Surface Water Drainage Strategy for Planning

Prepared for:
Mark Clyndes

Location:
Land at Tregoddick Farm,
Vingoes Lane,
Madron
TR20 8SS

November 2018

Our reference:
88384-Clyndes-TregoddickFarm-v2.0

Unda Consulting Limited, Southpoint, Old Brighton Road, Gatwick, West Sussex, RH11 0PR
+44 (0) 1293 214 444
enquiries@unda.co.uk

Document Issue Record

Location:	Land at Tregoddick Farm, Vingoes Lane, Madron TR20 8SS				
Application:	Development of up to seventeen dwellings on vacant agricultural land				
Prepared for:	Mark Clyndes				
Title:	Flood Risk Assessment and Surface Water Drainage Strategy for Planning				
Project No.:	88384	**Date:**	27th November 2018	**Issue No.:**	2.0
Written By:	T. Smith, BSc (Hons)	**Checked By:**	E. Bouet, BSc (Hons)	**Authorised By:**	E. Jeffery, MSci (Hons)

1. Introduction

1.1. This Flood Risk Assessment and Surface Water Drainage Strategy has been prepared by Unda Consulting Limited on behalf of Mark Clyndes, in support of a planning application for the development of up to seventeen dwellings at the site of Land at Tregoddick Farm, Vingoes Lane, Madron TR20 8SS. This report assesses the flood risk and surface water drainage strategy for the proposed development.

1.2. This report assesses the surface water drainage strategy for the proposed development in response to consultation comments received from Cornwall Council Lead Local Flood Authority on 6th June 2018 in relation to Outline Planning Application PA18/02055. A copy can be found within the report Appendix.

1.3. The proposed planning application is for the development of up to seventeen dwellings. Post development the newly introduced footprint, comprising seventeen houses, new access roads and respective driveways, will cover approximately 2935m².

1.4. In order to mitigate flood risk posed by post development runoff, adequate control measures will be required within the site. This will ensure that surface water runoff is dealt with at source and the flood risk off site is not increased.

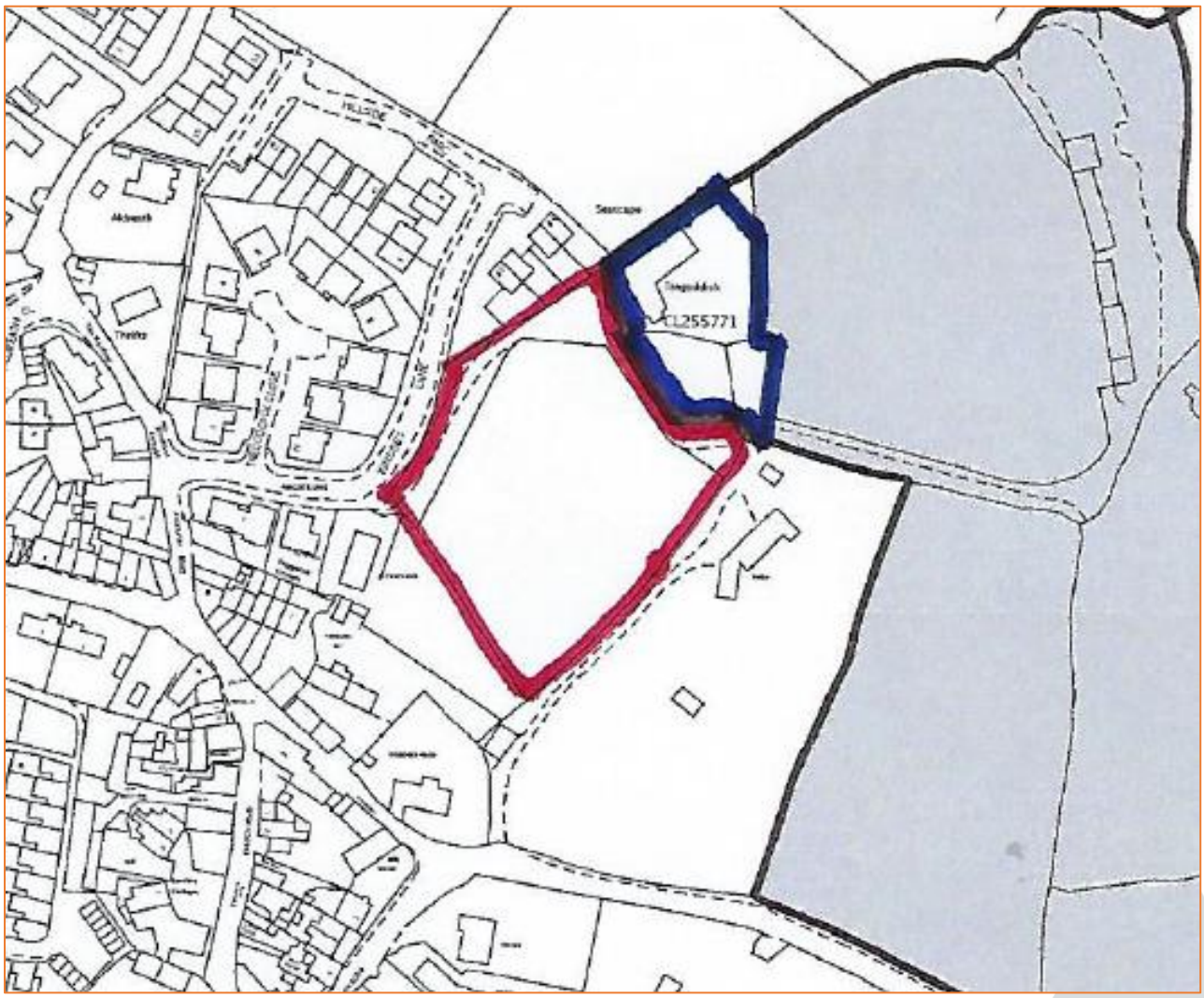

Figure 1: Site location plan (Source: Mark Clyndes)

2. Existing Site:

2.1. The proposed development site is approximately 5557m^2 and is currently occupied by a vacant agricultural field, part of the wider Tregoddick Farm. Having reviewed aerial photography the majority of the field appears to be grassland with dense scrub and trees along the north western and south eastern peripheries. A gravel roadway runs through the north of the site connecting Treggodick Farm House to Vingoe's Lane.

2.2. The site is largely surrounded by residential dwellings with Vingoe's Lane forming the western boundary.

2.3. A measured topographic survey has not been undertaken at the site however 1.0m horizontal resolution DTM LiDAR data is available. Data suggests that the ground topography on site ranges from approximately 112.90mAOD in the south to 119.20mAOD in the north. The proposed residential dwellings will be situated on land at an elevation of between approximately 113.60mAOD and 118.60mAOD.

Figure 2: Aerial view of the site (Source: Google)

Existing Ground Conditions:

2.4. The 1:50,000 BGS map shows the bedrock geology underlying the site to consist of Mylor Slate Formation – Hornfelsed Slate and Hornfelsed Siltstone. This strata was created during the Frasnian and Famennian Age.

2.5. According to 1:50,000 BGS mapping the site is not underlain by superficial geological deposits.

2.6. The soil type taken from the UK soils website shows intermediate to shallow argillite slate with a clayey loam to silty loam texture.

2.7. An intrusive site investigation has been undertaken by Wheal Jane Consultancy in November 2018. A total of four trial pits were excavated at the site.

2.8. Test results from the investigation indicate that the general strata sequence encountered comprises of Topsoil to a depth of 0.80mbgl. Topsoil was found to be underlain by Weathered Land's End Intrusion - Brown/Grey Sandy Gravel with Cobbles of Granite. This strata extended beyond the depth of the trial pits (refer to Appendix).

2.9. No groundwater was encountered during the site investigation.

2.10. Infiltration tests undertaken within the trial pits indicate that there is the potential for infiltration at the site. Refer to the site investigation located within Appendix.

2.11. The published Environment Agency Groundwater Vulnerability map shows the site is not located within an area classified as a Groundwater Source Protection Zone.

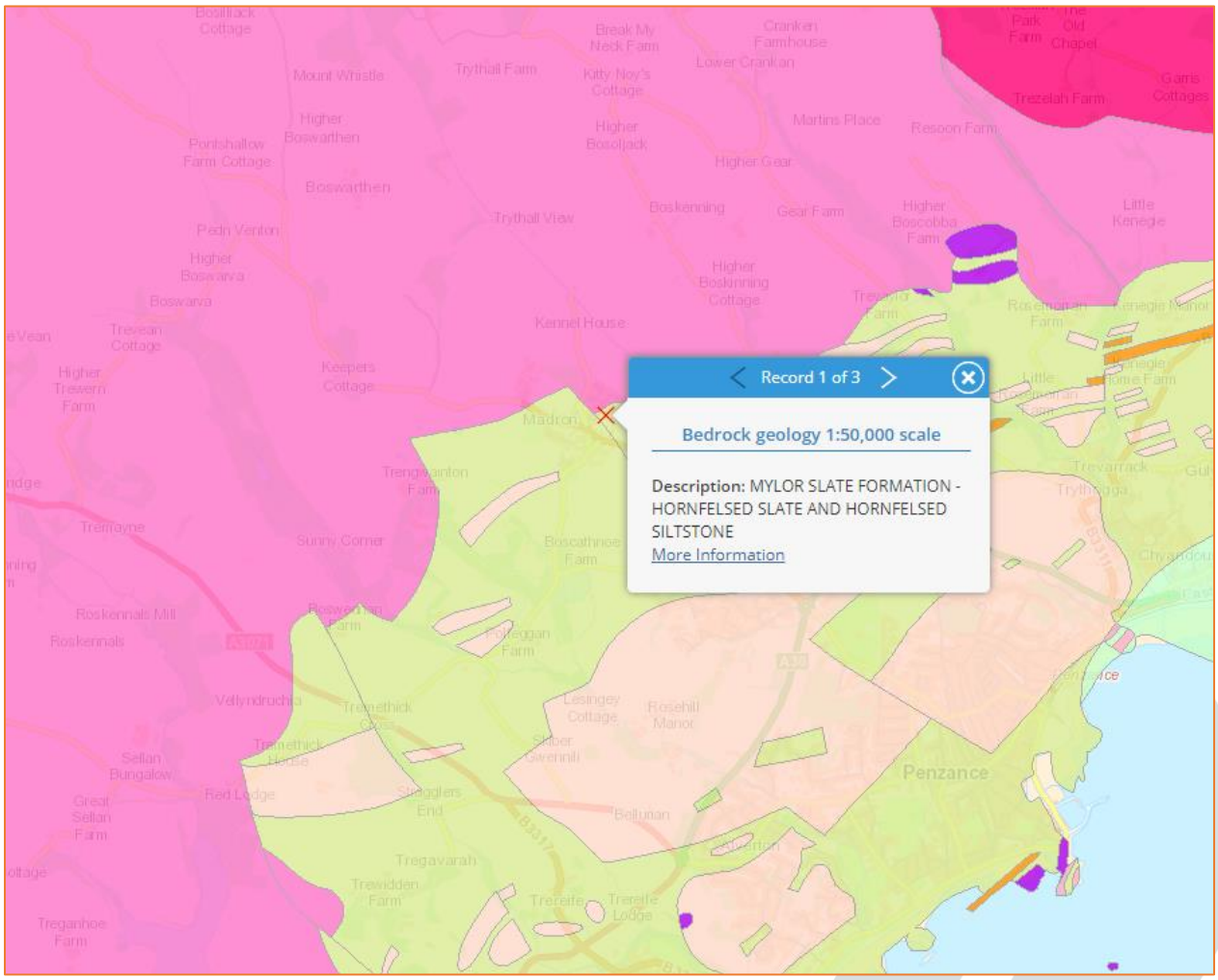

Figure 3: BGS Bedrock Geology (Source: BGS)

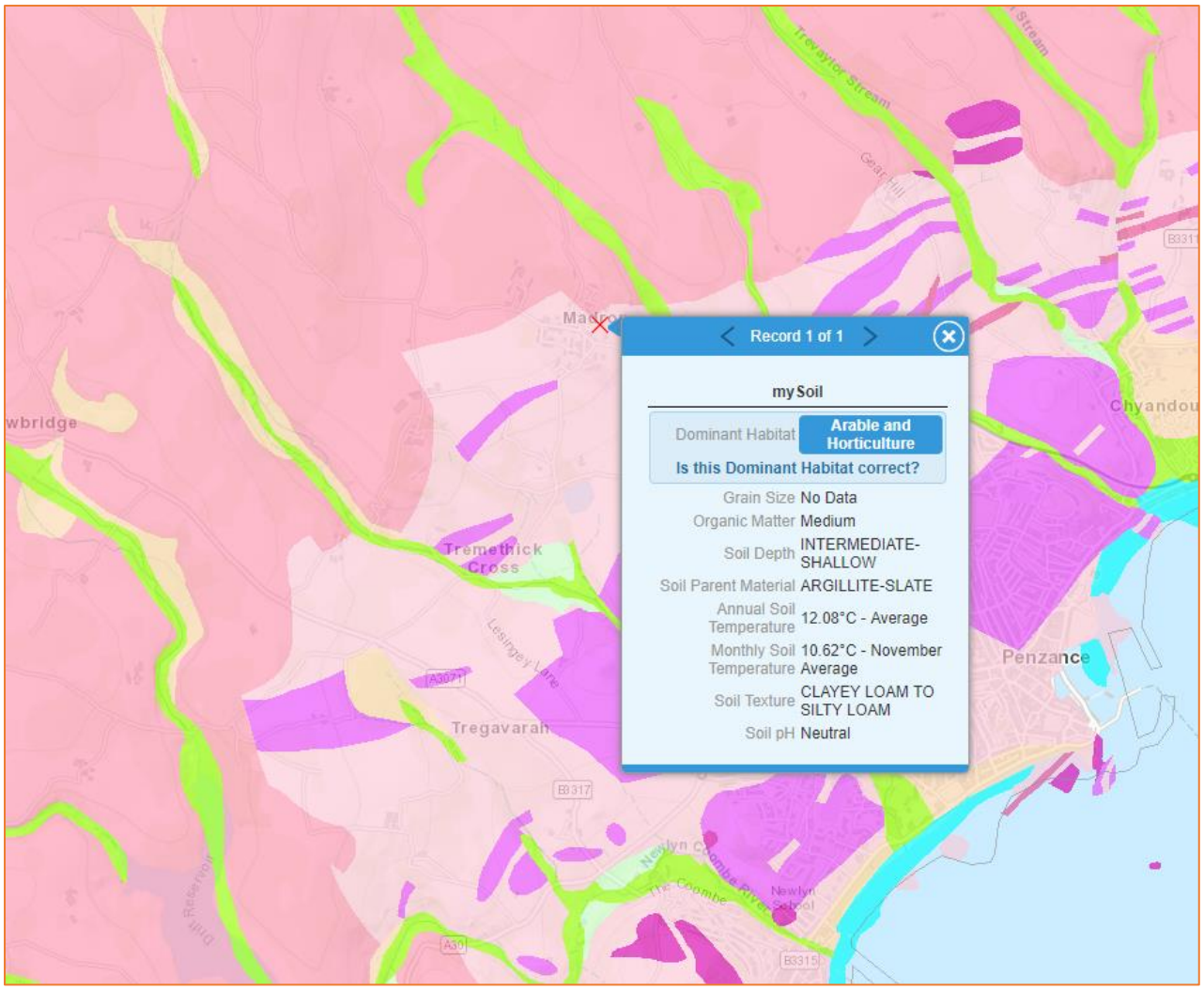

Figure 4: Soil Map (Source: UK Soils, BGS)

Nearby Watercourses / Drainage Features:

2.12. The closest watercourse to the site is Chyandour Brook 195m north east of the site, flowing in a southerly direction. Chyandour Brook is a small watercourse that appears to rise to the south of Boskednan Stone Circle and flows in a southerly direction past Boswarthan, Madron and Heamoor before discharging into the English Channel at Chyandour. In total Chyandour Brook has a length of approximately 3.5 miles.

2.13. There are no drains / ditches located within the red line site boundary.

Existing Drainage:

2.14. Surface water generated within the existing site boundary is assumed to currently discharge at an uncontrolled rate to ground, and via overland/subsurface flow onto land adjacent south.

3. Development Proposals:

Proposed Development:

3.1. The proposed planning application is for the development of up to seventeen dwellings on vacant agricultural land. Post development the newly introduced footprint, comprising seventeen houses, new access roads and respective driveways, will cover approximately 2935m².

Figure 5: Proposed Site Layout Plan (Source: Mark Clyndes)

4. Flood Risk Assessment:

Flood Zones:

4.1. Within planning, Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning (Rivers and Sea), available on the Environment Agency's website.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Table 1: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

4.2. The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding.

Vulnerability to flooding:

4.3. The NPPF classifies property usage by vulnerability to flooding. The existing site usage is classified as "less vulnerable" throughout, as it comprises agricultural land. Post development, the site will become "more vulnerable", as the application is for the development of up to seventeen residential dwellings.

4.4. Accordingly, it is considered that the vulnerability of the site as a whole will increase post development.

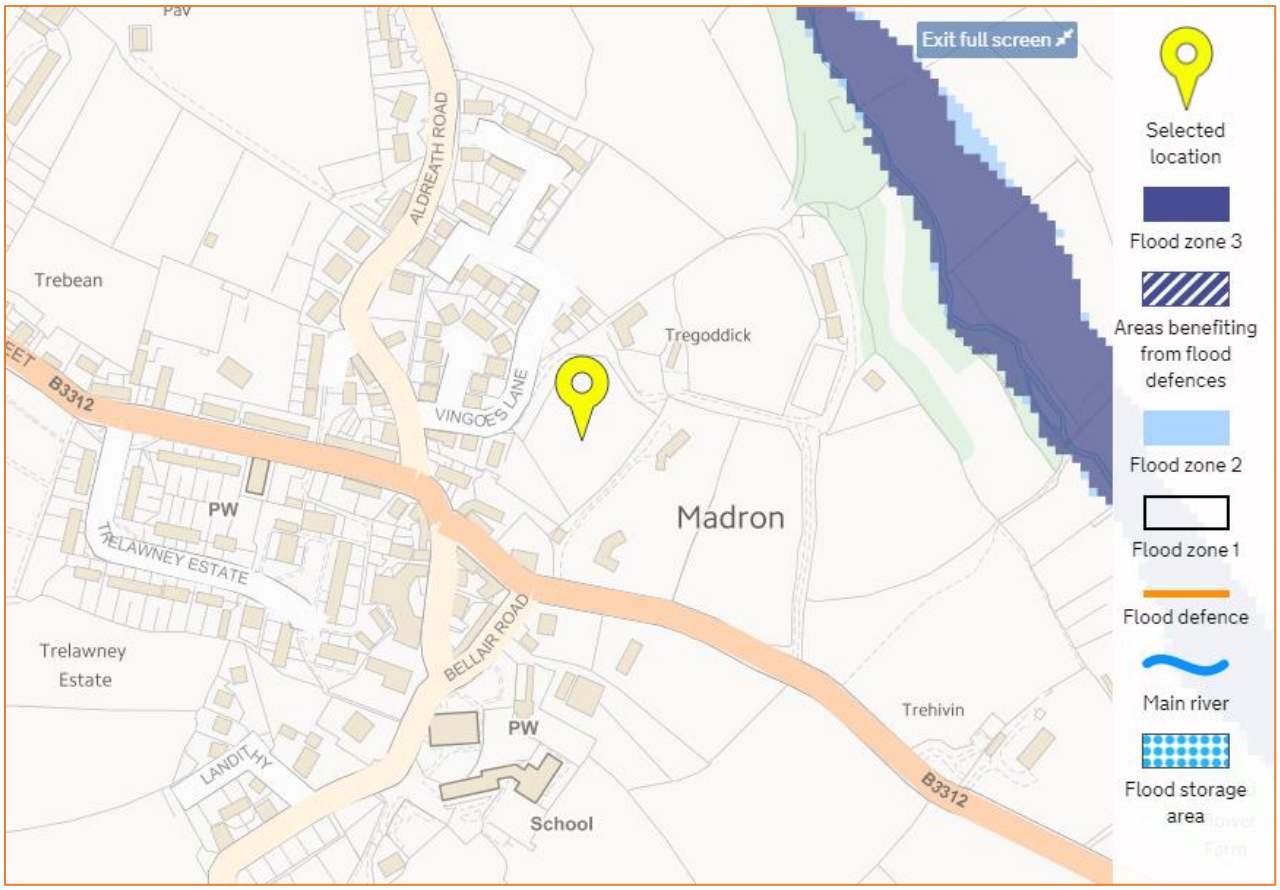

Figure 6: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

4.5. The site is located entirely within Flood Zone 1 (Low Risk) which means it is defined as land having less than a 1:1000 annual probability of fluvial flooding.

Tidal:

4.6. Due to the site topography and distance to the nearest coast/ tidal watercourse, the risk of tidal flooding is considered to be very low.

Pluvial:

4.7. Pluvial (surface water) flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

4.8. In 2013 the EA, working with Lead Local Flood Authorities (LLFAs), produced an updated Flood Map for Surface Water. It is considered to represent a significant improvement on the previous surface water flood maps available, both in terms of method and representation of the risk of flooding. The modelling techniques and data used are considerably improved, and also incorporated locally produced mapping where this is available to represent features best modelled at a local scale.

4.9. The Flood Map for Surface Water assesses flooding scenarios as a result of rainfall with the following chance of occurring in any given year (annual probability of flooding is shown in brackets):

- 1:30 (3.3%)
- 1:100 (1%)
- 1:1000 (0.1%)

4.10. The mapping below shows the Risk of Flooding from Surface Water centred on the site. Please note that the EA to not consider this information suitable to be used to identify the risk to individual properties or sites. It is useful to raise awareness in areas which may be at risk and may require additional investigation.

4.11. The EA Risk of Flooding from Surface Water Map suggests that the majority of the site lies within an area of "Very Low" risk of flooding from surface water. An isolated area along the south eastern boundary has been identified at "Low" risk of surface water flooding.

Figure 7: Extract from Environment Agency RoFSW map (Source: EA)

4.12. According to Cornwall Council Strategic Flood Risk Assessment Interactive Mapping, the site is located within Penzance Critical Drainage Area.

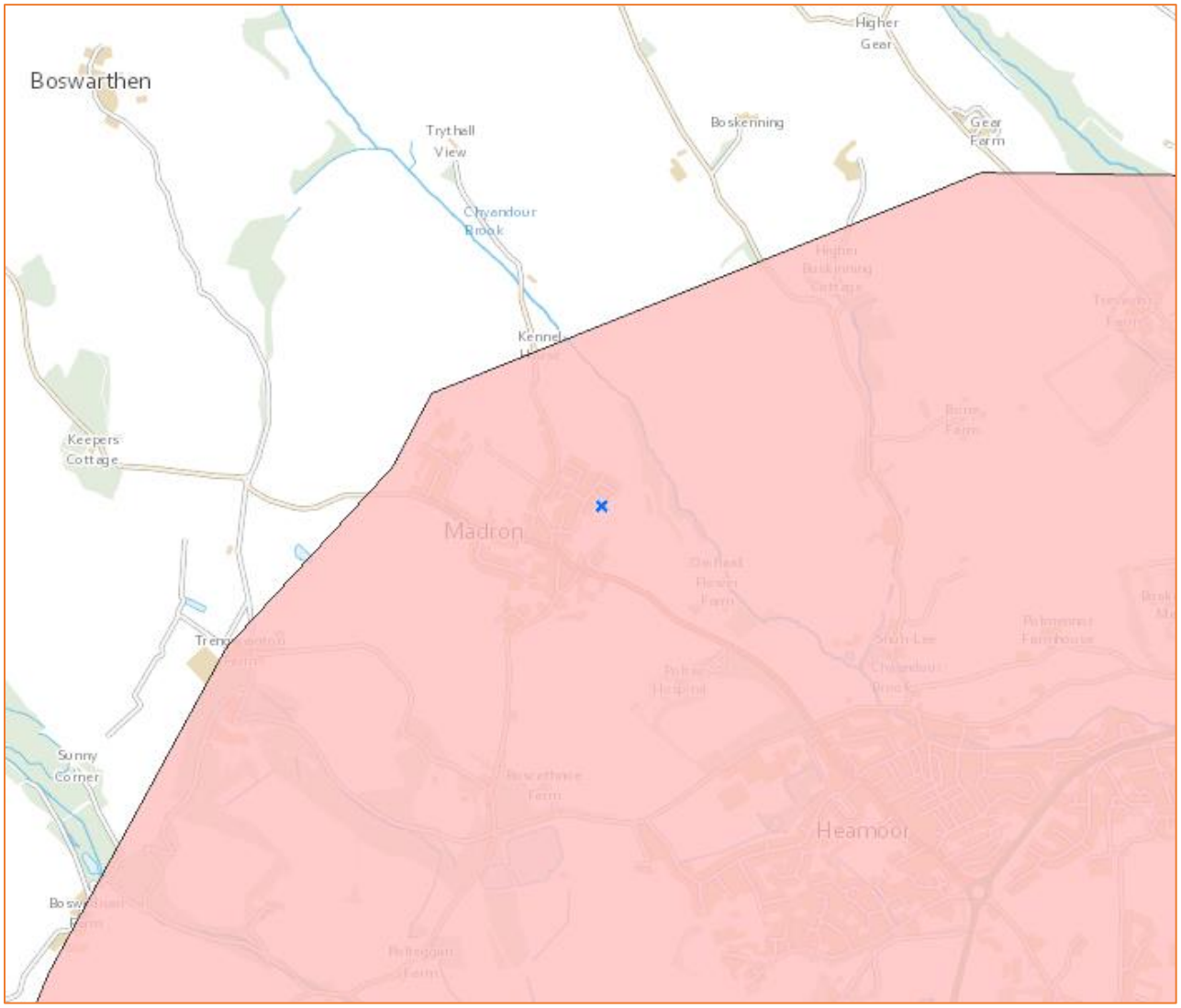

Figure 8: Extract of Critical Drainage Areas from Cornwall Council SFRA (Source: Cornwall Council)

Groundwater:

4.13. Groundwater flooding occurs as a result of water rising up from the underlying rocks or from water flowing from abnormal springs. This tends to occur after much longer periods of sustained high rainfall. Higher rainfall means more water will infiltrate into the ground and cause the water table to rise above normal levels. Groundwater tends to flow from areas where the ground level is high, to areas where the ground level is low. In low-lying areas the water table is usually at shallower depths anyway, but during very wet periods, with all the additional groundwater flowing towards these areas, the water table can rise up to the surface causing groundwater flooding.

