Phase I Site Investigation: Mains of Portlethen Farm, Portlethen, Aberdeenshire, AB12 4QP

Planning reference: Pre-planning enquiry for Planning Permission in Principle

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List of Contents

List of Tables

APPENDIX A: Groundsure EnviroInsight

APPENDIX B: Historical maps

APPENDIX C: Site photos

APPENDIX D: Site plans

APPENDIX E: Radon report

APPENDIX F: Petroleum licence

1. Introduction

1.5 Background

EnviroSurveying Ltd (ESL) was commissioned by Cameron & Ross on behalf of Mr & Mrs Graham Shand (the clients) to undertake a Phase 1 site investigation at Mains of Portlethen Farm, Portlethen, Aberdeenshire, AB12 4QP, in order to determine whether the land beneath the site has the potential to be contaminated. This report constitutes the Phase 1 only.

It is understood the site is the subject of a pre-planning enquiry for planning permission in principle for the Erection of 3 new detached dwellinghouses to replace farm buildings on the centre of the site, with further residential developments to be carried out to the east and west side of this also. The Phase 1 desktop report was requested by the Council contaminated land officer as a consultee in the planning process. This was due to these being former farm buildings and therefore at potential risk from contamination from fuel, herbicides and pesticides, and waste disposal or burning, among other things. Mr Peter Exon has been consulted and kindly supplied the petroleum records for the site which the Council held.

This report is to investigate whether potential contamination remains on the site from the previous use and whether this could pose a risk to the future residents.

1.6 Objectives

The specific objectives of the site investigation are as follows:

- to undertake a site investigation (Phase 1) according to BS10175:2011 *Investigation of Potentially Contaminated Sites* (BSi, 2011);
- to identify all potential and significant sources of contamination, pathways and receptors at the site;
- to assess and evaluate the risk of significant harm occurring to one or more of the site receptors; and
- to recommend and specify further investigative works if appropriate.

1.7 Scope

The scope of the works will comprise the following:

- a site reconnaissance would normally be carried out to make visual observations of all potentially significant sources of contamination and pathways at the site, and to set the site in context with the surrounding area. Details of other features, such as structures, building fabric, electrical substations, drainage systems, chemical substances used, fuels, storage vessels and storage areas; condition of the floor slab, permeable and impermeable areas, waste generation and storage tanks, watercourses, etc, will also be recorded

- a desk study will comprise of reviewing all published sources of information including historical maps (EnviroInsight Report), geological, hydrological and hydrogeological information;

- information will also be collected from SEPA on records of any historic incidents/complaints; and

- anecdotal evidence will be collected by undertaking interviews with former staff/site owners, where possible.

Once both the site reconnaissance and desk study have been carried out, it will be possible to identify all contaminant sources, pathways and receptors at the site. This information will be presented as a site conceptual model and potential pollutant linkages will be identified. The significance of these pollutant linkages will be assessed by carrying out a preliminary risk assessment, and thereafter the overall risk to site receptors will be evaluated.

If the overall risk to site receptors is identified as moderate or high, it will be necessary to carry out an intrusive site investigation (Phase II). The results of the Phase 1 site investigation will be used to justify and formulate a Phase II strategy, with the objective of confirming the potential pollutant linkages identified.

1.8 Report Structure

The Phase 1 site investigation was carried out in accordance with BSi 10175, 2011, through a walkover visit and desk study. This document is structured as follows:

Section 2 Site location & description

Section 3 Site history

Section 4 Site geology

Section 5 Hydrology and hydrogeology

Section 6 Other information on surrounding area

Section 7 Conceptual site model

Section 8 Summary

Section 9 Recommendations

Section 10 References

Section 11 Disclaimer

2. Site location & description

The site is located ½ mile E of Portlethen on the N side of an unclassified road that leads to Portlethen Village about $^{1}/_{3}$ mile further along. The site lies about ½ mile W of the sea and the centre of the site is around 60m above sea level. It slopes slightly downwards towards the N and E. The site is a fairly sizeable farm and has been so for at least 165 years. There are 18 buildings, most of which are joined together to form the large central part, with two separate ones (see annotated site plan in Appendix D). There are four houses, a shed and another farm building just outside the site boundary: an agricultural building to the W; 2 dwelling houses to the S; one to the E, along with a shed; and the main farmhouse also to the E.

The grid reference is 392891, 796732 for the centre of the site and the postcode is AB12 4QP. The site area is approximately 0.76 hectares.

The walkover took place on 15th September 2016, accompanied by the client. The buildings have been numbered for ease of description and these numbers can be seen in the site plan in Appendix D. Some of these buildings are within the current site boundary for the application APP/2016/3176 but others are included in the surrounds as they are relevant to this site. Buildings Q,P, L,M, K, N, R and O are all outside the current site application boundary.

The farm buildings all stand to the north side of the access road. Entrance is via a central driveway. An annotated plan showing the layout of the buildings on site can be seen in Appendix D. There are two dwellings outside the site boundary to the SE, and a further two dwellings outside the site boundary to the east. In addition there is a pair of large farm buildings outside the site to the immediate west which are intended to remain.

The walkover commenced in the open yard area to the SW corner of the site. From here a clear view can be gained over the many of the buildings and their adjoining roof structures.

Building C was most noticeable as a tall building with probable asbestos containing sheeting forming the upper walls and roof. The lower halves of the walls are blockwork. Inside this building was the former small milking parlour. It was last used by the client's Uncle when he ran the farm some 20 years ago. The walls and ceiling of this building were lined with a fibrous sheeting which could contain asbestos, with some damage to this apparent. The building was intact however. To the south side of building C were the outer walls of a former building only. This provided a sheltered area for the storage of a modern green fuel station for red diesel. This had only recently been delivered to the farm. Adjacent to this was a small lean-to building (annotated D) which had block-work walls and an intact corrugated asbestos roof. It appeared to have been used as an outhouse.

Building B was the first large building on site. It had stone walls and a slate roof which had some broken areas. Inside there was a concrete floor in good condition. The timber roof structure was low, and the area was sub-divided into cattle pens. There was no slurry collection system here or in any building. The client confirmed that the areas used for cattle were all scraped out by tractor or hand and the slurry waste stored in the concreted yard area at the N side of the site before being put onto the fields. Entry to the milking parlour (C) can be gained from here.

Building E adjoins Building B on its east side. It is a large cattle court which has essentially bridged the stone walls of building B and building L. There is a date stone inside marked “1894”. The cattle court has large timber roof beams supporting corrugated asbestos roof sheeting. The concrete floor is in good condition, and the area is sub-divided into three penned areas. The roof is largely intact but is now shaky and unstable in windy weather.

Building E leads through at the back to a series of smaller buildings. The first of these is the Calf shed (building F) – this is a long narrow barn with a slate roof and concrete floor, on block walls. This has a small end section (annotated H) which is a small cattle area leading through to other areas. Outside H/F is a small yard area. This allows entrance to buildings G and I to the rear of the site. Building G has a roof in very poor repair – it is corrugated asbestos roof sheeting on a timber frame, and large sections are missing. These were not broken on the ground and no fragments were found. The inside of the building, used to house cattle, was concrete floored. All broken sections had been removed. Building I was also used for cattle and had a slate roof and concrete floor.

To the north side of the site, and within the planned site boundary, is an area known as the slurry yard. It is now used for storage but was originally where the slurry and soiled bedding was scraped and stored from the cattle sheds. This is concreted with a slight depression in the centre to prevent run off. The outside is penned with metal bars. The concrete appears to be in good condition but with a few cracks visible in some areas.

Returning to the buildings accessible from the small yard area outside G/I there is an entrance to a long narrow building annotated K. This has stone walls and a slate roof. Inside the floor is concrete. It is currently used to store bales but the remains of an original upper floor can be seen around the upper walls. This was removed - the building continues through to Building L and the same upper floor removal has taken place here. This is a concrete grain store now. It has stone outer walls with an external and internal concrete skin and a slate roof supported on a wooden frame. The concrete floor is intact and in very good condition.

Building K also leads through to building M, essentially a lean-to structure used for storage of cardboard boxes and other domestic items. It is stone built, with a low roof. The front sectio of thios roof has been replaced with corrugated metal sheeting, with inset polycarbonate sheet to allow light in, and the rear section is corrugated cement sheeting which could contain asbestos. This is intact but repairs are evident by different coloured sheeting in places. Building R is at the N end of Building K. It is also stone built with a slate roof and was just a very small store. Leaving Building M, access is gained to a side yard on eastern side of the site. The 2 houses outside the site can be seen ahead to the east, with a garden boundary wall separating them from the farmyard. To the north of this yard area is another cluster of small buildings. Building O is in poor repair and the door frames are supported to stabilise the structure. This has a slate roof, and the lower half of the walls is stone, while the upper half is slatted wood. This was used as a small workshop for repair work using a welder. To the outside of this building is seen the single fuel dispensing pump that is connected to an underground fuel tank. The manhole cover for this is seen in the concrete yard adjacent to the pump. This tank is reported to be empty by the client and has not been used for many years.

Set back from this is Building N, which has a slate roof and stone walls. This small building was also just used as a general store. The floor inside is concrete.

Moving between the farm buildings and the houses outside site, the yard area runs to the south and follows around to the site entrance again. This passes the two further houses outside the site boundary and a single open-fronted shelter (building A) which is within the site. This is a metal structure and has a dirt floor inside. At the east end is a metal cabinet used as the chemical store. This is locked and self-contained with a spill proof floor. It is believed this location has always been used for the chemical store and no other location was indicated during the walkover. At the beginning of the walkover we explained all features of interest we would like to see from current or past use. Adjacent to this are some 50L oil drums with dispensing pumps, sat on pallets. There is no sign of staining on the ground in this area. At the time of writing this report it had not been decided if this building would be inside or outside the site boundary.

Moving across to the west side of the site there were three remaining large buildings within the site boundary. Building Q was a large shed with corrugated metal sides and a corrugated asbestos sheet roof. This has a floor level lower than the front southerly yard but is level with the rear northerly yard area. This is used to store bales and some farm implements on the concrete floor. This shed is also open through to Building P which has the same construction but is narrower in width. This was used as a cattle shed also. The final building attached to the side of Building P is Building J - this is accessible from the rear yard area also and was also used as a cattle shed. Again it has a corrugated asbestos sheet roof.

The farmer confirmed his family bought the site in 1934 from the Walker family and have farmed it for beef cattle and arable since then. They have another main farm which has more modern buildings, so they will continue the farming operations based from there, but also using the 2 large sheds outside the site to the west.

The land in all directions is open rolling farmland.

2.1.1 Underground structures

There is one underground fuel tank, reported to be empty now but formerly holding petroleum and later, diesel.

It is also possible that at one time there was a tunnel from the old castle to a sea cave:

“We know that there is some sort of underground tunnel (or hole) within the grounds of Mains of Portlethen farm because the current owners, the Shand family, spent a considerable amount of time and effort filling and blocking this particular cavern not long after they bought the farm.” (From: www.old-portlethen.co.uk, Myths and Mysteries/Cave and Castle? By Ian Kenn of Portlethen Village)

However, this is only one historical record and there are no other references to this tunnel. An earlier sentence is this website says there “could” be a tunnel. The writing is intended to be dramatic and there is no other confirmatory information to suggest it is true. The presence of a sea cave being filled does not confirm a tunnel and the current farmer was not aware of any tunnel.

2.1.2 Drainage

The site has a mains water supply to which new connections will be made for the new dwellings. No details on sewage connections have been confirmed at this time.

2.1.3 Chemical substances and formulations used

There is known to be an underground fuel tank, and pump, once housing petroleum and then diesel. It is no longer used and is thought to be empty. There is a workshop (Building O) on the site which was used for welding and a storage shed (Building A) that contains a chemical store for arable chemicals (locked and with a spill-proof floor). These were confirmed as Vortex (BASF, fungicide), Axial (Syngenta, herbicide), Adigor (Syngenta, adjuvant), Drava (Syndgenta, fungicide) and Dakota (Agow, herbicide). There were also some 50L oil drums on pallets but no staining near these.

2.1.4 Waste

It is not thought that any waste was stored on site, other than the slurry within the slurry concreted yard at the north side..

2.1.5 Environmental management systems

The site is not subject to Environmental Management System (ISO 14001) accreditation. However, there is one record of a Part A(1), IPPC and historic IPC Authorisation at 938m NW, a slaughterhouse.

2.1.6 Permits and licences

The site had a petroleum licence from 1971, when the 2,730 litre underground fuel tank was first installed, and which ran until 2005, when it was altered from petroleum to diesel and the license surrendered. The tank is now reported to be empty and the licence no longer current.

3. Site History

3.1 Historical maps

Historical maps of the site and surrounding area have been obtained and are provided in Appendix B. The earliest site map available was 1865, although Portlethen, with a single building or a small group of buildings has been marked on maps since at least Roy's Military Map of 1747-52. The main features of the historical maps are shown below in Table 1. Not all are listed where no further information can be gained. Please note the small scale maps were not possible to include within the main report file as this would be too large to email, but have been supplied as a separate file. Please note buildings Q,P, L, M, K, N, R and O are outside the current site boundary but are under discussion for planning applications under preparation at present.

