current site use	Low	The site is currently disused and the risk of damage to the TRS building is low.
Risk of damage to property under the future site use	Moderate	The presence of free phase hydrocarbons in soil could impact building materials if left in contact with hydrocarbons for an extended period of time.
Overall Contamination Risk	**Moderate to High**	

Table 5.1: Environmental Risk Assessment		
Issue	**Risk Category**	**Reason**
Residual asbestos containing materials in building fabric	Asbestos containing material has been in the building. A demolition/refurbishment asbestos survey should be completed before major refurbishment or demolition occurs.	

6 Conclusions and Recommendations

The site was developed from agricultural land into the Telephone Repeater Station by 1954. Surrounding land has remained in agricultural use.

The site is underlain by the Millstone Grit Group, a 'Secondary A' Aquifer. The site is not located in a SPZ. However, a private groundwater abstraction used for domestic purposes approximately 380m north-west of the site and a licensed groundwater abstraction used for drinking water purposes (associated with a hotel) approximately 420m north west of the site increases the environmental sensitivity of groundwater beneath the site.

The nearest surface water body is an unnamed river located approximately 95m to the south-east of the site. There is a private surface water abstraction used for domestic purposes approximately 430m north of the site and a public potable surface water abstraction within 2km of the site. On this basis the site is considered to be in an area of moderate sensitivity with respect to surface water.

Two underground storage tanks (USTs) are located on site which formerly stored fuel oil. One UST ('Tank 2') is foam filled, but failed an integrity test prior to it being decommissioned. Fuel oil remains in the second UST ('Tank 1'). Integrity test records are not available for Tank 1. A preliminary investigation of the USTs in 2008 identified the presence of localised oil in shallow soils immediately adjacent to the south west corner of the TRS building.

The site is located in an area designated as Flood Risk Zone 1 (low probability of fluvial flooding). This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1% in any year).

The Council has stated that the site has been identified as potentially contaminated land under the Council's Part 2A inspection strategy. However, it is considered to be low risk and it is unlikely that it will receive a detailed site assessment in the foreseeable future.

On the basis of this Phase I Environmental Assessment it is recommended that:

- Tank 2 and surrounding impacted soils (if present) are removed prior to development of the site for residential use.
- Tank 1 should be cleaned of residual fuel and integrity tested. If the tank passes the integrity test it should be decommissioned and foam filled. If it fails the integrity test it is recommended that the tank is removed in a similar manner to Tank 2.

These recommendations are based on the pollution potential of the tanks. If the tanks require removal for other purposes, such as excavation of foundations, the works to remove the tanks should be carried out under the supervision of a suitable experienced environmental specialist.

The remainder of the site has a low potential for significant contamination based on the activities carried out at the TRS

Prior to demolition or refurbishment of the building it is recommended that a refurbishment / demolition type asbestos survey is carried out in accordance with HSG 264.