4.14. Groundwater flooding is most likely to occur in low-lying areas underlain by permeable rocks (aquifers). These may be extensive, regional aquifers, such as chalk or sandstone, or may be localised sands or river gravels in valley bottoms underlain by less permeable rocks. Groundwater flooding takes longer to dissipate because groundwater moves much more slowly than surface water and will take time to flow away underground.

4.15. No records of previous groundwater flooding at the site have been provided. Cornwall Council Strategic Flood Risk Assessment (2009) states that '*due to its geology Cornwall has only minor aquifers and generally does not experience much groundwater type flooding*'. Given this it is considered that the site is at low risk of groundwater flooding.

Sewer:

4.16. Sewer flooding occurs when the sewer network cannot cope with the volume of water that is entering it. It is often experienced during times of heavy rainfall when large amounts of surface water overwhelm the sewer network causing flooding. Temporary problems such as blockages, siltation, collapses and equipment or operational failures can also result in sewer flooding.

4.17. All Water Companies have a statutory obligation to maintain a register of properties/areas which have reported records of flooding from the public sewerage system, and this is shown on the DG5 Flood Register. This includes records of flooding from foul sewers, combined sewers and surface water sewers which are deemed to be public and therefore maintained by the Water Company. The DG5 register records of flood incidents resulting in both internal property flooding and external flooding incidents. Once a property is identified on the DG5 register, water companies can typically put funding in place to address the issues and hence enable the property to be removed from the register. It should be noted that flooding from land drainage, highway drainage, rivers/watercourses and private sewers is not recorded within the register.

4.18. No records to suggest that the site has flooded from sewer sources previously have been provided.

Other Sources:

4.19. The EA Risk of Flooding from Reservoirs Map suggests that the site lies outside the "Maximum extent of flooding" from reservoir failure. The EA also advise on their website that reservoir flooding is extremely unlikely. All major reservoirs have to be inspected by specialist dam and reservoir Engineers. These inspections are monitored and enforced by the EA themselves. The risk to the site from reservoir flooding is therefore minimal and is far lower than that relating to the potential for fluvial flooding to occur.

4.20. No further information has been provided to suggest the site is susceptible to from the failure of canals or other artificial infrastructure from the risk of flooding.

Figure 9: Extract from Environment Agency Reservoir Flood Risk Map (Source: EA)

5. Surface Water Drainage Strategy:

5.1. In order to mitigate flood risk posed by post development runoff, adequate control measures will need to be considered within the site. This will ensure that surface water runoff is dealt with at source and flood risk is not increased elsewhere.

Drainage Hierarchy:

5.2. The drainage strategy for the site has been prepared according to the drainage discharge hierarchy from *CIRIA C753 The Suds Manual*, as follows:

- Infiltration to the maximum extent that is practical;
- Discharge to surface waters;
- Discharge to surface water sewer.

Infiltration Potential:
Refer to Appendix for Calculations.

5.3. An intrusive site investigation has been undertaken by Wheal Jane Consultancy in November 2018. A total of four trial pits were excavated at the site.

5.4. Test results from the investigation indicate that the general strata sequence encountered comprises of Topsoil to a depth of 0.80m, overlying Weathered Land's End Intrusion - Brown/Grey Sandy Gravel with Cobbles of Granite.

5.5. Infiltration testing was carried out within four test pits excavated to varying depths, dependent on underlying strata. Three complete test cycles were undertaken in all trial pits, except TP02, in full accordance with BRE365. In TP02, slow infiltration rates dictated that only one test could be completed in the time available.

5.6. Despite slow drainage in TP02, infiltration rates in the remaining three trial pits varied between $1.10x10^{-5}$m/s and $2.65x10^{-5}$m/s. TP01 had the slowest recorded infiltration rate of $1.10x10^{-5}$ m/s, in accordance to BRE365. This rate is suitable for infiltration SuDS and has been utilised for the calculations and sizing of the proposed infiltration features. Refer to Appendix.

5.7. All SUDS facilities will be designed to accommodate and dispose of runoff from storms up to the 1:100 year + 40% climate change event.

Discharge Location:

5.8. Given the aforementioned infiltration test results, provided by Wheal Jane Consultancy, the strata underlying the site is considered suitable for infiltration SuDS. Therefore an infiltration based drainage scheme is proposed.

Proposed Discharge Rate:

5.9. Existing greenfield runoff rates for the total site have been calculated as 4.5l/s for the 1:1 annual runoff event, 11.0l/s for the 1:30 year event and 14.0l/s for the 1:100 year event. Refer to calculations in Appendix.

5.10. Surface water runoff from the proposed access roads, driveways and roof areas of the seventeen proposed dwellings will be directed towards permeable paving. Surface water will be collected and stored within permeable paving located beneath all seventeen driveways and the minor road along the south and eastern boundary. Check dams will be utilised within the subbase where the topography is on a gradient, so as to maximise storage potential.

5.11. It is proposed to discharge post development runoff to ground, therefore, there will be no off-site discharge post development.

Permeable Paving:

5.12. Surface water runoff from the proposed access roads, driveways and roof areas of the seventeen proposed dwellings will be directed towards permeable paving. Surface water will be collected and stored within permeable paving located beneath all seventeen driveways and the minor road along the south and eastern boundary; amounting to $1040m^2$.

5.13. From the permeable paving, runoff will gradually infiltrate into the underlying strata.

5.14. The proposed development comprises some $2935m^2$ of potentially impermeable surfacing - $1467m^2$ of access roads, $641m^2$ of residential driveways, and $827m^2$ of roof area. In order to comply with CIRIA C753 The SuDS Manual, a 10% allowance will be added

to take into account future urban creep. Therefore, all drainage calculations have been made on the basis of a total impermeable area of 3228.5m^2.

5.15. Preliminary calculations indicate that permeable paving with dimensions of 1040m^2 x 0.5m deep x 0.3 (voids) will be sufficient to infiltrate all runoff from 3228.5m^2 of impermeable areas arising from the critical 1:100 year + 40% climate change event. Refer to enclosed calculations and Plan 88384-01 [*Proposed Drainage Layout*].

5.16. There will be no off-site discharge. The Permeable Paving SuDS system will be designed to accommodate and dispose of runoff from storms up to the 1:100 year + 40% climate change event, without flooding.

5.17. All preliminary surface water drainage calculations have been undertaken using MicroDrainage software. Refer to the Appendix.

Water Quality:

5.18. Water quality has been assessed in line with the Simple Index approach from Chapter 26 of CIRIA C753 The SuDS Manual:

Step 1 – Allocate suitable pollution hazard indices for the proposed land use.
Step 2 – Select SuDS with a total pollution mitigation index that equals or exceeds the pollution hazard index.

5.19. The highest pollution hazard level for the proposed land use is Low (residential car parks and low trafficked roads). The pollution hazard indices for this land use are shown in Table 2 below.

Total suspended solids (TSS)	Metals	Hydrocarbons
0.5	0.4	0.4

Table 2: Pollution Hazard Indices for the proposed site (from Table 26.2 of CIRIA C753 The SuDS Manual)

5.20. All SuDS components are assessed for their effectiveness in pollutant removal prior to discharge to sewer in Table 26.3 in CIRIA C753 The SuDS Manual. The pollution mitigation indices for permeable pavements are show in Table 3 below.

Total suspended solids (TSS)	Metals	Hydrocarbons
0.7	0.6	0.7

Table 3: Pollution Mitigation Indices for permeable pavements (from Table 26.3 of CIRIA C753 The SuDS Manual)

5.21. The Pollution Mitigation Indices for permeable pavement are greater than the Pollution Hazard Indices for car parks and low trafficked roads. Therefore, permeable pavements will provide sufficient water quality treatment prior to discharge to ground.

5.22. Runoff from roof areas is considered to be uncontaminated and does not warrant any form of treatment process to improve water quality. Nevertheless, it is suggested to include debris / sediment traps on any new drainage.

Design Exceedance:

5.23. Should the onsite drainage system fail under extreme rainfall events or blockage, flooding may occur within the site. In the event of the drainage system failure, the runoff flow can be managed through detailing the new external levels to direct water away from structures.

Adoption and Maintenance:

5.24. It is proposed that all SuDS facilities will be maintained privately by the end user.

5.25. A draft Maintenance Schedule is outlined in the Table below.

Permeable Paving

5.26. Permeable surfaces need to be regularly cleaned of silt and other sediments to preserve their infiltration capability. A brush and suction cleaner, which can be a lorry-mounted device or a smaller precinct sweeper, should be used and the sweeping regime should be as follows:

1. End of winter (April) – to collect winter debris.
2. Mid-summer (July/August) – to collect dust, flower and grass-type deposits.
3. After autumn leaf fall (November).

5.27. If reconstruction is necessary, the following procedure should be followed:

1. Lift surface layer and laying course.
2. Remove any geotextile filter layer.
3. Inspect sub-base and remove, wash and replace if required.
4. Renew any geotextile layer.
5. Renew laying course, jointing material and concrete block paving.

5.28. Materials removed from the voids or the layers below the surface of the paving may contain hazardous substances such as heavy metals and hydrocarbons which may need to be disposed of as controlled waste.

Pipework and Catchpits:

5.29. It is not envisaged that silt build up within the pipework systems will require a rigorous maintenance regime so long as silt is removed from upstream catch pits on a regular basis. Notwithstanding this, a suitable maintenance regime for the systems will comprise of routine inspection (every three months) and silt removal (as necessary).

Drainage Element	Maintenance Requirement	Frequency
Gutters & downpipes	▪ Inspect and remove silt and debris	▪ To be inspected every three months and silt/ debris removed as necessary.
Catchpits and inspection chambers	▪ Inspect and remove silt	▪ To be inspected every three months and silt/ debris removed as necessary. Flow control to be checked for blockages.
Permeable Paving	▪ Sweeping/vacuuming to remove build-up of silt or other sediments	▪ Three times a year or as necessary
	▪ Removal of weeds ▪ Replacement of cracked paving blocks ▪ Remedial work to cracks and depressions	▪ As required

Table 4: Suggested Maintenance Regime for Elements of the Drainage Infrastructure

Note: In addition to the above maintenance requirements, it is recommended that all drainage elements are inspected:

- Following the first storm event
- Monthly for the first 3 months following commissioning

6. Flood Risk Mitigation:

Physical Design Measures:

6.1. The site lies entirely within Flood Zone 1 according to the EA Flood Map for planning (Rivers and the Sea), thus completely outside Flood Zone 2 and Flood Zone 3 extents.

6.2. Whilst the site is recorded to be situated within Penzance Critical Drainage Area it is identified to be at "Very Low" Risk of Flooding from Surface Water.

6.3. Given this, it is recommended that finished internal floor levels of the proposed residential dwellings are set 150mm above adjacent ground level.

Fluvial floodplain storage:

6.4. The NPPF requires that where development is proposed in undefended areas of floodplain, which lie outside of the functional floodplain, the implications of ground raising operations for flood risk elsewhere needs to be considered. Raising existing ground levels may reduce the capacity of the floodplain to accommodate floodwater and increase the risk of flooding by either increasing the depth of flooding to existing properties at risk or by extending the floodplain to cover properties normally outside of the floodplain. Flood storage capacity can be maintained by lowering ground levels either within the curtilage of the development or elsewhere in the floodplain, in order to maintain at least the same volume of flood storage capacity within the floodplain.

6.5. In undefended tidal areas, raising ground levels is unlikely to impact on maximum tidal levels so the provision of compensatory storage should not be necessary.

6.6. For development in a defended flood risk area, the impact on residual flood risk to other properties needs to be considered. New development behind flood defences can increase the residual risk of flooding if the flood defences are breached or overtopped by changing the conveyance of the flow paths or by displacing flood water elsewhere. If the potential impact on residual risk is unacceptable then mitigation should be provided.

6.7. The proposed development is situated entirely within Flood Zone 1 when using the Environment Agency Flood Map for Planning (Rivers and Sea). No fluvial floodwater would be displaced by the proposed development.

7. Discussion and Conclusions:

7.1. This Flood Risk Assessment and Surface Water Drainage Strategy has been prepared by Unda Consulting Limited on behalf of Mark Clyndes, in support of a planning application for the development of up to seventeen dwellings at the site of Land at Tregoddick Farm, Vingoes Lane, Madron TR20 8SS. This report assesses the flood risk and surface water drainage strategy for the proposed development.

7.2. This report assesses the surface water drainage strategy for the proposed development in response to consultation comments received from Cornwall Council Lead Local Flood Authority on 6th June 2018 in relation to Outline Planning Application PA18/02055.

7.3. The proposed development site is approximately 5557m^2 and is currently occupied by a vacant agricultural field, part of the wider Tregoddick Farm. Having reviewed aerial photography the majority of the field appears to be grassland with dense scrub and trees along the north western and south eastern peripheries. A gravel roadway runs through the north of the site connecting Treggodick Farm House to Vingoe's Lane.

7.4. A measured topographic survey has not been undertaken at the site however 1.0m horizontal resolution DTM LiDAR data is available. Data suggests that the ground topography on site ranges from approximately 112.90mAOD in the south to 119.20mAOD in the north. The proposed residential dwellings will be situated on land at an elevation of between approximately 113.60mAOD and 118.60mAOD.

7.5. The proposed planning application is for the development of up to seventeen dwellings. Post development the newly introduced footprint, comprising seventeen houses, new access roads and respective driveways, will cover approximately 2935m².

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7.7. An intrusive site investigation has been undertaken by Wheal Jane Consultancy in November 2018. A total of four trial pits were excavated at the site.

7.8. Test results from the investigation indicate that the general strata sequence encountered comprises of Topsoil to a depth of 0.80mbgl. Topsoil was found to be underlain by Weathered Land's End Intrusion - Brown/Grey Sandy Gravel with Cobbles of Granite. This strata extended beyond the depth of the trial pit (refer to Appendix).

7.9. No groundwater was encountered during the site investigation.

7.10. The published Environment Agency Groundwater Vulnerability map shows the site is not located within an area classified as a Groundwater Source Protection Zone.

7.11. The site is located entirely within Flood Zone 1 (Low Risk) which means it is defined as land having less than a 1:1000 annual probability of fluvial flooding.

7.12. Due to the site topography and distance to the nearest coast/ tidal watercourse, the risk of tidal flooding is considered to be very low.

7.13. Whilst the site is within Flood Zone 1, it is recommended that finished internal floor levels of the proposed residential dwellings are set 150mm above adjacent ground level.

7.14. The EA Risk of Flooding from Surface Water Map suggests that the majority of the site lies within an area of "Very Low" risk of flooding from surface water. An isolated area along the south eastern boundary has been identified at "Low" risk of surface water flooding.

7.15. According to Cornwall Council Strategic Flood Risk Assessment Interactive Mapping, the site is located within Penzance Critical Drainage Area.

7.16. An intrusive site investigation has been undertaken by Wheal Jane Consultancy in November 2018. A total of four trial pits were excavated at the site.

7.17. Test results from the investigation indicate that the general strata sequence encountered comprises of Topsoil to a depth of 0.80m, overlying Weathered Land's End Intrusion - Brown/Grey Sandy Gravel with Cobbles of Granite.

7.18. Infiltration testing was carried out within four test pits excavated to varying depths, dependent on underlying strata. Three complete test cycles were undertaken in all trial pits, except TP02, in full accordance with BRE365. In TP02, slow infiltration rates dictated that only one test could be completed in the time available.

7.19. Despite slow drainage in TP02, infiltration rates in the remaining three trial pits varied between $1.10x10^{-5}$m/s and $2.65x10^{-5}$m/s. TP01 had the slowest recorded infiltration rate of $1.10x10^{-5}$ m/s, in accordance to BRE365. This rate is suitable for infiltration SuDS and has been utilised for the calculations and sizing of the proposed infiltration features.

7.20. Existing greenfield runoff rates for the total site have been calculated as 4.5l/s for the 1:1 annual runoff event, 11.0l/s for the 1:30 year event and 14.0l/s for the 1:100 year event.

7.21. Surface water runoff from the proposed access roads, driveways and roof areas of the seventeen proposed dwellings will be directed towards permeable paving. Surface water will be collected and stored within permeable paving located beneath all seventeen driveways and the minor road along the south and eastern boundary. Check dams will be utilised within the subbase where the topography is on a gradient, so as to maximise storage potential.

7.22. It is proposed to discharge post development runoff to ground, therefore, there will be no off-site discharge post development.

7.23. Surface water runoff from the proposed access roads, driveways and roof areas of the seventeen proposed dwellings will be directed towards permeable paving. Surface water will be collected and stored within permeable paving located beneath all seventeen driveways and the minor road along the south and eastern boundary; amounting to $1040m^2$.

7.24. From the permeable paving, runoff will gradually infiltrate into the underlying strata.

7.25. The proposed development comprises some $2935m^2$ of potentially impermeable surfacing - $1467m^2$ of access roads, $641m^2$ of residential driveways, and $827m^2$ of roof area. In order to comply with CIRIA C753 The SuDS Manual, a 10% allowance will be added to take into account future urban creep. Therefore, all drainage calculations have been made on the basis of a total impermeable area of $3228.5m^2$.

7.26. Preliminary calculations indicate that permeable paving with dimensions of $1040m^2$ x 0.5m deep x 0.3 (voids) will be sufficient to infiltrate all runoff from $3228.5m^2$ of impermeable areas arising from the critical 1:100 year + 40% climate change event. Refer to enclosed calculations and Plan 88384-01 [*Proposed Drainage Layout*].

7.27. There will be no off-site discharge. The Permeable Paving SuDS system will be designed to accommodate and dispose of runoff from storms up to the 1:100 year + 40% climate change event, without flooding.

7.28. Water quality has been assessed in line with the Simple Index approach from Chapter 26 of CIRIA C753 The SuDS Manual. Runoff from roof areas is relatively uncontaminated, and does not warrant a complex treatment process to improve quality prior to discharge to ground. Nevertheless, it is suggested to include debris / sediment traps on any new drainage. All surface water runoff will be directed to permeable paving. As such, there will be no requirement to pass water off roadways through an oil interceptor prior to discharge to ground.

7.29. It is proposed that all SuDS facilities will be maintained privately by the end user. A draft Maintenance Schedule is outlined within the report.

7.30. Should the onsite drainage system fail under extreme rainfall events or blockage, flooding may occur within the site. In the event of the drainage system failure, the runoff flow can be managed through detailing the new external levels to direct water away from structures.

7.31. This drainage strategy has been undertaken in accordance with the principles set out in NPPF. We can conclude that providing the development adheres to the conditions advised above, the said development proposals can be accommodated without increasing flood risk within the locality in accordance with objectives set by Central Government and the EA.

Unda Consulting Limited

November 2018

8. Appendix

A - Plans by others:

- Location and Existing Block Plan – Mark Clyndes;
- Proposed Site Plan – Mark Clyndes;
- Indicative Layout Plan - Mark Clyndes.

B – Cornwall Council Correspondence:

- Lead Local Flood Authority Consultation Comments.

C - MicroDrainage Calculations:

- ICP SUDS Greenfield Runoff Calculations;
- Permeable Paving Calculations.

D - Flood Data:

- EA Product 4 Information Response.

E - Plans:

- Proposed Drainage Layout [88384-01].

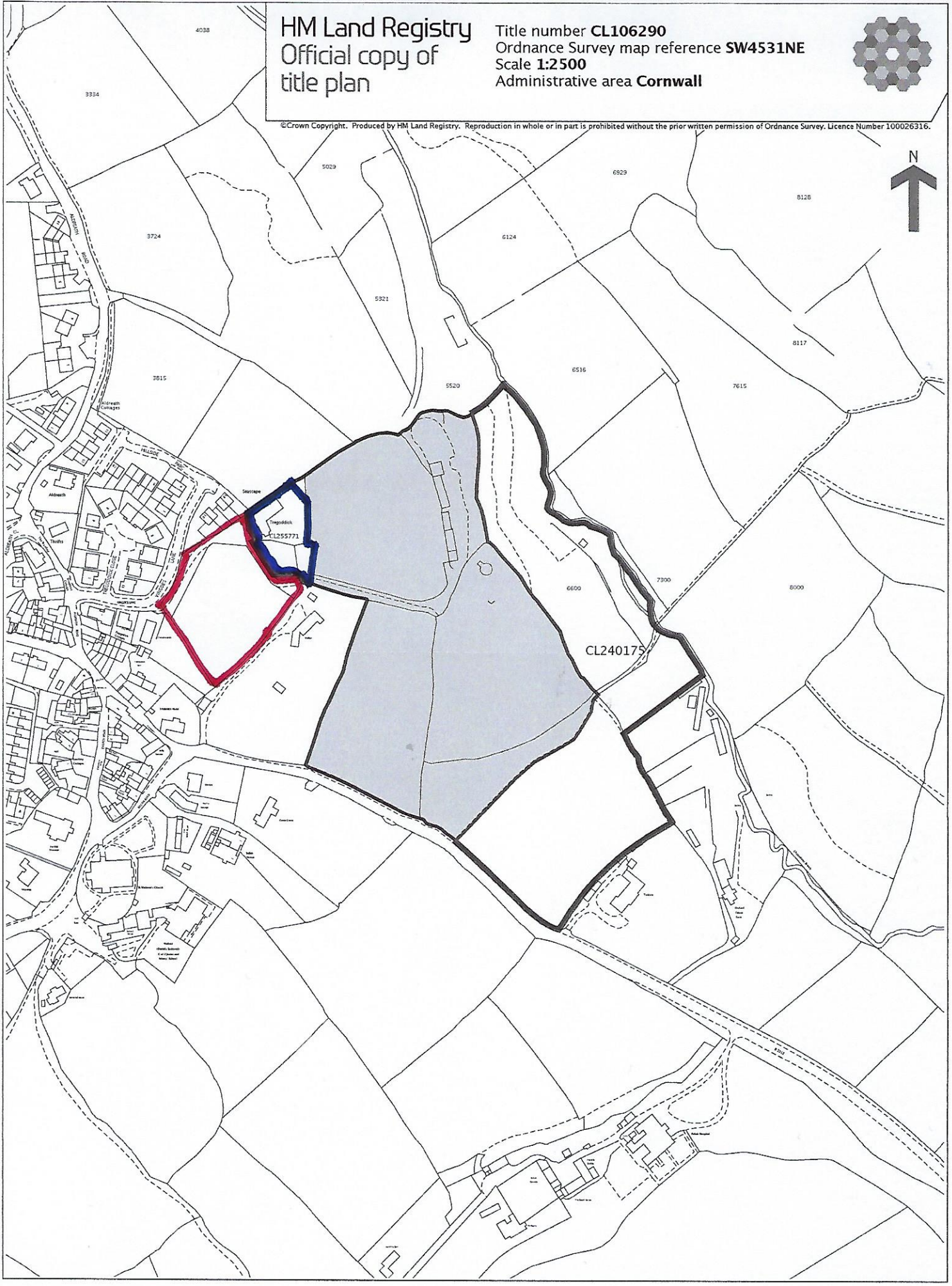
F – Reporting by others:

- Infiltration Testing Report – Wheal Jane Consultancy in November 2018;
- Contaminated Land Report – Argyll Environmental Ltd.