Table 1 Summary of historical maps

Year/s	Site	Adjacent areas
1865 1:10,560 & 1867 1:2,500	The site at this time has several buildings present: these correspond roughly to the following buildings on the annotated plan in Appendix D (from W to E): Buildings P, B, K, L & M running N-S, and I & N running W-E. The NE section of the site forms part of what looks like a walled garden.	Immediately outside the site to the E is a pair of semi-detached cottages with a triangular garden on their S side. The Burn of Findon is around 200m NNW & NNE, flowing W-E to the N of the site. The site is noted to be on the "Site of Portlethen Castle". There is a pump 60m SE and a well around 185m NNE. Portlethen (now Portlethen Village) is 500m SE, the coast 600m E. Mill of Findon, a corn mill, is around 300m NW; Portlethen Station 500m W, the Great British North Eastern Railway running roughly SW-NE passing though it; there is a school 550m W and the Church 500m WSW. There are several other farms around, Townhead c.450m SSW being the closest. The remaining surrounds are mostly farmland.
1889 Architect's Plan (reviewed online but not purchased for inclusion due to limited relevant info gained)	At this time the farm buildings were redesigned and rebuilt by George James Walker (see Section 3.2 below, Further Information). Buildings K, L and N (on the annotated plan in Appendix D) are present, as are Buildings B, F, G, H & I. All the buildings appear to have attics or lofts with skylights. There is one further building on these plans: a small building in the NE corner of buildings F & G.	On the plans detailed left, there is one further building in roughly the position of the centre of the 3 dwellings labelled on the annotated plan, i.e. immediately E of Building A.
1903 1:2,500 & 1904 1:10,560	Building A is now present on the site and there is another building adjacent to Buildings K & L: Building M on the annotated plan. The building corresponding to building F or the north part of Building E on the annotated plan is divided into sections with pens or stables and there is what is probably a cattle court to the S of it. Building O on the annotated plan is now present in the NE of the site.	Immediately to the SE of the semi-detached cottages there is now a farmhouse. There is another fairly large house immediately outside the site boundary to the S. There is a tree-lined avenue leading up to the farmhouse and a well to the W of this. The area around the Burn of Findon is marked as rough pasture and furze. There is a Rifle Range from the cliff top at Broad Haven (600m E) heading westwards towards the farm and 600yds range. (See below, Section 3.2, for more

		information.) There is a Mill Dam 400m NW and a Gravel Pit 550m W. There is a Capstan[1] above the beach of Broad Haven, c. 600m E.
1956 1:10,560	At this scale, the only change visible is that the central courtyard is now roofed.	There are several belts of trees around the farm: one immediately N and parallel to the northern site boundary; a triangle in the corner of the fields a few metres NE; another long narrow one around 40m W, parallel to the small road running N; another, smaller triangle, immediately to the S of this junction; a further one to the E of the farmhouse and semi-detached cottages, running N-S; and another around 80m S, running W-E. The rifle range is no longer marked.
1963 1:2,500 & 1968 1:10,560	There is another building on the site now: to the W of the original buildings and probably Building P on the annotated plan. Building C on the annotated plan is also present now, as is Building R.	The pump 60m SE is no longer marked. There is now a shed to the N of the more westerly of the semi-detached cottages adjacent and parallel to the site boundary. The mill dam at Findon is no longer marked, Portlethen Village is now named as such and Portlethen is taking shape. The Capstan is no longer marked.
1978-1981 1:2,500 & 1978 1:10,000	The layout of the buildings is now more or less the same as it is today: i.e. Buildings J, Q, E and D on the annotated plan are now present. The Slurry Storage Yard is now outlined. There is (possibly walled) area to the W of the farm entrance.	The farmhouse and semi-detached cottages are now the same size and shape as they are today, as is the central dwelling on the annotated plan, which before this time had been rectangular and is now square. The only belt of trees still to have trees is the one 80m S. Portlethen has now more than quadrupled in size and there is a Cistern 400m WSW and another 230m SSW.
1985 1:2,500 & 1988 1:10,000	The small building in the NE corner of buildings F, G & H on the annotated plan is no longer there.	There are now trees once more in the tree belt to the E of the farmhouse and cottages. Portlethen continues to grow and is now big enough to need a secondary school. The pit 550m E is now marked as an Earthwork. However, it is probably worth mentioning that the lettering for 'Earthwork ' is of the sort used for antiquities, so it may be that this is an archaeological dig site, or similar, rather than a quarry or pit.
1994 1:10,000 & 1992-5 1:2,500	No significant changes.	As before, Portlethen continues to grow.
2002 1:10,000	No changes visible at this scale.	No significant changes.
2010 & 2014 1:10,000	No changes visible at this scale.	There is now a Pumping Station just E of Mill of Findon around 300m NW. No other significant changes.

[1] A **capstan** is a vertical-axled rotating machine developed for use on sailing ships to apply force to ropes, cables, and hawsers.

Additional web searches have been carried out to gain a fuller picture of the site history. The search terms used were “Mains of Portlethen Farm Steading (1889)”, “House of Portlethen”, “Portlethen Castle” and “George James Walker, Architect”, as well as geographic location searches.

Searches were made of the following locations:

Google – A Google search brought up George James Walker as the architect for the farm steading in 1889 (see also Section 3.2 below).

PastMap.org – the following Canmore IDs are shown on PastMap.org, the details of which are available on RCAHMS: 184668, Mains of Portlethen, Farmstead - has 3 digital images of the Architect’s Plans for redesigning and building the farmstead in 1889 (see Map Table above and Section 3.2 Further Information, below). Canmore ID 37217, Mains of Portlethen, House (see also Section 3.2 below). Also HER (Historic Environment Record) ID NO99NW0008 Portlethen Castle - see details below in Section 3.2. The Earthworks at Broad Haven have several designations: Canmore ID 37203, HER ID NO99NW0038, HES (Historic Environment Scotland) Scheduled Monument, The Bothy, fort and earthwork 350m NNE of SM12468.

Royal Commission on Ancient & Historical Monuments (RCAHMS) – see above

Old Maps Online – Roy’s Military Map of 1747-52 and William Garden/A. Arrowsmith’s map of 1797, both show Portlethen as a single building or small group of buildings around the site of the present farm steading (as near as can be determined from a very old map). Two even older maps are also available and both showing Portlethen: Robert Gordon & Joan Blaeu’s map of Aberdonia, dated 1654, where it is spelled Port Lethin; and John Adair’s map, The Coast of Scotland from Red-Head to Aberdeen, where it is called Port Lethim, dated 1650-1722.

Scotland’s Places – has the information that the Walkers were tenant farmers at Mains of Portlethen in 1863; the proprietress being Mrs Rosa Ann Gammell at that time.

Scottish Places - no further information

NRS - no further information

Geolocation – site not currently available

SCRAN – no further information

Derelict Places - no further information

Old-maps - no further maps not already obtained

Geograph – there is one photograph of Mains of Portlethen, taken from the entrance to the steading in 2010 by C Michael Hogan.

FreeCENsus - from this site is the following information (from the 1841 & 1851 censuses - the later ones are not yet available on this site): in 1841, there were eight people working at Mains

of Portlethen, the youngest being 12 years old; by 1851, the Walker family both owned and worked the farm, employing some 16 labourers. (More details in Section 3.2 Further Information, below.)

There are several previous planning applications associated with this site: APP/2005/4192, change of use to workshop - Building M on the annotated plan; APP/2010/2120 & BW/2010/2957, application to change the multi-pitched roof to a single-pitched roof - this doesn't appear to have happened; APP/2014/0371 & 3514, erection of agricultural building and change of use from agricultural building to store.

3.2 Further information

Portlethen is noted on Robert Gordon & Joan Blaeu's map of Aberdonia, dated 1654, where it is called Port Lethin. It is also on John Adair's map, The Coast of Scotland from Red-Head to Aberdeen, where it is called Port Lethim, dated 1650-1722. Portlethen Castle stood on the site originally, although little of it remains, having been built by Robert Buchan in the 17th century. The castle is reported to be similar to the nearby Muchalls Castle in size and style. From *The History of the Troubles and Memorable Transactions in Scotland and England from MDCXXIV* [1624] *to MDCXLV* [1645], by John Spalding (available as a Google ebook), Robert Buchan, the then Laird of Portlethen who built Portlethen Castle, in 1640 fled to the sea after his house and ground was plundered. This may explain why there is very little trace of Portlethen Castle remaining today.

Incorporated into the present farmhouse is a skew-putt dated 1630 and presumably from the castle, dating it to that year. There is also a later skew-putt and two baronial stone blocks, the latter being gateposts at the more westerly house.

By the time of the 1841 census, there were eight people working at mains of Portlethen, although none of them is listed as being a farmer - they are: agricultural labourers (5), apprentice farmers (2) and a farm servant. The Walkers are at this time farming England of Portlethen Farm some 700m S. By the 1851 census, the Walkers are at Mains of Portlethen (as tenant farmers), the farm by this time consisiting of some 400 acres. Sixteen labourers are employed on the farm but none of them are listed as living there; there is a total of 25 people living on the farm, of whom 5 are children, aged between 2 and 8. There is no wife mentioned.

By the 1870s George James Walker, son of Robert Walker, is the tenant of the farm. He is also an architect, listed in the Dictionary of Scottish Architects, and redesigned and rebuilt the farm steading in 1889. There are 3 digitised plans of his design available on RCAHMS. George James Walker was also a keen rifleman and a 'crack shot' [ibid.], perhaps explaining the presence of the rifle range on the 1904 1:10,560 OS map (see Map Table, above).

The farm has been for both cattle and agriculture for at least 200 years. Certainly by 1818, Robert Walker was raising Aberdeenshire polled cattle at Mains of Portlethen, even though he was only 16 years old, and there are records of cattle here going back to 1784.

The Walkers farmed, either as tennants or owners, Mains of Portlethen, for around 7 or 8 generations, before selling to the Shands in 1934. Soon after buying the farm, the Shands "…spent a considerable amount of time and effort filling and blocking this particular cavern [thought to have been the tunnel connecting the castle to the cave at Black Slough] not long after they bought the farm". (From: www.old-portlethen.co.uk, Myths and Mysteries/Cave and Castle? By Ian Kenn of Portlethen Village)

The descendents of the original Shands still live on the farm and are the clients of this report.

(In addition to specific citings, above, the information in this section comes from the following: RCAHMS, Scotland's Places, Dictionary of Scottish Architects 1660-1980, FreeCENsus, HER, Wikipedia, Google and, of course, Ian Kenn of Portlethen Village.)

3.3 SEPA & Aberdeenshire Council records

Aberdeenshire Council contaminated land officers were contacted regarding the site by the project agents and the information supplied concerns the licence for, and correspondence regarding, the UG fuel tank. This is in Appendix F.

SEPA was also contacted for this project and their response will be included below when it is returned (not yet rec'd, chased up)

4. Geology

4.1 Site geology

Reference has been made to the Groundsure EnviroInsight (shown in Appendix A) and the GeoInsight report (not included due to size).

The superficial geology is formed of Mill of Forest till of a Diamicton rock. The bedrock underlying the site is of Glen Lethnot Grit formation. There are no records of landslips and no faults within the 500m boundary. There are no current or historical ground workings on the site. There is negligible risk potential for soluble rocks and compressible deposits. There is only a very low risk of shrink-swell effects, landslides, collapsible ground and running sand. None of these require any special action.

4.2 Made ground

There are no formal records of artificial or made ground. Although clearly there would be expected to be shallow made-ground under all of the buildings and roadways.

5. Hydrology, topography and hydrogeology

5.1 Topography

The site appears relatively level with a slight downwards slope towards the N and E. The extent of this is shown on the architect's plans for the site (see Appendix D).

5.2 Hydrology

The site is not prone to flooding (it is on a flood plain greater than 2m depth) and not within brine affected area.

The nearest main moving water body is the Burn of Findon, which lies approximately 200m N of the site. The North Sea lies around 630m E.

5.3 Hydrogeology

The underlying superficial geology of the site is thought to contain aquifers of limited potential containing insignificant groundwater quantities at only shallow depths. The permeability of this superficial ground ranges from low to high permeability with mixed flow types. This solid geology is thought to contain concealed aquifers of limited potential and regions underlain by impermeable rocks without significant groundwater except at shallow depth. The permeability of this solid layer is low and of the fracture type.

There are no BGS boreholes within 250m of the site. There is a water well recorded in the grounds of the farmhouse gardens. However the client has confirmed all dwellings on or adjacent to the site outline are on a mains water supply. This well was once used to water cattle but is no longer in use.

6. Other information on surrounding area

Environmental information on the surrounding area is provided in the Groundsure Enviroinsight and Geoinsight reports in Appendix A.

6.1 Landfill and other waste treatment or disposal sites

There are no landfills within 1500m of the site and no waste sites within 500m of the site currently or historically. There are no recycling centres known to be within 250m of the site.

6.2 Current and historical land use

There are and were no fuel retailers within 500m of the site. There are no recorded fuel tanks within 500m, with the exception of the now empty fuel tank on site (see Section 2.1.1).

Groundsure shows the area as unaffected by mining (section 6). The nearest railway is 450m W, which is in a cutting either side of Portlethen Station, which closed in 1963 and reopened in 1985 when Portlethen became a commuter town for the oil industry.

6.3 Designated environmentally sensitive sites

It is not in an area protected by any special designations, or within 2000m of a sensitive site.

There are eight SSSIs, all Findon Moor, between 1026m and 1570m E.

6.4 Radon gas

It is not within a radon gas area where the estimated probability of a property being above the Radon action level is less than 1% (individual address radon search report from HPA in Appendix E).

6.1 Registered radioactive substances

There are no known registered radioactive substances within 100m of the site.

7. Conceptual site model

7.1 Sources

The site currently has eighteen buildings on it, variously used for agricultural storage, tractor and farm machinery storage, cattle, workshops and so on. Six of the buildings on the site have asbestos sheeting on their roofs (Buildings C, E, G, J, P & Q), building C having asbestos sheeting on the upper part of its walls on the outside (with some damage noted) and the possibility of asbestos-containing material on the inside walls also. While Building G, in particular, has many of its asbestos roofing sheets missing, there are no broken sheets or fragments on the ground. There is the potential for asbestos fibres to be released, not only from the broken asbestos, but by improper removal of whole sheets. Therefore asbestos remains a potential contaminant. At this time no fragments were noted on the ground anywhere on site.