Appendix A

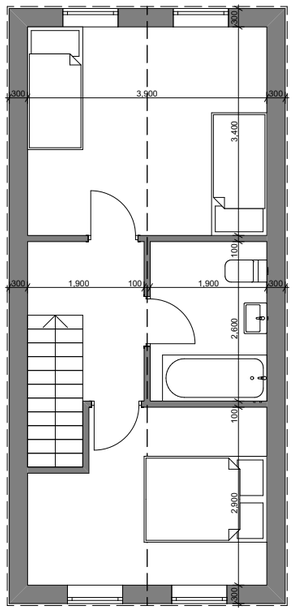
HM Land Registry
Official copy of title plan

Title number **CL106290**
Ordnance Survey map reference **SW4531NE**
Scale **1:2500**
Administrative area **Cornwall**

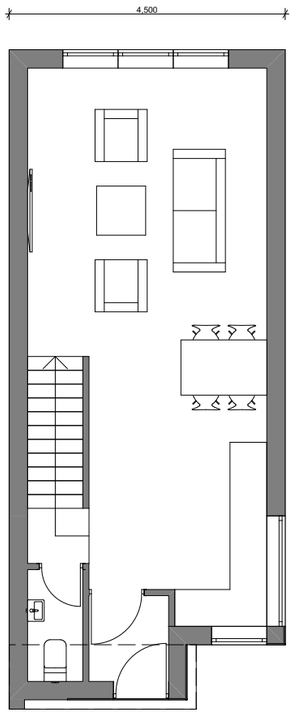


Tregoddick Farm

2
3
4
43m
5m
2.4m



FIRST FLOOR 1:100



GROUND FLOOR 1:100

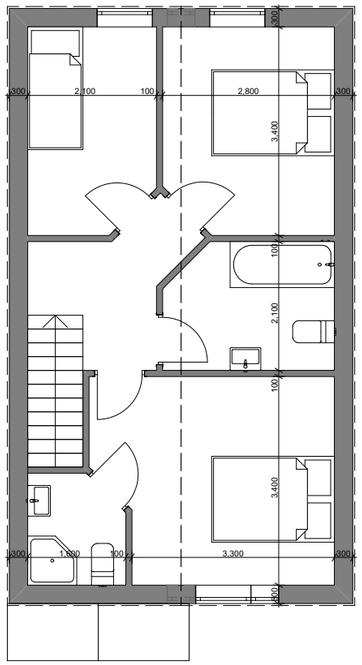
FRONT ELEVATION 1:100

REAR ELEVATION 1:100

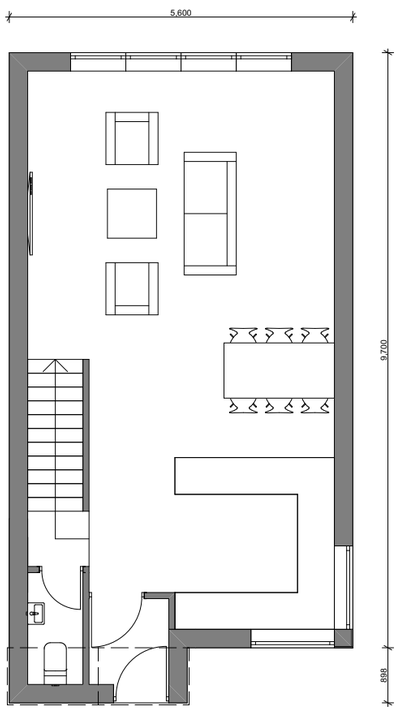
Tregoddick Farm

Indicative 2 bed House Plans/Elevations

1:100 @ A3



FIRST FLOOR 1:100



GROUND FLOOR 1:100

FRONT ELEVATION 1:100

REAR ELEVATION 1:100

Tregoddick Farm

Indicative 3 bed House Plans/Elevations

1:100 @ A3

Appendix B

Cornwall Council Lead Local Flood Authority

Comment Date: Wed 06 Jun 2018

The Lead Local Flood Authority's (LLFA) comments with regard to this application are as follows.

The proposed development sits within Flood Zone 1 based on the Environment Agency maps and is within the Penzance Critical Drainage Area. The site is also within an area which is susceptible to groundwater flooding as designated by the Environment Agency. A basic Flood Risk Assessment and Drainage Strategy have been provided, but this has limited detail.

The Councils requirement in relation to surface water drainage systems are that surface water runoff should be managed on the site where possible to prevent potential flooding issues elsewhere. The applicant should submit details of a sustainable surface water drainage scheme for the site designed to the following standard:

1. Drainage systems must be sized to cater for the 1 in 100 year critical duration event plus a minimum allowance of 40% for climate change.
2. Surface water flow must be contained and managed within the site where practicable. Any flows leaving the site must be at a rate no greater than the 1 in 10 year greenfield run rate.
3. The LLFA does not accept greenfield runoff rates based on the ADAS method but does accept the IH124 method as this provides lower more conservative rates.
4. An appropriate allowance for the effects of urban creep must be made.
5. Overland flood flow routes must be considered at the design phase. A plan indicating exceedance routes is required and this must indicate the routes and likely impacts of overland flows on adjacent development sites, property, infrastructure and highways. Consideration must be given to historic, known flood flow routes and flood related issues and these issues should be mitigated. Designers must consider how these flows will be managed within the development and provided details of management features e.g. dropped or raised kerbs, detention areas etc.

Percolation tests have be undertaken to test if infiltration is viable. These tests must be conducted in accordance with the procedures set out in BRE Digest 365 or CIRIA 156. Groundwater should not rise to the level of the base of the soakaway, during annual variations in the water table. If groundwater is found on the site further testing and groundwater monitoring will be required.

A representative number of tests must be completed to provide adequate coverage of the site to allow an initial assessment to be made. Further testing may be required in the locations and at the effective depth of potential soakaways or permeable surfaces.

The applicant should consider the following in relation to soakaways:

1. A safety factor 5 must be applied to all private infiltration systems and 10 for systems proposed for adoption under a Section 38 Agreement.
2. Soakaways should be sited least 5m from any built structure in order to comply with Building Regulations Part H.
3. Where possible there should be a 5m separation distance from any adjacent soakaway or infiltration system.
4. Soakaways must not be sited adjacent to retaining structures.
5. The location of existing and/or proposed trees must be considered to ensure that soakaways are not sited within the root protection area.
6. Silt traps must be installed on all soakaway inlets. Soakaway must have and appropriate number of inspection chambers fitted.

A Construction Phase Surface Water Management Plan is required. This should provide details of how surface water is to be managed throughout the construction phases of the development. Consideration should be given to the management of runoff from the site and the effects of silt and surface water on land, property, watercourses and the highway throughout the development.

A Construction Quality Control Plan is required. This should provide details of the procedures proposed to monitor the quality of contractors and subcontractors work. Details of how the storage and use of materials will be controlled to ensure that this is in accordance with the manufactures recommendations and compliant with the approved design.

South West Water Ltd must be consulted by the applicant to ensure that there is sufficient capacity within the network to cater for the proposed development. The applicant must provide written confirmation from South West Water Ltd to support this application.

Details of the proposed surface water drainage management and maintenance regime must be provided along with a schedule and plan indicating the extent of the drainage assets managed and those to be conveyed to private owners.

Due to the sensitivity of this Critical Drainage Area the applicant must provide more information relating to the foul and surface water drainage strategy including initial percolation test results before the LLFA can support this application.

Jackie Smith
Sustainable Drainage Lead Officer

Appendix C

ICP SUDS Mean Annual Flood

Input

Return Period (years)	100	Soil	0.500
Area (ha)	0.556	Urban	0.000
SAAR (mm)	1200	Region Number	Region 8

Results l/s

QBAR Rural	5.8
QBAR Urban	5.8
Q100 years	14.0
Q1 year	4.5
Q30 years	11.0
Q100 years	14.0

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 224 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	116.256	0.186	5.7	58.2	O K
30 min Summer	116.327	0.257	5.7	80.1	O K
60 min Summer	116.398	0.328	5.7	102.2	O K
120 min Summer	116.454	0.384	5.7	119.9	Flood Risk
180 min Summer	116.470	0.400	5.7	124.9	Flood Risk
240 min Summer	116.473	0.403	5.7	125.6	Flood Risk
360 min Summer	116.467	0.397	5.7	123.8	Flood Risk
480 min Summer	116.456	0.386	5.7	120.4	Flood Risk
600 min Summer	116.442	0.372	5.7	116.1	Flood Risk
720 min Summer	116.427	0.357	5.7	111.5	Flood Risk
960 min Summer	116.396	0.326	5.7	101.7	O K
1440 min Summer	116.334	0.264	5.7	82.4	O K
2160 min Summer	116.252	0.182	5.7	56.8	O K
2880 min Summer	116.190	0.120	5.7	37.4	O K
4320 min Summer	116.124	0.054	5.7	16.9	O K
5760 min Summer	116.113	0.043	4.9	13.3	O K
7200 min Summer	116.106	0.036	4.1	11.2	O K
8640 min Summer	116.101	0.031	3.6	9.8	O K
10080 min Summer	116.098	0.028	3.2	8.7	O K
15 min Winter	116.282	0.212	5.7	66.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	111.276	0.0	18
30 min Summer	76.836	0.0	33
60 min Summer	50.812	0.0	62
120 min Summer	32.465	0.0	120
180 min Summer	24.581	0.0	172
240 min Summer	20.008	0.0	200
360 min Summer	14.913	0.0	264
480 min Summer	12.100	0.0	332
600 min Summer	10.277	0.0	402
720 min Summer	8.989	0.0	470
960 min Summer	7.267	0.0	606
1440 min Summer	5.372	0.0	866
2160 min Summer	3.960	0.0	1236
2880 min Summer	3.185	0.0	1584
4320 min Summer	2.337	0.0	2208
5760 min Summer	1.876	0.0	2936
7200 min Summer	1.584	0.0	3672
8640 min Summer	1.379	0.0	4400
10080 min Summer	1.227	0.0	5120
15 min Winter	111.276	0.0	18

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	116.362	0.292	5.7	91.1	O K
60 min Winter	116.444	0.374	5.7	116.6	Flood Risk
120 min Winter	116.514	0.444	5.7	138.5	Flood Risk
180 min Winter	116.538	0.468	5.7	146.0	Flood Risk
240 min Winter	116.541	0.471	5.7	146.9	Flood Risk
360 min Winter	116.530	0.460	5.7	143.6	Flood Risk
480 min Winter	116.514	0.444	5.7	138.5	Flood Risk
600 min Winter	116.492	0.422	5.7	131.8	Flood Risk
720 min Winter	116.469	0.399	5.7	124.3	Flood Risk
960 min Winter	116.418	0.348	5.7	108.6	Flood Risk
1440 min Winter	116.320	0.250	5.7	77.8	O K
2160 min Winter	116.198	0.128	5.7	40.0	O K
2880 min Winter	116.126	0.056	5.7	17.5	O K
4320 min Winter	116.109	0.039	4.4	12.0	O K
5760 min Winter	116.101	0.031	3.5	9.6	O K
7200 min Winter	116.096	0.026	3.0	8.1	O K
8640 min Winter	116.093	0.023	2.6	7.0	O K
10080 min Winter	116.090	0.020	2.3	6.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	76.836	0.0	32
60 min Winter	50.812	0.0	62
120 min Winter	32.465	0.0	118
180 min Winter	24.581	0.0	174
240 min Winter	20.008	0.0	228
360 min Winter	14.913	0.0	284
480 min Winter	12.100	0.0	362
600 min Winter	10.277	0.0	438
720 min Winter	8.989	0.0	514
960 min Winter	7.267	0.0	656
1440 min Winter	5.372	0.0	924
2160 min Winter	3.960	0.0	1276
2880 min Winter	3.185	0.0	1532
4320 min Winter	2.337	0.0	2204
5760 min Winter	1.876	0.0	2944
7200 min Winter	1.584	0.0	3624
8640 min Winter	1.379	0.0	4400
10080 min Winter	1.227	0.0	5064

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Shortest Storm (mins)	15
Ratio R	0.300	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.323

Time (mins) From:	To:	Area (ha)
0	4	0.323

Model Details

Storage is Online Cover Level (m) 116.700

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.03960	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	104.0
Max Percolation (l/s)	288.9	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	116.070	Cap Volume Depth (m)	0.500

Appendix D

ENQ18/DCIS/101710 - Flood Map for Planning (Rivers & Sea) centred on Vingoes Lane, Madron Ref: 88384

Environment Agency

Please note this map is intended only as a guide - it is not accurate at individual property level

Legend

- main river
- Flood Zone 3
- Flood Zone 2

Flood Zones are areas, also known as the floodplain, which could be affected in the event of flooding from rivers and the sea. Flood Zones provide a good indication of land at flood risk. Flood Zones are not sufficiently detailed to show whether an individual property is at risk, for example it does not take into account flood defences. Please note that the likelihood of flooding is an assessment based on the information currently available and may change in future due to climate change or other factors.

Flood Zone 3 shows the area that could be affected by flooding, either from rivers or the sea, if there were no flood defences. This area could be flooded from the sea by a flood that has a 0.5 per cent (1 in 200) or greater chance of happening each year; or from a river by a flood that has a 1 per cent (1 in 100) or greater chance of happening each year.

Flood Zone 2 shows the additional extent of an extreme flood from rivers or the sea. These outlying areas are likely to be affected by a major flood, with up to a 0.1 per cent (1 in 1000) chance of occurring each year.

1:10,000 Correct as of the 15th October 2018

N

Appendix E

Key

- Site Boundary (5557m^2)
- Proposed Dwellings (827m^2)
- Proposed Roads (1467m^2)
- Proposed Driveways (641m^2)
- Proposed Permeable Paving (1040m^2)
- Proposed Soft Landscaping
- Proposed Trees
- Design Exceedance Route

Notes:

1. Discharge of surface water via Permeable Paving. Preliminary calculations indicate that sufficient storage required to attenuate runoff arising from the proposed increase in impermeable areas, during the critical 1 in 100 year + 40% Climate Change event, can be provided within Permeable Paving of dimensions 1040m^2 x 0.5m deep x 0.3 (voids).
2. All levels are in metres above ordnance datum

Client:
Mark Clyndes

Site Address:
Land at Tregoddick Farm,
Vingoes Lane,
Madron
TR20 8SS

Job Reference:	Date:
88384-Clyndes-TregoddickFarm	27-Nov-18
Drawing Number:	**Revision:**
88384-01	v1.0

Designed by:	Drawn by:	Checked by:
TS	TS	EB

Scale:
1:250@A2

Disclaimer:
The drawings provided are for planning purposes only.

Unda Consulting Ltd
Southpoint
Old Brighton Road
Gatwick
RH11 0PR

Appendix F

Ground Investigation

Tregoddick

19 November 2018

Wheal Jane Consultancy

Old Mine Offices, Wheal Jane, Baldhu, Truro, Cornwall, TR3 6EE

01872 560200

www.wheal-jane-consultancy.co.uk

consultancy@wheal-jane.co.uk

Ref: SI19570

DOCUMENT CONTROL SHEET

Client	Mr M Clyndes
Project Title	Tregoddick
Document Title	Soakaway Testing Investigation
Document No.	SI19570

Date	Status	Revision	Prepared By	Approved By
19 November 2018	Final	1	Bryony Halliday	Dan Jobson

CONTENTS

FIGURES

APPENDICES

EXECUTIVE SUMMARY

Objectives	
Wheal Jane Consultancy was commissioned by Mr M Clyndes to undertake a ground Investigation at the site of a proposed residential development, focusing specifically on drainage.	
Site Investigation	
Previous Investigations	A phase 1 preliminary risk assessment was undertaken by Cornwall Consultants on 18th May 2018 Report Reference: AEL-4491-SSR-944447. No other intrusive investigations are known to have taken place at this site.
Site Works	4nr Trial Pits were excavated at the site. Soakaway testing was undertaken at all locations.
Ground Conditions	Full ground profiles were obtained, showing topsoil overlying weathered Land's End Intrusion.
Groundwater	No groundwater was encountered during the site investigation.
Soakaway Testing	
• Infiltration rates varied between 1.10E-05m/s and 2.65E-05m/s across the site. • The fastest infiltration rates were encountered in TP04 in the east. • Slow soakage was encountered in TP02 in the centre of the site and as a result only one test was undertaken.	

1 INTRODUCTION

1.1 Instruction

1.1.1 Wheal Jane Consultancy (WJC) was commissioned by Mr M Clyndes to undertake BRE 365 Testing across a site at Tregoddick to calculate the soil infiltration rate of the site and assess the suitability of the site for a new residential development.

1.1.2 This report has been prepared by Wheal Jane Consultancy solely for the benefit of the client. It shall not be relied upon or transferred to any third party without the prior written authorisation of WJC.

1.2 Scope and Objectives

1.2.1 The objective of this investigation is to determine the permeability of the ground beneath the site in order to enable soakaway design and assess the site's suitability for its intended use as a residential development.

1.3 Limitations

1.3.1 Conditions of the ground at locations not included within the investigation may be different from the tested locations.

1.3.2 This report considers site conditions at the time of the ground investigation, but ground conditions may change with time. If future work discovers ground conditions that vary significantly from the findings available in this report, the conclusions should be reviewed in the context of the new information.

1.3.3 Findings were assessed in the context of standards and methodology current at the time of reporting.

1.3.4 The findings and conclusions in this report are based upon information derived from a variety of sources. WJC cannot accept liability for the accuracy or completeness of any information derived from third party sources.

2 THE SITE

2.1 Site Location and Layout

2.1.1 The site is located at Tregoddick, Madron, approximately 2.6km to the north west of the town centre of Penzance. The site is approximately centred on National Grid Reference SW 45409 31994 and shown on the site location plan Figure 2.1.

2.1.2 The site is irregular in shape and covers an area of approximately 0.40ha.

2.1.3 The site layout can be seen in Figure 2.2 below:

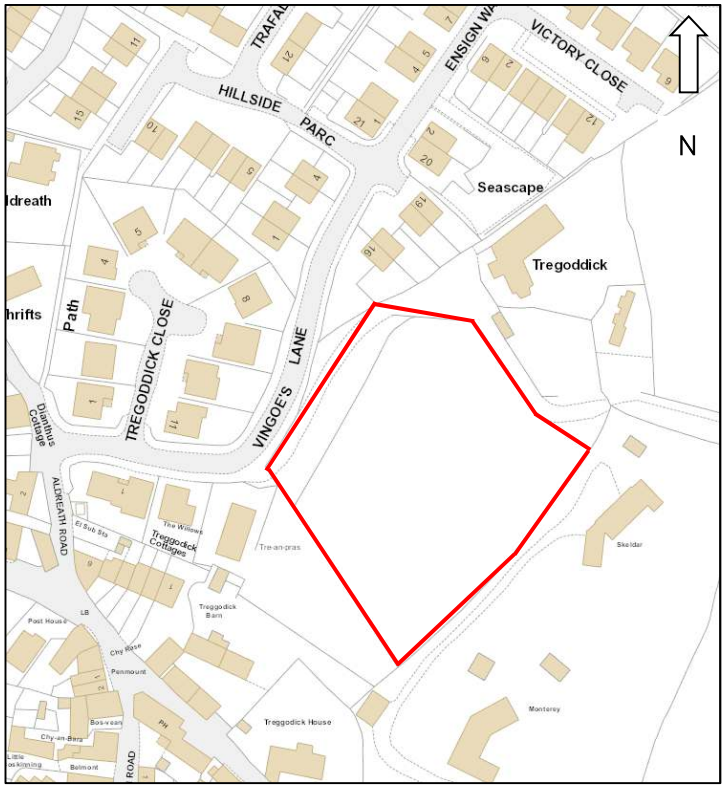


Figure 2.2: Current Site Layout. Plan taken from Cornwall Council Interactive Map.

2.2 Surrounding area

2.2.1 The site is bound to the north, west and south by residential property. To the east the site is bound by agricultural land with occasional residential property.

2.3 Proposed Development

2.3.1 The proposed development is for residential housing with associated gardens, parking and access. Planning application reference: PA18/02055.

3 SITE INVESTIGATION

3.1 Site Works

3.1.1 A BRE 365 Soakaway Testing Investigation was conducted on Tuesday 13th November 2018. The investigation was overseen by a geotechnical engineer from Wheal Jane Consultancy. An exploratory hole location plan is presented as Figure 3.1.

3.1.2 The following table summarises the intrusive investigation techniques employed during the site investigation:

Exploratory Hole Type	Exploratory Hole ID	Hole Depths (mBGL)	Comments
Trial Pit	TP01 – TP04	2.10 – 2.80	Soakaway test completed at all locations.

3.1.3 Trial pit logs are shown in Appendix A.

3.1.4 Trial pit photographs can be seen in Appendix B.

3.1.5 BRE 365 Soakaway results can be seen in Appendix C.

4 GROUND CONDITIONS

4.1 General

4.1.1 The BGS 1:50,000-scale bedrock geological map Sheet 351 & 358 Penzance shows the site to be underlain by the Land's End Intrusion comprising of Granite.

4.1.2 Trial pit logs depicting the strata beneath the site are shown in Appendix A. The following table represents a summary of the strata encountered beneath the site:

Strata	Depth Encountered (mBGL)		Typical Thickness (m)	Brief Description & Comments
	From	To		
Topsoil	0.00	0.60 – 0.80	0.80	Dark brown sandy, clayey TOPSOIL.
Weathered Land's End Intrusion	0.60 – 0.80	2.10 - 2.80	Unproven	Brown sandy GRAVEL Or Grey sandy GRAVEL

4.2 Strata Encountered

Topsoil

4.2.1 Material described as Topsoil was encountered across the site to depths of up to 0.80m below existing ground level.

Weathered Land's End Intrusion

4.2.2 Material described as Weathered Land's End Intrusion was encountered across the site to depths of up to 2.80m. This was the depth of the soakaway testing; the sides of all pits were all stable. The thickness of the unit is unproven.

4.2.3 The unit may be generally described as grey or brown sandy GRAVEL. Cobbles and boulders of granite were encountered in three of the locations.

4.3 Groundwater

4.3.1 No groundwater was encountered during the site investigation.

4.4 Contamination Indications

4.4.1 No anthropogenic components were encountered during the investigation. No olfactory evidence of contamination was encountered.