There is one underground fuel tank that is reported to be empty now, and its associated pump, but this tank has in the past held petroleum (1971 - 2005) and after that time, diesel. There is always an associated risk of fuel spillage or leakage from fuel tanks and pumps. This can lead to TPH and metals in the soils.

In the remains of a building between Buildings C & D there is a new storage tank for red diesel however this has only been here one month and is double-skinned with no staining around it. In shed A, there are some 50L oil drums with dispensing pumps sitting on pallets, but again there is no staining. Surface spills can lead to TPH and metals in soils.

Building O was used for welding, and general workshop repairs, and so there is a potential for contamination. Given the poor state of the building this would merit a further visual inspection after demolition.

There is a concrete slurry yard in the N of the site. However, this has a depression in the centre to prevent run-off and is now only used for storage of farm machinery and vehicles. In the days when there were still cattle on the farm, the cattle sheds were all cleared of slurry either by tractor or by hand as there was no slurry collection in the cattle sheds. The resulting slurry was then stored in the concreted slurry yard prior to being used on the fields. While slurry is a valuable source of organic matter and major nutrients, when these are lost from the slurry they can lead to potentially contaminative substances reaching water courses and groundwater and causing ground gases. These are a potential contaminant they leach or migrate through ground.

There is no history of sheep (and therefore the potential for sheep dipping) on the site.

There are agricultural chemicals stored in the chemical cabinet in building A. However this is in good condition and has a spill proof design with inner capacity in the base. The client reports no accidental spillages.

There are no other likely sources known to exist on or near the site.

7.2 Pathways

Given the objectives of the site assessment, pathways that impacted upon human and ecological receptors (e.g. groundwater) are considered. Therefore, the main pathways hypothesised were:

- migration of contaminants within the soil at the site to sensitive site receptors via inhalation of dust
- migration of contaminants within the soil at the site to sensitive site receptors via inhalation of vapour
- migration of contaminants within the soil at the site to sensitive site receptors via ingestion of soil
- migration of contaminants within the soil at the site to sensitive site receptors via dermal contact with soil;
- migration of contaminants from the site to the groundwater via the soil; and
- migration of contaminated groundwater to and/or from receptors outside the site boundary
- Migration of contaminated groundwater into private water supplies or affecting water supply pipes
- Direct contact with buildings

7.3 Receptors

For the site assessment, the receptors being considered are:

- sensitive site receptors (human residents, visitors and site workers);
- Water bodies (groundwater).
- Future buildings

7.4 Initial qualitative risk assessment

The sources, pathways and receptors identified above can now be qualitatively risk assessed: the assessment is presented in Table 2.

Potential risk severity: 1 = Minor; 2 = Mild; 3 = Medium; 4 = Severe
Probability: 1 = unlikely; 2 = low likelihood; 3 = likely; 4 = High likelihood

Table 2 - Initial qualitative risk assessment for Mains of Portlethen Farm

Area	Source: contaminants	Pathway(s)	Receptor(s)	Potential Consequence	Potential Probability	Potential Risk severity	Assessment
Most recent & only known site use							
Potentially asbestos containing materials on unused buildings	asbestos	Through soil (Inhalation, ingestion,)	Human	ill health or death	Low likelihood	medium	Much of the roofing material on site is likely to contain asbestos fibres. This should be confirmed by lab analysis initially. If confirmed then these materials when broken pose a risk of fibre release and inhalation.. It should be noted that there is cladding inside building C which may contain a different type of asbestos and this should also be confirmed first, and handled with care during removal.
		Soil or GW migration	Human	Inhalation of fibres	Low likelihood	medium	
Livestock farming	Organic waste generating ground gases	Through soil (Inhalation, ingestion, contact)	Human	Asphyxiation in enclosed spaces	Low likelihood	medium	There is no slurry collection system at this farm and animal waste was scraped out by tractor and stored for spraying onto fields as a valuable fertiliser. The slurry storage space is a concreted yard with a lower depression to collect liquid before it runs off to the field to the north. This appears largely intact. It is of course not known whether this has always been concreted throughout the farm history.
		groundwater migration	Groundwater	contamination of groundwater	unlikely	medium	
		Soil gas or GW migration	buildings	Accumulation - explosion	unlikely	medium	
		Soil or GW migration	Human	Asphyxiation or explosion	Low likelihood	medium	
Chemical store cupboard	Arable crop chemicals	Through soil (Inhalation, ingestion, dermal contact)	Human	ill health	unlikely	Mild to medium	There are no visible indications of a spill and none reported by the client. The cabinet is spill-proof and the risk from this is thought to be very low. This area has been designated for covered car parking.
		groundwater migration	Groundwater	contamination of groundwater	unlikely	medium	
Workshop building (O)	Metals from welding	Through soil (Inhalation, ingestion,)	Human	ill health	medium	medium	This building was not safe to enter but was reported to have been used for small scale welding repairs and as a general workshop. This can lead to limited spills of oils, or metal impact in the surface soils. Please see assessment of underground tank which is adjacent to this one.
		groundwater migration	Groundwater	contamination of groundwater	unlikely	mild	
Fuel tank (UG) and	TPH, PAH, metals	Through soil (Inhalation,	Human	Ill health	Low likelihood	medium	There is an underground fuel tank on the site which has ceased to store fuel in 2005. There is a possibility that this had leaked, or fuel been spilled during filling

Area	Source: contaminants	Pathway(s)	Receptor(s)	Potential Consequence	Potential Probability	Potential Risk severity	Assessment
pump		ingestion, contact)					or dispensing. There is nothing in the records or from site observations to suggest this however. Any belowground fuel has the potential to impact below adjacent buildings also, in particular workshop "O"
		groundwater migration	Groundwater	contamination of groundwater	Low likelihood	medium	
		Soil gas or GW migration	buildings	Accumulation - explosion	Low likelihood	medium	

Please note: as there is no specific information confirming contamination on site the risk to building foundations has not been included above as there is no specific indication of any of the above sources specifically impacting it. However, this would be re-considered following the recommended works or should other information come to light.

8. Summary

A Phase 1 site investigation has been carried out at farm buildings at Mains of Portlethen Farm Steading, Portlethen, Aberdeenshire, AB12 4QP. It is the subject of a planning application for planning permission in principle for the Erection of 3 Dwellinghouses in the central section of the site, with discussions underway for further housing development of the redundant buildings to the east and west side of this cluster of buildings..

The application is being pursued by the clients who have lived on and worked the farm (beef cattle and arable) since purchasing it in 1934.

The site walkover found that many of the buildings had roofing in a state of disrepair which was often suspected cement asbestos sheeting and, in the case of Building C, asbestos cladding on the upper part of the outside walls as well as suspected asbestos-containing sheet material lining the inner walls. The latter shows some signs of damage. Confirmation of the nature of this material by lab analysis undertaken by a specialist company is required. If confirmed this material would all require careful removal and appropriate disposal to a licensed landfill, adhering to current regulations and guidance on the safe handling and disposal of asbestos. No fragments were noted anywhere on the ground however, despite careful examination. The client has therefore been advised to appoint a competent contractor to ensure appropriate handling and disposal procedures for the removal of this material prior to any further site works or demolition taking place.

There is a single underground fuel tank with its associated pump in the north east corner of the site. This has not been used to store fuel for around 10 years and is currently believed to be empty. However it was used to store petrol from 1971-2005. This is just beside a small building in precarious condition and therefore tank removal at this stage could be problematic. It is therefore recommended that following removal of the adjacent buildings this tank is decommissioned and vapour checked, prior to being extracted. The ground below the tank and around the pump, and potentially under the workshop building could then be checked for indications of fuel impact. There are no visual signs of surface spillages from the dispensing pump and no records of spillages/leakages.

All animal waste was collected from within the buildings and stored in the concreted slurry yard at the north side of the site. Slurry can lead to ground gas production but only poses a direct risk when buried. It is therefore advised that should any odour/visual signs of animal waste be encountered below ground here, or anywhere else on site, during site development then this material should be excavated and removed from the site. Slurry can also lead to leachate run-off which can impact soils around the source.

There is one anecdotal record of an old tunnel linked to a historical sea cave that allegedly led to the old castle which was once located on the site. It is therefore recommended that further investigation of this is highlighted as part of any archaeological investigation requested, and further consideration given to it at that point.

The chemical store cupboard on site is not thought a likely issue as it is designed to be spill-proof.

There are no other known sources of potential contamination likely to pose a risk from this site or its immediate surrounds. It is not felt that an intrusive ground investigation is merited at this stage for this application and recommended works would be better carried out following demolition works.

9. Recommendations

The information collected was used to identify all potential sources, pathways and receptors at the site and carry out a qualitative risk assessment of possible pollutant linkages.

Potential sources of contamination were identified on site. Works recommended are as follows:

- Potentially asbestos containing roof and wall panels on the site should be removed carefully and double-wrapped prior to any other demolition works by a competent contractors. It should be noted that the corrugated roof sheeting and the wall panels inside the old dairy are likely to be of different types and may pose a different risk level. Handling and disposal of any asbestos containing material should be undertaken in accordance with current Health & Safety procedures, and disposal should at a licensed facility. Evidence of correct disposal should be retained. The ground around each building should be visually examined for the presence of small fragments.

- Should any animal waste be encountered below the slurry yard or below any other building during demolition or groundworks then this material should be excavated removed from site, and not re-buried, to prevent gas migration or leachate risk.

- When demolition of adjacent buildings has taken place, the underground fuel tank should be decommissioned and removed with the dispensing pump. A small targeted site investigation should be undertaken at this time by a suitable experienced environmental consulant to confirm whether any impact from fuel is present in this area.

- The planning application allows for a new mains water supply to be laid to the site. The route of this is not known however a UKWIR specification soil assessment will be required to confirm a suitable pipe specification prior to laying potable water pipes on this site, to ensure they are now impacted by ground conditions. It is advised suitable time is left for this to be undertaken and the application made to Scottish water.

- It is likely that an archaeological survey will be requested due to site once having been home to Portlethen Castle, with a reported secret tunnel leaded from the castle to a sea cave. If there is a tunnel then this may have been infilled. At this stage this is purely speculative and based on limited information but it is recommended this is highlighted for inclusion in any archaeological study carried out at a later stage.

The site is otherwise suitable for the purpose for which it is proposed, based on the information examined. It is not recommended that any formal site investigation is required at this time but that the above points be following during site clearance.

10. References

BGS/SEPA, 2004b, Bedrock Aquifer map, http://www.sepa.org.uk/pdf/groundwater/tools/bedrock_aquifers.pdf.

BGS/SEPA, 2004c, Vulnerability of Groundwater in the Uppermost Aquifer map, http://www.sepa.org.uk/pdf/groundwater/tools/vulnerability.pdf.

BSi, 2011, BS10175:2011, Investigation of potentially contaminated sites: Code of practice, British Standards Institute (BSI).

CIRIA, 2001, Contaminated Land Risk Assessment, A guide to good practice. Publication C552, 2001.

BGS 1:50,000 classification sheets.

Radon search by postcode, 2013, Public Health England

11. Disclaimer

EnviroSurveying Ltd has prepared this report for the sole use of the Clients, in accordance with generally accepted consulting practice and for the intended purpose as stated in the related contract agreement. No other warranty, expressed or implied, is made as to the professional advice included in this report.

To the best of our knowledge, information contained in this report is accurate at the date of issue; however subsurface conditions including contamination concentrations may vary spatially and with time. It should be noted, however, that this report is based on information obtained from the site investigation works. There may be conditions pertaining at the site not disclosed by these investigations, which might have a bearing on the recommendations provided if such conditions were known.
It is important that these implications be clearly recognized when the findings of this study are being interpreted.

APPENDICES

APPENDIX A – Enviroinsight Report

EnviroSurveying Ltd
The Willows, Frain Drive,
Laurencekirk, AB30 1HJ

Groundsure Reference:	GS-3313771
Your Reference:	ESL1664
Report Date:	22 Sep 2016
Report Delivery Method:	**xml**
Client Email:	fmoore@envirosurveying.co.uk

Enviroinsight

Address: MAINS OF PORTLETHEN FARM, PORTLETHEN, ABERDEEN, AB12 4QP

Dear Sir/Madam,

Thank you for placing your order with Groundsure. Please find enclosed the Enviroinsight as requested

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

[redacted]

Managing Director
Groundsure Limited

Enc.
Enviroinsight

Enviroinsight

Address: MAINS OF PORTLETHEN FARM, PORTLETHEN, ABERDEEN, AB12 4QP

Date: 22 Sep 2016

Groundsure Reference: GS-3313771

Your Reference: ESL1664

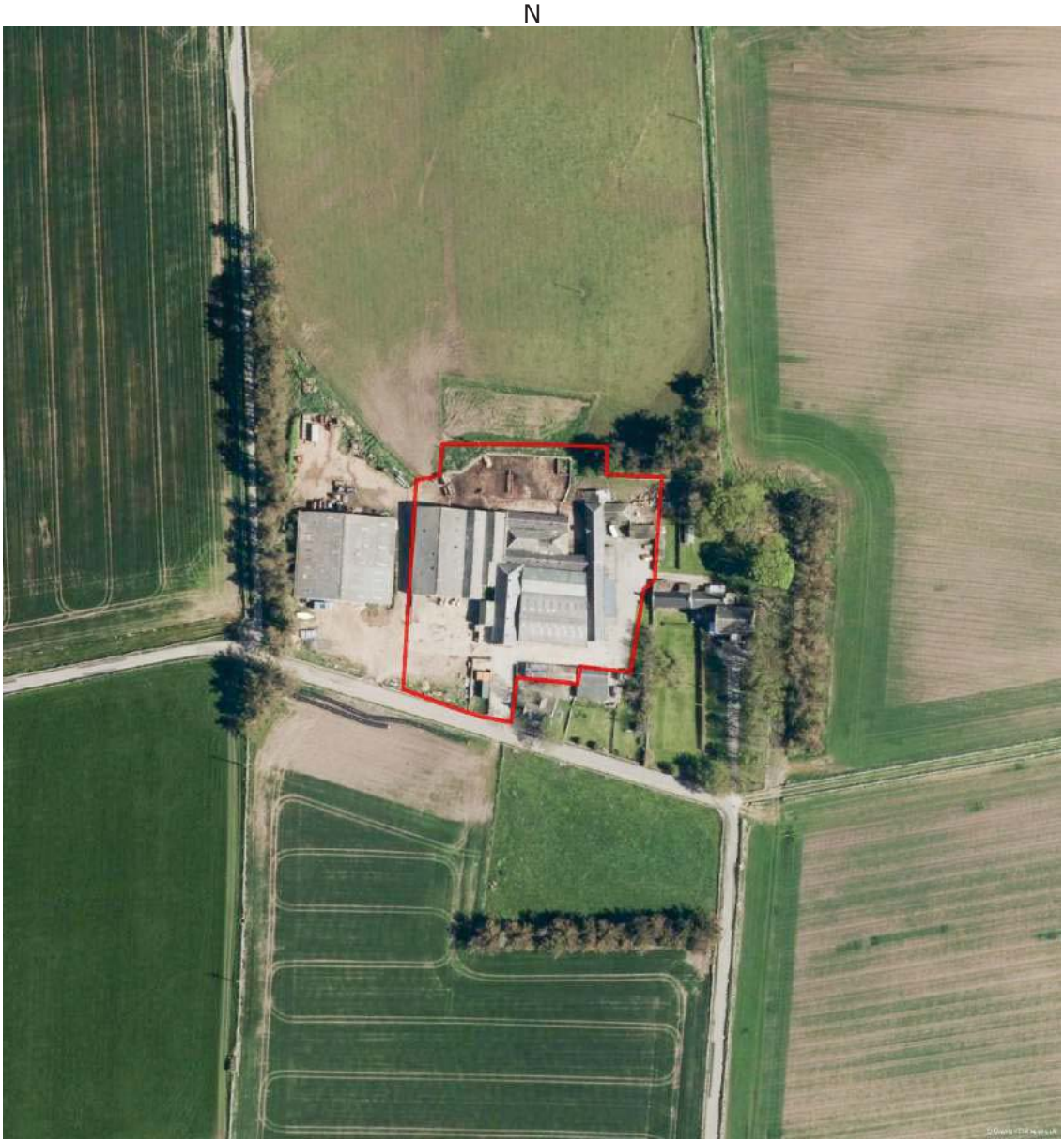
Client: EnviroSurveying Ltd

Aerial Photograph of Study Site

NW ▲ N NE

◄W E►

SW ▼ S SE



Site Name: MAINS OF PORTLETHEN FARM, PORTLETHEN, ABERDEEN, AB12 4QP
Grid Reference: 392891,796732
Size of Site: 0.76 ha

Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Report Section	Number of records found within (X) m of the study site boundary					
1. Landfill and Other Waste Sites	on-site	0-50	51-250	251-500	501-1000	1000-1500
1.1 SEPA Landfill Sites	0	0	0	0	0	-
1.2 Groundsure Recorded Landfill Sites	0	0	0	0	0	0
1.3 Historic Waste Sites						
Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	-	-
1.4 SEPA Waste Sites	0	0	0	0	-	-
2. Current Land Uses	on-site	0-50	51-250	251-500	501-1000	1000-1500
2.1 Current Industrial Sites Data	0	0	0	-	-	-
2.2 Records of Petrol and Fuel Sites	0	0	0	0	-	-
2.3 Part A(1), IPPC and historic IPC Authorisations	0	0	0	0	1	-
2.4 Part A(2) or Part B Authorisations	0	0	0	-	-	-
2.5 Underground High Pressure Oil and Gas Pipelines	0	0	0	0	-	-
2.6 Sites Designated as Contaminated Land or under investigation under Part 2A of the Environmental Protection Act 1990	0	0	0	0	-	-
3. Geology and Hydrogeology				Description		
3.1 Are there any records of Artificial Ground and Made Ground present beneath the study site? *				No		
3.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site? *				Yes		
3.3 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.						
3.4 Are there any records of Groundwater Classification within 250m of the study site?				Yes		

Source: Scale: 1:50,000 BGS Sheet 067

* This includes an automatically generated 50m buffer zone around the site.

4. Designated Environmentally Sensitive Sites	on-site	0-50	51-250	251-500	501-1000	1000-2000
4.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	8
4.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
4.3 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
4.4 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
4.5 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
4.6 Records of Ramsar sites	0	0	0	0	0	0
4.7 Records of World Heritage Sites	0	0	0	0	0	0
4.8 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
4.9 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
4.10 Records of National Parks	0	0	0	0	0	0
4.11 Ancient Woodland	0	0	0	0	0	0

5. Natural Hazards

5.1 What is the maximum risk of natural ground subsidence?	Very Low

6. Mining

6.1 Are there any coal mining areas within 75m of the study site?	No
6.2 Are there any non-coal mining areas within 500m of the study site?	No

Using this Report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

2. Current Land Use, Incidents and Registers

Provides information on the current land use as taken from PointX data, petrol filling stations, and Part A(1), Part A (2), Part B , IPPC and IPC Authorisations and sites designated as Contaminated Land in proximity to the property.

3. Environmental Setting

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas and World Heritage Sites. These searches are conducted using radii of up to 2000m.

4. Geology and Hydrogeology

Provides information on artificial and superficial deposits and bedrock beneath the study site and groundwater vulnerability and soil classification.

5. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence.

6. Mining

Provides information on areas of coal and shallow mining.

7. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

Note: Maps

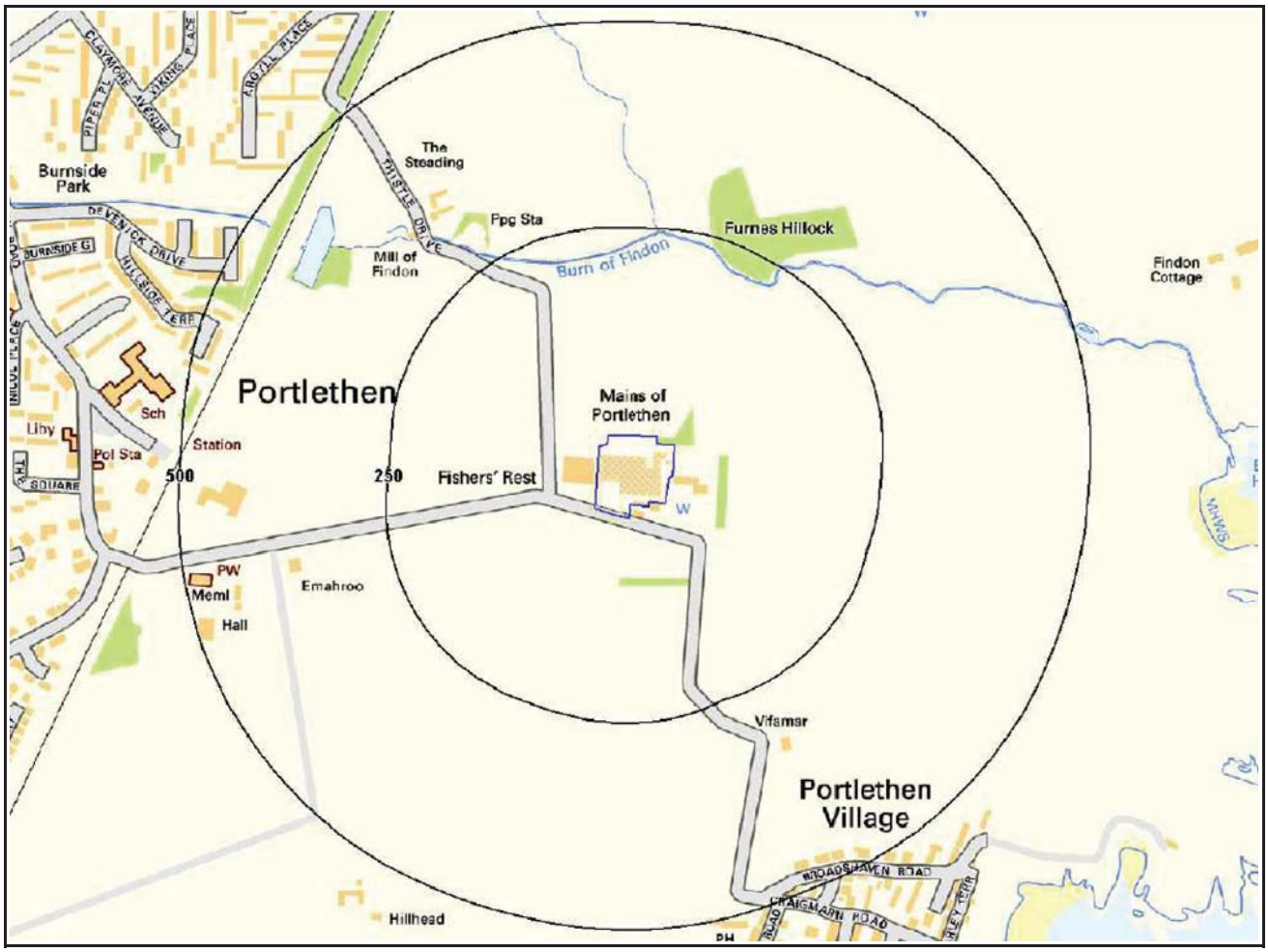
Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary

1. Landfill and Other Waste Sites Map

NW N NE



W E

SW S SE

Landfill and Other Waste Sites Legend

- Site Outline
- Search Buffers (m): 250, 500
- Groundsure Historic Landfill Sites (Area Data)
- Historic and Planned Waste Sites
- Groundsure SEPA Landfill Data (Area Data)
- Groundsure SEPA Landfill Data (Point Data)
- Groundsure SEPA Waste Data (Area Data)
- Groundsure SEPA Waste Data (Point Data)

1. Landfill and Other Waste Sites Findings

1.1 Groundsure SEPA Landfill Sites Data

Records of SEPA landfill sites within 500m of the study site	0

Database searched and no data found.

1.2 Groundsure Recorded Landfill Sites

Records of landfill sites and refuse tips within 1500m of the study site	0

Database searched and no data found.

1.3 Historic Waste Sites

Records of waste treatment, transfer or disposal sites within 500m of the study site:	0

Database searched and no data found.

1.4 Groundsure SEPA Waste Sites Data

Records of SEPA waste sites within 500m of the study site	0

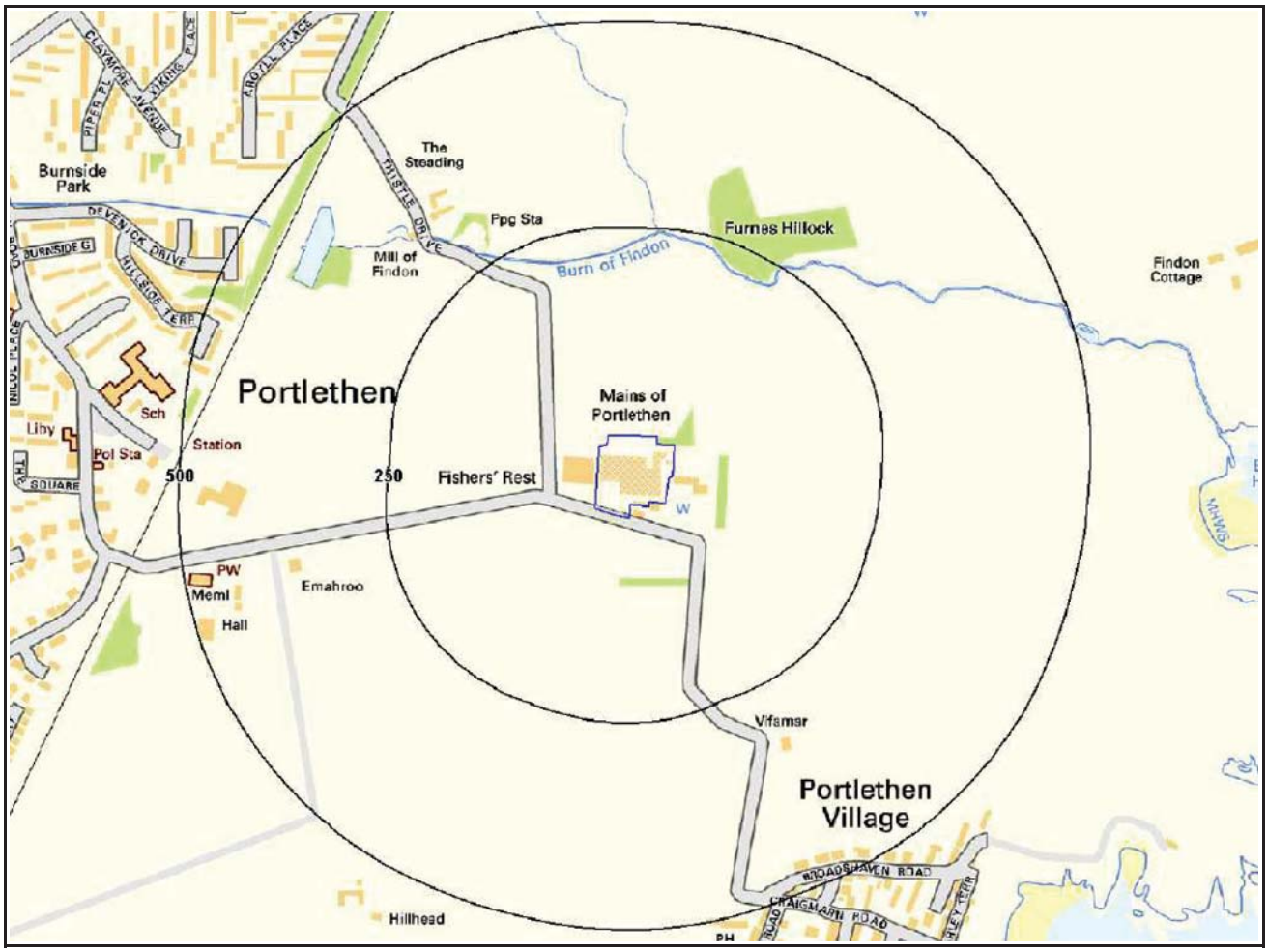
Database searched and no data found.