5 SOAKAWAY RESULTS

5.1.1 Soakaway testing was completed in line with BRE 365.

5.1.2 Table 5.1, below, summarises the results, which are also contained as Appendix C.

Test	Exploratory Hole ID	Depth to Initial water level (mBGL)	Soil Infiltration Rate. (m/s)
BRE 365 Soakaway	TP01 – Test 1	0.82	1.48E-05
BRE 365 Soakaway	TP01 – Test 2	0.83	1.33E-05
BRE 365 Soakaway	TP01 – Test 3	0.82	1.10E-05
BRE 365 Soakaway	TP02 – Test 1	0.84	N/A
BRE 365 Soakaway	TP03 – Test 1	0.86	2.24E-05
BRE 365 Soakaway	TP03 – Test 2	0.86	1.58E-05
BRE 365 Soakaway	TP03 – Test 3	0.85	1.35E-05
BRE 365 Soakaway	TP04 – Test 1	0.80	2.65E-05
BRE 365 Soakaway	TP04 – Test 2	0.88	2.37E-05
BRE 365 Soakaway	TP04 – Test 3	0.86	2.13E-05

5.1.3 The test could not be completed in TP02 due to extremely slow drainage.

5.1.4 The results highlight that the site possesses good drainage characteristics.

6 NOTES

- *This report is concerned solely with the property, as defined by this report, or parts thereof examined.*
- *The report should not be used in connection with adjacent properties.*
- *In respect of site works, Wheal Jane Consultancy cannot accept any liabilities for any additional mine workings found outside the limits of any areas examined.*
- *The information supplied by third parties which has been used in compiling this Phase 2 ground investigation report, is derived from a number of statutory and non-statutory sources. While every effort is made by the supplier to ensure accuracy, the supplier cannot guarantee the accuracy or completeness of such information or data, nor to identify all the factors that may be relevant.*
- *The conclusions and recommendations relate to the type and extent of development outlined in this report for this specific property only and should not be taken as suitable for any other form or extent of development on this property without further consultation with Wheal Jane Consultancy.*
- *This report is confidential to the client, the client's legal and professional advisors, and may not be reproduced or distributed without our permission other than to directly facilitate the sale or development of the property concerned.*
- *We have no liability toward any person not party to commissioning this report.*
- *Unless otherwise expressly stated, nothing in this report shall create or confer any rights or other benefits pursuant to the Contracts (Rights of Third Parties) Act 1999 in favour of any person other than the person commissioning this report.*
- *This report is not an asbestos inspection that may fall within the control of Control of Asbestos Regulations 2006*

FIGURES

Title: Site Location Plan

Project: Tregoddick Farm

Client: Mr M Clyndes

Report Title: Ground Investigation

Date: 19/11/2018 Ref: 19570 Figure: 2.1

Wheal Jane Consultancy
Geotechnical, environmental & mining services

Title: Exploratory Hole Location Plan

Project: Tregoddick Farm

Client: Mr M Clyndes

Report Title: Ground Investigation

Scale: NTS

Date: 23/11/2018 Ref: 19570 Figure: 3.1

Wheal Jane Consultancy
Geotechnical, environmental & mining services

Appendix A

Trial Pit Logs

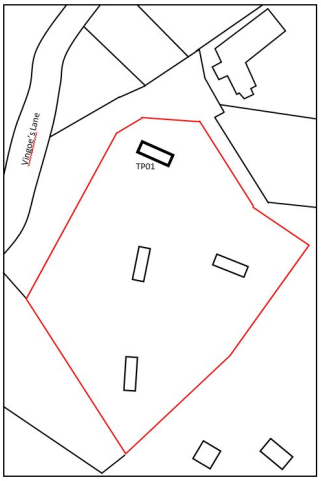
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Wheal Jane Group

Site	Trial Pit Number
Tregoddick	TP01

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Machine excavated trial pit	Width: 0.60m Length: 2.10m	119.00	Mr M Clyndes	19570
	Location Tregoddick	**Dates** 12/11/2018	**Engineer** Wheal Jane Consultancy	**Sheet** 1/4

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.80)	Grass over dark brown clayey, sandy TOPSOIL. Sand is fine to coarse.		
				118.20	0.80	Brown sandy angular to subangular, fine to coarse GRAVEL of granite. Sand is fine to coarse. Rare cobbles and Boulders up to 700mm. [LANDS END INTRUSION]		
					(1.80)			
				116.40	2.60			
					(0.20)	Grey sandy angular to subangular, fine to coarse GRAVEL of granite. Sand is fine to coarse. [LANDS END INTRUSION]		
				116.20	2.80	Complete at 2.80m		



Remarks

Sides stable.
No groundwater encountered.

Scale (approx)	Logged By	Figure No.
1:50	BH	19570.TP01

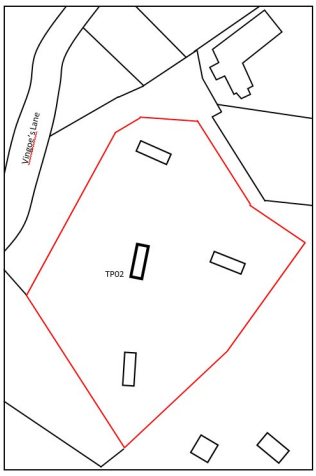
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Wheal Jane Group

Site	Trial Pit Number
Tregoddick	TP02

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Machine excavated trial pit.	Width: 0.60m Length: 2.20m	118.00	Mr M Clyndes	19570
	Location Tregoddick	**Dates** 12/11/2018	**Engineer** Wheal Jane Consultancy	**Sheet** 2/4

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.80)	Grass over dark brown clayey, sandy TOPSOIL. Sand is fine to coarse.		
				117.20	0.80			
					(1.30)	Brown clayey angular to subangular, medium to coarse GRAVEL of granite. Frequent cobbles and boulders up to 800mm. [LANDS END INTRUSION]		
				115.90	2.10			
						Complete at 2.10m		



Remarks

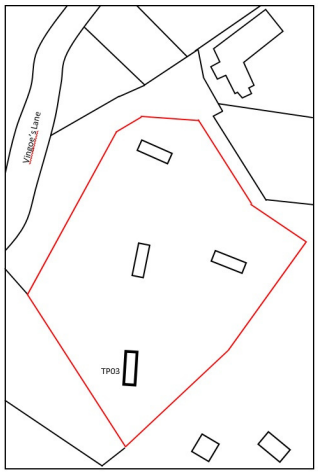
Sides stable
No groundwater encountered.

Scale (approx)	Logged By	Figure No.
1:50	BH	19570.TP02

Site	Trial Pit Number
Tregoddick	TP03

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Machine excavated trial pit.	Width: 0.60m Length: 2.20m	116.00	Mr M Clyndes	19570
	Location Tregoddick	**Dates** 12/11/2018	**Engineer** Wheal Jane Consultancy	**Sheet** 3/4

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.80)	Grass over dark brown clayey, sandy TOPSOIL. Sand is fine to coarse.		
				115.20	0.80	Brown clayey angular to subangular, medium to coarse GRAVEL of granite. Frequent cobbles and boulders up to 600mm. [LANDS END INTRUSION]		
					(2.00)			
				113.20	2.80	Complete at 2.80m		



Remarks

No groundwater encountered.
Sides stable.

Scale (approx)	Logged By	Figure No.
1:50	BH	19570.TP03

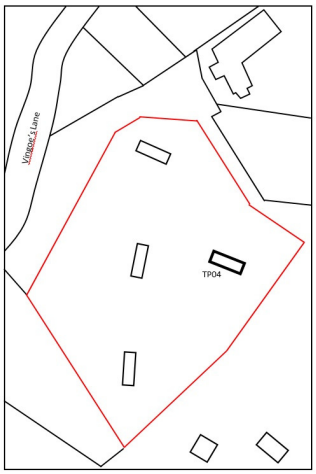
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Wheal Jane Group

Site	Trial Pit Number
Tregoddick	TP04

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Machine excavated trial pit.	Width: 0.60m Length: 2.25m	116.00	Mr M Clyndes	19570
	Location Tregoddick	**Dates** 12/11/2018	**Engineer** Wheal Jane Consultancy	**Sheet** 4/4

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.60)	Grass over dark brown clayey, sandy TOPSOIL. Sand is fine to coarse.		
				115.40	0.60	Brown sandy angular to subangular, fine to coarse GRAVEL of granite. Sand is fine to coarse. [LANDS END INTRUSION]		
					(2.10)			
				113.30	2.70	Complete at 2.70m		



Remarks

No groundwater encountered.
Sides stable.

Scale (approx)	Logged By	Figure No.
1:50	BH	19570.TP04

Appendix B

Trial Pit Photographs

Trial Pit:	TP01

Tregoddick	19570
Soakaway Investigation	Trial Pit Photographs
Mr M Clyndes	13/11/2018

Trial Pit:	TP02

Tregoddick	19570
Soakaway Investigation	Trial Pit Photographs
Mr M Clyndes	13/11/2018

Trial Pit:	TP03

Tregoddick	19570
Soakaway Investigation	Trial Pit Photographs
Mr M Clyndes	13/11/2018

Trial Pit:	TP04

Tregoddick	19570
Soakaway Investigation	Trial Pit Photographs
Mr M Clyndes	13/11/2018

Appendix C

BRE 365 Soakaway Testing Results

SOIL INFILTRATION TEST (BRE Digest 365)

Job Name:	Tregoddick	Trial Pit:	TP01
Job Number:	19570	Test No:	1
Client:	Mr M Clyndes	Engineer:	Wheal Jane Consultancy
		Date:	13/11/2018

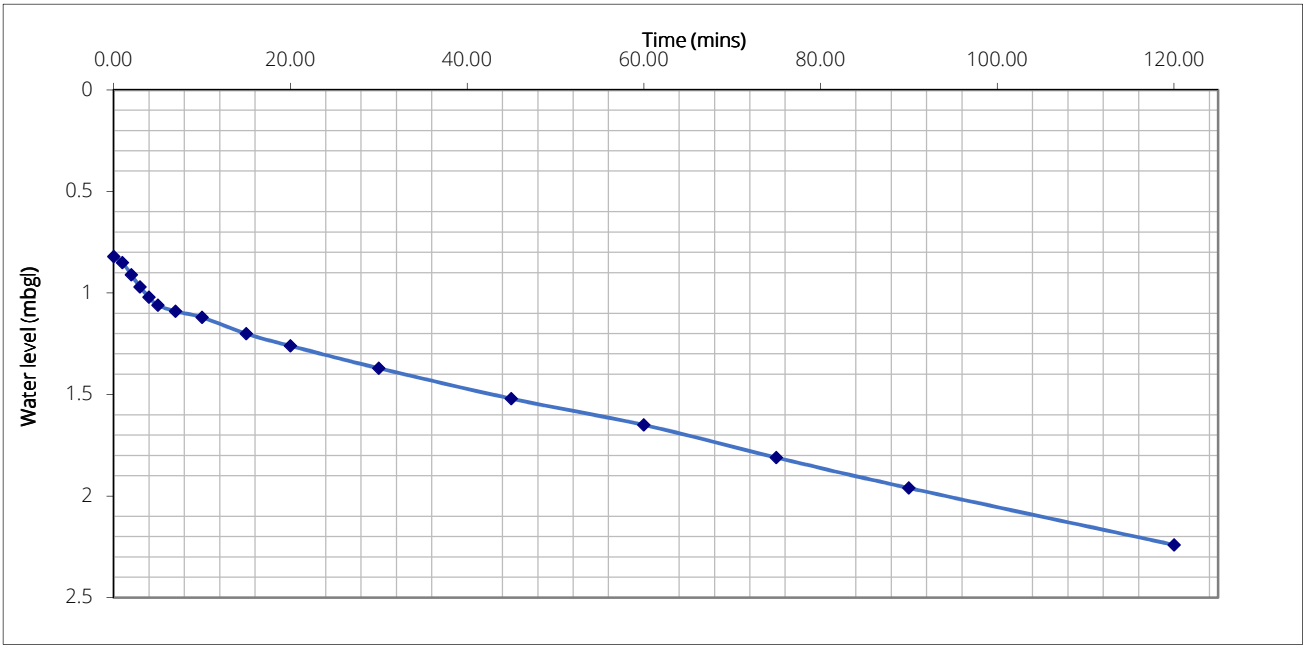
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Pit Dimensions		
Depth to Base	2.80	m
Length	2.10	m
Width	0.60	m
Depth to Initial Water Level	0.82	m

Calculations		
Depth to initial water level	0.82	m
Volume of water between 75% and 25% storage	0.17	m3
Water level at 50% storage	1.81	m
Effective height at 50% storage	0.99	m
Effective surface area of hole at 50% storage	1.94	m2
Time between 75% and 25% dissipation (from chart)	100	min *

Soil Infiltration Rate (*f*)	1.48E-05	m/s

Elapsed Time (mins)	Water Level (m)
0.00	0.82
1.00	0.85
2.00	0.91
3.00	0.97
4.00	1.02
5.00	1.06
7.00	1.09
10.00	1.12
15.00	1.2
20.00	1.26
30.00	1.37
45.00	1.52
60.00	1.65
75.00	1.81
90.00	1.96
120.00	2.24
150.00	
180.00	
210.00	
240.00	



Remarks
Sides stable

SOIL INFILTRATION TEST (BRE Digest 365)

Job Name:	Tregoddick	Trial Pit:	TP01
Job Number:	19570	Test No:	2
Client:	Mr M Clyndes	Engineer:	Wheal Jane Consultancy
		Date:	13/11/2018

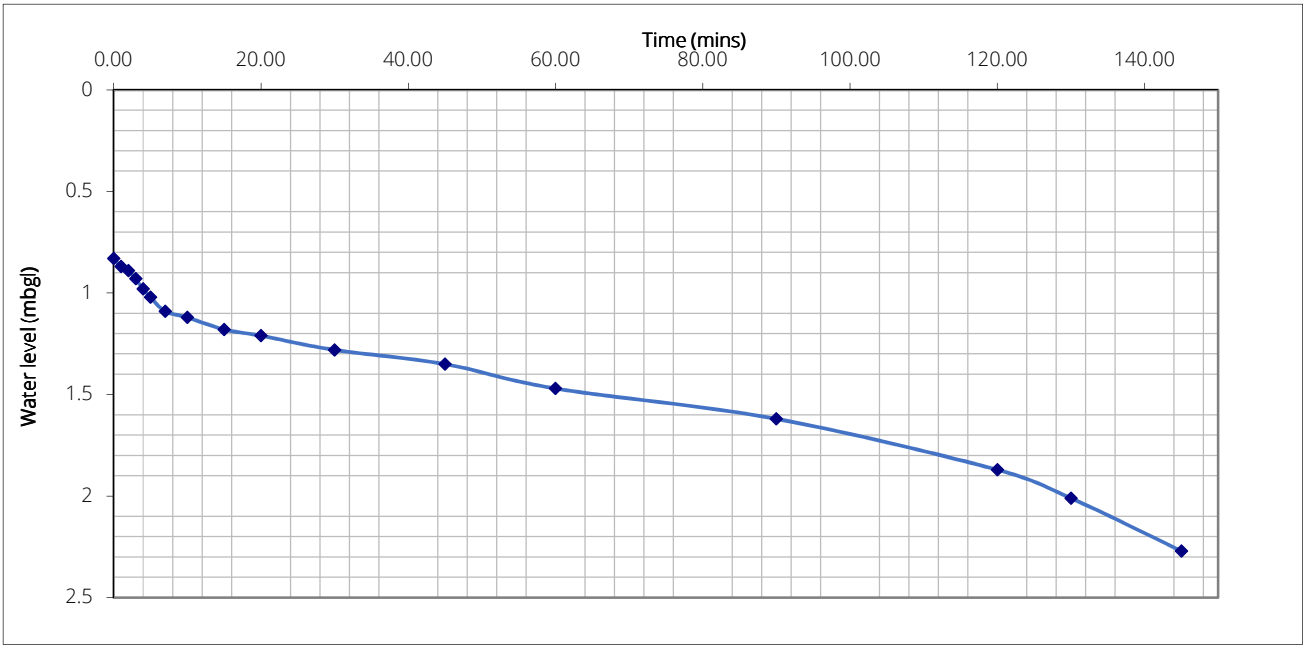
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Pit Dimensions		
Depth to Base	2.80	m
Length	2.10	m
Width	0.60	m
Depth to Initial Water Level	0.83	m

Calculations		
Depth to initial water level	0.83	m
Volume of water between 75% and 25% storage	0.17	m3
Water level at 50% storage	1.82	m
Effective height at 50% storage	0.99	m
Effective surface area of hole at 50% storage	1.91	m2
Time between 75% and 25% dissipation (from chart)	110	min *

Soil Infiltration Rate (*f*)	1.33E-05	m/s

Elapsed Time (mins)	Water Level (m)
0.00	0.83
1.00	0.87
2.00	0.89
3.00	0.93
4.00	0.98
5.00	1.02
7.00	1.09
10.00	1.12
15.00	1.18
20.00	1.21
30.00	1.28
45.00	1.35
60.00	1.47
90.00	1.62
120.00	1.87
130.00	2.01
145.00	2.27
150.00	
180.00	
210.00	



Remarks

Sides stable

SOIL INFILTRATION TEST (BRE Digest 365)

Job Name:	Tregoddick	Trial Pit:	TP01
Job Number:	19570	Test No:	3
Client:	Mr M Clyndes	Engineer:	Wheal Jane Consultancy
		Date:	13/11/2018

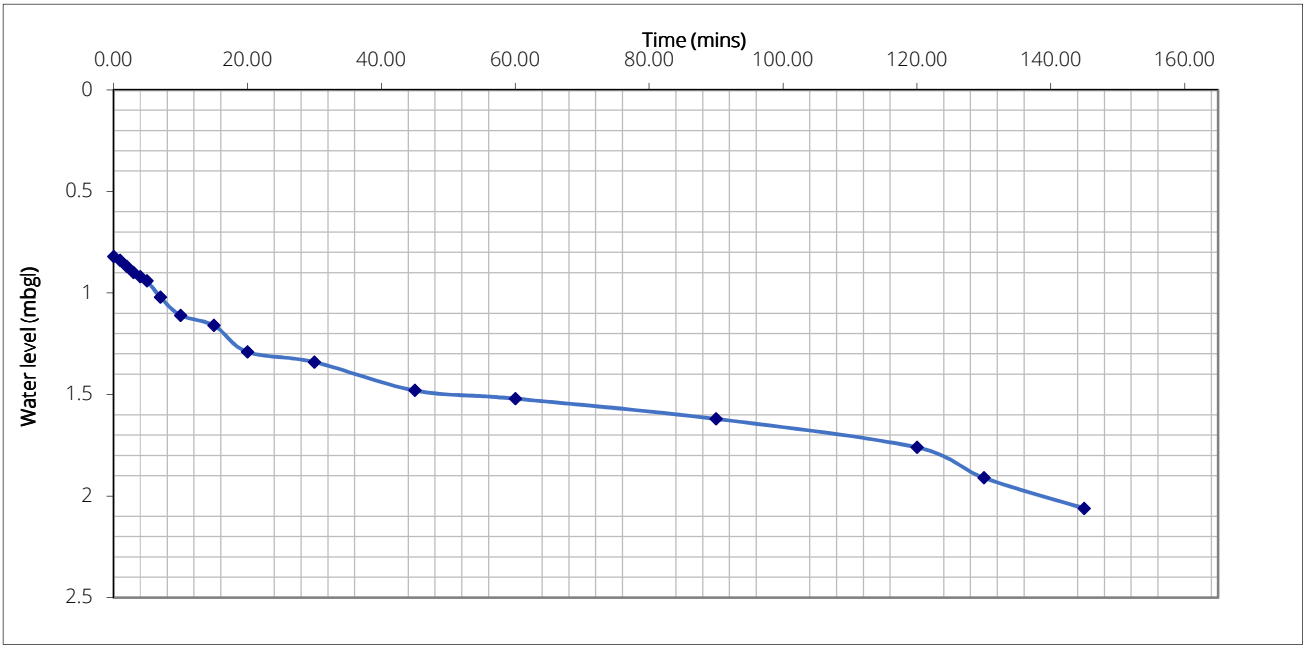
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Pit Dimensions		
Depth to Base	2.80	m
Length	2.10	m
Width	0.60	m
Depth to Initial Water Level	0.82	m

Calculations		
Depth to initial water level	0.82	m
Volume of water between 75% and 25% storage	0.17	m3
Water level at 50% storage	1.81	m
Effective height at 50% storage	0.99	m
Effective surface area of hole at 50% storage	1.94	m2
Time between 75% and 25% dissipation (from chart)	135	min *

Soil Infiltration Rate (*f*)	1.10E-05	m/s

Elapsed Time (mins)	Water Level (m)
0.00	0.82
1.00	0.84
2.00	0.87
3.00	0.9
4.00	0.92
5.00	0.94
7.00	1.02
10.00	1.11
15.00	1.16
20.00	1.29
30.00	1.34
45.00	1.48
60.00	1.52
90.00	1.62
120.00	1.76
130.00	1.91
145.00	2.06
160.00	2.28
190.00	
220.00	



Remarks

Sides stable

SOIL INFILTRATION TEST (BRE Digest 365)

Job Name:	Tregoddick	Trial Pit:	TP02
Job Number:	19570	Test No:	1
Client:	Mr M Clyndes	Engineer:	Wheal Jane Consultancy
		Date:	13/11/2018

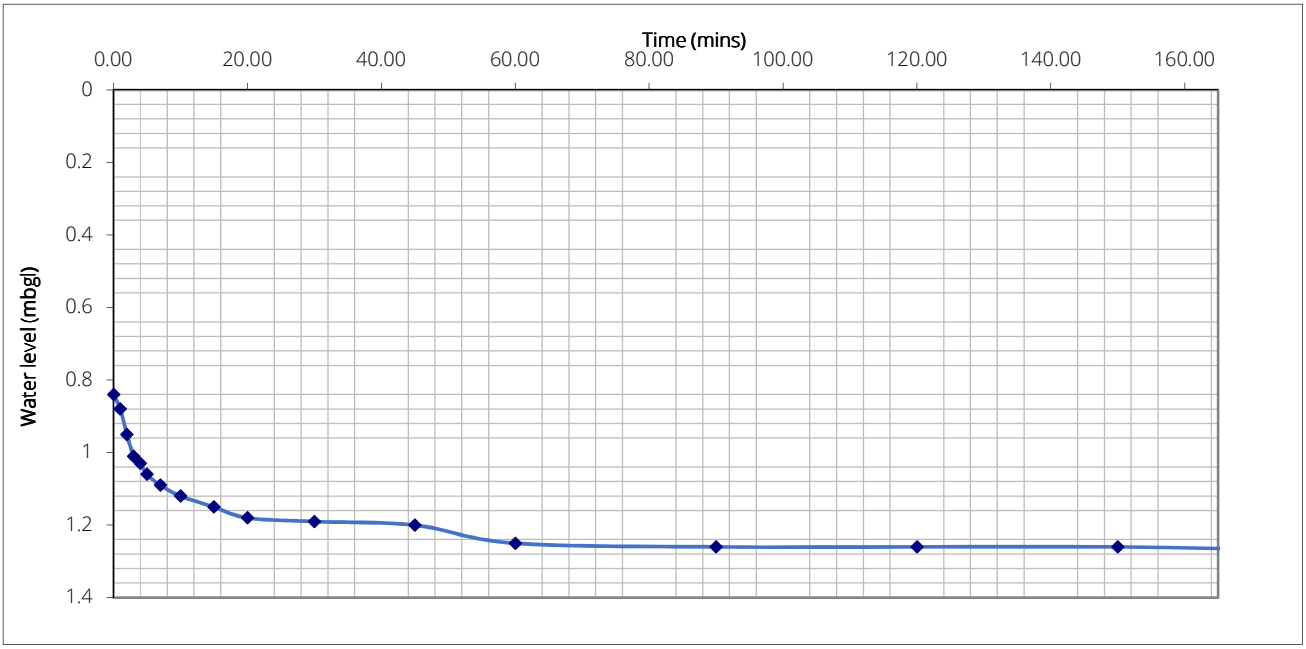
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Pit Dimensions		
Depth to Base	2.10	m
Length	2.20	m
Width	0.60	m
Depth to Initial Water Level	0.84	m

Calculations		
Depth to initial water level	0.84	m
Volume of water between 75% and 25% storage	0.28	m3
Water level at 50% storage	1.47	m
Effective height at 50% storage	0.63	m
Effective surface area of hole at 50% storage	2.11	m2
Time between 75% and 25% dissipation (from chart)	N/A	min *

Soil Infiltration Rate (*f*)	N/A	m/s

Elapsed Time (mins)	Water Level (m)
0.00	0.84
1.00	0.88
2.00	0.95
3.00	1.01
4.00	1.03
5.00	1.06
7.00	1.09
10.00	1.12
15.00	1.15
20.00	1.18
30.00	1.19
45.00	1.2
60.00	1.25
90.00	1.26
120.00	1.26
150.00	1.26
180.00	1.27
210.00	1.27
240.00	1.27
270.00	1.27



Remarks

Sides stable. Pit did not drain to 25% within sufficient time.

SOIL INFILTRATION TEST (BRE Digest 365)

Job Name:	Tregoddick	Trial Pit:	TP03
Job Number:	19570	Test No:	1
Client:	Mr M Clyndes	Engineer:	Wheal Jane Consultancy
		Date:	13/11/2018

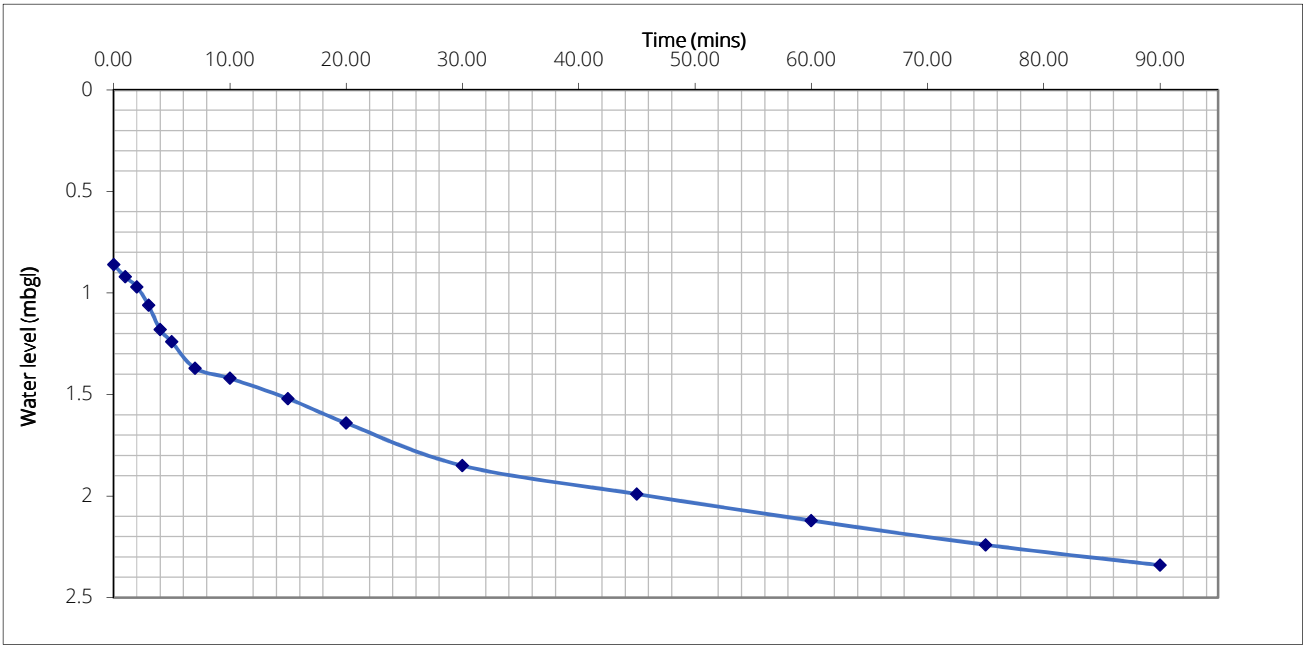
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Pit Dimensions		
Depth to Base	2.80	m
Length	2.20	m
Width	0.60	m
Depth to Initial Water Level	0.86	m

Calculations		
Depth to initial water level	0.86	m
Volume of water between 75% and 25% storage	0.22	m3
Water level at 50% storage	1.83	m
Effective height at 50% storage	0.97	m
Effective surface area of hole at 50% storage	2.10	m2
Time between 75% and 25% dissipation (from chart)	76	min *

Soil Infiltration Rate (*f*)	2.24E-05	m/s

Elapsed Time (mins)	Water Level (m)
0.00	0.86
1.00	0.92
2.00	0.97
3.00	1.06
4.00	1.18
5.00	1.24
7.00	1.37
10.00	1.42
15.00	1.52
20.00	1.64
30.00	1.85
45.00	1.99
60.00	2.12
75.00	2.24
90.00	2.34
120.00	
150.00	
180.00	
210.00	
240.00	



Remarks

Sides stable

SOIL INFILTRATION TEST (BRE Digest 365)

Job Name:	Tregoddick	Trial Pit:	TP03
Job Number:	19570	Test No:	2
Client:	Mr M Clyndes	Engineer:	Wheal Jane Consultancy
		Date:	13/11/2018

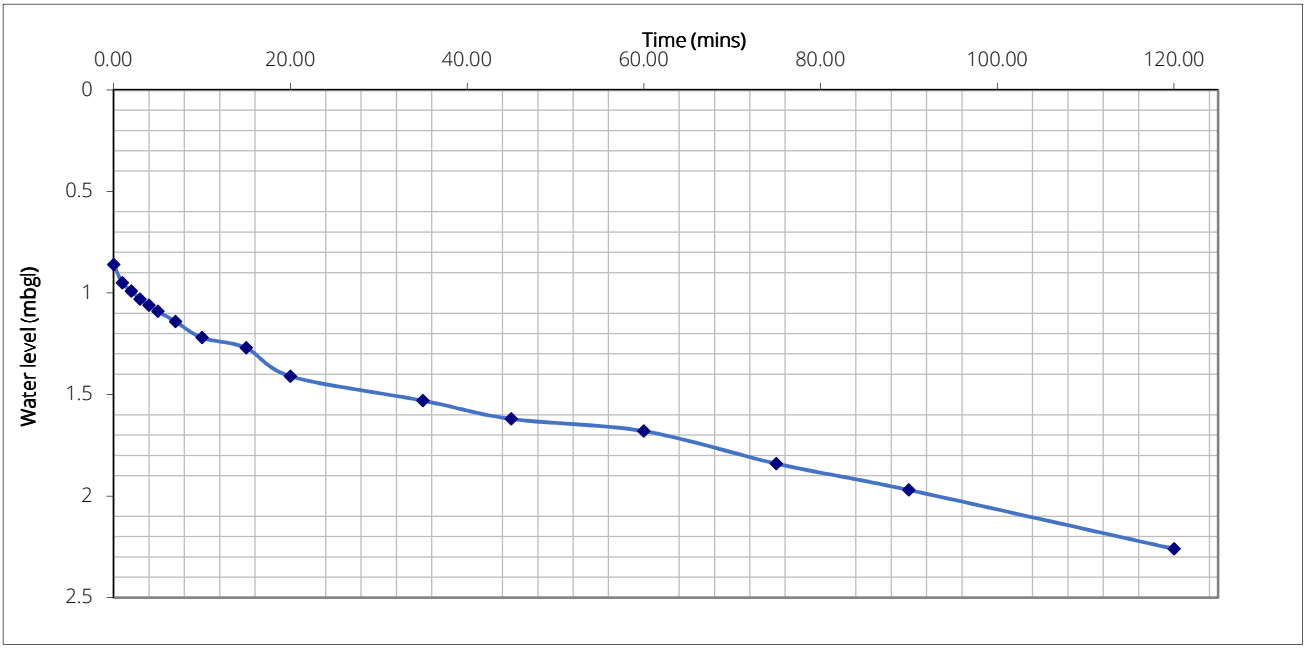
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Pit Dimensions		
Depth to Base	2.80	m
Length	2.20	m
Width	0.60	m
Depth to Initial Water Level	0.86	m

Calculations		
Depth to initial water level	0.86	m
Volume of water between 75% and 25% storage	0.22	m3
Water level at 50% storage	1.83	m
Effective height at 50% storage	0.97	m
Effective surface area of hole at 50% storage	2.10	m2
Time between 75% and 25% dissipation (from chart)	108	min *

Soil Infiltration Rate (*f*)	1.58E-05	m/s

Elapsed Time (mins)	Water Level (m)
0.00	0.86
1.00	0.95
2.00	0.99
3.00	1.03
4.00	1.06
5.00	1.09
7.00	1.14
10.00	1.22
15.00	1.27
20.00	1.41
35.00	1.53
45.00	1.62
60.00	1.68
75.00	1.84
90.00	1.97
120.00	2.26
150.00	
180.00	
210.00	
240.00	



Remarks
Sides stable

SOIL INFILTRATION TEST (BRE Digest 365)

Job Name:	Tregoddick	Trial Pit:	TP03
Job Number:	19570	Test No:	3
Client:	Mr M Clyndes	Engineer:	Wheal Jane Consultancy
		Date:	13/11/2018

Wheal Jane Consultancy
Geotechnical, environmental & mining services

Pit Dimensions		
Depth to Base	2.80	m
Length	2.20	m
Width	0.60	m
Depth to Initial Water Level	0.85	m

Calculations		
Depth to initial water level	0.85	m
Volume of water between 75% and 25% storage	0.22	m3
Water level at 50% storage	1.83	m
Effective height at 50% storage	0.98	m
Effective surface area of hole at 50% storage	2.13	m2
Time between 75% and 25% dissipation (from chart)	127	min *

Soil Infiltration Rate (*f*)	1.35E-05	m/s

Elapsed Time (mins)	Water Level (m)
0.00	0.85
1.00	0.9
2.00	0.96
3.00	0.99
4.00	1.04
5.00	1.09
7.00	1.13
10.00	1.18
15.00	1.25
20.00	1.34
30.00	1.39
45.00	1.47
60.00	1.54
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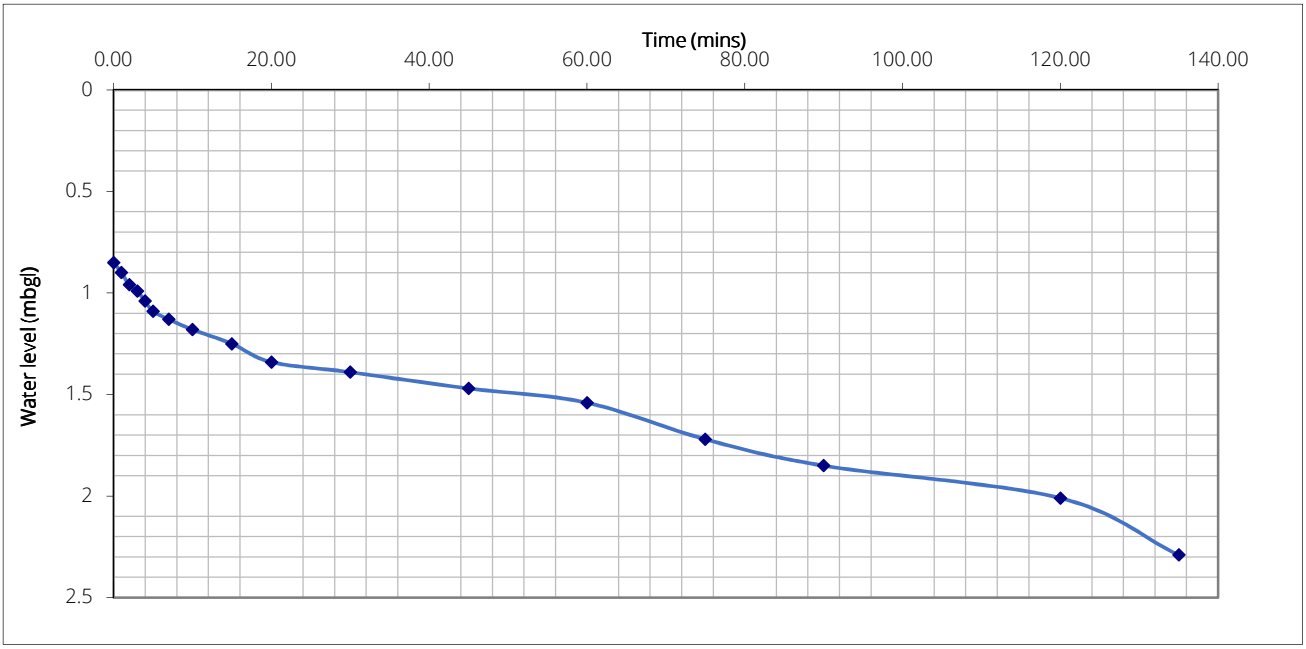
180.00	
210.00	
240.00	



Remarks

Sides stable

SOIL INFILTRATION TEST (BRE Digest 365)

Job Name:	Tregoddick	Trial Pit:	TP04
Job Number:	19570	Test No:	1
Client:	Mr M Clyndes	Engineer:	Wheal Jane Consultancy
		Date:	13/11/2018

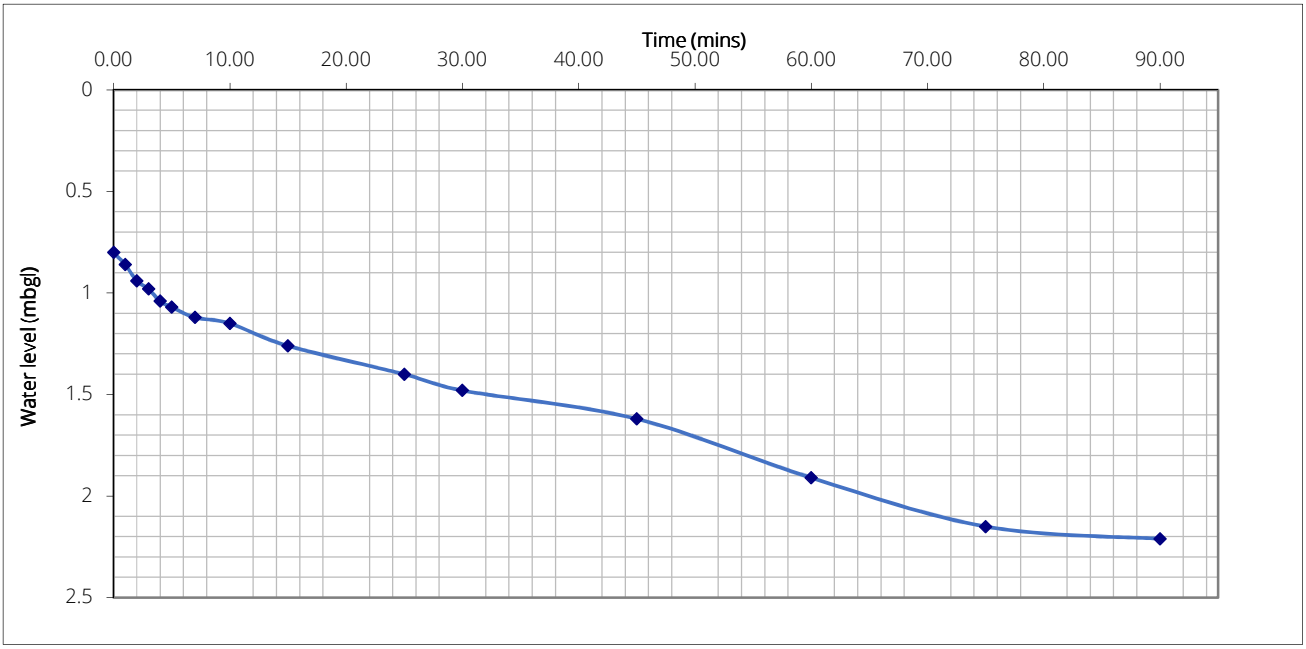
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Pit Dimensions		
Depth to Base	2.70	m
Length	2.25	m
Width	0.60	m
Depth to Initial Water Level	0.80	m

Calculations		
Depth to initial water level	0.80	m
Volume of water between 75% and 25% storage	0.29	m3
Water level at 50% storage	1.75	m
Effective height at 50% storage	0.95	m
Effective surface area of hole at 50% storage	2.39	m2
Time between 75% and 25% dissipation (from chart)	75	min *

Soil Infiltration Rate (*f*)	2.65E-05	m/s

Elapsed Time (mins)	Water Level (m)
0.00	0.8
1.00	0.86
2.00	0.94
3.00	0.98
4.00	1.04
5.00	1.07
7.00	1.12
10.00	1.15
15.00	1.26
25.00	1.4
30.00	1.48
45.00	1.62
60.00	1.91
75.00	2.15
90.00	2.21
120.00	
150.00	
180.00	
210.00	
240.00	



Remarks

Sides stable

SOIL INFILTRATION TEST (BRE Digest 365)

Job Name:	Tregoddick	Trial Pit:	TP04
Job Number:	19570	Test No:	2
Client:	Mr M Clyndes	Engineer:	Wheal Jane Consultancy
		Date:	13/11/2018

Wheal Jane Consultancy
Geotechnical, environmental & mining services

Pit Dimensions		
Depth to Base	2.70	m
Length	2.25	m
Width	0.60	m
Depth to Initial Water Level	0.88	m

Calculations		
Depth to initial water level	0.88	m
Volume of water between 75% and 25% storage	0.25	m3
Water level at 50% storage	1.79	m
Effective height at 50% storage	0.91	m
Effective surface area of hole at 50% storage	2.21	m2
Time between 75% and 25% dissipation (from chart)	80	min *

Soil Infiltration Rate (*f*)	2.37E-05	m/s

Elapsed Time (mins)	Water Level (m)
0.00	0.88
1.00	0.92
2.00	0.94
3.00	1.02
4.00	1.06
5.00	1.09
7.00	1.13
10.00	1.17
15.00	1.24
25.00	1.38
35.00	1.63
45.00	1.74
60.00	1.86
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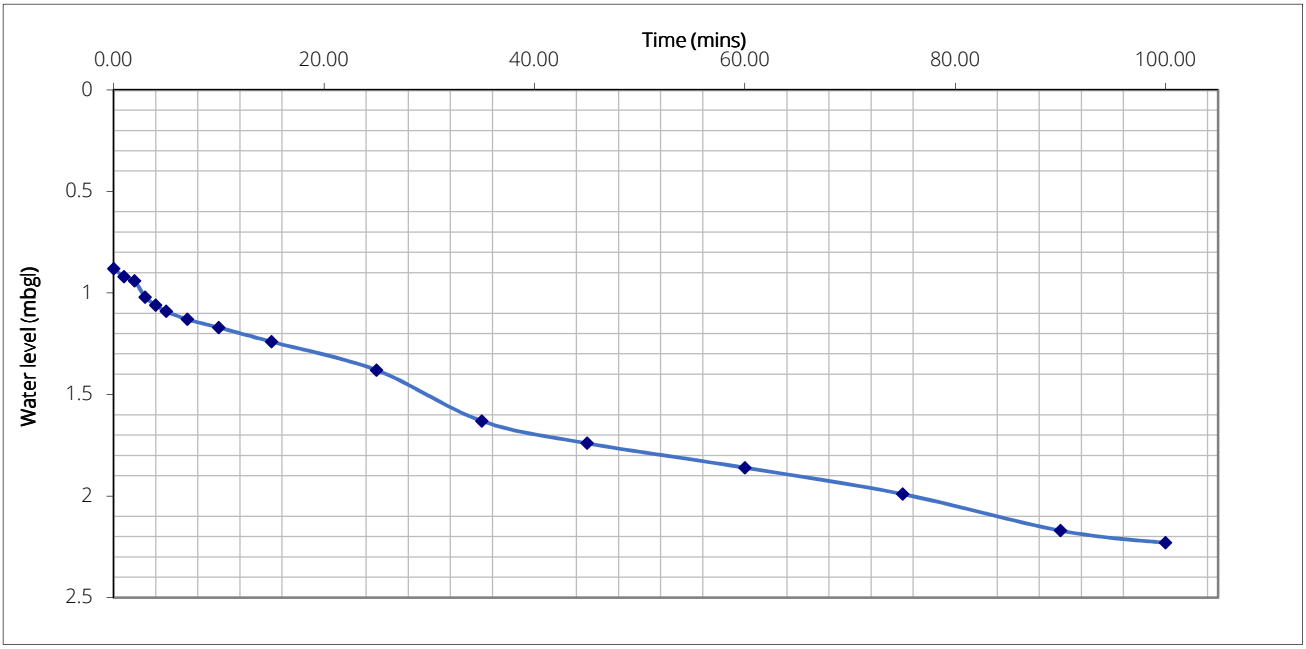
130.00	
160.00	
190.00	
220.00	



Remarks
Sides stable

SOIL INFILTRATION TEST (BRE Digest 365)

Job Name:	Tregoddick	Trial Pit:	TP04
Job Number:	19570	Test No:	3
Client:	Mr M Clyndes	Engineer:	Wheal Jane Consultancy
		Date:	13/11/2018

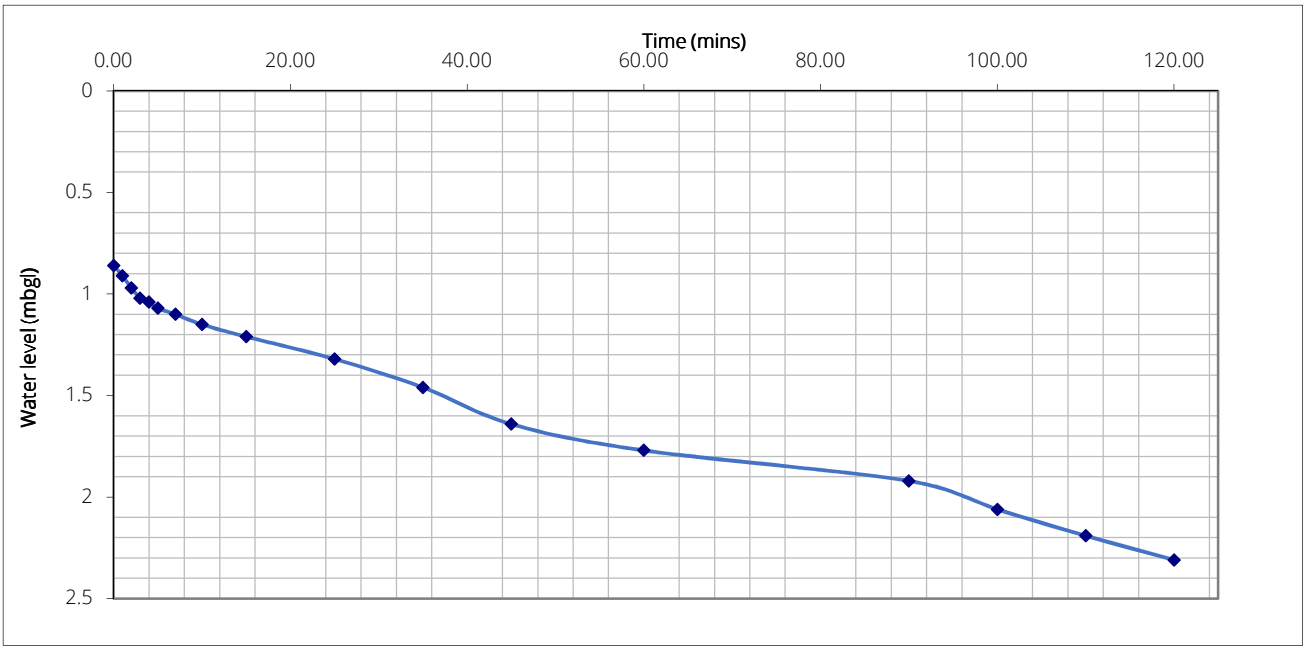
Wheal Jane Consultancy
Geotechnical, environmental & mining services

Pit Dimensions		
Depth to Base	2.70	m
Length	2.25	m
Width	0.60	m
Depth to Initial Water Level	0.86	m

Calculations		
Depth to initial water level	0.86	m
Volume of water between 75% and 25% storage	0.26	m3
Water level at 50% storage	1.78	m
Effective height at 50% storage	0.92	m
Effective surface area of hole at 50% storage	2.25	m2
Time between 75% and 25% dissipation (from chart)	90	min *

Soil Infiltration Rate (*f*)	2.13E-05	m/s

Elapsed Time (mins)	Water Level (m)
0.00	0.86
1.00	0.91
2.00	0.97
3.00	1.02
4.00	1.04
5.00	1.07
7.00	1.1
10.00	1.15
15.00	1.21
25.00	1.32
35.00	1.46
45.00	1.64
60.00	1.77
90.00	1.92
100.00	2.06
110.00	2.19
120.00	2.31
150.00	
180.00	
210.00	



Remarks
Sides stable

Wheal Jane Consultancy

Part of the Wheal Jane Group

-Laboratory Testing of Soils and Water-

-Mineralogical Surveys and Reports-

-Contaminated Land Assessments-

-Geotechnical Investigation-

-Mine Site Investigations-

-Mine Search Reports-

-Mundic Analysis-

SiteSolutions Commercial

Overall Opinion

PASSED ✔

Argyll's Overview

Considering the information reviewed during this assessment, no significant contaminant linkage has been identified. Accordingly soil and groundwater liabilities are unlikely to occur. No further action with respect to contaminated land Liability is required.

The following other Environmental Hazards have been identified in the immediate vicinity of the Site: Radon more than 30%, and Radon Protection Measures.

Report on:

Tregoddick Farm, Madron, Penzance, TR20 8SS

Report prepared for:
Direct Client

Client Reference:

Report Reference:
AEL-4491-SSR-944447

National Grid Reference:
145452,32062

Report date:
17th May 2018

0845 458 5250
www.argyllenvironmental.com
Intelligent Due Diligence

Site Location

Report prepared on

Tregoddick Farm, Madron, Penzance, TR20 8SS

Site Area (m^2)

5785.55

Current Use

Assumed Commercial

Proposed Use

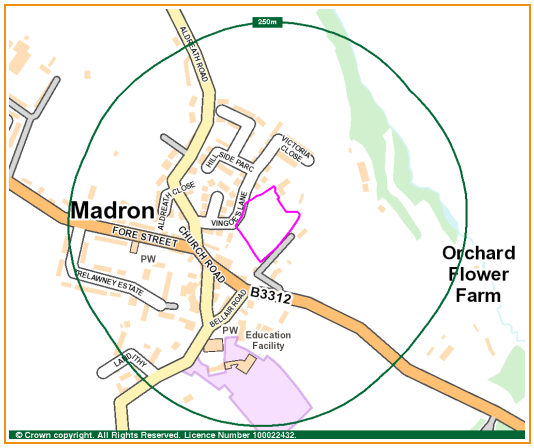
Assumed Commercial

Report Author

Joanna Heathfield BSc (Hons)
Telephone: 0845 458 5250
E-mail: orders@argyllenviro.com

Additional Information Provided

-



Summary of Contamination Risk and Liabilities

Liability Assessment	
Passed	No further action

Liability Assessment

Within the scope of this assessment no Liabilities have been identified. No further action is required.