2. Current Land Use Map

NW ▲ N NE

◄W E►

SW ▼ S SE



Current Land Use Legend

- Search Centre
- Search Buffers (m) — 250 — 500
- Current Industrial Features
- Part A(1), IPPC and IPC Authorisations
- Part A(2) and Part B Authorisations
- Petrol & Fuel Sites
- Underground High Pressure Oil & Fuel Pipelines
- Sites Determined or Investigated as Contaminated Land Under Part IIA

2. Current Land Uses

2.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 0

Database searched and no data found.

2.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

2.3 Part A(1), IPPC and Historic IPC Authorisations

Records of Part A(1), IPPC and historic IPC Authorisations within 1000m of the study site: 1

The following Licenses are represented as points on the Current Land Use map:

ID	Distance [m]	Direction	NGR	Details	
Not shown	938.0	NW	392026, 797197	Operator: McIntosh Donald Ltd Address: Cookston Road, Portlethen, Aberdeen, AB12 4QB	Permit Number: PPC/N/20019 Comments: Grid reference from Address Data Activity: Slaughtering animals

2.4 Part A(2) and Part B Authorisations

Records of Part A(2) and Part B Authorisations within 250m of the study site: 0

Database searched and no data found.

2.5 Underground High Pressure Oil and Gas Pipelines

Records of high pressure underground pipelines within 500m of the study site: 0

Database searched and no data found.

2.6 Sites Determined as Contaminated Land under Part 2A EPA 1990[1]

How many sites does the Local Authority hold information on under Section 78R of the Environmental Protection Act 1990 within 500m of the study site: 0

[1]Further information on sites that have been determined under the Contaminated Land Regime is maintained by Local Authorities under Section 78R of the Environmental Protection Act 1990. Information should be available on both sites currently determined as Contaminated Land and Special Sites.

Database searched and no data found.

3. Geology and Hydrogeology

3.1 Artificial Ground and Made Ground

Database searched and no data found.
The database has been searched on site, including a 50m buffer.

3.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
MFT	MILL OF FOREST TILL FORMATION	DIAMICTON

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

3.3 Bedrock and Solid Geology

The database has been searched on site, including a 50m buffer.

LEX Code	Description	Rock Type
GLGT-PSAMIF	GLEN LETHNOT GRIT FORMATION	PSAMMITE, MICACEOUS-FLAGGY

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

3.4 Groundwater Vulnerability and Soil Classification

Are there any records of Groundwater Classification within 250m of the site? Yes

The following groundwater information is not represented on mapping:

Distance [m]	Direction	Description	Type	Layer	Rock Description
0.0	On Site	Concealed aquifers, aquifers of limited potential, regions without significant groundwater	Regions underlain by impermeable rocks, generally without groundwater except at shallow depth	SOLID	PreCambrian

4. Designated Environmentally Sensitive Sites Map

NW ▲ N NE

◄W E►

SW ▼ S SE

Designated Environmentally Sensitive Sites Legend

Site Outline
Areas of Outstanding Natural Beauty
SAC
SPA
Nitrate Vulnerable Zones
SSSI
Ramsar
Nitrate Sensitive Areas
NNR
LNR
National Parks
World Heritage Sites
Environmentally Sensitive Areas
Ancient Woodlands

4.Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? **No**

Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site: **8**

The following Site of Special Scientific Interest (SSSI) records provided by Scottish Natural Heritage are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance	Direction	SSSI Name	Data Source
1	1026.0	NE	Findon Moor	Scottish Natural Heritage
2	1071.0	E	Findon Moor	Scottish Natural Heritage
3A	1240.0	E	Findon Moor	Scottish Natural Heritage
4A	1258.0	E	Findon Moor	Scottish Natural Heritage
5	1308.0	E	Findon Moor	Scottish Natural Heritage
6B	1534.0	E	Findon Moor	Scottish Natural Heritage
7B	1547.0	E	Findon Moor	Scottish Natural Heritage
8B	1570.0	E	Findon Moor	Scottish Natural Heritage

Records of National Nature Reserves (NNR) within 2000m of the study site: **0**

Database searched and no data found.

Records of Special Areas of Conservation (SAC) within 2000m of the study site: **0**

Database searched and no data found.

Records of Special Protection Areas (SPA) within 2000m of the study site: **0**

Database searched and no data found.

Records of Ramsar sites within 2000m of the study site: **0**

Database searched and no data found.

Records of Local Nature Reserves (LNR) within 2000m of the study site: **0**

Database searched and no data found.

Records of World Heritage Sites within 2000m of the study site: **0**

Database searched and no data found.

Records of Environmentally Sensitive Areas within 2000m of the study site: **0**

Database searched and no data found.

Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site: **0**

Database searched and no data found.

Records of National Parks (NP) within 2000m of the study site: **0**

Database searched and no data found.

Records of Ancient Woodland within 2000m of the study site: **0**

Database searched and no data found.

5. Natural Hazards Findings

5.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure GeoInsight, available from our website. The following information has been found:

5.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? **Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

5.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? **Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

5.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? **Negligible**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

5.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? **Negligible**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

5.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site? **Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

5.1.6 Running Sand

What is the maximum Running Sand* hazard rating identified on the study site? **Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

* This indicates an automatically generated 50m buffer and site.

6.Mining

6.1 Coal Mining

Are there any coal mining areas within 75m of the study site? **No**

Database searched and no data found.

6.2 Non – Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any non-coal mining areas within 500m of the study site? **No**

Database searched and no data found.

7.Contacts

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com

British Geological Survey
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143. Fax: 0115 936 3276. Email: enquiries@bgs.ac.uk
Web: www.bgs.ac.uk
BGS Geological Hazards Reports and general geological enquiries

Scottish Environment Protection Agency
Web: www.sepa.org.uk
See website for local office contact details

The Coal Authority Property Search Services
200 Lichfield Lane, Berry Hill,
Mansfield, Nottinghamshire, NG18 4RG
Phone: 0845 762 6848 - DX 716176 MANSFIELD 5
Email:groundstability@coal.gov.uk
Web: www.groundstability.com

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: Aberdeenshire Council
Phone: 0845 608 1207
Web: http://www.aberdeenshire.gov.uk/
Address: Woodhill House, Westburn Road, Aberdeen, AB16 5GB

Get Mapping PLC
Virginia Villas, High Street, Hartley Witney, Hampshire RG27 8NW
Tel: 01252 845444

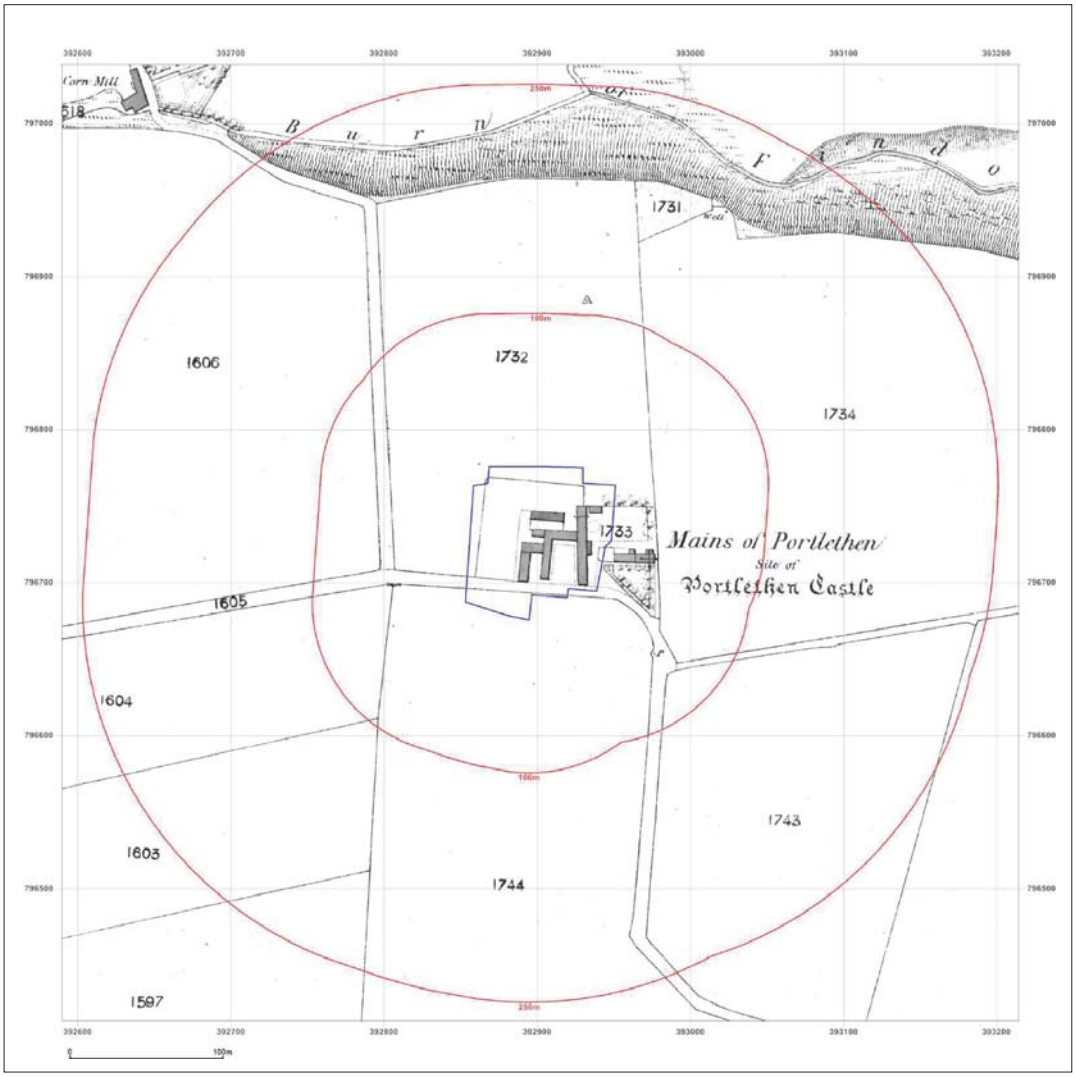
Acknowledgements

Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Scottish Natural Heritage who retain the Copyright and Intellectual Property Rights for the data.

8.Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:
https://www.groundsure.com/terms-and-conditions-sept-2016/

APPENDIX B – HISTORIC MAPS



Groundsure INSIGHTS

Site Details:

MAINS OF PORTLETHEN FARM,
PORTLETHEN, ABERDEEN,
AB12 4QP

Client Ref: ESL1664
Report Ref: GS-3313773
Grid Ref: 392902, 796726

Map Name: County Series
Map date: **1867**
Scale: 1:2,500
Printed at: 1:2,500

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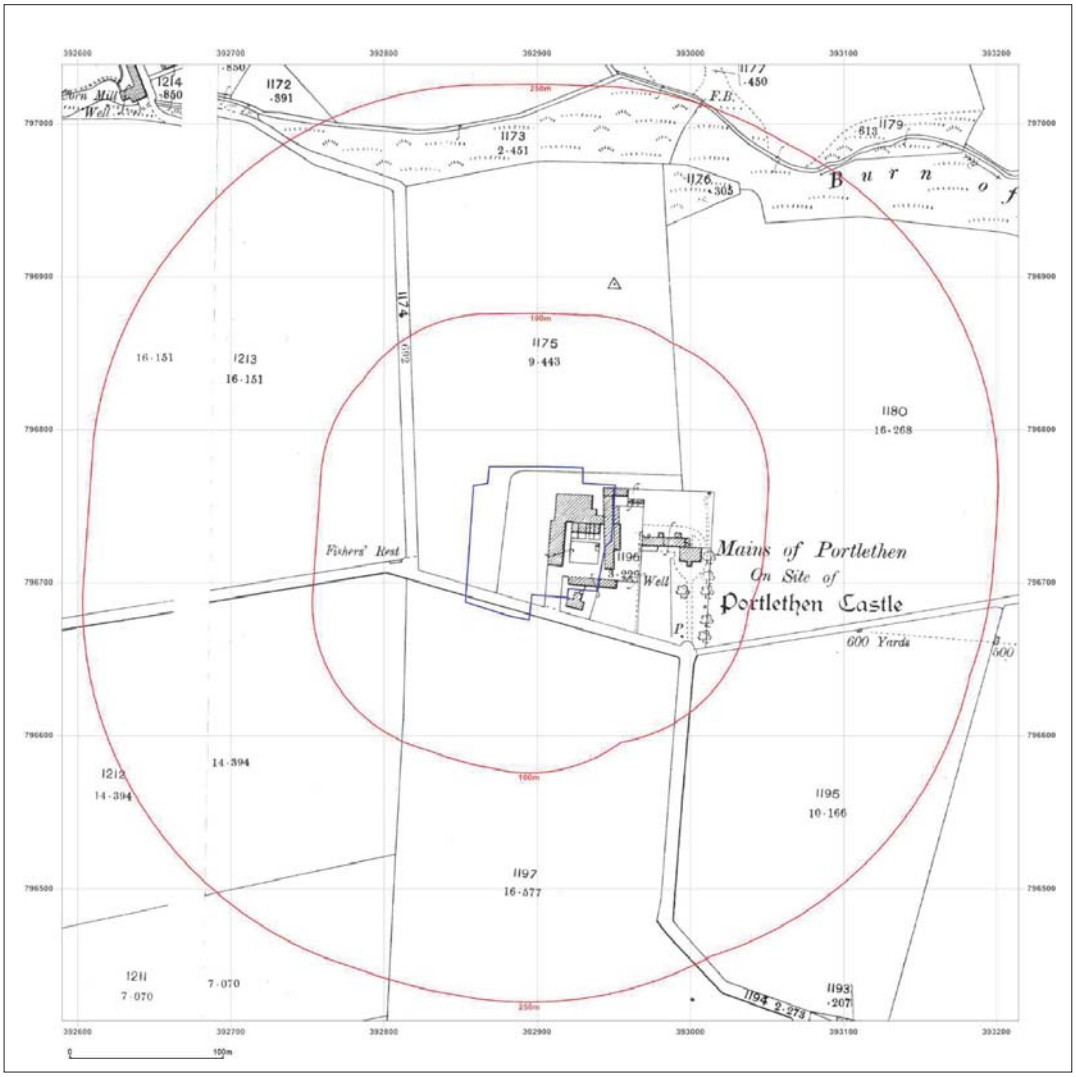
Surveyed 1867
Revised 1867
Edition N/A
Copyright N/A
Levelled N/A

Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 22 September 2016

To view map legend click here *Legend*



Groundsure INSIGHTS

Site Details:

MAINS OF PORTLETHEN FARM,
PORTLETHEN, ABERDEEN,
AB12 4QP

Client Ref: ESL1664
Report Ref: GS-3313773
Grid Ref: 392902, 796726

Map Name: County Series
Map date: **1903**
Scale: 1:2,500
Printed at: 1:2,500

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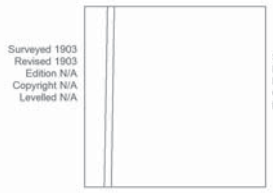

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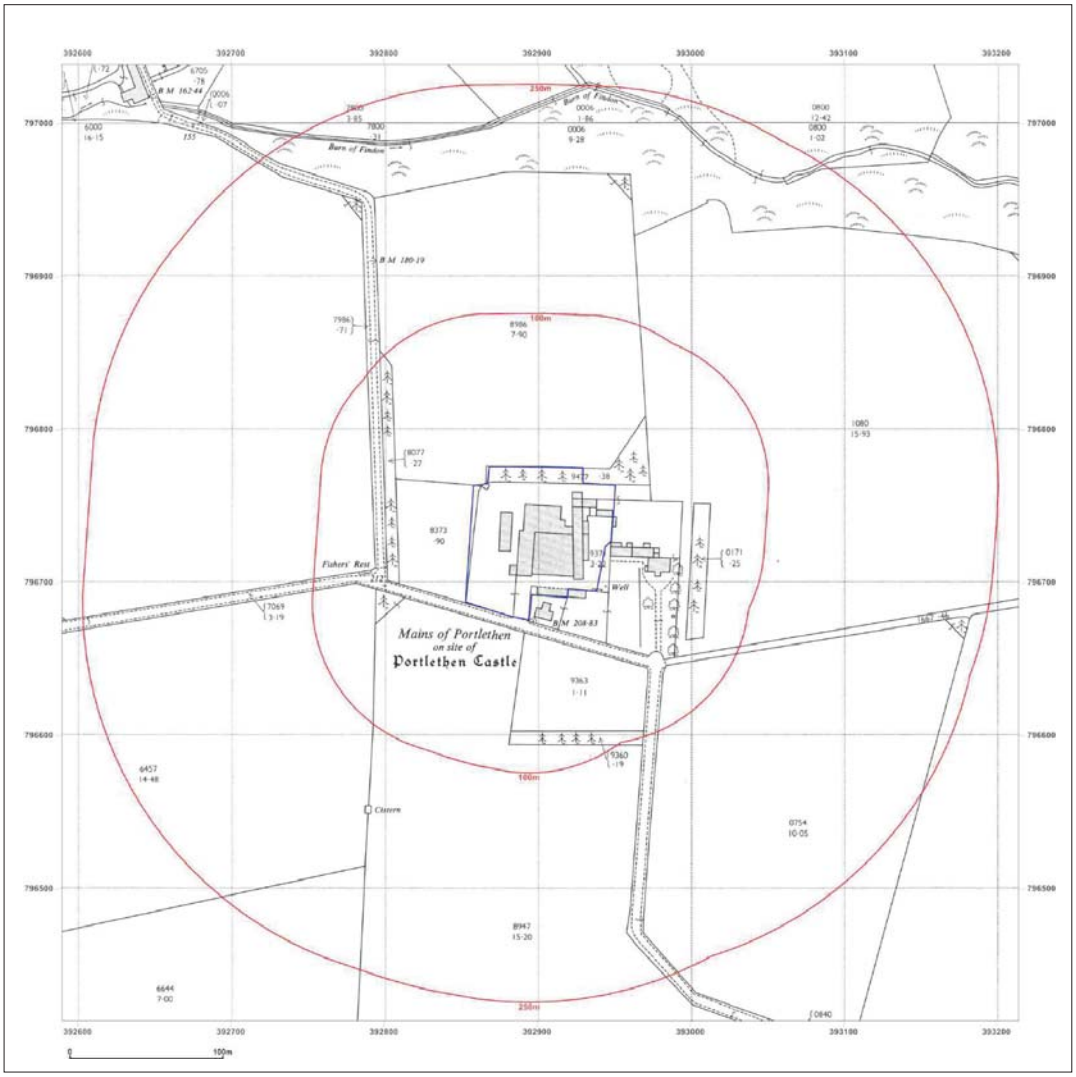
Production date: 22 September 2016

To view map legend click here *Legend*



Groundsure INSIGHTS

Site Details:

MAINS OF PORTLETHEN FARM,
PORTLETHEN, ABERDEEN,
AB12 4QP

Client Ref: ESL1664
Report Ref: GS-3313773
Grid Ref: 392902, 796726

Map Name: National Grid
Map date: **1963**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1963
Revised 1963
Edition N/A
Copyright 1964
Levelled 1952

Surveyed 1963
Revised 1963
Edition N/A
Copyright 1964
Levelled 1952

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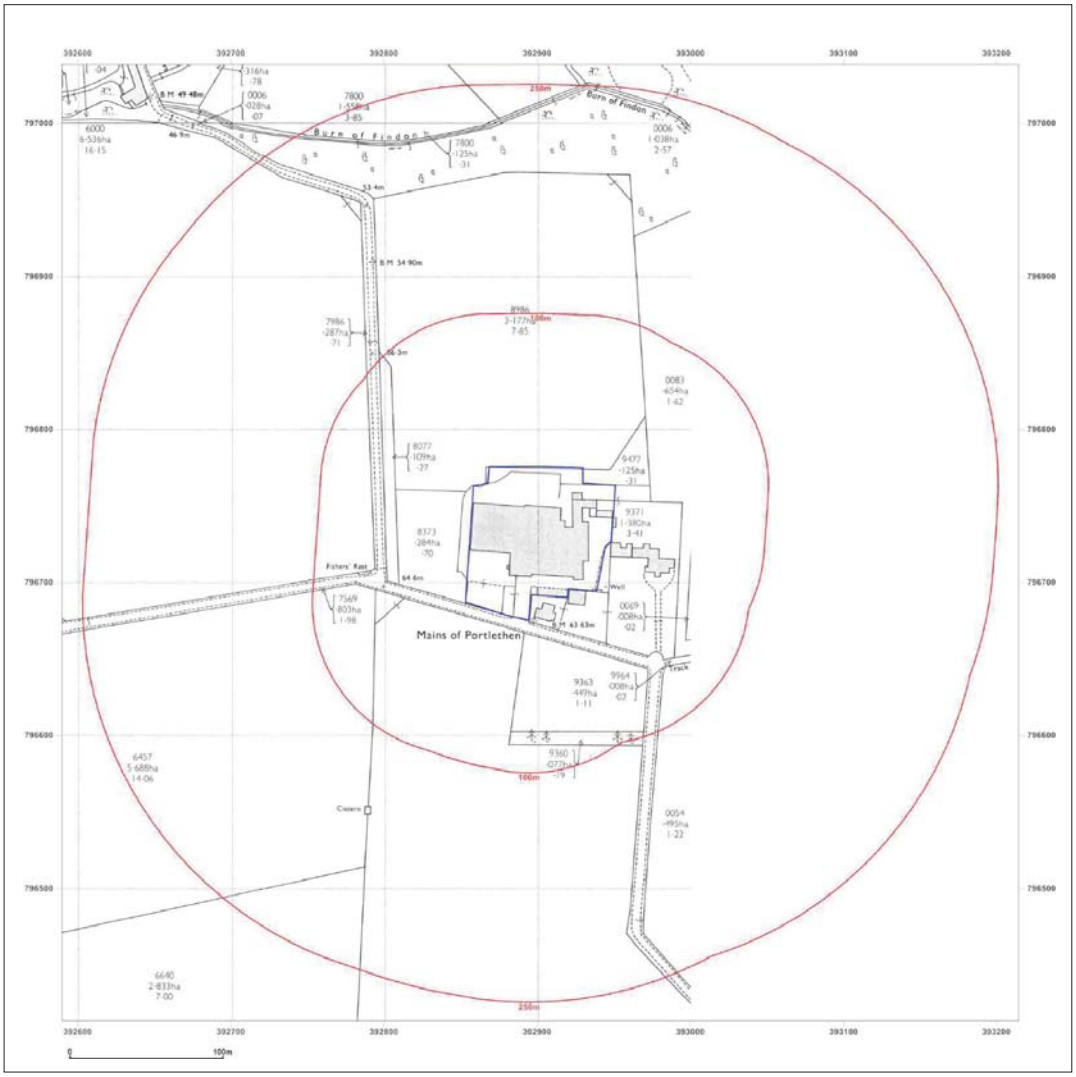
E: info@groundsure.com
W: www.groundsure.com

Production date: 22 September 2016

To view map legend click here *Legend*



Groundsure INSIGHTS

Site Details:

MAINS OF PORTLETHEN FARM,
PORTLETHEN, ABERDEEN,
AB12 4QP

Client Ref: ESL1664
Report Ref: GS-3313773
Grid Ref: 392902, 796726

Map Name: National Grid
Map date: **1978-1981**
Scale: 1:2,500
Printed at: 1:2,500

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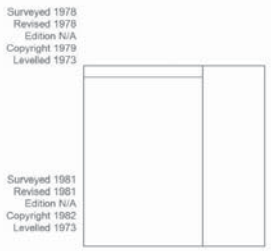

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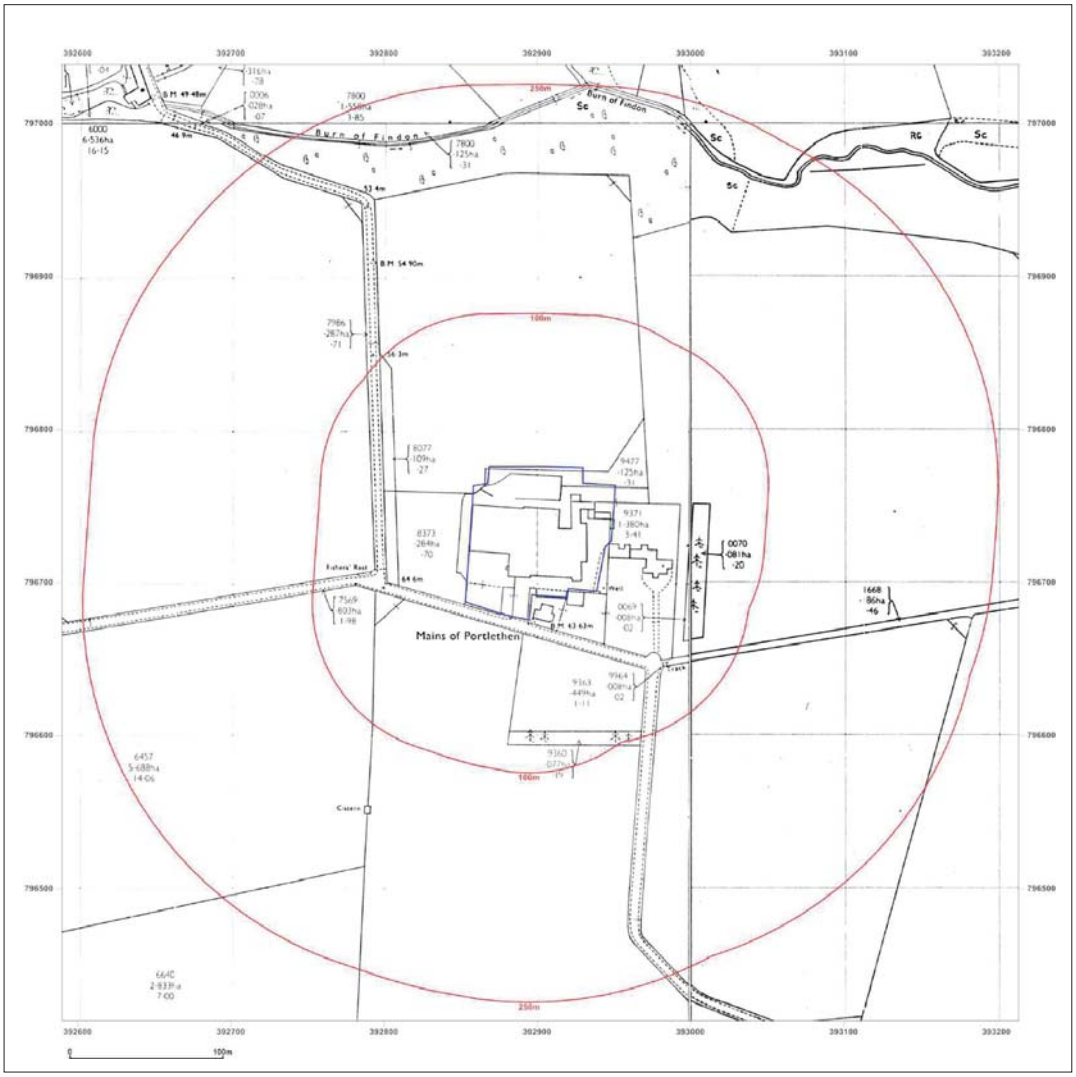
Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 22 September 2016