Risk	Issue	Evaluation
Contaminated Land	What is the overall on-site risk?	Low to Moderate
	What is the overall off-site risk?	Low to Moderate
	What is the environmental sensitivity rating?	Moderate to High

Recommendations

None required.

Contaminated Land Risk Analysis

Investigation	Commentary
On-site sources	A review of historical maps indicates the Site was in use as an agricultural field from c.1878. A tank was placed in the north west of the Site from c.1975, assumed to be a water tank due to its location in a field, and that no other infrastructure is noted. No further changes are noted. Therefore, it is likely that standard agricultural practices including the use of fertilisers and pesticides has been occurring at the Site. We have not been informed of the current Site use and have therefore assumed that it is in agricultural use and will continue in this use without redevelopment.
Argyll's Comment	As a result of the historical and current use of the Site, there is a **low to moderate risk** of contaminants being present.
Off-site sources	A review of historical maps has revealed no historical or current potentially contaminative uses in proximity to the Site. However the land is abutted by further agricultural land, with a farmyard adjacent north east, so is likely to have been subject to the aforementioned agricultural processes.
Argyll's Comment	The historical and current use of the surrounding area is therefore considered to present a **low to moderate risk** of affecting the Site.
Pathways and receptors	With reference to Environment Agency data, the bedrock hydrogeology underlying the Site is classified as a Secondary (A) Aquifer (deposits with moderate permeability). In terms of the overlying soils, these are given a H3 (class H3) vulnerability classification. According to information provided by the Environment Agency the Site does not lie within a groundwater Source Protection Zone (SPZ). There are five abstraction licences located within 1000m. The closest of these is a groundwater abstraction (932m east) for general farming and domestic use. The nearest water feature is the Chyandour Brook located 173m east. Residential properties are located adjacent north. Finally no designated eco-receptors were identified within a 1000m radius of the Site.
Argyll's Comment	Overall, the Site is therefore considered to have a **moderate to high environmental sensitivity**.
Additional Sources of Information	No additional materials have been used in this assessment.

Argyll's Conclusion

Considering the information reviewed during this assessment, no significant contaminant linkages have been identified. Accordingly soil and groundwater liabilities are unlikely to occur.

Please refer to risk analysis methodology section for further guidance and definition of terms.

Other Environmental Hazards

Risk	Recommendation
Radon more than 30%	Employers are required by the Management of Health and Safety at Work Regulations 1999 to assess risks from radon in workplaces. You may therefore wish to contact the Health Protection Agency for further information regarding radon monitoring.
Radon Protection Measures	If redevelopment or building extensions are proposed, radon protection may be required. As the data provided in this report is not site specific, it would be prudent to order a more detailed radon report from the British Geological Survey (www.bgs.ac.uk/georeports) or contact the local Building Controls Officer to clarify the level of radon protection required (if any) in accordance with Building Research Establishment report BR211.
Telecommunication Base Stations	No telecommunication base stations are located within 100m of the Site.
COMAH	No Control of Major Accident Hazards (COMAH) sites are located within 500m.

Argyll's Comment

This report is primarily a desktop assessment of potential soil and groundwater liabilities. We also comment whether the above Environmental Hazards are relevant. Contact details are provided at the end of this report.

Current Operations

Environmental Damage Regulations 2009 (EDR)

Potential for owner/operation to incur a Liability under the EDR

Argyll's Comment

The Site is in close proximity to a potentially sensitive receptor as set out in the EDR. It would therefore be prudent to ensure that operations on the site are audited on a regular basis to minimise the risk of causing environmental damage that could result in liability under the EDR. In addition, the presence of such receptors should be considered as part of any future development or activity.

Please refer to the risk analysis methodology section for further guidance and definition of terms.

Regulatory Compliance Within 25m of the Site

Type	Details	Distance
Discharge Consent	Operator: Mr Eddy & Mrs C Elcox, Location: Land Pt 3400 Aldreath Road, Madron, Penzance, Cornwall, Authority: Environment Agency, South West Region, Permit Ref: Swwa 2003, Status: Varied under EPR 2010.	10m
Discharge Consent	Operator: Mr Eddy & Mrs C Elcox, Location: Land Pt 3400 Aldreath Road, Madron, Penzance, Cornwall, Authority: Environment Agency, South West Region, Permit Ref: Swwa 2003, Status: Revoked under EPR 2010.	10m
Discharge Consent	Operator: Mr P Eddy & Mrs C Elcox, Location: Land At Tregoddick Aldreath Road, Madron, Penzance, Cornwall, Tr20 8ss, Authority: Environment Agency, South West Region, Permit Ref: Nra-Sw-6845, Status: Varied under EPR 2010.	13m
Discharge Consent	Operator: Mr P Eddy & Mrs C Elcox, Location: Land At Tregoddick Aldreath Road, Madron, Penzance, Cornwall, Tr20 8ss, Authority: Environment Agency, South West Region, Permit Ref: Nra-Sw-6845, Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995).	13m

Additional Considerations

Item	Summary	Suggested Action
Above and Below Ground Storage	It is common for agricultural premises to store a variety of substances in above ground and underground storage tanks (ASTs and USTs). Most commonly red diesel, heating oil and occasionally petrol on larger estates. There is no reliable database of underground storage tanks nor are all above ground tanks marked on historical maps.	Check for presence of tanks / Consider Site inspection
Sensitive Land Uses	If areas subject to statutory designations are located either on or in proximity to the Site, there may be land management implications or restrictions to planned developments. You are located inside/within 500m of an Area of Outstanding Natural Beauty.	Contact local planning authority or speak with planning consultant
Change of Use Redevelopment	Proposed changes in land use require permission from the Local Authority and are subject to conditions as part of the statutory planning process.	Contact local planning authority or speak with planning consultant

Argyll's Comment

Whilst this assessment is primarily a desktop assessment of potential soil and groundwater liabilities, the above potential liability considerations that fall outside the scope of the Risk Analysis Methodology have been identified.

Additional sources of information may be available for the Site. These sources could include previous environmental reports (including audits, contaminated land investigation and remediation reports), valuation reports (including property observation checklists), a Land Quality Record, and property deeds. Argyll Environmental would be pleased to review any reports that are available and revise this report accordingly. This may entail additional fees depending upon the volume and complexity of information available. Please contact us for further information.

Contents of the Data Section

Section	Description
Tabular Summary	This section presents a tabular summary of information found for the Site and surrounding area. The data is presented in three buffer zones for ease of reference: data found at the Site, from 1-250m and from 251-500m. If a database has been searched the number of records found will be displayed under the relevant search band. If a database is not available or has not been searched, this will be represented by the abbreviation N/A under the relevant search band.
Current Land Use Mapping	This section provides information on current land uses and is divided into three sections, statutory information, waste and current industrial uses. It is preceded by two maps.
Statutory Information	This section presents detailed statutory information for the Site and surrounding area (up to 500m depending upon dataset). The Map ID of each feature is indicated (where applicable) followed by specific information on each feature and its distance and direction from the Site. If no data is identified then the section will be omitted.
Waste	This section presents detailed information on waste and landfill sites for the Site and surrounding area (up to 500m depending upon dataset). The Map ID of each feature is indicated (where applicable) followed by specific information on each feature and its distance and direction from the Site. If no data is identified then the section will be omitted.
Current Industrial Land Use	This section presents detailed information on current land use for the Site and surrounding area (0-250m). The Map ID of each feature is indicated (where applicable) followed by specific information on each feature and its distance and direction from the Site. If no data is identified then the section will be omitted.
Historical Land Use Mapping	The Historical Land Use Map presents 1:10,000 scale and selected 1:2,500 scale (tanks and energy facilities) historical land use information within 250m of the Site boundary.
Historical Land Use	This section presents selected information on historical land use for the Site and surrounding area (0-250m). The Map ID of each feature is indicated (where applicable) followed by specific information on each feature and its distance and direction from the Site. If no data is identified then the section will be omitted.
Aquifer Designations and Geology	This section is preceded by two maps that present information relating to the aquifer designations beneath the Site. The first of these maps indicates the designation of the Superficial geology. The second map presents the aquifer designation of the solid geology. These maps are followed by detailed information in relation to aquifer designations/groundwater vulnerability and geology at the Site and surrounding area (0-500m). If no data is identified then the section will be omitted.
Environmental Sensitivity	This section presents detailed information on the environmental sensitivity of the Site and surrounding area (up to 500m depending upon dataset) and is preceded by two maps. The first shows areas with statutory designations, the second shows source protection zones. The Map ID of each feature is indicated (where applicable) followed by specific information on each feature and its distance and direction from the Site. If no data is identified then the section will be omitted.
Natural and Mining Related Hazards	This section contains information on natural and mining related hazards which may affect the Site. These include subsidence, radon and mining.

Tabular Summary

Statutory Information

Authorisations	On-site	1-250m	251-500m
Local Authority Pollution Prevention and Controls	0	0	0
Local Authority Integrated Pollution Prevention and Controls	0	0	0
Integrated Pollution Controls	0	0	0
Integrated Pollution Prevention And Control	0	0	2
Registered Radioactive Substances	0	0	0
Discharges	**On-site**	**1-250m**	**251-500m**
Discharge Consents	0	5	2
Water Industry Act Referrals	0	0	0
Control of Major Accident Hazards Sites	0	0	0
Explosive Sites	0	0	0
Notification of Installations Handling Hazardous Substances	0	0	0
Planning Hazardous Substance Consents	0	0	0
Contraventions	**On-site**	**1-250m**	**251-500m**
Contaminated Land Register Entries and Notices	0	0	0
Local Authority Pollution Prevention and Control Enforcements	0	0	0
Enforcement and Prohibition Notices	0	0	0
Planning Hazardous Substance Enforcements	0	0	0
Substantiated Pollution Incident Register	0	0	0
Prosecutions Relating to Authorised Processes	0	0	0
Prosecutions Relating to Controlled Waters	0	0	0

Waste

Waste/Landfill Sites	On-site	1-250m	251-500m
BGS Recorded Landfill Sites	0	0	0
Integrated Pollution Control Registered Waste Sites	0	0	0
Licensed Waste Management Facilities (Landfill Boundaries)	0	0	0
Licensed Waste Management Facilities (Locations)	0	0	0
Local Authority Recorded Landfill Sites	0	0	0 (1) *
Registered Landfill Sites	0	0	0 (0) *
Registered Waste Transfer Sites	0	0	0
Registered Waste Treatment or Disposal Sites	0	0	0
Historical Landfill Sites	0	0	0

Current Land Use

Current Potentially Contaminative Uses	On-site	1-250m	251-500m
Contemporary Trade Directory Entries	0	0	7
Fuel Station Entries	0	0	0
Other Features	**On-site**	**1-250m**	**251-500m**
Telecommunication Base Stations	0	0[1]	N/A
Overhead Transmission Lines	0	0	0
Gas Pipelines	0	0	0
Gas Feeders	0	0	0

Historical Land Use

Historical Potentially Contaminative Uses	On-site	1-250m	251-500m
Historical Tanks And Energy Facilities	0	3	2
Potentially Infilled Land	**On-site**	**1-250m**	**251-500m**
Former Marshes	0	0	0
Potentially Infilled Land (Non-Water)	0	0	1
Potentially Infilled Land (Water)	0	0	0

[1]Telecommunication base stations are searched to a radius of 100m from the Site boundary

Groundwater Vulnerability

Hydrogeology	On-site	1-250m	251-500m
Superficial Aquifer Designations	0	1	0
Bedrock Aquifer Designations	1	0	1
Groundwater Vulnerability	1	1	0
Geology	**On-site**	**1-250m**	**251-500m**
Low Permeability Drift Deposits	0	N/A	N/A
BGS 1:50,000 Bedrock Geology	2	1	1
BGS 1:50,000 Superficial Deposits	0	1	1
BGS 1:50,000 Geological Mapping Coverage	1	0	0
BGS 1:625,000 Solid Geology	2	N/A	N/A
BGS Borehole Logs	0	0	N/A

Environmental Sensitivity

Environmental Sensitivity	On-site	1-250m	251-500m
Areas of Outstanding Natural Beauty	0	1	0
Environmentally Sensitive Areas	0	0	0
Forest Parks	0	0	0
Local Nature Reserves	0	0	0 (0) *
Marine Nature Reserves	0	0	0 (0) *
National Nature Reserves	0	0	0 (0) *
National Parks	0	0	0
National Scenic Areas	0	0	0
Nitrate Sensitive Areas	0	N/A	N/A
Nitrate Vulnerable Zones	0	N/A	N/A
Ramsar Sites	0	0	0 (0) *
River Quality Biology Sampling Points	0	0	0
River Quality Chemistry Sampling Points	0	0	0
Nearest Surface Water Feature	0	1	0
Sites of Special Scientific Interest	0	0	0 (0) *
Special Areas of Conservation	0	0	0 (0) *
Special Protection Areas	0	0	0 (0) *
Water Abstractions	0	0	0 (5)*
Source Protection Zones	0	0	0

Natural and Mining Related Hazards

Subsidence	On-site	1-250m	251-500m
Collapsible Ground Stability Hazards	1	1[2]	N/A
Compressible Ground Stability Hazards	1	1	N/A
Ground Dissolution Stability Hazards	1	0	N/A
Landslide Ground Stability Hazards	1	1	N/A
Running Sand Ground Stability Hazards	1	1	N/A
Shrinking or Swelling Clay Subsidence Hazards	1	1	N/A
Non-Coal Mining Hazards	1	0	N/A
Radon	**On-site**	**1-250m**	**251-500m**
Radon Potential	1	N/A	N/A
Radon Protection Measures	1	N/A	N/A
Mining	**On-site**	**1-250m**	**251-500m**
Brine Compensation Areas	0	N/A	N/A
Coal Mining Affected Areas	0	N/A	N/A
Natural and Mining Cavities	0	0	0
Mining Instability	0	1	N/A
BGS Recorded Mineral Sites	0	0	1

Tabular Summary Explanation

Argyll has carefully selected a range of datasets which are considered appropriate for the intended use of this report. Each dataset is searched to a set radius from the

[2]Ground stability hazards are only searched to a radius of 50m from the Site boundary.

Site boundary and the tabular summary is divided into different search bands accordingly. If a database is searched and information is found, then the number of records available are detailed in the table above. If the database was searched and no data was found, then a zero will be present. If a database was not searched then the abbreviation N/A will be found, indicating this information was not available at the radius searched.

Landfill Site Information

Registered landfill site boundaries (where available), are shown on the map as a red diagonal hatched polygon and referred to in the map legend as Registered Landfill Sites. At present no complete national dataset exists for landfill site boundaries, therefore a point grid reference provided by the data supplier is used for some landfill sites. The point grid references supplied provide only an approximate position, and can vary from the site entrance to the centre of the site. A point cannot properly define landfill boundaries therefore Landmark constructs a 250 metre or 100 metre "buffer" zone around the point to warn of the possible presence of landfill. The "buffer" zone is shown on the map as an orange crosshatched area and is referred to in the map legend as Potential Landfill Buffer.
Local Authority landfill data is sourced from individual local authorities that were able to provide information on sites operating prior to the introduction of the Control of Pollution Act (COPA) in 1974. Appropriate authorities are listed under Local Authority Landfill Coverage with an indication of whether or not they were able to make landfill data available. Details of any records identified are disclosed. You should be aware that if the local authority had landfill data but passed it to the relevant Environment Agency office, it does not necessarily mean that local authority landfill data is now included in our other Landfill datasets. In addition if no data has been made available for all or part of the search area, you should be aware that a negative response under 'Local Authority Recorded Landfill Sites' does not necessarily confirm that no local authority landfills exist.

Subsidence Hazards

Information on subsidence hazards is provided by the British Geological Survey (BGS). Information present within 250m of the Site is reported under Natural and Mining Related Hazards. Due to the level of detail of this data and the complexities of the real world, the BGS recommends a precautionary approach when using this information and advises taking the worst reading noted for each dataset within the vicinity of a property. Therefore, Argyll reports the presence of a ground stability or non-coal related mining hazard in the Risk Analysis section based on the highest reading found within 50m of the Site boundary.

Current Land Use within 250m

General
- Site Boundary
- Search Buffer
- Bearing Reference Point
- Grid Lines
- Reference Number
- N

Waste/Landfill Sites
- BGS Recorded Landfill Site
- Point Location of Registered Landfill Site
- EA Historic Landfill (Polygon)
- Point Location of BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- Licenced Waste Management Facilities (Location)
- Licenced Waste Management Facilities (Landfill)
- Point Location of Local Authority Recorded Landfill Site
- Local Authority Recorded Landfill Site
- Point Location of Registered Waste Transfer Site
- Registered Waste Transfer Site
- Point Location of Registered Waste Treatment or Disposal Site
- Registered Waste Treatment or Disposal Site
- Registered Landfill Site Potential Landfill Buffer
- Registered Landfill Site

Statutory Authorisations
- Local Authority Pollution Prevention and Control
- Contaminated Land Register Entry or Notice
- Point Location of Contaminated Land Register Entry or Notice
- Registered Radioactive Substance

Discharge Consents
- Discharge Consent
- Water Industry Act Referral

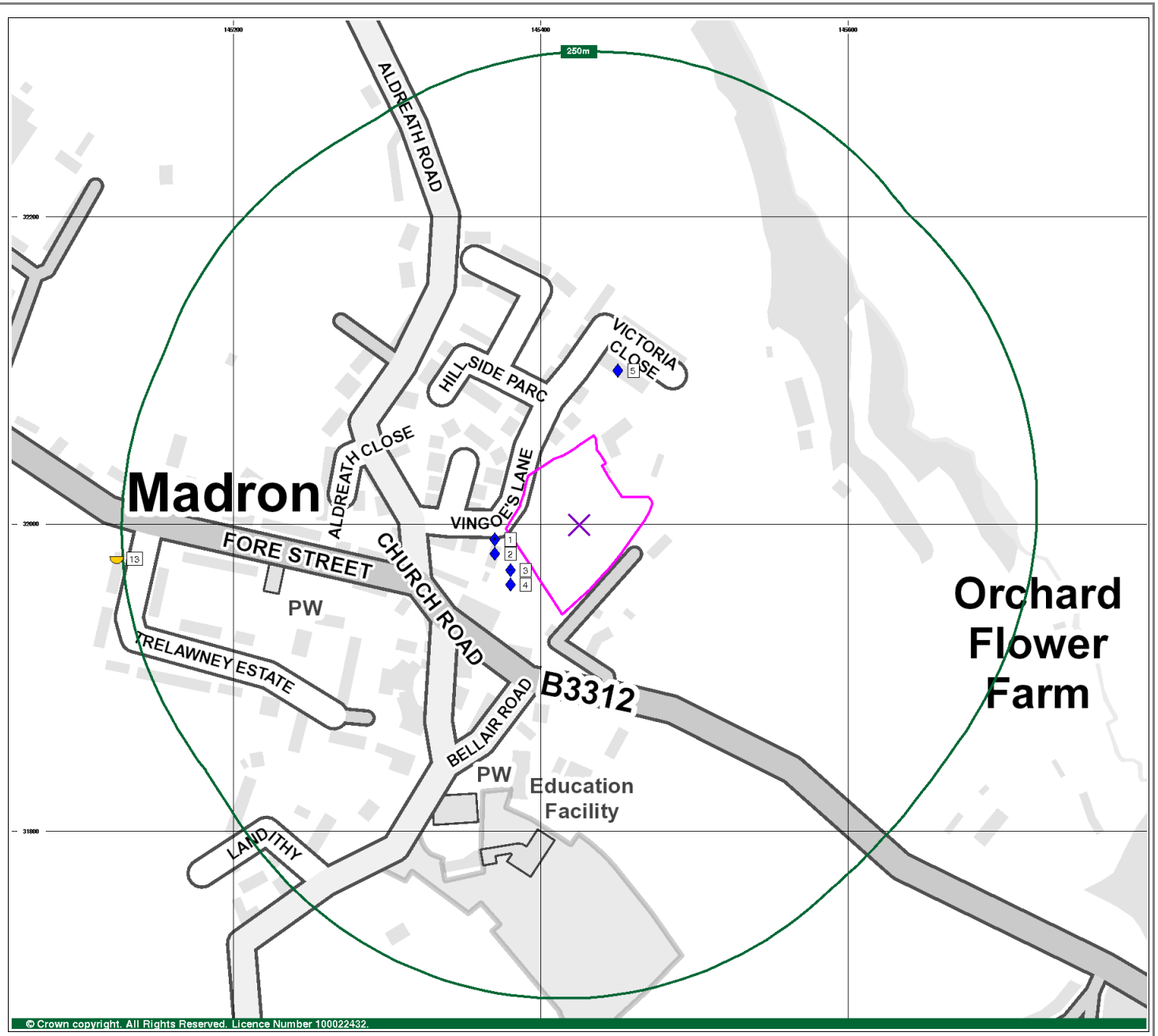
Industrial Processes
- Integrated Pollution Control
- Integrated Pollution Control Registered Waste Site
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control

Storage of Hazardous Substances
- COMAH
- Explosive Site
- Planning Hazardous Substance Consent
- NIHHS

Contraventions
- Local Authority Pollution Prevention and Control Enforcement
- Enforcement and Prohibition Notice
- Planning Hazardous Substance Enforcement
- Substantiated Pollution Incident Register
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters

Potentially Contaminative Use
- Potentially Contaminative Use
- Gas Pipeline
- Fuel Station Entry
- Gas Site

Miscellaneous
- BGS Recorded Mineral Site
- BGS Borehole
- Telecommunication Base Station



Current Land Use within 500m

General
- Site Boundary
- Search Buffer
- Bearing Reference Point
- Grid Lines
- Reference Number

Waste/Landfill Sites
- BGS Recorded Landfill Site
- Point Location of Registered Landfill Site
- EA Historic Landfill (Polygon)
- Point Location of BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- Licenced Waste Management Facilities (Location)
- Licenced Waste Management Facilities (Landfill)
- Point Location of Local Authority Recorded Landfill Site
- Local Authority Recorded Landfill Site
- Point Location of Registered Waste Transfer Site
- Registered Waste Transfer Site
- Point Location of Registered Waste Treatment or Disposal Site
- Registered Waste Treatment or Disposal Site
- Registered Landfill Site Potential Landfill Buffer
- Registered Landfill Site

Statutory Authorisations
- Local Authority Pollution Prevention and Control
- Contaminated Land Register Entry or Notice
- Point Location of Contaminated Land Register Entry or Notice
- Registered Radioactive Substance