To view map legend click here *Legend*



Groundsure INSIGHTS

Site Details:

MAINS OF PORTLETHEN FARM,
PORTLETHEN, ABERDEEN,
AB12 4QP

Client Ref: ESL1664
Report Ref: GS-3313773
Grid Ref: 392902, 796726

Map Name: National Grid
Map date: **1985**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1973
Revised 1985
Edition N/A
Copyright 1985
Levelled 1973

Surveyed 1973
Revised 1985
Edition N/A
Copyright 1985
Levelled 1973

Surveyed 1973
Revised 1985
Edition N/A
Copyright 1985
Levelled 1973

Surveyed 1973
Revised 1985
Edition N/A
Copyright 1985
Levelled 1973

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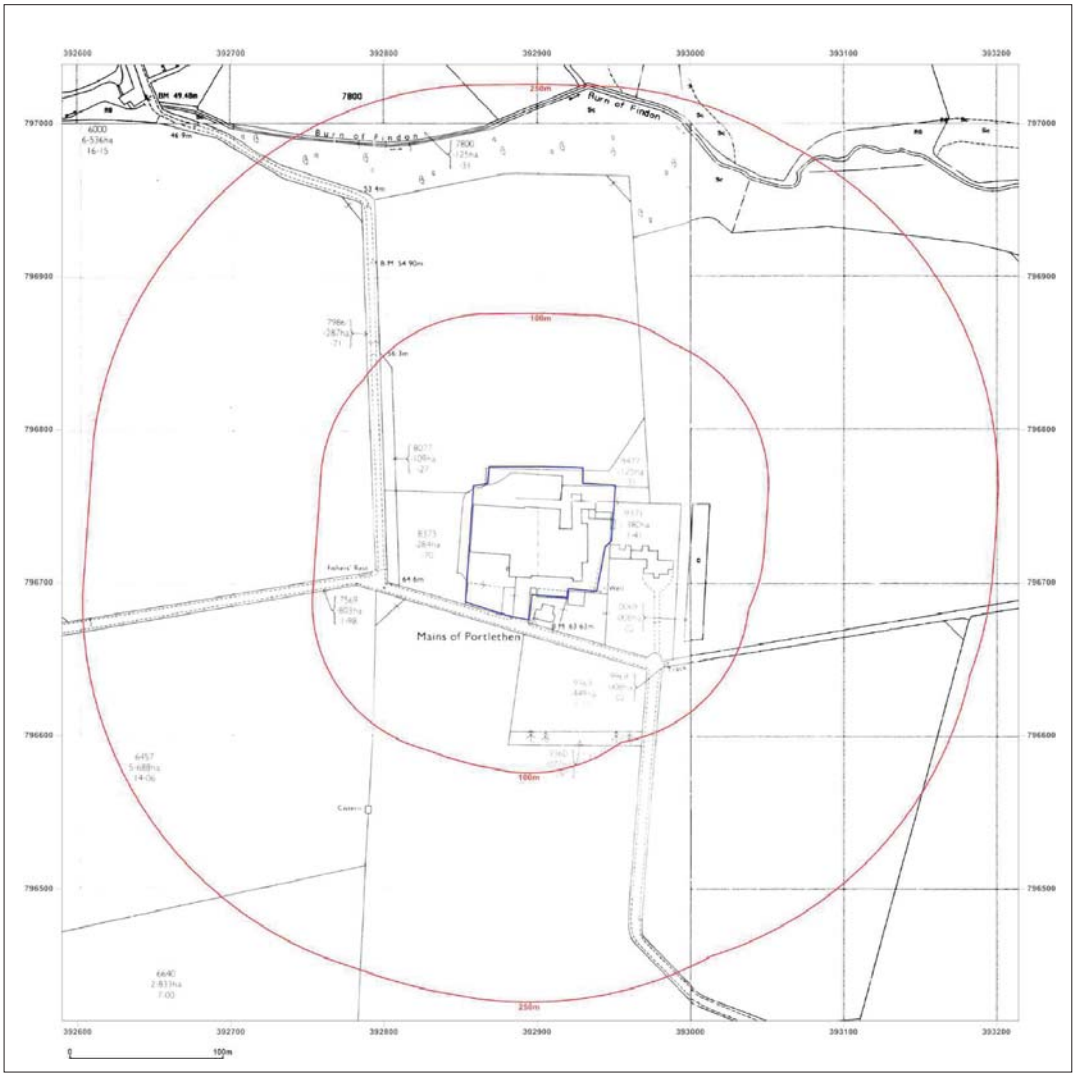
W: www.groundsure.com

Production date: 22 September 2016

To view map legend click here *Legend*



Groundsure INSIGHTS

Site Details:

MAINS OF PORTLETHEN FARM,
PORTLETHEN, ABERDEEN,
AB12 4QP

Client Ref: ESL1664
Report Ref: GS-3313773
Grid Ref: 392902, 796726

Map Name: National Grid
Map date: **1992-1995**
Scale: 1:2,500
Printed at: 1:2,500

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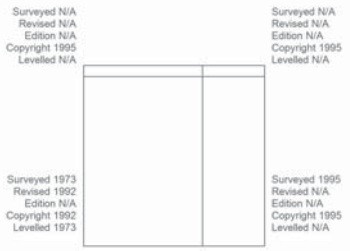

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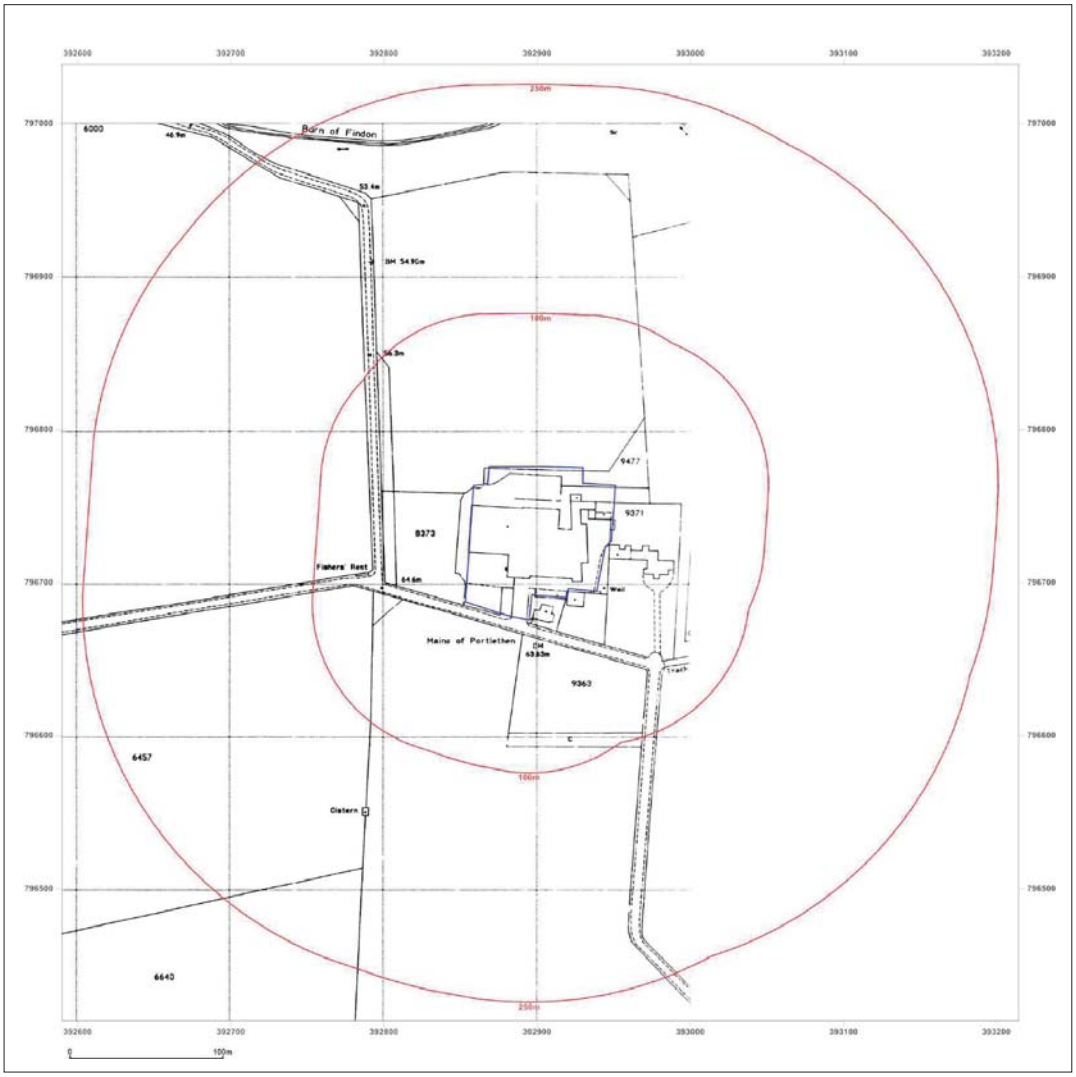
Production date: 22 September 2016

To view map legend click here *Legend*



Groundsure INSIGHTS

Site Details:

MAINS OF PORTLETHEN FARM,
PORTLETHEN, ABERDEEN,
AB12 4QP

Client Ref: ESL1664
Report Ref: GS-3313773
Grid Ref: 392902, 796726

Map Name: National Grid
Map date: **1995**
Scale: 1:2,500
Printed at: 1:2,500

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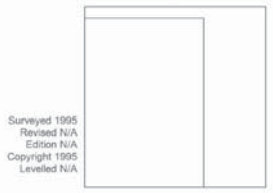

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E: info@groundsure.com
W: www.groundsure.com

Production date: 22 September 2016

To view map legend click here *Legend*

APPENDIX C – photos

1. Yard area by roadside in SW part of site, just inside entrance. Q & P seen to left, and B/C/D in distance

2. View from SW yard area looking at small building D, with C (asbestos) and B (slate) to rear. Green fuel station just seen.

3. Building C close up - asbestos upper walls and roof.

4. Building A - open fronted to north side.

5. View looking east between Shelter A on right and building E on left.

6. Dwelling outside site adjacent to building A.

7. Building E - view along south facade looking east. Dwelling outside site seen.

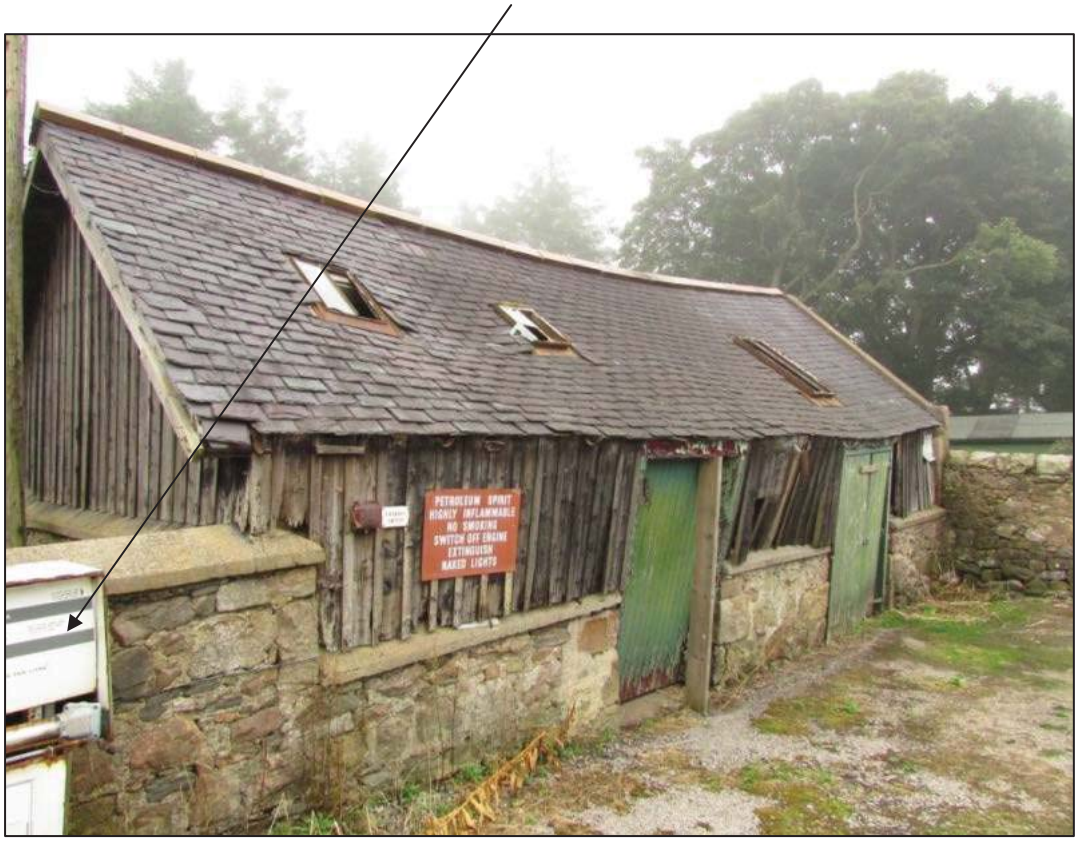
8. Building B seen from south side, adjoins Building E