Discharge Consents
- Discharge Consent
- Water Industry Act Referral

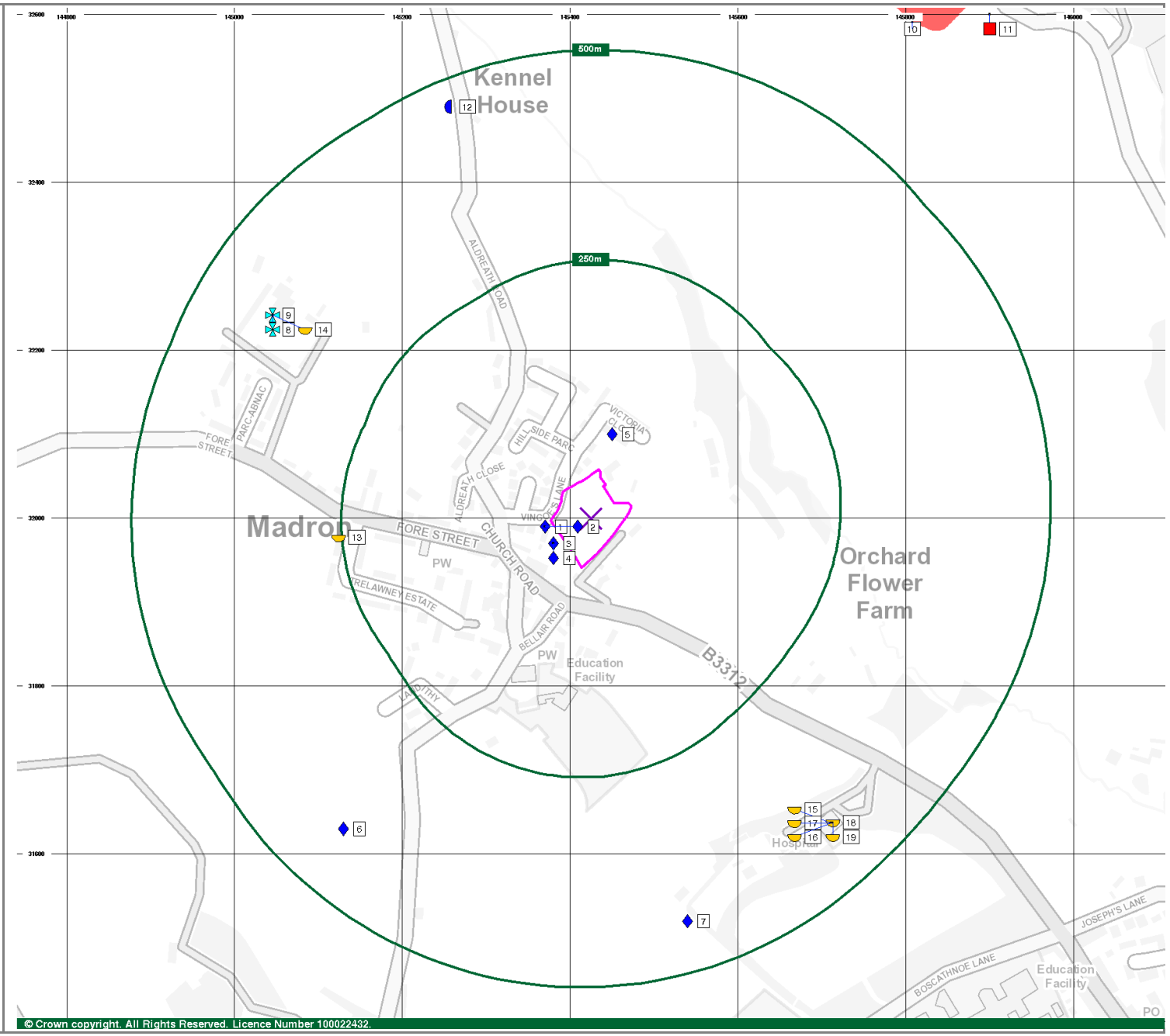
Industrial Processes
- Integrated Pollution Control
- Integrated Pollution Control Registered Waste Site
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control

Storage of Hazardous Substances
- COMAH
- Explosive Site
- Planning Hazardous Substance Consent
- NIHHS

Contraventions
- Local Authority Pollution Prevention and Control Enforcement
- Enforcement and Prohibition Notice
- Planning Hazardous Substance Enforcement
- Substantiated Pollution Incident Register
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters

Potentially Contaminative Use
- Potentially Contaminative Use
- Gas Pipeline
- Fuel Station Entry
- Gas Site

Miscellaneous
- BGS Recorded Mineral Site
- BGS Borehole
- Telecommunication Base Station



Statutory Information

Authorisations

Integrated Pollution Prevention And Control

Map ID	Details	Distance	Direction
8	Name: Madron Meat Company Ltd, Location: Madron Meat Abattoir, The Abattoir, PENZANCE, Cornwall, TR20 8SF, Authority: Environment Agency, South West Region, Permit Ref: HP3337PS, Dated: 29th April 2005 to Not Supplied, Activity Descriptions: 1.Animal, Vegetable And Food; Slaughtering Animals Greater Than 50 T/Day, Activity Codes: 1.6.8 A(1) (B), Status: Superseded By Variation, Positional Accuracy: Automatically positioned to the address.	406m	NW
9	Name: Madron Meat Company Ltd, Location: Tally Ho, Madron, Penzance, Cornwall, TR20 8SF, Authority: Environment Agency, South West Region, Permit Ref: WP3030US, Dated: 30th April 2007 to Not Supplied, Activity Descriptions: 1.Animal, Vegetable And Food; Slaughtering Animals Greater Than 50 T/Day, Activity Codes: 1.6.8 A(1) (B), Status: Surrender Effective, Positional Accuracy: Automatically positioned to the address.	406m	NW

Discharges

Discharge Consents

Map ID	Details	Distance	Direction
1	Operator: Mr Eddy & Mrs C Elcox, Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES), Location: Land Pt 3400 Aldreath Road, Madron, Penzance, Cornwall, Authority: Environment Agency, South West Region, Catchment Area: South Coast Streams: Loe Bar To Merthern Pt, Cornwall, Permit Ref: Swwa 2003, Permit Version: 2, Effective Date: 17th December 2012, Issued Date: 17th December 2012, Revocation Date: Not Supplied, Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company, Discharge Environment: Land/Soakaway, Receiving Water: Soakaway, Status: Varied under EPR 2010, Positional Accuracy: Located by supplier to within 10m.	10m	W
2	Operator: Mr Eddy & Mrs C Elcox, Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES), Location: Land Pt 3400 Aldreath Road, Madron, Penzance, Cornwall, Authority: Environment Agency, South West Region, Catchment Area: South Coast Streams: Loe Bar To Merthern Pt, Cornwall, Permit Ref: Swwa 2003, Permit Version: 1, Effective Date: 1st June 1991, Issued Date: 27th June 1988, Revocation Date: 16th December 2012, Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company, Discharge Environment: Land/Soakaway, Receiving Water: Soakaway, Status: Revoked under EPR 2010, Positional Accuracy: Located by supplier to within 100m.	10m	W
3	Operator: Mr P Eddy & Mrs C Elcox, Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES), Location: Land At Tregoddick Aldreath Road, Madron, Penzance, Cornwall, Tr20 8ss, Authority: Environment Agency, South West Region, Catchment Area: South Coast Streams: Loe Bar To Merthern Pt, Cornwall, Permit Ref: Nra-Sw-6845, Permit Version: 2, Effective Date: 17th December 2012, Issued Date: 17th December 2012, Revocation Date: Not Supplied, Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company, Discharge Environment: Into Land, Receiving Water: Soakaway, Status: Varied under EPR 2010, Positional Accuracy: Located by supplier to within 10m.	13m	SW

Discharge Consents

Map ID	Details	Distance	Direction
4	Operator: Mr P Eddy & Mrs C Elcox, Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES), Location: Land At Tregoddick Aldreath Road, Madron, Penzance, Cornwall, Tr20 8ss, Authority: Environment Agency, South West Region, Catchment Area: South Coast Streams: Loe Bar To Merthern Pt, Cornwall, Permit Ref: Nra-Sw-6845, Permit Version: 1, Effective Date: 5th September 1994, Issued Date: 5th September 1994, Revocation Date: 16th December 2012, Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company, Discharge Environment: Into Land, Receiving Water: Soakaway, Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995), Positional Accuracy: Located by supplier to within 100m.	13m	SW
5	Operator: Devon & Cornwall Housing Assoc Ltd, Property Type: Wholesale Distribution Of Timber, Location: Site Off Aldreath Road, Madron, PENZANCE, Cornwall, Authority: Environment Agency, South West Region, Catchment Area: South Coast Streams: Loe Bar To Merthern Pt, Cornwall, Permit Ref: NRA-SW-4060/1, Permit Version: Not Supplied, Effective Date: Not Supplied, Issued Date: 15th July 1992, Revocation Date: Not Supplied, Discharge Type: Sewage Effluent Discharge-Treated Effluent, Discharge Environment: Land/Soakaway, Receiving Water: Licence Status: Lapsed, Revoked Or Cancelled, Status: Not Supplied, Positional Accuracy: Located by supplier to within 100m.	46m	N
6	Operator: Major E T Bolitho, Property Type: Wooden Containers, Location: Landithy Madron, Authority: Environment Agency, South West Region, Catchment Area: South Coast Streams: Loe Bar To Merthern Pt, Cornwall, Permit Ref: NRA-SW-0607/1, Permit Version: Not Supplied, Effective Date: Not Supplied, Issued Date: 26th March 1990, Revocation Date: Not Supplied, Discharge Type: Sewage Effluent Discharge-Treated Effluent, Discharge Environment: Land/Soakaway, Receiving Water: Soakaway, Licence Status: Lapsed, Revoked Or Cancelled, Status: Not Supplied, Positional Accuracy: Located by supplier to within 100m.	422m	SW
7	Operator: Mr Richard Cruickshank, Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE), Location: Lower Landithy Barn Boscathoe Lane, Heamore, Penzance, Cornwall, Authority: Environment Agency, South West Region, Catchment Area: South Coast Streams: Loe Bar To Merthern Pt, Cornwall, Permit Ref: 300108/Sa/01, Permit Version: 1, Effective Date: 18th October 1996, Issued Date: 18th October 1996, Revocation Date: Not Supplied, Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company, Discharge Environment: Land/Soakaway, Receiving Water: Soakaway, Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995), Positional Accuracy: Located by supplier to within 100m.	440m	S

Waste

Waste/Landfill Sites

Local Authority Landfill Coverage

Penwith District Council - Has supplied landfill data
Cornwall County Council - Had landfill data but passed it to the relevant environment agency

Local Authority Recorded Landfill Sites

Map ID	Details	Distance	Direction
11	Location: Bone Valley, Reference: 53, Authority: Penwith District Council (now part of Cornwall Council), Last Reported Status: Unknown, Types of Waste: Not Supplied, Date of Closure: Not Supplied, Boundary Quality: Not Applicable, Positional Accuracy: Located by supplier to within 100m.	715m	NE

Historical Landfill Sites

Map ID	Details	Distance	Direction
10	Licence Holder: Not Supplied, Location: Bone Valley, Penzance, Cornwall, Name: Bone Valley, Operator Location: Not Supplied, Boundary Accuracy: As Supplied, Provider Reference: EAHLD08110, First Input Date: Not Supplied, Last Input Date: 31st December 1991, Specified Waste Type: Deposited Waste included Inert, Industrial, Commercial and Household Waste, EA Waste Ref: 0, Regis Ref: Not Supplied, WRC Ref: 0800/0200, BGS Ref: Not Supplied, Other Ref: WM9/5/1/53	652m	NE
	Licence Holder: Not Supplied, Location: Bone Valley, Penzance, Cornwall, Name: Bone Farm, Operator Location: Not Supplied, Boundary Accuracy: As Supplied, Provider Reference: EAHLD08100, First Input Date: 23rd February 1965, Last Input Date: 31st December 1966, Specified Waste Type: Deposited Waste included Inert, Industrial, Commercial and Household Waste, EA Waste Ref: 0, Regis Ref: Not Supplied, WRC Ref: 0800/0021, BGS Ref: Not Supplied, Other Ref: I/G/33, WM9/5/1/22	686m	E

Current Land Use

Current Potentially Contaminative Uses

Contemporary Trade Directory Entries

Map ID	Details	Distance	Direction
13	Commercial Cleaning Services, Name: Duchy Cleaners, Status: Active, Location: 8, Trelawney Estate, Madron, PENZANCE, Cornwall, TR20 8SJ, Positional Accuracy: Automatically positioned to the address.	254m	W
14	Meat - Wholesale, Name: Madron Meat Co Ltd, Status: Inactive, Location: Tally Ho, Madron, Penzance, Cornwall, TR20 8SF, Positional Accuracy: Automatically positioned to the address.	406m	NW
15	Hospitals, Name: Poltair Hospital, Status: Inactive, Location: Madron, Penzance, TR20 8SR, Positional Accuracy: Automatically positioned to the address.	425m	SE
16	Hospitals, Name: Poltair Hospital, Status: Active, Location: Madron, Penzance, TR20 8SR, Positional Accuracy: Automatically positioned to the address.	425m	SE
17	Hospitals, Name: Poltair Community Hospital, Status: Inactive, Location: Madron, Penzance, TR20 8SR, Positional Accuracy: Automatically positioned to the address.	425m	SE
18	Hospitals, Name: Poltair Hospital, Status: Inactive, Location: Madron, Penzance, Cornwall, TR20 8SR, Positional Accuracy: Automatically positioned to the address.	426m	SE
19	Hospitals, Name: Health Services, Status: Inactive, Location: Madron, Penzance, Cornwall, TR20 8SR, Positional Accuracy: Manually positioned to the address or location.	427m	SE

Historical Land Use

Historical Potentially Contaminative Uses

Historical Tanks and Energy Facilities

Map ID	Details	Distance	Direction
	Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1963.	5m	NW
	Electrical Sub Station Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1981.	38m	W
	Electrical Sub Station Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1981.	214m	SW
	Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1963.	392m	NW
	Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1963.	416m	NW

Potentially Contaminative Industrial Uses (Past Land Use)

Map ID	Details	Distance	Direction
	Cemetery or Graveyard, Date of Mapping: 1908-1993.	252m	W
	Animal slaughtering & basic processing of meat [other than poultry], Date of Mapping: 1993.	412m	NW
	Hospitals, Date of Mapping: 1963-1993.	422m	SE
	Quarrying of sand & clay, operation of sand & gravel pits, Date of Mapping: 1888.	462m	N

Potentially Infilled Land

Potentially Infilled Land (Non-Water)

Map ID	Details	Distance	Direction
	Unknown Filled Ground (Pit, quarry etc), Date of Mapping: 1993.	462m	N

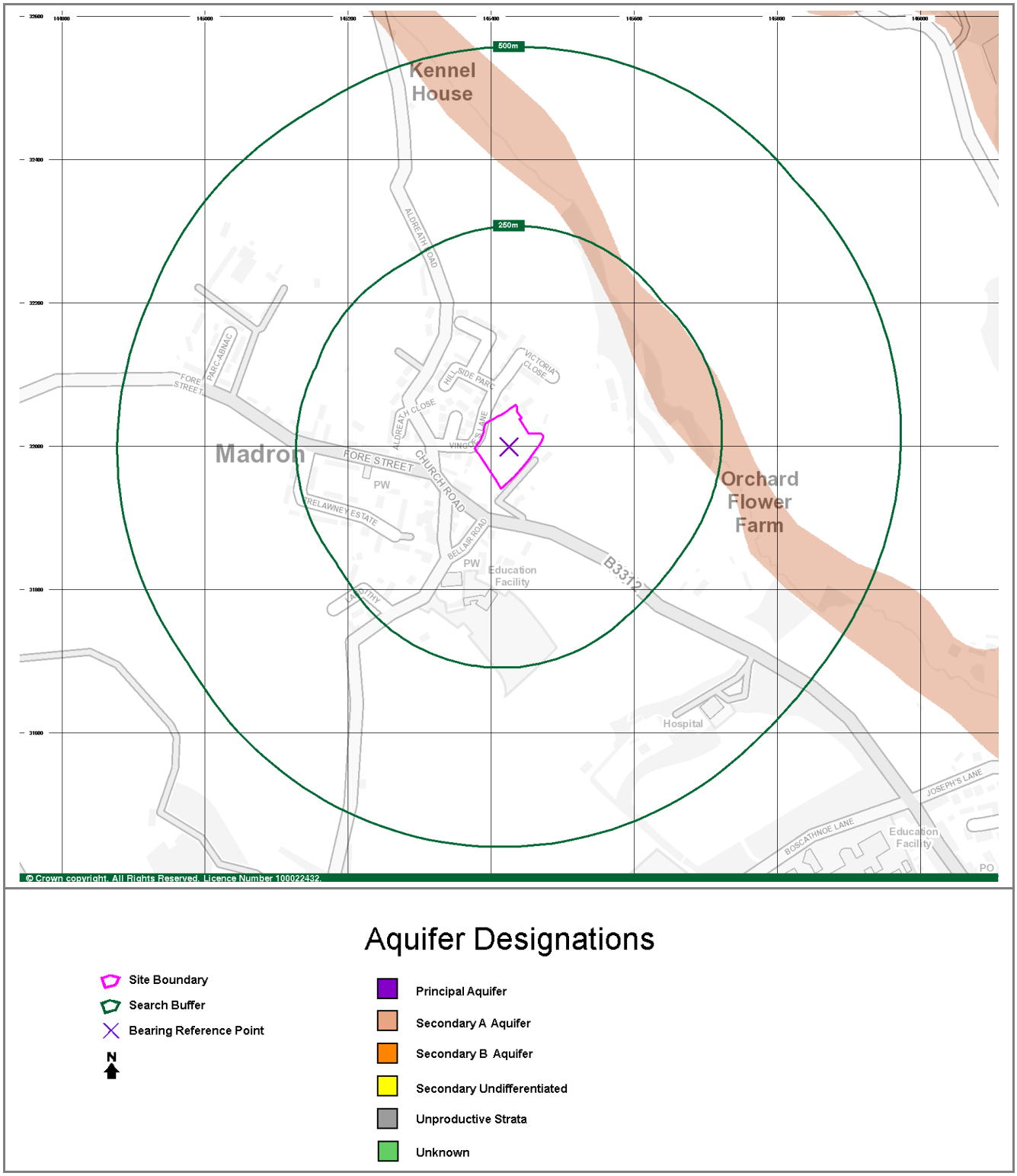
Historical Maps

The following maps have been manually reviewed by a consultant and presented in the Risk Analysis section at the front of this report:

Scale	Map Sheet	Published Date
1:2,500	Cornwall & Isles Of Scilly 068_13	1878
1:2,500	Cornwall & Isles Of Scilly 074_01	1878
1:2,500	Cornwall & Isles Of Scilly 068_13	1908
1:2,500	Cornwall & Isles Of Scilly 074_01	1908
1:2,500	Cornwall & Isles Of Scilly 074_01	1936
1:2,500	National Grid SW4531	1962
1:2,500	National Grid SW4532	1963
1:2,500	National Grid SW4531	1981
1:2,500	National Grid SW4532	1975
1:2,500	National Grid SW4532	1994
1:2,500	National Grid SW4531	1983
1:2,500	National Grid SW4532	1992
1:10,560	Cornwall & Isles Of Scilly 068_SW	1888
1:10,560	Cornwall & Isles Of Scilly 074_NW	1888
1:10,560	Cornwall & Isles Of Scilly 068_SW	1908
1:10,560	Cornwall & Isles Of Scilly 074_NW	1909
1:10,560	Cornwall & Isles Of Scilly 074_NW	1936
1:10,560	National Grid SW43SE	1963
1:10,560	National Grid SW43SW	1963
1:10,560	National Grid SW43SE	1968
1:10,000	National Grid SW43SE	1976
1:10,000	National Grid SW43SW	1981
1:10,000	National Grid SW43SE	1993
1:10,000	National Grid SW43SE	2014

Scale	Map Sheet	Published Date
1:10,000	National Grid SW43SW	2014
1:1,250	National Grid SW4531NE	1994
1:1,250	National Grid SW4531NW	1994

Aquifer Designation (Superficial)

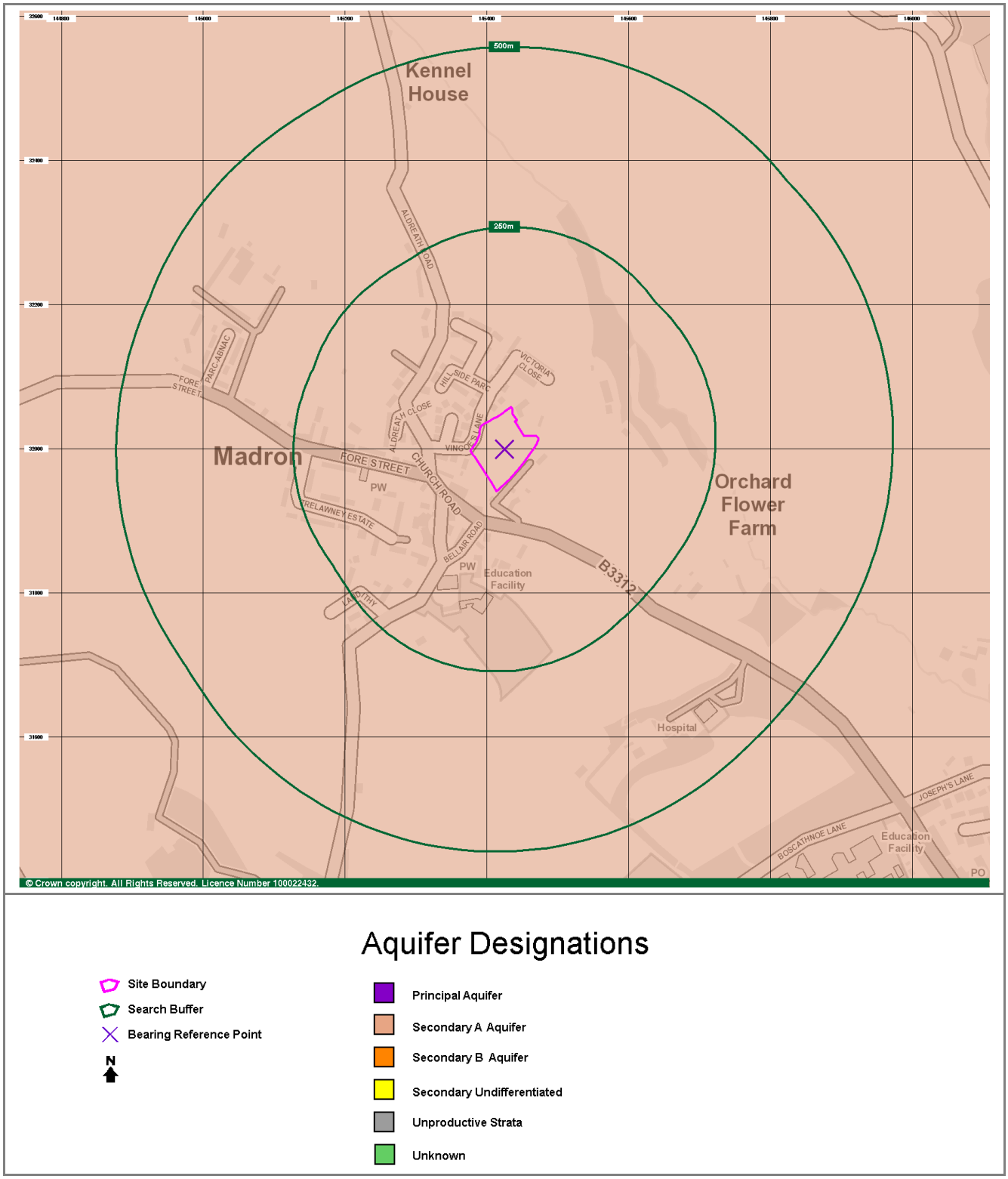


Aquifer Designations

- Site Boundary
- Search Buffer
- Bearing Reference Point
- N

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Aquifer Designation (Bedrock)



Aquifer Designations

- Site Boundary
- Search Buffer
- Bearing Reference Point
- N

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Groundwater Vulnerability

Hydrogeology

Superficial Aquifer Designations

Map ID	Details	Distance	Direction
	Secondary Aquifer - A These aquifers are formed of moderately permeable layers capable of supporting water supplies at a local scale, and in some cases forming an important source of base flow to rivers.	160m	NE

Bedrock Aquifer Designations

Map ID	Details	Distance	Direction
	Secondary Aquifer - A These aquifers are formed of moderately permeable layers capable of supporting water supplies at a local scale, and in some cases forming an important source of base flow to rivers.	On Site	-
	Secondary Aquifer - A These aquifers are formed of moderately permeable layers capable of supporting water supplies at a local scale, and in some cases forming an important source of base flow to rivers.	378m	W

Groundwater Vulnerability

Map ID	Details	Distance	Direction
	Soil Classification: Soils of High Leaching Potential (H3)- Coarse textured or moderately shallow soils which readily transmit non-absorbed pollutants and liquid discharges but which have some ability to attenuate absorbed pollutants because of their large clay or organic matter contents, Map Scale: 1:100,000, Map Name: Sheet 53 West Cornwall.	On Site	-
	Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants, Map Scale: 1:100,000, Map Name: Sheet 53 West Cornwall.	46m	SE

Geology

BGS 1:50,000 Bedrock Geology

Map ID	Details	Distance	Direction
	LEX Code: MRSL, Rock Name: Mylor Slate Formation, Rock Type: Hornfelsed Slate and Hornfelsed Siltstone, Min Age: Not Supplied, Max Age: Frasnian.	On Site	SW
	LEX Code: MRSL, Rock Name: Mylor Slate Formation, Rock Type: Hornfelsed Slate and Hornfelsed Siltstone, Min Age: Not Supplied, Max Age: Frasnian.	On Site	-
	LEX Code: LEIN, Rock Name: Land's End Intrusion, Rock Type: Granite, Min Age: Not Supplied, Max Age: Carboniferous.	5m	NW
	LEX Code: MRSL, Rock Name: Mylor Slate Formation, Rock Type: Metabasaltic-rock, Min Age: Not Supplied, Max Age: Frasnian.	303m	SW