9. Building M - looking north. Fuel pump seen in distance.

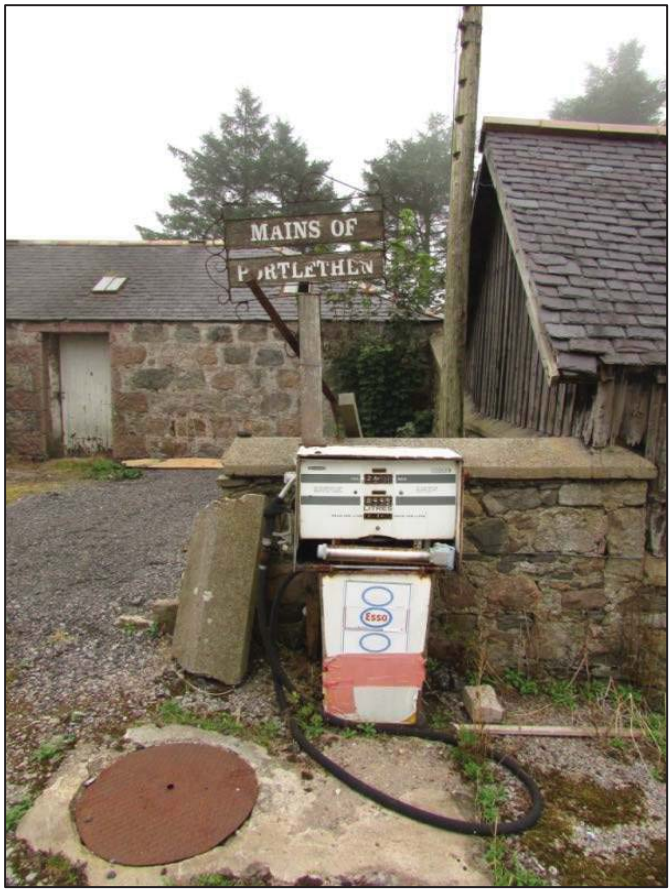
10. Dwelling just outside site to east. Building O is seen to left (pump just out of picture)

11. Building O with pump and tank cover.

12. Building O in very poor state. Fuel pump located here and UG tank adjacent



13. Fuel pump with manhole cover to UG tank seen at west end of Building O.



14. Building N - stone with slate roof. Small store. Attaches to end of Building K.

15. View from NE corner of site looking south along Buildings K, M and L.

16. Join between K and H.

17. View along rear of buildings from north side, looking west towards large shed to remain

18. Further view along north side between buildings and storage yard.

19. Storage yard at north end of site is all concreted

20. Storage yard at north end of site.

21. Building I - East gable end. Attached to building G.

22. Building G - missing roof sections throughout.

23. Building G - east gable end looking inwards. Concrete floor.

24. Building Q (left) and P (right) seen from south facade

25. Site boundary on west lies between these 2 sheds. Building Q to right.

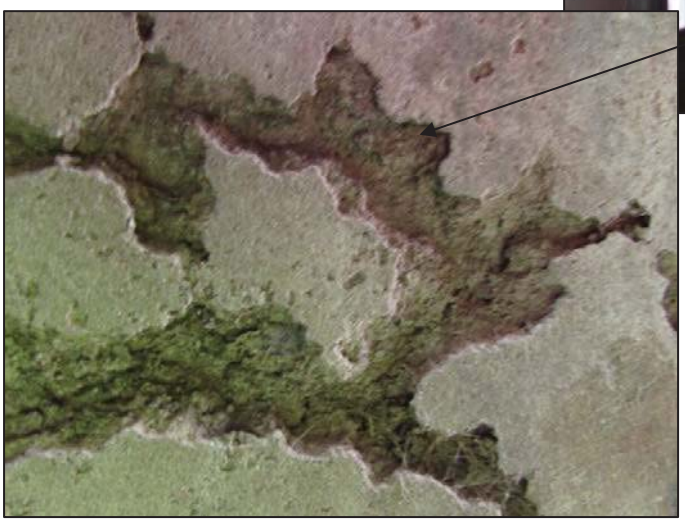
26. Shed outside site to west to remain

27. Building A - chemical store at west end plus oil drums on pallets. No staining.

28. Building B - inside view. Stone walls, slate roof, used for cattle pens.

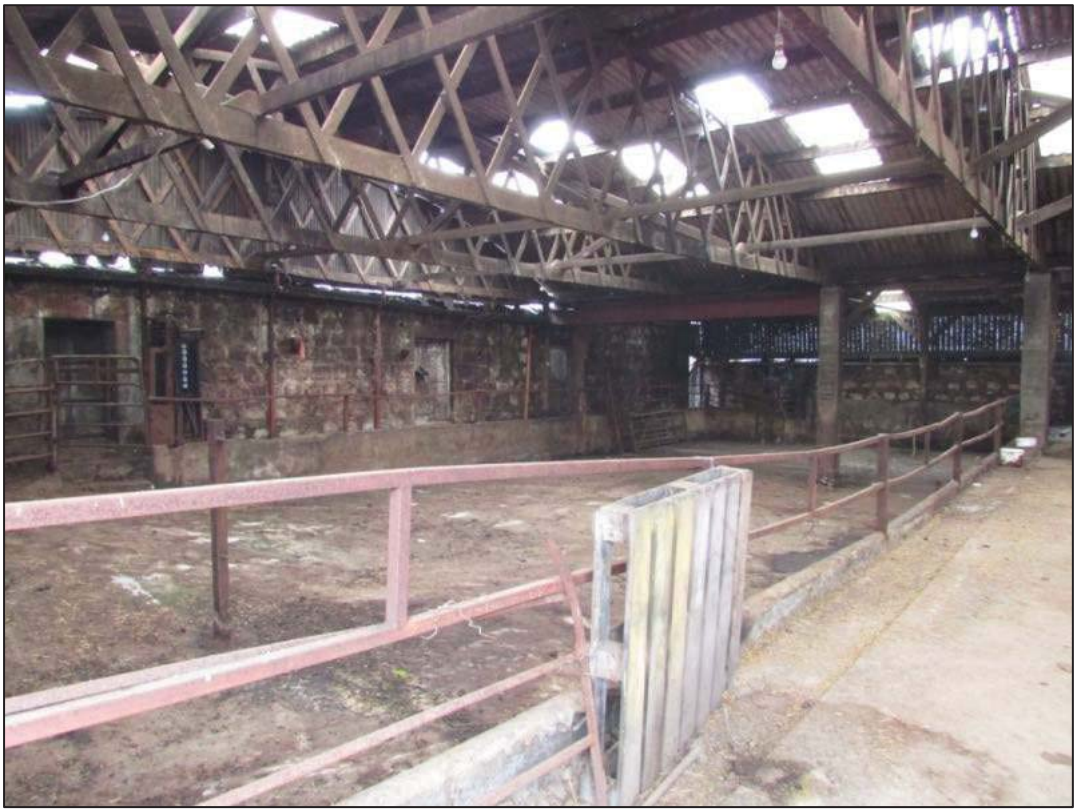
29. Building C - small milking parlour/dairy with asbestos roof, walls and possibly inside lining.

30a. Building C - internal dairy walls are clad in sheeting, which may contain asbestos.



30b. Building C- internal walls on former dairy may contain asbestos.

31. Building E- west side (original stone wall of Building B clearly visible).



32. Building E- east side (stone wall of Building L visible). Date on stone wall here is 1864.

33. Building E- main cattle court.

34. Building F - inside calf shed. Solid concrete floor.

35. Building F - calf shed with slate roof

36. Building H - inside leading through to L.

37. Building G - large sections of asbestos roof gone.

38. Building G - inside used for cattle.

39. North end of Building K used for bale storage

40. Building K inside - originally had upper floor for storage - leads through to Building L.

41. Building L - inside, grain store with concrete floor.

42. Building M - used for general storage.

43. Building M - asbestos roof sheets seen from inside. Intact.

44. P - inside, open to Q on the left. Adjoins J to the right.

45. Q - inside, used for storage of bales and implements.

Appendix D -

APPENDIX D – Annotated site plan

LEGEND.

- SITE BOUNDARY
- ASPHALT VEHICULAR ACCESS ROAD:
- GREY BLOCK PAVING
- BUFF BLOCK PAVING
- GREY SLAB PAVING TO PRIMARY FOOTPATHS
- HARD LANDSCAPING:
- AMENITY GRASS:
- SOFT LANDSCAPING:

Rev	Description	Date
A	General updates	Nov '16

MACKIE RAMSAY TAYLOR ARCHITECTS
47 Victoria Street, Aberdeen, AB10 1QA
T : (01224) 639295 F : (01224) 637956
E: mail@mrtarchitects.com W: www.mrtarchitects.com

Project
PROPOSED STEADING REDEVELOPMENT

MAINS OF PORTLETHEN
ABERDEENSHIRE

Drawing
PROPOSED DRAWINGS
INDICATIVE SITE PLAN

Scale	1:250@A1 / 1:500@A3
Status	PLANNING
Date	JUN '16
Drawn By	BK
Project No.	2009
Drawing No.	L(00)10 A

APPENDIX E – RADON REPORT

Public Health England

Report of address search for radon risk

British Geological Survey

Radon Risk Report for addresses in Scotland

Address searched: Mains of Portlethen Farm, Portlethen, Aberdeen, AB12 4QP

Grid reference searched:

392971 East

796718 North

Date of report: 22 September 2016

Guidance for existing properties

Is this property in a radon Affected Area? - No

A radon Affected Area is defined as where the radon level in at least one property in every hundred is estimated to exceed the Action Level.

The estimated probability of the property being above the Action Level for radon is: 0-1%

The result covers a 75 metre zone around the grid references above to allow for uncertainties in locations.

This report informs you of the estimated probability that this particular property is above the Action Level for radon. This does not necessarily mean there is a radon problem in the property; the only way to find out whether it is above or below the Action Level is to carry out a radon measurement in an existing property.

Radon Affected Areas are designated by the Public Health England. PHE advises that radon gas should be measured in all properties within Radon Affected Areas.

If you are buying a currently occupied property in a Radon Affected Area, you should ask the present owner whether radon levels have been measured in the property. If they have, ask whether the results were above the Radon Action Level and if so, whether remedial measures were installed, radon levels were re-tested, and the results of re-testing confirmed the effectiveness of the measures.

Further information is available from PHE or http://www.ukradon.org

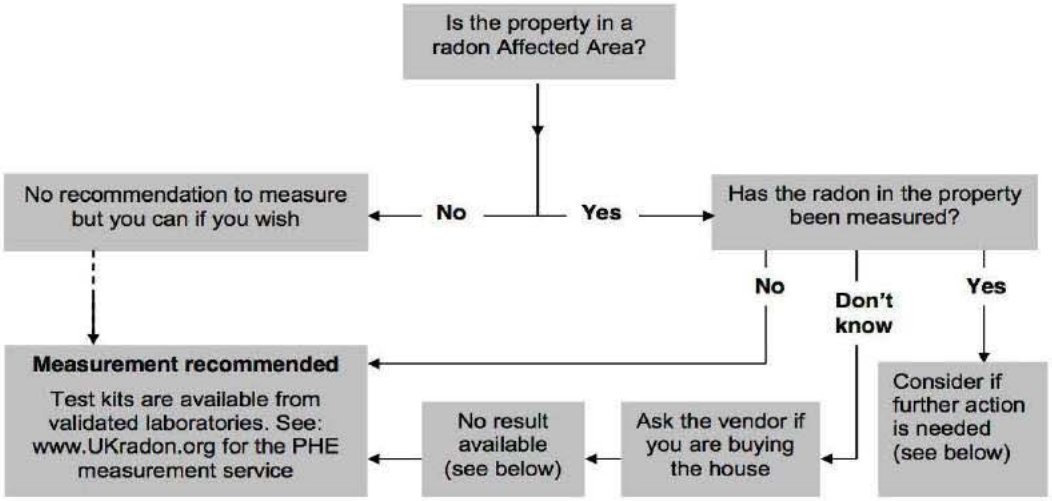
Guidance for new buildings and extensions to existing properties

What is the requirement under Building Regulations for radon protection in new buildings and extensions at the property location? - None

If you are buying a new property in a Radon Affected Area, you should ask the builder whether radon protective measures were incorporated in the construction of the property.

See the Radon and Building Regulations for more details.

PHE guidance for occupiers and prospective purchases



Existing radon test results: There is no public record of individual radon measurements. Results of previous tests can only be obtained from the seller. Radon levels can be significantly affected by changes to the building or its use, particularly by alterations to the heating and ventilation which can also be affected by changes in occupier. If in doubt, test again for reassurance.

Radon Bond: This is simply a retained fund, the terms of which are negotiated between the purchaser and the vendor. It allows the conveyance of the property to proceed without undue delay. The purchaser is protected against the possible cost of radon reduction work and the seller does not lose sale proceeds if the result is low. Make sure the agreement allows enough time to complete the test, get the result and arrange the work if needed.

High Results: Exposure to high levels of radon increases the risk of developing lung cancer. If a test in a home gives a result at or above the Action Level of 200 Becquerels per cubic metre of air (Bq/m3), formal advice will be given to lower the level. Radon reduction will also be recommended if the occupants include smokers or ex-smokers when the radon level is at or above the Target Level of 100 Bq/m3; these groups have a higher risk. Information on health risks and radon reduction work is available from PHE. Guidance about radon reduction work is also available from some Local Authorities, the Building Research Establishment and specialist contractors.

PHE designated radon website:	http://www.ukradon.org
Building Research Establishment:	http://www.bre.co.uk/radon/reduce.html

APPENDIX F - Petroleum licence