BGS 1:50,000 Superficial Deposits

Map ID	Details	Distance	Direction
	LEX Code: ALV, Rock Name: Alluvium, Rock Type: Clay, Silt, Sand and Gravel, Min Age: Not Supplied, Max Age: Holocene.	160m	NE
	LEX Code: RTDU, Rock Name: River Terrace Deposits (Undifferentiated), Rock Type: Sand and Gravel, Min Age: Not Supplied, Max Age: Quaternary.	448m	SE

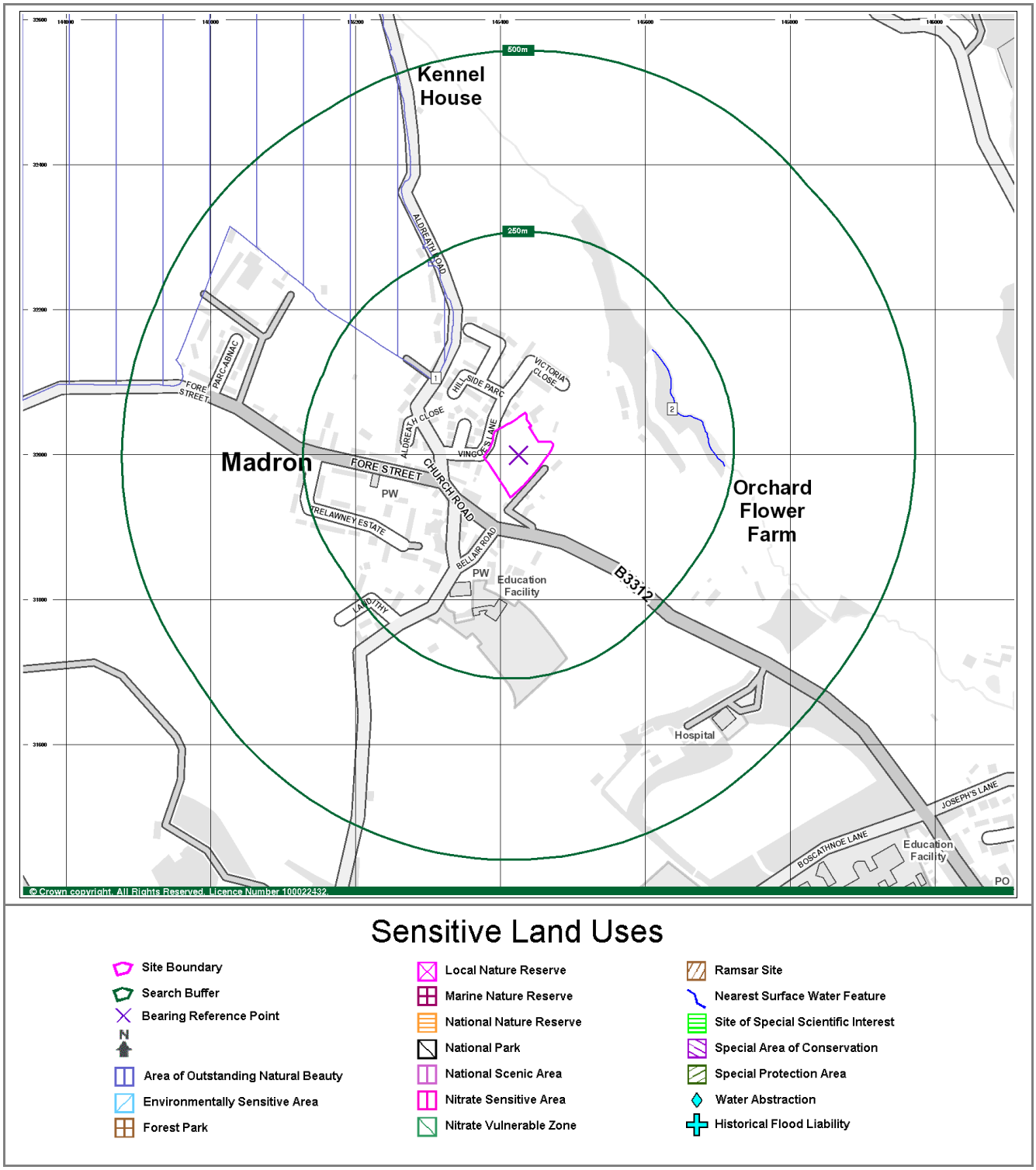
BGS 1:50,000 Geological Mapping Coverage

Map ID	Details	Distance	Direction
	Map Sheet No: 358, Map Name: Penzance, Map Date: 1984, Bedrock Geology: Available, Superficial Geology: Available, Artificial Geology: Available, Faults: Not Supplied, Landslip: Available, Rock Segments: Not Supplied.	On Site	-

BGS 1:625,000 Solid Geology

Map ID	Details	Distance	Direction
	Upper Devonian Rocks (Undifferentiated).	On Site	-
	Unnamed Igneous Intrusion, Carboniferous To Permian.	On Site	N

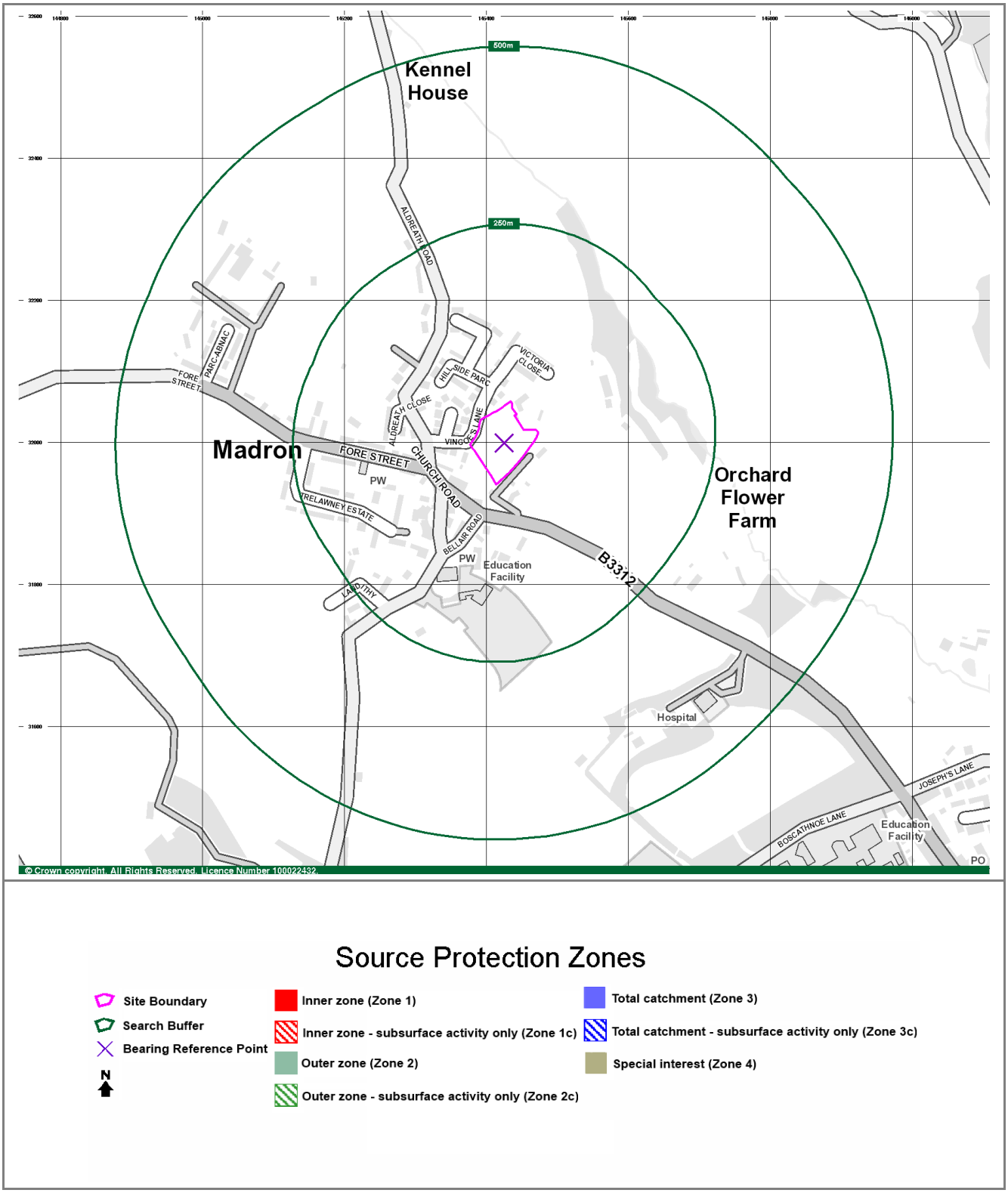
Environmentally Sensitive Features



Sensitive Land Uses

- Site Boundary
- Search Buffer
- Bearing Reference Point
- N
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- National Scenic Area
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Nearest Surface Water Feature
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- Water Abstraction
- Historical Flood Liability

Source Protection Zones



Environmentally Sensitive Features

Areas of Outstanding Natural Beauty

Map ID	Details	Distance	Direction
1	Name: Cornwall, Multiple Area: Y, Area (m^2): 964031731.73, Designation Date: 30th November 1959, Source: Natural England.	111m	NW

Nearest Surface Water Feature

Map ID	Details	Distance	Direction
2	Surface water feature identified in proximity.	173m	E

Water Abstractions

Map ID	Details	Distance	Direction
	Operator: Mr J B Eddy, Licence Number: 15/48/024/G/102, Permit Version: 100, Location: Bone Farm - Well A, Authority: Environment Agency, South West Region, Abstraction: General Farming And Domestic, Abstraction Type: Water may be abstracted from a single point, Source: Groundwater, Daily Rate(m^3): Not Supplied, Yearly Rate (m^3): Not Supplied, Bone Farm, Penzance., Authorised Start: 01 January, Authorised End: 31 December, Permit Start Date: 29th September 1971, Permit End Date: Not Supplied, Positional Accuracy: Located by supplier to within 100m.	932m	E
	Operator: SOUTH WEST WATER SVS LTD, Licence Number: 1548024G075, Permit Version: Not Supplied, Location: Polteggan Well, Authority: Environment Agency, South West Region, Abstraction: Public Water Supply (South West Water), Abstraction Type: Not Supplied, Source: Well, Daily Rate(m^3): 1963.00, Yearly Rate (m^3): 227300.00, Borehole Depth: 26; Polteggan Well; 7743, Authorised Start: Not Supplied, Authorised End: Not Supplied, Permit Start Date: Not Supplied, Permit End Date: Not Supplied, Positional Accuracy: Located by supplier to within 10m.	991m	S
	Operator: South West Water Svs Ltd, Licence Number: 15/48/24/G/75, Permit Version: Not Supplied, Location: Polteggan Well, Authority: Environment Agency, South West Region, Abstraction: Public Water Supply (South West Water), Abstraction Type: Not Supplied, Source: Well, Daily Rate(m^3): 1963, Yearly Rate (m^3): 227300, Not Supplied, Authorised Start: Not Supplied, Authorised End: Not Supplied, Permit Start Date: Not Supplied, Permit End Date: Not Supplied, Positional Accuracy: Located by supplier to within 100m.	993m	S
	Operator: SOUTH WEST WATER SVS LTD, Licence Number: 1548024G075, Permit Version: Not Supplied, Location: Polteggan Well, Authority: Environment Agency, South West Region, Abstraction: Public Water Supply (South West Water), Abstraction Type: Not Supplied, Source: Well, Daily Rate(m^3): 1963.60, Yearly Rate (m^3): 227273.00, Polteggan Well; Depth 26M, Authorised Start: Not Supplied, Authorised End: Not Supplied, Permit Start Date: Not Supplied, Permit End Date: Not Supplied, Positional Accuracy: Located by supplier to within 100m.	996m	S
	Operator: SOUTH WEST WATER SVS LTD, Licence Number: 1548024G075, Permit Version: Not Supplied, Location: Polteggan Well, Authority: Environment Agency, South West Region, Abstraction: Public Water Supply (South West Water), Abstraction Type: Not Supplied, Source: Well, Daily Rate(m^3): 1963.60, Yearly Rate (m^3): 464091.00, Polteggan Well; Depth 26M, Authorised Start: Not Supplied, Authorised End: Not Supplied, Permit Start Date: Not Supplied, Permit End Date: Not Supplied, Positional Accuracy: Located by supplier to within 100m.	997m	S

Natural and Mining Related Hazards

Subsidence

Collapsible Ground Stability Hazards

Map ID	Details	Distance	Direction
	Risk: Very Low, Source: British Geological Survey, National Geoscience Information Service.	On Site	-
	Risk: Very Low, Source: British Geological Survey, National Geoscience Information Service.	240m	NE

Compressible Ground Stability Hazards

Map ID	Details	Distance	Direction
	Risk: No Hazard, Source: British Geological Survey, National Geoscience Information Service.	On Site	-
	Risk: Moderate, Source: British Geological Survey, National Geoscience Information Service.	160m	NE

Ground Dissolution Stability Hazards

Map ID	Details	Distance	Direction
	Risk: No Hazard, Source: British Geological Survey, National Geoscience Information Service.	On Site	-

Landslide Ground Stability Hazards

Map ID	Details	Distance	Direction
	Risk: Very Low, Source: British Geological Survey, National Geoscience Information Service.	On Site	-
	Risk: Moderate, Source: British Geological Survey, National Geoscience Information Service.	160m	NE

Running Sand Ground Stability Hazards

Map ID	Details	Distance	Direction
	Risk: No Hazard, Source: British Geological Survey, National Geoscience Information Service.	On Site	-
	Risk: Low, Source: British Geological Survey, National Geoscience Information Service.	160m	NE

Shrinking or Swelling Clay Subsidence Hazards

Map ID	Details	Distance	Direction
	Risk: No Hazard, Source: British Geological Survey, National Geoscience Information Service.	On Site	-
	Risk: Very Low, Source: British Geological Survey, National Geoscience Information Service.	160m	NE

Non-Coal Mining Hazards

Map ID	Details	Distance	Direction
	Risk: Highly Unlikely, Source: British Geological Survey, National Geoscience Information Service.	On Site	-

Radon

Radon Potential

Map ID	Details	Distance	Direction
	The property is in a Higher probability radon area (more than 30% of homes are estimated to be at or above the Action Level)., Source: British Geological Survey, National Geoscience Information Service.	On Site	-

Radon Protective Measures

Map ID	Details	Distance	Direction
	Full, Source: British Geological Survey, National Geoscience Information Service.	On Site	-

Mining

Mining Instability

Map ID	Details	Distance	Direction
	Mining Evidence: Conclusive Metaliferous Mining, Source: Ove Arup & Partners, Boundary Quality: As Supplied.	31m	E

BGS Recorded Mineral Sites

Map ID	Details	Distance	Direction
12	Site Name: The Kennels Gravel Pit, Site Location: Not Supplied, Source: British Geological Survey, National Geoscience Information Service, Reference: 81576, Type: Opencast, Status: Ceased, Operator: Not Supplied, Operator Location: Not Supplied, Periodic Type: Carboniferous, Geology: Land'S End Intrusion, Commodity: Sand and Gravel, Positional Accuracy: Located by supplier to within 10m.	468m	N

Useful Contacts

Name and Address	Telephone/Fax/Email
Argyll Environmental Limited 1st Floor 98 – 99 Queens Road Brighton BN1 3XF www.argyllenvironmental.com	Telephone 0845 458 5250 orders@argyllenviro.com
Ensura Limited (for Environmental Insurance) 1st Floor 98 – 99 Queens Road Brighton BN1 3XF www.ensura.co.uk	Telephone 0845 652 8585 Fax 0845 652 8686 info@ensura.co.uk
Environment Agency National Customer Contact Centre (NCCC) PO Box 544	Telephone 03708 506 506
Penwith District Council (now part of Cornwall Council) County Hall www.cornwall.gov.uk	Telephone 0300 1234 100 enquiries@cornwall.gov.uk
Cornwall County Council (now part of Cornwall Council) County Hall www.cornwall.gov.uk	Telephone 0300 1234 100 enquiries@cornwall.gov.uk
British Geological Survey Enquiry Service British Geological Survey www.bgs.ac.uk	Telephone 0115 936 3143 Fax: 0115 936 3276 enquiries@bgs.ac.uk
Natural England County Hall www.naturalengland.org.uk	Telephone 0300 060 3900 enquiries@naturalengland.org.uk
Please note that the Environment Agency / SEPA have a charging policy in place for enquiries. When contacting these agencies please mention that this data has been received from the Landmark database, alternatively Argyll Environmental Limited would be pleased to assist with consultation to the above bodies. Please contact us for a quotation.	

Risk Analysis Methodology

The Site Solutions reports have been designed to assist in making informed decisions during property transactions. The Report is a desktop assessment of direct liabilities (Liabilities) which could affect the owner /occupier of the Site and arise under Part 2A of the Environmental Protection Act 1990 and/or equivalent requirements under the planning regime and/or the Water Resources Act 1991[3]. (Relevant Legislation). If a risk is identified, then a number of options for finding out more about the risk, managing it or transferring it are proposed.

The assessment of environmental liability under the Relevant Legislation is based upon the principle of determining the presence of a plausible contaminant-pathway-receptor relationship (a contaminant linkage). A 'contaminant' is a source of contamination, a 'pathway' is a medium through which the contamination can mobilise and 'a receptor' is a person or entity that could be detrimentally affected by the contamination. If all three are identified, then a 'plausible contaminant-pathway-receptor relationship' may be present. By definition, this is one which Argyll believes could result in significant harm, a significant possibility of significant harm or significant pollution or the possibility of significant pollution to Controlled Waters.

In our assessment we use the following test to decide if there is a potential liability affecting the Site. For the purpose of this assessment a site where a potential Liability has been identified is defined as follows:

A Site which, from the information assessed by Argyll, is considered to have the potential of being affected by contaminative substances present in or under the Site (but excluding potential sources of contamination on or above the land) such that, on the basis of its current or proposed use, there is a reasonable likelihood of a UK regulatory authority, acting in accordance with Relevant Legislation, requiring that remedial measures are taken in order to remedy or mitigate the contaminative substances that are present in or under the land that forms all or part of the Site.

The term Liabilities is defined within the scope of this assessment to mean, remedial works under Part 2A of the Environmental Protection Act 1990 (or where appropriate, equivalent requirements under the planning regime) and/or the Water Resources Act 1991 which may result in direct liability for the site owner/occupier.

The assessment within the Report has been produced and quality checked by a team of qualified environmental professionals. The assessment is based upon a manual review of the data contained within the Data Section of this Report and of 1:2500 and 1:1250 (where available) scale historical mapping.

Ecological Risk Assessment

The evaluation of ecological risk is becoming an increasingly important input when making risk management decisions. In the Site Solutions Commercial report, Argyll assesses two different drivers for risks and liabilities driven by ecological receptors;

1. The Contaminated Land Regime; and
2. The Environmental Damage Regulations 2009, as amended (EDR).

The Environment Agency has designed a generic framework for conducting ecological risk assessment (see Assessing Risk to Ecosystems from Land Contamination, R&D Technical Report P299, EA 2002). This recommends a tiered approach in line with best practice for human health and controlled water risk assessment and defines Relevant Ecological Receptors as any of the Relevant Types of Receptor as set out in Table 1 of Defra Statutory Guidance on Contaminated Land dated April 2012.

Argyll assesses Relevant Ecological Receptors as part of its assessment process. To do so it uses the Argyll EcoRisk model which was developed and tested in consultation with leading experts and is based on the Environment Agency framework.

The Environmental Damage (Prevention and Remediation) Regulations 2009, as amended, were introduced on 1 March 2009 to implement the provisions of the European Union's Environmental Liability Directive into law in England[4]. The aim of EDR is to prevent and remedy damage to protected species or natural habitats or a site of special scientific interest, surface water, groundwater, coastal water or to land. 'Environmental damage' has a specific meaning in the Regulations, and must meet key criteria. Existing legislation with provisions for environmental

[3] Water Environment (Controlled Activities)(Scotland) Regulations 2005 where appropriate.
[4]Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009 or Environmental Liability (Scotland) Regulations 2009 where appropriate.

liability remains in place. The Regulations apply on land in England and on the seabed around the UK up to the limits set out in the Continental Shelf Act 1964, and to waters out to the Renewable Energy Zone, which extends approximately 200 miles out to sea.

Argyll will apply due consideration to the nature of any activities likely to be occurring on Site and review EDR Receptors surrounding the Site. However, Argyll are unable to consider the standard of current operations or instances where environmental damage arises either intentionally or as a result of negligence on behalf of the Site operator.

The assessment excludes the identification of potential liabilities arising as a result of genetically modified organisms and the transportation or delivery of polluting goods which may occur at locations off Site. In addition, not all EDR Receptors can be identified in this assessment including protected species/natural habitats such as nesting bats, nesting birds or migratory bird routes which are not officially designated.

When conducting either assessment, Argyll will primarily assess information provided in the Data section of the Report. However, in some cases Argyll may choose to supplement this with freely available public information such as that provided by Natural England and/or information provided by the Argyll Europa System.

Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009, Environmental Damage (Prevention and Remediation) (Northern Ireland) Regulations 2009 or Environmental Liability (Scotland) Regulations 2009 where appropriate.

Liability Assessment

In this section Argyll will report on any potential soil and groundwater liabilities which it considers are associated with the Site. Our assessment of Liability is based upon the proposed and current use of the Site(as supplied by the client)in line with current Government guidance.

There will be one of the following three responses:

Assessment	Liability Statement & explanation	Defra Category*
PASSED 	**Within the scope of this assessment no Liabilities have been identified. No further action is required.** This statement indicates that within the scope of this assessment, no issues have been identified that are likely to result in significant cost liabilities under Relevant Legislation.	3 or 4
PASSED 	**Within the scope of this assessment no Liabilities have been identified. However, your attention is drawn to the prudent enquiries suggested below.** This statement indicates that within the scope of this assessment, no issues have been identified that are likely to result in significant cost liabilities under Relevant Legislation. However, a client may wish to obtain further information about other issues disclosed in the Report, which could be material.	3 or 4
FURTHER ACTION 	**Potential Liabilities have been identified under Part 2A of the Environmental Protection Act 1990 (or where appropriate, equivalent requirements under the planning regime) and/or the Water Resources Act 1991[5]. To quantify these you may decide to undertake a more detailed assessment through the recommendation(s) set out below.** This statement indicates that within the scope of this assessment, an issue or a number of issues have been identified that are likely to result in significant cost liabilities under Relevant Legislation. In this event, recommendations are made, in order that additional information is collected so that the liabilities may be more accurately assessed.	Potentially 1 or 2

* According to Defra's updated Statutory Guidance on Contaminated Land, Regulators have a four-stage test to decide when land is and is not contaminated. Category 1 and Category 2 sites would encompass land which is capable of being determined as contaminated land, whereas Category 3 and Category 4 sites would encompass land which is not capable of being determined as contaminated land.

[5]Water Environment (Controlled Activities)(Scotland) Regulations 2005 where appropriate.

Limitations of the Report

The Site Solutions reports have been designed to satisfy standard environmental due-diligence enquiries, as recommended by the Law Society's contaminated land warning card. It is a 'remote' investigation and reviews only information provided by the client and from the databases of publicly available information that have been chosen to enable a desk based environmental assessment of the Site. The Report does not include a site investigation, nor does Argyll make specific information requests of the regulatory authorities for any relevant information they may hold. Therefore, Argyll cannot guarantee that all land uses or factors of concern will have been identified by the Report.

The information in the Data Section of the Report is derived from a number of statutory and non-statutory sources. While every effort is made to ensure accuracy, Argyll cannot guarantee the accuracy or completeness of such information or data. Argyll will not accept responsibility for inaccurate data provided by external data providers.

Further information regarding our risk assessment methodology is provided in the Products and Services User Manual which is available free of charge from the client area of our website www.argyllenvironmental.com. For further information regarding the datasets reviewed within our assessment, please contact one of our technical team on 0845 458 5250. This report is provided under The Argyll Environmental Terms and Conditions for Data Reports, a copy of which is available on our website.

Important Consumer Protection Information

This search has been produced by Argyll Environmental Ltd, 1st Floor, 98 – 99 Queens Road, Brighton, BN1 3XF. Telephone: 0845 458 5250, e-mail: orders@argyllenviro.com which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details:
The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Web site: www.tpos.co.uk
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk.

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

Complaints procedure

If you want to make a complaint, we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

Complaints should be sent to:

Legal Director
Argyll Environmental Ltd
1st Floor
98 – 99 Queens Road
Brighton
BN1 3XF

Telephone: 0845 458 5250
Email: orders@argyllenviro.com

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision.